

Research article

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(Arachnida: Araneae: Synotaxidae)**Narelle ESTOL¹, Victor Hugo VALIATI², Antonio D. BRESCOVIT³ &
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Abstract. The genus *Tekellina* Levi, 1957 is currently composed of ten species, six of which are Neotropical. They are small-sized spiders (0.9 to 1.5 mm), with a wide distribution, with a great diversity in the Neotropical Region and well represented in Brazil. In this article, males and females of the species *Tekellina bella* Marques & Buckup, 1993 and *T. crica* Marques & Buckup, 1993 are redescribed and illustrated. The female of *Tekellina minor* Marques & Buckup, 1993 is described and illustrated for the first time. New records are included for Neotropical species. *Tekellina guaiba* Marques & Buckup, 1993 is synonymized with *T. pretiosa* Marques & Buckup, 1993. Three new species are described for Brazil: *Tekellina picurrucha* Rodrigues & Estol sp. nov. (São Paulo, Paraná and Rio Grande do Sul), *Tekellina miuda* Rodrigues & Estol sp. nov. (São Paulo and Paraná) and *Tekellina miudinha* Rodrigues & Estol sp. nov. (São Paulo). Distribution maps with new records and an identification key of the Neotropical species are also presented.

Keywords. New species, new synonymy, new records, taxonomy.

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Introduction

The genus *Tekellina* Levi, 1957 is currently composed of ten species, six of which are exclusively Neotropical (World Spider Catalog 2024). They are small-sized spiders (0.9 to 1.5 mm), with a wide distribution and a great diversity in the Neotropical Region, especially in Brazil (Marques & Buckup 1993). The type species is *Tekellina archboldi* Levi, 1957 with type locality in Florida, USA (World Spider Catalog 2024).

Levi (1957) proposed the genus and included it in Theridiidae. According to Levi, *Tekellina* differs from the other genera of the family mainly because it does not present teeth or denticles in the chelicerae. Levi (1957) and Marques & Buckup (1993) characterized the genus by the male having a circular cymbium, a long embolus surrounding the tegulum, and a subapical and usually spiraled conductor; females have elongated receptacles and long ducts and a wider abdomen, rarely higher than long. Recently, Marusik & Olmeko (2017) indicated that possibly *Tekellina* does not belong to Theridiidae. Ramirez *et al.* (2022) transferred the genus to Synotaxidae; however, with few species studied and only with molecular data in their phylogeny.

In this paper, we propose a taxonomic revision of the Neotropical species of *Tekellina* Levi, 1957, with the redescription of *Tekellina bella* Marques & Buckup, 1993 and *T. crica* Marques & Buckup, 1993; also, the female of *T. minor* is described and illustrated for the first time. We also propose a new synonymy of *T. guaiba* Marques & Buckup, 1993 with *T. pretiosa* Marques & Buckup, 1993 and present three new species for Brazil. A key to the Neotropical species is also presented as are distribution maps with new records.

Material and methods

Institutional abbreviations

The material examined is deposited in the following institutions (curators in parentheses):

- AMNH = American Museum of Natural History, New York, USA (L. Prendini)
- IBSP = Instituto Butantan, São Paulo, São Paulo, Brazil (A.D. Brescovit)
- INPA = Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil (M.L. de Oliveira)
- MCN = Museu de Ciências Naturais, SEMA, Porto Alegre, Rio Grande do Sul, Brazil (R. Ott)
- MCTP = Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Rio Grande do Sul, Porto Alegre, Brazil (R.A. Teixeira)
- MPEG = Museu Paraense Emílio Goeldi, Belém, Pará, Brazil (A.B. Bonaldo)
- UFMG = Centro de Coleções Taxonômicas, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil (A.J. Santos)
- UNAM = Universidad Nacional Autónoma de México, Ciudad de México, México (E.G. Santillán)

Descriptions and terminology of genital structures follow Marques & Buckup (1993) and Marusik & Omelko (2017). All measurements are presented in millimeters (mm). Measurements were taken under a stereo microscope with a Motic SMZ168 millimeter eyepiece. The specimens were preserved in 70% ethanol, coloration described according to specimens in alcohol and to visualize the internal structures of the female, the epigynum was submerged in clove oil for approximately 60 minutes (Levi 1965).

The illustrations were done with the help of a camera lucida attached to a Leica MZ9.5 stereo microscope. Digital photographs of the somatic characteristics of the specimens were taken with a Leica S9i stereo microscope with an integrated color digital camera. Microscopy photographs were taken using a Zeiss Microscope AXIO Lab. A1 with an AXIOCAM. For scanning electron microscopy (SEM) images, the specimens body parts were dehydrated in a graded series of ethanol washes (80% to 100%), dried

by critical point, mounted on metal stubs using adhesive copper tape and covered with gold. SEM images were taken with a FEI Inspect 250 scanning electron microscope at the Laboratório Central de Microscopia e Microanálise of Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre, Brazil. Images of *Tekellina archboldi* were created by Dr Fernando Álvarez Padilha (UNAM, Mexico), available on the website (<http://www.unamfcaracnolab.com>).

Geographical coordinates were obtained from the vial labels, when available; if not, approximate coordinates were obtained from Google Earth. Maps were made using the software Qgis (QGIS Development Team 2012).

Abbreviations for morphological terms

ALE = anterior lateral eyes
AME = anterior median eyes
Co = conductor
Cc = terminal claw like arm
CD = copulatory ducts
Cm = mesal arm
Cp = plate like arm
Cr = coiled ribbon shaped arm
Cs = stem of conductor
Cy = cymbium
E = embolus
FD = fertilization ducts
OC = copulatory opening
Pa = paracymbium
PLE = posterior lateral eyes
PME = posterior median eyes
Re = receptacle

Results

Taxonomy

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Synotaxidae Simon, 1895

Genus *Tekellina* Levi, 1957

Tekellina Levi, 1957: 107 (type species by original designation, *Tekellina archboldi* Levi, 1957).

Tekellina – World Spider Catalog 2024.

Emended diagnosis

Species of *Tekellina* differ from those of most Synotaxidae genera in lacking teeth on the chelicerae, in being minute-sized spiders (less than 1.5 mm, male of *Tekellina minor* 0.97 mm). Males have a circular cymbium prominent in the retrolateral base (Figs 1E, 2 E, H, L, 6B, E), paracymbium not articulated (Fig. 22A–B, D–E, G–H, J–K) and a big conductor divided into three parts: terminal claw-like arm, coiled ribbon-shaped arm and mesal arm (Fig. 5A–D). Female genitalia have one pair of long receptacles sometimes twisted around the axis with various loops (Figs 1F–G, 2F, L) and fertilization ducts occasionally conspicuous (Fig. 2C).

Description

See Levi (1957).

Included species

Tekellina includes nine Neotropical species: *Tekellina araucana* Marusik, Eskov & Ramirez, 2022; *T. archboldi* Levi, 1957; *T. bella* Marques & Buckup, 1993; *T. crica* Marques & Buckup, 1993; *T. guaiba* Marques & Buckup, 1993; *T. minor* Marques & Buckup, 1993; *T. picurruca* Rodrigues & Estol sp. nov.; *T. miuda* Rodrigues & Estol sp. nov. and *T. miudinha* Rodrigues & Estol sp. nov.; and other three Palearctic species: *Tekellina helixicis* Gao & Li, 2014 (from China); *T. sadamotoi* Yoshida & Ogata, 2016 (from China and Japan) and *T. yoshidai* Marusik & Omelko, 2017 (from Russian Far East) (World Spider Catalog 2024). With the present work, *Tekellina* includes a total of twelve species.

Key to the Neotropical species of *Tekellina* Levi, 1957

1. Males (those of *Tekellina miudinha* Rodrigues & Estol sp. nov. unknown) 2
– Females 9
2. Paracymbium retrolaterally very prominent in ventral view, thumb-shaped (Figs 2A, G, J, 6D) 3
– Paracymbium not thumb-shaped (Figs 2D, 6A) or not enlarged retrolaterally (Fig. 1D) 5
3. Mesal arm of conductor medially positioned 4
– Mesal arm of conductor apically positioned 7
4. Mesal arm of conductor coiled upwards (Fig. 2G) *Tekellina minor* Marques & Buckup, 1993
– Mesal arm of conductor hook shaped (Fig. 6D) *T. miuda* Rodrigues & Estol sp. nov.
5. Coiled mesal arm (Fig. 2D) 8
– Straight mesal arm (Fig. 6A) 6
6. Mesal arm with sharp apex (Fig. 6A) *T. picurruca* Rodrigues & Estol sp. nov.
– Mesal arm with blunt apex *T. araucana* Marusik, Eskov & Ramirez, 2022
7. Long terminal claw, exceeding half of the paracymbium and mesal arm not coiled (Fig. 2A)
..... *T. bella* Marques & Buckup, 1993
– Short terminal claw, not exceeding half of the paracymbium and mesal claw coiled inwards
(Fig. 2J) *T. guaiba* Marques & Buckup, 1993
8. Stem of conductor developed (Fig. 5C, D) *T. crica* Marques & Buckup, 1993
– Stem of conductor not developed (see Levi 1957: figs 7–8) *T. archboldi* Levi, 1957
9. Epigynum with arched copulatory opening (Figs 1G, 2C) 10
– Epigynum smaller and straighten copulatory opening (Fig. 6C) 12
10. Receptacles $\frac{1}{2}$ distant from each other (Fig. 2F) 14
– Receptacles $\frac{1}{3}$ closer to each other 11
11. Fertilization ducts close together (Figs 2F, 3C–D) *T. crica* Marques & Buckup, 1993
– Fertilization ducts far from each other *T. araucana* Marusik, Eskov & Ramirez, 2022
12. Abdomen with white pigment (Fig. 8J) 13
– Abdomen yellowish without white pigment (Fig. 9A–C) *T. bella* Marques & Buckup, 1993

13. Light eyes (almost transparent) with AME darker, rounder receptacles (see Levi, 1957, Figs 11–12) *T. archboldi* Levi, 1957
– Light brown eyes with AME darker, oval receptacles (Figs 8J–L, 4C–D, 2L)
..... *T. guaiba* Marques & Buckup, 1993
14. Copulatory ducts long with more than three turns surrounding receptacle (Figs 2F, 6C, F–G) 15
– Copulatory ducts with three turns surrounding receptacle (Fig. 2I)
..... *T. minor* Marques & Buckup, 1993
15. Small copulatory opening (Fig. 6C) 16
– Large copulatory opening (Fig. 8F) *T. miuda* Rodrigues & Estol sp. nov.
16. Round receptacles with a loop at the tip *T. picurrucha* Rodrigues & Estol sp. nov.
– Funnel-shaped receptacles distant between each other *T. miudinha* Rodrigues & Estol sp. nov.

Tekellina archboldi Levi, 1957

Fig. 1A–G

Tekellina archboldi Levi, 1957: 107, figs 7–12.

Tekellina archboldi – Levi & Levi 1962: 52, figs 196–197. — Levi & Randolph 1975: 41, figs 27–28.
— Roth 1982: 47–10, figs 27–28; 1985: b43–8, figs 27–28; 1994: 182, fig. 28.

Emended diagnosis

Males of *Tekellina archboldi* (see Levi 1957: figs 7–8; Fig. 1D–E) resemble those of *T. crica* (Fig. 2D–E) by the less prominent paracymbium in retrolateral view, and by the mesal arm of the conductor coiled in ventral view (Fig. 1D; Levi 1957: fig. 7). They differ by the shape of the mesal arm pointing upwards in apical view of the cymbium and by the longer terminal claw-like arm. Females resemble those of *T. bella* (Fig. 2C) by the shape of the receptacle of the genitalia and copulatory ducts, but differ by the presence of fertilization ducts with a divergent course, turned inward (Fig. 1G).

Type material (examined by photos)

Holotype

USA • ♂; Florida, Dade County, Kendall; 17 Dec. 1950, A.M. Nadler leg.; AMNH.

Allotype

USA • ♀; Florida, Highlands Co., Lake Placid, Archbold Biological Station; 17 Nov. 1952; A.M. Nadler leg., AMNH.

Paratypes

USA • 4 ♀♀; same data as for allotype; AMNH.

Material examined

MEXICO • ♂; San Luis Potos; Las Pozas, Xilita; 21°23'50" N, 98°59'38" W; 10–15 Jun. 2012; Equipe FC–UNAM leg.; UNAM.

Description

Male and female described by Levi (1957: 107, figs 7–12).

Distribution

Known from Florida, USA (Levi 1957), and from São Luis Potosi, Mexico.

Tekellina bella Marques & Buckup, 1993
Figs 2A–C, 3A–B, 5A–B, F, 8A–C, 11

Tekellina bella Marques & Buckup, 1993: 128, figs 9–12.

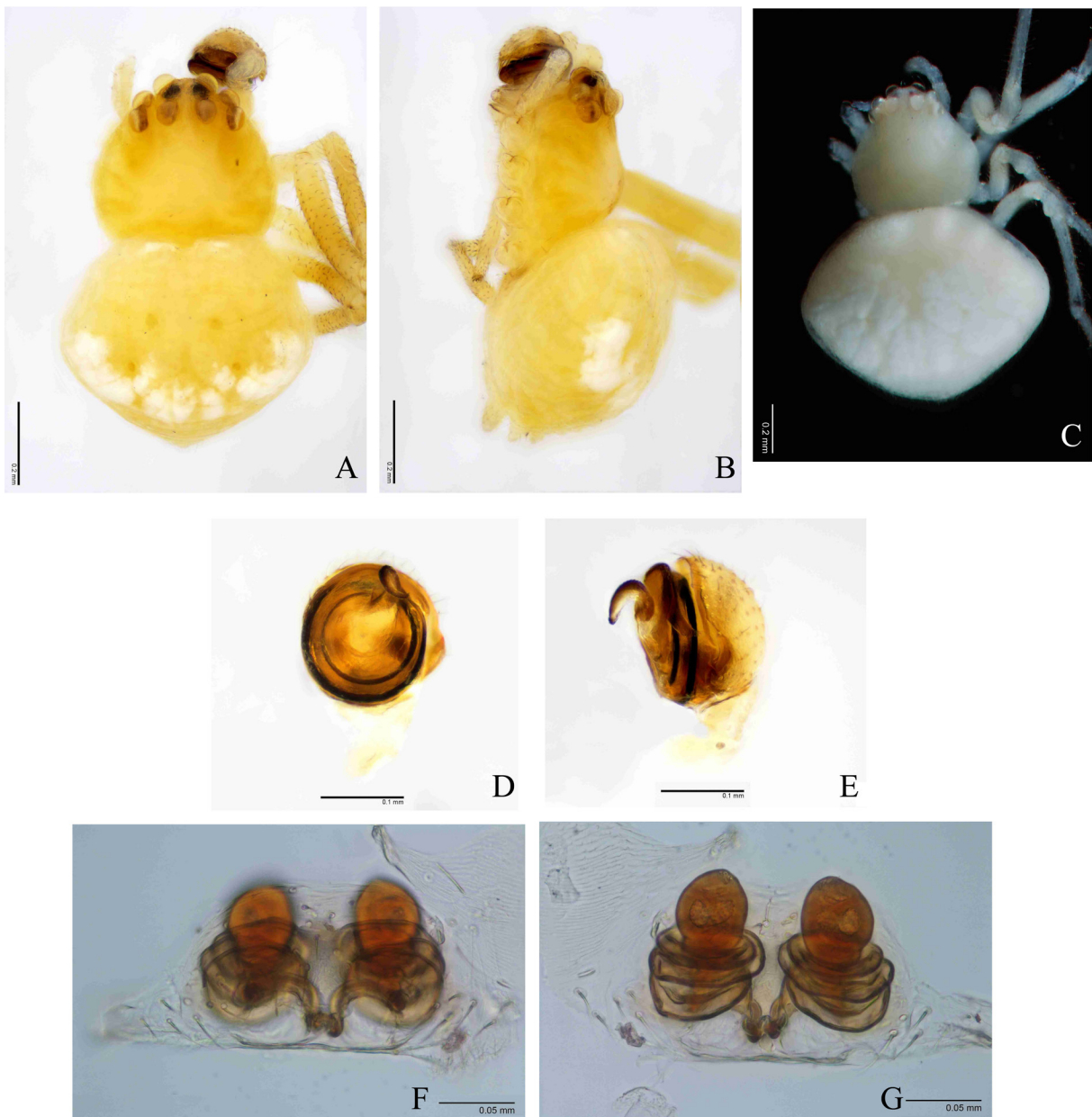


Fig. 1. *Tekellina archboldi* Levi, 1957. **A.** ♂, habitus, dorsal view. **B.** ♂, habitus, lateral view. **C.** ♀, habitus, dorsal view. **D.** ♂, palp, ventral view. **E.** ♂, palp, retrolateral view. **F.** ♀, clarified epigynum, ventral view. **G.** ♀, epigynum, dorsal view. Images: Fernando Álvarez Padilha (UNAM, Mexico). Available from <http://unamfcaracnolab.com> [accessed 14 Jun. 2024].

Diagnosis

Males of *Tekellina bella* resemble those of *Tekellina miuda* Rodrigues & Estol sp. nov. by the acuminate shape of the paracymbium, but differ by the terminal claw of the longer conductor and the mesal arm of the conductor not coiled and surpassing the cymbium (Figs 2A, 3B, 5A–B). Females resemble those of *T. archboldi* (see Levi 1957: figs 11–12) by the shape of the receptacles (Fig. 3A), but differ by the distinct course of the fertilization ducts and the distance between the copulatory openings (Fig. 2C).

Type material examined

Holotype

BRAZIL • ♂; Amazonas, Manaus, Reserva Florestal Adolpho Duck; 2°55' S, 59°59' W; 21 Feb. 1992; J. Adis *et al.* leg.; INPA.

Paratypes

BRAZIL • 1 ♀; same data as for holotype; INPA • 1 ♀; same data as for holotype; 19–21 Aug. 1991; J. Adis *et al.* leg.; MCN 22502 • 1 ♀; same data as for holotype; 18–25 Feb. 1992; A.D. Brescovit leg.; MCN 22474 • 2 ♀ ♀; same data as for preceding; MCN 22021, 22474 • 1 ♂, 1 ♀; Roraima, Ilha de Maracá, Rio Uraricoera; 3°24' N, 61°42' W; 14 Nov. 1992; A.A. Lise and A.B. Bonaldo leg.; MCTP 2225.

Other material examined

BOLIVIA – Beni • 1 ♂, 1 ♀; Beni Biological Station; 49°59.99" S, 34°59.99" W; 27–29 Aug. 1993; H. Höfer and A.D. Brescovit leg.; MCN 24681.

BRAZIL – Amazonas • 1 ♂, 1 ♀; Manaus, Reserva Florestal Adolpho Duck; 2°55' S, 59°59' W; 21 Feb. 1992; J. Adis *et al.* leg.; MCN 22170. – Minas Gerais • 1 ♂; Nova Lima, Reserva Particular do Patrimônio Natural Mata Samuel de Paula; 20°03' S, 43°52' W; 12–14 Oct. 2006, J.P.P.P. Barbosa *et al.* leg.; UFMG 3099 • 1 ♂; same data as for preceding; 29–30 Apr. 2007; UFMG 2672. – Pará • 1 ♀; Portel, Rio Camarapi, Igarapé Banã; 2°1'31.58" S, 50°42'43.58" W; 2018; R. Saturnino leg.; MPEG 35565 • 1 ♀; same data as for preceding; 2°12'5.70" S, 50°42'10.17" W; 2018; R. Saturnino, L.R. Fernandes and L. Feitosa leg.; MPEG 35568 • 1 ♀; same data as for preceding; 2°12'40.00" S, 50°28'23.10" W; 2018; Leonardo leg.; MPEG 35552 • 1 ♂, 1 ♀; Portel, Rio Camarapi, Igarapé Açaituba; 2°12'21.48" S, 50°27'51.09" W; 2018; Adriano leg.; MPEG 35553 • 1 ♀; same data as for preceding; 2°1'38.50" S, 50°42'55.80" W; 2018; L.R. Fernandes leg.; MPEG 35563 • 2 ♂♂, 1 ♀; same data as for preceding; 2°4'11.85" S, 50°43'4.71" W; 2018; R. Saturnino leg.; MPEG 35561 • 1 ♀; same data as for preceding; 2°3'21.30" S, 50°42'21.60" W; 2018; L. Feitosa leg.; MPEG 35569 • 1 ♀; same data as for preceding; MPEG 35557 • 2 ♀♀; same data as for preceding; MPEG 35564 • 1 ♂, 1 ♀; same data as for preceding; MPEG 35559 • 1 same data as for preceding; MPEG 35556 • 1 ♀; MPEG 35567 • 1 ♂; Portel, Igarapé Banã; 2°3'59.62" S, 50°42'53.46" W; 2018; R. Saturnino leg.; MPEG 35560 • 1 ♂; same data as for preceding; Miguel leg.; MPEG 35566 • 1 ♂; same data as for preceding; MPEG 35558 • 1 ♂; same data as for preceding; L. Feitosa leg.; MPEG 35562 • 1 ♂; Portel, Rio Camarapi, Igarapé Mirituba; 2°6'34.50" S, 50°39'9.00" W; 2018; Azenildo leg.; MPEG 35555.

Description

See Marques & Buckup (1993: 128, figs 9–12).

Distribution

Previously known from the states of Amazonas and Roraima. Herein newly recorded from Beni, Bolivia, and states of Pará and Minas Gerais, Brazil (Fig. 11).

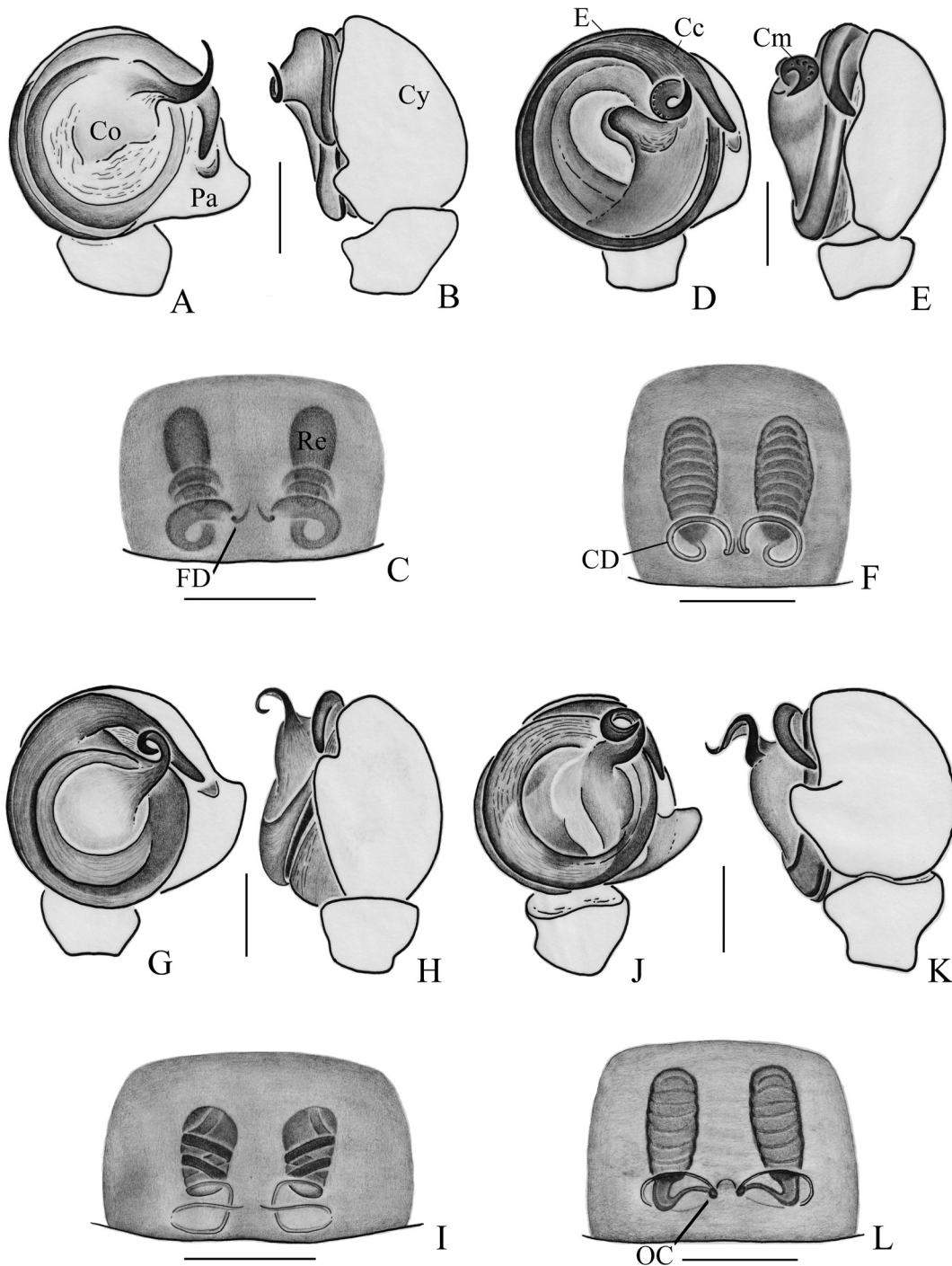


Fig. 2. A–C. *Tekellina bella* Marques & Buckup, 1993 (MCN 22170). A. ♂, palp, ventral view. B. ♂, palp, retrolateral view. C. Type (MPEG 35551), epigynum, ventral view. D–F. *T. crica* Marques & Buckup, 1993. D. Holotype, ♂ (INPA) palp, ventral view. E. Holotype, ♂ (INPA), palp, retrolateral view. F. Paratype, ♀ (MCN 22090), epigynum, ventral view. G–I. *T. minor* Marques & Buckup, 1993. G. ♂ (MCN 40893), palp, ventral view. H. ♂ (MCN 40893), palp, retrolateral view. I. ♀ (MCN 48868), epigynum, ventral view. J–L. *T. guaiba* Marques & Buckup, 1993 (MCN 41624). J. ♂, palp, ventral view. K. ♂, palp, retrolateral view. L. Epigynum, ventral view. Scale bars = 0.25 mm. Abbreviations: see Material and methods.

Tekellina crica Marques & Buckup, 1993
Figs 2D–F, 3C–E, 5C–E, 8D–F, 11

Tekellina crica Marques & Buckup, 1993: 127, figs 5–6.

Diagnosis

Males of *Tekellina crica* resemble those of *T. minor* by the course of the terminal claw of the conductor very near to the hollow paracymbium, but differ by the paracymbium not so prominent and the mesal arm with the tip coiled down (Figs 2D–E, 5C–D). Females resemble those of *T. guaiba* by the shape of

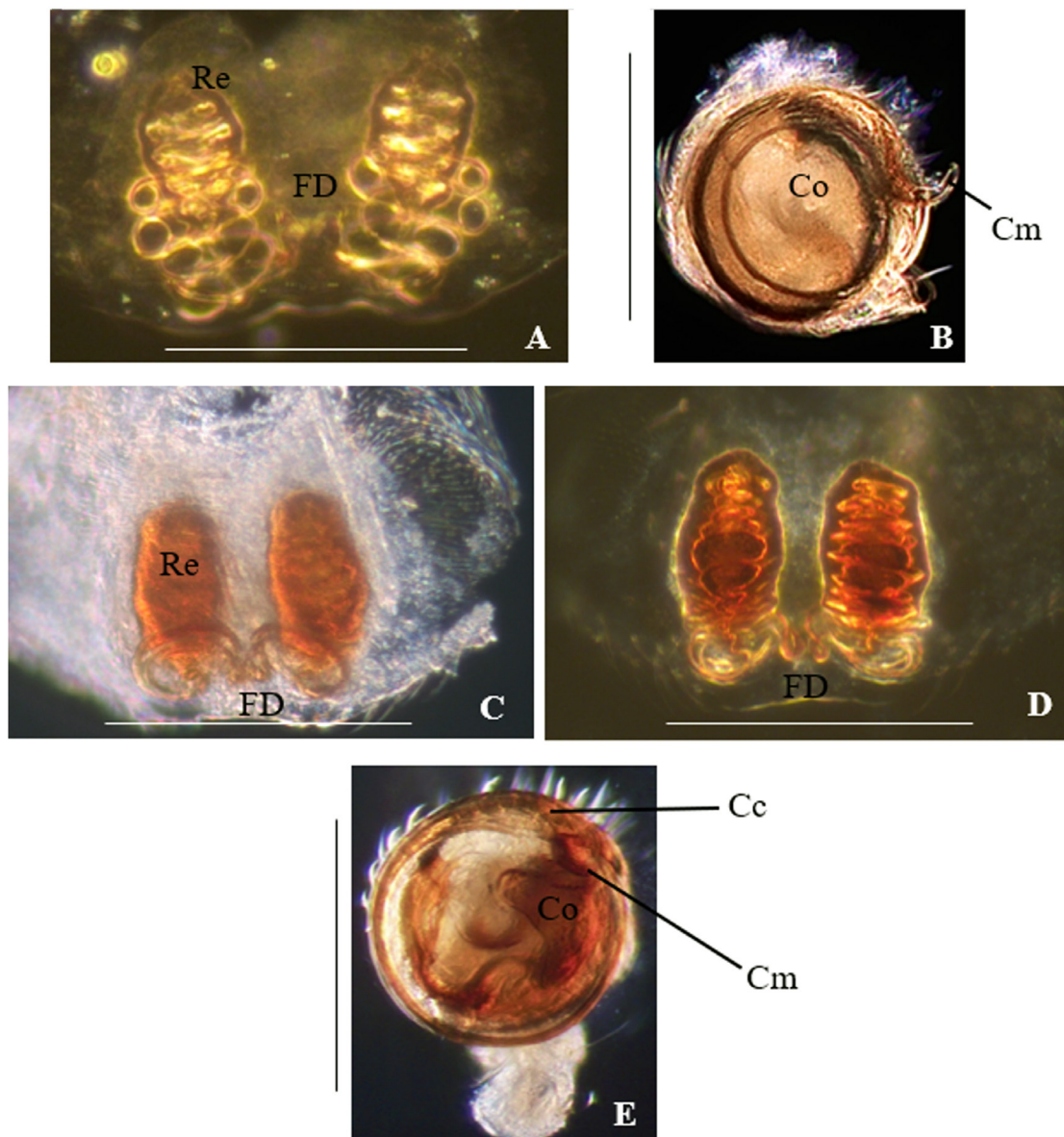


Fig. 3. A–B. *Tekellina bella* Marques & Buckup, 1993. A. ♀ (MCN 22170), clarified epigynum, dorsal view. B. ♂ (MCN 22170), left palp, ventral view. C–E. *T. crica* Marques & Buckup, 1993. C. ♀ (IBSP 12580), epigynum, ventral view. D. ♀ (IBSP 12580), clarified epigynum, dorsal view. E. ♂ (MCN 44493), palp, ventral view. Scale bars = 0.25 mm. Abbreviations: see Material and methods.

the epigynum, presenting conspicuous fertilization ducts, but differ by their distinct course and rounded atrium (Figs 2F, 3C–D).

Type material examined

Holotype

BRAZIL • ♂; Amazonas, Manaus, Reserva Florestal Adolpho Ducke; 18 Oct. 1991; H. Höfer and T. Gasnier leg. INPA.

Allotype

BRAZIL • ♀; same data as for holotype; MCN 22090.

Other material examined

BRAZIL – **Acre** • 1 ♀; Serra do Divisor; Parque Nacional da Serra do Divisor; 7°35'28.3" S, 73°55'17.4" W; 19 Mar. 1997; L. Resende and R. Vieira leg.; IBSP 12580. – **Minas Gerais** • 1 ♀; Nova Lima, Reserva Particular do Patrimônio Natural Mata Samuel de Paula; 20°03' S, 43°52' W; 1 May 2007; J.P.P.P. Barbosa *et al.* leg.; UFMG 2673 • 1 ♀; same data as for preceding; 13–15 Oct. 2006, J.P.P.P. Barbosa *et al.* leg.; UFMG 3100. – **Pará** • 1 ♀; Bagre, Igarapé Sequitã, Comunidade São Sebastião; 2°5'15.1" S, 50°29'19.3" W; 2018; R. Saturnino and Josimar leg.; MPEG 35547 • 3 ♂♂, 1 ♀; Portel, Rio Camarapi, Igarapé Açaituba; 2°12'21.48" S, 50°27'51.09" W; 2018; Adriano leg.; MPEG 35550 • 1 ♀; L.R. Fernandes leg.; MPEG 35548 • 2 ♂♂, 1 ♀; same data as for preceding; R. Saturnino leg.; MPEG 35551. – **Paraná** • 1 ♂; Guaraqueçaba, Reserva Natural do Itaquí; 29°07'19" S, 56°33'21" W; 30 Sep. 2007; F. Raub leg.; MCN 44493 • 1 same data as for preceding; 15 Sep. 2007; É. Álvares leg.; MCN 44574. – **Rio Grande do Sul** • 2 ♂♂, 2 ♀♀; Santa Maria; 29°41'02" S, 53°48'25" W; 2007; A. Aued and E. Felzmann leg.; MCTP 41637 • 1 ♂; Nova Santa Rita, Quinta São José; 29°51'36" S, 51°15'30" W; A. Oliveira *et al.* leg.; MCTP 36490 • 1 ♀; same data as for preceding; 2009; MCTP 36515.

Description

See Marques & Buckup (1993: 107, figs 7–12).

Distribution

Previously known from the state of Amazonas, Brazil. Herein newly recorded from the states of Acre, Pará, Paraná and Rio Grande do Sul, Brazil (Fig. 11).

Tekellina minor Marques & Buckup, 1993

Figs 2G–I, 4A–B, 8G–I, 11

Tekellina minor Marques & Buckup, 1993: 127, figs 5–6.

Diagnosis

Males of *Tekellina minor* resemble those of *T. bella* by the large paracymbium, but differ by the shorter terminal claw of the conductor (Figs 2G–H, 4B). Females resemble those of *T. bella* by the shape of the epigynum, but differ by the smaller receptacles and copulation ducts (Figs 2I, 4A).

Type material examined

Holotype

BRAZIL • ♂; Rio Grande do Sul, Rio Grande, Estação Ecológica do Taim; 2 Sep. 1986; M.A.L. Marques leg.; MCN 15856.

BRAZIL – **Acre** • 1 ♂; Senador Guiomard; 10°8'53" S, 67°43'55" W; E.F. Morato leg.; IBSP 159016. – **Bahia** • 1 ♂; Salvador, Parque Joventino da Silva; 12°59'49.21" S, 38°28'25.93" W; 9. Apr. 2008; A. Andrade leg.; IBSP 145643. – **Rio de Janeiro** • 1 ♂; Resende, Parque Nacional do Itatiaia; 22°22'31" S, 44°39'44" W; 8–15 Jun. 2001; Equipe Biota leg.; IBSP 107 • 1 ♀; Petrópolis, Fazenda Ranchinho da Roça; 22°30'18" S, 43°10'44" W; 15–16 Aug. 2001; Equipe Biota leg.; IBSP 49738 – **São Paulo** • 2 ♂♂; Guarulhos, Parque Estadual Cantareira, Núcleo Cabuçu; 23°24'5" S, 46°35'24" W; 16–22 Jul. 2001; Equipe Biota leg.; IBSP 177 • 1 ♂; São Paulo, Parque Estadual da Cantareira; 23°24'15,1" S, 46°31'59,7" W; 1 May 2001; R. Pinto da Rocha *et al.* leg.; MCN 41790 • 1 ♂; Miracatu, Fazenda Itereí; 24°03' S, 47°13' W; 20–26 Sep. 2001; Equipe Biota leg.; MCN 40893 • 2 ♂♂; same data as for preceding; MCN 41626 • 2 ♂♂; same data as for preceding; MCN 41627 • 1 ♀; same data as for preceding; MCN 48868 • 1 ♂; 20–26 Sep. 2001; Equipe Biota leg.; MCN 40894 • 1 ♂; same data as for preceding; MCN 40895 • 1 ♂; same data as for preceding; MCN 48866 • 1 ♀; same data as for preceding; MCN 40896 • 1 ♀; same data as for preceding; MCN 4886 • 1 ♂; same data as for preceding; 9 Aug. 2000; R. Pinto da Rocha *et al.* leg.; MCN 41789.

Description

Male

See Marques & Buckup (1993: 127, figs 5–6).

Female (MCN 40897)

Carapace (Fig. 8I) yellowish, subtriangular. Subequal eyes, AME bigger, PLE distant from PME for almost a diameter. Legs yellowish with many setae. Abdomen (Fig. 8I) subspherical, dorsally white pigments absent. Total length 1.44. Carapace length 0.48, width 0.50. Abdomen length 0.88, width 1.05, height 1.22. Legs I 1.73 (femur 0.58 + patella & tibia 0.63 + tarsus 0.31 + metatarsus 0.21); II 1.5 (0.60 + 0.42 + 0.26 + 0.22); III 1.4 (0.48 + 0.45 + 0.26 + 0.21); IV 1.6 (0.50 + 0.48 + 0.34 + 0.28). Legs formula: 1423.

Distribution

Previously known from the state of Rio Grande do Sul, Brazil. Herein newly recorded from the states of Acre, Rio de Janeiro and São Paulo, Brazil (Fig. 11).

Tekellina guaiba Marques & Buckup, 1993
Figs 2J–L, 4C–E, 7A–F, 8J–L, 11

Tekellina guaiba Marques & Buckup, 1993: 128, figs 7–8.

Tekellina pretiosa Marques & Buckup, 1993: 129, figs 13–14. Syn. nov.

Diagnosis

Males of *Tekellina guaiba* resemble those of *T. archboldi* by the shape of the paracymbium in ventral view (Figs 2J, 7A–C), but differ by the longer, more coiled and medially positioned mesal claw of the conductor (Fig. 7D, 4E). Females resemble those of *T. archboldi* by the long shape of the receptacles, but differ by the course of the more angular fertilization ducts and receptacles (Figs 2L, 4C–D).

Type material examined

Holotype of *T. guaiba*

BRAZIL • ♀; Rio Grande do Sul; 6. Jan. 1976; S. Scherer leg.; MCN 3716.

Holotype of *T. pretiosa*

BRAZIL – ♂; Amazonas; Fazenda Esteio, 60 km north of Manaus; 19. Nov. 1986; collected with Malaise trap; B.C. Klein leg.; INPA.

Other material examined

BRAZIL – Amazonas • 1 ♂; São Gabriel da Cachoeira, Parque Nacional do Pico da Neblina; 00°48'01" N, 66°00'25" W; 7 Oct. 2007; N. Lo Man Hung leg.; MCN 46131. – Bahia • 1 ♀; Salvador,

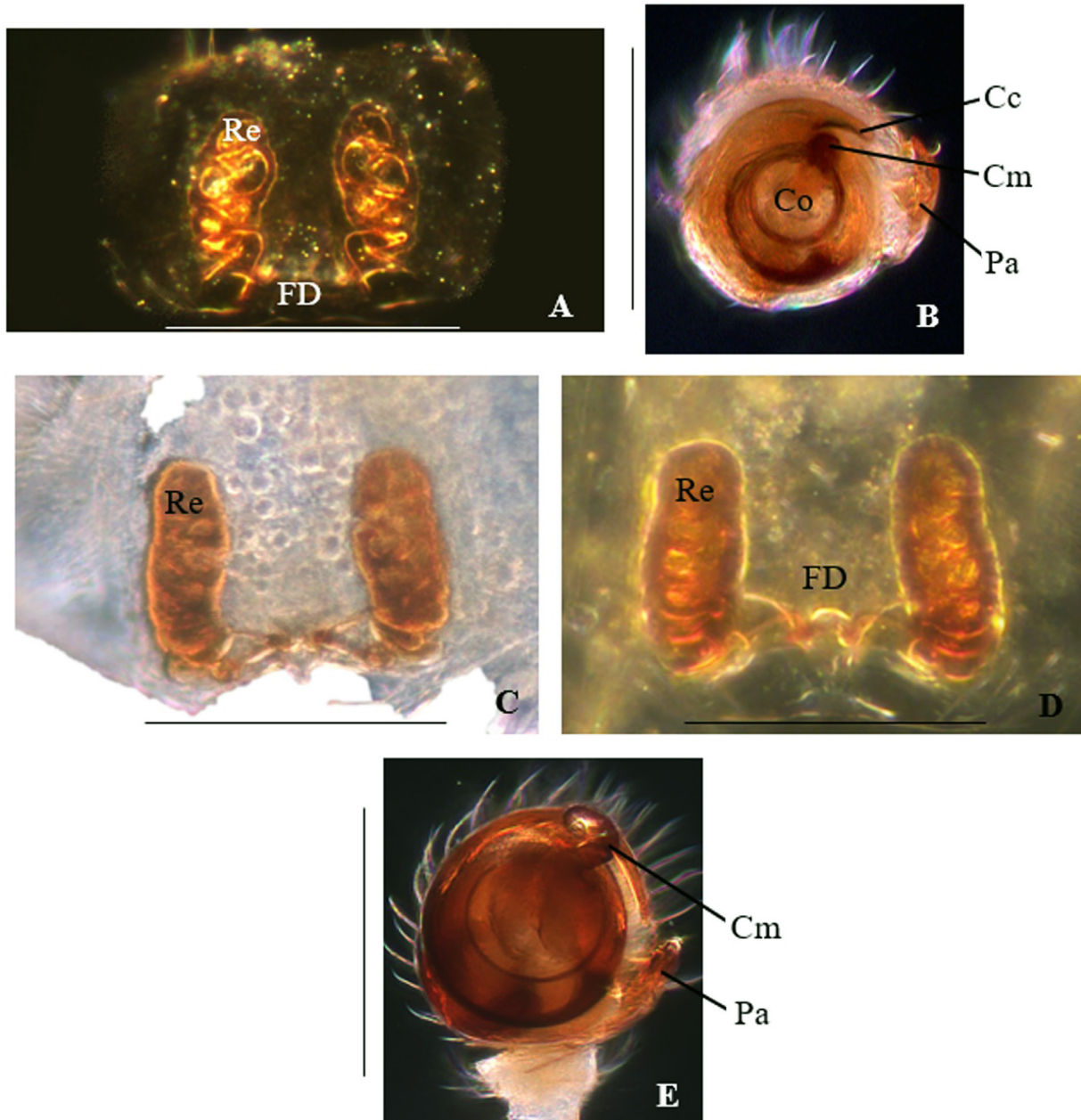


Fig. 4. A–B. *Tekellina minor* Marques & Buckup, 1993. A. ♀ (MCN 40896), clarified epigynum, dorsal view. B. ♂ (IBSP 177), palp, ventral view. C–E. *T. guaiba* Marques & Buckup, 1993. C. ♀ (MCN 26251), epigynum, ventral view. D. ♀ (MCN 26251), clarified epigynum, dorsal view. E. ♂, palp, ventral view. Scale bars: 0.25 mm. Abbreviations: see Material and methods.

Parque Joventino da Silva; 12°59'49.21" S, 38°28'25.93" W; 9 Apr. 2008; A. Andrade leg.; IBSP 145610. – **Rio Grande do Sul** • 1 ♀; São Francisco de Paula; 29°26'49" S, 50°34'45" W; 11–12 Oct. 2008; R.B. Moura leg.; MCN 45771 • 1 ♀; 2004; same data as for preceding; IBSP 50978 • 1 ♂; same data as for preceding; 2004; IBSP 50805 • 1 ♀; 2004; IBSP 50800 • 3 ♂♂, 2 ♀♀; same data as for preceding; 2004; IBSP 50804 • 1 ♀; same data as for preceding; 2004; IBSP 50813 • 1 ♂, 1 ♀; Vacaria; 28°30'43" S,

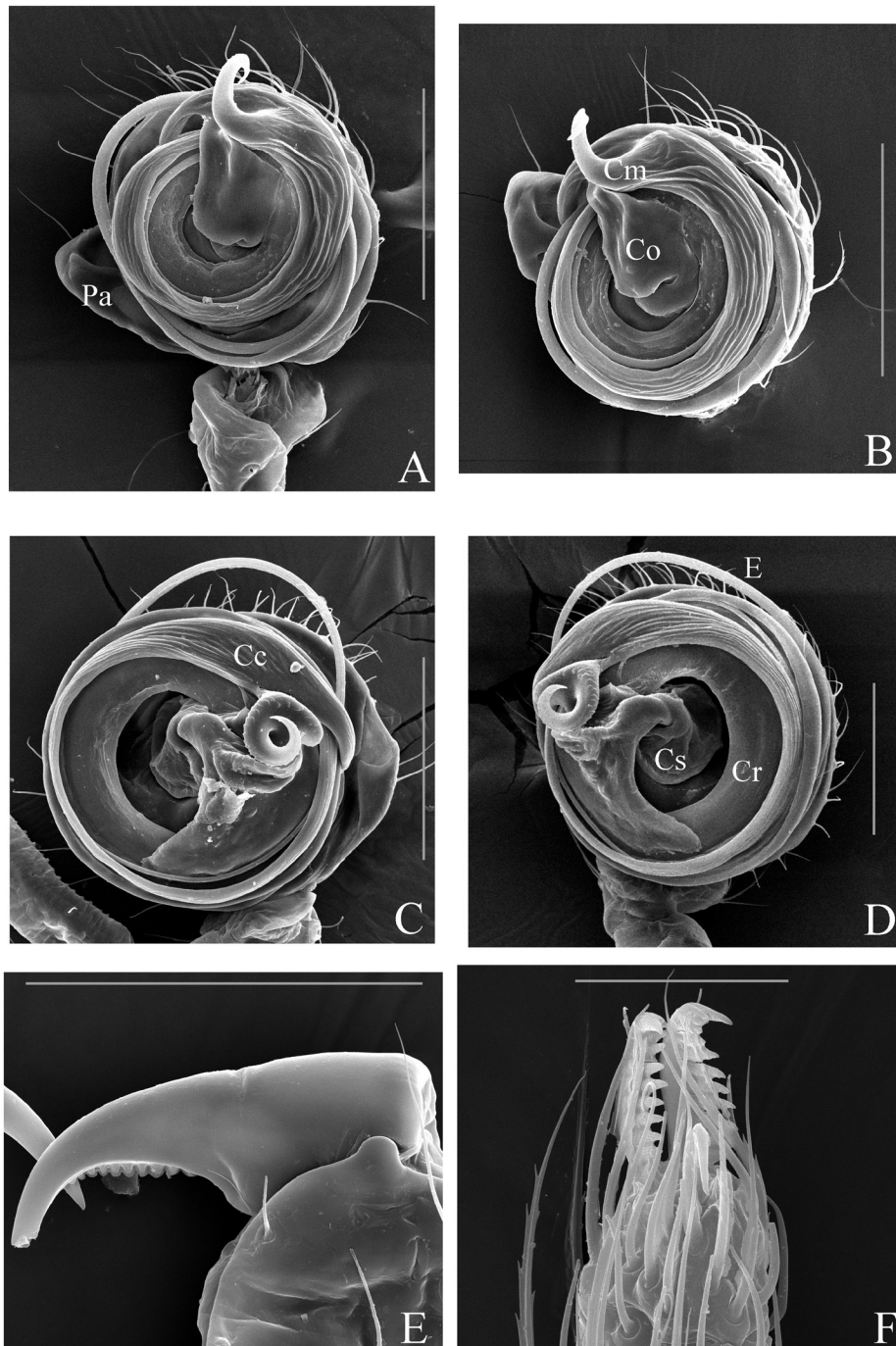


Fig. 5. A–B. *Tekellina bella* Marques & Buckup, 1993, ♂, palp. A. Ventral view. B. Antero-lateral view. C–E. *Tekellina crica* Marques & Buckup, 1993, ♂. C–D. Palp. C. Ventral view. D. Antero-lateral view. E. Chelicera. F. Tarsal claws. Scale bars: A–E = 100 µm; F = 20 µm. Abbreviations: see Material and methods.

50°56'02" W; 12 Oct. 1994, L.A. Moura leg.; MCN 26251 • 1 ♂, 1 ♀; São Jerônimo; 29°57'33" S, 51°43'20" W; 20 May 1982; E.H. Buckup leg.; MCN 10363 • 1 ♂; Triunfo, Parque Copesul de Proteção Ambiental; 29°56'36" S, 51°43'05" W; 9 Jul. 2008; A. Barcellos *et al.* leg.; MCN 44159 • 1 ♂, 1 ♀; São Leopoldo; 29°45'39" S, 51°9'8" W; 13 Jul. 1992; A.C. Meyer leg.; MCN 24740 • 1 ♂, 1 ♀; Estrela Velha; 29°10'36" S, 53°9'38" W; 20 Oct. 1998; A.B. Bonaldo leg.; MCN 29585 • 1 ♂; Triunfo, Parque Braskem de Proteção Ambiental; 29°56'36" S, 51° 43'05" W; 15 Sep. 2009; P.E.S. Rodrigues leg.; MCN 46544 • 1 ♂; Parobé, Rio dos Sinos; 29°37'51" S, 50°49'33" W; 25 Dez. 2008; E.N.L. Rodrigues leg.; MCN 47852 • 1 ♂; same data as for preceding; 15 Dec. 2008; E.N.L. Rodrigues leg.; MCN 47904 • 1 ♂; same data as for preceding; 2. Aug. 2008; E.N.L. Rodrigues leg.; MCN 47936 • 2 ♂♂; Maquiné; 29°40'30" S, 50°12'26" W; 18 Sep. 2007; E.N.L. Rodrigues leg.; MCN 48252 • 1 ♂; same data as for preceding; 27 Jan. 2008; E.N.L. Rodrigues leg.; MCN 48389 • 2 ♂♂; same data as for preceding; 18 Nov. 2007; E.N.L. Rodrigues leg.; MCN 48451 • 2 ♂♂; same data as for preceding; 18 Sep. 2007; E.N.L. Rodrigues leg.; MCN 48450 • 1 ♀; Porto Alegre, Reserva Biológica do Lami; 30°14'49" S, 51°6'25" W; 13–14 Aug. 2001; C.E. Ferro leg.; MCN 38031 • 3 ♂♂; Cristal, Rio Camaquã; 31°01'01" S, 51°56'42" W; 7 May 2008; E.N.L. Rodrigues leg.; MCN 48846 • 1 ♀; same data as for preceding; 26 Jul. 2007; E.N.L. Rodrigues leg.; MCN 48528 • 3 ♀♀; same data as for preceding; 11 Sep. 2007; E.N.L. Rodrigues leg.; MCN 48558 • 1 ♂, 1 ♀; same data as for preceding; 14 Nov. 2007; E.N.L. Rodrigues leg.; MCN 48584 • 1 ♀; same data as for preceding; 14 Mar. 2008; E.N.L. Rodrigues leg.; MCN 48813 • 2 ♂♂; same data as for preceding; 12 Nov. 2008; E.N.L. Rodrigues leg.; MCN 48995 • 2 ♂♂, 2 ♀♀; same data as for preceding; 6 Dec. 2009; E.N.L. Rodrigues leg.; MCN 49040 • 1 ♀; same data as for preceding; 19 Sep. 2007; E.N.L. Rodrigues leg.; MCN 49071. – **São Paulo** • 2 ♂♂, 1 ♀; Guarulhos, Parque Estadual da Cantareira, Núcleo Cabuçu; 23°24'15,1" S, 46°31'59,7" W; 16–22 Jul. 2001; Equipe Biota leg.; MCN 41624 • 1 ♀; same data as for preceding; MCN 41625 • 1 ♂; São José do Barreiro, Parque Nacional da Serra da Bocaina; 12°40'23°20' S, 44°24'–44°54' W; 28 Apr.–3 May 2002; Equipe Biota leg.; IBSP 165 • 1 ♂, 1 ♀; São Paulo, Parque Estadual do Jaraguá; 23°27'34.3" S, 46°46'02.8" W; 14–19 Oct. 2002; Equipe Biota leg.; IBSP 51152 • 1 ♀; IBSP 52044 • 1 ♂, 1 ♀; IBSP 520778.

Description

Male

See Marques & Buckup (1993: 129, figs 13–14, as *T. pretiosa*).

Female

See Marques & Buckup (1993: 128, figs 7–8).

Remark

Based on the large number of male and female specimens collected together, we suggest that *Tekellina pretiosa* is a junior synonym of *Tekellina guaiba*.

Distribution

Previously known from the state of Amazonas and Rio Grande do Sul, Brazil. Herein newly recorded from the states of Amazonas, Bahia, São Paulo and Rio Grande do Sul, Brazil (Fig. 11).

Tekellina picurrucha Rodrigues & Estol sp. nov.

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Figs 6A–C, 9A–C, 10

Diagnosis

Males of *Tekellina picurrucha* Rodrigues & Estol sp. nov. resemble those of *T. helixicis* (see Gao & Li 2014: fig. 72) by the terminal claw of the straight conductor, but differ by the shape of the cymbium

and terminal claw closer to the apical part of cymbium (Fig. 6A–B). Females of *Tekellina picurruca* resemble those of *T. miuda* Rodrigues & Estol sp. nov. and *T. miudinha* Rodrigues & Estol sp. nov. by the receptacles around the copulatory ducts, but differ by the course of the copulatory ducts not reaching the apical part of the receptacles and the receptacles close to each other (Fig. 6C).

Etymology

The specific epithet is derived from a popular Brazilian Portuguese expression and refers to its small size.

Type material

Holotype

BRAZIL – Rio Grande do Sul • ♂; Porto Alegre, Ilha dos Marinheiros; 29°58' S, 51°14' W; 10 Aug. 1999; A.B. Bonaldo leg.; MCN 31476.

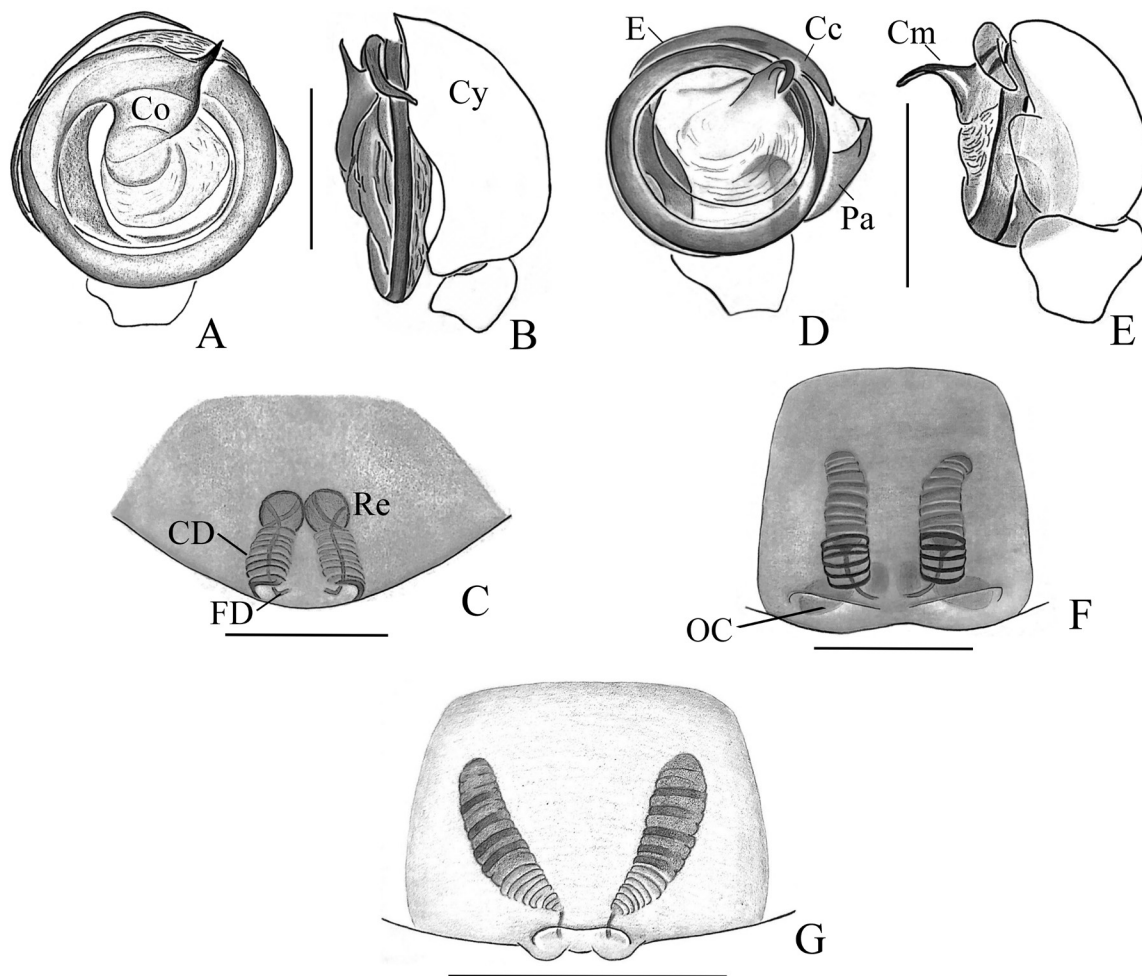


Fig. 6. A–C. *Tekellina picurruca* Rodrigues & Estol sp. nov., ♂ (MCN 31476) and ♀ (IBSP 50834). A. Male palp, ventral view. B. ♂, palp, retrolateral view. C. ♀, epigynum, ventral view. D–E. *T. miuda* Rodrigues & Estol sp. nov., ♂ (MCN 48872) and ♀ (MCN 48871). D. ♂, palp, ventral view. E. ♂, palp, retrolateral view. F. ♀, epigynum, ventral view. G. *T. miudinha* Rodrigues & Estol sp. nov., ♀, holotype (MCN 48870), epigynum, ventral view. Scale bars = 0.25 mm. Abbreviations: see Material and methods.

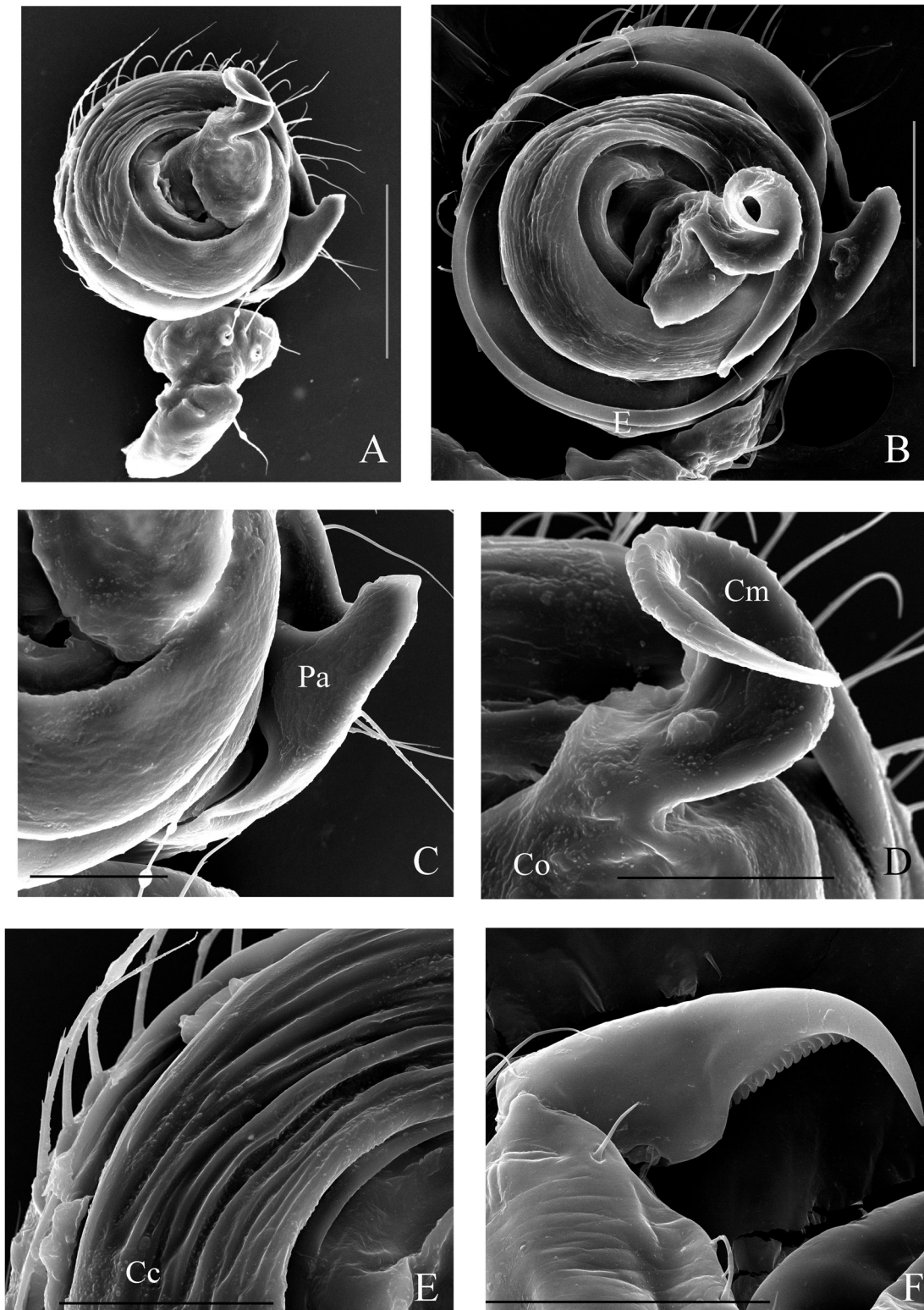


Fig. 7. *Tekellina guaiba* Marques & Buckup, 1993. A. ♂ (MCN 44159), palp, ventral view. B. ♂ (MCN 44159), palp, anterolateral view. C. ♂ (MCN 44159), paracymbium detail. D. ♂ (MCN 44159), mesal arm and conductor detail. E. ♂ (MCN 44159), terminal claw of conductor detail. F. ♂ (MCN 44159), chelicera, detail. Scale bars: A–B = 100 μ m; C–F = 50 μ m. Abbreviations: see Material and methods.

Paratype

BRAZIL – **Rio Grande do Sul** • 1 ♀; São Francisco de Paula; 29°26'49" S, 50°34'45" W; 2004; R. Baldissera leg.; IBSP 50834.

Other material examined

BRAZIL – **Paraná** • 1 ♀; Antonina, Reserva Natural do Rio da Cachoeira; 25°25'44" S, 48°42'43" W; 23 Sep. 2005; E. Álvares leg.; MCN 45115. – **Rio Grande do Sul** • 1 ♂, 1 ♀; Santo Antônio da Patrulha, Fazenda Paulo Lompra; 29°50'18" S, 50°30'58" W; 2 Jun. 2000; A.B. Bonaldo leg.; MCN 32644 • 2 ♂♂, 2 ♀♀; Porto Alegre, Ilha Grande dos Marinheiros; 30°01'58" S, 51°13'48" W; 8 Aug. 1999; A.B. Bonaldo leg.; MCN 31352 • 2 ♂♂, 1 ♀; same data as for preceding; MCN 31476 • 1 ♂, 1 ♀; Maquiné, Fepagro; 29°54' S, 50°19' W; Equipe Biota leg.; IBSP 50822 • 1 ♂, 1 ♀; Pelotas, Passo da Micaela; 31°46'34" S, 52°21'34" W; 1–3 May 1997; L.A. Moura leg.; MCN 28447. – **São Paulo** • 1 ♀; Mogi das Cruzes, Parque Natural Municipal do Itapety; 23°29' S, 46°12' W; 13–19 Oct. 2003; Equipe Biota leg.; MCN 48799 • 1 ♂; Guarulhos, Parque Estadual da Cantareira, Núcleo Cabuçu; 23°24'5" S, 46°35'24" W; 16–22 Aug. 2001; Equipe Biota leg.; IBSP 166 • 1 ♀; São José do Barreiro, Parque Nacional da Serra da Bocaina; 12°40'23"20' S, 44°24'–44°54' W; 28. Apr.–3 May 2002; Equipe Biota leg.; IBSP 50821 • 1 ♀; Itirapina, Estação Ecológica de Itirapina; 22°15'10" S, 47°49'22" W; Equipe Biota leg.; IBSP 50172.

ARGENTINA – **Misiones** • 1 ♀; San Javier; 27°52'17" S, 55°08'17" W; 1989; MCTP 573.

Description

Male (holotype, MCN 31476)

Carapace (Fig. 9A) oval, yellow with brown dots medially. No teeth in chelicera. Eye region higher, subequal eyes, AME bigger with darker rings around. Legs light yellow with light brown spots. Abdomen (Fig. 9A) oval in dorsal view, subtriangular in lateral view (Fig. 9B), higher than wide, light brown with lighter spots. Total length 1.24. Carapace length 0.44, width 0.42. Abdomen length 0.65, width 1.05, height 0.66. Legs I 2.05 (femur 0.65 + patella and tibia 0.72 + tarsus 0.46 + metatarsus 0.22); II 1.3 (0.45 + 0.40 + 0.23 + 0.22); III 1.4 (0.48 + 0.45 + 0.26 + 0.21); IV 1.7 (0.63 + 0.48 + 0.34 + 0.25). Legs formula: 1432. Male palpus with paracymbium not enlarged retrolaterally (Fig. 6A–B). Embolus filamentous and coiling. Mesal arm with sharp apex and terminal claw-like arm directed clockwise (Fig. 6A).

Female (paratype, IBSP 50834)

Color pattern and abdomen like that of male (Fig. 9C). Total length 1.35. Carapace length 0.63, width 0.42. Abdomen length 0.84, width 1.17, height 0.7. Legs I 2.08 (femur 0.66 + patella and tibia 0.72 + tarsus 0.46 + metatarsus 0.24) II 1.5 (0.45 + 0.42 + 0.23 + 0.22); III 1.6 (0.48 + 0.45 + 0.27 + 0.22); IV 1.9 (0.64 + 0.48 + 0.35 + 0.25). Legs formula: 1432. Epigynal plate wider than long, weakly sclerotized, light brown. Copulatory ducts long and spiral surrounding receptacle and fertilization ducts short. Receptacles closely together (Fig. 6C).

Distribution

Argentina (San Javier) and Brazil (states of São Paulo, Paraná and Rio Grande do Sul) (Fig. 10).

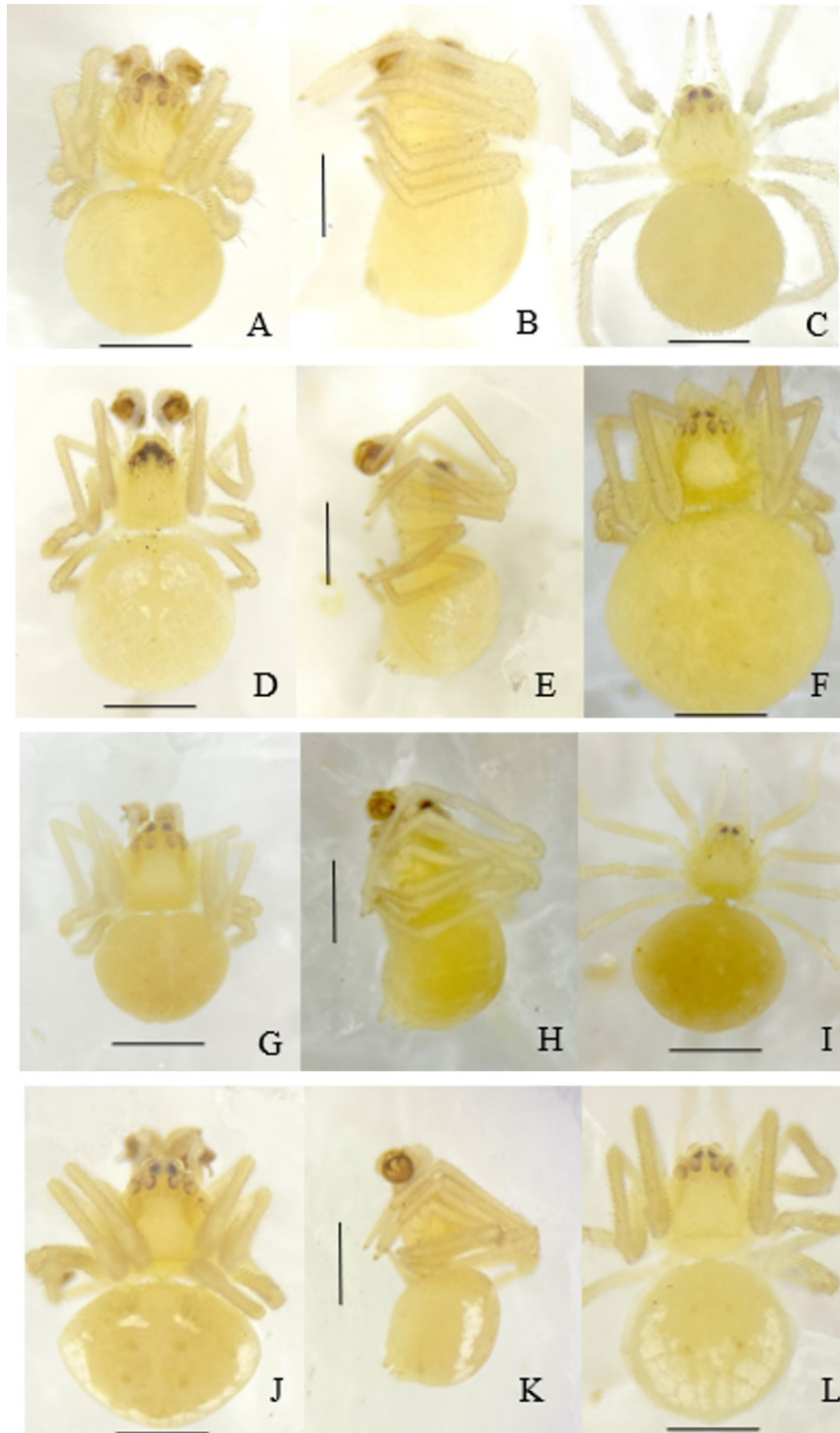


Fig. 8. A–C. *Tekellina bella* Marques & Buckup, 1993. A. ♂ (MCN 22170), habitus, dorsal view. B. ♂ (MCN 22170), habitus, lateral view. C. ♀ (MCN 22170), habitus, dorsal view. D–F. *T. crica* Marques & Buckup, 1993. D. ♂ (MPEG 35550), male habitus, dorsal view. E. ♂ (MPEG 35550), habitus, lateral view. F. ♀ (MPEG 35550), habitus, dorsal view. G–I. *T. minor* Marques & Buckup, 1993. G. ♂ (MCN 41626), habitus, dorsal view. H. ♂ (MCN 41626), habitus, lateral view. I. ♀ (MCN 48858), habitus, dorsal view. J–L. *T. guaiba* Marques & Buckup, 1993. J. ♂ (MCN 26251), habitus, dorsal view. K. ♂ (MCN 26251), habitus, lateral view. L. ♀ (MCN 26251), habitus, dorsal view. Scale bars = 0.5 mm.

Tekellina miuda Rodrigues & Estol sp. nov.

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Figs 6D–F, 9D–F, 10

Diagnosis

Males of *Tekellina miuda* Rodrigues & Estol sp. nov. resemble those of *T. archboldi* (see Levi 1957: figs 7–8) by the shape of the cymbium and by the long terminal claw of the conductor, but differ by the shape of the paracymbium more prominent and the terminal claw hook-shaped directed to the base of the cymbium (Fig. 6D–E). The females resemble those of *T. miudinha* Rodrigues & Estol sp. nov. by the long receptacles, totally wrapped around the copulatory ducts, but differ by the cylindrical shape of the receptacles and the copulatory opening separated by a median septum (Fig. 6F).

Etymology

The specific epithet means ‘little’ in the Brazilian Portuguese language and refers to the small size of the species.

Type material examined

Holotype

BRAZIL – São Paulo • ♂; Ilhabela, Parque Estadual de Ilhabela; 23°46'28" S, 45°21'20" W; 15 Oct. 2001; Equipe Biota leg.; MCN 48872.

Paratype

BRAZIL – São Paulo • 1 ♀; same data as for holotype; MCN 48871.

Other material examined

BRAZIL – Paraná • 1 ♀; Guaraqueçaba, Reserva Natural Serra do Itaqui; 25°17'19" S, 48°28'29" W; 22 Apr. 2007; É. Álvares leg.; MCN 45875.

Description

Male (holotype, MCN 48872)

Carapace (Fig. 9D) subtriangular, yellowish. Legs whitish. Eye region higher, subequal eyes, AME bigger than others. Abdomen (Fig. 9D–E) triangular-shaped, wider than long, four darker yellow dots in median area forming a square, white pigment in posterior area in dorsal view (Fig. 9D). Total length 1.34. Carapace length 0.44, width 0.42. Abdomen length 0.66, width 1.05, height 0.66. Legs I 2.05 (femur 0.65 + patella and tibia 0.72 + tarsus 0.46 + metatarsus 0.42); II 1.3 (0.45 + 0.40 + 0.23 + 0.22); III 1.4 (0.48 + 0.45 + 0.26 + 0.21); IV 1.7 (0.63 + 0.48 + 0.34 + 0.25). Legs formula: 1432. Male palpus with round cymbium in dorsal view. Paracymbium enlarged retrolaterally, thumb-shaped (Fig. 6D–E). Embolus filamentous and coiling. Mesal arm of conductor hook-shaped (Fig. 6D). Terminal claw like arm directed clockwise (Fig. 6D).

Female (holotype MCN 48871)

Color pattern and abdomen (Fig. 9F) similar to male. Total length 1.44. Carapace length 0.62, width 0.42. Abdomen length 0.82, width 1.17, height 0.70. Legs I 2.08 (femur 0.66 + patella and tibia 0.72 + tarsus 0.46 + metatarsus 0.24); II 1.5 (0.45 + 0.42 + 0.23 + 0.22); III 1.6 (0.48 + 0.45 + 0.27 + 0.22); IV 1.9 (0.64 + 0.48 + 0.35 + 0.25). Legs formula: 1432. Epigynal plate longer than wide, slightly sclerotized, light brown. Large copulatory opening (Fig. 6F). Copulatory ducts long and spiral, surrounding receptacle. Fertilization ducts short near to posterior margin. Receptacles distant from each other (Fig. 6F).

Distribution

Brazil (states of São Paulo and Paraná) (Fig. 10).

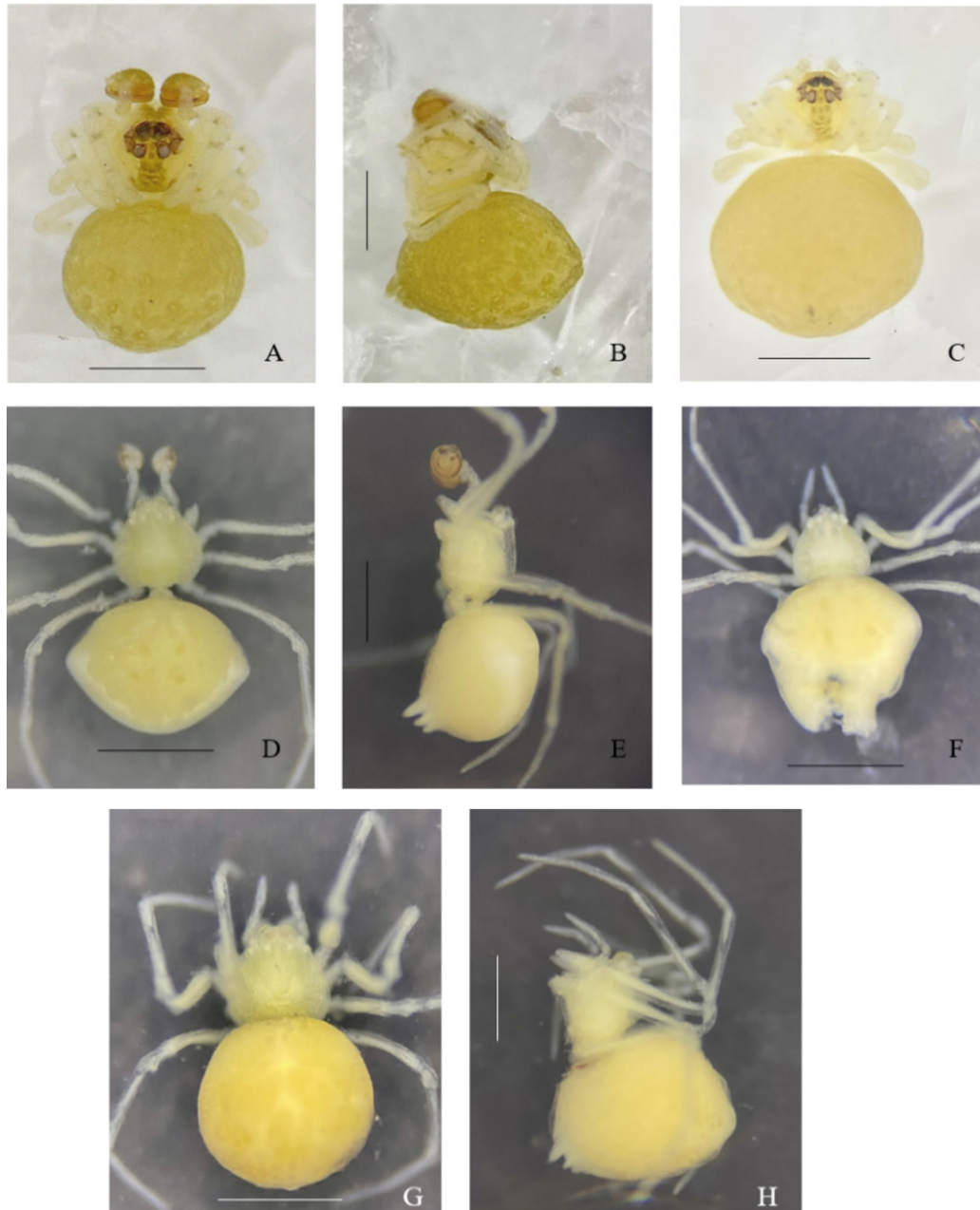


Fig. 9. A–C. *Tekellina picurrucha* Rodrigues & Estol sp. nov. A. ♂ (MCN 31476), habitus, dorsal view. B. ♂ (MCN 31476), habitus, lateral view. C. ♀ (IBSP 50834), habitus, dorsal view. D–F. *T. miuda* Rodrigues & Estol sp. nov. D. ♂ (MCN 48872), habitus, dorsal view. E. ♂ (MCN 48872), habitus, lateral view. F. ♀ (MCN 48871), habitus, dorsal view. G–H. *T. miudinha* Rodrigues & Estol sp. nov. G. ♀, holotype (MCN 48870), habitus, dorsal view. H. ♀, holotype (MCN 48870), habitus, lateral view. Scale bars = 0.5 mm.

Tekellina miudinha Rodrigues & Estol sp. nov.

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Figs 6G, 9G–H, 10

Diagnosis

Females of *Tekellina miudinha* Rodrigues & Estol sp. nov. resemble those of *Tekellina miuda* Rodrigues & Estol sp. nov. by the long receptacles, wrapped by the copulatory ducts, but differ by the oval funnel-shaped receptacles and wide copulatory opening without a medium septum (Fig. 6G).

Etymology

The specific epithet is the diminutive of ‘miuda’ in the Brazilian Portuguese language and refers to the small size of the species.

Type material

Holotype

BRAZIL – São Paulo • ♀; Iporanga, Parque Estadual Turístico do Alto Ribeira; 24°35'14" S, 48°35'41" W; 8–15 Nov. 2001, Equipe Biota leg.; MCN 48870.

Description

Male

Unknown.

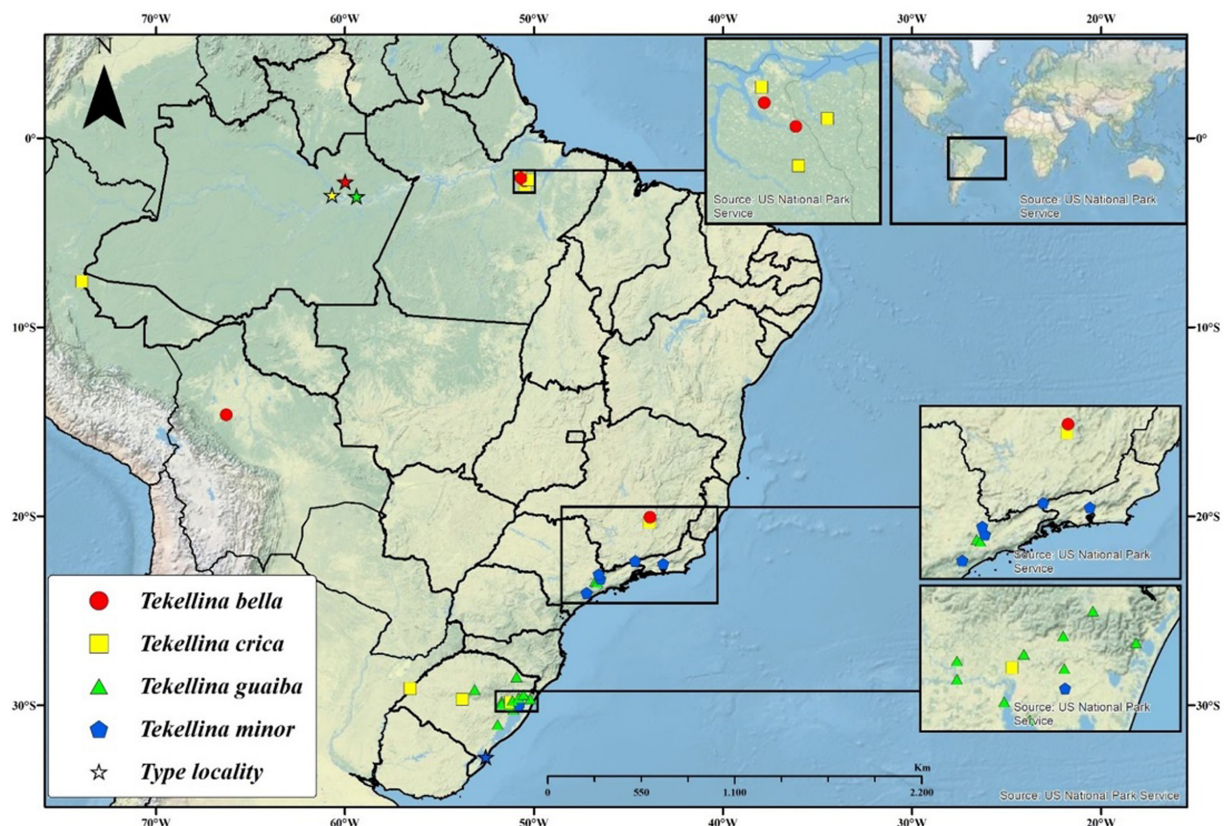


Fig. 11. Distribution map with new records of *Tekellina bella* Marques & Buckup, 1993, *T. crica* Marques & Buckup, 1993, *T. guaiba* Marques & Buckup, 1993 and *T. minor* Marques & Buckup, 1993.

Female (holotype MCN 48872)

Carapace (Fig. 9G) oval, light yellowish. AME bigger very close to ALE and PLE. Abdomen (Fig. 9G–H) oval-shaped, yellow, wider than long. Total length 1.40. Carapace length 0.52, width 0.58. Abdomen length 0.92, width 0.98, height 1.17. Legs I 1.97 (femur 0.84 + patella and tibia 0.65 + tarsus 0.27 + metatarsus 0.21); II 1.82 (0.79 + 0.58 + 0.23 + 0.22); III 1.55 (0.63 + 0.45 + 0.26 + 0.21); IV 1.78 (0.71 + 0.48 + 0.34 + 0.25). Legs formula: 1432. Epigynal plate wide than long, slightly sclerotized, light yellow. Large copulatory opening (Fig. 6G). Copulatory ducts long and spiral, surrounding receptacle. Fertilization ducts short. Receptacles distant from each other (Fig. 6G).

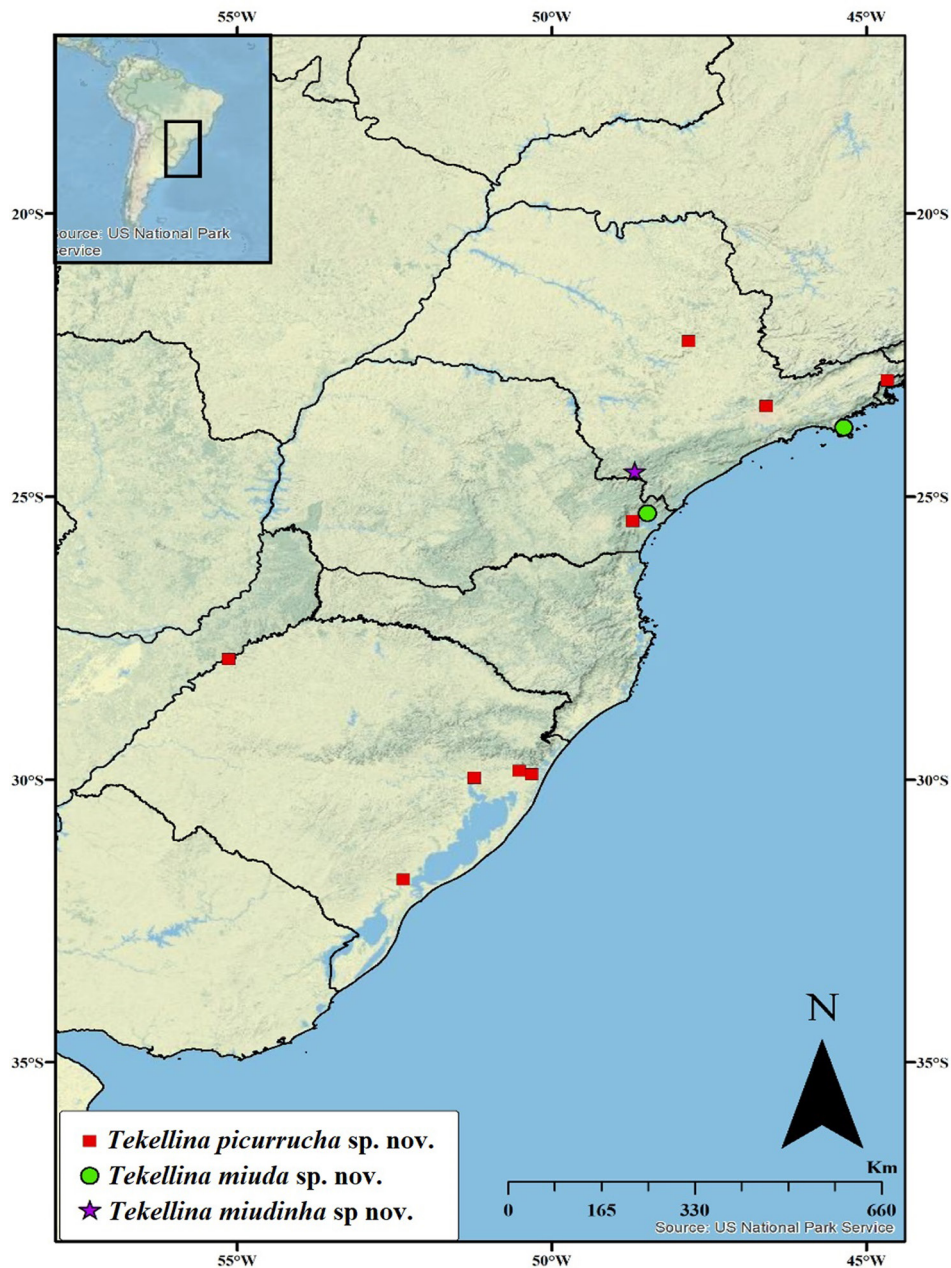


Fig. 10. Distribution map of *Tekellina picurrucha* Rodrigues & Estol sp. nov., *T. miuda* Rodrigues & Estol sp. nov. and *T. miudinha* Rodrigues & Estol sp. nov.

Distribution

Only locality type (Fig. 10).

Tekellina araucana Marusik, Eskov & Ramírez, 2022

Tekellina araucana – Marusik, Eskov & Ramírez in Ramírez *et al.*, 2022: 82, figs 2a–e, 3a–d, 4a–d, 5a–j, 6a–f, 7a–g, 8a–g, 9a–f, 10a–c.

Diagnosis and description

See Ramírez *et al.* (2022).

Distribution

Chile and Argentina (see Ramírez *et al.* 2022).

Discussion

According to Marusik & Omelko (2017) the palpal sclerites were incorrectly homologized over time. According to these authors, the conductor is divided into three arms: ribbon-shaped arm, mesal arm and claw-like arm as observed in SEM. We also observed structures under SEM microscopy (Figs 5A–D, 7A–B, D) of *T. bella*, *T. crica* and *T. guaiba*. Therefore, spiders of the genus *Tekellina* have a complex and well-developed conductor. Ramírez *et al.* (2022) described as diagnostic character of *Tekellina* a row of bottle-like modified setae between the anal tubercle and the spinnerets, and the absence of aggregate and cylindrical gland spigots; however, only two species were analyzed by the authors.

Some species of *Tekellina* have the receptacles twisted about the axis and spiraling copulatory ducts, which was also observed in the type species *T. archboldi* (Levi 1957: fig. 11). We observed this type of epigynum in *T. bella* (Marques & Buckup 1993: figs 11–12), *T. guaiba* (Marques & Buckup 1996: fig. 26), and *T. minor* (Fig. 2I). Based on that, we proposed in this paper an emended diagnosis for the genus based on those characteristics, facilitating future studies. *Tekellina* was considered very different from theridiids, by the presence of the paracymbium located medially or basally (Fig. 7A–C) at the cymbium. Levi (1961) and Agnarsson *et al.* (2007) indicated that species of Theridiidae do not have that kind of paracymbium as in Nesticidae Thorell, 1869 and Syntaxidae Simon, 1895. Marusik & Olmeko (2017) also compared *Tekellina* with some genera of Nesticidae. They mostly contrasted their similarities with *Hamus* Ballarin & Li, 2015 (see Ballarin & Li 2015), predominantly by having a circular cymbium, a conductor with three arms and an epigynum with copulatory ducts wrapping the receptacles. But they also highlighted that *Hamus* have an elongated paracymbium, a dorsal apophysis and distal processes, an epigynal plate, scape and vulval pocket, which are absent in *Tekellina*. Even so, a broader study of the relationships between these genera should be carried out, as there are several similarities that may involve homologies between the structures.

Liu *et al.* (2016) revised the phylogeny of the subfamilies of Theridiidae based on sequences of two-mitochondrial genes and three nuclear genes, placing *Tekellina* phylogenetically for the first time. The monophyly of the currently recognized subfamilies of theridiids was recovered with a few exceptions. Between these, include the putative ‘hadrotarsines’ (*Audifia*, *Tekellina*), where *Tekellina* was closely related to the outgroups Nesticidae and Syntaxidae phylogenetically. Ramírez *et al.* (2022) suggested in their phylogenetic analysis with molecular data that *Tekellina* is closely related to *Syntaxis* Simon, 1895, and included in Syntaxidae. Although we can notice the similarities with Syntaxidae, our aim here was to review the Neotropical species of the genus and ascertain the morphology of the species to facilitate a future morphological phylogenetic analysis of the genus.

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References

- Agnarsson I. 2004. Morphological phylogeny of combweb spiders and their relatives (Araneae, Theridiidae). *Zoological Journal of the Linnean Society* 141: 447–626. <https://doi.org/10.1111/j.1096-3642.2004.00120.x>
- Agnarsson I., Coddington J.A. & Knoflach B. 2007. Morphology and evolution of combweb spider male genitalia (Araneae, Theridiidae). *Journal of Arachnology* 35: 334–395.
- Ballarin F. & Li S.Q. 2015. Three new genera of the family Nesticidae (Arachnida: Araneae) from Tibet and Yunnan, China. *Zoological Systematics* 40 (2): 179–190. <https://doi.org/10.1186/zs.20150203>
- Levi H.W. 1957. The North American spider genera *Paratheridula*, *Tekellina*, *Pholcomma* and *Archerius* (Araneae: Theridiidae). *Transactions of the American Microscopical Society* 76 (2): 105–115. <https://doi.org/10.2307/3223625>
- Levi H.W. 1961. Evolutionary trends in the development of palpal sclerites in the spider family Theridiidae. *Journal of Morphology* 108: 1–10.
- Levi H.W. 1963. American spiders of the genus *Theridion* (Araneae, Theridiidae). *Bulletin of the Museum of Comparative Zoology* 129: 483–592.
- Levi H.W. 1965. Techniques for the study of spider genitalia. *Psyche* 72: 152–158.
- Levi H.W. & Levi L.R. 1962. The genera of the spider family Theridiidae. *Bulletin of the Museum of Comparative Zoology* 127: 1–71.
- Levi H.W. & Randolph D.E. 1975. A key and checklist of American spiders of the family Theridiidae north of Mexico (Araneae). *Journal of Arachnology* 3: 31–51.
- Liu J., May-Collado L., Pekár S. & Agnarsson I. 2016. A revised and dated phylogeny of coweb spiders (Araneae, Araneoidea, Theridiidae): A predatory Cretaceous lineage diversifying in the era of the ants. *Molecular Phylogenetics and Evolution* 94: 658–675. <https://doi.org/10.1016/j.ympev.2015.09.023>
- Marques M.A.L. & Buckup E.H. 1993. Novas espécies de *Tekellina* do Brasil (Araneae, Theridiidae). *Iheringia, Série Zoologia* 74: 125–132.
- Marusik Y.M. & Omelko M.M.A. 2017. New species of *Tekellina* (Araneae, Araneoidea) from the Russian far East. *Entomologica Fennica* 28: 164–168. <https://doi.org/10.33338/ef.84684>

Ramirez M., Magalhaes I.L., Pizarro-Araya J., Balarin F., Marusik Y.M. & Eskov K.Y. 2022. A new species of the spider genus *Tekellina* Levi, 1957 from Chile, with a broadened definition of the family Synotaxidae (Arachnida, Araneae). *Zoologischer Anzeiger* 301: 76–90.

<https://doi.org/10.1016/j.jcz.2022.08.005>

Roth V.D. 1982. *Handbook for Spider Identification*. Published by the author, Portal, Arizona.

Roth V.D. 1985. *Spider Genera of North America*. American Arachnological Society, Gainesville.

Roth V.D. 1994. *Spider Genera of North America, with Keys to Families and Genera, and a Guide to Literature, Third Edition*. American Arachnological Society, Gainesville.

World Spider Catalog. 2024. *World Spider Catalog, version 25.0*. Natural History Museum Bern. Available from <https://wsc.nmbe.ch> [accessed 14 Jun. 2024]. <https://doi.org/10.24436/2>

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