



## The South American genus *Quemedice* Mello-Leitão (Araneae: Sparassidae): familial placement and taxonomic revision

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### Abstract

The genus *Quemedice* Mello-Leitão, 1942 is revised. The female of the type species, *Quemedice enigmaticus* Mello-Leitão, 1942 is redescribed and the male described and illustrated for the first time based on specimens from Argentina (Santiago del Estero province, near the type locality), central-western and southeastern Brazil (states of Minas Gerais, Mato Grosso and São Paulo). *Quemedice piracuruca* n. sp. is described based on male and female specimens from Colombia (Dept. Meta) and northern, northeastern and central-western Brazil (states of Piauí, Bahia and Minas Gerais). All specimens share the undisputed synapomorphy for Sparassidae, a soft dorsal trilobate membrane at the distal end of leg metatarsi, hence the genus is transferred to the family Sparassidae.

**Key words:** taxonomy, morphology, new species, transfer, South America, Colombia, Brazil, Argentina

### Introduction

The genus *Quemedice*, from the Spanish “qué me dice?”, a colloquial expression meaning “what’s up?”, was erected by Mello-Leitão (1942) to include the type species, *Quemedice enigmaticus* Mello-Leitão, described from Santiago del Estero province, Argentina, based on a single female specimen. To date, the genus remained monotypic (Platnick 2008) with no additional records other than the type specimen. The species was originally placed in Thomisidae in the subfamily Philodrominae (Mello-Leitão 1942) which was later elevated to family level (Homann 1975). Examination of holotype of *Q. enigmaticus* revealed the presence of a soft dorsal trilobate membrane at the distal end of leg metatarsi. This membrane is considered to be an undisputed synapomorphy of Sparassidae (Jäger 1998; Lew 2005; Jocqué & Dippenaar-Schoeman 2006) and thus the genus is here transferred to this family.

Further examination of several Brazilian collections revealed a significant quantity of specimens congeneric with *Q. enigmaticus*, mostly misidentified as belonging to the genus *Tibellus* Simon (Philodromidae) due to the elongate abdomen and eye arrangement (Mello-Leitão 1943; Van den Berg & Dippenaar-Schoeman 1994).

In this contribution, the genus *Quemedice* is revised. The female of *Q. enigmaticus* is redescribed and the male described and illustrated for the first time. In addition, a new species is described based on males and females from Colombia and Brazil.

## Material and methods

The material examined is deposited in the following institutions (abbreviations and curators in parentheses): California Academy of Sciences, San Francisco (CAS, C.E. Griswold), Instituto Butantan, São Paulo (IBSP, A.D. Brescovit), Museu Paraense Emílio Goeldi, Belém (MPEG, A.B. Bonaldo), Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires (MACN-Ar, C. Scioscia), Museo de La Plata, La Plata (MLP, L. Pereira), Museu de Zoologia da Universidade de São Paulo, São Paulo (MZSP, R. Pinto da Rocha).

Female genitalia were observed in clove oil after dissection and digestion with KOH. Illustrations were made using a Leica MZ 12.5 and Leitz Wetzlar 751739 with camera lucida; pictures were taken with a Nikon DXM1200 digital camera mounted on a stereoscopic microscope Nikon SMZ1500, the extended focal range images composed with Helicon Focus 3.10.3 or 4.01 scanning electron micrographs were taken under high vacuum with a FEI XL30-TMP after critical point drying and Au-Pd coating. Measurements were taken with a micrometric ocular and are given in millimeters.

## Taxonomy

### Sparassidae Bertkau, 1872

#### *Quemedice* Mello-Leitão, 1942

Type species: *Quemedice enigmaticus* Mello-Leitão, 1942, by original designation

*Quemedice* Mello-Leitão, 1942: 407–408; Roewer, 1954: 790 (Thomisidae); Homann, 1975: 183 (transf. to Philodromidae); Brignoli, 1983: 596; Platnick, 2008.

**Diagnosis.** Distinguished from remaining sparassid genera by the combination of the following characters: elongate opisthosoma (Figs 1–2, 4–7), male palp with massive embolus retrolaterally bent with median region curved dorsad and behind the base and emerging dorsally to rest behind an apophysis at the base of the embolus (Figs 8–10, 13–14). Females are distinguished by having the copulatory ducts distally convoluted with anterior membranous receptacles and inconspicuous spermathecae (Figs 12, 16).

**Description.** Prosoma longer than wide (Figs 1, 5); cephalic region slightly higher than thoracic region. Eyes arranged in two recurved rows; AME slightly larger than ALE and farther apart from each other than from laterals; PME slightly smaller than PLE, equidistant (Figs 1, 5). Chelicerae with two promarginal and two retromarginal teeth; intermarginal denticles absent (Figs 17–22). Internal keel at base of fang with 8–10 strong setae in one or two rows (Figs 17–18, 21–22). Cheliceral boss on ectal margin (Figs 17, 20–21) and gland area on retromargin (Fig. 19). Abdomen elongate, three times longer than wide (Figs 1–2, 4–7). Legs laterigrade (2413). Leg spination in males: femora I–IV p1-1-1; d0-1-1; r0-1-1; patellae I–II p1; III–IV d1; tibiae I–IV p1-0-1; d1-0-1; r1-0-1; v2-2-0; metatarsi I–III p1-1-0; r1-1-0; v2-2-0; IV p1-1-2; r1-1-2; v2-2-0. Leg spination in females as in males, except patellae I–IV 0; tibiae I–IV d0. Metatarsi I–IV with dorsal trilobate membrane at distal end, with median lobe slightly more developed than laterals (Figs 26–27). Tarsi and anterior half of metatarsi densely scopulated. Tarsal organ capsulated, with rounded opening, located dorsally at the distal end of tarsi (Fig. 25). Trichobothrium with basal crescent plate projecting over smooth distal plate (Fig. 24). Tarsi with two pectinated claws, with ca. 25 teeth each, and claw tufts (Fig. 23).

*Male palp.* Tibia short with one strong basal spine prolaterally and one dorsally (Figs 8–9, 13–14). RTA distally bifid (Figs 8–9, 13–14). Cymbium with oval, median alveolus and two prolateral spines at base, one of them stronger. Subtegulum retrolaterally displaced and visible in ventral and retrolateral views. Tegulum S-shaped, slightly spiraled perpendicularly to the main palpal axis, towards the tip of the cymbium (Figs 8–9, 13–14). Conductor absent. Embolus massive, retrolaterally directed and medially curving behind base and emerging at the top (Fig. 10).

*Epigynum*. Epigynal field divided into median septum and lateral lobes; lateral borders slightly rounded covering longer than wide median septum with pair of anterior copulatory openings (Figs 4, 11, 15). Vulva with copulatory ducts posteriorly convoluted, with large anterior membranous receptacles ("Subepigynealer Sack" *sensu* Järvi 1912, considered to be non-homologous to the "spermathecae" *sensu* Sierwald 1989 because they are not associated to the fertilization ducts); fertilization ducts short, hook shaped, directed anteriorly and outwards (Figs 12, 16).

**Remarks.** Within Sparassidae, *Quemedice* seems to belong to Sparassinae due to the presence of only two promarginal teeth in the chelicerae, absence of intermarginal denticles, median hook of trilobate membrane as large as or slightly larger than lateral projections and a short-toothed female palpal claw (Jäger 1998). The genus seems to be closely related to *Macrinus* Simon, *Vindullus* Simon and *Nolavia* Kammerer, with whom it shares the presence of only two pairs of ventral spines on tibiae I-IV, the tegulum slightly spiraled perpendicularly to the main palpal axis, towards the tip of the cymbium (Figs. 8, 13; Rheims 2007: figs. 22, 28, 34) the female epigynum with simple, rounded lateral lobes partially covering the median septum (Figs 11, 15; Rheims 2007: figs 24, 30, 36) and vulva with large anterior hyaline receptacles (Figs 12, 16; Rheims 2007: figs 25, 31, 37).

### ***Quemedice enigmaticus* Mello-Leitão, 1942**

Figs. 1–12, 17–28

*Quemedice enigmaticus* Mello Leitão, 1942: 407, figs 31–32 (female holotype, examined). Roewer, 1954: 790 (sub. Thomisidae); Platnick, 2008 (sub. Philodromidae).

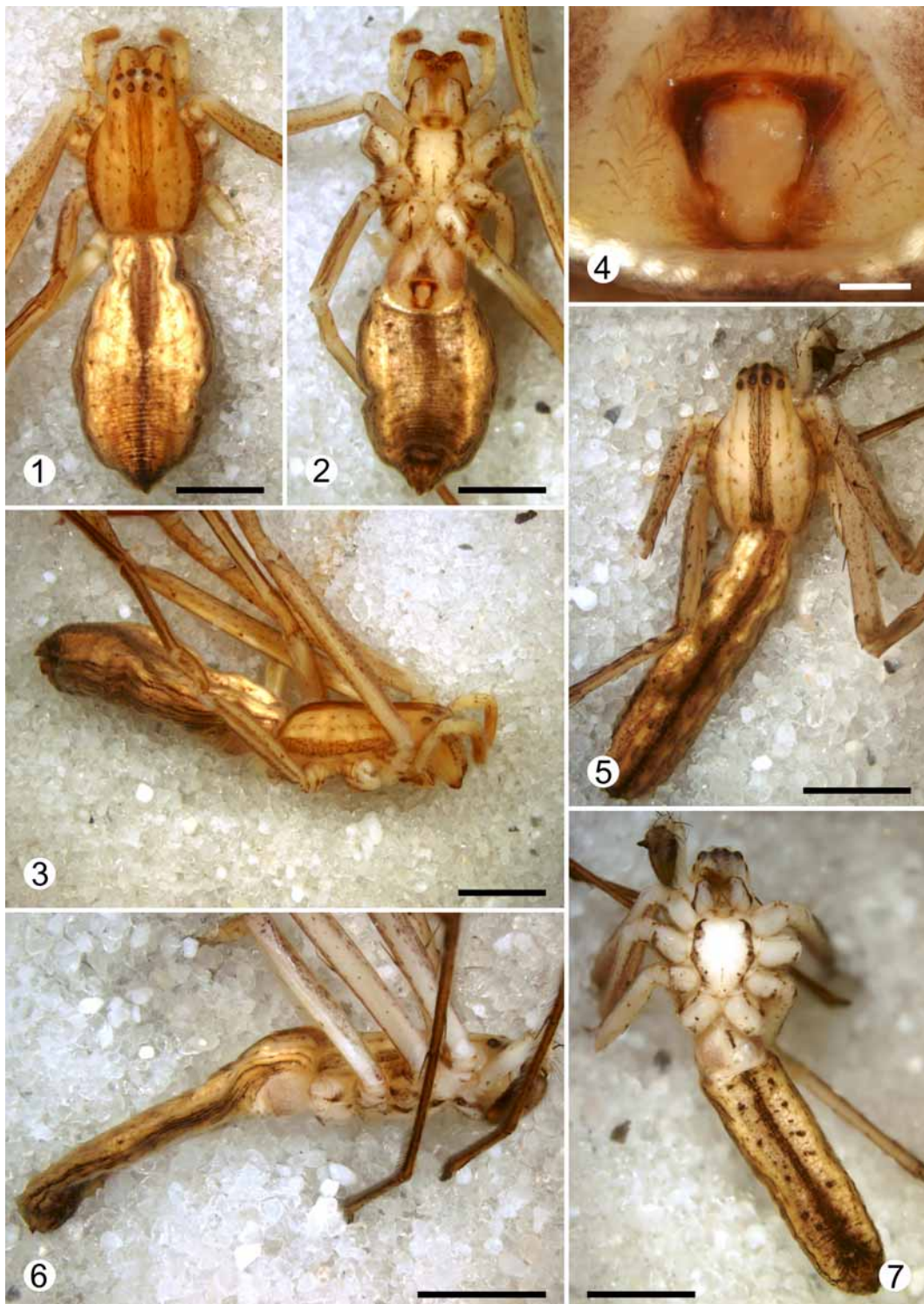
**Type material: Holotype:** female from Puna [27°48' S; 62°31' W], Santiago del Estero Province, Argentina, M. Birabén (MLP 15450).

**Other material examined. BRAZIL. Mato Grosso:** 1♂, Chapada dos Guimarães, Usina Hidrelétrica de Rio Manso, Rio Manso [14°52'00" S; 55°48'00" W], 2000–2001, Equipe Rio Manso (IBSP 28197). **Minas Gerais:** 1♀, Montes Claros [16°43'00" S; 43°52'00" W], 2005, G.L.D. Leite (IBSP 73206); 1♂, Juatuba, Rio Manso, Serra Azul, Área de Proteção de Mananciais da COPASA [20°10'00" S; 44°21'00" W], 18–24 April 2002, Equipe Biota (IBSP 67823); 1♂ (IBSP 67822), 2♀ (IBSP 67821); 1♀ (IBSP 67820). **São Paulo:** Castilho 1♀, [20°52'00" S; 51°28'60" W], 27 November 1964, Exp. CDZ (MZSP 3898); 1♀, Assis [22°40'00" S; 50°25'00" W], Nov.1964, G. Brizola (IBSP 1899); 1♂, Itupeva [23°08'60" S; 47°04'00" W], October 1982, I. Levis (IBSP 4160); 1♀, São Paulo [23°31'60" S; 46°37'00" W], October 1952, J.J. Rufino (IBSP 824); **ARGENTINA. Santiago del Estero:** 1♂, Parque Nacional Copo [25°55'00" S; 61°55'00" W], 22–24 February 2004, C. Grismado, A. Ojanguren, F. Labarque and L. Compagnucci (MACN-Ar 10758).

**Diagnosis.** *Quemedice enigmaticus* is distinguished from *Q. piracuruca* **n. sp.** by the male palp with RTA branches similar in size (sometimes dorsal branch slightly shorter) and base of embolus smooth (Figs 8–10); female epigynum with broad median septum, twice longer than wide, and vulva with large, elongate hyaline receptacles and slender, convoluted copulatory ducts (Figs 11–12).

**Description. Male (IBSP 67822):** Prosoma pale orange with brown margins, a median longitudinal brown stripe and a pair of slightly lighter paramedian ones (Figs 5–7). Chelicerae pale orange with small brown spots at the base of setae. Legs orange, except femora with dorsal longitudinal brown stripes (Figs 5–7). Pedipalps pale orange. Labium pale brown (Fig. 7). Endites and sternum yellow with pale brown margins (Fig. 7). Opisthosoma cream colored with three longitudinal brown stripes (Figs 5–7). Total length 11.1. Dorsal shield of prosoma: 3.8 long, 2.5 wide. Eye diameters and interdistances: AME 0.22, ALE 0.18, PME 0.16, PLE 0.16, AME–AME 0.20, AME–ALE 0.04, PME–PME 0.20, PME–PLE 0.20, AME–PME 0.22, ALE–PLE 0.24. Legs (2413): I: femur 6.9, patella 1.5, tibia 6.7, metatarsus 6.8, tarsus 2.1, total 24.0; II: 8.40, 1.60, 8.10, 8.40, 2.30, 28.80; III: 4.00, 1.30, 3.50, 3.30, 1.10, 13.20; IV: 8.10, 1.40, 6.70, 7.70, 1.90, 25.80. Spina-

tion as in genus description, except tibiae III d0–0–1; metatarsus IV d1–0–0. Opisthosoma: 7.5 long, 1.5 wide. Epiandrous spigots dispersed along the margin of epigastric furrow (Fig. 28).



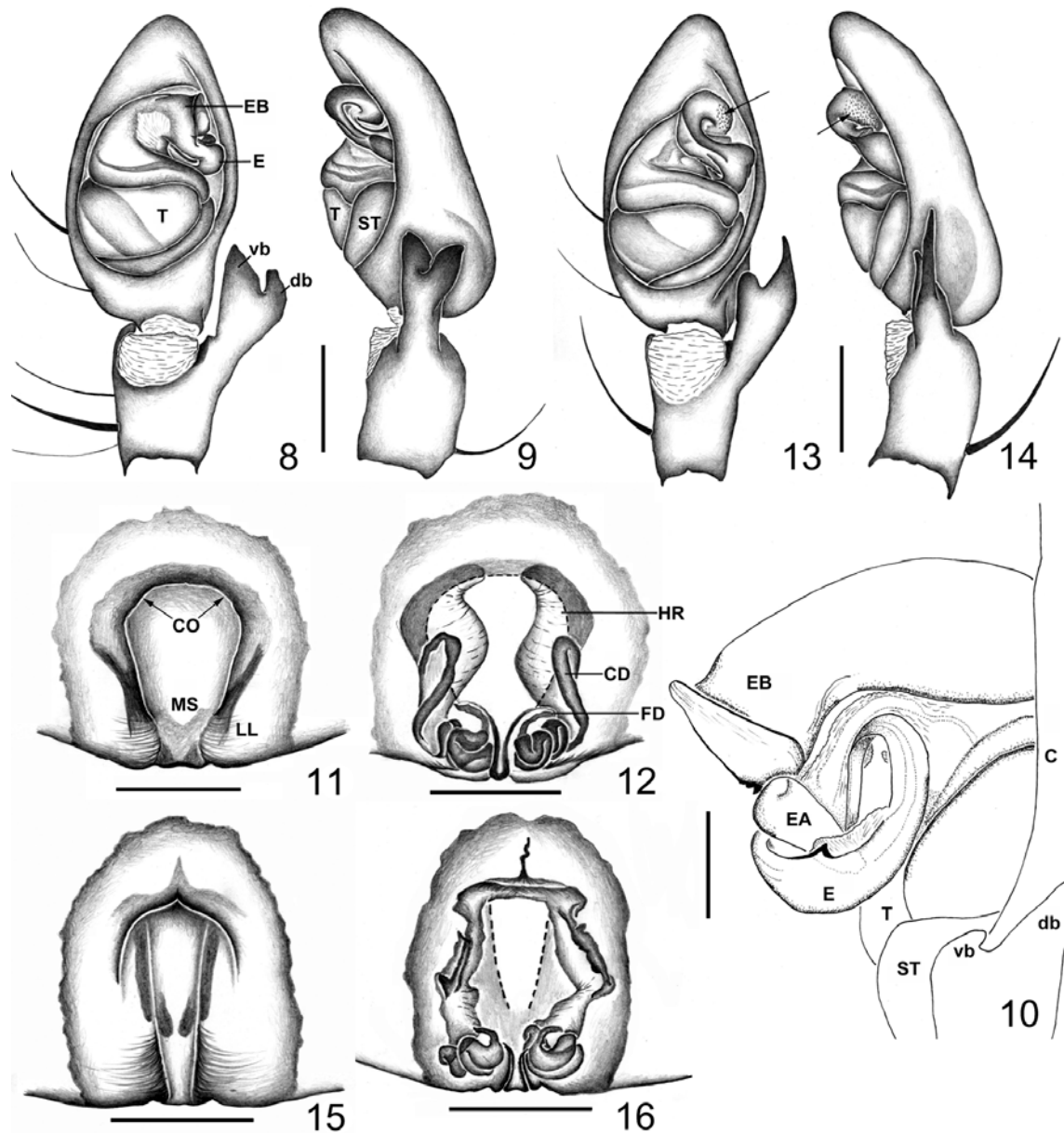
**FIGURES 1–7.** *Quemedice enigmaticus* Mello–Leitão, preserved specimens. 1–4 Female (holotype, MLP 15450), 1–3 habitus (1 dorsal; 2 ventral; 3 lateral), 4 Epigynum, ventral ; 5–7. Male (MACN–Ar 10758), habitus (5 dorsal; 6 lateral, 7 ventral). Scale bars: 1–2, 4–7, 2 mm; 3, 0.25 mm.

**Redescription. Female (holotype, MLP 15450):** Coloration as in male (Figs 1–2, 4). Total length 9.62. Dorsal shield of prosoma: 3.96 long, 2.68 wide. Eye diameters and interdistances: AME 0.20, ALE 0.16, PME 0.16, PLE 0.14, AME–AME 0.24, AME–ALE 0.10, PME–PME 0.24, PME–PLE 0.32, AME–PME 0.26,

ALE-PLÉ 0.26. Legs (2413): I: femur 5.50, patella 1.54, tibia 4.32, metatarsus 4.64, tarsus 2.12, total 18.12; II: 7.35, 1.96, 5.74, 5.66, 2.12, 22.83; III: 3.16, 1.12, 2.68, 2.20, 1.00, 10.16; IV: 8.65, 1.48, 4.77, 5.25, 1.40, 21.55. Spination: as in genus description except femur I d0-1-0; r0-1-1; femur IV r0-1-1. Opisthosoma: 5.66 long, 2.88 wide.

**Variation.** Three males: total length 11.0–11.1; dorsal shield of prosoma 3.7–3.8; femur I 6.9–7.3. Three females: total length 13.1–16.4; carapace 3.8–4.1; femur I 5.7–6.7.

**Distribution.** Central eastern South America: Argentina and Brazil (state of Mato Grosso).

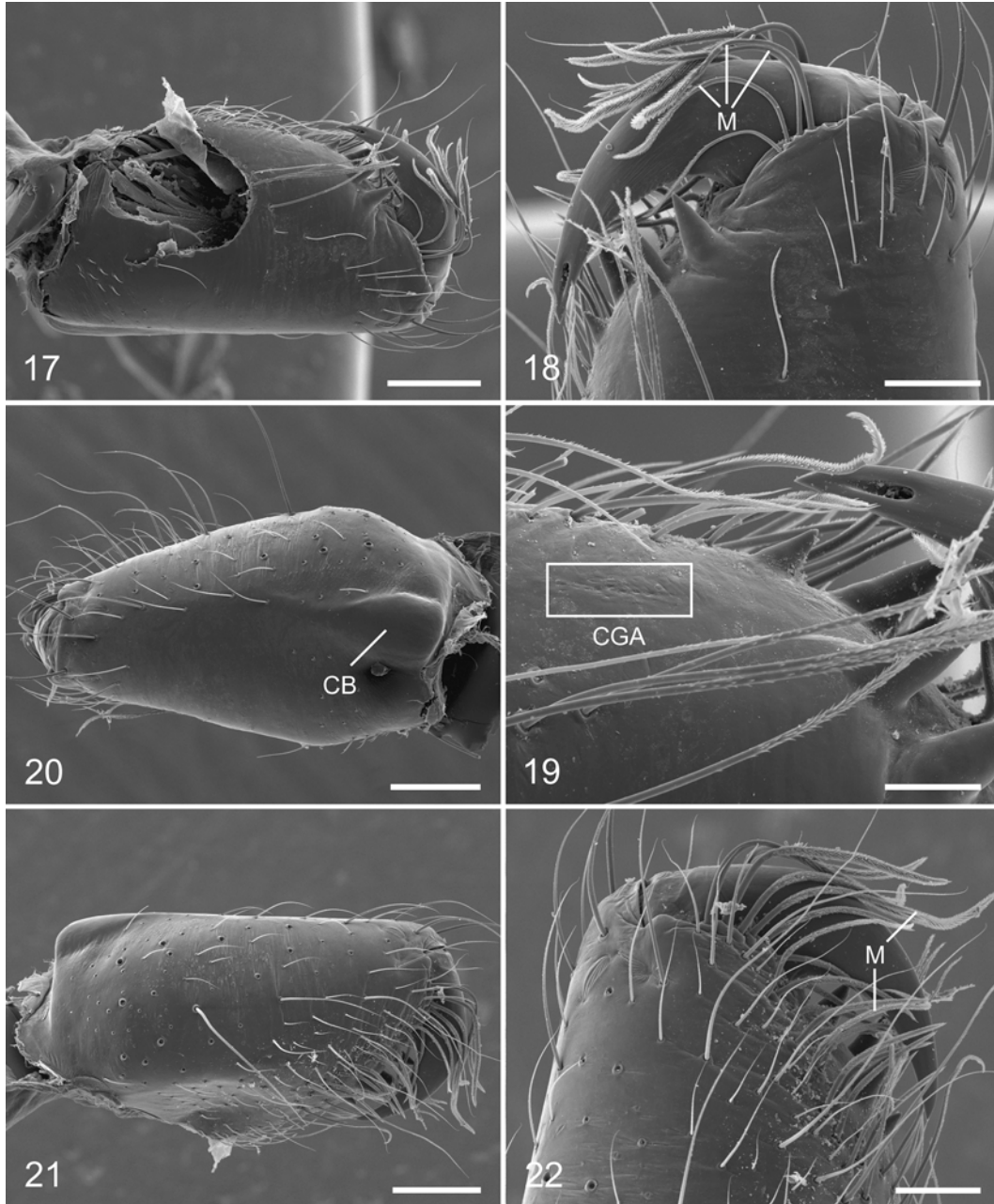


**FIGURES 8–16.** 8–12. *Quemedice enigmaticus* Mello-Leitão (8–9 IBSP 67822; 10 MACN–Ar 10758; 11–12 IBSP 1899). 8–10 Left male palp (8 ventral, 9 retrolateral, 10 ditto, detail of expanded embolus); 11–12. Epigynum (11 ventral, 12 dorsal). 13–16. *Quemedice piracuruca* n. sp. (13–14, paratype, IBSP 28565; 15–16, paratype, MPEG 6402). 13–14 Left male palp (arrows indicate small teeth) (13 ventral, 14 dorsal); 15–16. Epigynum (15 ventral, 16 dorsal). (C = cymbium; CD = copulatory duct; CO = copulatory opening; db = dorsal branch of RTA; EA = embolus apophysis; EB = embolus base; E = embolus; FD = fertilization duct; HR = hyaline receptacle; MS = median septum; LL = lateral lobes; ST = subtegulum; T = tegulum; vb = ventral branch of RTA). Scale bars: 8–9, 11–16, 0.5 mm; 10, 0.1 mm.

*Quemedice piracuruca* n. sp.

Figs 13–16

**Type material: Holotype:** male from Parque Nacional da Chapada Diamantina [13°49'00" S; 41°43'00" W], Lençóis, Bahia, Brazil, 1997, M.F. Dias (IBSP 15849).



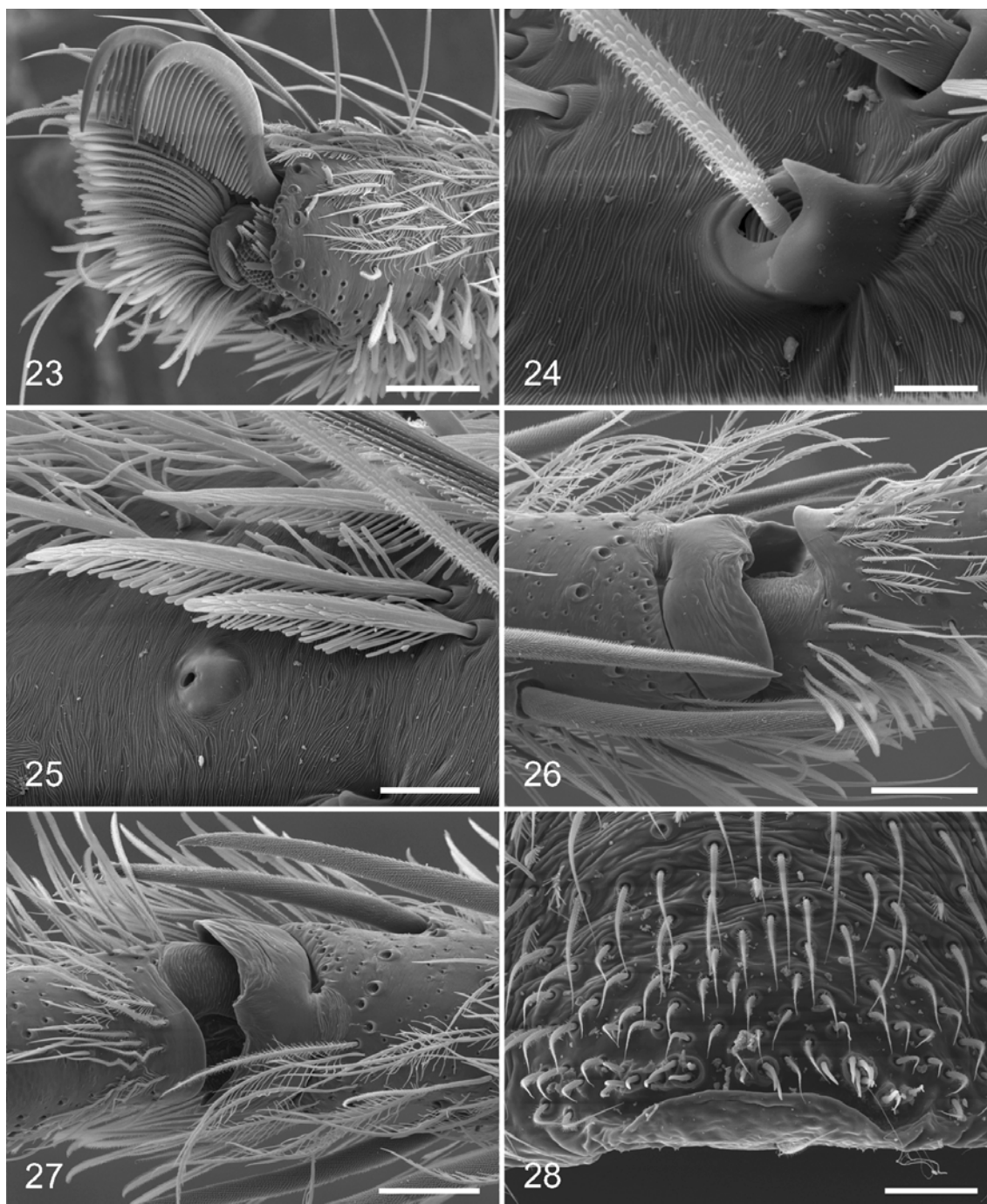
**FIGURES 17–22.** *Quemedice enigmaticus* Mello–Leitão (MACN–Ar 10758). 17–22 Left chelicera (17 posterior, 18 retromargin, 19 ditto, detail of cheliceral gland area, 20 ectal, 21 frontal, 22 promargin) (CB = cheliceral boss; CGA = cheliceral gland area; M = macrosetae). Scale bars: 17, 20–21, 200  $\mu$ m; 18, 22, 100  $\mu$ m; 19, 50  $\mu$ m.

**Paratypes: COLOMBIA: Meta:** 1 ♀, Lomalinda, Llera Mesa [03°18'00" N; 73°22'00" W], 18 Dec. 1985, B. Carroll (CAS). **BRAZIL: Minas Gerais:** 1 ♂, Coromandel, Vale do Rio Santo Inácio [18°28'00" S; 47°13'00" W], 11 May 2001, R. Gallon (IBSP 28565). **Piauí:** 1 ♂, Castelo do Piauí, ECB Plantas Ornamentais [05°13'52.5" S; 41°41'37.5" W], 20 October 2005, F.M. Oliveira Neto (MPEG 6401); 1 ♀, Brasileira e Piracuruca, Parque Nacional de Sete Cidades [04°06'44.2" S; 41°41'43.6" W], 28 January 2006, W.A Rocha (MPEG

6402); 1♂, 8 December 2006, D.F. Candiani leg. (MPEG 11324); 1♀, 30 January 2007, L.S. Carvalho leg. (MPEG 1251); 1♀, Brasileira e Piracuruca, Parque Nacional de Sete Cidades [04°06'44.2" S; 41°41'43.6" W], 17 December 2006, L.S. Carvalho (IBSP 90810).

**Other material examined. BRAZIL. Piauí:** 1♂, Brasileira e Piracuruca, Parque Nacional de Sete Cidades [04°06'44.2" S; 41°41'43.6" W], 12 December 2006, L.S. Carvalho (MPEG 11250); 1♂, Castelo do Piauí, ECB Plantas Ornamentais [05°14'01.7" S; 41°41'46" W], 10 December 2005, L.S. Carvalho (MPEG 6403).

**Etymology.** The specific name is a noun in apposition that refers to the type locality of most of the type specimens: the Parque Nacional de Sete Cidades in the municipality of Piracuruca, Piauí, Brazil.



**FIGURES 23–28.** *Quemedice enigmaticus* Mello–Leitão (MACN–Ar 10758). 23–27 Male, left leg IV (23 claw, retrolateral–apical, 24 tarsal trichobothria, dorsal, 25 tarsal organ, dorsal, 26 trilobate membrane at distal end of metatarsus, pro-lateral, 27 ditto, dorsal); 28 Epiandrium, ventral view. Scale bars: 23, 26–27, 100 µm; 28, 50 µm; 25, 20 µm; 24, 10 µm.

**Diagnosis.** *Quemedice piracuruca* n. sp. is distinguished from *Q. enigmaticus* by the male palp with different size RTA branches, ventral one short and truncated, dorsal twice as long and distally pointed (Fig. 13), embolus base with small teeth retrolaterally and medially widened (Figs 13–14); female epigynum with slender median field, at least three times longer than wide, vulva with smaller and slender hyaline receptacles and wider convoluted copulatory ducts (Figs 15–16).

**Description.** Male (IBSP 28565). Prosoma orange with brown margins, a median longitudinal brown stripe and a pair of slightly lighter paramedian ones. Chelicerae yellow with small brown spots at the base of setae. Legs brown, except femora with dorsal longitudinal brown stripes. Pedipalps pale orange. Labium pale brown. Endites and sternum yellow with pale brown margins. Opisthosoma cream colored with three longitudinal brown stripes. Total length 10.0. Dorsal shield of prosoma: 3.3 long, 2.1 wide. Eye diameters and interdistances: AME 0.22, ALE 0.20, PME 0.18, PLE 0.18, AME–AME 0.14, AME–ALE 0.04, PME–PME 0.18, PME–PLE 0.20, AME–PME 0.20, ALE–PLE 0.20. Legs (2413): I: femur 7.0, patella 1.4, tibia 6.6, metatarsus 7.4, tarsus 1.6, total 24; II: 8.5, 1.5, 7.9, 8.9, 1.8, 28.6; III: 3.2, 1.0, 3.3, 3.1, 1.0, 11.6; IV: 7.8, 1.4, 6.4, 7.6, 1.4, 24.6. Spination as in genus description. Abdomen: 6.5 long, 1.7 wide.

Female (MPEG 6402). Coloration as in male. Total length 13.4. Dorsal shield of prosoma: 3.3 long, 2.1 wide. Eye diameters and interdistances: AME 0.22, ALE 0.20, PME 0.16, PLE 0.20, AME–AME 0.30, AME–ALE 0.04, PME–PME 0.20, PME–PLE 0.28, AME–PME 0.22, ALE–PLE 0.20. Legs (2413): I: femur 5.1, patella 1.3, tibia 4.3, metatarsus 4.4, tarsus 1.1, total 16.2; II: 5.9, 1.4, 5.1, 5.3, 1.2, 18.9; III: 2.6, 0.9, 2.3, 2.0, 0.7, 8.5; IV: 5.4, 1.3, 4.2, 4.7, 0.9, 16.5. Spination as in genus description except femur IV r0-1-1; metatarsus IV: p1-1-1. Opisthosoma: 10.0 long, 3.5 wide.

**Variation.** Six males: total length 6.7–10.0; dorsal shield of prosoma 2.5–3.3; femur I 5.9–7.0. Four females: total length 12.7–16.3; carapace 3.3–4.5; femur I 5.10–6.2.

**Distribution.** Northern South America: Colombia and Brazil (Piauí).

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