



Monograph

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**Taxonomic revision of the Neotropical spiders
of the genus *Idiops* Perty, 1833 (Araneae, Idiopidae),
with description of four new species**

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Abstract. Neotropical species of the genus *Idiops* Perty, 1833 are reviewed, and four new species are described from Brazil: *I. duocordibus* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., *I. guri* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., *I. mocambo* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov. and *I. sertania* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov. The majority of species are redescribed based on the examination of the types and extensive material. Males of *I. petiti* (Guérin, 1838), *I. rastratus* (Pickard-Cambridge, 1889), *I. rohdei* Karsch, 1886 and *I. nilopolensis* Mello-Leitão, 1923, and females of *I. fuscus* Perty, 1833 and *I. pirassununguensis* Fukami & Lucas, 2005, hitherto unknown, are described for the first time. *Idiops nilopolensis*, considered a nomen dubium, is revalidated. *Idiops fulvipes* Simon, 1889 is synonymized with *I. argus* Simon, 1889, and *I. santaremius* (Pickard-Cambridge, 1896) is synonymized with *I. petiti*. Neotypes are designated for *Idiops fuscus*, *I. nilopolensis* and *I. siolii* (Bücherl, 1953). *Idiops bonapartei* Hasselt, 1888 is considered species inquirendae, since the type is an immature female. Finally, an updated distribution map of Neotropical species is included. The genus now has 24 species in the Neotropical region.

Keywords. Mygalomorphae, Idiopinae, Domiothelina, Arachnida, trapdoor spiders.

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Introduction

The family Idiopidae Simon, 1889 comprises species popularly known as spiny trapdoor spiders. The spiders build and live in silk-lined burrows in the soil, which are closed with a camouflaged operculum, which functions as a trapdoor (Raven 1985; Dippenaar-Schoeman 2002; Fig. 1A–L). Idiopidae was erected by Raven (1985), who raised the tribe Idiopiae Simon, 1889, until then included in Ctenizidae Thorell, 1887, to the family level. Sustained by three apparently apomorphic features of the male palp (Raven 1985), the family monophyly was never questioned, being well supported by both morphological (Goloboff 1993) and molecular data (Hedin & Bond 2006; Bond *et al.* 2012; Opatova *et al.* 2020). With an origin dating back to the Lower Cretaceous, about 133 million years ago (Opatova *et al.* 2020), and Gondwanan distribution (World Spider Catalog 2021), the family Idiopidae is currently divided into three subfamilies: Arbanitinae Simon, 1903, with spiders restricted to Oceania, Genysinae Simon, 1903, occurring in India, Sri Lanka, Madagascar and South America, and Idiopinae Simon, 1889, from South America, Africa, the Middle East, and Southern and Southeast Asia (Raven 1985; World Spider Catalog 2021). The idiopids are currently the third most diverse mygalomorph family, comprising 434 species in 23 genera (World Spider Catalog 2021). Despite this potential, only genera belonging to the subfamily Arbanitinae have recently been systematically reviewed, which have also formed the basis of subsequent biogeographic studies (Rix *et al.* 2017a, 2017b; Wilson *et al.* 2018, 2020).

Representatives of the subfamily Idiopinae are characterized by having the anterior lateral eyes projected in front of the others, close to the anterior margin of the carapace, the cephalic area of the carapace arched, distal segments of the front legs with numerous lateral spines and the tibia of leg I of males with the tibial apophysis with one or two apical branches (Raven 1985). It currently has seven genera: *Ctenolophus* Purcell, 1904, *Galeosoma* Purcell, 1903, *Gorgyrela* Purcell, 1902, *Segregara* Tucker, 1917 and *Titanidiops* Simon, 1903, restricted to the African continent, *Heligmomerus* Simon, 1892 occurring in India, Sri Lanka and Africa, and *Idiops* Perty, 1833 occurring in South America, Africa, Syria, Israel, Yemen, India, Myanmar and Thailand (World Spider Catalog 2021).

Among the genera of Idiopidae, the most diverse is *Idiops* Perty, 1833 (Fig. 2A–F), which currently includes 99 valid species (World Spider Catalog 2021). Their body size ranges from 5 to 35 mm and species are mainly characterized by chelicera with two rows of teeth on the prolateral and retrolateral margins, a sternum with two pairs of sigilla (posterior pair absent) and the absence of tiny spines on the coxae (Raven 1985; Dippenaar-Schoeman 2002). In the cladistic analysis carried out by Raven (1985), *Idiops* is closely related to *Ctenolophus* and *Galeosoma*, grouped in a trichotomy and supported by the absence of the posterior pair of sigillae (Raven 1985). According to the molecular phylogeny proposed by Opatova *et al.* (2020), *Idiops* is recovered as the sister-group to four other genera of Idiopinae that were recovered as a monophyletic clade.

Four genera are considered junior synonyms of *Idiops*. *Acanthodon* Guérin, 1838, proposed based on the species *A. petiti* Guérin, 1838 from Brazil, was synonymized with *Idiops* by Pickard-Cambridge (1870). However, Simon (1892) revalidated *Acanthodon*, differentiating it from *Idiops* by its ocular formation and restricted the American species to the genera *Pseudidiops* Simon, 1889 and *Idiops*. Later, Simon (1903), when examining a female of *Idiops germaini* Simon, 1892, considered that the differences in the eyes between *Idiops* and *Acanthodon* would not be valid, since they are dependent on sex. Consequently, he synonymized these two genera again, but kept the *Idiops* genus only for American species. The problem of *Acanthodon* was only solved by Tucker (1917) and its consequent synonymy with *Idiops*. *Dendricon*



Fig. 1. Natural habitats and diversity of burrows and trapdoors of *Idiops* Perty, 1833 spp. **A–G.** Ravine habitats. **H–L.** Ground habitats. Images by Rafael P. Indicatti (A–B); by Arthur Anker and Pedro H. Martins (C–D); by Leonardo S. Carvalho (E–F); by Rafael Fonseca-Ferreira (G–L).



Fig. 2. Live habitus of *Idiops* Perty, 1833. **A.** *I. fuscus* Perty, 1833, ♀. **B.** *I. fuscus*, ♂. **C.** *I. camelus* (Mello-Leitão, 1937), ♀. **D.** *I. camelus*, ♂. **E.** *I. pirassununguensis* Fukami & Lucas, 2005, ♀. **F.** *I. pirassununguensis*, ♂. Images by: Leonardo S. Carvalho (A–B); Rafael P. Indicatti (C–D); Pedro H. Martins (E–F).

O. Pickard-Cambridge, 1889 was proposed based on *D. rastratum* O. Pickard-Cambridge, 1889, but was synonymized with *Pseudidiops* Simon, 1889 by Pocock (1895). *Pseudidiops* was proposed based on the species *P. opifex* Pocock 1899, from Colombia. This genus was synonymized by Raven (1985) who considered the characteristics presented by Simon insufficient to differentiate this genus. *Juambeltzia* Mello-Leitão, 1946 was proposed based on the species *J. clara* Mello-Leitão, 1946, from Argentina, and later synonymized by Schiapelli & Gerschman de Pikelin (1971). *Pachyidiops* Simon, 1903 was established based on the species *Idiops crassus* Simon, 1884, from Burma and was synonymized by Raven (1985).

So far, no comprehensive review of the genus *Idiops* has been carried out, only propositions of species (Fonseca-Ferreira *et al.* 2017; Siliwal *et al.* 2020) or reviews limited to countries (Fukami & Lucas 2005; Mirza *et al.* 2012; Ferretti *et al.* 2017). Here we present a taxonomic revision of the Neotropical species of *Idiops* and present an updated distribution map of Neotropical species, thus expanding the knowledge of the family Idiopidae.

Material and methods

Repositories

The examined specimens are deposited in the following taxonomic collections (curators indicated between parentheses):

BMNH	=	The Natural History Museum, London, UK (J. Beccaloni)
CAD	=	Coleção Aracnológica Diamantina, UNESP, Rio Claro, Brazil (J.P. Guadanucci)
CHNUFPI	=	Coleção de História Natural, Universidade Federal do Piauí, Brazil (L.S. Carvalho)
FCE	=	Facultad de Ciencias, Universidad de la República, Montevideo, Uruguay (M. Simó)
IBNP	=	Inventario Biológico Nacional de Paraguay, Asunción, Paraguay (J.A. Kochalka)
IBSP	=	Instituto Butantan, São Paulo, Brazil (A.D. Brescovit)
INPA	=	Instituto Nacional de Pesquisas da Amazônia, Manaus, Brazil (M.L. Oliveira)
MCN	=	Museu de Ciências Naturais, Sema, Porto Alegre, Brazil (R. Ott)
MCTP	=	Museu de Ciências e Tecnologia, Pontifícia Universidade Católica, Porto Alegre, Brazil (R.A. Teixeira)
MHNM	=	Museo Nacional de Historia Natural, Montevideo, Uruguay (A. Laborda)
MNHN	=	Muséum national d'histoire naturelle, Paris, France (C. Rollard)
MNRJ	=	Museu Nacional, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil (A.B. Kury)
MPEG	=	Museu Paraense Emilio Goeldi, Belém, Brazil (A.B. Bonaldo)
MZSP	=	Museu de Zoologia, Universidade de São Paulo, São Paulo, Brazil (R. Pinto da Rocha)
UFMG	=	Coleção de Invertebrados, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil (A.J. Santos)
UFMT	=	Coleção de Arachnida, Universidade Federal do Mato Grosso, Cuiabá, Brazil (A. Chagas Junior)
UFPB	=	Coleção de Arachnida, Universidade Federal da Paraíba, João Pessoa, Brazil (M.B. da Silva)
ZMB	=	Zoologisches Museum Berlin, Berlin, Germany (J. Dunlop)

Measurements

Measurements were taken with the aid of a Leica M205C stereo microscope equipped with a Leica DFC295 digital camera. The measurements of the carapace, abdomen and legs were taken in dorsal view. For the diameter of the eyes, the largest values were considered. Leg measurements are given in the following order: total length (femur, patella, tibia, metatarsus, tarsus). All measurements are in millimeters. The coding and position of the leg spines follow the methodology proposed by Petrunkevitch

(1925). Spermathecae were dissected and immersed in enzyme (Ultrazyme®) for 24 hours for soft tissue digestion to allow observation of the internal structures.

Illustrations

Photographs were taken with a Leica DFC295 digital camera, with focus stacking using Leica Application ver. 2.5.0. For scanning electron microscopy (SEM) micrographs, body parts were dehydrated in a series of graded ethanol washes (80% to 100%), dried by critical point, mounted on metal stubs using adhesive copper tape and nail polish for fixation and covered with gold. SEM micrographs were taken with an FEI Quanta 250 scanning electron microscope at the Laboratório de Biologia Celular of Instituto Butantan, São Paulo, Brazil. The drawings were made with the aid of a Leica MZ12.5 stereo microscope equipped with a camera lucida. The final art of the drawings was made with graphite, on 180g opaline paper. Illustrations were digitalized using the HP Scanjet G4050 scanner. All generated pictures were later edited in Photoshop CC 2018 software.

Geographical data

Each locality from museum databases was carefully checked (lat-long coordinates) to correct for imprecise georeferences in decimal degrees, based on the WGS 1984 datum. In the case of samples with inaccurate or incomplete distribution data, the specimens were georeferenced to the geographic center of the given locality. For species from Argentina, recently reviewed by Ferretti *et al.* 2017, the coordinates available in the material examined were included. Species distribution maps were made using the QGIS ver. 3.12.3 program. Subsequently, they were organized into plates using the Photoshop CC 2018 software.

Abbreviations

ALE	=	anterior lateral eyes
AME	=	anterior median eyes
CL	=	carapace length
CW	=	carapace width
d	=	dorsal
DET	=	distal embolar tooth
EL	=	embolar lamella
Fe	=	femur
K	=	keel
Mt	=	metatarsus
LL	=	labium length
LW	=	labium width
p	=	prolateral
Pa	=	patella
PLE	=	posterior lateral eyes
PME	=	posterior median eyes
PT	=	promarginal teeth
r	=	retrolateral
RT	=	retromarginal teeth
SL	=	sternum length
SW	=	sternum width
Ta	=	tarsus
TBL	=	total body length
Ti	=	tibia
v	=	ventral

Results

Taxonomy

Class Arachnida Cuvier, 1812
Order Araneae Clerck, 1757
Family Idiopidae Simon, 1889
Subfamily Idiopinae Simon, 1889

Genus *Idiops* Perty, 1833

Idiops Perty, 1833: 197 (type species by monotypy: *I. fuscus* Perty, 1833).

Acanthodon Guérin, 1838: 163 (type species by monotypy: *A. petitii* Guérin, 1838). Synonymized by O. Pickard-Cambridge 1870: 107.

Dendricon O. Pickard-Cambridge, 1889: 250 (type species by monotypy: *D. rastratum* O. Pickard-Cambridge, 1889). Synonymized by Pocock 1895: 223.

Pseudidiops Simon, 1889: 215 (type species by monotypy: *P. opifex* Simon, 1889). Synonymized by Raven 1985: 139.

Juambeltzia Mello-Leitão, 1946: 6 (type species by monotypy: *J. clara* Mello-Leitão, 1946). Synonymized by Schiapelli & Gerschman de Pikelin 1971: 58.

Idiops – O. Pickard-Cambridge 1870: 101. — Simon 1892: 89. — Roewer 1953: 5. — Raven 1985: 139. — Dippenaar-Schoeman 2002: 68.

Acanthodon – Walckenaer 1837: 434. — Simon 1892: 90; 1903: 350. — Pocock 1897: 731.

Type species

Idiops fuscus Perty, 1833

Composition

Idiops includes 102 species, of which 24 occur in the Neotropical region, including the four new species herein described: *I. fuscus* Perty, 1833, the type species, *I. argus* Simon, 1889, *I. bonapartei* Hasselt, 1888, *I. cambridgei* Ausserer, 1875, *I. camelus* (Mello Leitão, 1937), *I. carajas* Fonseca-Ferreira, Zampaulo & Guadanucci, 2017, *I. clarus* (Mello-Leitão, 1946), *I. duocordibus* sp. nov., *I. germaini* Simon, 1892, *I. guri* sp. nov., *I. harti* (Pocock, 1893), *I. hirsutipedis* Mello-Leitão, 1941, *I. minguito* Ferretti, 2017, *I. mocambo* sp. nov., *I. nilopolensis* Mello-Leitão, 1923, *I. opifex* (Simon, 1889), *I. petiti* (Guérin, 1838), *I. piluso* Ferretti, Nime & Mattoni, 2017, *I. pirassununguensis* Fukami & Lucas, 2005, *I. sertania* sp. nov., *I. siolii* (Bücherl, 1953), *I. rastratus* (O. Pickard-Cambridge, 1889), *I. rohdei* Karsch, 1886 and *I. tolengo* Ferretti, 2017.

Distribution

South America, Africa, Syria, Israel, Yemen, India, Myanmar and Thailand. Here we present the updated distribution of the Neotropical species of the genus (Figs 3–4).

Diagnosis

The species of *Idiops* differ from all other Idiopinae by having the coxae without spines and by the chelicerae with a row of large teeth along the retromargin and small teeth concentrated in the basal third of the promargin and arranged in a row or randomly (Fig. 5A–B; except *I. harti* (Pocock, 1893)). *Idiops harti* differs from all other species of the genus by having only one prolateral row of large teeth (Fig. 5C).

Description

Small to medium sized spiders, with Neotropical species with total length ranging between 5.4 mm and 19.1 mm. Brown color, with variation between yellowish brown and almost entirely black (Fig. 2A–F). Anterior lateral eyes close to clypeal edge (Fig. 6A). Chelicerae with a prolateral row of large teeth and a retrolateral row of smaller teeth (Fig. 6B), retrolateral teeth occupying basal third of chelicerae, arranged in a row (Fig. 5A) or randomly (Fig. 5B), except *I. harti*, with retrolateral teeth absent (Fig. 5C), and rastellum consisting of a distinct process with large spines (Fig. 6C). Legs with three tarsal claws, paired claws with teeth and third claw smooth (Fig. 6D). Adhesive scopula absent, pseudoscopula present in males (Fig. 6D). Sternum with two anterior pairs of small marginal sigillae. Abdomen oval, without

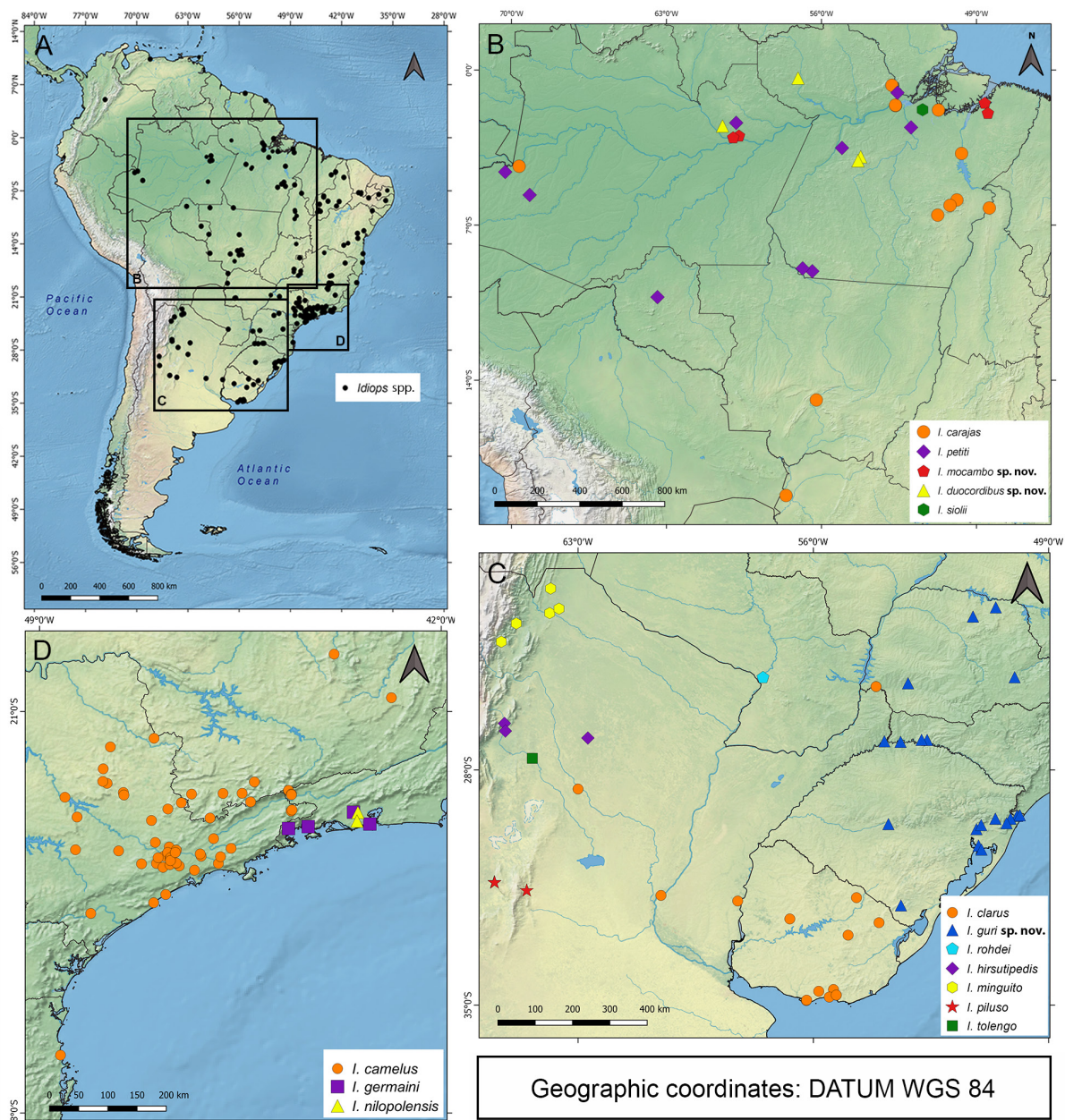


Fig. 3. Distribution of species of *Idiops* Party, 1833 in the Neotropical region (part).

ornaments or sclerotic spots (Fig. 2A–F). Four spinnerets; posterior lateral spinnerets trisegmented and with a domed apical segment, posterior median spinnerets with one short segment. Males with enlarged palpal tibia, with retrolateral depression bordered by robust spines (Fig. 6E–F). Copulatory bulb presents an embolus with median curvature, subapical torsion, apical expansion, usually in flattened shape (embolar lamella) (Fig. 7E–F) or pointed shape (distal embolar tooth) (Fig. 19E) (with the exception of *I. petiti*; Fig. 26E–F). Leg I with a double tibial apophysis, with apical branch wider than basal branch (Fig. 6G) (with the exception of *I. germaini*; Fig. 18H), with putative slit organ between the two branches (Fig. 6H–I). Metatarsus I smooth (with the exception of *I. duocordibus* sp. nov., *I. petiti* and *I. pirassununguensis*, which have a subapical prolateral projection (Figs 17I, 26I, 27I)). *Idiops* females have cuspules on labium and maxillae. In *I. duocordibus* sp. nov., *I. opifex* and *I. rastratus*, cuspules occupy entire ventral region of maxillae (Figs 17K, 29K). Tibia III presents dorsal depression in *I. fuscus*, *I. camelus*, *I. pirassununguensis* and *I. rohdei*. Spermathecae with sclerotized basal area, divided into two outward-sloping ducts, each one connected to rounded terminal receptacles (Fig. 7L) (with the exception of *I. duocordibus* sp. nov., *I. petiti* and *I. siolii*; Figs 17L, 26L, 34C) that have receptacles with lobular expansions.

Natural history

Spiders of the genus *Idiops* live in tubular silk-lined burrows, which are closed by a hinged lid (operculum), which functions as a trapdoor (Fig. 1A–F, H–L). The burrows, which can be found on ravines (Fig. 1G)

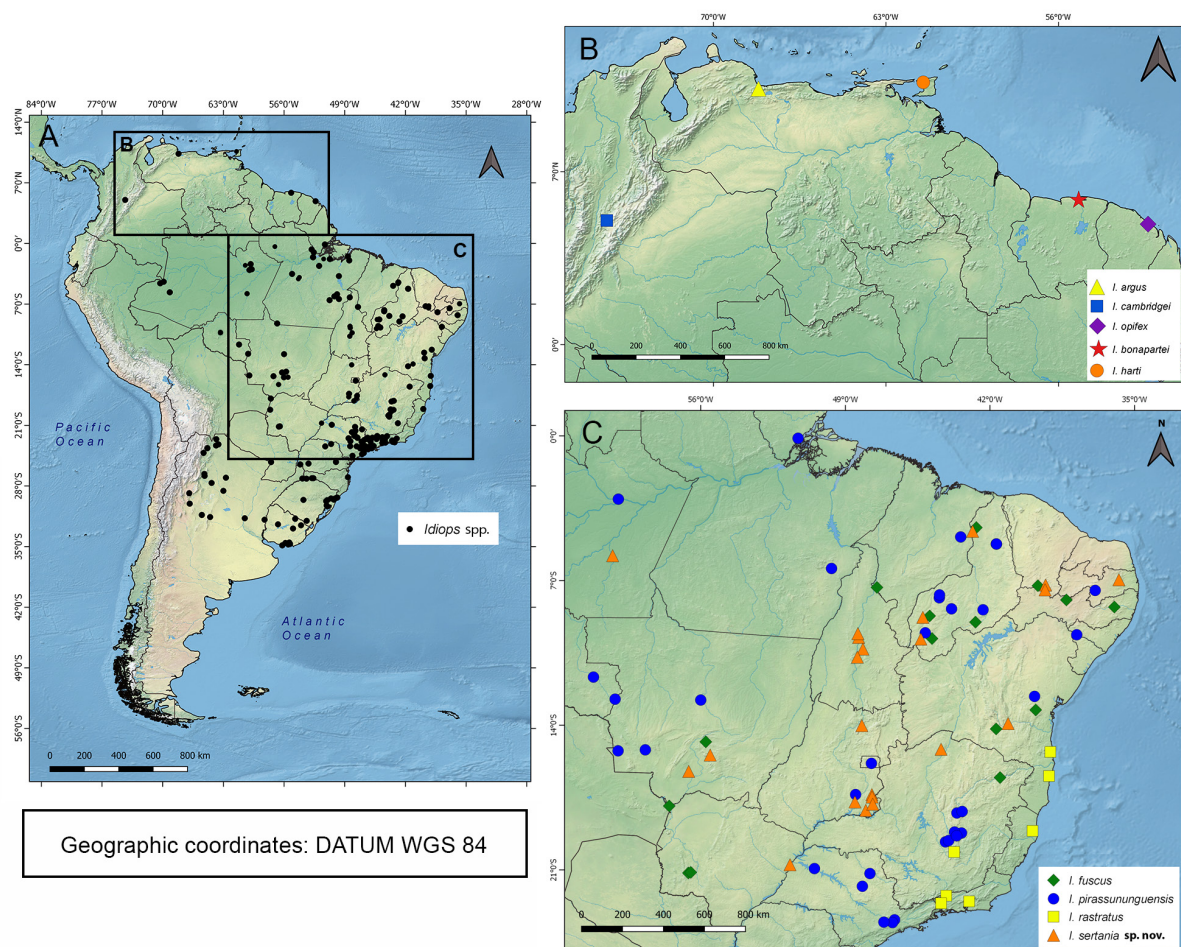


Fig. 4. Distribution of species of *Idiops* Perty, 1833 in the Neotropical region (part).

and on the ground (Fig. 1L), are dug with the help of the rastellum and first legs (Coyle *et al.* 1992). The opercula are usually camouflaged with mosses (Fig. 1A–D), grains of sand and clay (Fig. 6E–F), and small leaves and pieces of dry grass (Fig. 6H–K) (Coyle *et al.* 1992; Dippenaar-Schoeman 2002). These burrows provide a suitable microclimate that protects the spiders from predators, parasites and microbial infections, and behave as effective expansions for ambushing prey (Dippenaar-Schoeman 2002; Pérez-Miles & Perafán 2017). *Idiops* spiders live in a variety of habitats, ranging from dry environments with scattered vegetation and harder soils to more humid environments with dense vegetation and softer soils (Dippenaar-Schoeman 2002; Gupta *et al.* 2013; RFF pers. obs.). Some species can occasionally be found in termite mounds or in soil deposited near the base of trees (Gupta *et al.* 2015) and inside tree bark and rotten trunks (Pickard-Cambridge 1889: fig. 5; pers. obs.). Finally, some species can be found in degraded environments, often close to human dwelling and agricultural environments (Mirza & Sanap 2012; Gupta *et al.* 2013). In Brazil, specimens of *Idiops* were found in urban vegetation fragments, located even in large cities, such as São Paulo (*I. camelus*), Rio de Janeiro (*I. germani*) and Brasília (*I. pirassununguensis*) (RFF pers. obs.).

Females and juveniles spend most of their lives in the burrows, leaving only during events of capturing prey and disposing of undigested parts. Males, after reaching adulthood, leave their burrows and wander in search for females to copulate (Dippenaar-Schoeman 2002; Pérez-Miles & Perafán 2017). Although less common, it is possible to find males living in individual burrows (Siliwal *et al.* 2020; RFF pers. obs.). It is common to find several nearby burrows, with spiders often belonging to the same population (Dippenaar-Schoeman 2002), with records reaching the density of 20 individuals per m² for *I. bombayensis* Siliwal, Molur & Biswas, 2005 (Mirza & Sanap 2012). At night, the spiders position themselves near the opening, with the trapdoor slightly ajar and wait for the prey that, upon approaching and being noticed, is captured and taken inside (Coyle *et al.* 1992). If disturbed, the spider closes the operculum firmly, holding the trapdoor with its anterior legs, and as a last resort, goes to the bottom of the burrow (Dippenaar-Schoeman 2002; Pérez-Miles & Perafán 2017; pers. obs.). In case there is an egg sac inside the burrow, the female positions itself on top of it to better protect its contents. The egg sac is usually oval and can contain up to 250 eggs held together by thick silk lining (as in *I. joida* Gupta, Das & Siliwal, 2013) (Gupta *et al.* 2013). In cases of adverse environmental events, these spiders can abandon their burrows, migrate to apparently more stable environments and build new burrows (Dippenaar-Schoeman 2002; Pérez-Miles & Perafán 2017).

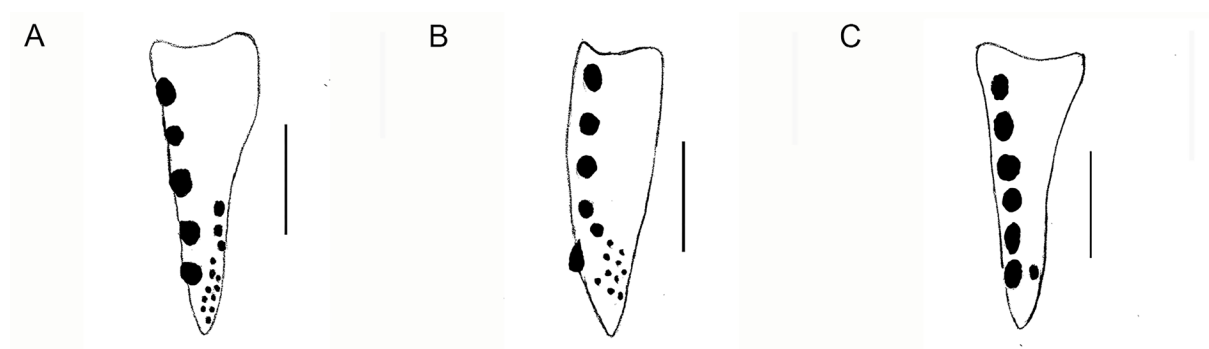


Fig. 5. Chelicera teeth arrangement. **A.** Smaller retrolateral teeth arranged in rows (*I. camelus* (Mello-Leitão, 1937)). **B.** Smaller retrolateral teeth arranged randomly (*I. germani* Simon, 1892). **C.** Smaller retrolateral teeth absent (*I. harti* (Pocock, 1893)). Scale bars = 1 mm.

Idiops fuscus Perty, 1833

Figs 2A–B, 4C, 6A, 7–8

Idiops fusca Perty, 1833: 197, pl. 39 fig. 5 (♂).

Sphasus idiops – Walckenaer 1837: 379 (new name for *Idiops aculeatus* – lapsus). — Petrunkevitch 1911: 780.

Idiops aculeatus – Walckenaer 1837: 379 (lapsus). — Petrunkevitch 1911: 775.

Idiops fuscus – O. Pickard-Cambridge 1870: 103. — Simon 1892: 92, fig. 91.

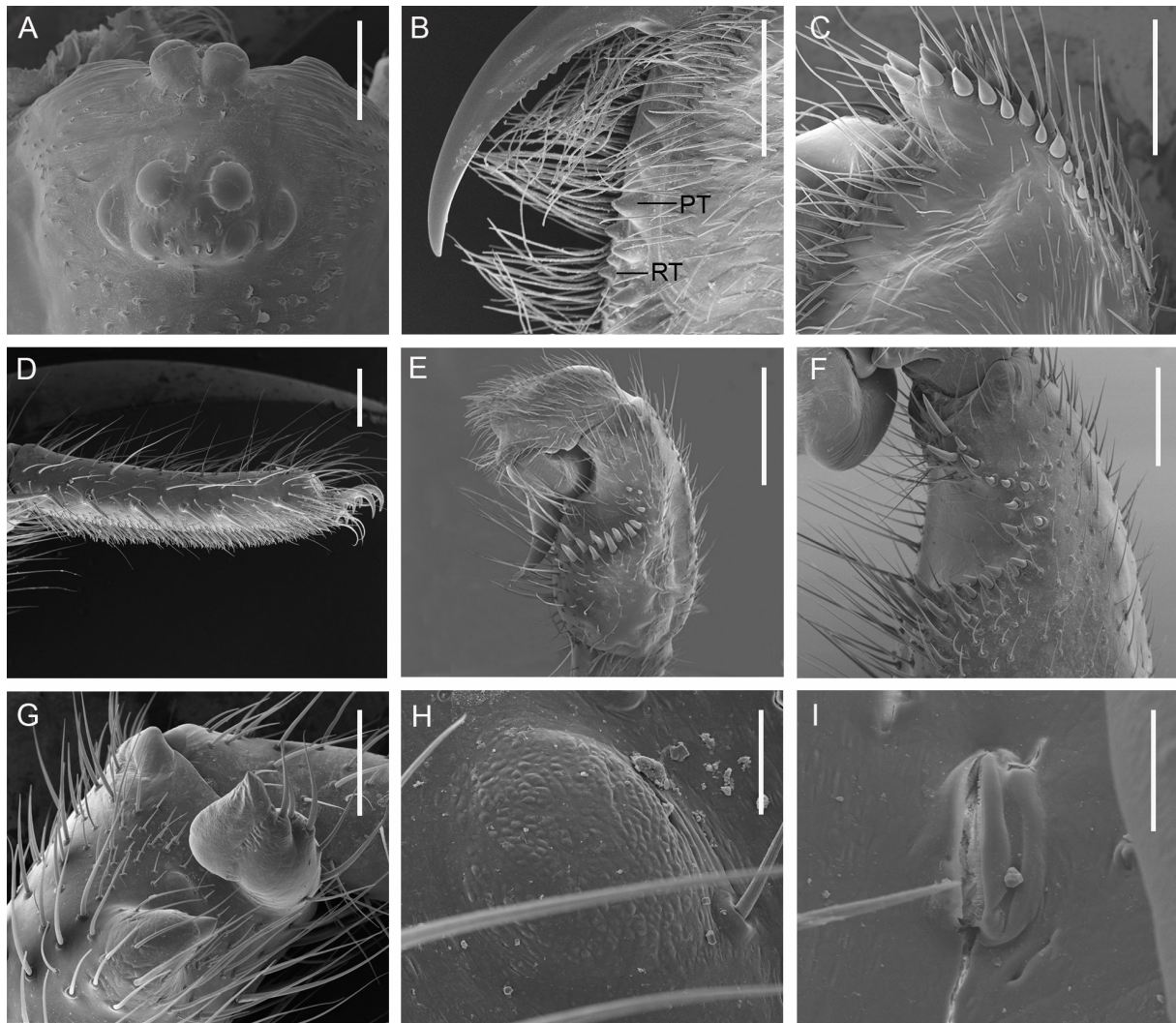


Fig. 6. Diagnostic characters of *Idiops* Perty, 1833 spp. **A.** Ocular disposition, with emphasis on the anterior lateral eyes apart from the others (*I. fuscus* Perty, 1833, CHNUFPI 0036). **B.** Rows of chelicera teeth (*I. clarus* (Mello-Leitão, 1946), FCE 0340). **C.** Rastellum (*I. carajas* Fonseca-Ferreira, Zampaulo & Guadanucci, 2017, MPEG 00109). **D.** Tarsus showing the pseudoscopula and tarsal claws (*I. camelus* (Mello-Leitão, 1937), MZSP 28832). **E.** Palpal bulb (*I. carajas*). **F.** Retrolateral depression of palpal bulb (*I. rastratus* (O. Pickard-Cambridge, 1889), MZSP 24215). **G.** Tibial apophysis (*I. pirassununguensis* Fukami & Lucas, 2005, MZSP 15651). **H–I.** Putative slit organ between the branches of the tibial apophysis (*I. camelus*). Abbreviations: PT = promarginal teeth; RT = retromarginal teeth. Scale bars: A–D, F–G = 0.5 mm; E = 1 mm; H–I = 0.05 mm.

Diagnosis

Males of *I. fuscus* (Figs 7A–I) differ from other Neotropical species of the genus, except *I. clarus* and *I. pirassununguensis*, by having palpal tibia with a prominent projection at the base of the retrolateral depression (Fig. 7C). Differs from *I. clarus* and *I. pirassununguensis* by the strong curvature of the median portion of the embolus in dorsal view (also present in *I. nilopolensis*). Differs from *I. nilopolensis* by the distal portion of the embolus having a pronounced embolar lamella with differentiated dorsal and ventral edges (also present in *I. rastratus*) (Figs 7D–F, 8E–F). The females differ from other Neotropical species by the aspect of the spermathecae, composed of two ducts slightly curved outward, with a soft and non-sclerotized basal portion and a median and apical portion strongly sclerotized and by the receptacula with a much larger diameter than the duct width (Fig. 7L).

Type material

Holotype

BRAZIL – **Piauí** • MNHN. Should be in the MNHN, lost.

Neotype (here designated)

BRAZIL – **Piauí** • ♂; Bom Jesus, Reserva Natural Serra do Teimoso; 8°52'52.6" S, 44°58'12" W; 12 Jul.–2 Aug. 2000; F. Curcioi and M. Pixo leg.; IBSP 11887.

Remark: Despite an intensive search, the type specimen of *Idiops fuscus* was not found in the MNHN, being considered lost. In accordance with the criteria of the ICZN Code (ICZN 1999), a neotype is designated here, because the type is lost and the original description is inadequate to stabilize the species. This neotype was based on a specimen collected near the type locality, in the state of Piauí, Brazil.

Other material examined

BRAZIL – **Maranhão** • 1 ♂; Carolina, Campus Hotel Rilton; 7°19'58" S, 47°28'8" W; 10 Dec. 2005; UFMT. – **Piauí** • 1 ♀; São Raimundo Nonato; 9°0'54" S, 42°41'56" W; 6 Dec. 1994; R. Bertani and D. Pinz leg.; IBSP 9574 • 3 ♂♂ (SEM); União, Campus OMOVAPI Ltda; 4°35'9" S, 42°51'50" W; 2006; J. Queiroz *et al.* leg.; CHNUFPI 0036 • 2 ♂♂; same collection data as for preceding; CHNUFPI 0030, CHNUFPI 0038 • 1 ♂; Guaribas, Parque Nacional da Serra das Confusões; 9°12'55.5" S, 43°29'1" W; 14 Dec. 2010; F.S. Silva leg.; CHNUFPI 4033 • 1 ♂; Guaribas, Parque Nacional da Serra das Confusões; 9°13'12.3" S, 43°29'26.7" W; 9–15 Dec. 2010; L.S. Carvalho leg.; CHNUFPI 4034 • 1 ♂; Guaribas, Parque Nacional da Serra das Confusões; 9°13'32.4" S, 43°27'46.9" W; 10 Dec. 2010; F.S. Silva leg.; CHNUFPI 4032. – **Ceará** • 1 ♂; Crato, Parque Estadual Sítio do Fundão; 7°13'3" S, 39°20'21" W; May 2016; IBSP 218297. – **Pernambuco** • 2 ♂♂; Caruaru, Brejo; 8°16'58" S, 35°58'33" W; Nov. 2010; H. Amorin leg.; IBSP 243978, IBSP 243980 • 1 ♂; Serra Talhada; 7°59'9" S, 38°17'45" W; Nov. 2010; H. Amorin leg.; IBSP 243979. – **Bahia** • 1 ♀; Santa Inês, BR420; 13°15'48.7" S, 39°47'2.8" W; 18 Jun. 2018; P.H. Martins and E.A. Araújo leg.; UFMG 24028 • 1 ♀; Brumado, Magnesita; 14°10'51.5" S, 41°42'0.7" W; 24 Feb. 2017; P. Martins leg.; UFMG 24029. – **Mato Grosso** • 1 ♂; Chapada dos Guimarães; 15°27'39" S, 55°45'0" W; 23 Mar. 2001; C. Strussmann leg.; MCTP 12212. – **Minas Gerais** • 1 ♂; Itaobim; 16°31'58.6" S, 41°30'37.5" W; 25 Nov. 2011; I.L.F. Magalhães *et al.* leg.; UFMG 10098. – **Mato Grosso do Sul** • 4 ♂♂; Corumbá, Serra do Amolar; 17°94'32" S, 57°55'47" W; 8–12 May 2001; C. Strussmann leg.; MCTP 12193 • 1 ♀; Bonito; 21°07'15" S, 56°28'55" W; Oct. 2002; C.A. Rheims leg.; IBSP 225943 • 1 ♂; Bonito, Abismo Anhumas; 21°08'60" S, 56°36'00" W; Oct. 2002; C.A. Rheims leg.; IBSP 243976 • 2 ♂♂; same collection data as for preceding; IBSP 243974 • 3 ♂♂; same collection data as for preceding; IBSP 243975.

Description

Male (neotype IBSP 11887)

HABITUS. See Fig. 7A.



Fig. 7. *Idiops fuscus* Perty, 1833. **A–I.** ♂, neotype (IBSP 11887). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀ (IBSP 9574). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Abbreviation: EL = embolar lamella. Scale bars = 1 mm.

MEASUREMENTS. TBL 11.2, CL 5.3, CW 5, LL 0.7, LW 1, SL 3, SW 2.7.

COLOR. Brown carapace and legs, light brown sternum and coxae (Fig. 7A–B), grayish brown abdomen.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 7A. Eye distance AME-ALE 0.6. Eye diameters: AME 0.3, ALE 0.3, PME 0.2, PLE 0.3. Thoracic fovea procurved (Fig. 7A). Labium and sternum without cuspules (Fig. 7B). Basal segment of chelicerae with a prolateral row of 10 large teeth and a retrolateral row of 10 small teeth, grouped in basal half, rastellum with 10–12 spines, distal ones longer (Fig. 8A–B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 7G. Leg I with double tibial apophysis composed of a short, thickened basal branch with a small tapered spine and an apical branch composed of a base twice the size of the basal branch, a thickened apical spine followed by two smaller spines (Figs 7H–I, 8C). Pseudoscopula: tarsus I with apical half with weak coverage (Fig. 7G); tarsus II, III and IV fully covered.

PALP. Tibia with conspicuous retrolateral depression and spines distributed along margin (Fig. 7C); embolus with torsion in apical portion, followed by a pronounced lamella, with upper and lower edges with different sizes (Figs 7D–F, 8E–F).

PALP AND LEG MEASUREMENTS. Palp = 8.8 (3, 1.4, 3, 1.4), I = 22.1 (6.6, 3, 4.7, 5, 2.8), II = 18.9 (5.7, 2.5, 3.9, 4.4, 2.4), III = 16.6 (4.5, 2.3, 2.8, 4.6, 2.4), IV = 22.7 (5.9, 2.7, 5.2, 6, 2.9).

SPINATION. Palp: Ti r20, Ta d0-0-8. Leg I: Pa v0-0-4, Mt v0-12, Ta p0-1-1, r1-1-1. Leg II: Ti v0-1-1-2, Mt v1-2-1-3, Ta p1-1-2, r1-1-3. Leg III: Fe d1-2-2, Pa p3-2-4, r0-0-4, Ti d0-1-0, v1-2-2, p1-1-4, r1-1-2, Mt v2-2-1-3, p1-1-1, r3-1-0, Ta p1-2-3, r0-1-1. Leg IV: Fe d1-1-2, Ti v1-1-3, Mt v1-1-1-3, Ta p1-1-4, r0-0-2.

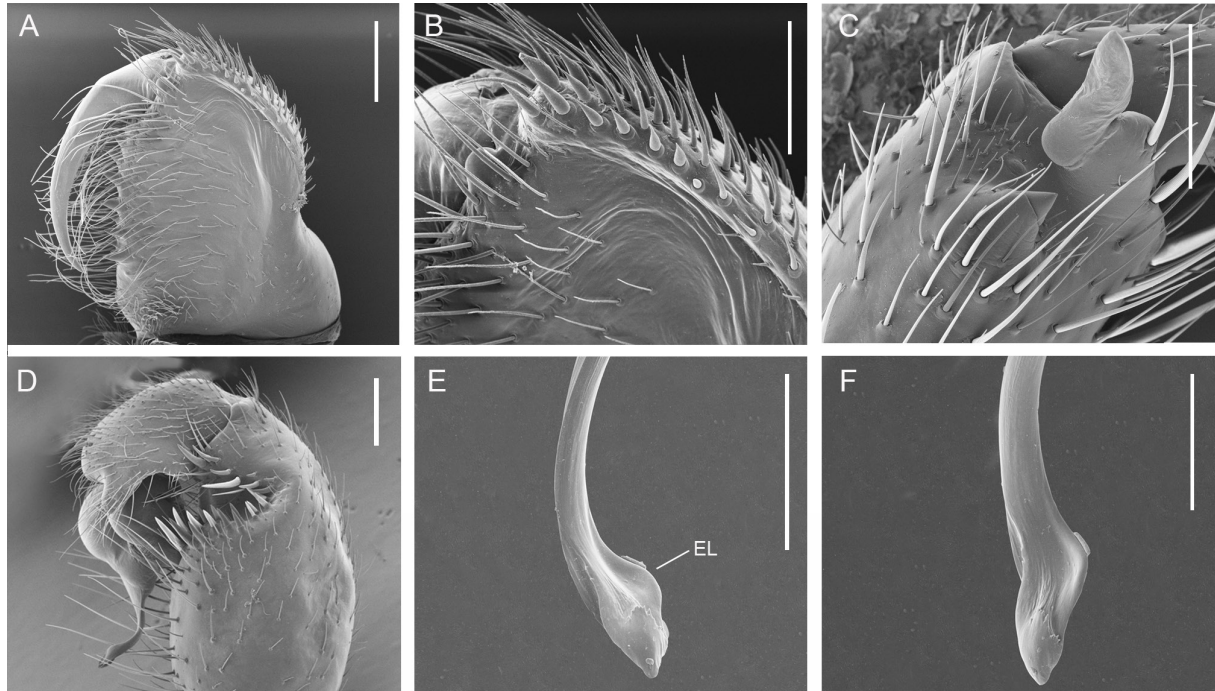


Fig. 8. Scanning electron micrographs of *Idiops fuscus* Perty, 1833, ♂ (CHNUFPI 0036). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the distal portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: EL = embolar lamella. Scale bars: A, C–D = 0.5 mm; B = 0.3 mm; E–F = 0.2 mm.

Female (IBSP 9574)

HABITUS. See Fig. 7J.

MEASUREMENTS. TBL 18.9, CL 8.2, CW 6.9, LL 1.2, LW 1.5, SL 4.7, SW 4.

COLOR. Brown carapace and legs, light brown sternum and coxae (Fig. 7J–K), grayish brown abdomen.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 7J. Eye tubercle: 1.75 long, 1.83 wide. Distance AME–ALE 1. Eye diameters: AME 0.4, ALE 0.4, PME 0.3, PLE 0.5. Thoracic fovea procurved (Fig. 7J). Labium with 7 cuspules (Fig. 7K). Maxilla with 56 cuspules, distributed over anterior ventral half (Fig. 7K). Basal segment of chelicerae with a prolateral row of 10 large teeth and a retrolateral row of 10 small teeth, grouped in basal half. Robust rastellum, presenting 18–20 short and thick spines on a tubercle.

PALP AND LEG MEASUREMENTS. Palp = 12.3 (4.2, 2.7, 2.8, 2.6), I = 13.6 (4.6, 2.9, 2.9, 2.3, 0.9), II = 12.95 (4.3, 2.9, 2.5, 2.2, 1), III = 13.8 (3.7, 3.1, 2.3, 2.9, 1.85), IV = 19.4 (5.4, 3.8, 4.1, 4, 2.1).

SPINATION. Palp: Fe p0-0-2, Pa p0-0-1, Ti p3-6-7, r3-5-12, Ta v0-0-7, p7-7-7, r11-9-7. Leg I: Ti p3-4-8, r3-6-12, Mt p9-6-5, r8-7-5, Ta v0-0-5, p4-3-2, r4-2-2. Leg II: Ti p3-3-5, r1-1-1, Mt p9-7-7, r3-3-2, Ta v0-0-3, p4-5-2, r3-1-0. Leg III: Pa p3-5-10, r0-0-2, Ti v0-0-2, p1-3-3, r0-2-6, Mt v1r-1r-2, p7-1-1, r7-2-1, Ta v0-3-8. Leg IV: Pa p17-0-0, Ti v1-1-1, Mt v1-1-1-3, Ta v0-3-8.

SPERMATHECAE. Duct with apical half thicker than its basal half, oval receptacula (Fig. 7L).

Distribution

Brazil. Widely distributed, occurring in areas with phytophysionomies in the Caatinga and Cerrado. Records for Central-West region (Mato Grosso, Mato Grosso do Sul), Northeast region (Bahia, Ceará, Maranhão, Paraíba, Pernambuco and Piauí) and the northern part of Minas Gerais (Fig. 4C).

Idiops argus Simon, 1889

Figs 4B, 9

Idiops argus Simon, 1889: 180, pl. 2 fig. 1.

Idiops fulvipes Simon, 1889: 181. **Syn. nov.**

Idiops argus – Dupérré & Tapia 2021: 272, fig. 14a–d.

Idiops fulvipes – Dupérré & Tapia 2021: 273, fig. 15a–d.

Diagnosis

Females of *Idiops argus* differ from the other Neotropical species by having the spermathecae with a unique morphology within the genus, with a long and spiral duct followed by an oval receptacle (Fig. 9).

Type material

Lectotype (here designated)

VENEZUELA – **Carabobo** • ♀; Puerto Cabello, San Esteban; 1889; E. Simon leg.; MNHN 4169.

Paralectotypes

VENEZUELA – **Carabobo** • 1 ♀, 2 juvs; same collection data as for lectotype; MNHN 4169a.

Holotype of *I. fulvipes* Simon, 1889

VENEZUELA – Miranda • juv.; La Silla de Caracas, Parque Nacional El Ávila; 10°32'0" N, 66°52'0" W; 1889; MNHN.

Remark: The type specimen of *Idiops fulvipes* was examined and recognized as a juvenile of *I. argus*. Although the spermathecae were presented by Dupérré & Tapia (2021: fig. 15c–d), we detected that it is a pre-adult female of *I. fulvipes*.

Description

Male

Unknown.

Female (MNHN 4169)

MEASUREMENTS. TBL 13.7, CL 6.7, CW 5.6, LL 0.9, LW 1.2, SL 3.9, SW 3.5.

COLOR. Carapace, sternum and legs brownish. Abdomen ventrally brownish and dorsally gray.

PROSOMA. Eye tubercle: 1.9 long; 1.7 wide. AME-ALE distance 1.2. Eye diameters: AME 0.3, ALE 0.5, PME 0.3, PLE 0.4. Thoracic fovea procurved. Labium with six cuspules. Maxilla with 54 cuspules, distributed over anterior ventral half. Basal segment of chelicerae with a prolateral row of 8 large teeth and 6 retrolateral small teeth, grouped in basal half.

PALP AND LEG MEASUREMENTS. Palp = 11.4 (3.9, 2.4, 2.4, 2.4), I = 12.48 (4.04, 2.80, 2.64, 2.04, 0.96), II = 11.1 (3.68, 2.52, 2.16, 1.84, 0.92), III = 11.2 (3.2, 2.6, 1.8, 2, 1.6), IV = 15.9 (4.3, 3.1, 3.5, 3.2, 1.8).

SPINATION. Palp: Fe p0-0-1, Pa p0-0-1, r0-0-1, Ti p8-7-13, r7-7-12, Ta v0-0-3, p13-12-9, r13-8-9. Leg I: Ti p6-8-10, r6-7-15, Mt p12-10-7, r11-9-8, Ta v0-1-6, p4-4-2, r5-4-2. Leg II: Ti p3-5-8, r1-1-1, Mt p13-11-6, r1-2-2, Ta v0-2-4, p5-4-3, r4-2-1. Leg III: Pa p6-7-12, r0-0-3, Ti v2-2-2, p2-3-6, r1-2-4, Mt v2-2-2, p5-3-2, r2-2-1, Ta v0-4-11. Leg IV: Pa p29-3-0, Ti v1-1-2, Ta v4-5-10.

SPERMATHECAE. Long spiral ducts and bean-shaped receptacula (Fig 9).

Distribution

Venezuela. Carobobo and Miranda (Fig. 4B).

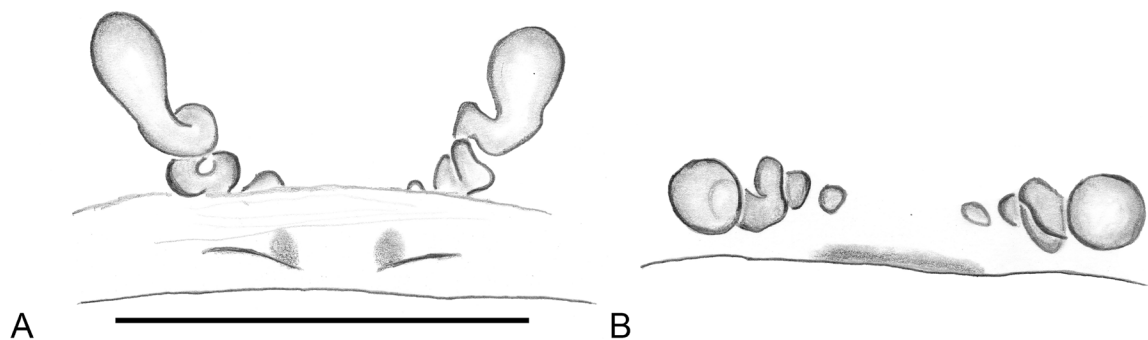


Fig. 9. *Idiops argus* Simon, 1889, ♀, genitalia, lectotype (MNHN 4169). **A.** Dorsal view. **B.** Frontal view. Scale bars = 1 mm.

Idiops cambridgei Ausserer, 1875

Figs 4B, 10

Idiops cambridgei Ausserer, 1875: 145.

Idiops cambridgei – Raven 1985: 158.

Pseudidiops cambridgei – Pocock 1895: 223.

Diagnosis

The female of *Idiops cambridgei* differs from that of the other Neotropical species by the spermathecae having ducts with strong outward curvature in the transition between duct and receptacle, and small receptacula, with diameter slightly larger than the width of the duct (Fig. 10).

Type material

Holotype

COLOMBIA • ♀; Bogotá; 1889; BMNH 1890.7.1.321.

Description

Male

Unknown.

Female (holotype BMNH 1890.7.1.321)

MEASUREMENTS. TBL 12.9, CL 7, CW 5.4, LL 0.9, LW 1.2, SL 3, SW 3.

COLOR. Carapace and legs brown. Sternum, coxae and abdomen brownish.

PROSOMA. Eye tubercle: 1.4 long; 1.3 wide. AME-ALE distance 0.5. Eye diameters: AME 0.3, ALE 0.3, PME 0.2, PLE 0.3. Thoracic fovea procurved. Labium with 16 cuspules. Maxilla with 114 cuspules, distributed throughout ventral area. Basal segment of chelicerae with a prolateral row of 6 large teeth and 3 retrolateral small teeth, grouped in basal half.

PALP AND LEG MEASUREMENTS. Palp = 8.3 (2.9, 1.8, 1.8, 1.8), I = 9.9 (3.4, 2.4, 1.9, 1.3, 0.9), II = 8.7 (2.9, 2, 1.7, 1.3, 0.8), III = 8.4 (2.4, 1.9, 1.5, 1.6, 1), IV = 11.2 (3.3, 2.3, 2.4, 2.1, 1.1).

SPINATION. Palp: Fe p0-0-3ap, r0-0-3ap, Pa p0-0-1, Ti p5-5-7, r2-4-7, Ta p7-6-6, r8-9-8. Leg I: Fe r0-0-3, Ti p5-5-5, r4-4-8, Mt p7-6-7, r3-3-2, Ta p3-2-1, r2-1-1. Leg II: Ti p2-4-3, r3-3-1, Mt p10-6-4, r4-3-1, Ta

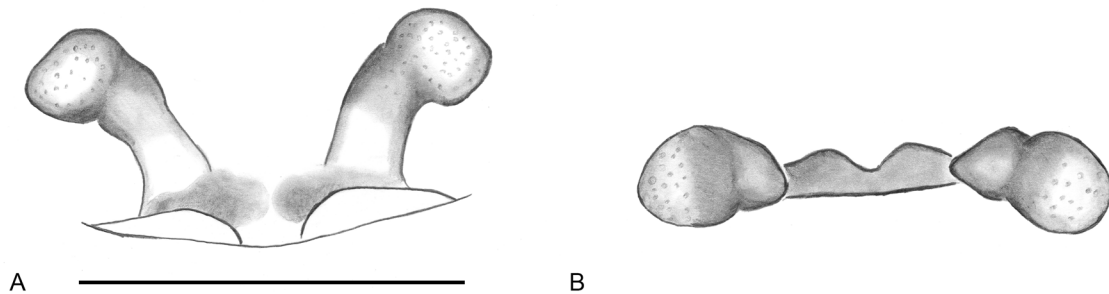


Fig. 10. *Idiops cambridgei* Ausserer, 1875, ♀, genitalia, holotype (BMNH 1890.7.1.321). **A.** Dorsal view. **B.** Frontal view. Scale bars = 1 mm.

p3-2-2, r2-0-0. Leg III: Pa p5-9-25, r0-1-1, Ti p5-13-19, r4-4-6, Mt v0-1-2, p8-5-5, r5-0-1, Ta v0-0-4. Leg IV: Pa p31-31-23, Ti v0-0-2, Mt v1-2-3ap, Ta v0-3-3.

SPERMATHECAE. Spherical receptacula. Duct with basal translucent area and median area sclerotized (Fig. 10).

Distribution

Colombia. Known only from the type locality (Fig. 4B).

Idiops camelus (Mello-Leitão, 1937) Figs 2C–D, 5A, 6D, H–I, 11–12

Pseudidiops camelus Mello-Leitão, 1937: 1, figs 1–2.

Idiops montealegrensis Soares, 1944: 156, figs 2–4. Synonymized by Fukami & Lucas 2005: 6, figs 6–7.

Idiops camelus – Raven 1985: 158. — Fukami & Lucas 2005: 6, figs 6–7.

Idiops montealegrensis – Bücherl 1957: 383, figs 2–2a.

Diagnosis

Males of *Idiops camelus* (Fig. 11A–I, 12) differ from other Neotropical species by having the apical half of the embolus tapering (Fig. 11D–F), with the presence of a distal embolar tooth (also present in *I. clarus* and *I. germaini*) close to the opening of the sperm duct (Fig. 12E–F). Differs from *I. clarus* and *I. germaini* by having the apical portion of the embolus more expanded (Fig. 12E–F). Females (Fig. 11J–L) have spermathecae with spherical receptacles slightly wider than the ducts, with a subtle constriction between duct and receptacle (Fig. 11L).

Type material

Holotype of *Pseudidiops camelus* Mello-Leitão, 1937

BRAZIL – São Paulo • ♀; Corumbataí; IBSP 3429.

Holotype of *Idiops montealegrensis* Soares, 1944

BRAZIL – São Paulo • ♂; Amparo, Monte Alegre, Fazenda Santa Maria; Nov. 1942; F. Lane leg.; MZSP 326.

Other material examined

BRAZIL – Minas Gerais • 1 ♀; Lima Duarte, Parque Estadual de Ibitipoca; 21°43'0" S, 43°54'0" W; 21 Oct. 1995; R. Baptista leg.; MNRJ • 1 ♀; Monte Verde, trail south of Monte Verde; 22°51'27" S, 46°1'46" W; V. Ghirotto leg.; CAD 827 • 8 ♂♂; Itajubá, Horto Florestal Anhumas; 22°25'36" S, 45°28'10" W; Mar. 2010; W.C.G.G. Castro leg.; UFMG 4274 • 7 ♂♂; same collection data as for preceding; UFMG 4270 • 7 ♂♂; same collection data as for preceding; UFMG 4272 • 7 ♂♂; same collection data as for preceding; UFMG 4275 • 8 ♂♂; same collection data as for preceding; UFMG 4273 • 8 ♂♂; same collection data as for preceding; UFMG 4271 • 2 ♂♂; Cristina, Parque Ecológico Municipal; 22°12' S, 45°11' W; Sep. 2009; C.G.G. Castro leg.; UFMG 4232 • 1 ♂; Nova Lima, RPPN Mata Samuel de Paula; 20°00' S, 43°52' W; 18 Oct. 2006; J.P.P.P. Barbosa *et al.* leg.; UFMG 2530 • 1 ♀; Bueno Brandão, 1.5 km from Socorro/Bueno Brandão; 22°26'27" S, 46°21'3" W; 22 Jul. 2010; R.P. Indicatti and B. Gambaré leg.; IBSP 210359 • 2 ♂♂; Delfim Moreira, Fazenda Boa Esperança; 22°34'33" S, 45°19'19.7" W; 3 Apr. 2014; A. Nogueira *et al.* leg.; IBSP 210175 • 1 ♀; Viçosa, Campus UFV, Recanto de Cigarras; 20°45'37" S, 42°52'4" W; 6 Mar. 2013; E.S. Barreto, A.A. Zaccaro and G.M. Diniz leg.; IBSP 221797. – Rio de Janeiro • 13 ♂♂, 1 ♀, 2 juvs; Itatiaia, Parque Nacional do Itatiaia; 22°22'31" S, 44°39'44" W; 20–30 May 2013;

R.P. Indicatti and F.U. Yamamoto leg.; IBSP 225155 • 1 ♀; Itatiaia, Parque Nacional do Itatiaia; 22°22'31" S, 44°39'44" W; 19–21 Mar. 2019; R.F. Ferreira, R. Indicatti, A.G. Lima and I. Meireles leg.; CAD 289 • 1 ♂; Itatiaia, Parque Nacional do Itatiaia, Cachoeira Poranga; 22°26'25.7" S, 44°36'40" W; 17 Apr. 2014; R. Pinto da Rocha, A. Benedeti, D. Chiviri and J. Cabra leg.; IBSP 210439 • 2 ♂♂; Itatiaia, Parque Nacional do Itatiaia, Casa Jardim Botânico; 22°27'07" S, 44°36'35" W; 17 Apr. 2014; R. Pinto da Rocha, A. Benedeti, D. Chiviri and J. Cabra leg.; IBSP 210440. – **Sao Paulo** • 2 ♀♀; São José do Barreiro, Parque Nacional da Serra da Bocaina, behind the accommodation; 23°2'30" S, 44°39'42" W; 24–26 Mar. 2019; R.F. Ferreira, A. Galletti, I. Meirelles and R. Indicatti leg.; CAD 830 • 1 ♂; São José do Barreiro, Parque Nacional da Serra da Bocaina; 22°43' S, 44°36' W; 28 Apr.–3 May 2002; Equipe Biota leg.; IBSP12372 • 1 ♂; Salesópolis, Estação Biológica de Boracéia; 23°39' S, 45°53' W; Jun. 2003; J.P.L. Guadanucci leg.; MZSP 27668 • 1 ♂; Salesópolis, Estação Biológica de Boracéia; MZSP 21159 • 2 ♂♂; Salesópolis, Estação Biológica de Boracéia; 11 May. 2003; J.P.L. Guadanucci leg.; MZSP 22005 • 8 ♂♂; Salesópolis, Estação Biológica de Boracéia; 7 Mar. 2003; J.P.L. Guadanucci leg.; MZSP 23714 • 1 ♀; Salesópolis, Estação Biológica de Boracéia; Dec. 1949; I. Travassos leg.; MZSP 11326 • 1 ♂; Salesópolis, Estação Biológica de Boracéia; Mar. 2006; M.U. Prado *et al.* leg.; IBSP 14547 • 1 ♀; Mogi-Salesópolis Road, Km 91; 25 Jun. 2002; R. Martins *et al.* leg.; IBSP 13111 • 1 ♂; Amparo, Fazenda Santa Maria; 22°42'3" S, 46°45'50" W; Nov. 1942; F. Lane leg.; MZSP 326 • 4 ♀♀; Iperó, Floresta Nacional de Ipanema; 23°25'49" S, 47°37'22" W; 10–14 Oct. 2019; J.P.L. Guadanucci, R.P. Indicatti and A. Galletti-Lima leg.; CAD 828 • 3 ♂♂; Santa Gertrudes, Fazenda Paraguaçu; 22°27'25" S, 47°31'48" W; J.H.B. Medeiros leg.; IBSP 243977 • 1 ♀; Barra Bonita; 22°29'42" S, 48°33'28" W; 6 Nov. 1979; O. Froelich leg.; MZSP 13876 • 2 ♂♂; Botucatu, Fazenda Edgardia, Mata do Bixiguento; 22°50'25.08" S, 48°20'48.25" W; Apr. 2014; R.C.B. Paradero leg.; IBSP 229983 • 4 ♂♂; Luis Antonio, Estação Ecológica de Jataí; 21°37'3" S, 47°45'55" W; 6–12 Dec. 2009; A.G. Cristovão leg.; IBSP 220958 • 3 ♂♂; same collection data as for preceding; IBSP 220944 • 1 ♂; same collection data as for preceding; IBSP 220949 • 3 ♂♂; Luis Antonio, Estação Ecológica de Jataí; 3–7 Oct. 2009; A.G. Cristovão leg.; IBSP 220948 • 5 ♂♂; same collection data as for preceding; IBSP 220961 to 220963, IBSP 220966 to 220967 • 8 ♂♂; Luis Antonio, Estação Ecológica de Jataí; Jan. 2010; A.G. Cristovão leg.; IBSP 243964, IBSP 243966 to 243972 • 2 ♂♂; same collection data as for preceding; IBSP 43965 • 2 ♂♂; Jacareí, Campos Vila Branca, UNIVAP; 23°13' S, 45°58' W; 2007; N.M.C. Velho *et al.* leg.; IBSP 141829 • 33 ♂♂; same collection data as for preceding; IBSP 141786, IBSP 141788 to 141791, IBSP 141796, IBSP 141798 to 141800, IBSP 141804 to 141810, IBSP 141818 to 141821, IBSP 141823 to 141828, IBSP 141831 to 141832, IBSP 141834 to 141835, IBSP 141837 to 141838, IBSP 143973 • 2 ♂♂; same collection data as for preceding; IBSP 141792 • 2 ♂♂; same collection data as for preceding; IBSP 141794 • 2 ♂♂; same collection data as for preceding; IBSP141802 • 2 ♂♂; same collection data as for preceding; IBSP 141822 • 2 ♂♂; same collection data as for preceding; IBSP 141830 • 1 ♀; Mococa; 21°28'4" S, 47°0'18" W; 6 Mar. 1991; J.A. Azevedo leg.; IBSP 11834 • 1 ♂; Itapeperica da Serra; 23°43'1" S, 46°50'56" W; IBSP 212207 • 1 ♂; Mairiporã, Parque Estadual da Serra da Cantareira; 23°25' S, 46°37' W; 24 Feb 2001; C.L. Firmo leg.; MCN 41851 • 2 ♂♂; Mairiporã, Parque Estadual da Serra da Cantareira, Pinheirinho; 23°25' S, 46°37' W; 17 Dec. 2000; MZSP 25748, MZSP 26029 • 3 ♂♂; Mairiporã, Parque Estadual da Serra da Cantareira, Pinheirinho; 24 Feb. 2001; MZSP 26030 to 26032 • 2 ♂♂; Mairiporã, Parque Estadual da Serra da Cantareira, Pinheirinho; 27 Apr. 2001; MZSP 26035 to 26036 • 1 ♂; Mairiporã, Parque Estadual da Serra da Cantareira, Pinheirinho; 1 Jul. 2001; MZSP 26033 • 1 ♂; Mairiporã, Parque Estadual da Serra da Cantareira, Pinheirinho; 27 May 2001; MZSP 26034 • 1 ♂; Paraibuna, Sitio Amici; 23°23'9" S, 45°39'43" W; 13 Jul. 2003; M.B. da Silva leg.; MZSP 21820 • 1 ♀; Jaú; 22°17'45" S, 48°33'28" W; 21 Dec. 2011; A.M. Giroti leg.; IBSP 210069 • 1 ♂; Paraibuna, Sitio Amici; 2008; A.M. Giroti leg.; IBSP 151641 • 1 ♀; Campinas, Condomínio Caminhos de San Conrado; 22°54' S, 47°3' W; 9 Jan. 2019; V. Ghirotto leg.; CAD 831 • 1 ♀; Campinas; 24 Aug. 1974; O. Froelich leg.; MZSP 13880 • 1 ♂; Jundiaí, Parque Estadual Serra do Japi; 23°17' S, 46°59' W; 13 Nov. 2007; J. Sobjac leg.; UFMG 6475 • 1 ♂; Itirapina; 22°15'10" S, 47°49'22" W; 19 Jul. 2000; G. Machado leg.; MZSP 20612 • 1 ♂; Estação Ecológica de Itirapina; 22°13'10" S, 47°53'54" W; 4–9 Oct. 2001; E.S. Cunha leg.; IBSP 13380 • 1 ♂; Santo André,

Reserva Biológica do Alto da Serra de Paranapiacaba; 23°46' S, 46°18' W; 20 Mar. 2007; M.U. Prado *et al.* leg.; IBSP 14566 • 1 ♀; Santo André, Reserva Biológica do Alto da Serra de Paranapiacaba; 17 Nov. 2006; M.U. Prado *et al.* leg.; IBSP 14567 • 1 ♀; São Carlos; 22°0'0" S, 47°53'27" W; 9 Jun. 1946; F. Salto leg.; MZSP E-3095 • 1 ♂; Itapevi, Condomínio Trensurb; 23°32'56" S, 46°56'2" W; 27 Oct. 2000; V. Onofrio and D.M.B.B. Batesti leg.; IBSP 123524 • 1 ♂; Itapevi, Condomínio Trensurb; 2000; V. Onofrio and D.M.B.B. Batesti leg.; IBSP 123525 • 1 ♀; Mogi das Cruzes; 23°31'26,27" S, 46°11'0,685" W; 30 Oct. 2009; R. Quadros leg.; UFMG 6265 • 9 ♂♂; Mogi das Cruzes, Parque Natural Municipal Serra do Itapety; 23°29' S, 46°12' W; 13 Nov.–19 Dec. 2003; Equipe Biota leg.; IBSP 13391, IBSP 13393, IBSP 13395 to 13396, IBSP 13398 to 13399, 13401 to 13403 • 1 ♂; same locality as for preceding; 5 Jun. 2003; IBSP 13392 • 2 ♂♂; Mogi das Cruzes, Parque Natural Municipal Serra do Itapety; May 2003; P. Goldoni *et al.* leg.; IBSP 10189 to 10190 • 1 ♂; Itapevi, Parque Natural Municipal Serra do Itapety; Feb.–Mar. 2004; P. Goldoni *et al.* leg.; IBSP 11781 • 2 ♂♂; Itapevi, Parque Natural Municipal Serra do Itapety; 2014–2015; C.C. Barbosa leg.; IBSP 258651 to 258652 • 1 ♂; São Bernardo do Campo; 23°41'38" S, 46°33'54" W; 17 Apr. 2009; Pref. Mun. SB Campo leg.; IBSP 151640 • 2 ♀♀; Socorro, Gruta do Anjo; 22°35'27" S, 46°31'44" W; 19–26 Dec. 2010; R.P. Indicatti and B. Gambaré leg.; IBSP 210350 to 210351 • 1 ♀; São Paulo; 23°25' S, 46°37' W; 5 Feb. 1996; L.A. Leme *et al.* leg.; IBSP 10569 • 1 ♂; São Paulo; 21 Oct. 2004; R.M. Nori leg.; IBSP 11040 • 1 ♂; São Paulo; 20 Oct. 2002; D.P.C. Souza leg.; IBSP 9961 • 1 ♂; São Paulo; Oct. 1971; A. Guarnieri leg.; IBSP 2113 • 1 ♂; São Paulo; 3 Oct. 1991; N. Cochrane leg.; IBSP 8256 • 1 ♀; São Paulo; 1937; A. Franci leg.; IBSP 3723 • 1 ♀; São Paulo, Serra da Cantareira; 27 Aug. 1999; F.L. da Silva leg.; IBSP 9579 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira; 23°25' S, 46°37' W; 17 Dec. 2000; C.L. Firmo leg.; MCN 41849 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira; 27 Apr. 2001; A.D. Brescovit leg.; MCN 41850 • 11 ♂♂; São Paulo, Parque Estadual da Serra da Cantareira; 3 Mar.–5 Jul. 2000; S. Favorito *et al.* leg.; MZSP 21316 • 2 ♂♂; same collection data as for preceding; MZSP 21324 • 2 ♂♂; same collection data as for preceding; MZSP 21325 • 2 ♂♂; same collection data as for preceding; MZSP 21314 • 3 ♂; same collection data as for preceding; MZSP 21322 • 6 ♂♂; same collection data as for preceding; MZSP 21323 • 2 ♂♂; same collection data as for preceding; MZSP 21313 • 4 ♂♂; same collection data as for preceding; MZSP 21326 • 2 ♂♂; same collection data as for preceding; MZSP • 2 ♂♂; same collection data as for preceding; MZSP 21309 • 6 ♂♂; same collection data as for preceding; MZSP 21306 • 7 ♂♂; same collection data as for preceding; MZSP 21305 • 8 ♂♂; same collection data as for preceding; MZSP 21304 • 5 ♂♂; same collection data as for preceding; MZSP 21320 • 18 ♂♂; same collection data as for preceding; MZSP 21307, MZSP 21315, MZSP 21329, MZSP 21333, MZSP 21335 to 21336, MZSP 21338 to 21342, MZSP 21345 to 21346, MZSP 21348 to 21352 • 2 ♀♀; same collection data as for preceding; MZSP 21311, MZSP 21330 • 2 ♂♂; same collection data as for preceding; IBSP 13088 • 6 ♂♂; same collection data as for preceding; IBSP 13082, IBSP 13084, IBSP 13087, IBSP 13089, IBSP 13094 to 13095, IBSP 13095 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira; 29 Apr. 2001; R. Pinto da Rocha leg.; MCN 41848 • 1 ♀; São Paulo, Parque Estadual da Serra da Cantareira; 18 Aug. 1999; F.L. da Silva leg.; IBSP 7913 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira; 24 Jan. 2001; F.L. da Silva leg.; IBSP 130688 • 1 ♂; same locality as for preceding; 27 Apr. 2001; F.L. da Silva leg.; IBSP 130689 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira; 1 Aug. 2001; F.L. da Silva leg.; IBSP 130690 • 1 ♂; same locality as for preceding; 1 Jul. 2001; IBSP 130687 • 1 ♂; same locality as for preceding; 27 May 2001; IBSP 130686 • 1 ♂; same collection data as for preceding; IBSP 130691 • 9 ♂♂; São Paulo, Parque Estadual da Serra da Cantareira; 17 Jul. 2000–1 Aug. 2001; C.L. Firmo leg.; MZSP 24046, MZSP 26027, MZSP 26037, MZSP 26039 to 26040, MZSP 26042, MZSP 26044 to 26046 • 2 ♂♂; same collection data as for preceding; MZSP 26041, MZSP 26038 • 5 ♂♂; São Paulo, Parque Estadual da Serra da Cantareira, Pedra Grande; 23°25' S, 46°37' W; 17 Dec. 2000–1 Jul. 2001; C.L. Firmo leg.; MZSP 26023 to 26026, MZSP 26028 • 1 ♂; São Paulo, Parque Estadual da Serra da Cantareira, Pedra Grande; 25 Aug.–3 Sep. 2000; C.C. Aires *et al.* leg.; MZSP 21328 • 1 ♀; São Paulo, Parque Estadual do Jaraguá; 23°27'34.3" S, 46°46'2.8" W; Apr. 2015; R.P. Indicatti and J.P.L. Guadanucci leg.; CAD 598 • 1 ♀; same locality as for preceding; Mar. 2015; R.P. Indicatti and J.P.L. Guadanucci leg.; CAD 605 • 1 ♀; São Paulo, Parque Estadual do Jaraguá;

18 Jul. 2010–31 Aug. 2012; R.P. Indicatti leg.; IBSP 171840 • 6 ♂♂; same collection data as for preceding; IBSP 171802, IBSP 171842 to 171843, IBSP 171845 to 171847 • 1 ♂; São Paulo, Jardim Botânico de São Paulo; 23°38'30.7" S, 46°37'14.2" W; 20 Oct. 1950; Kulmann leg.; MZSP 7800 • 1 ♀; São Paulo, Ipiranga; 23°35'07.8" S, 46°35'56.4" W; 5 Jan. 1998; MZSP 16060 • 1 ♀; São Paulo, Santo Amaro; 23°25' S, 46°37'W; 16–17 Dec. 1966; P. de Biasi leg.; MZSP 5399 • 1 ♀; São Paulo, Campus USP; 23°33'34" S, 46°43'26" W; 10 Sep. 1975; O. Froelich leg.; MZSP 13886 • 1 ♂; São Paulo, Mata do Viveiro; 1980; MZSP 19530 • 1 ♂; São Paulo, Instituto de Pesquisas Energéticas e Nucleares; 12 Aug. 1991; P.I. Spencer leg.; IBSP 9576 • 2 ♂♂; São Paulo, Campus Instituto Butantan; 23°33' S, 46°43' W; 12–13 Nov. 2012; Equipe IBSP leg.; IBSP 210144 • 1 ♂; São Paulo, Campus Instituto Butantan; 30 Jul. 2009; F.P. Santos leg.; IBSP 210130 • 1 ♂; São Paulo, Campus Instituto Butantan; IBSP 9592 • 1 ♂; São Paulo, Campus Instituto Butantan; 20 Oct. 1988; A. Hoge leg.; IBSP 9563 • 1 ♂; São Paulo, Campus Instituto Butantan; 7 Aug. 2003; D. Candiani and C.S. Fukushima leg.; IBSP 9835 • 1 ♂; São Paulo, Campus Instituto Butantan; Sep. 1992; C. Bertin leg.; IBSP 9590 • 2 ♂♂; São Paulo, near the Instituto Butantan; 30 Oct. 2003; IBSP 12344 • 3 ♂♂; São Paulo, Parque da Previdência; 23°34' S, 45°43' W; May 2000–Feb. 2001; D. Candiani leg.; IBSP 14398, IBSP 14742 to 14743 • 2 ♀♀; São Paulo, Parque Ilha dos Eucaliptos, Represa Guarapiranga; 23°40'17" S, 46°43'39" W; 7–13 Apr. 2005; I. Cizauskas leg.; IBSP 13788, IBSP 13790 • 4 ♂♂; São Paulo, Parque do Estado; 23°38'24.6" S, 46°37'3.1" W; 26 Jul.–1 Aug. 2002; Valvassori leg.; IBSP 13340 to 13342, IBSP 13345 • 13 ♂♂; São Paulo, Parque dos Príncipes; 23°25' S, 46°37' W; 2005; IBSP 13234b • 1 ♂; São Paulo, Morumbi; 23°36'0" S, 46°43'12" W; Oct. 1968; O. Mamino leg.; IBSP 293 • 1 ♂; São Paulo, Parque Estadual Alberto Loefgren, Mandaqui; 23°27'33" S, 46°38'2" W; May 1973; IBSP 102438 • 1 ♀; highway Raposo Tavares, Km 21; 21 Jul. 1977; P. Aliche leg.; IBSP 104270 • 10 ♂♂; Cotia, Reserva do Morro Grande; 23°38'58.12" S, 46°57'45.99" W; Jul. 2006; C. Bragagnollo leg.; MZSP 28831 • 9 ♂♂ (SEM); same collection data as for preceding; MZSP 28832 • 3 ♂♂; same collection data as for preceding; MZSP 28823 • 2 ♀♀; Itapetininga, Estação Ecológica de Angatuba; 23°24'57" S, 48°21'39" W; 11–16 Nov. 2002; C. Firmo *et al.* leg.; IBSP 258658 to 258659 • 2 ♂♂; Itanhaém, Estação Ecológica São Camilo, Suarão; 24°10'60" S, 46°46'60" W; Dec. 2010; G. Aparecida and M. Pessoa leg.; IBSP 224494 to 224495 • 1 ♂; Peruíbe, Estação Ecológica da Juréia Itatins, Núcleo Arpoador; 24°23'13" S, 47°1'3,3" W; 21–26 Apr. 2012; G. Azevedo and J.P.P.P. Barbosa leg.; UFMG 11788. – **Santa Catarina** • 4 ♂♂; Balneário Camboriú; 26°59'27" S, 48°38'38.6" W; Jun. 2009–Jun. 2010; M. Zucatelli leg.; IBSP 245677 to 245680.

Description

Male (MZSP 26023)

HABITUS. See Fig. 11A.

MEASUREMENTS. TBL 12.8, CL 7, CW 5.9, LL 0.9, LW 1.2, SL 3.4, SW 4.

COLOR. Brownish carapace and legs, sternum and coxae yellow brown (Fig. 11A–B), abdomen brown.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 11A. Eye tubercle: 1.6 long; 1.5 wide. Distance AME–ALE 0.9. Eye diameters: AME 0.4, ALE 0.4, PME 0.4, PLE 0.5. Thoracic fovea procurved (Fig. 11A). Labium and sternum without cuspules (Fig. 11B). Basal segment of chelicerae with a prolateral row of 9 teeth, 7 large and 2 small, and 6 small retrolateral teeth (Fig. 12A). Salient rastellum, presenting 12–13 spines of the same size (Fig. 12A–B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 11G. Leg I with double tibial apophysis, with wider apical branch, thickened base and conical distal area (Figs 11H–I, 12C). Pseudoscopula: tarsus I–III covered, IV absent.

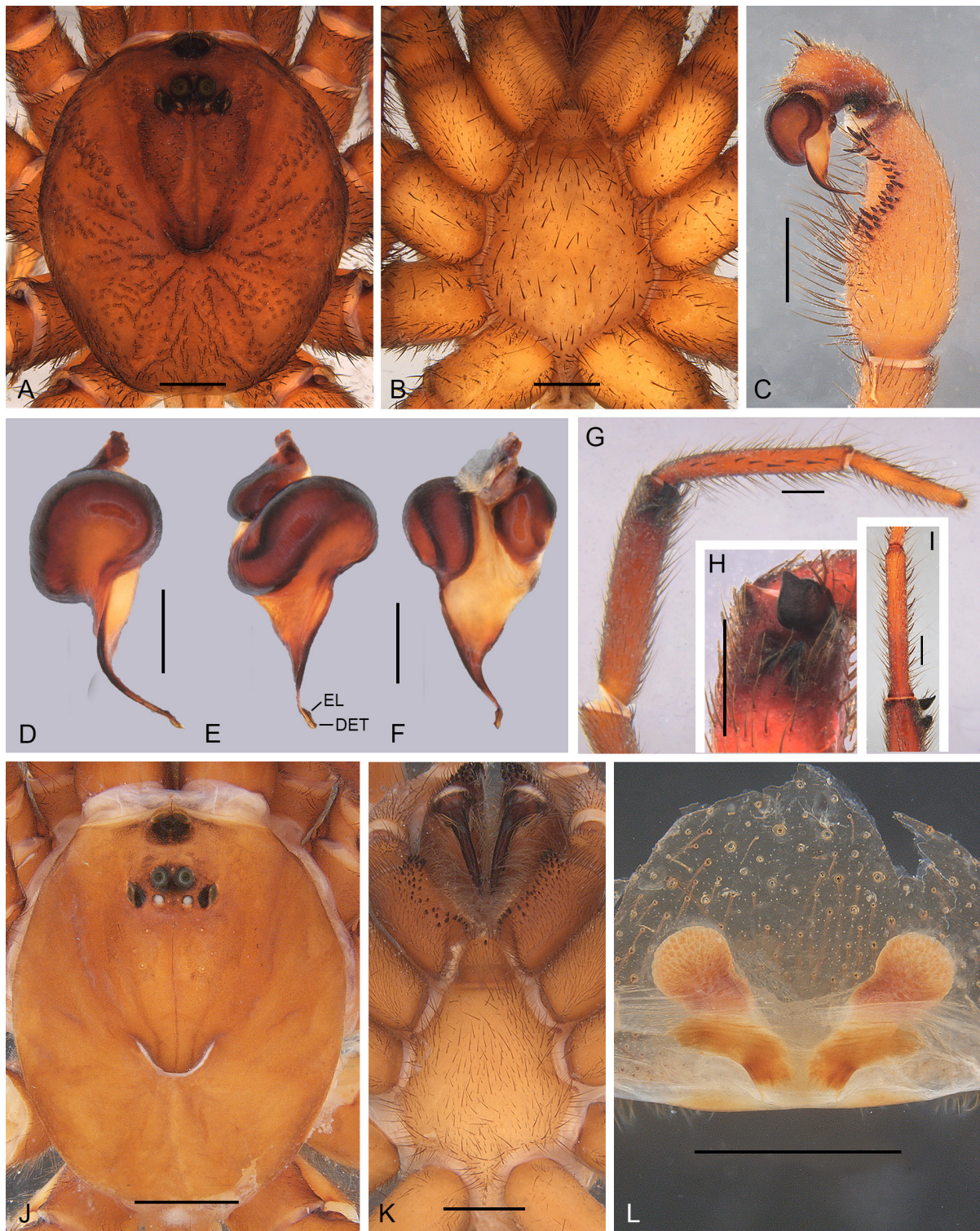


Fig. 11. *Idiops camelus* (Mello-Leitão, 1937). A–I. ♂ (MZSP 26023). A. Prosoma (dorsal view). B. Prosoma (ventral view). C. Part of palp (retrolateral view). D–F. Palpal bulb. D. Dorsal view. E. Retrolateral view. F. Prolateral view. G. Tibia, metatarsus and tarsus I (prolateral view). H. Tibial apophysis (prolateral view). I. Tibial apophysis and metatarsus I (dorsal view). J–L. ♀ (IBSP 9579). J. Prosoma (dorsal view). K. Prosoma (ventral view). L. Genitalia (dorsal view). Abbreviations: DET = distal embolar tooth; EL = embolar lamella. Scale bars: A–B, D–L = 1 mm; C = 2 mm.

PALP. Tibia with conspicuous retrolateral depression, bordered by short spines, with the exception of the spines of the basal and apical ends, which are twice the size of the others (Fig. 11C); embolus with subapical torsion and presence of a small lamella at spermatic duct opening (Figs 11D–F, 12E–F).

PALP AND LEG MEASUREMENTS. Palp = 10.6 (3.6, 2, 3.5, 1.5), I = 19.7 (5.9, 2.8, 4.4, 4.3, 2.3), II = 24 (6.3, 2.9, 5.4, 6.1, 3.3), III = 18.3 (4.6, 2.8, 3.1, 4.9, 2.9), IV = 24.9 (6.6, 3.3, 5.4, 6.3, 3.3).

SPINATION. Palp: Ti r3-3, Ta d-0-0-6. Leg I: Ti r0-1-2, Mt p5-3-2, r1-1-2, Ta p4-3-1, r3-2-2. Leg II: Ti v1-2-1-2, Mt p0-0-1, r1-1-3, Ta p0-1-2, r0-2-3. Leg III: Pa p4-5-7, r0-0-3, Ti v0-2-0-4, p1-2-2, r0-1-3, Mt v2-3-2-3, p3-3-3, r3-1-3, Ta p1-2-5, r0-2-3. Leg IV: Pa p17-4-0, Ti v0-2-0-4, Mt v1-2-2-3, Ta v2-4-11.

Female (IBSP 9579)

HABITUS. See Fig. 11J.

MEASUREMENTS. TBL 18.4, CL 8.3, CW 8, LL 1.5, LW 1.8, SL 5.4, SW 4.9.

COLOR. Brownish carapace and legs, sternum and coxae yellow brown (Fig. 11J–K), abdomen brown.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 11J. Eye tubercle: 2 long; 2 wide. Distance AME–ALE 1.3. Eye diameters: AME 0.4, ALE 0.6, PME 0.3, PLE 0.6. Thoracic fovea procurved (Fig. 11J). Labium with 2–5 cuspules (Fig. 11K). Maxilla with 48 cuspules, distributed over the anterior ventral half (Fig. 11K). Basal segment of chelicerae with a prolateral row of 6 large teeth and a retrolateral row with 4 small teeth.

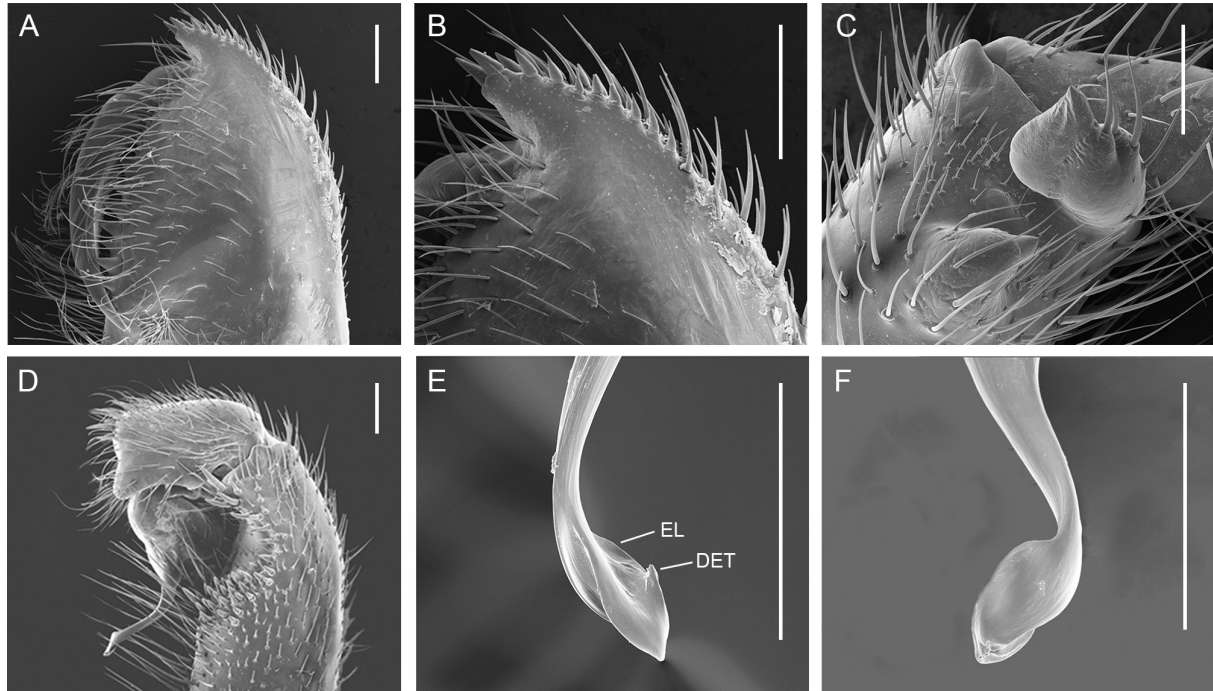


Fig. 12. Scanning electron micrographs of *Idiops camelus* (Mello Leitão, 1937), ♂ (MZSP 28832). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the distal portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviations: DET = distal embolar tooth; EL = embolar lamella. Scale bars = 0.5 mm.

PALP AND LEG MEASUREMENTS. Palp = 14.3 (4.8, 3.2, 3.1, 3.2), I = 16.7 (5.4, 3.7, 3.6, 2.8, 1.2), II = 14.9 (4.9, 3.4, 3, 2.3, 1.3), III = 15.6 (4.3, 3.7, 2.4, 3.1, 2.1), IV = 21.6 (6.1, 4.4, 4.5, 4.3, 2.3).

SPINATION. Palp: Fe p0-0-1, Pa p0-0-1, Ti p9-6-12, Ta p14-11-10. Leg I: Ti p7-7-10, r8-7-13, Mt p11-9-7, r12-8-13, Ta v0-0-5, p6-5-3, r6-4-3. Leg II: Ti p4-4-7, r2-1-7, Mt p8-4-2, r12-8-10, Ta v0-0-9, p6-1-2, r6-5-3. Leg III: Pa p5-5-17, r0-1-4, Ti v1-1-1, p4-5-12, r1-3-10, Mt v1-2-2, p11-3-3, r8-2-1, Ta v0-1-4, p0-1-3, r0-0-1. Leg IV: Pa p65-7-0, Ti v2-1-3, Mt 1-3-2, p0-1-0, Ta v1 -5-11.

SPERMATHECAE. Receptacula with evident granules. Duct with sclerotized apical portion (Fig. 11L).

Distribution.

Brazil. Mainly distributed in Atlantic Forest phytophysiognomies, with records for Southeast region (center-south of Minas Gerais, Rio de Janeiro and São Paulo) and northeast of Santa Catarina (Fig. 3D).

Idiops carajas Fonseca-Ferreira, Zampaulo & Guadanucci, 2017
Figs 3B, 6D–E, 13–14

Idiops carajas Fonseca-Ferreira, Zampaulo & Guadanucci, 2017: 191, figs 29–38.

Emended diagnosis

The male of *Idiops carajas* (Figs 13A–I, 14) differs from the other Neotropical species, except *I. petiti*, by the palpal tibia having spines concentrated on the basal half of the retrolateral depression (Figs 13C, 14D), apophysis with a narrow rectangular apical branch (Figs 13G–H, 14C) and by the presence of a lateral lamella that extends along the median portion of the embolus (Figs 13E–F). Differs from *I. petiti* by having the subapical portion of the embolus thickened in dorsal view (Fig. 13D) and the arrow-shaped apical end in retrolateral view (Figs 13E–F, 14E). Females (Fig. 13J–L) are distinguished from congeners, except *I. petiti*, by having the spermathecae with a sclerotized trapezoidal base. Differs from *I. petiti* by the ducts having a thickened basal half and shorter apical half and by the rounded receptacles, separated from the ducts by a strong constriction (Fig. 13L).

Type material

Holotype

BRAZIL – **Pará** • ♂; Parauapebas, FLONA Carajás Serra Norte, cave GEM-1758; 5°52'0.00" S, 49°52'60.00" W; 23 Nov. 2010; R.A. Zampaulo leg.; IBSP 166619.

Paratype

BRAZIL – **Pará** • 1 ♀; same collection data as for holotype; IBSP 166620.

Other material examined

BRAZIL – **Amazonas** • 1 ♂; Benjamin Constant; 4°22'58" S, 70°1'51" W; 2014; P.S. Pompeu *et al.* leg.; IBSP 243963. – **Pará** • 1 ♂ (SEM); Parauapebas, Serra Norte, Serra de Carajás; 5°52' S, 49°53' W; 29 Mar.–6 Apr. 1989; N. Degallier leg.; MPEG 0109 • 1 ♂; Flona Carajás, Cave N3-033; 6°6'34.92" S, 50°11'40.11" W; 5–17 Mar. 2013; Equipe Carste leg.; IBSP 174029 • 1 ♂; Melgaço, Igarapé do Laranjal; 1°48'21.44" S, 50°43'0" W; 7 Apr. 1998; J.A.R. Bernardi and R.A.J. Rocha leg.; MPEG 0111 • 1 ♂; Almeirim, Rio Jari; 00°41'25.93" S, 52°49'9.21" W; 17–23 Aug. 2004; T. Gardner leg.; MPEG 7592 • 1 ♂; Almeirim, Rio Jari; 3 Apr. 2005; T. Gardner leg.; MPEG 7589 • 1 ♂; Almeirim, Rio Jari; 2004; T.C.S. Avila Pires leg.; MPEG 7591 • 2 ♂♂; Almeirim, Rio Jari; 22 Mar. 2005; T. Gardner & M.A. Ribeiro Junior leg.; MPEG 7587, MPEG 7590 • 1 ♂; Tucuruí, Base IV; 3°46'4" S, 49°40'22" W; 8–22 Feb. 1980; T. Gardner leg.; MPEG 0115. – **Mato Grosso** • 1 ♂; Chapada dos Guimarães; 15°27'39" S, 55°45'0" W;

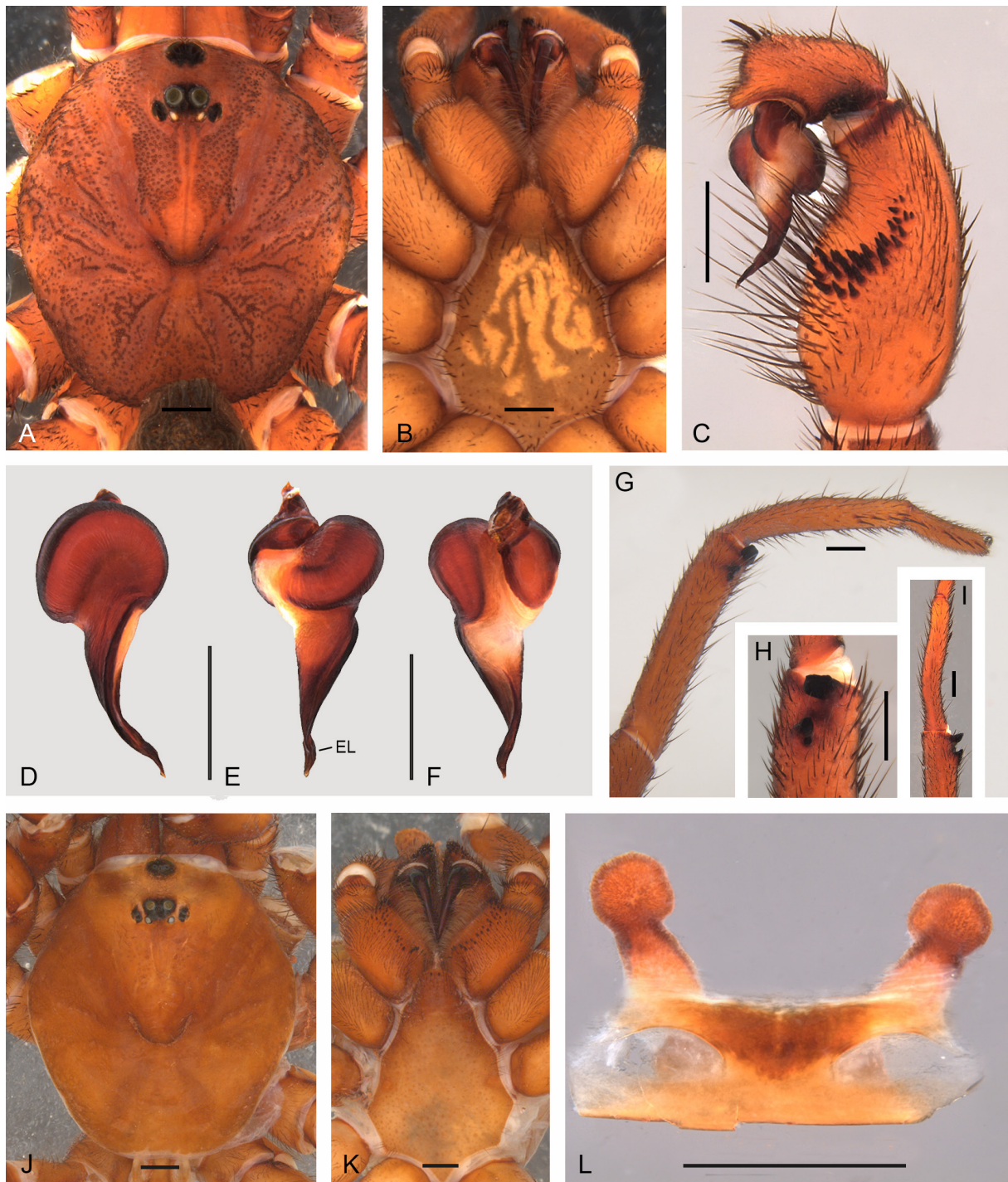


Fig. 13. *Idiops carajas* Fonseca-Ferreira, Zampaulo & Guadanucci, 2017. **A–I.** ♂, holotype (IBSP 166619). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀, paratype (IBSP 166620). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Abbreviation: EL = embolar lamella. Scale bars = 1 mm.

18 Jun. 2000; C. Strussmann leg.; MCTP 11192 • 1 ♂; Porto Estrela; 15°19'26"S, 57°13'40" W; 5 May 2019; J.R. Lema, D. Castro and M. Pessoa-Silva leg.; IBSP249141. – **Mato Grosso do Sul** • 1 ♂; Corumbá, Morro Santa Cruz; 19°12'07.6" S, 57°36'09.9" W; Jun. 2003; V.L. Ferreira leg.; MCTP 17591. – **Tocantins** • 1 ♂; Ananás; 6°13'34.70" S, 48°25'2.39" W; 21 Apr. 2009; W.U. Oliveira and M.D. Miranda leg.; UFMG 5749.

Emended description

Male and female recently described by Fonseca-Ferreira *et al.* (2017). New data on the male and female are included.

Male (holotype IBSP 166619)

PROSOMA. Basal segment of chelicerae with a prolateral row of 9 teeth, 6 large and 3 small, and 5 small retrolateral teeth (Fig. 14A); salient rastellum, presenting 12–13 short, thick spines with larger distal ends (Fig. 14B).

Female (paratype IBSP 166620)

PROSOMA. Basal segment of chelicerae with a prolateral row of 9 large teeth and 5 small retrolateral teeth; robust rastellum, presenting approximately 25 short and thick spines on a tubercle.

Distribution

Brazil. Distributed in the phytophysiognomies of Amazon and Cerrado, with records from the west of Central-west region (Mato Grosso, Mato Grosso do Sul) and from the North region (Amazonas, Pará and Tocantins) (Fig. 3B).

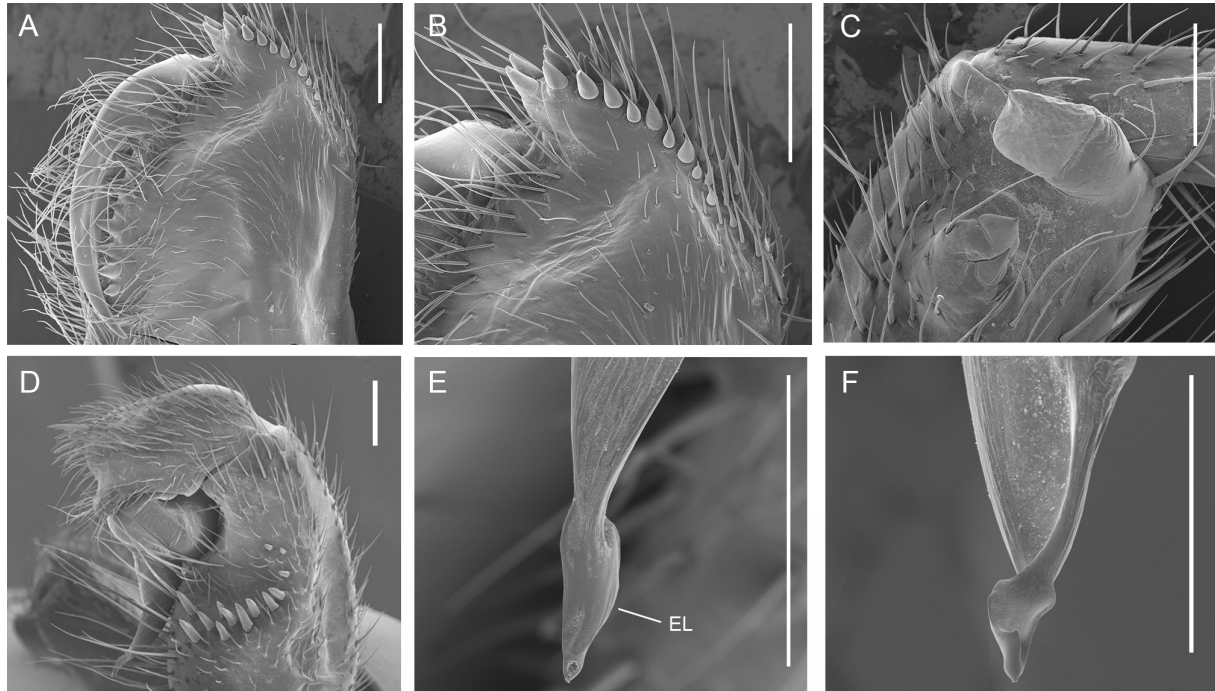


Fig. 14. Scanning electron micrographs of *Idiops carajas* Fonseca-Ferreira, Zampaulo & Guadanucci, 2017, ♂ (MPEG 0109). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: EL = embolar lamella. Scale bars = 0.5 mm.

Idiops clarus (Mello-Leitão, 1946)
Figs 3C, 6B, 15–16

Juambeltzia clara Mello-Leitão, 1946: 6, figs 6–9.

Juambeltzia clara – Bücherl 1957: 383, figs 3–3a.

Idiops clarus – Schiapelli & Gerschman de Pikelin 1971: 58, figs 1–7. — Ferretti *et al.* 2017: 977, figs 1a–f, 2a–c, 3d.

Emended diagnosis

Males (Fig. 15A–H) and females (Fig. 15I–K) of *Idiops clarus* differ from the other Neotropical species by having the posterior lateral eyes separated from the median eye group (Fig. 15A, I) and by the rounded sternum (Fig. 15B). Males also differ from others by having the palpal tibia short and thick, with a projection at the base of the retrolateral depression (also present in *I. fuscus* and *I. pirassunsunguensis*) (Fig. 15C) and by the presence of a distal embolar tooth close to the opening of the sperm duct (also present in *I. germaini*) (Fig. 16E). Females differ by the aspect of the spermathecae with the extensive basal area divided by a non-sclerotized portion and by ducts distant from each other and a sclerotized area in the transition between duct and receptacle (Fig. 15K).

Type material

Holotype

URUGUAY – **Florida** • ♂; San Gabriel; A. Juambeltz leg.; MHNM. The type specimen was not found in the MHNM, probably lost.

Other material examined

URUGUAY – **Rivera** • 1 ♂ (SEM); Rivera, Near Vichadero; 31°48' S, 54°43' W; 23 Nov. 1959; C.C., P.S.M. and A.M. leg.; FCE 0340. – **Cerro Largo** • 1 ♂; Arroyo Chui del Tacuarí; 32°32'42" S, 54°2'45" W; 15 Nov. 1972; A.S.P., C.C., L.Z.C. and N.E.L. leg.; MNHN 295. – **Río Negro** • 1 ♂; Tres Arboles; 32°26' S, 56°42' W; 1 Apr. 2009; Stora Enso/Trampa PC; FCE 1075 • 1 ♂; Tres Arboles; 1 Apr. 2009; Stora Enso/Trampa PB2; FCE 1085 • 2 ♂♂; Tres Arboles; 1 Mar. 2009; Stora Enso/Trampa PC; FCE 1115 • 1 ♂; Tres Arboles; 1 Feb. 2009; Stora Enso/Trampa PB4; FCE 1118 • 2 ♂♂; Tres Arboles; 1 Mar. 2009; Stora Enso/Trampa ECD; FCE 1152 • 1 ♂; Tres Arboles; 1 Mar. 2009; Stora Enso/Trampa PB; FCE 1161 • 4 ♂♂; 1 Jan. 2009; Stora Enso/Trampa MB and EC; FCE 1171. – **Treinta y Tres** • 1 ♂; Santa Clara de Olimar; 32°55' S, 54°58' W; 12 Jan. 1960; L.C. Zolessi and A. Spiritoso leg.; FCE 0337. – **Lavalleja** • 1 ♀, 1 juv.; Aguas Blancas; 34°32' S, 55°24' W; 9 Nov. 1958; FCE 0339. – **Canelones** • 1 ♂; Ruta 11 Km 144; 34°35'09" S, 55°50'23" W; 26 Jun. 2010; F. Costa and F. Pérez-Miles leg.; FCE 1015 • 1 ♂; Piedras de Afilar; 34°45'33" S, 55°31'32" W; 19–26 Apr. 2010; M. González leg.; trampa pitfall; FCE 1021. – **Maldonado** • 1 ♀; Sierra de las Animas; 34°42' S, 55°19' W; 23 Feb. 1969; L.C. Zolessi leg.; FCE 0335 • 1 juv.; Sierra de las Animas; 21 Mar. 1971; FCE 0336 • 1 ♀; Sierra de las Animas; 34°42' S, 55°19' W; 21 Mar 1971; FCE 0338 • 2 ♀♀, 2 juvs; Sierra de las Animas; 2 Nov. 1969; L.C. Zolessi leg.; FCE 0342 • 1 ♀; Sierra de las Animas; 11 Feb. 1970; L.C. de Zolessi leg.; MNHN 373 • 1 ♂; Sierra de las Animas; 21 Mar. 1971; S. Etcheverrigaray leg.; MNHN 718. – **Montevideo** • 1 ♂; Prado, Liceo Bauzá; 34°51' S, 56°12' W; 19 Apr. 2002; A. Mignone leg.; FCE 0341.

The specimens registered for Argentina and reviewed by Ferretti *et al.* 2017 were not examined here. Despite this, they were included in the species distribution map.

Description

Male (FCE 0341)

HABITUS. See Fig. 15A.

MEASUREMENTS. TBL 11, CL 5.7, CW 4.8, LL 0.6, LW 1.2, SL 3, SW 2.9.

COLOR. Carapace, legs and sternum light brown (Fig. 15A–B), abdomen gray.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 15A. Eye tubercle: 1.4 long; 1.6 wide. Distance AME-ALE 0.8. Eye diameters: AME 0.3, ALE 0.4, PME 0.3, PLE 0.3. Thoracic fovea procurved. Labium and sternum without cuspules (Fig. 15B). Basal segment of chelicerae with a prolateral row of

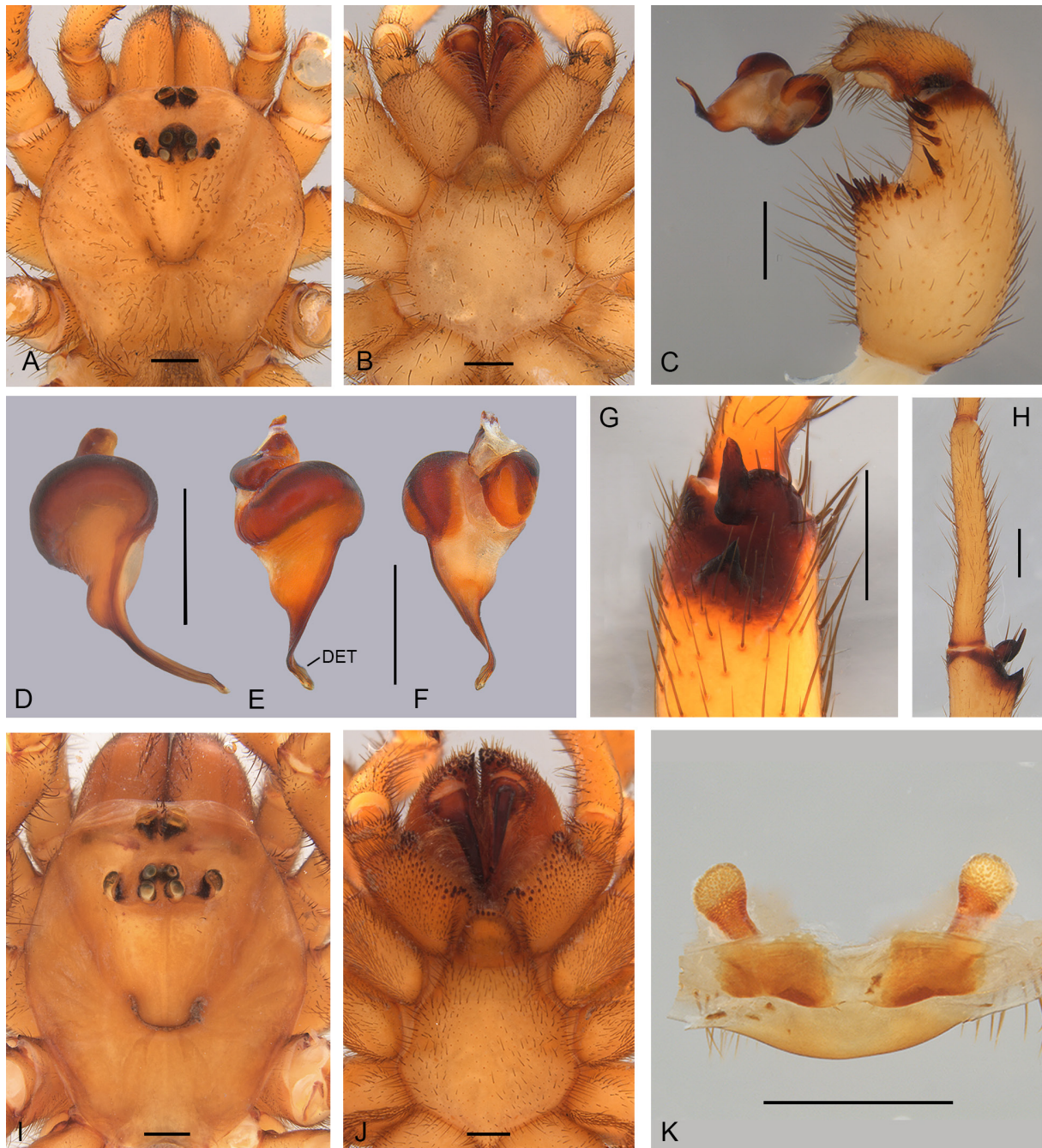


Fig. 15. *Idiops clarus* (Mello-Leitão, 1946). A–H. ♂ (FCE 0341). A. Prosoma (dorsal view). B. Prosoma (ventral view). C. Part of palp (retrolateral view). D–F. Palpal bulb. D. Dorsal view. E. Retrolateral view. F. Prolateral view. G. Tibial apophysis (prolateral view). H. Tibial apophysis and metatarsus I (dorsal view). I–K. ♀, (FCE 0338). I. Prosoma (dorsal view). J. Prosoma (ventral view). K. Genitalia (dorsal view). Abbreviation: DET = distal embolar tooth. Scale bars = 1 mm.

5 large teeth and retrolateral row with 9 small teeth (Fig 15A), rastellum with 8 spines, distal spines are longer (Fig. 16B).

LEGS. Tibia and metatarsus I as shown in Fig. 15H. Leg I with an apical branch of tibial apophysis with a short and triangular basal spine, and an apical branch with a conical spine twice the size of basal spine. Pseudoscopula: tarsus I divided into rows of thick hair; tarsus II–IV totally covered.

PALP. Tibia with conspicuous retrolateral depression, with projection on basal portion and larger spines concentrated on basal and apical portions (Figs 15G, 16C); embolus with subapical torsion and presence of a small embolar tooth close to spermatic duct opening (Figs 15D–F, 16E–F).

PALP AND LEG MEASUREMENTS. Palp = 9.3 (3, 1.6, 3.1, 1.6), I = 21.3 (5.9, 3.2, 4.3, 5, 2.9), II = 19.7 (5, 2.5, 3.4, 4.2, 2.6), III = 14.9 (3.5, 2.3, 2.3, 4, 2.8), IV = 21.2 (5.4, 2.9, 4.5, 5.4, 3).

SPINATION. Palp: Ti r24, Ta d0-0-4. Leg I: Fe d1-1-2, Ti v1r-1r-2r, Mt 1r-2r-1ap, Ta r2-1-0. Leg II: Fe d1-1-2, Ti v0-2r-1r-1, Mt v1r-1r-1r-2, Ta p0-0-1, r2-2-0. Leg III: Fe d1-1-1, Pa d1-1-0, p3-5-8, r0-0-2, Ti v0-1r-0-2, p1-1-4, r1-1-2, Mt v3-4-0-4, p3- 2-2, r0-1-2, Ta p0-4-8, r0-4-8. Leg IV: Fe d1-1-2, Pa p16-3-0, Ti v1-2-2, Mt v1-2 -1-3, Ta p2-3-6, r0-0-2.

Female (FCE 0338)

HABITUS. See Fig. 15I.

MEASUREMENTS. TBL 17.3, CL 7.5, CW 6.3, LL 1.2, LW 1.6, SL 4.4, SW 4.3.

COLOR. Carapace, legs and sternum light brown (Fig. 15I–J), abdomen gray.

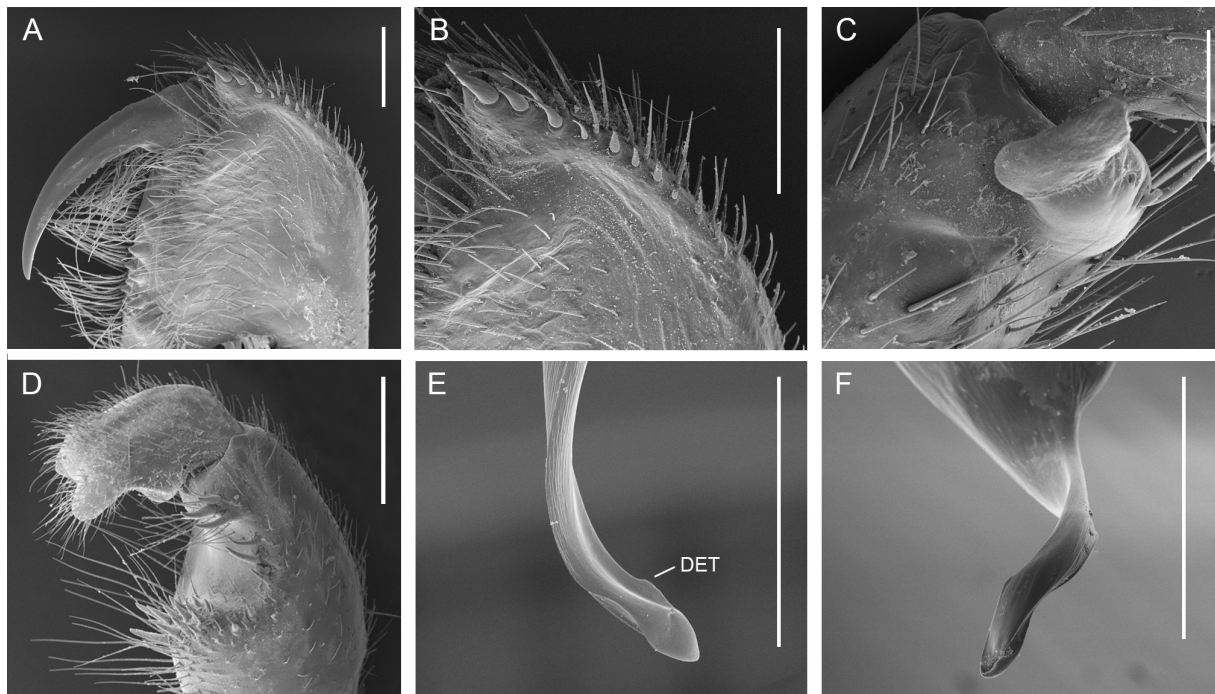


Fig. 16. Scanning electron micrographs of *Idiops clarus* (Mello-Leitão, 1946), ♂ (FCE 0340). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: DET = distal embolar tooth. Scale bars = 0.5 mm.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 15I. Eye tubercle: 2.2 long; 2.7 wide. Distance AME-ALE 1. Eye diameters: AME 0.4, ALE 0.6, PME 0.5, PLE 0.7. Thoracic fovea procurved. Labium with 4–6 cuspules (Fig. 15J). Maxilla with 83 cuspules, distributed over the anterior ventral half (Fig. 15J). Basal segment of chelicerae with a prolateral row of 5 large teeth and a retrolateral row with 7 small teeth, grouped at basal half.

PALP AND LEG MEASUREMENTS. Palp = 12.2 (4.1, 2.6, 2.7, 2.8), I = 13.3 (4.2, 3, 2.9, 2.2, 1), II = 11.1 (3.4, 2.7, 2.3, 2, 1), III = 12 (3.3, 2.6, 1.7, 2.4, 2), IV = 15.8 (4.1, 3.4, 3.3, 3.2, 1.8).

SPINATION. Palp: Fe p0-0-2, Pa p0-0-1, Ti p7-8-11, r3-10-13, Ta v0-0-6, p12-10-8, r12-10-12. Leg I: Ti p5-5-8, r6-8-12, Mt p11-8-10, r9-8-7, Ta v0-6-7, p4-5-2, r5-4-3. Leg II: Ti p2-7-6, r2-4-1, Mt p10-9-7, r4-5-3, Ta v0-1-7, p4-5-3, r4-2-1. Leg III: Pa p5-5-16, r0-0-2, Ti p5-7-10, r3-7-10, Mt v0-0-2, p12-7-6, r7-5-4, Ta v0-6-22. Leg IV: Pa p30-5-0, Ti v0-1-1-2, Mt v0-2-5-3, Ta v1-9-14.

SPERMATHECAE. Duct with basal portion shorter than apical portion and non-sclerotized spherical receptacles with evident granules (Fig. 15K).

Distribution

Uruguay and Argentina (Fig. 3C).

Idiops duocordibus Fonseca-Ferreira, Guadanucci & Brescovit sp. nov.

[urn:lsid:zoobank.org:act:D3387D49-8B8B-42C0-ADB9-88D5A8A78B62](https://zoobank.org/act:D3387D49-8B8B-42C0-ADB9-88D5A8A78B62)

Figs 3B, 17A–L

Diagnosis

Males and females of *Idiops duocordibus* sp. nov. differ from the other Neotropical species by the light brown coxae and trochanters, contrasting with the brown body (Fig. 17A–L). The male resembles that of *I. rohdei* by the short metatarsus I with prolateral curvature and with a slight prolateral projection on the apical half (Fig. 17I), but differs by the tibial apophysis with a triangular apical branch twice the size of the basal branch (Fig. 17G–H) and by the weakly curved embolus (Fig. 17D). The female (Fig. 17J–L) differs from those of the other species by having the spermathecae with bilobed receptacles in the shape of a heart (Fig. 17L).

Etymology

The specific epithet refers to the heart-shaped receptacles of the female genitalia.

Type material

Holotype

BRAZIL – **Pará** • ♂; Vitória do Xingu, Ilha Taboca; 3°23'12.7" S, 51°57'26.2" W; 3 Nov. 2000; F. Oliveira leg.; MPEG 0124.

Paratypes

BRAZIL – **Pará** • 1 ♂; Almeirim, Reserva de Itapeguara; 0°32'04.9" S, 52°48'14.8" W; Dec. 2001; MPEG 0122 • 1 ♀; Arapari, Rio Tocantins, left bank; 4°52'23.6" S, 49°31'39.5" W; 14 Mar. 1984; W.L. Overal leg.; MPEG 0123.

Other material examined

BRAZIL – **Amazonas** • 1 ♂; Manaus, Reserva Florestal Adolpho Ducke; 3°0'27" S, 59°56'22.92" W; 9 Sep. 1991; H. Höfer and T. Gasnier leg.; INPA 4592 • 1 ♂; Manaus, Reserva Florestal Adolpho Ducke;

14–24 Jul. 1991; A.D. Brescovit leg.; MCN 21485. – **Pará** • 2 ♂♂; Vitória do Xingu, Ilha Taboca; 3°23'12.7" S, 51°57'26.2" W; 23 Nov. 2000; F. Oliveira leg.; MPEG 0112, MPEG 0114.

Description

Male (holotype MPEG 0124)

HABITUS. See Fig. 17A.

MEASUREMENTS. TBL 10, CL 4.6, CW 4, LL 0.5, LW 0.7, SL 2.4, SW 2.2.

COLOR. Carapace brown, light brown coxae and trochanter (Fig. 17A–B). Abdomen dark gray.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 17A. Eye tubercle: 0.68 long; 1.08 wide. AME-ALE distance 0.63. Eye diameters: AME 0.32, ALE 0.34, PME 0.13, PLE 0.22. Thoracic fovea procurved (Fig. 17A). Labium and sternum without cuspules (Fig. 17B). Basal segment of chelicerae with a prolateral row of 5 small teeth equally distributed, rastellum with 5 spines (Fig. 17B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 17G. Leg I with double tibial apophysis. Leg I tibial apophysis with apical branch twice the size of basal branch and with a conspicuous spine (Fig. 17G–I). Pseudoscapula: tarsus I weakly covered (Fig. 17G), tarsus II–IV totally covered.

PALP. Tibia with thickened median portion and with larger spines concentrated in basal portion of retrolateral depression (Fig. 17C), embolus elongated, tapered, and slightly curved, with torsion on apical portion (Fig. 17D–F), keel along embolus length extending to apical portion (Fig. 17D).

PALP AND LEG MEASUREMENTS. Palp = 6.9 (2.3, 1.3, 2.4, 0.9), I = 13.4 (4.3, 1.9, 3, 2.9, 1.3), II = 11.3 (3.5, 1.8, 2.5, 2.5, 1), III = 10 (2.7, 1.5, 1.9, 2.6, 1.3), IV = 13.6 (3.9, 1.9, 3.5, 3.1, 1.2).

SPINATION. Palp: Ti r39, Ta d0-0-3. Leg I: Pa v0-1-2, r1-2-3, Ti v1-2-3, r1-2-6, Mt v1-4-7, p0-0-2, p0-1-1, r4-4-5, Ta v0-1-0, p0-2-3, p1-2-3, r4-4-3. Leg II: Pa v0-0-3, d0-0-1, Ti v2-3-7, d3-4-8, Mt v4-6-8, d5-6-7, p1-2-4, r0-2-3, Ta p1-3-3, r2-2-3. Leg III: Pa v0-0-2, Ti v1-2-3 r0-1-0, Mt v3-6-7, d0-0-2, p2-2-3, r1-2-4, Ta p3-4-4, r1-3-3. Leg IV: Pa v0-0-3, Ti v1-2-2, Mt v1-4-8, p0-0-1, r0-2-3, Ta v2-4-5, p0-1-2, r2-3-2.

Female (paratype MPEG 0123)

HABITUS. See Fig. 17J.

MEASUREMENTS. TBL 9.9, CL 5.5, CW 4.8, LL 0.9, LW 1.2, SL 3.4, SW 2.9.

COLOR. Brown carapace and trochanter, remainder of leg light brown (Fig. 17J–L). Abdomen dark gray.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 17J. Eye tubercle: 0.7 long; 1.1 wide. AME-ALE distance 0.9. Eye diameters: AME 0.3, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 17J). Labium with 13 cuspules (Fig. 17K). Maxilla with 117 cuspules, distributed throughout the maxillae, with larger spines on anterior half (Fig. 17K). Basal segment of chelicerae with a prolateral row of 6 large teeth and 2 retrolateral small teeth, grouped in basal half, rastellum with 16–18 short and thick spines (Fig. 17K).

PALP AND LEG MEASUREMENTS. Palp = 6.4 (2.3, 1.2, 1.6, 1.3), I = 7.4 (2.5, 1.5, 1.6, 1, 0.8), II = 6.5 (2.3, 1.6, 1.2, 0.9, 0.5), III = 7 (1.9, 1.6, 1.3, 1.4, 0.8), IV = 9.5 (2.6, 1.7, 2.1, 2.2, 0.9).

SPINATION. Palp: Pa p0-0-1, Ti p4-7-7, r4-6-8, Ta p10-8-7, r10-7-9. Leg I: Ti p4-4-5, r3-5-8, Mt p8-7-8, r5-5-6, Ta p3-4-2, r5-4-0. Leg II: Ti v1-1-2, p3-3-4, r0-1-3, Mt v1-1-2, p6-7-9, r2-2-1, Ta p2-3-3, r2-1-0.

Leg III: Pa p4-5-10, Ti v0-0-2, p2-4-6, r4-4-6, Mt v1-1-2, d0-0-2, p3-3-3, r0-2-1. Leg IV: Ti v1-1-2, Mt v1-1-3, vp0-0-2, Ta v0-1-2, p1-1-2.

SPERMATHECAE. Single sclerotized base that is divided into two divergent ducts, receptacula strongly sclerotized (Fig. 17L).



Fig. 17. *Idiops duocordibus* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov. **A–I.** ♂, holotype (MPEG 0124). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀, paratype (MPEG 0123). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Abbreviation: K = keel. Scale bars = 1 mm.

Distribution

Brazil. Distributed in phytophysionomies in the Amazon, with records for the North region (western Amazonas and northwestern Pará) (Fig. 3B)

Idiops germaini Simon, 1892
Figs 3D, 5B, 18–19

Idiops germaini Simon, 1892: 92.

Idiops germaini – Mello-Leitão 1923: 47. — Fukami & Lucas 2005: 6, figs 8–10.

Diagnosis

Males of *Idiops germaini* differ from those of other Neotropical species of *Idiops* by the long and slender palpal tibia, with the retrolateral depression restricted to the apical portion (Figs 18C, 19D), and by having the tibial apophysis reduced to two long spines inserted on a low tubercle (Figs 18G–I, 19C). Females with spermathecae composed of short ducts and fully sclerotized receptacles, almost twice the diameter of the duct (Fig. 18L).

Type material

Holotype

BRAZIL – Rio de Janeiro • ♂; Rio de Janeiro; P. Germain leg.; MNHN 417.

Paratype

BRAZIL – Rio de Janeiro • 1 ♀; same collection data as for holotype; MNHN 9977.

Other material examined

BRAZIL – Rio de Janeiro • 1 ♂ (SEM); Nova Iguaçu, Parque Municipal de Nova Iguaçu; 22°45'35" S, 43°27'6" W; 20 May 2004; R.L.C. Baptista leg.; MNRJ • 1 ♂; Nova Iguaçu, Parque Municipal de Nova Iguaçu; 20 Jun. 2004; R.L.C. Baptista leg.; MNRJ • 1 ♂; Nova Iguaçu, Parque Municipal de Nova Iguaçu; Jan. 2001; R.L.C. Baptista leg.; MNRJ • 1 ♀; Nova Iguaçu, Parque Municipal de Nova Iguaçu; 22 Jan. 2005; D.R. Pedroso leg.; MNRJ • 1 ♀; Paraty, Parque Nacional da Serra da Bocaina, Trilha da Cachoeira Sete Quedas; 23°2'30" S, 44°39'42" W; 24–26 Mar. 2019; R.F. Ferreira, A. Galleti, I. Meirelles and R. Indicatti leg.; CAD 832 • 1 ♀; Angra dos Reis, Distrito de Serra D'Água; 23°0'25" S, 44°19'4" W; 25 Nov. 2010; C.A.S. Souza *et al.* leg.; CHNUFPI 0040 • 1 ♀; Mata da Tijuca; 13 Aug. 1977; M. Júlio leg.; UFPB Ar418.

Description

Male (holotype MNHN 417)

HABITUS. See Fig. 18A.

MEASUREMENTS. TBL 12, CL 6.8, CW 6.1, LL 0.8, LW 1.1, SL 3.8, SW 3.3.

COLOR. Brown carapace and legs, brownish sternum and coxae (Fig. 18A–B), gray abdomen.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 18A. Eye tubercle: 1.4 long; 1.4 wide. Distance AME-ALE 0.6. Eye diameters: AME 0.4, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 18A). Labium and sternum without cuspules (Fig. 18B). Basal segment of chelicerae with a prolateral row of 8 teeth, seven larger and one small, and a retrolateral row with 9 small teeth, grouped in basal half (Fig. 19A), with distal rastellum with 10 spines, with same size (Fig. 19B).

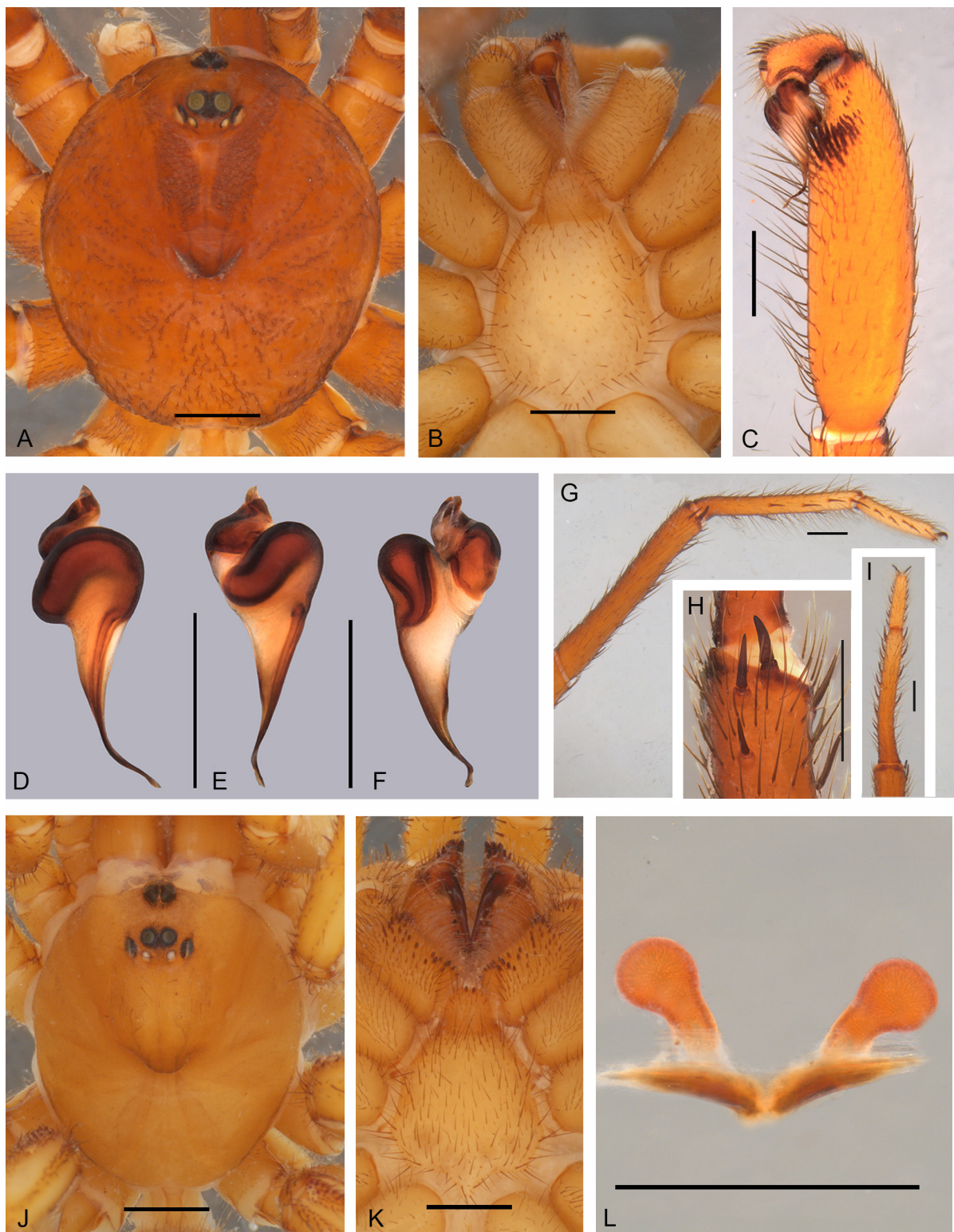


Fig. 18. *Idiops germaini* Simon, 1892. **A–I.** ♂ (MRNJ). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀, (CAD 832). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Scale bars = 1 mm.

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 18G.

PALP. Tibia with a shallow retrolateral depression and spines concentrated at basal half of depression (Figs 18C, 19D); elongated embolus with median curvature (Fig. 18E–F) and a small distal embolar tooth close to sperm duct opening (Fig. 19E–F).

PALP AND LEG MEASUREMENTS. Palp = 12 (4.4, 2, 4.2, 1.4), I = 22.9 (7.2, 3.4, 5.4, 4.8, 2.1), II = 19.9 (6.4, 2.9, 4.4, 4.4, 1.8), III = 17.2 (4.6, 2.6, 3.3, 4.7, 2), IV = 24 (6.7, 3.4, 5.6, 5.9, 2.4).

SPINATION. Palp: Ti r3-4, Ta d0-0-4. Leg I: Fe d1-2-2, Ti p0-0-1, r0-2-2, Mt p0-0-2, r2-2-4, Ta p1-1-1, r2-1-2. Leg II: Fe d1-2-2, Ti v1-1-3ap, Mt p0-1-2, r2-2-2, Ta p0-1-1, r2-2-4. Leg III: Fe d1-1-1, Pa p2-5-6, r0-0-3, Ti v1-2-2, p1-2-4, r0-1-2, Mt vv2-1-4ap, p3-2-2, r2-1-1, Ta p2-3-3, r1-2-3. Leg IV: Fe d1-1-2, Pa p13-3-0, Ti v1-1-3, Mt v1-1-1-3, Ta p2-2-4, r0-0-2.

Female (paratype MNHN 9977)

HABITUS. See Fig. 18J.

MEASUREMENTS. TBL 16.6, CL 9.1, CW 6.7, LL 1.5, LW 1, SL 4.8, SW 4.

COLOR. Brown carapace and legs, brownish sternum and coxae (Fig. 18J–K), gray abdomen.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 18J. Eye tubercle: 2.3 long; 2.8 wide. Distance AME–ALE 0.9. Eye diameters: AME 0.3, ALE 0.5, PME 0.3, PLE 0.5. Thoracic fovea procurved (Fig. 18J). Labium with 2 cuspules (Fig. 18K). Maxilla with 28 cuspules, with larger cuspules concentrated in anterior prolateral and retrolateral extremities (Fig. 18K). Basal segment of chelicerae with a prolateral

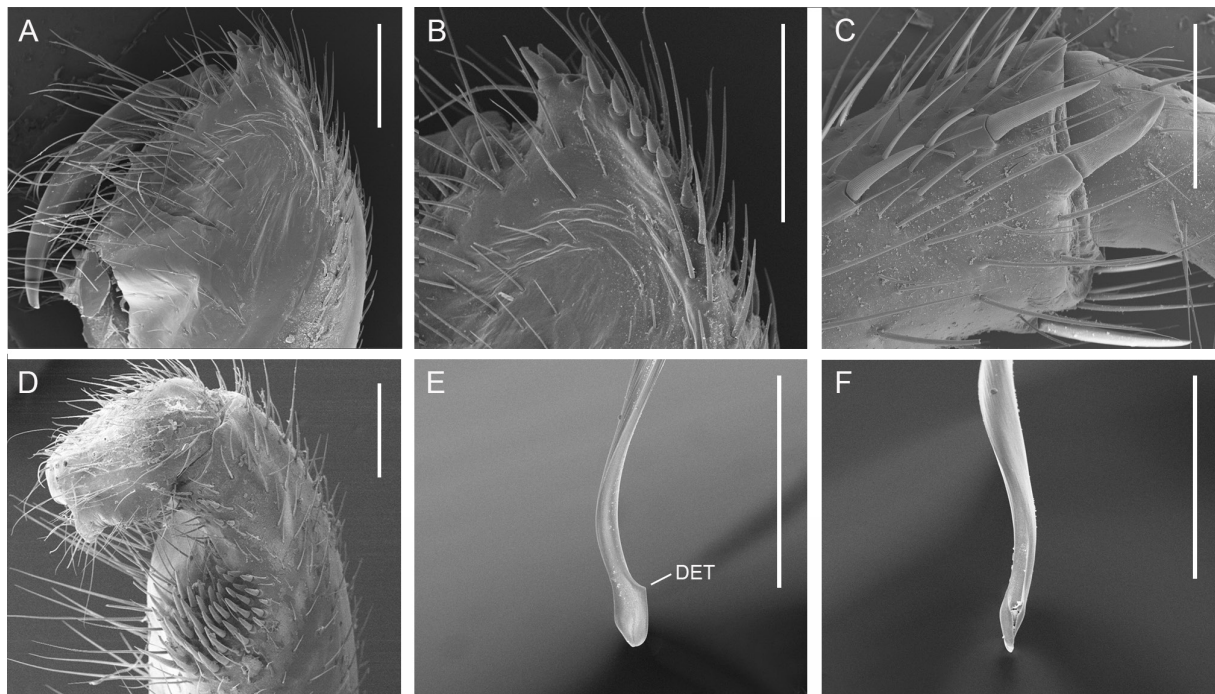


Fig. 19. Scanning electron micrographs of *Idiops germaini* Simon, 1892, ♂ (MNRJ). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: DET = distal embolar tooth. Scale bars = 0.5 mm.

row of 6 large teeth and a retrolateral row with 13 small teeth, grouped in basal half, rastellum with 14 spines, distal ones longer (Fig. 18K).

PALP AND LEG MEASUREMENTS. Palp = 11.9 (4, 2.6, 2.6, 2.7), I = 13.3 (4.5, 2.9, 2.7, 2.2, 1), II = 11.8 (3.8, 2.7, 2.2, 2, 1), III = 12.9 (3.5, 2.9, 1.9, 2.6, 2), IV = 17.6 (4.8, 3.5, 3.7, 3.5, 2.1).

SPINATION. Palp: Pa p0-0-1, Ti p4-9-11, r4-7-13, Ta v0-0-6, p14-9-8, r11-11-10. Leg I: Ti p3-8-11, r3-7-15, Mt p11-8-6, r11-7-9, Ta v0-0-6, p5-4-2, r6-5-0. Leg II: Ti p1-3-6, r0-1-1, Mt p10-10-10, r5-4-2, Ta v0-0-4, p5-5-4, r3-2-0. Leg III: Pa p3-5-7, r0-0-2, Ti p4-4-4, r0-3-4, Mt v1p-0-0-2, p5-0-3, r5-1-1, Ta v0-2-7. Leg IV: Pa p30-5-0, Ti v0-1-2, Mt v1-1-1-3ap, Ta v0-2-6.

SPERMATHECAE. Ducts with translucent basal half and sclerotized apical half and spherical receptacula (Fig. 18L).

Distribution

Brazil. Found in Atlantic Forest phytophysiognomies, with records for the state of Rio de Janeiro (Fig. 3D).

Idiops guri Fonseca-Ferreira, Guadanucci & Brescovit sp. nov.
[urn:lsid:zoobank.org:act:A7664A49-43C0-4157-BC48-B98BFB58252B](https://doi.org/10.21203/rs.3.rs-1011111/v1)
Figs 3C, 20–21

Diagnosis

The male of *Idiops guri* sp. nov. differs from those of other Neotropical species by having the palpal tibia with the retrolateral depression shallow and delimited by spines of decreasing lengths towards the apical portion (Figs 20C, 21D) and by the presence of a hook-shaped projection near the sperm duct opening in retroventral view (Fig. 21E–F). The female differs from the other species by the horseshoe-shaped spermathecae, with ducts curved inward and with sclerotization at the transition between the duct and the receptacle, and oval and weakly sclerotized receptacles (Fig. 20L).

Etymology

The specific epithet is a tribute to southern Brazil, the region where the species is distributed. The word ‘guri’, which is of Tupi-Guarani origin, is commonly used in the region to refer to a child or a lad. It also alludes to the tiny size of the specimens.

Type material

Holotype

BRAZIL – **Rio Grande do Sul** • ♂; São Francisco de Paula, Cento de Pesquisas e Conservação da Natureza Pró Mata; 29°27′–29°35′ S, 50°08′–50°15′ W; 1 May 2001; R. Ott leg.; MCN 39594.

Paratypes

BRAZIL – **Paraná** • 1 ♂; Londrina, Parque dos Godoy; 23°26′ S, 51°15′ W; 5 Jan. 1999; J. Lopes and I.M. Madri leg.; MCTP 11840. – **Santa Catarina** • 1 ♂; Chapecó, Floresta Nacional de Chapecó; 27°06′10.5″ S, 52°46′48.8″ W; 10 Mar. 2004; M. Scartezini leg.; IBSP 126721. – **Rio Grande do Sul** • 1 ♂; Viamão, Parque Estadual de Itapuã; 30°22′6″ S, 50°59′52″ W; 28 May 2004; A.C.K. Ferreira *et al.* leg.; MCTP 16937.

Other material examined

BRAZIL – **Paraná** • 2 ♂♂ (SEM); Cornélio Procópio, Parque Estadual Mata São Francisco; 28°08′47.3″ S, 50°34′19.5″ W; 2009; J.L. Chavari leg.; IBSP 220523 • 1 ♂; Cornélio Procópio, Parque Estadual Mata

São Francisco; 8 May 2009; N.G. Cipola leg.; IBSP 150273 • 1 ♂; Londrina, Parque dos Godoy; 23°26' S, 51°15' W; 13 Apr. 1999; J. Lopes and I.M. Madri leg.; MCTP 11815 • 1 ♂; Londrina, Parque dos Godoy; 16 Mar. 1999; J. Lopes and I.M. Madri leg.; MCTP 11816 • 2 ♂♂; same collection data as for preceding; MCTP 11820 • 1 ♂; Londrina, Parque dos Godoy; 30 Mar. 1999; J. Lopes and I.M. Madri leg.; MCTP 11817 • 1 ♂; Ponta Grossa, Parque Estadual de Vila Velha; 25°14'17" S, 50°0'39" W; 22 Nov. 1986; Equipe Profauapar leg.; MCN 20668 • 2 ♂♂, 1 juv.; Três Barras do Paraná, Foz do Córrego Três Barras; 25°25'8" S, 53°10'51" W; 24 Feb.–24 Mar. 1993; A.B. Bonaldo leg.; MCN 23420. – **Santa Catarina** • 1 ♂; Chapecó, Floresta Nacional de Chapecó; 27°06'10.5" S, 52°46'48.8" W; 10 Mar. 2004; M. Scartezini leg.; IBSP 126735 • 2 ♂♂; same collection data as for preceding; IBSP 126732 • 2 ♂♂; same collection data as for preceding; IBSP 126729 • 8 ♂♂; same collection data as for preceding; IBSP 126723 to 126724, IBSP 126726 to 126728, IBSP 126730 to 126731, IBSP 126733. – **Rio Grande do Sul** • 2 ♀♀; São Francisco de Paula; Potreiro Velho; 29°26'52" S, 50°35'2" W; Feb. 2002; L. Bertocello; MCTP 17532, MCTP 23469 • 1 ♀; São Francisco de Paula, Centro de Pesquisas e Conservação da Natureza Pró-Mata; 29°27'–29°35' S, 50°08'–50°15' W; 18 May 2002; R. Ott leg.; MCTP 18549 • 2 ♂♂; Itaara; 29°36'36" S, 53°45'54" W; Apr. 2017; A.A. Lise leg.; MCTP 20798 to MCTP 20799 • 1 ♂, 1 juv.; São Francisco de Paula, Centro de Pesquisas e Conservação da Natureza Pró-Mata; 1 May 2001, R. Ott leg.; MCN 39594a • 2 ♂♂, São Francisco de Paula, Centro de Pesquisas e Conservação da Natureza Pró-Mata; 3 Feb. 2001; R. Ott leg.; MCN 39593 • 1 ♂; Derrubadas, Parque Estadual do Turvo; 27°8'44" S, 53°53'10" W; 7 May 2004; R. Ott leg.; MCN 40380 • 3 ♂♂; Morrinhos do Sul, Tres Passos; 29°21'54" S, 49°56'6" W; 1 Nov. 2006; A. Gonçalves *et al.* leg.; MCN 52357 to 52358 • 1 ♂; Dom Pedro de Alcântara; 29°22'8" S, 49°51'0" W; 25 Apr. 2006; A. Gonçalves *et al.* leg.; MCN 52356 • 2 ♂♂; Viamão, Parque Estadual de Itapuã; 30°22'6" S, 50°59'52" W; 15 Apr. 2004; A.C.K. Ferreira *et al.* leg.; MCTP 16939, MCTP 16946 • 2 ♂♂; same collection data as for preceding; MCTP 16948 • 14 ♂♂; Viamão, Parque Estadual de Itapuã; 30 Apr. 2004; A.C.K. Ferreira *et al.* leg.; MCTP 16638 • 12 ♂♂; same collection data as for preceding; MCTP 16936 • 1 ♂; Viamão, Parque Estadual de Itapuã; 18 Apr.–8 May 2007; R. Moraes leg.; MCTP 29969 • 2 ♂♂; Porto Alegre, Reserva Biológica de Lami; 30°15' S, 51°05' W; 23 Mar.–2 Apr. 2006; MCN 46338 • 1 ♂; Porto Alegre, Reserva Biológica de Lami; 23 Mar.–12 Apr. 2006; R. Moraes leg.; MCN 56824 • 4 ♂♂; Porto Alegre, Jardim Botânico; 5 Mar.–5 Apr. 2013; G.O. Silva leg.; MCN 49909 to 49911; MCN 49913 • 1 ♂; Herval; 32°1'26" S, 53°23'45" W; 27–28 Apr. 2013; Equipe Sisbiota leg.; MCN 48527.

Description

Male (holotype MCN 39594)

HABITUS. See Fig. 20A.

MEASUREMENTS. TBL 5.3, CL 2.5, CW 2.4, LL 0.4, LW 0.6, SL 1.4, SW 1.3.

COLOR. Yellowish brown carapace and legs, gray abdomen (Fig. 20A–B).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 20A. Eye tubercle: 0.4 long; 0.5 wide. AME-ALE distance 0.3. Eye diameters: AME 0.1, ALE 0.2, PME 0.1, PLE 0.12. Thoracic fovea procurved (Fig. 20A). Labium and sternum without cuspules (Fig. 20B). Basal segment of chelicerae with a prolateral row of 5 small teeth equally distributed, rastellum with 11–12 spines, distals largest (Fig. 21A–B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 20G. Tibial apophysis of leg I with short basal branch with small triangular spine and apical branch twice as large as basal branch (Fig. 20G–I), with elongated spine in digitiform shape (Fig. 21C). Pseudoscopula: tarsus I–IV totally covered.

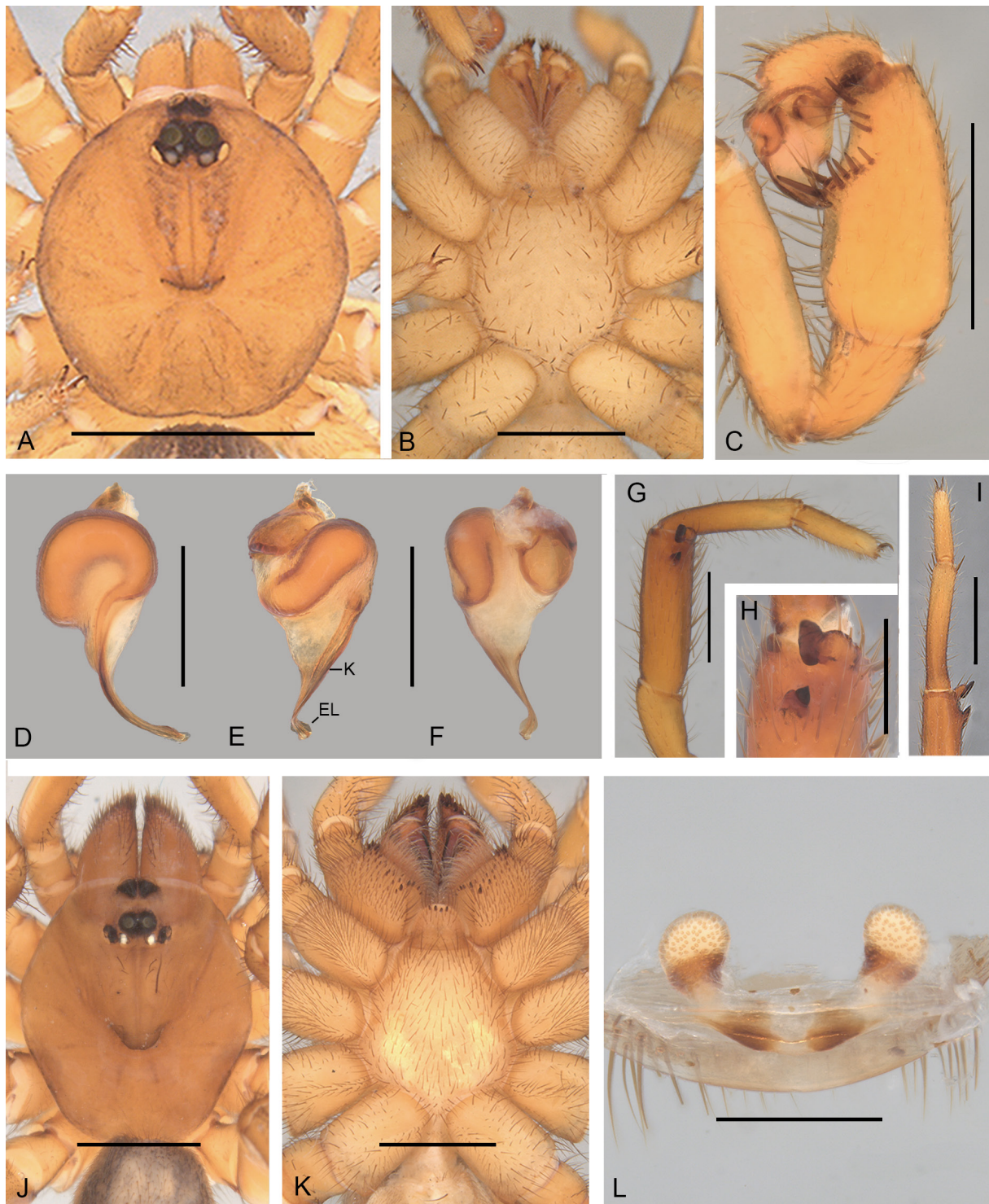


Fig. 20. *Idiops guri* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov. **A–I.** ♂, holotype (MCN 39594). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀ (MCTP 23469). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Abbreviations: EL = embolar lamella; K = keel. Scale bars: A–G, I–L = 1 mm; H = 0.5 mm.

PALP. Tibia with larger spines arranged on basal half of retrolateral depression (Fig. 20C), embolus with keel in retrolateral view, embolus with subapical torsion, followed by lateral lamella close to opening of sperm duct (Figs 20D–F, 21E–F).

PALP AND LEG MEASUREMENTS. Palp = 3.8 (1.2, 0.6, 1.4, 0.6), I = 7.5 (2.2, 1.2, 1.7, 1.4, 1), II = 6.8 (2.2, 1, 1.4, 1.2, 1), III = 6.2 (1.7, 1, 1, 1.5, 1), IV = 8 (1.9, 1, 2, 1.9, 1.2).

SPINATION. Palp: Ti r13. Leg I: Pa v0-0-1, Ti r0-1-2 Mt v0-0-1, p0-0-1, r1-1-2, Ta p0-0-1 r0-1-0. Leg II: Pa v0-0-3, Ti v1-1-3, p0-0-2, Mt v1-1-3, p0-0-1, Ta p0-0-1. Leg III: Pa p1-2-2, Ti v0-0-2, p0-1-1, r0-0-1, Mt v0-1-2, p0-1-2, r0-1-2, d0-1-2. Leg IV: Pa 0-0-1, Ti v1-1-2, p0-0-1, r0-0-1, Mt v0-1-2, p0-0-1, r0-0-2, Ta p0-0-1, r0-0-1.

Female (MCTP 23469)

HABITUS. See Fig. 20J.

MEASUREMENTS. TBL 8.4, CL 4.2, CW 3.7, LL 0.7, LW 0.9, SL 2.5, SW 2.5.

COLOR. Brown carapace and legs, gray abdomen (Fig. 20J–K).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 20J. Eye tubercle: 0.5 long; 0.9 wide. AME-ALE distance 0.7. Eye diameters: AME 0.2, ALE 0.3, PME 0.2, PLE 0.3. Thoracic fovea procurved (Fig. 20J). Labium with 4 cuspules (Fig. 20K). Maxilla with 29 cuspules, distributed over anterior ventral half, with 8 large cuspules at anterior ventral retrolateral end and 5 large cuspules at anterior ventral prolateral end (Fig. 20K). Basal segment of chelicerae with a prolateral row of 5 large teeth. Rastellum with 11–12 thick spines, distals largest.

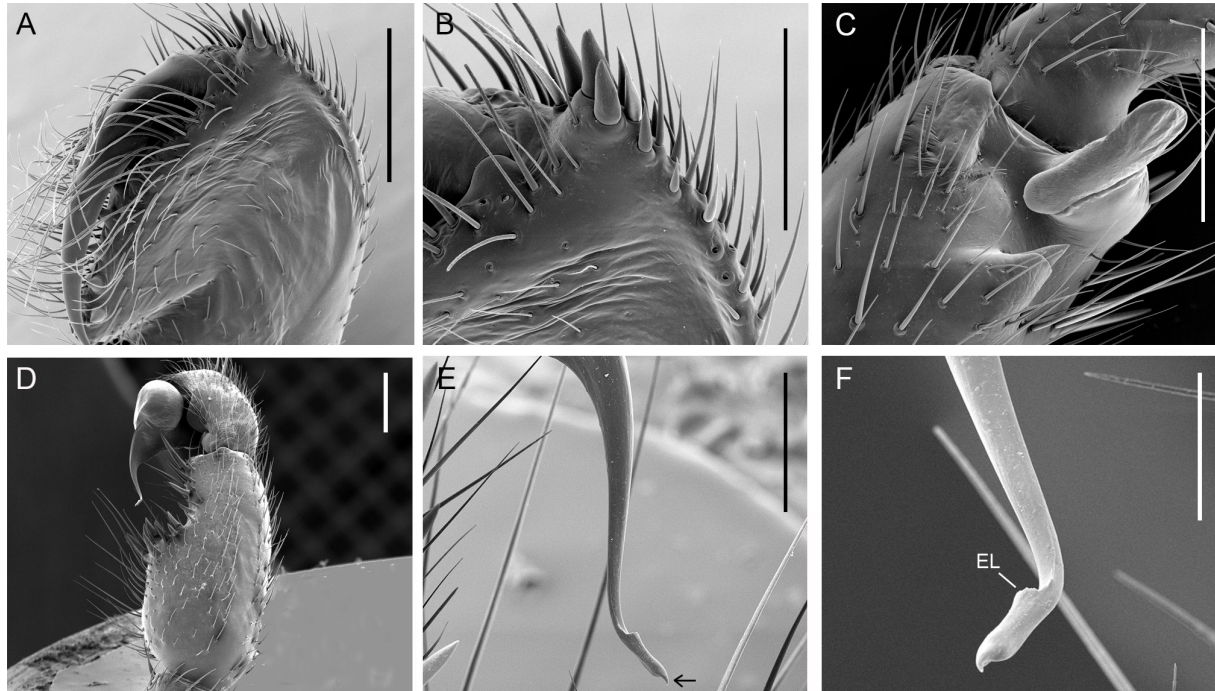


Fig. 21. Scanning electron micrographs of *Idiops guri* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., ♂ (IBSP 220523). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus in prolateral view. Abbreviation: EL = embolar lamella. The arrow indicates the hook-shaped projection near the sperm duct. Scale bars: A = 0.4 mm; B, E–F = 0.2 mm; C = 0.3 mm; D = 1 mm.

PALP AND LEG MEASUREMENTS. Palp = 6.9 (2.5, 1.3, 1.5, 1.6), I = 7.7 (2.5, 1.6, 1.8, 1, 0.8), II = 6.6 (2.2, 1.4, 1.2, 1.1, 0.7), III = 7.3 (2, 1.6, 1.2, 1.5, 1), IV = 9.7 (2.6, 2, 1.8, 2, 1.3).

SPINATION. Palp: Ti r5-4-5, p2-4-6, Ta r4-6-6, p7-6-5. Leg I: Mt r3-4-5, p2-3-3, Ta v0-0-3, r5-4-6, p2-4-2. Leg II: Ti r2-3-3, p2-4-2, Mt r6-4-5, p5-5-5, Ta v0-0-3, r3-2-1, p2-4-2. Leg III: Pa p3-5-8, Ti p0-2-3, Mt d2-4-4, v1-2-2, p4-2-1, Ta v0-1-3, p0-2-0. Leg IV: Pa p12-0-0, Ti v1-1-1, Mt v1-2-2, p0-0-1, Ta v0-3-4.

SPERMATHECAE. Duct with translucent median portion and receptacle with evident granules and medial half slightly expanded (Fig. 20L).

Distribution

Brazil. Found mainly in Atlantic Forest phytophysiognomies, with records for the South region (Paraná, Santa Catarina and Rio Grande do Sul) (Fig. 3C).

Idiops harti (Pocock, 1893)

Figs 4B, 5C, 22

Pseudidiops harti Pocock, 1893: 407, pl. 19, figs 1–3.

Idiops harti – Raven 1985: 158.

Diagnosis

The female of *Idiops harti* differs from that of other species of the genus by having the spermathecae with short ducts (same length as the diameter of the receptacula) and a well-marked division between them, by having the receptacula shaped like a bean (Fig. 22) and by having only an internal row of large teeth on the chelicera (Fig. 5C).

Type material

Holotype

TRINIDAD AND TOBAGO • ♀; Trinidad; J.H. Hart leg.; BMNH 1893.3.25.1.

Description

Male

Unknown.

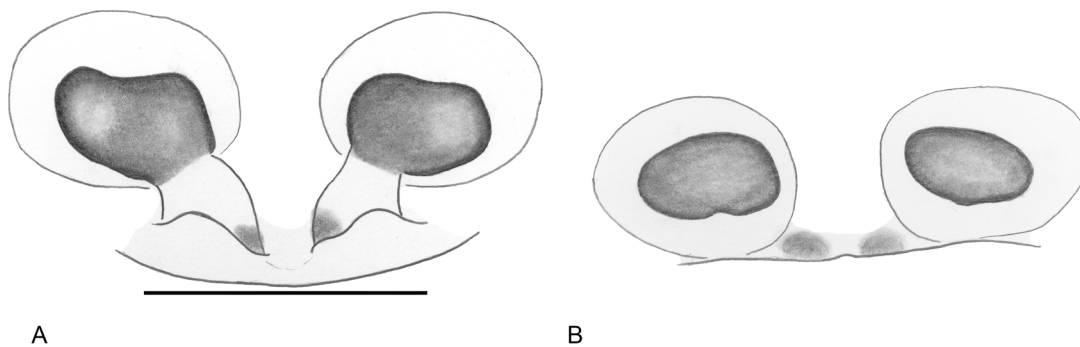


Fig. 22. *Idiops harti* (Pocock, 1893), ♀, genitalia, holotype (BMNH 1893.3.25.1). **A.** Dorsal view. **B.** Frontal view. Scale bar = 1 mm.

Female (holotype BMNH 1893.3.25.1)

MEASUREMENTS. TBL 18.8, CL 12.2, CW 9.8, LL 0.8, LW 1.3, SL 5.8, SW 5.6.

COLOR. Carapace and legs light brown. Abdomen brown.

PROSOMA. Eye tubercle: 1.7 long; 1.1 wide. AME-ALE distance 0.7. Eye diameters: AME 0.44, ALE 0.4, PME 0.3, PLE 0.4. Thoracic fovea procurved with 7 cuspules. Maxilla with 104 cuspules, distributed through ventral area. Basal segment of chelicerae with a prolateral row of 6 large teeth and one small retrolateral tooth (Fig. 4C).

PALP AND LEG MEASUREMENTS. Palp = 10.6 (3.6, 2.4, 2.3, 2.3), I = 12.8 (4.3, 2.8, 2.9, 1.9, 0.9), II = 11.5 (3.9, 2.5, 2.3, 1.8, 1), III = 8.6 (2.4, 1.9, 1.5, 1.8, 1), IV = 15.8 (4.5, 2.9, 3.5, 3.3, 1.6).

SPINATION. Palp: Fe p0-0-2, Pa p0-1-1, Ti p6-5-9, r3-6-8, Ta p8-6-9, r9-8-7. Leg I: Ti p3-3-8, r3-5-6, Mt p6-4-4, r5-5-3, Ta p3-1-1, r1-2-1. Leg II: Ti p3-4-6, r1-1-3, Mt p6-5-6, r2-2-4, Ta p2-3-1, r2-2-1. Leg III: Fe d0-0-1, Pa p3-5-9, r0-1-0, Ti v0-0-2, p2-4-7, Mt v0-0-2, p2-1-3, r1-2-1. Leg IV: Pa p0-0-1, Ti v1-1-2, r1-1-1, Mt v1-2-1-3.

SPERMATHECAE. Short ducts, receptacula wider than long (Fig. 22A).

Distribution

Trinidad and Tobago. Known only from the type locality (Fig. 3B).

Idiops mocambo Fonseca-Ferreira, Guadanucci & Brescovit sp. nov.
[urn:lsid:zoobank.org:act:9A7CB56E-31BD-4122-81D0-D514069399D6](https://zoobank.org/act:9A7CB56E-31BD-4122-81D0-D514069399D6)
Figs 3B, 23A–I

Diagnosis

The male of *Idiops mocambo* sp. nov. differs from other Neotropical species by anterior region of the carapace in a pointed shape (Fig. 23A), sternum with distinct black edges (Fig. 23B) and by the apical branch of the tibial apophysis in rectangular shape (Fig. 23G–H).

Etymology

The specific epithet refers to the location where the holotype specimen was collected.

Type material

Holotype

BRAZIL – **Pará** • ♂; Belém, Mocambo; 1°27'21" S, 48°30'14" W; 4 Nov. 2002; A.B. Bonaldo leg.; MPEG 0110.

Paratype

BRAZIL – **Amazonas** • 1 ♂; Manaus, Reserva Florestal Adolpho Ducke; 3°0'27" S, 59°56'22.92" W; 9 Sep. 1991; H. Höfer and T. Gasnier leg.; INPA 4593.

Other material examined

BRAZIL – **Amazonas** • 1 ♂; Road Am-010, Km 54; 3°3'45" S, 59°59'19" W; 6–10 Nov. 1997; J. Vidal *et al.* leg.; INPA 4594. – **Pará** • 1 ♂; Barcarena; 1°30'21" S, 48°37'33" W; MPEG 1106.

Description

Male (holotype MPEG 0110)

HABITUS. See Fig. 23A.

MEASUREMENTS. TBL 7.9, CL 3.8, CW 3, LL 0.5, LW 0.7, SL 1.9, SW 1.7.

COLOR. Brown carapace and legs, except for coxae and trochanters, which are light brown (Fig. 23A–B).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 23A. Eye tubercle: 0.5 long; 0.9 wide. AME-ALE distance 0.5. Eye diameters: AME 0.2, ALE 0.3, PME 0.2, PLE 0.2. Thoracic fovea procurved (Fig. 23A). Labium and sternum without cuspules (Fig. 23B). Basal segment of chelicerae with a prolateral row of 5 large teeth and 2 small retrolateral teeth, grouped on basal half, rastellum with 16–18 short and thick spines.



Fig. 23. *Idiops mocambo* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., ♂, holotype (MPEG 0110). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). Abbreviation: K = keel. Abbreviation: K = keel. Scale bars: A–G, I = 1 mm; H = 0.5 mm.

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 23G. Leg I with double tibial apophysis, apical branch twice the size of basal branch (Fig. 23G–I). Pseudoscopula: tarsus I–IV totally covered.

PALP. Tibia with spines distributed along margin of retrolateral depression, with large spines at apical and basal ends (Fig. 23C); embolus with lamelliform apical half, keel in retrolateral view and torsion close to sperm duct opening (Fig. 23D–F).

PALP AND LEG MEASUREMENTS. Palp = 7.1 (2.5, 1, 2.6, 1), I = 11.7 (3.4, 1.9, 2.6, 2.6, 1.2), II = 10.3 (2.8, 1.5, 2.3, 2.5, 1.2), III = 9.8 (2.6, 1.4, 1.9, 2.6, 1.3), IV = 12.6 (3.2, 1.8, 3, 3.2, 1.4).

SPINATION. Palp: Ti r25, Ta 0-0-1. Leg I: Pa v0-0-2, Ti v0-0-2, r1-2-3, Mt p0-0-1, r2-2-2, Ta p1-1-1, r1-1-1. Leg II: Ti v2-2-3, Mt v3-3-3, r1-1-2, Ta p0-2-0, r1-1-0. Leg III: Ti v0-2-3, Mt v1-2-4, p1-3-4, Ta p0-2-1. Leg IV: Ti v1-1-3, Mt v1-2-4, p1-3-6, Ta p1-1-1.

Distribution

Brazil. Distributed in phytophysionomies in the Amazon, with records for the North region (eastern Amazonas and Pará) (Fig. 3B).

Idiops nilopolensis Mello-Leitão, 1923

Figs 3D, 24A–L

Idiops nilopolensis Mello-Leitão, 1923: 47.

Idiops nilopolensis – Bücherl *et al.* 1971: 121, figs 6–7. — Fukami & Lucas 2005: 7.

Diagnosis

Males of *Idiops nilopolensis* differ from those of other Neotropical species by the strong curvature of the median portion of the embolus in dorsal view (Fig. 24D–F; also present in *I. fuscus*). Differs from *I. fuscus* by having the embolus with a thickened basal half and by the small embolar lamella (smaller than in *I. fuscus*) close to spermathecae (Fig. 24D–F). The female differs from those of other species by having the spermathecae with a translucent duct and without constriction between the duct and the sclerotized receptacles (Fig. 24L).

Type material

Holotype

BRAZIL – Rio de Janeiro • ♀; Rio de Janeiro; Nov. 1923; H. Blanc de Freitas leg.; MNRJ 10. Lost before the 2018 fire (Moreira *et al.* 2010: 34).

Neotype (here designated)

BRAZIL – Rio de Janeiro • ♂; Nova Iguaçu, Parque Municipal de Nova Iguaçu; 22°45'35" S, 43°27'6" W; 21 Jul. 2004; R. Baptista leg.; MNRJ.

Remark: The type specimen of *Idiops nilopolensis* was lost in the MNRJ long before the 2018 fire. In accordance with the criteria of the ICZN Code (ICZN 1999), a neotype is designated here, because the type is lost and the original description is inadequate to stabilise the species. This neotype is based on a specimen collected near the type locality, in the state of Rio de Janeiro, Brazil.

Other material examined

BRAZIL – Rio de Janeiro • 1 ♀; same locality as for neotype; 1 Nov. 2004; MNRJ.

Description

Male (neotype MNRJ)

HABITUS. See Fig. 24A.

MEASUREMENTS. TBL 16.9, CL 7.3, CW 6.4, LL 0.6, LW 1.2, SL 3.9, SW 3.5.

COLOR. Body uniformly light brown (Fig. 24A–B).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 24A. Eye tubercle: 0.8 long; 1 wide. AME-ALE distance 0.9. Eye diameters: AME 0.4, ALE 0.4, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 24A). Labium and sternum without cuspules (Fig. 24B). Basal segment of chelicerae with a prolateral row of 7 large teeth and 3 small retrolateral teeth, grouped on basal half, rastellum with 16–18 spines, the distal ones longer.

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 20G. Leg I with double tibial apophysis. Apical branch twice the size of basal branch and with a conspicuous spine (Fig. 24H–I). Pseudoscapula: tarsus I–IV totally covered.

PALP. Tibia with retrolateral conspicuous depression and spines concentrated at basal and apical portions (Fig. 24C); embolus with basal torsion and opening of sperm duct in shape of a quill tip (Fig. 24D–E).

PALP AND LEG MEASUREMENTS. Palp = 11.8 (4.3, 2.2, 3.8, 1.5), I = 28.4 (8.5, 3.8, 6.6, 6.7, 2.8), II = 26.9 (7.8, 3.4, 6, 6.3, 3.1), III = 23.7 (6.1, 3.3, 4.3, 6.4, 3.6), IV = 32.6 (8.4, 3.7, 7.9, 8.6, 4).

SPINATION. Palp: Ti r20, Ta d0-0-1. Leg I: Mt p0-0-2, r2-2-4, Ta p2-2-2, r3-3-4. Leg II: Mt p0-0-2, r0-3-3, Ta p2-3-3, r3-4-5. Leg III: Fe d2-1-1, Pa p2-4-5, Ti d2-2-1, v1-2-2, p4-4-6, Mt d2-2-5, v3-4-5, p3-4-6, r2-2-4, Ta p3-4-2, r3-3-6. Leg IV: Ti v1-2-3, p0-0-1, Mt v2-4-6, p1-2-4, Ta p1-4-6.

Female (MNRJ)

HABITUS. See Fig. 24J.

MEASUREMENTS. TBL 15.7, CL 6.2, CW 5.7, LL 0.9, LW 1.3, SL 3.9, SW 3.4.

COLOR. Brown carapace and legs, brownish sternum and coxae (Fig. 24J–K), gray abdomen.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 24J. Eye tubercle: 1.2 long; 0.8 wide. AME-ALE distance 1. Eye diameters: AME 0.2, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 24J). Labium with 2 cuspules (Fig. 24K). Maxilla with 48 cuspules, distributed over anterior ventral half, with 6 large cuspules at anterior ventral retrolateral end and 6 large cuspules at anterior ventral prolateral end (Fig. 24K). Basal segment of chelicerae with a prolateral row of 7 large teeth and 5 small retrolateral teeth, grouped on basal half, rastellum with 22 short and thick spines (Fig. 24K).

PALP AND LEG MEASUREMENTS. Palp = 11.4 (4, 2.4, 2.4, 2.6), I = 12.2 (3.7, 2.8, 2.6, 1.7, 1.4), II = 11.4 (3.6, 2.5, 2.3, 1.6, 1.4), III = 13.6 (4.1, 2.5, 2.2, 2.1, 2.7), IV = 15.7 (4.4, 3.1, 3.1, 3.2, 1.9).

SPINATION. Palp: Ti p4-10-12, r4-6-8, Ta p6-8-7, r10-13-9. Leg I: Ti v0-2-2, p4-5-6, r1-3-9, Mt v2-2-3, p6-6-9, r4-3-5, Ta v0-0-3, p2-3-3, r4-3-5. Leg II: Fe v0-0-2, Pa v0-0-1, Ti v1-1-2, p4-5-6, r0-0-1, Mt v1-2-1, p4-6-9, r1-2-1, Ta v0-1-3, p4-4-4, r4-4-2. Leg III: Pa d0-0-2, Ti p2-3-2, r0-0-3, Mt v0-0-1, r3-1-1, 4-4-3, Ta v0-4-3, p0-2-3. Leg IV: Fe d0-0-2, v0-0-3, Ti v1-1-3, Mt v3-4-6, p1-2-3, Ta v3-3-4, p1-2-3.

SPERMATHECAE. Short and narrow sclerotized base, ducts with same width as receptacles (Fig. 24L).

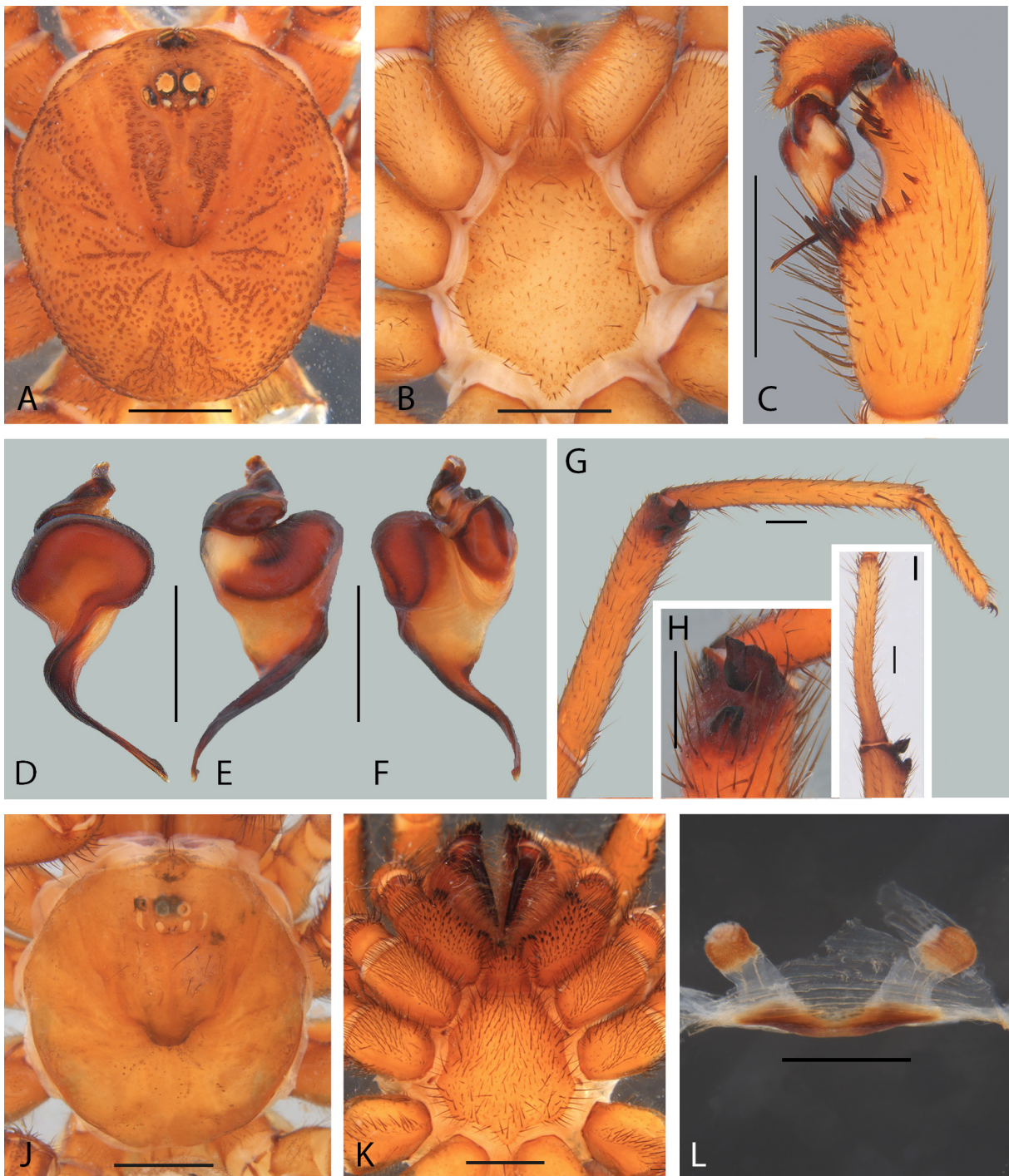


Fig. 24. *Idiops nilopolensis* Mello-Leitão, 1923. **A–I.** ♂, neotype (MRNJ). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀, (MNRJ). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Scale bars: A–B, D–L = 1 mm; C = 2 mm.

Distribution

Brazil. Found in Atlantic Forest phytophysiognomie in the state of Rio de Janeiro (Fig. 3D).

Idiops opifex (Simon, 1889)

Figs 4B, 25

Pseudidiops opifex Simon, 1889: 215, pl. 1 fig. 3.

Idiops opifex – Raven 1985: 139. — Dupérré & Tapia 2021: 274, figs 16a–b, 17a–b.

Diagnosis

The female of *Idiops opifex* differs from that of all other Neotropical species of the genus, except *I. rastratus* and *I. duocordibus* sp. nov., by presenting cuspules on the entire maxillae ventral face. Differs from *I. rastratus* by the non-sclerotized spermathecae base (Fig. 25A) and from *I. duocordibus* sp. nov. by the spherical receptacula (Fig. 25).

Type material

Holotype

FRENCH GUIANA • ♀; Cayenne; MNHN 5340. The holotype is damaged, apparently smashed.

Description

Male

Unknown.

Female (holotype MNHN 5340)

Measurements. TBL 11, CL 5.4, CW 5.2, LL 0.9, LW 1.3, SL 2.9, SW 3.3.

COLOR. Carapace and legs brown. Abdomen dark gray.

PROSOMA. Eye tubercle: 1.7 long; 1.8 wide. AME-ALE distance 1. Eye diameters: AME 0.3, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved. Labium with 23 cuspules. Sternum destroyed. Maxilla with 160 cuspules, distributed through ventral area. Basal segment of chelicerae with a prolateral row of 5 large teeth and 4 small retrolateral basal teeth.

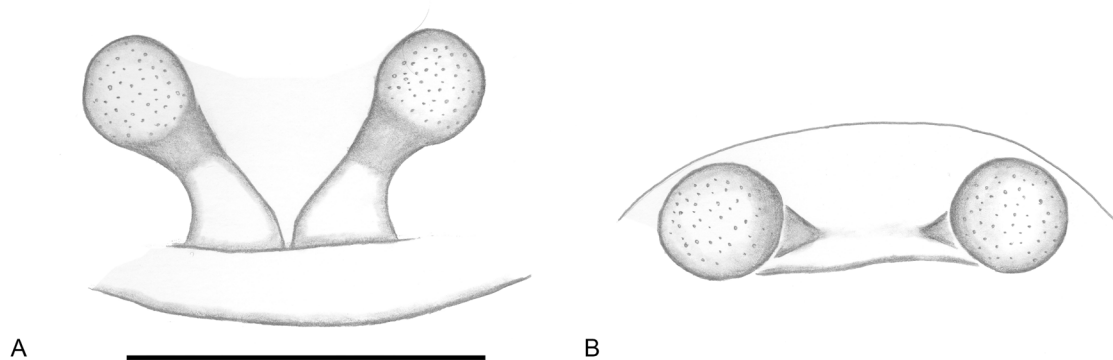


Fig. 25. *Idiops opifex* (Simon, 1889), ♀, genitalia, holotype (MNHN 5340). **A.** Dorsal view. **B.** Frontal view. Scale bar = 1 mm.

PALP AND LEG MEASUREMENTS. Palp = 10.6 (3.6, 2.3, 2.5, 2.2), I = 11.6 (3.8, 2.7, 2.6, 1.8, 0.7), II = 10 (3.4, 2.4, 2, 1.6, 0.6), III = 10.7 (3.3, 2.4, 1.8, 2, 1.2), IV = 14.1 (4.4, 2.8, 3, 3.7, 1.2).

SPINATION. Palp: Fe p0-0-3, Pa p0-1-0, Ti p7-9-9, Ta v0-0-2, p11-10-8, r12-9-7. Leg I: Ti p5-7-11, r4-4-5, Mt p9-7-6, r9-5-6, Ta v0-0-3, p5-2-1, r5-2-0. Leg II: Pa r0-0-1, Ti p3-5-5, r2-3-3, Mt p10-9-5, r5-4-3, Ta p3-3-1, r3-1-0. Leg III: Pa p2-3-9, r0-0-1, Ti v0-0-2, p4-4-10, r3-4-8, Mt v0-0-2, p4-4-6, r2-0-0, Ta v0-0-6. Leg IV: Pa p8-2-0, Mt v1-1-1-3, Ta v0-0-6.

SPERMATHECAE. Duct length similar to diameter of spherical receptacles, close to each other, with basal half thicker than apical half and with sclerotization at transition between duct and receptacle (Fig. 25).

Distribution

French Guyana. Know only from type locality (Fig. 4B).

Idiops petiti (Guérin, 1838)

Figs 3B, 26

Acanthodon petiti Guérin, 1838: 163, pl. 47 figs 1–8.

Acanthodon santaremia O. Pickard-Cambridge, 1896: 733, pl. 34 fig. 13. **Syn. Nov.**

Idiops crulsi Mello-Leitão, 1930: 55, fig. 2. Synonymized by Bücherl *et al.* 1971: 128.

Idiops petiti – O. Pickard-Cambridge 1870: 107; 1896: 732, pl. 34 figs 9–12. — Mello-Leitão 1923: 48.

— Bücherl *et al.* 1971: 121, fig. 5.

Idiops santaremius – Petrunkevitch 1911: 73.

Diagnosis

The male of *Idiops petiti* differs from that of other Neotropical species, except *I. carajas*, by having the palpal tibia with spines concentrated in the basal half of the retrolateral depression (Fig. 26C), the tibial apophysis with a narrow apical branch and rectangular in shape (Fig. 26G–H) and by the presence of a lateral lamella that extends along the median portion of the embolus (Fig. 26E–F). Differs from *I. carajas* by having the subapical portion of the embolus thin and straight (Fig. 26E–F) and the metatarsus of the leg I slightly curved and with a small prolateral projection on the apical half (Figs 26I). Females are distinguished from congeners, except *I. carajas*, by having the spermathecae with a large sclerotized trapezoidal base and V-shaped ducts (Fig. 26L). Differs from *I. carajas* by its large oval-shaped receptacula (Fig. 26L).

Type material

Holotype of *Acanthodon petiti* Guérin, 1838

BRAZIL – Pará • ♀; Santarém; BMNH 1890.7.1.320.

Holotype of *Acanthodon santaremia* O. Pickard-Cambridge, 1896

BRAZIL – Pará • juv.; Santarém; Mar. 1896; O. P.-Cambridge leg.; BMNH 1896.12.13.66.

Holotype of *Idiops crulsi* Mello-Leitão, 1930

BRAZIL – Pará • ♀; Oriximná, Rio Cuminá; G. Cruls leg.; MNRJ 0007. Lost in the fire of 2018.

The type specimen of *Idiops petiti* was originally deposited in a dry collection and subsequently rehydrated and stored in alcohol. Although clearly an adult female, the specimen has lost many legs and the spermathecae, because the abdomen was stuffed with cotton. This prevented a more detailed description. The type specimen of *I. santaremius* was examined and recognized as a juvenile of *I. petiti*.

Other material examined

BRAZIL – **Amazonas** • 2 ♂♂; Manaus, Fazenda Esteio; 2°23'3.00" S, 59°51'15.00" W; 6 Nov. 1985; B.C. Klein leg.; INPA 4590 to 4591 • 1 ♂; Benjamin Constant; 4°22'58" S, 70°1'51" W; 2014; P.S. Pompeu leg.; IBSP 243961 • 1 ♂; Jutai, near the Rio Jutai; 5°38'21.7" S, 69°10'58.8" W; 14–19 Mar. 2006; M.S. Hoogmoed leg.; MPEG 2579. – **Pará** • 2 ♂♂; Belterra, Flona Tapajós, Km 83; 3°31'1" S, 55°4'23" W; 2010; J.L. Freitas leg.; IBSP 218829, IBSP 218868 • 1 ♂; Almeirim, Jari; 1°1'33.122" S, 52°34'2.785" W; MPEG 7588 • 1 ♂; Senador José Porfirio; Trilha do Censo, Margem Direita, Rio Xingu; 2°35'27" S, 51°57'14" W; 25 Feb. 2001; MPEG 0113 • 1 ♂; Senador José Porfirio; Trilha do Acampamento, Margem Direita, Rio Xingu; 25 Feb. 2001; MPEG 0116 • 1 ♂; Jacareacanga, UHN de São Manoel; 9°13'32" S, 56°59'56" W; 16 Feb. 2009; W.U. Prado leg.; UFMG 3205 • 1 ♂; Jacareacanga; 21 Feb. 2009; W.U. Prado leg.; UFMG 3206. – **Rondônia** • 1 ♀; Monte Negro, LC25, Km 10; 10°14'49" S, 63°24'16.8" W; 19 Dec. 2013; P.H. Martins leg.; UFMG 24031.

Description

Male (MPEG 0116)

HABITUS. See Fig. 26A.

MEASUREMENTS. TBL 17.2, CL 7.4, CW 6.7, LL 0.9, LW 1.4, SL 4, SW 3.6.

COLOR. Carapace and legs reddish brown, with yellowish coxae, brownish sternum; abdomen grey (Fig. 26A–B)

PROSOMA. Carapace and ocular arrangement as shown in Fig. 26A. Eye tubercle: 0.7 long; 1.3 wide. AME-ALE distance 0.9. Eye diameters: AME 0.4, ALE 0.4, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 26A). Labium and sternum without cuspules (Fig. 26B). Basal segment of chelicerae with a prolateral row of 8 large teeth and 4 small retrolateral teeth, grouped in basal half, rastellum presenting 12–13 spines of same size.

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 26G. Leg I with double tibial apophysis. Apical branch twice the size of basal branch and with a conspicuous spine (Fig. 26H–I). Pseudoscapula: tarsus I–IV totally covered.

PALP. Elongated palpal bulb with slightly curved embolus and without torsion of subapical portion (Fig. 26D–F).

PALP AND LEG MEASUREMENTS. Palp = 12 (3.8, 3.3, 3.21, 1.7), I = 22 (6.8, 3.5, 5.1, 4.8, 1.8), II = 18.9 (6, 3, 4.4, 3.8, 1.7), III = 17 (4.7, 2.9, 3, 4.3, 2.1), IV = 24.2 (6.9, 3.6, 5.9, 5.1, 2.7).

SPINATION. Palp: Ti r19, Ta d0-0-4. Leg I: Fe d1-2-1, Pa v0-1-5, Ti v10-15-16, p0-1-0, Mt v6-8-14, p0-0-5, r0-0-4, Ta p3-4-4, r5-6-6. Leg II: Fe d1-2-1, Pa p0-0-2, Ti v5-7-12, p2-2-9, r1-2-4, Mt v6-6-7, p3-5-10, r3-3-4, Ta p4-4-4, r6-6-7. Leg III: Fe d1-2-1, Ti p2-3-6, Mt r6-3-8, Ta p5-8-8, r2-4-7. Leg IV: Fe d1-2-1, Ti v1-2-3, r0-1-2, Mt v1-3-3, p1-2-5, r0-3-5, Ta p5-5-8, r5-5-8.

Female (UFMG 24031)

HABITUS. See Fig. 26J.

MEASUREMENTS. TBL 13, CL 5.8, CW 4.9, LL 0.8, LW 2, SL 3.5, SW 3.5.

COLOR. Carapace and legs brown, light brown sternum (Fig. 22J–K). Abdomen grey.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 26J. Eye tubercle: 0.6 long; 1 wide. AME-ALE distance 0.8. Eye diameters: AME 0.2, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. J). Labium with 3 cuspules (Fig. 26K). Maxilla with 30 cuspules, distributed throughout anterior ventral half (Fig. 26K). Basal segment of chelicerae with a prolateral row of 7 large teeth and 4 small



Fig. 26. *Idiops petiti* (Guérin, 1838). **A–I.** ♂ (MPEG 0116). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀ (UFMG 24031). **J.** Prosoma (dorsal view). **K.** Prosoma (ventral view). **L.** Genitalia (dorsal view). Scale bars = 1 mm.

retrolateral teeth, grouped in basal half. Rastellum well developed, presenting 14–16 robust spines (Fig. 26K).

PALP AND LEG MEASUREMENTS. Palp = 9.6 (3, 2, 2.2, 2.4), I = 10.2 (2.8, 2.2, 2.3, 1.7, 1.2), II = 10.2 (3.3, 2.2, 2, 1.3, 1.4), III = 11.3 (3, 2.3, 2, 2.3, 1.7), IV = 15.2 (4, 3, 3.2, 2.9, 2.1).

SPINATION. Palp: Ti p5-6-9, r6-8-12, Ta p6-7-8, r8-8-9. Leg I: Pa v0-0-2, Ti v1-2-1, p4-6-9, r4-6-11, Mt v2-1-1, p8-6-8, r10-3-4, Ta v0-0-1, p3-4-4, r4-3-2. Leg II: Ti v1-1-1, p3-7-7, r0-1-2, Mt v1-1-1, p7-5-4, r1-2-2, Ta v0-1-1, p4-4-3, r2-2-1. Leg III: Fe d0-0-1, Pa d0-0-1, p4-5-8, r0-0-1, Ti v0-1-2, p3-4-5, r0-1-4, Mt v2-1-2, p2-3-2, r2-2-1, Ta v1-2-3, p0-0-3. Leg IV: Fe d0-0-1, Pa p12-4-2, Ti v1-1-2, Mt v2-3-5, p0-1-2, Ta v1-2-3, p0-3-6.

SPERMATHECAE. Ducts with weakly sclerotized basal half and thickened and sclerotized apical half; asymmetric receptacula, with expansion of medial half (Fig. 26L).

Distribution

Brazil. Widely distributed in the Amazon region, with records for the North region (Amazonas, Pará and Rondônia) (Fig. 3B).

Idiops pirassununguensis Fukami & Lucas, 2005
Figs 2E–F, 4C, 6G, 27–28

Idiops pirassununguensis Fukami & Lucas, 2005: 2, figs 1–5.

Diagnosis

Males of *Idiops pirassununguensis* differ from those of other Neotropical species by having the tibial apophysis with a robust apical branch and a prominent spine in prolateral view (Figs 27H–I, 28C), metatarsus I long with a prolateral projection on the apical half (Fig. 27I) and the embolus with a prominent lamella that expands along the apical half, with a constriction near the sperm duct opening (Figs 27D–F, 28E–F). Females differ by having the spermathecae with long vertical ducts, and strong sclerotization on the transition between duct and receptacula, with the same diameter as ducts (Fig. 27L).

Type material

Holotype

BRAZIL – São Paulo • ♂; Pirassununga; Nov. 1997; P. Valdujo leg.; IBSP 9565.

Other material examined

BRAZIL – **Amapá** • 7 ♂♂; Mazagão; 0°6'54" S, 51°17'20" W; 3 Dec. 2003; R.A. da Silva leg.; MCTP 16519. – **Amazonas** • 2 ♂♂; Manaus, PAE Lago Grande; 3°3'45" S, 59°59'19" W; 2–7 Jul. 2007; Projeto Geoma 2 leg.; INPA 6914, INPA 6916 • 1 ♀; Manaus, PAE Lago Grande; 5 May 2007; A.L. Tourinho and R. Saturnino leg.; INPA 6915. – **Pará** • 1 ♂; Parauapebas; 6°4'4" S, 49°54'7" W; Sep. 2008; C.A.R. Souza leg.; IBSP 225254. – **Rondônia** • 1 ♂; Pimenta Bueno; 11°40'21" S, 61°11'37" W; Jul. 2000; L. Carvalho leg.; IBSP 13335 • 2 ♂♂; same collection data as for preceding; IBSP 13337 • 4 ♂♂; Vilhena; 12°44'26" S, 60°8'45" W; Sep. 1999; L. Carvalho leg.; IBSP 14400 • 2 ♂♂; same collection data as for preceding; IBSP 14401, IBSP 14403 • 2 ♂♂; same collection data as for preceding; IBSP 14402. – **Maranhão** • 1 ♂; Caxias, Área de Proteção Ambiental Municipal do Inhamum; 04°53'30" S, 43°24'53" W; 2–5 Oct. 2007; Lima-Lobato leg.; IBSP 130947 • 1 ♂; same collection data as for preceding; IBSP 129120. – **Goiás** • 2 ♂♂ (SEM); Caldas Novas, UHE Corumbá; 17°42'50" S, 48°32'22" W; 12–23 Aug. 1996; M.T.I. Rodrigues *et al.* leg.; MZSP 15651. – **Piauí** • 5 ♂♂; Alvorada do Gurguéia, Fazenda

Escola UFPI; 8°22'11.5" S, 43°51'30.2" W; 4–12 Sep. 2018; D.B.S. Barbosa *et al.* leg.; CHNUFPI 2715 • 5 ♂♂; same collection data as for preceding; CHNUFPI 2713 • 12 ♂♂; same collection data as for preceding; CHNUFPI 2714 • 15 ♂♂; same collection data as for preceding; CHNUFPI 2576 to 2590 • 2 ♂♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°13'59" S, 41°41'14.5" W; 11 Dec, 2005; F.M. Oliveira-Neto *et al.* leg.; MPEG 2336 • 2 ♂♂; same collection data as for preceding; MPEG 2339, MPEG 2401 • 1 ♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°13'47.7" S, 41°41'36.6" W; MPEG 2337 • 1 ♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°14'12.8" S, 41°41'0.8" W; MPEG 2338 • 2 ♂♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°19'19" S, 41°33'10"; CHNUFPI CASTa0226 • 1 ♂; same collection data as for preceding; CHNUFPI CASTa0225 • 1 ♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°13'46.7" S, 41°41'29.9" W; 25 Oct. 2005; F.M. Oliveira-Neto *et al.* leg.; CHNUFPI 4024 • 2 ♂♂; Castelo do Piauí, Fazenda Bonito, ECB Rochas Ornamentais do Brasil LTDA; 5°13'59" S, 41°41'14.5" W; 8 May 2005; F.M. Oliveira-Neto *et al.* leg.; CHNUFPI 4028 • 2 ♂♂; same collection data as for preceding; CHNUFPI 2712 • 3 ♂♂; same collection data as for preceding; CHNUFPI 4025 to 4027 • 1 ♀; Guaribas, Parque Nacional da Serra das Confusões; 9°13'16" S, 43°29'21" W; Oct. 2006; P.R.R.Silva *et al.* leg.; CHNUFPI 4029 • 1 ♂; same collection data as for preceding; CHNUFPI 4030 • 2 ♂♂; Gilbués, Olhos D'água da Santa, PN Serra das Confusões; MZSP 19974 • 1 ♂; São Raimundo Nonato, Parque Nacional Serra da Capivara; 8°25'0" S, 42°20'0" W; 27 Oct.–9 Nov. 2012; R. Recoder and M. Teixeira Jr. leg.; IBSP 167608 • 1 ♂; Uruçuí, Vale do Rio Pratinha, 40 km from Uruçuí; 7°50'08" S, 44°27'05" W; M.P.D. Santos *et al.* leg.; CHNUFPI 2711 • 1 ♂; Uruçuí; Fazenda União, Topo da Chapada, 40 km from Uruçuí; 7°41'41" S, 44°26'30" W; 26 Oct. 2007; F.M. Oliveira-Neto leg.; CHNUFPI 2710. – **Paraíba** • 5 ♂♂; São José dos Cordeiros, RPPN Almas; 7°28'45" S, 36°54'18" W; 2008–2009; A. Vasconcelos leg.; IBSP 228197, IBSP 228200 to 228201, IBSP 228205, IBSP 228207 • 2 ♂♂; same collection data as for preceding; IBSP 228202 • 2 ♂♂; same collection data as for preceding; IBSP 228199 • 3 ♂♂; same collection data as for preceding; IBSP 228193. – **Sergipe** • 1 ♂; Canindé do São Francisco, Fazenda São José-Olhos D'água, UHE de Xingó; 9°37'25" S, 37°47'54" W; 31 Oct. 2000; L. Ianuzzi leg.; IBSP 10183. – **Mato Grosso** • 2 ♂♂; Pontes e Lacerda; 15°19'10.38" S, 59°17'33.70" W; 5–10 Oct. 2013; R.A.K. Ribeiro leg.; UFMT • 2 ♂♂; Vila Bela da Santíssima Trindade, Córrego Areias; 14°50'29.9" S, 69°39'01.2" W; 2–4 Nov. 2013; R.A.K. Ribeiro leg.; UFMT • 1 ♂; Lucas do Rio Verde, PCH Canoa Quebrada; 12°47' S, 56°00' W; V. Azaias leg.; UFMT. – **Minas Gerais** • 1 ♂; Santana do Riacho, Parque Nacional Serra do Cipó; 19°22'1" S, 43°32'17" W; Oct. 2004; UFMG 1740 • 2 ♂♂; Santa Luzia; 19°46'12" S, 43°51'3" W; 9 Oct. 2004; UFMG 1730, UFMG 1732 • 1 ♂; Santa Luzia, 19°46'43.52" S, 43°50'26.56" W; 17 Sep. 2011; B.R.N. Leg keys; UFMG 8471 • 1 ♀; Morro do Pilar; 19°12'56" S, 43°22'34" W; 6 Aug. 2011; P.H. Martins leg.; UFMG 11296 • 1 ♀; Morro do Pilar; 19°12'56" S, 43°22'34" W; 29 Jul. 2011; P.H. Martins leg.; UFMG 11297 • 1 ♀; Santana do Riacho; 19°10'8" S, 43°42'57" W; 9 Jul. 2011; P.H. Martins leg.; UFMG 11264 • 2 ♂♂, 1 ♀; Santana do Riacho, Parque Nacional Serra do Cipó; 19°21'06.8" S, 43°36'38.8" W; 17–21 Oct. 2018; R.F. Ferreira, A. Galleti, P.H. Martins and V. Ghirotto leg.; CAD 833 • 1 ♀; Diamantina, Campus JK; 18°14'56" S, 43°36'0" W; 7 Mar. 2010; W.F. Silva leg.; CAD 27 • 1 ♂; São Gonçalo do Rio Preto, Parque Estadual do Rio Preto; 18°10'29.97" S, 43°20'41.25" W; 20–25 Oct. 2010; G. Monteiro, F. Sá, W.F. Silva and J.P.L. Guadanucci leg.; CAD 275 • 1 ♀; São Gonçalo do Rio Preto, Parque Estadual do Rio Preto; 14 Jan. 2010; J.P.L. Guadanucci, W.F. Silva, D. Moura, R. F. Ferreira and D. Weinmann leg.; CAD 14 • 1 ♂; Belo Horizonte, Campus UFMG; 19°52'19" S, 43°57'58" W; 27 Nov. 1999; E.S.S. Álvares leg.; UFMG 606 • 2 ♂♂; Belo Horizonte, Campus UFMG; 10–25 Sep. 2000; E.S.S. Álvares leg.; UFMG 607 • 1 ♂; Belo Horizonte, Campus UFMG; 30 Aug. 2000; E.S.S. Álvares leg.; UFMG 608 • 2 ♂♂; Belo Horizonte, Campus UFMG; 26 Sep. 2009; I.L.F. Magalhães leg.; UFMG 3211 • 1 ♂; Belo Horizonte, Reserva Biológica UFMG; IBSP 14488 • 1 ♂; Belo Horizonte, Campus UFMG, Centro Pedagógico UFMG; Jul. 2002; C. Torres leg.; IBSP 13659. – **São Paulo** • 1 ♂; Araraquara; 21°47'38" S, 48°10'33" W; 30 Sep. 1988; IBSP 9562 • 1 ♂; Ribeirão Preto; 21°10'40" S, 47°48'36" W; 24 Nov. 2004; IBSP 12337 •

1 ♂; Santo Antônio do Aracanguá; 20°56'13" S, 50°29'45" W; IBSP 14314 • 1 ♂; São Paulo, Parque dos Príncipes; 23°25' S, 46°37' W; IBSP 13324 • 1 ♂; Rio Pequeno; 23°33' S, 46°43' W; IBSP 3346 • 1 ♂; São Roque; 23°31'44" S, 47°08'06" W; 2 Aug. 2011; A.B. Canute leg.; IBSP 9133.

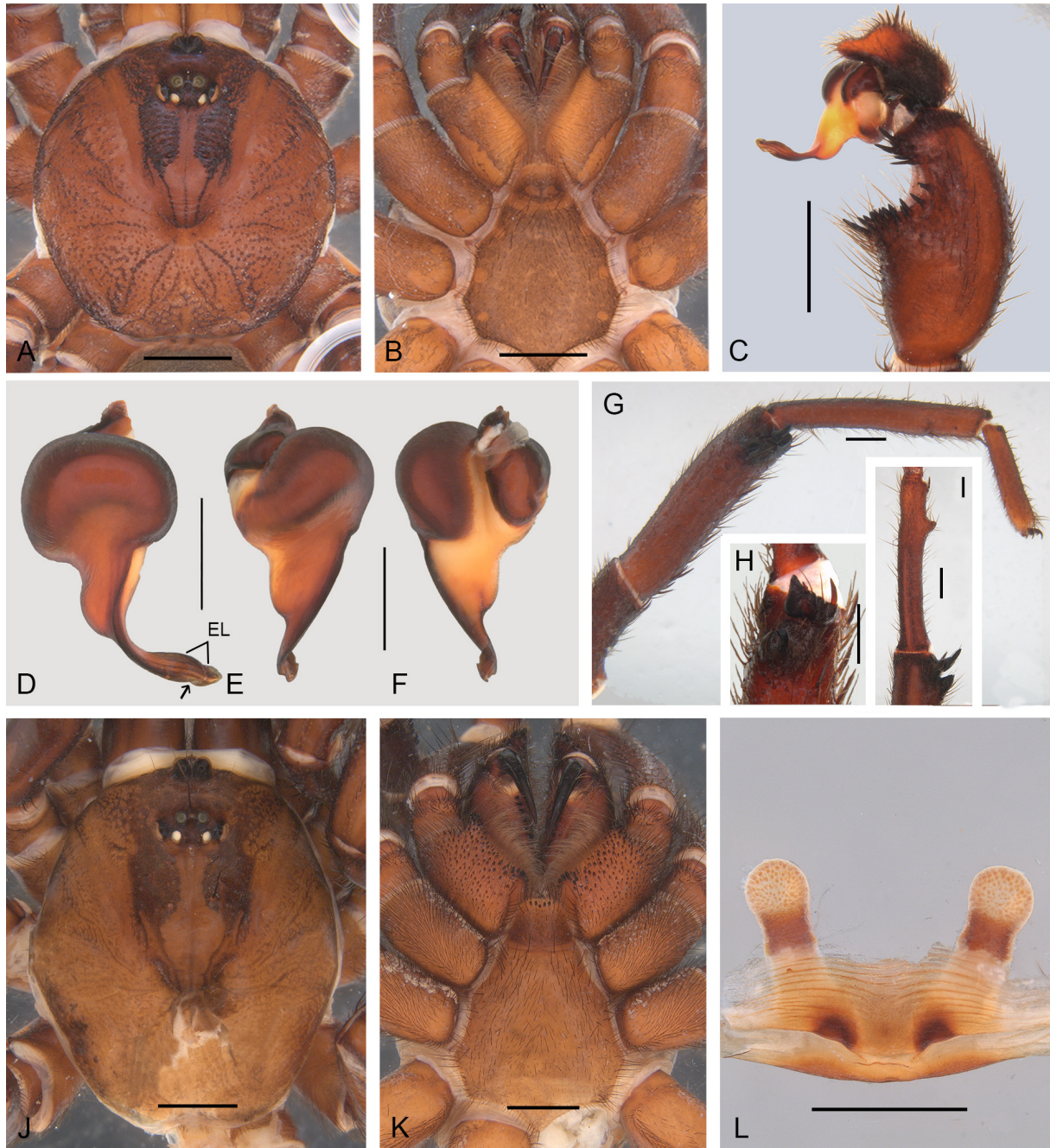


Fig. 27. *Idiops pirassununguensis* Fukami & Lucas, 2005. **A–I.** ♂ (UFMG 607). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–L.** ♀ (UFMG 11264). **J.** Prosoma, dorsal view. **K.** Prosoma, ventral view. **L.** Genitalia (dorsal view). Abbreviation: EL = embolar lamella. The arrow indicates a constriction. Scale bars = 1 mm.

Emended description

Male and female recently described by Fukami & Lucas (2005). New data on the male and female are included here:

Male (UFMG 607)

HABITUS. See Fig. 27A.

COLOR. Carapace with dark brown spots on anterior half, mainly on cephalic area near eyes (Fig. 27A).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 27A. Eye tubercle: 0.6 long; 1 wide. AME-ALE distance 0.8. Basal segment of chelicerae with a prolateral row of 6 large teeth and 4 small retrolateral teeth, grouped in basal half (Fig. 28A); rastellum presenting 12 spines of same size (Fig. 28B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 27G. Pseudoscopula: on tarsus I divided into rows of strong setae; tarsus II–IV totally covered.

PALP. Tibia with expansion of basal half of retrolateral depression (Figs 27C, 28D). Palpal bulb with short embolus with a strongly inclined basal portion and incomplete subapical torsion (Fig. 27D–F).

SPINATION. Palp: Ti r24, Ta d0-0-4. Leg I: Fe d1-1-2, Ti v1r-1r-2r, Mt 1r-2r-1, Ta r2-1-0. Leg II: Fe d1-1-2, Ti v0-2r-1r-1, Mt v1r-1r-1r-2, Ta p0-0-1, r2-2-0. Leg III: Fe d1-1-1, Pa d1-1-0, p3-5-8, r0-0-2, Ti v0-1r-0-2, p1-1-4, r1-1-2, Mt v3-4-0-4, p3-2-2, r0-1-2, Ta p0-4-8, r0-4-8. Leg IV: Fe d1-1-2, Pa p16-3-0, Ti v1-2-2, Mt v1-2-1-3, Ta p2-3-6, r0-0-2.

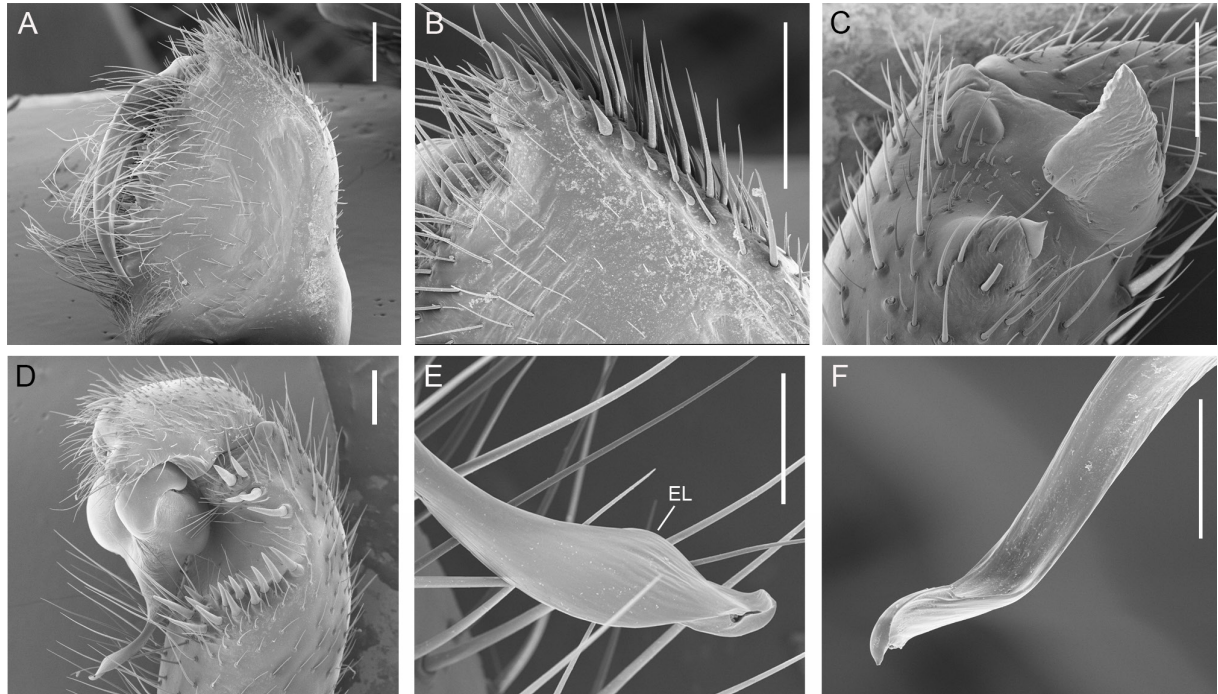


Fig. 28. Scanning electron micrographs of *Idiops pirassununguensis* Fukami & Lucas, 2005, ♂ (MZSP 15651). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Dorsal view. **F.** Prolateral view. Abbreviation: EL = embolar lamella. Scale bars: A–D = 0.5 mm; E–F = 0.2 mm.

Female (UFMG 11264)

HABITUS. See Fig. 27J.

MEASUREMENTS. TBL 19.1, CL 9.8, CW 8.8, LL 1.5, LW 1.8, SL 5.4, SW 4.8.

COLOR. Similar to that of male, except sternum and coxae brownish and dark gray abdomen (Fig. 27J–K).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 27J. Eye tubercle: 2.2 long; 1.9 wide. AME-ALE distance 1.4. Eye diameters: AME 0.4, ALE 0.5, PME 0.3, PLE 0.6. Thoracic fovea procurved (Fig. 27J). Labium with 6 cuspules (Fig. 27K). Maxilla with 92 cuspules, distributed over anterior ventral half, with 15 large cuspules at anterior prolateral end and 18 large cuspules at anterior retrolateral end (Fig. 27K). Basal segment of chelicerae with a prolateral row of 6 large teeth and a retrolateral row with 3 small teeth, grouped in basal third, rastellum presenting 22–24 spines of same size (Fig. 27K).

PALP AND LEG MEASUREMENTS. Palp = 14.4 (4.8, 3.1, 3.2, 3.3), I = 16.4 (5.3, 3.6, 3.6, 2.6, 1.3), II = 14.7 (4.8, 3.4, 2.9, 2.4, 1.2), III = 15.1 (4.1, 3.5, 2.4, 3.1, 2), IV = 20.3 (5.4, 4.1, 4.4, 4.2, 2.2).

SPINATION. Palp: Ti p5-12-13, r7-12-14, Ta v0-0-3, p12-10-8, r12-14-8. Leg I: Ti p5-7-8, r7-8-12, Mt p12-9-11, r11-10-9, Ta v0-0-6, p5-4-2, r5-4-2. Leg II: Ti p3-6-6, r1-3-3, Mt p12-9-12, r5-5-6, Ta v0-0-5, p7-4-3, r6-3-1. Leg III: Pa p3-4-8, r0-0-3, Ti v1-1-1, p2-3-6, r0-2-4, Mt v2-2-2, p6-2-2, r8-1-2, Ta v0-6-15. Leg IV: Pa p37-4-0, Ti v1-1-2, Mt v2-2-2, Ta v2-4-13.

SPERMATHECAE. Ducts with non-sclerotized basal region, thicker than apical portion; sclerotized apical portion; spherical and non-sclerotized receptacula, with evident granules (Fig. 27L).

Distribution

Brazil. Widely distributed, with areas in the phytophysionomies of the Amazon, Caatinga and Cerrado. Records for Central-West region (Distrito Federal and Goiás), North region (Amazonas, Amapá, Pará and Rondônia), Northeast region (Bahia, Maranhão, Paraíba, Piauí and Sergipe) and Southeast region (Minas Gerais and São Paulo) (Fig. 4C).

Idiops rastratus (O. Pickard-Cambridge, 1889)

Figs 4C, 6F, 29–30

Dendricon rastratum O. Pickard-Cambridge, 1889: 250, figs 1–5. Synonymized by Pocock 1895: 223.

Dendricon rastratum – O. Pickard-Cambridge 1890: 623, pl. 53 fig. 2.

Pseudidiops rastratus – Pocock 1895: 223. — Petrunkevitch 1911: 87.

Idiops rastratus – Raven 1985: 139.

Diagnosis

The male of *Idiops rastratus* resembles that of *I. fuscus* by the shape of the palpal bulb, but differs by having the embolus curvature less accentuated (Fig. 29D–F) and the absence of a projection at the base of the retrolateral depression of the palpal tibia. The female differs from that of other species (except *Idiops opifex* and *I. duocordibus* sp. nov.) by the strong cuspules on the entire ventral face of the maxillae (Fig. 29K). Differs from *I. opifex* by the aspect of the spermathecae, with a shorter duct and a slightly larger receptacle compared to the diameter of the duct (Fig. 29L). Differs from *I. duocordibus* sp. nov. by the unmodified and rounded receptacle (Fig. 29L).

Type material

Syntypes

BRAZIL – **Rio de Janeiro** • 4 ♀♀; Serra dos Órgãos; W. Baker leg.; BMNH 1890.1.20.1 to 1890.1.20.4.

Other material examined

BRAZIL – Bahia • 2 ♂♂; Feira de Santana, Serra de São José; 12°16'1"S, 38°58'1" W; 2009–2010; G. de Ferreira leg.; IBSP 258656 to 258657 • 1 ♀, 1 juv.; Porto Seguro, Arraial d’Ajuda; 16°27.643' S,

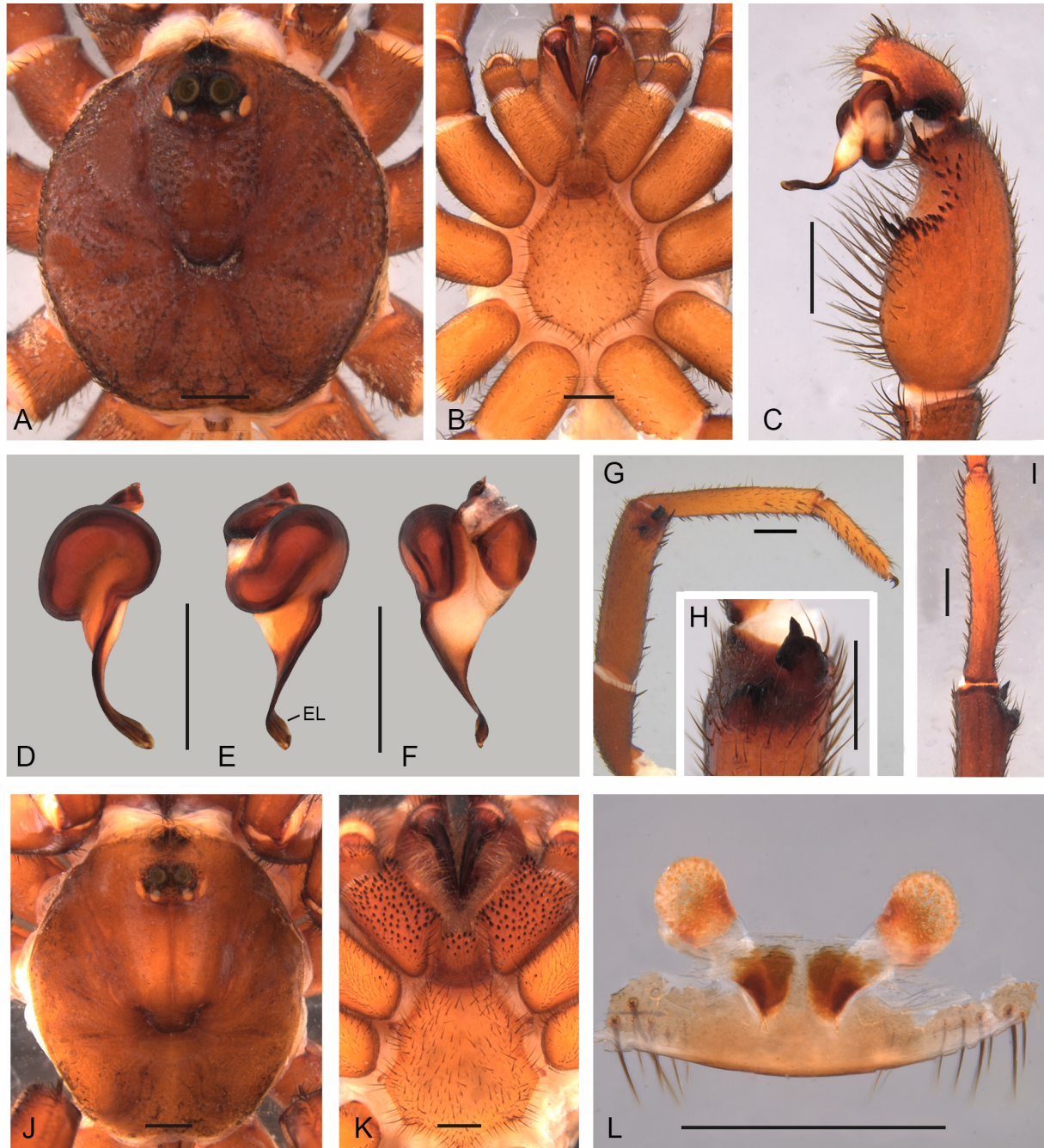


Fig. 29. *Idiops rastratus* (O. Pickard-Cambridge, 1889). A–I. ♂ (MZSP 24282). A. Prosoma (dorsal view). B. Prosoma (ventral view). C. Part of palp (retrolateral view). D–F. Palpal bulb. D. Dorsal view. E. Retrolateral view. F. Prolateral view. G. Tibia, metatarsus and tarsus I (prolateral view). H. Tibial apophysis (prolateral view). I. Tibial apophysis and metatarsus I (dorsal view). J–L. ♀ (MZSP 24282). J. Prosoma (dorsal view). K. Prosoma (ventral view). L. Genitalia (dorsal view). Abbreviation: EL = embolar lamella. Scale bars = 1 mm.

39°08.298' W; 24–27 Feb. 2005; Expedição Arachné leg.; MNRJ • 18 ♂♂; Una, 15°17'34" S, 39°4'30" W; Dec. 1999; K. Kato leg.; MZSP 24233 • 11 ♂♂; same collection data as for preceding; MZSP 24218 • 15 ♂♂, 2 ♀♀; same collection data as for preceding; MZSP 24214 • 13 ♂♂; same collection data as for preceding; MZSP 24216 • 7 ♂♂; same collection data as for preceding; MZSP 24219 • 7 ♂♂; same collection data as for preceding; MZSP 24221 • 10 ♂♂; same collection data as for preceding; MZSP 24292 • 7 ♂♂; same collection data as for preceding; MZSP 24211 • 2 ♂♂, 1 ♀; same collection data as for preceding; MZSP 24282 • 2 ♂♂; same collection data as for preceding; MZSP 24212 • 5 ♂♂, 1 ♀; same collection data as for preceding; MZSP 24210 • 6 ♂♂; same collection data as for preceding; MZSP 24284 • 3 ♂♂ (SEM); same collection data as for preceding; MZSP 24215 • 6 ♂♂; same collection data as for preceding; MZSP 24675 • 5 ♂♂; same collection data as for preceding; MZSP 24220 • 3 ♂♂; same collection data as for preceding; MZSP 24213 • 5 ♂♂; same collection data as for preceding; MZSP 24217 • 4 ♂♂; same collection data as for preceding; MZSP 24288 • 3 ♂♂; same collection data as for preceding; MZSP 24273 • 2 ♂♂; same collection data as for preceding; MZSP 24222 • 4 ♂♂; same collection data as for preceding; MZSP 24275 • 3 ♂♂; same collection data as for preceding; MZSP 24276 • 6 ♂♂; same collection data as for preceding; MZSP 24287. – **Minas Gerais** • 1 ♂; Nova Lima, Serra da Moeda, Cave PBR_10_11; 20°09'20" S, 43°58'24" W; 15–20 Mar. 2010; R. Bessi leg.; IBSP 196034. – **Espírito Santo** • 2 ♂♂; Linhares, Reserva Natural Vale; 19°6'54" S, 39°56'20" W; 27–30 Apr. 2010; J.P.P. Barbosa *et al.* leg.; IBSP 234713. – **Rio de Janeiro** • 1 ♀; Teresópolis, Parque Nacional da Serra dos Órgãos; 23°27'33" S, 46°38'2" W; 10–22 Nov. 2010; R.P. Indicatti and F.U. Yamamoto leg.; IBSP 243973. – **São Paulo** • 36 ♂♂; Bananal, Estação Biológica de Bananal; 22°15'–22°37' S, 44°07'–44°22' W; 13–25 Apr. 2004; A.E. Monteiro leg.; MZSP 23781 • 39 ♂♂; same collection data as for preceding; MZSP 23732 • 1 ♀; Bananal, Estação Biológica de Bananal; 2010; J.M. Pereira leg.; IBSP 245408.

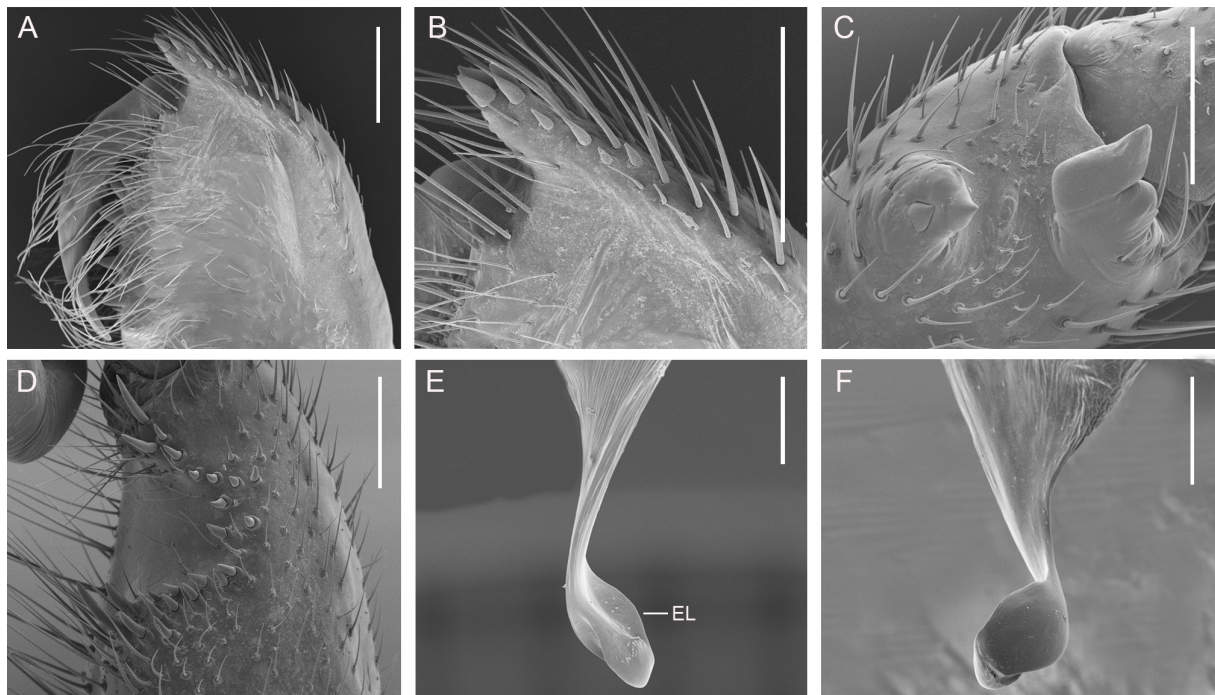


Fig. 30. Scanning electron micrographs of *Idiops rastratus* (O. Pickard-Cambridge, 1889), ♂ (MZSP 24215). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: EL = embolar lamella. Scale bars: A–D = 0.5 mm; E–F = 0.2 mm.

Description

Male (MZSP 24282)

HABITUS. See Fig. 29A.

MEASUREMENTS. TBL 11.2, CL 5.5, CW 5.2, LL 0.7, LW 1, SL 3, SW 2.6.

COLOR. Carapace and legs reddish brown, with yellowish coxae, brownish sternum (Fig. 29A–B), abdomen dorsally dark gray and ventrally brownish.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 29A. Eye tubercle: 1.3 long; 1.4 wide. Distance AME–ALE 0.5. Eye diameters: AME 0.5, ALE 0.3, PME 0.2, PLE 0.4. Thoracic fovea procurved (Fig. 27A). Labium and sternum without cuspules (Fig. 29B). Basal segment of chelicerae with a prolateral row of 5 large teeth and 4–5 small retrolateral teeth in basal third (Fig. 30A), with prominent rastellum, with 7–8 spines, with larger ones in distal region (Fig. 30B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 29G. Basal branch of tibial apophysis with additional tooth (Fig. 30C). Pseudoscapula: tarsus I smooth, II weakly covered, III–IV densely covered.

PALP. Tibia with conspicuous retrolateral depression and with larger spines concentrated on basal half (Figs 29C, 30D); embolus with apical lamella with a differentiated dorsal and ventral border (Figs 29D–F, 30E–F).

PALP AND LEG MEASUREMENTS. Palp = 9 (3.2, 1.6, 3, 1.2), I = 20.7 (6.4, 3, 4.9, 4.4, 2), II = 16.5 (5.3, 2, 3.6, 3.8, 1.8), III = 15.13 (4.1, 2.1, 3, 3.9, 1.9), IV = 21.7 (6, 2.7, 5.3, 5.3, 2.4).

SPINATION. Palp: Ti r36, Ta d-0-0-4. Leg I: Ti v1r-1r-2r-1ap, Mt v35-3, Ta v45, p2-3-3, r4-3-1. Leg II: Ti v1r-1r-3r-2, Mt v4-6-5-3ap, p0-1-1, Ta p3-4-2, r3-3-4. Leg III: Pa p1-2-7, r0-1-2, Ti v1-2-2-1ap, p1-1-1, r1-1-1, Mt v2-4-3-4, p0-0-2, r1-1-1, Ta p2-3-2, r3-4-2. Leg IV: Pa p6-1-0, Ti v1-1-4, Mt v1-1r-1-3, Ta p2-1-3, r0-1-2.

Female (BMNH 1890.1.20.1)

HABITUS. See Fig. 29J.

MEASUREMENTS. TBL 13, CL 5.8, CW 4.9, LL 0.8, LW 2, SL 3.5, SW 3.5.

COLOR. Carapace and legs reddish brown, with yellowish coxae, brownish sternum (Fig. 29J–K), abdomen dorsally dark gray and ventrally brownish.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 29J. Eye tubercle: 1.7 long; 1.5 wide. Distance AME–ALE 0.9. Eye diameters: AME 0.5, ALE 0.4, PME 0.3, PLE 0.4. Thoracic fovea procurved (Fig. 29J). Labium with 14 cuspules. Maxilla with 113 cuspules, distributed throughout ventral region (Fig. 29K). Basal segment of chelicerae with a prolateral row of 5 large teeth and a retrolateral row with 9 small teeth, grouped in basal third, rastellum with 12–14 spines, distal ones longer.

PALP AND LEG MEASUREMENTS. Palp = 11.4 (3.9, 2.4, 2.7, 2.4), I = 12.7 (4.4, 2.7, 2.7, 1.9, 1), II = 10.8 (3.3, 2.5, 2.2, 1.8, 1), III = 11.4 (3.4, 2.4, 1.9, 2.3, 1.4), IV = 16.2 (4.8, 2.9, 3.6, 3.1, 1.8).

SPINATION. Palp: Ti r36, Ta d-0-0-4. Leg I: Ti v1r-1r-2r-1ap, Mt v35-3, Ta v45, p2-3-3, r4-3-1. Leg II: Ti v1r-1r-3r-2ap, Mt v4-6-5-3, p0-1-1, Ta p3-4-2, r3-3-4. Leg III: Pa p1-2-7, r0-1-2, Ti v1-2-2, p1-1-1, r1-1-1, Mt v2-4-3-4, p0-0-2, r1-1-1, Ta p2-3-2, r3-4-2. Leg IV: Pa p6-1-0, Ti v1-1-4, Mt v1-1r-1-3, Ta p2-1-3, r0-1-2

SPERMATHECAE. Base divided by non-sclerotized area. Ducts short and slightly narrower than receptacles, which are spherical and with evident granules (Fig. 29L).

Distribution

Brazil. Mainly distributed in Atlantic Forest phytophysionomies along the coastal zone, with records for the Southeast region (east of São Paulo, Espírito Santo and Rio de Janeiro) and Northeast region (center-south of Bahia). Only one record for the central region of Minas Gerais (Fig. 4C)

Idiops rohdei Karsch, 1886
Figs 3C, 31

Idiops rohdei Karsch, 1886: 93.

Diagnosis

The male of *Idiops rohdei* differs from that of other Neotropical species by the rectangular shape in dorsal view of the apical branch of the tibial apophysis (Fig. 31H) and by the short metatarsus I with a projection on the apical half (Fig. 31I). The female differs in having the spermathecae with ducts slightly curved outward in the median portion and elongated bean-shaped receptacles (Fig. 31J–K).

Type material

Holotype

PARAGUAY • ♀; R. Rohde leg.; ZMB 6230.

Other material examined

PARAGUAY • 1 ♂; Departamento Amambay, 33 km SW of Pedro Juan Caballero, Parque Nacional Cerro Corá, camping area; 22°38'04.6" S, 56°01'33.8" W; 22 Oct. 2019; A. Pérez-González, A. Ojanguren, D.J. Guerrero and J. Kochalka leg.; IBNP-2444.

Remark: The description of *Idiops rohdei* was based on a female specimen from Paraguay, without any further details about its locality. We had access to a male specimen from Parque Nacional Cerro Corá, mid-eastern Paraguay. The female holotype and the male specimen share the overall body coloration, especially close to the eye tubercle, which is dark brown. We decided to consider them as conspecifics, pending the availability of more specimens from Paraguay or nearby regions to support our decision.

Description

Male (IBNP-2444)

HABITUS. See Fig. 31A.

MEASUREMENTS. TBL 6.3, CL 3.3, CW 3.1, LL 0.5, LW 0.6, SL 1.8, SW 1.7.

COLOR. Carapace and legs reddish brown, with dark brown ocular tubercle, yellowish coxae, brownish sternum (Fig. 31A–B), abdomen dorsally dark gray and ventrally brownish.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 31A. Eye tubercle: 0.6 long; 0.8 wide. Distance AME–ALE 0.5. Eye diameters: AME 0.3, ALE 0.3, PME 0.1, PLE 0.2. Thoracic fovea procurved (Fig. 31A). Labium and sternum without cuspules (Fig. 31B). Basal segment of chelicerae with a prolateral row of 4 larger teeth, and a small, retrolateral row with 2 small teeth, grouped in basal half, rastellum with 3 spines (Fig. 31B).

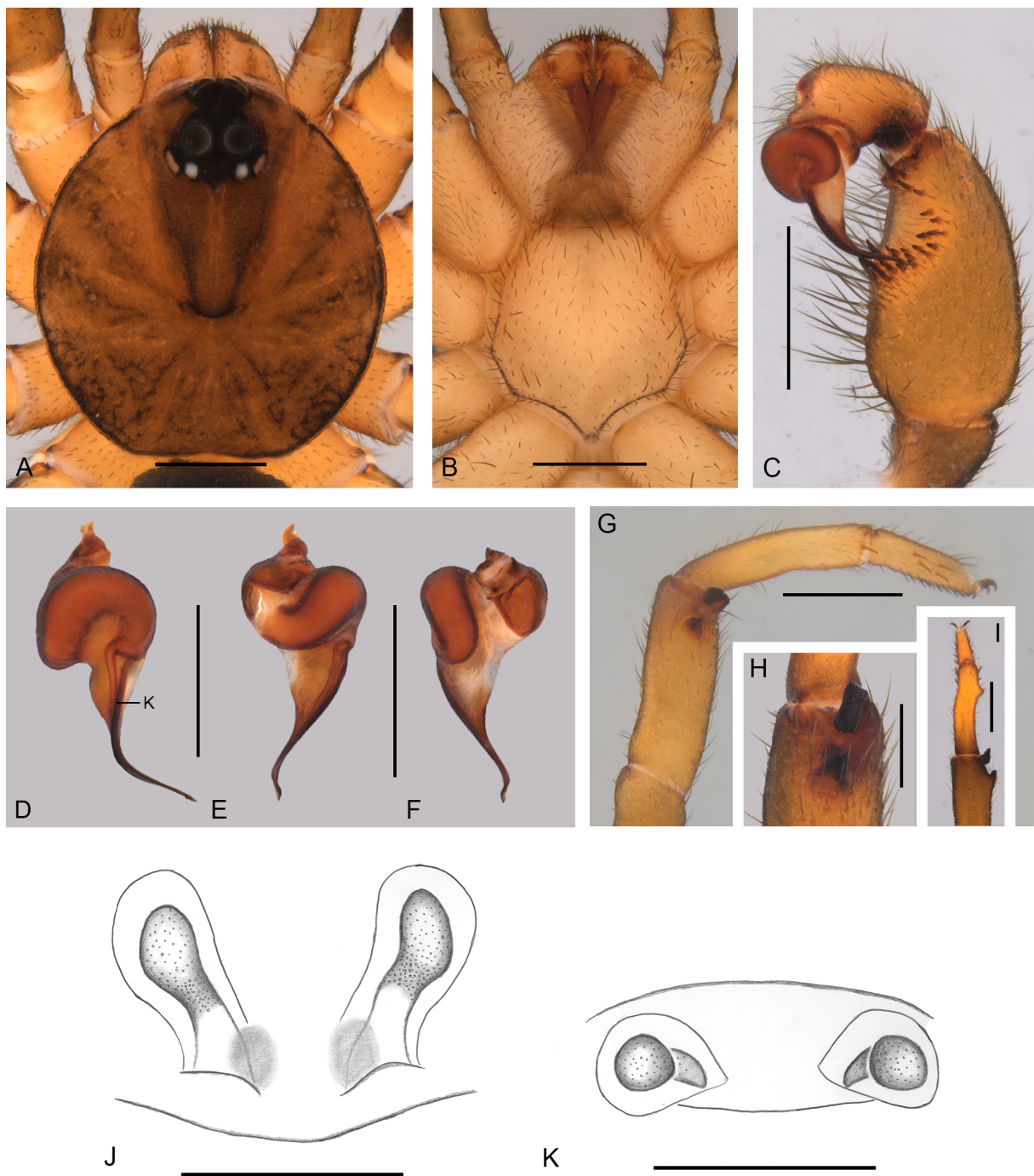


Fig. 31. *Idiops rohdei* Karsch, 1886. **A–I.** ♂ (IBNP-2444). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). **J–K.** ♀, genitalia, holotype (ZMB 6230). **J.** Dorsal view. **K.** Frontal view. Abbreviation: K = keel. Scale bars = 1 mm.

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 31G. Pseudoscapula: tarsus II–IV fully covered.

PALP. Tibia with spines distributed along margin of retrolateral depression, with larger spines on basal and apical portions (Fig. 31C), embolus with a keel in dorsal and retrolateral view, embolus strongly curved dorsally with abrupt reduction in thickness in its apical half, incomplete torsion at spermatid duct opening (Fig. 31D–F).

PALP AND LEG MEASUREMENTS. Palp = 2.8 (1, 0.5, 0.9, 0.4), I = 4.2 (1.4, 0.7, 1, 0.8, 0.3), II = 3.5 (1, 0.6, 1, 0.6, 0.3), III = 4.1 (1.5, 0.6, 0.7, 0.8, 0.5), IV = 4.4 (1, 0.7, 1.2, 1, 0.5).

SPINATION. Palp: Ti r25. Leg I: Fe d1-2-2, Pa v0-0-1, Ti v1-1-2, p0-0-1, r2-2-2, Mt v1-1-1, p0-0-1, r2-2-2, Ta v3-6-5, p0-1-1, r2-2-1. Leg II: Pa v0-0-2, Ti v2-1-3, r1-2-2, Mt v4-3-4, p0-0-3, r-2-2, Ta p0-1-1, r2-1-1. Leg III: Pa p0-0-3, Ti v0-2-2, Mt v0-1-3, p0-0-1, Ta r1-0-1. Leg IV: Pa p0-0-6, Ti p0-0-2, Mt v0-2-4, Ta p1-1-2.

Female (holotype ZMB 6230)

MEASUREMENTS. TBL 13.9, CL 6.8, CW 5.8, LL 1, LW 1.4, SL 4.2, SW 3.7.

COLOR. Carapace and legs red brown. Eye tubercle dark brown. Sternum brown.

PROSOMA. Eye tubercle: 1.7 long; 1.5 wide. AME-ALE distance 1. Eye diameters: AME 0.4, ALE 0.3, PME 0.3, PLE 0.4. Thoracic fovea procurved. Labium with 5 cuspules. Maxilla with 58 cuspules, distributed throughout anterior ventral half. Basal segment of chelicerae with a prolateral row of 6 large teeth and 11 small retrolateral teeth, grouped in median area.

PALP AND LEG MEASUREMENTS. Palp = 11.2 (3.7, 2.3, 2.6, 2.6), I = 13.1 (4.4, 2.9, 2.8, 2, 1), II = 11.7 (4, 2.7, 2.2, 1.8, 1), III = 12.6 (3.8, 2.7, 1.8, 2.6, 1.7), IV = 17.3 (4.9, 3.3, 3.7, 3.4, 2).

SPINATION. Palp: Fe p0-0-2, Pa p0-1-0, Ti p7-7-12, r6-11-12, Ta v6-11-12. Leg I: Ti p6-5-8, r4-7-15, Mt p10-7-7, r11-8-7, Ta v0-0-7, p4-4-4, r4-4-0. Leg II: Ti p3-4-7, r1-2-4, Mt p13-7-9, r5-5-5, Ta v0-0-6, p5-5-3, r5-3-0. Leg III: Pa p6-5-12, r0-0-3, Ti v0-0-2, p0-4-8, r0-3-3, Mt v2-2-3, p10-4-3, r5-2-1, Ta v4-8-9. Leg IV: Pa p39-0-0, Ti v1-1-1, Mt v1-1-7, r0-0-1, Ta v4-6-11.

SPERMATHECAE. Bean-shaped receptacula with conspicuous granules, long, translucent ducts (Fig. 31J–K).

Distribution

Paraguay. Departamento Amambay (Fig. 3C).

Idiops sertania Fonseca-Ferreira, Guadanucci & Brescovit sp.nov.
[urn:lsid:zoobank.org:act:8C6CC368-27DF-45A0-9164-2CA32C4D0F39](https://zoobank.org/act:8C6CC368-27DF-45A0-9164-2CA32C4D0F39)
Figs 4C, 32–33

Diagnosis

Males of *Idiops sertania* sp. nov. differ from those of other Neotropical species by having the robust embolus with a wide basal half, strongly curved dorsally, with torsion at the apical end and a conspicuous embolar lamella close to the opening of the sperm duct (Figs 32D–F, 33E–F) and by having the palpal tibia elongated (similar to *I. germaini*) (Fig. 32C). Differs from *I. germaini* by having large spines distributed along the margin of the retrolateral depression (Figs 32C, 33D) and by the robust tibial apophysis (Fig. 32H).

Etymology

The term ‘sertania’, referenced in the specific epithet, is a tribute to the ‘sertão’ of Brazil, a large region of the country where these spiders occur. The term sertão refers to culturally diverse regions, far from the coast and large cities, and generally associated with rural regions with little human occupation.

Type material

Holotype

BRAZIL – Minas Gerais • ♂; Januária, Parque Nacional Cavernas do Peruaçu; 15°10'0" S, 44°22'0" W; 3–25 Jan. 2008; M.T. Junior and R.S. Recoder leg.; IBSP 15348.

Paratypes

BRAZIL – Amazonas • 1 ♂; Nova Aripuanã, Santa Maria, Margem esquerda, Rio Arapuanã; 5°47'52" S, 60°15'55" W; May 2002; M. Trefaut leg.; MZUSP 21511. – Piauí • 1 ♂; Guaribas, Parque Nacional da Serra das Confusões; 9°13'16" S, 43°29'21" W; Oct. 2006; P.R.R.Silva *et al.* leg.; CHNUFPI 4031. –

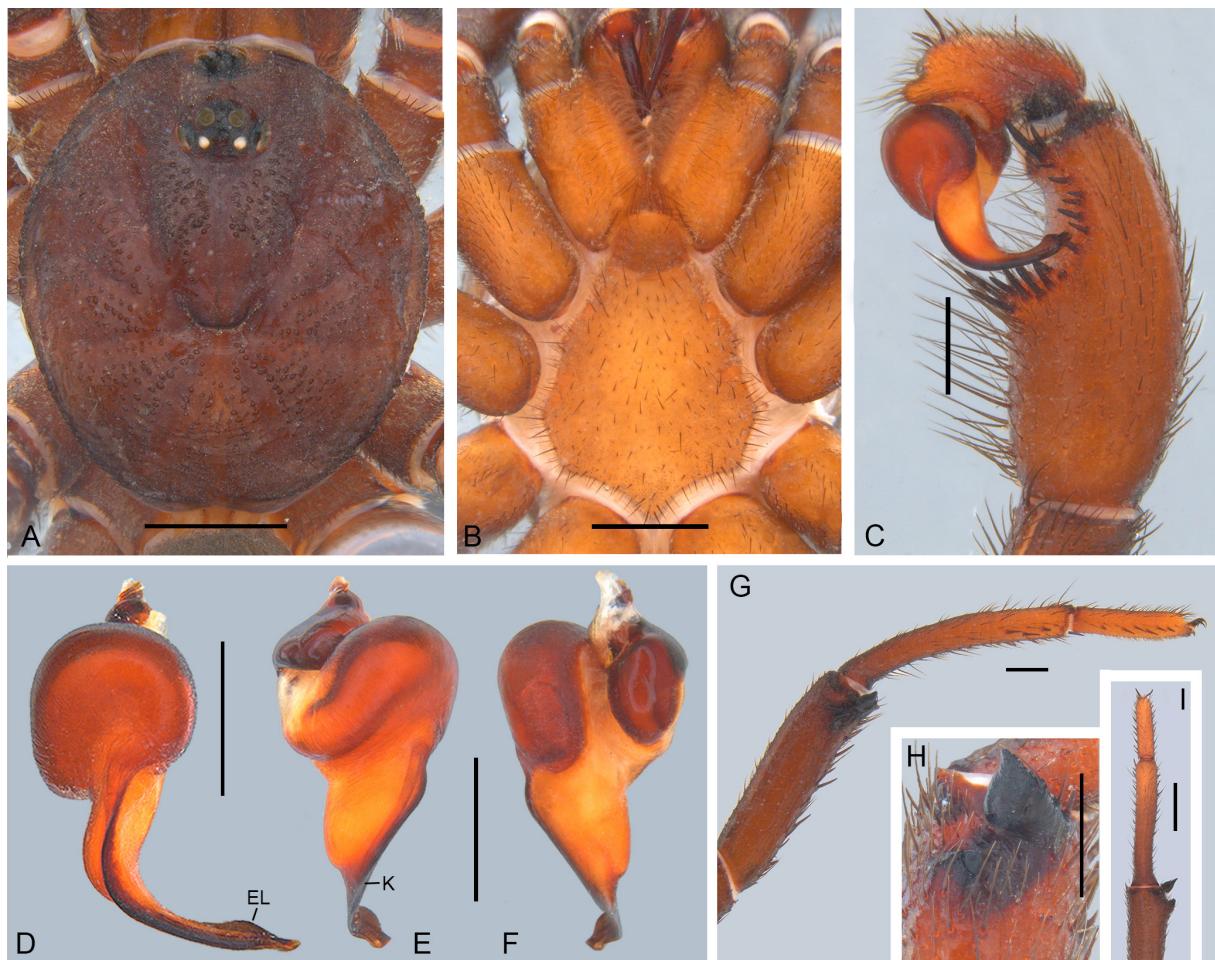


Fig. 32. *Idiops sertania* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., ♂, holotype (IBSP 15348). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Part of palp (retrolateral view). **D–F.** Palpal bulb. **D.** Dorsal view. **E.** Retrolateral view. **F.** Prolateral view. **G.** Tibia, metatarsus and tarsus I (prolateral view). **H.** Tibial apophysis (prolateral view). **I.** Tibial apophysis and metatarsus I (dorsal view). Abbreviations: EL = embolar lamella; K = keel. Scale bars = 1 mm.

Ceará • 1 ♂; Crato, Floresta Nacional do Araripe; 07°27'07.3" S, 39°19'52.4" W; 2018; R. Azevedo leg.; IBSP 227617. – **Minas Gerais** • 1 ♂; same collection data as for holotype; IBSP 15346.

Other material examined

BRAZIL – **Piauí** • 5 ♂♂ (SEM); Bom Jesus, Estação Ecológica de Uruçuí-Una; 08°52'5" S, 44°57' W; 19–29 Jan. 2001; G.G. Martinelle leg.; MZSP 21546 • 2 ♂♂; União, Campus COMVAPI Ltda; 4°35'9" S, 42°51'50" W; 2006; J. Queiroz *et al.* leg.; CHNUFPI 0032, CHNUFPI 0035 • 2 ♂♂; same collection data as for preceding; CHNUFPI 0037 • 3 ♂♂; same collection data as for preceding; CHNUFPI 0034 • 2 ♂♂ (SEM); same collection data as for preceding; CHNUFPI 0039 • 2 ♂♂; same collection data as for preceding; CHNUFPI 0033 • 1 ♂; same collection data as for preceding; 4°38'6" S, 42°50'19" W; CHNUFPI 4035 • 2 ♂♂; same collection data as for preceding; CHNUFPI 0031. – **Ceará** • 1 ♂; Crato, Parque Estadual Sítio do Fundão; 07°13'3" S, 39°20'21" W; 2018; R. Azevedo leg.; IBSP 218294 • 2 ♂♂; Crato, Floresta Nacional do Araripe; 07°27'07.3" S, 39°19'52.4" W; 2018; R. Azevedo leg.; IBSP 218307, IBSP 227583. – **Paraíba** • 1 ♂; Areia, Mata do Pau Ferro; 06°67'45.8" S, 35°55'27" W; 5 Aug. 2011; S.B.R. Alencar *et al.* leg.; CHNUFPI 0041. – **Bahia** • 1 ♂; Contendas do Sincorá, Floresta Nacional Contendas do Sincorá; 13°55'08,7" S, 41°07'13,8" W; 12–14 Jan. 2012; I.L.F. Magalhães *et al.* leg.; IBSP 271351 – **Tocantins** • 1 ♂; Palmas, Taquarussu; 10°19' S, 48°9' W; Equipe IBSP leg.; IBSP 10415 • 1 ♂; Porto Nacional, Área urbana, UHE Luiz Eduardo Magalhães; 10°42'28" S, 48°25'1" W; Equipe IBSP leg.; IBSP 10437. – **Goiás** • 6 ♂♂; Caldas Novas, UHE Corumbá; 17°42'50" S, 48°32'12" W; 12–23 Aug. 1996; M.T.I. Rodrigues *et al.* leg.; MZSP 15656 • 2 ♂♂; Colinas do Sul, Serra da Mesa; 14°01' S, 48°12' W; 2–15 Dec. 1995; Silvestri, Dietz and Campaner leg.; MZSP 28851 • 1 ♂; Catalão, Barragem, Serra do Facão; 17°31'51.07" S, 47°33'29.57" W; Jul. 2013; R.B. Martines and R.M.C. Silveira leg.; UFMG 4442 • 4 ♂♂; Catalão, Barragem, Serra do Facão; 17°35'34" S, 47°37'16" W; Jul. 2011; R.B. Martines and

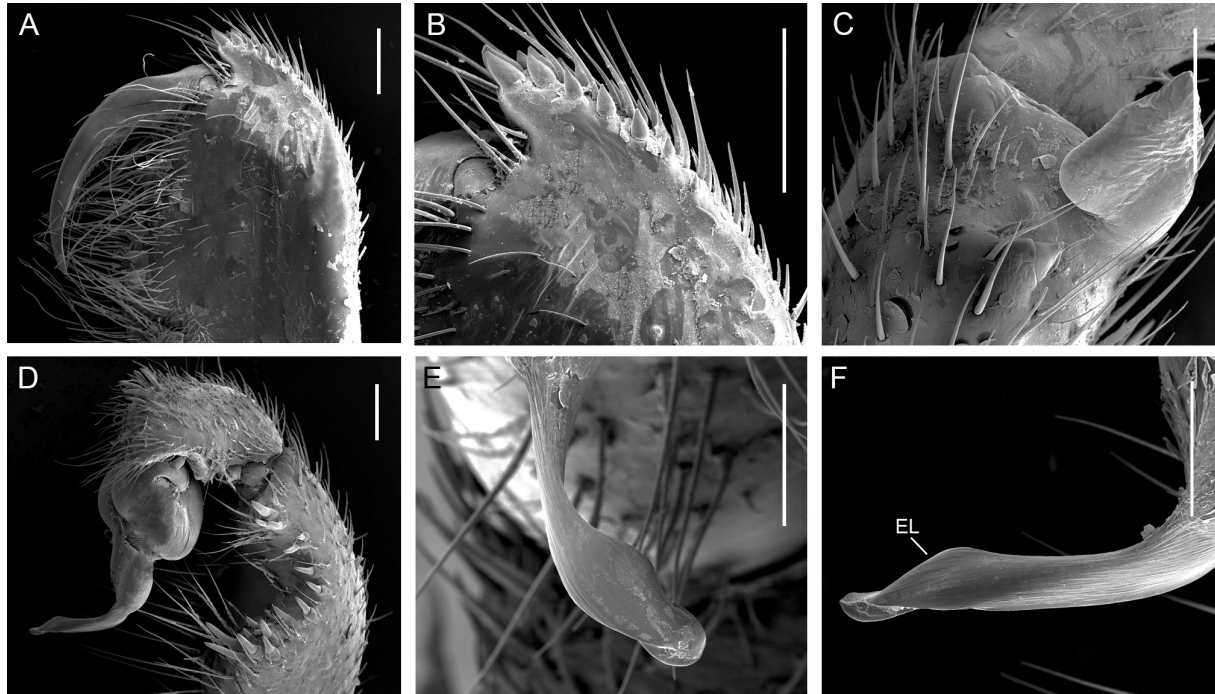


Fig. 33. Scanning electron micrographs of *Idiops sertania* Fonseca-Ferreira, Guadanucci & Brescovit sp. nov., ♂ (CHNUFPI 0039). **A.** Chelicera (retrolateral view). **B.** Rastellum (retrolateral view). **C.** Tibial apophysis (dorsal view). **D.** Part of the palp, showing retrolateral depression. **E–F.** Detail of the final portion of the embolus. **E.** Retrolateral view. **F.** Prolateral view. Abbreviation: EL = embolar lamella. Scale bars: A–D = 0.5 mm; E–F = 0.3 mm.

R.M.C. Silveira leg.; UFMG 4441 • 1 ♂; Catalão, Barragem, Serra do Facão; 17°51'40" S, 47°37'38" W; Jul. 2012; R.B. Martines and R.M.C. Silveira leg. UFMG 4440. – **Mato Grosso** • 1 ♂; Chapada dos Guimarães; 15°27'39" S, 55°45'0" W; 20–30 Sep. 2000; C. Strussmann leg.; MCTP 11557 • 2 ♂♂; Chapada dos Guimarães; 20–29 Sep. 2000; C. Strussmann leg.; MCTP 13614 • 2 ♂♂; Chapada dos Guimarães; 20–28 Sep. 2000; C. Strussmann; MCTP 13661; 2 ♂♂; Poconé; 16°15'25" S, 56°37'22" W; 2010–2012; D. Batistella leg., Winkler extractor; IBSP 249196. – **Mato Grosso do Sul** • 1 ♂; Três Lagoas, Fazenda Canaã; 20°45'04" S, 51°40'42" W; Dec. 1967; F. Lane leg.; MZSP 7575. – **Minas Gerais** • 2 ♂♂; Januária, Parque Nacional Cavernas do Peruaçu; 15°10'0" S, 44°22'0" W; 3–25 Jan. 2008; M. Teixeira-Junior and R.S. Recoder leg.; IBSP 15345, IBSP 15347 • 2 ♂♂; same collection data as for preceding; IBSP 210881.

Description

Male (holotype IBSP 15348)

HABITUS. See Fig. 32A.

MEASUREMENTS. TBL 15.6, CL 7.7, CW 6.9, LL 1, LW 1.3, SL 4, SW 3.7.

COLOR. Dark brown carapace, reddish brown legs, light brown sternum, abdomen gray (Fig. 32A–B).

PROSOMA. Carapace and ocular arrangement as shown in Fig. 32A. Eye tubercle: 0.9 long; 1.2 wide. AME-ALE distance 1. Eye diameters: AME 0.2, ALE 0.4, PME 0.2, PLE 0.5. Thoracic fovea procurved (Fig. 32A). Labium and sternum without cuspules (Fig. 32B). Basal segment of chelicerae with a prolateral row of 6 large teeth and 6 small retrolateral teeth, grouped in the basal half, prominent rastellum with 11–12 spines, distals largest (Fig. 33A–B).

LEGS. Tibia, metatarsus and tarsus I as shown in Fig. 32G. Leg I with tibial apophysis with apical branch twice the size of basal branch (Figs 32H–I, 33C). Pseudoscopula: tarsus I weakly covered, II–IV totally covered.

PALP. Tibia with conspicuous retrolateral depression and large spines distributed along its entire length (Figs 32C, 33D); embolus with keel in retrolateral view (Fig. 32E).

PALP AND LEG MEASUREMENTS. Palp = 10.2 (2.4, 2.2, 3.9, 1.7), I = 23.6 (7.2, 3.3, 4.9, 5.4, 2.8), II = 20.8 (6.4, 2.9, 4.4, 4.8, 2.3), III = 19.3 (5.3, 2.5, 3.6, 5, 2.9), IV = 27 (7.1, 3.4, 6, 7, 3.5).

SPINATION. Palp: Ti r20, Ta d0-0-2. Leg I: Pa v4, Ti v4-5-4, Mt r1-1-4, p0-0-4, Ta r3-4-3, p1-3-2. Leg II: Pa p0-0-4, r0-0-3, Ti v6-5-7, Mt p0-2-3, r2-3-4, Ta p2-2-3, r4-3-4. Leg III: Pa p1, Ti v1-2-2, p0-0-1, Mt v2-4-5, p2-2-2, Ta r4-4-5. Leg IV: Pa v0-0-2, Ti v1-1-3, Mt v9-9-11, d1-1-2, r0-0-3, p0-1-2, Ta p3-3-7, r0-0-2.

Distribution

Brazil. Widely distributed, with areas covering the phytophysionomies of the Amazon, Caatinga and Cerrado. Records for Central-west region (Goiás, Mato Grosso and Mato Grosso do Sul), North region (Amazonas), Northeast region (Bahia, Ceará and Piauí) and Southeast region (northern part of Minas Gerais) (Fig. 4C).

Idiops siolii (Bücherl, 1953)

Figs 3B, 34

Pseudidiops siolii Bücherl, 1953: 126, figs 6–8.

Idiops siolii – Raven 1985: 158.

Diagnosis

The female of *Idiops siolii* differs from that of other Neotropical species by having the spermathecae with ducts with a thickened median portion and mushroom-shaped receptacles (Fig. 34C).

Type material

Holotype

BRAZIL – Pará • ♀; Belém, Campus do IAN - Embrapa Amazônia Oriental; IBSP 3123. Lost in the fire of 2010.

Neotype (here designated)

BRAZIL – Pará • ♀; Melgaço, Flona Caxiuanã, Estação Científica Ferreira Penna, Plote B; 1°47'32.3" S, 51°26'2.5" W; 6–11 Apr. 2002; MPEG 1012.

Remark: The type specimen of *Idiops siolii* was lost in the 2010 IBSP fire. In accordance with the criteria of the ICZN Code (ICZN 1999), a neotype is designated here, because the type is lost and the original description is inadequate to stabilise the species. The neotype is a specimen collected near the type locality, in the state of Pará, Brazil.

Description

Male

Unknown.

Female (neotype MPEG 1012)

HABITUS. See Fig. 34A.

MEASUREMENTS. TBL 13.8, CL 7.6, CW 6.6, LL 1.1, LW 1.5, SL 4.4, SW 3.7.

COLOR. Carapace and legs reddish brown, with yellowish coxae, reddish brown sternum (Fig. 34A–B). Abdomen gray.

PROSOMA. Carapace and ocular arrangement as shown in Fig. 34A. Eye tubercle: 0.7 long; 1.4 wide. AME-ALE distance 1. Eye diameters: AME 0.21, ALE 0.5, PME 0.2, PLE 0.4. Thoracic fovea procurved. Labium with 3 cuspules (Fig. 34B). Maxilla with 31 cuspules, distributed throughout anterior ventral

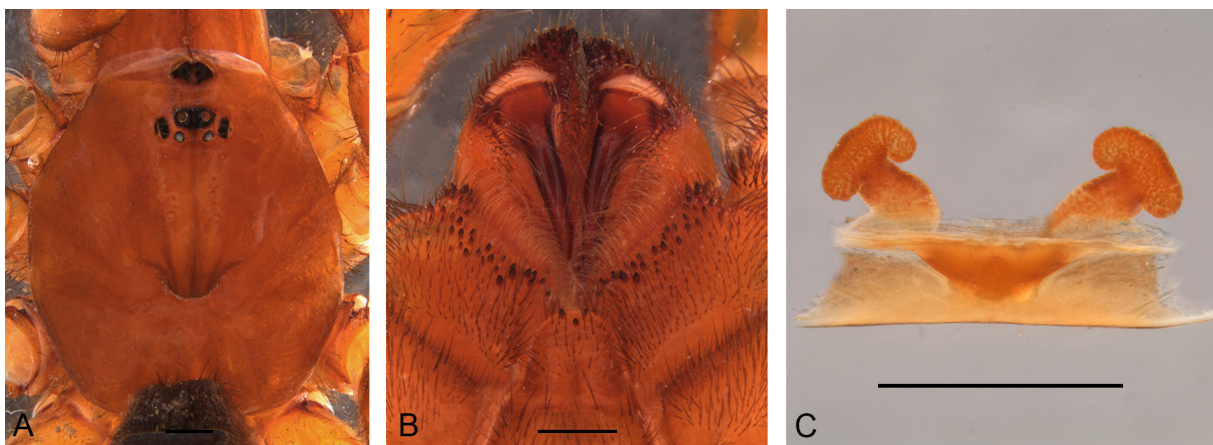


Fig. 34. *Idiops siolii* (Bücherl, 1953), ♀, neotype (MPEG 1012). **A.** Prosoma (dorsal view). **B.** Prosoma (ventral view). **C.** Genitalia (dorsal view). Scale bars = 1 mm.

half (Fig. 34B). Basal segment of chelicerae with a prolateral row of 8 large teeth and 4 small retrolateral teeth, grouped in basal half; rastellum with 20–22 short spines of same size (Fig. 34B).

PALP AND LEG MEASUREMENTS. Palp = 12.5 (4.2, 2.7, 2.7, 2.9), I = 13.8 (4.5, 2.8, 3, 2.1, 1.4), II = 13.2 (4.3, 3, 2.5, 2, 1.4), III = 12 (4.1, 2.3, 2.8, 2, 0.8), IV = 18.4 (4.4, 3.9, 4, 3.6, 2.5).

SPINATION. Palp: Ti p7-9-12, r6-10-10, Ta p12-10-11, r14-12-9. Leg I: Ti p3-7-10, r9-8-10, Mt p11-8-11, r3-9-8, Ta v0-0-3, p5-4-3, r5-5-4. Leg II: Pa p5-5-12, Ti v1-1-1, p2-4-6, r0-2-3, Mt v2-2-3, d2-2-2, p6-4-2, r2-3-1, Ta v2-4-5, p0-2-5, r0-1-1. Leg III: Ti v1-1-0, r0-1-1, p2-6-7, Mt v2-2-4, p9-7-9, r2-2-2, Ta v0-0-3, p5-5-2, r1-0-0. Leg IV: Ti v0-0-1, Mt v0-1-2, p1-2-3, r0-1-1, Ta v2-1-2, p1-5-5, r0-2-2.

SPERMATHECAE. V-shaped ducts with sclerotized portion between duct and receptacles. Bilobed ducts sclerotized, with evident granules (Fig. 34C).

Distribution

Brazil. Known only for the region of Belém and Melgaço (Pará), in the phytophysionomies of the Amazonian region (Fig. 3B)

Species inquirenda

Idiops bonapartei Hasselt, 1888

Idiops bonapartei Hasselt, 1888: 166.

Remark

The female holotype from Suriname is deposited in National Museum of Natural History of Leiden. It was not possible to obtain the type specimen for loan. The examination of the type through photos revealed it to be an immature female specimen of Idiopinae. Moreover, the original description does not warrant species recognition, as it includes only generic level characteristics. Because of this, we consider *I. bonapartei* species inquirenda.

Distribution

Suriname. Known only from the type locality (Fig. 5B).

Discussion

Systematics and biogeography notes

Trapdoor spiders belonging to the infraorder Mygalomorphae Pocock, 1892, which include the family Idiopidae, are usually associated with a sedentary lifestyle, high longevity, limited dispersion skills and high environmental specificity (Dippenaar-Schoeman 2002; Bond & Stockman 2008; Pérez-Miles & Perafán 2017; Mason *et al.* 2018). These characteristics, together with the strong morphological homogeneity contrasted with the high genetic diversification, make these spiders great evolutionary and biogeographic models (Bond *et al.* 2001; Satler *et al.* 2013; Opatova & Arnedo 2014; Harrisson *et al.* 2017; Opatova *et al.* 2020).

The genus *Idiops* is the most diverse among idiopids, with 102 valid species hitherto, of which 24 occur in South America, corresponding to approximately a quarter of the known species (World Spider Catalog 2021). In this revision, an extensive number of specimens of *Idiops* was examined, revealing undescribed species (such as the widely distributed species *I. sertania* sp. nov.; Fig. 4C), indicating the existence of species with an apparently restricted distribution (such as *I. nilopolensis* and *I. germaini*)

(Fig. 3D), and expanding the geographic distribution of several species (such as *I. carajas*, *I. fuscus* and *I. pirassununguensis*; Figs 3B, 4C). The latter had their distributions expanded by more than a thousand kilometers after the revision of this material.

As the only genus of Idiopinae with species distributed in the Neotropical and Paletropical regions, with the other six genera restricted to the Paletropical region (World Spider Catalog 2021), this revision of the Neotropical species is essential for a better evolutionary and biogeographic understanding of the genus, both in the context of deep and recent evolution and diversification. In an ancient context, it is unknown whether the species of *Idiops* of the Old and New World comprise a monophyletic clade. Despite the type species, *Idiops fuscus*, being from Brazil, previous molecular analyses included only Old World species (Hedin & Bond 2006; Opatova *et al.* 2020). In an intraspecific context, we found morphologically similar widespread species, with disjunct distributions, which is poorly compatible with the sedentary habits of trapdoor spiders, suggesting the possible existence of a cryptic species complex.

The species *Idiops pirassununguensis* represents one of these cases: as a result of the present revision, the species had its distribution expanded to more than twice in size compared to the previous scenario, with records for phytophysionomies in the Amazon, Caatinga and Cerrado. Presenting a conserved morphology and a continental distribution, uncommon in trapdoor spider (Buzzato *et al.* 2021), the current delimitation as a single species may actually be a complex of cryptic species. To solve this situation, an integrative approach is needed, involving molecular, morphometric, demographic and environmental data. Such an approach has already been taken to solve similar problems for species of the genera *Aptostichus* Simon, 1891 (Euctenizidae Raven, 1985) (Bond *et al.* 2001; Bond & Stockman 2008), *Aliatypus* Smith, 1908 (Antrodiaetidae Gertsch, 1940) (Satler *et al.* 2013), *Ummidia* Thorell, 1878 (Halonoproctidae Pocock, 1901) (Opatova *et al.* 2013, 2016), *Titanidiops* (Idiopidae) (Opatova & Arnedo 2014) and *Moggridgea* O. Pickard-Cambridge, 1875 (Migidae Simon, 1889) (Harrisson *et al.* 2017).

An alternative hypothesis that may explain such a wide distribution that cannot be ruled out is ballooning, which is a behavioral mechanism of aerial dispersion with the use of silk, widely reported for silk-producing arthropods such as spiders, mites and moth larvae (Bell *et al.* 2005). Although not commonly witnessed in Mygalomorphae (Colye 1983; Bell *et al.* 2005; Buzzato *et al.* 2021), as in Araneomorphae Pocock, 1892, cases of ballooning dispersion have already been recorded for at least nine species from four families, all of trapdoor spiders (Atypidae Thorell, 1870, Actinopodidae Simon, 1892, Halonoproctidae and recently Idiopidae) (Buzzato *et al.* 2021; Rossi *et al.* 2021). In this type of aerial dispersion, called suspended ballooning, spiderlings climb to elevated positions in the vegetation, exposing themselves to be carried passively by the wind, with the help of a drag line (Colye 1983; Bell *et al.* 2005; Buzzato *et al.* 2021). According to Opatova *et al.* (2013), ballooning possibly contributed to the dispersion of spiders of the genus *Ummidia* across the Mediterranean and between Europe and North America, when the continents were not too far apart. The ballooning, which has already been recorded for several species of *Ummidia*, could also explain the presence of the genus on Caribbean islands (Opatova *et al.* 2013; Godwin & Bond 2021).

For Idiopidae, ballooning was recently recorded for the species *Neocteniza toba* Goloboff, 1987 (Genysinae), a widely distributed trapdoor spider with records in Argentina, Brazil and Paraguay (Rossi *et al.* 2021). From laboratory experiments, the authors observed spiderlings being carried by gentle breezes reaching 20–30 cm from the dropping point, with some individuals reaching a distance of three meters from the initial point (Rossi *et al.* 2021). Although not directly registered, ballooning dispersion was inferred for species of the subfamily Arbanitinae with wide distribution, found in Australia (Buzzato *et al.* 2021). To explore the importance of ballooning in the distribution of Neotropical *Idiops*, such as *I. pirassununguensis*, we need studies that can infer, or even directly record, ballooning and investigate

population genetic structuring, to estimate spiderling dispersal skills from their maternal burrows (Buzzato *et al.* 2021).

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