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Revisão taxonômica e análise cladística dos gêneros de tarântulas arborícolas *Psalmopoeus* Pocock, 1985 e *Tapinauchenius* Ausserer, 1871 (Araneae: Theraphosidae: Avicullariinae).

São José do Rio Preto
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Dissertação apresentada como parte dos requisitos para obtenção do título de Mestre em Biologia Animal, junto ao Programa de Pós-Graduação em Biologia Animal, do Instituto de Biociências, Letras e Ciências Exatas da Universidade Estadual Paulista "Júlio de Mesquita Filho", Câmpus de São José do Rio Preto.

Orientador: Prof. Dr. Rogério Bertani.

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Aos três pilares da minha vida: meus pais Víctor Cifuentes e Leonor Gil, e à minha irmã Mariana Cifuentes, minhas forças e esperança.

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“Exploration is in our nature. We began as wanderers, and we are wanderers still. We have lingered long enough on the shores of the cosmic ocean. We are ready at last to set sail for the stars.”

Carl Sagan

RESUMO

Os gêneros *Psalmopoeus* Pocock, 1895 e *Tapinauchenius* Ausserer, 1871 são revisados, e a maioria das espécies são redescritas, chaves taxonômicas para a identificação de espécies são propostas e mapas de distribuição são apresentados. *Tapinauchenius* é composto pelas espécies: *Tapinauchenius plumipes* (C. L. Koch, 1842), *Tapinauchenius latipes* L. Koch, 1875 e *Tapinauchenius sanctivincenti* (Walckenaer, 1837). *Tapinauchenius cupreus* Schmidt & Bauer, 1996 é sinonimizada com *Tapinauchenius latipes,* e *Tapinauchenius brunneus* Schmidt, 1995 e *Tapinauchenius gigas* Caporiacco, 1954 são consideradas sinônimos-júniores de *Tapinauchenius plumipes*. *Tapinauchenius concolor* (Caporiacco, 1947) é considerada "nomem dubium". *Tapinauchenius elenae* Schmidt, 1994 e *Tapinauchenius subcaeruleus* Bauer & Antonelli, 1997 são transferidas para *Psalmopoeus* e as novas combinações *Psalmopoeus elenae* (Schmidt, 1994) n. comb., e *Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) n. comb. são estabelecidas. *Psalmopoeus* é composto por 14 espécies: *Psalmopoeus cambridgei* Pocock, 1895, *Psalmopoeus ecclesiasticus* Pocock, 1903, *Psalmopoeus emeraldus* Pocock, 1903, *Psalmopoeus intermedius* Chamberlin, 1940, *Psalmopoeus irminia* Saager, 1994, *Psalmopoeus langenbucheri* Schmidt, Bullmer & Thierer-Lutz, 2006, *Psalmopoeus plantaris* Pocock, 1903, *Psalmopoeus pulcher* Petrunkevitch, 1925, *Psalmopoeus reduncus* (Karsch, 1880), *Psalmopoeus victori* Mendoza, 2014, *Psalmopoeus elenae* (Schmidt, 1994) *n. comb, Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) *n. comb,* e duas espécies novas: *Psalmopoeus* sp. nov 1 e *Psalmopoeus* sp. nov 2. Foi efetuada análise cladística com 45 táxons e 84 caracteres utilizando o programa TNT, com pesos iguais (L= 180, Ci 41, Ri= 67) e com pesagem implícita (K weight = 4.909, L= 184, Ci=41, Ri= 66). As duas metodologias usadas recuperaram *Tapinauchenius* e *Psalmopoeus* como monofiléticos e grupos irmãos dentro de Avicullariinae.

Palavras chave: Tarântulas neotropicais, Psalmopoeinae, Selenocosmiinae, orgão estridulatorio, sistemática.

ABSTRACT

The arboreal tarantula genera *Psalmopoeus* Pocock, 1895 and *Tapinauchenius* Ausserer, 1871 are taxonomically reviewed, the majority of the species are redescribed, taxonomic keys are proposed for species identification and maps with distribution of the species are presented. *Tapinauchenius* has three valid species: *Tapinauchenius plumipes* (C. L. Koch, 1842), *Tapinauchenius latipes* L. Koch, 1875 and *Tapinauchenius sanctivincenti* (Walckenaer, 1837). *Tapinauchenius cupreus* Schmidtt & Bauer, 1996 is synonimized with *Tapinauchenius latipes*, and *Tapinauchenius brunneus* Schmidt, 1995 and *Tapinauchenius gigas* Caporiacco, 1954 are considered junior-synonyms of *Tapinauchenius plumipes*. *Tapinauchenius concolor* (Caporiacco, 1947) is considered "nomen dubium". *Tapinauchenius elenae* Schmidt, 1994 and *Tapinauchenius subcaeruleus* Bauer & Antonelli, 1997 are transferred to *Psalmopoeus* making the new combinations *Psalmopoeus elenae* (Schmidt, 1994) n. comb., and *Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) n. comb., respectively. *Psalmopoeus* is composed of 14 species: *Psalmopoeus cambridgei* Pocock, 1895, *Psalmopoeus ecclesiasticus* Pocock, 1903, *Psalmopoeus emeraldus* Pocock, 1903, *Psalmopoeus intermedius* Chamberli, 1940, *Psalmopoeus irminia* Saager, 1994, *Psalmopoeus langenbucheri* Schmidt, Bullmer & Thierer-Lutz, 2006, *Psalmopoeus plantaris* Pocock, 1903, *Psalmopoeus pulcher* Petrunkevitch, 1925, *Psalmopoeus reduncus* (Karsch, 1880), *Psalmopoeus victori* Mendoza, 2014, *Psalmopoeus elenae* (Schmidt, 1994) *n. comb, Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) *n. comb*, two of them newly described: *Psalmopoeus* sp. nov 1 and *Psalmopoeus* sp. nov 2. Cladistic analyses for 45 taxa and 84 characters were carried out with TNT program, with equal weights (L= 180, Ci 41, Ri= 67) and under implied weighting (K weight = 4.909, L= 184, Ci=41, Ri= 66).The two used methodologies recovered *Tapinauchenius* and *Psalmopoeus* as monophyletics and as sister groups inside Avicullariinae.

Key words: neotropical tarantulas, Psalmopoeinae, Selenocosmiinae, stridulatory organ, systematics.

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SUMARIO

Taxonomic revision and cladistic analysis of the arboreal tarantula genera *Psalmopoeus* Pocock, 1985 and *Tapinauchenius* Ausserer, 1871 (Araneae: Theraphosidae: Avicullariinae).

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Introduction

Theraphosidae Thorell, 1869, is the most specious mygalomorph family. To date, it is composed by 144 genera and 962 species of tarantulas (World Spider Catalog, 2018), distributed in all continents except Antarctica and well represented in tropical and subtropical regions. According to Raven (1985), it is composed by eight subfamilies: Thrigmopoeinae, Ornithoctoninae, Eumenophorinae, Harpactirinae, Selenocosmiinae, Ischnocolinae, Avicullariinae and Theraphosinae, the last three with their core distribution in the New World.

The avicullariines are mainly arboreal tarantulas that have been receiving considerable taxonomic and biological attention recently (West et al., 2008; Fukushima & Bertani, 2017; Bertani, 2012). The more recent revisions and cladistics analyses of some genera based on morphological characters had determined that the subfamily is composed by two african genera (*Heteroscodra* Pocock, 1899 and *Stromatopelma* Karsch, 1881), and ten New World genera (*Antillena* Fukushima & Bertani, 2017, *Avicularia* Lamarck, 1818, *Caribena* Fukushima & Bertani, 2017, *Ephebopus* Simon, 1892, *Iridopelma* Pocock, 1901, *Pachistopelma* Pocock, 1901, *Psalmopoeus* Pocock 1985, *Tapinauchenius* Ausserer, 1871, *Typhochlaena* C. L. Koch, 1850, *Ybirapora* Fukushima & Bertani, 2017 (Fukushima & Bertani, 2017; Bertani, 2012; West *et al.*, 2008).

Despite all efforts in understanding the relationship among avicullariine genera, the position of *Psalmopoeus* in theraphosid subfamilies has been ambiguous (Raven, 1985; Samm & Schmidt, 2008). *Psalmopoeus* was erected in Selenocosmiidae by Pocock (1895). Posteriorly, Pocock (1901) considered that *Psalmopoeus* as well as *Ephebopus*, *Pachistopelma* and *Iridopelma* should belong in the group Avicularieae of Simon (1892), which had at that moment only the genera *Tapinauchenius* and *Avicularia.* In Roewer's catalog (1942) *Psalmopoeus* and *Tapinauchenius* were retained in Avicullariinae.

Raven (1985) transferred *Psalmopoeus* from Avicullariinae to Selenocosmiinae, an Asian and Australian theraphosid subfamily, due to the presence of a maxillary lyra, and absence of urticating hairs on the opisthosoma. Samm & Schmidt (2008) proposed a new subfamily Sinurticantinae for *Psalmopoeus* and *Tapinauchenius,* based on the incongruence of some characters with Selenocosmiinae, such as the presence of tibial apophysis (which lack in adult males of Selenocosmiinae (West et. al. 2012)), neotropical distribution, ecology (selenocosmiines have semi-arboreal habits whereas *Psalmopoeus* and *Tapinauchenius* live in trees and shrubs), and morphology of copulatory palpal bulb, a structure more similar to those in males of avicullariines. The proposal was, however, considered as "nomen nudum" by not complying with the zoological nomenclature rules (World Spider Catalog, 2018). Posteriorly, Schmidt (2010) modified the subfamily name to Psalmopoeinae but did not present a phylogenetic analysis to justify the new group. West *et al.* (2008) conducted a cladistic analysis of *Ephebopus* species and included representatives of seven of the eight Theraphosidae subfamilies recognized by Raven (1985) as outgroups. They concluded that *Psalmopoeus* and *Tapinauchenius* should be included in the Avicullariinae, and the "maxillary lyra character" was regarded as a homoplasy with the Selenocosmiinae (West *et al.* 2008). More recent revisions and cladistic analyses including Avicullariinae genera support this hypothesis (Fukushima & Bertani, 2017; Bertani, 2012) and consider *Psalmopoeus* as a sister group of *Tapinauchenius*, sharing the characters "presence of lateral directed hairs on legs of males", and the general morphology of copulatory structures of males (Fukushima & Bertani, 2017; West *et al.*, 2008) as apomorphies. The species of both genera are very similar morphologically, differing mainly by the presence of a conspicuous maxillary lyra in *Psalmopoeus.* Nonetheless, some species of *Tapinauchenius* have an intermediate state of this character, hindering the establishment of boundaries of the genera, and suggesting that *Psalmopoeus* and *Tapinauchenius* can be synonymous (West *et al.* 2008).

A recent molecular phylogenetic hypothesis of relationship of Theraphosidae subfamilies, propose Avicullariinae as possible paraphyletic group, with a clade formed by *Avicularia, Ybirapora* and *Caribena* separated from *Psalmopoeus* and *Tapinauchenius* that form a sister-clade with Schismatothelinae (Lüddecke *et al*. 2017). This supports Samm & Schmidt (2008) proposal of a new subfamily Psalmopoeinae; nonetheless, the hypothesis requires additional evaluation (Lüddecke *et al*. 2017). This study also suggests that the african avicullariines *Heteroscodra* and *Stromatopelma* forms a strongly supported clade named Stromatopelminae, which is the sister group of the african Harpactirinae (Lüddecke *et al*. 2017).

Historic of the genera *Tapinauchenius* and *Psalmopoeus*.

Genus *Tapinauchenius* Ausserer, 1871.

Ausserer (1871) erected his new genus *Tapinauchenius* Ausserer, 1871 based on *Mygale plumipes* C. L. Koch, 1842 from Suriname, a male described in general terms as a very hairy limbs specimen with male genitalia having long, slender and mildly curved embolus (C.L. Koch, 1842). C. L. Koch (1850) described the genus *Eurypelma* C. L. Koch, 1850 and transferred to it several species formarly described in *Mygale* Latreille, 1802, including *M. plumipes*. Ausserer (1871) described *Tapinauchenius* genus as having dense and entire scopulae in tarsi and metatarsi, eyes of the first row larger than those of the second row, and anterior median eyes at least two times lateral anterior eyes.

Becker (1879) described *Avicularia deborri* Becker, 1879 with male and female from Paramaribo, Surinam. The species was diagnosed by the well-developed scopulae, anterior row of eyes almost in a line and the anterior median eyes larger than the others.

A few years after (Ausserer 1875), a new species, *T. latipes* L. Koch, 1875, was described from Puerto Cabello, Venezuela with a male specimen.

Simon (1886) revised *A. deborri* and synonimized it with *T. plumipes.*

Some years after, Simon (1891) described two species from United States, *Tapinauchenius caerulescens* Simon, 1891 and *Tapinauchenius texensis* Simon, 1891; and, one year after (Simon, 1892), transferred *Mygale sancti-vincentii* (Walckenaer, 1837) described with a female from "Noveau-Monde", Saint Vincent Island, to *Tapinauchenius*.

Schiapelli and Gerschman (1945) described the female of. *T. latipes*, from Chacaito, Caracas, Venezuela.

More than fifty years after, Caporiacco (1954) described *T. gigas* Caporiacco, 1954 with females from French Guiana.

More recently, three *Tapinauchenius* species were described by Schmidt (1994c, 1995), *Tapinauchenius eleneae* Schmidt, 1994 with a female specimen from Ecuador (and posteriorly in the same year described the male (Schmidt 1994c)); *Tapinauchenius brunneus* Schmidt, 1995 with a male from Mato Grosso, Brazil; and *Tapinauchenius purpureus* Schmidt (1995) with male and female specimens from French Guiana. Schmidt described also the male of *Tapinauchenius gigas* (Schmidt 1994a).

Smith (1995) considered *T. caerulescens* and *T. texensis* nomina dubia, due to the descriptions based on immature specimens with dubious localities. Furthermore, the holotypes are lost (Smith 1995). Schmidt and Bauer (1996) described *T. cupreus* Schmidt & Bauer, 1996 with female and male specimens from Ecuador; and Bauer and Antonelli (1997) described *T. subcaeruleus* Bauer & Antonelli, 1996 with a female from the same country.

West *et al.* (2008) reviewed *Ephebopus* Simon, 1892, transferred *Ephebopus violaceus* Mello-Leitão (1930) to *Tapinauchenius* and considered it senior-synonym of *T. purpureus*.

Bertani (2012) transferred *Pachystopelma concolor* Caporiacco (1947), described with an immature specimen, to *Tapinauchenius*.

Currently, *Tapinauchenius* is composed by 10 species, distributed in Brazil, Guyana, Ecuador, French Guiana, Saint Vincent, Suriname, and Venezuela (World Spider Catalog, 2018).

Genus *Psalmopoeus* Pocock, 1895.

Psalmopoeus was described with *Psalmopoeus cambridgei* Pocock, 1895 as type species, based on a female specimen from “The East Indies" (Pocock, 1895). The main features of the genus were the scopulae and hairs of the legs well developed, metatarsus of leg III scopulate to the base, complete scopulae in tarsus IV, chelicera with external scopulae having few spiniform setae, and stridulatory organ described as a single serie of rods (Pocock, 1895). It was included in the new family Selenocosmiidae of Pocock, 1895 (Selenocosmiae tribe in Avicularinae, Simon 1889) with other eight genera from the Old World. The main diagnostic characteristic of the new family was the possession of a stridulating organ formed by thick setae

on inner side of maxillae and spiniform series of hairs or spicules in lower half of ventral side of chelicera (Pocock 1895).

In the following year, F. O. Pickard-Cambridge (1896) described *Santaremia longipes* F. O. Pickard-Cambridge, 1896 with a female. Posteriorly (F. O. Pickard-Cambridge 1899), he noticed that this species has a stridulatory organ as some specimens from Trinidad determined by him as *P. cambridgei*. He also perceived and suggested that the origin of the female of *P. cambridgei* described by Pocock (1895) probably was mistaken and the real provenance of this species was “The West Indies" as the material of Trinidad that he reviewed. He also described the male of the species.

Simon (1903) transferred *Tapinauchenius reduncus* Karsch, 1880, described with male and female from Costa Rica, to *Psalmopoeus*, due to the presence of a stridulatory organ. In the same year Pocock (1903) described *Psalmopoeus emeraldus* Pocock, 1903 and *P. plantaris* Pocock, 1903 from Colombia, with females; and *Psalmopoeus ecclesiasticus* Pocock, 1903 from Ecuador, with male and female.

Strand (1907) described *Psalmopoeus affinis* Strand, 1907 from “The West Indies" with two females.

Petrunkevitch (1925) described two more species, *Psalmopoeus rufus* Petrunkevitch, 1925 and *Psalmopoeus pulcher* Petrunkevitch, 1925, both from Panamá, with a female and a male, respectively.

Another panamenian species was described by Chamberlin (1940), *Psalmopoeus intermedius* Chamberlin, 1940, based on a female specimen.

Saager (1994) described *Psalmopoeus irminia* Saager, 1994 with male and female from the Guyana State in Venezuela, and Schmidt, Bullmer, & Thierer-Lutz (2006) described *Psalmopoeus langenbucheri* Schmidt, Bullmer, & Thierer-Lutzet, 2006 with male and female from north of Venezuela.

Witt (1996) described *Psalmopoeus maya* Witt, 1996, with male and female from Belize. However, the species was synonymized with *P. reduncus* by Gabriel (2008) as the description was based in color features and the holotype was unavailable for study.

Mendoza (2014) described the first species of arboreal mexican Theraphosidae, *Psalmopoeus victori* Mendoza, 2014 corresponding to the higher latitude record for

Psalmopoeus genus (Mendoza 2014). This species is very similar to *P. reduncus*, differing slightly in the stridulatory organ structure, copulatory palp bulb shape and sclerotization of spermathecae (Mendoza 2014).

Gabriel (2014) considered *P. affinis* Strand, 1907 a "nomen dubium" due to poor clarity of identity of the species and doubtful collecting location. In the same paper (Gabriel 2014) he considered *P. rufus* as junior-synonym of *P. pulcher* as the holotype of *P. rufus* corresponds to an immature specimen with same pattern of stridulatory organ as in *P. pulcher*.

To date, *Psalmopoeus* genus contains 14 species, distributed in the Caribbean (Trinidad), Central America (Costa Rica, Panama), North and South America (Mexico, Brazil, Colombia, Ecuador and Venezuela) (World Spider Catalog, 2018).

Considering the taxonomic problematic of *Psalmopoeus* and *Tapinauchenius*, the aim of this work is to review taxonomicaly the species of the two genera and to propose a phylogenetic hypothesis for their species.

Materials and Methods

All measurements are in millimeters and were obtained with a Mitutoyo digital caliper with an error of 0.005 mm, rounded up to two significant decimals, for large measurements. A Leica LAS Montage and LAS 3D module mounted on a Leica M205C dissecting microscope were used for image capture and measurements of other small structures. Legs and palp measurements were taken from dorsal view of the left side and leg spines description and cuspules were also taken from the left limbs. Photomicrographs were obtained with a Scanning Electron Microscope SEM FEI Quanta 250. Abbreviations: (ALE) anterior lateral eyes, (AME) anterior median eyes, (PLE) posterior lateral eyes, (PLS) posterior lateral spinnerets, (PME) posterior median eyes, (PMS) posterior median spinnerets, (ITC) Inferior tarsal claw, (STC) superior tarsal claws.

Specimens from the following institutions were examined:

AMNH= American Museum of Natural history, New York; BMNH= The Natural History Museum, London; CASENT= California Academy of Science Museum of Entomology, San Francisco; ICN-UNAL= Instituto de Ciencias Naturales, Universidad Nacional de Colombia, Bogotá; INPA= Instituto Nacional de Pesquisas da Amazônia, Manaus; LEEV= Laboratório de Ecologia e Evolução, Instituto Butantan, São Paulo; MCP-PUCRS= Museu de Ciencias da

Pontificia Universidad Católica de Río Grande do Sul, Porto Alegre; MNHN-AR= Muséum National d'histoire Naturelle, Paris; MNRJ= Museu Nacional do Rio de Janeiro, Rio de Janeiro; MPEG= Museu Paraense Emilio Goeldi, Belém; MZUSP= Museu de Zoologia da Universidade de São Paulo, São Paulo; QCAZ= Museo de Zoologia, Pontificia Universidad Católica del Ecuador, Quito; SMF= Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt; ZMB= Museum für Naturkunde der Humboldt-Universität, Berlin.

Geographic coordinates: were obtained with google earth considering the center of the municipaliy when the information was not available on the label of the specimens. In this case they were indicated by square brackets. Original coordinates indicated in labels are indicated by rounded brackets. Maps of species distribution were done with SimpleMappr (Shorthouse 2010).

For cladistics analises it was used TNT program version 1.1 (Goloboff et al. 2008).

The analyses using equal weights were carried out with traditional search, 6000 replications with TBR algorithm, and 500 cladograms saved by replication.

For the analyses under implied weighting, it was used the methodology proposed by Mirande (2009) to find K values using the script developed by the author (available in http://phylo.wikidot.com/tntwiki). For choosing the adequate cladogram it was used as criterion the cladogram stability, measured by SPR distance using 1000 replicatios (Goloboff, 2008b). The analyses were carried out using traditional search, 6000 replications with TBR algorithm, and 500 cladograms saved by replication.

The program Winclada 1.0 (Nixon, 2002) was used for display of cladograms.

Characters proposed by West et al. (2008), Bertani (2012) and Fukushima & Bertani, (2017), were used. Character 17, 20 were modified and 0-3, 5-12, 14, 16, 19, 26, 28-30, 38-40, 53, 55, 59,60, 6-71, 74, 75, 78-80, 83, 84 were used from West et al. (2008). From Bertani (2012) characters 32-48 were modified and 4, 27, 33, 34, 46, 50, 56-58, 62, 73, 76, 77, 81, 82 were used strictly; characters 31, 35,36, 45, 47, 51, 52, 54, 61, 63, 72 were used from Fukushima & Bertani (2017).

New characters proposed are 13, 15, 18, 21-25, 37, 41-44, 49, 64, 65.

For the cladistic analyses representatives of seven subfamilies of Theraphosidae recognized by Raven (1985) and species of all genera of Avicullariinae (Fukushima & Bertani 2017) were

included. The species *Melloina santuario* (Paratropididae) was used as root of the tree, considering this species as the one with more plesiomorfic states of characters in the used outgroups. *Sason robustum* was also included as Barychelidae has been considered the sister-group of Theraphosidae (Bond et al. 2012; Hamilton et al 2016)

Examined ingroup specimens were the same used for descriptions of *Psalmopoeus* and *Tapinauchenius* species.

Specimens used as outgroups in the analyses are:

Barychelidae: Sasoninae: *Sason robustum* (O. Pickard-Cambridge, 1883), 1 female and 1 male, [Sri Lanka], Ceylan (Museum Paris AR4563, AR 15063).

Paratropididae: Glabropelmatinae: *Melloina santuario* Bertani, 2013, holotype male (MIZA 520) and paratype female (MNRJ 12965), both from Venezuela, Lara, Cueva El Santuario (9°50’S, 70°03’W), O. Villareal col. 19, April 2000.

Theraphosidae:

Aviculariinae:

Ephebopus murinus (Walckenaer, 1837), male (IBSP9650) and female (IBSP 9658), Brazil, state of Pará, Tucuruí, U.H.E. Tucuruí, [4°20'S, 49°31'W], Equipe de Resgate de Fauna col., 1984; *Ephebopus uatuman* Lucas, Silva & Bertani, 1992, male holotype (IBSP 4939) and paratype female (IBSP 4940), Brazil, state of Amazonas, Presidente Figueiredo [2°02'S, 60°01'W], Uatuman River, Balbina Hydroelectric Power Station, M. Costa col., 19 February 1988; *Heteroscodra maculata* Pocock, 1899, male, Africa, pet trade (IBSP 9642); female, Guinea-Bissau, pet trade (IBSP 9644); *Iridopelma hirsutum* Pocock, 1901, male, Brazil, state of Paraíba, João Pessoa [7°07'S, 34°52'W], P. F. L. Duarte col., 30 November 1979 (IBSP 8078); female, Brazil, state of Alagoas, Murici, E. E. Murici, UFAL (09°14'1.73"S, 35°50'1.61"W), R. Bertani, D. R. M. Ortega and R. H. Nagahama col., 16 August 2006 (MNRJ 06252); *Iridopelma oliveirai* Bertani, 2012, holotype male, Brazil, state of Bahia, Central, Toca dos Pilões [11°08'S, 42°06'W], A. D. Brescovit col., July 2000 (IBSP 10100) and paratype female, at night in “Macambira” bromeliad (Bromelia laciniosa), same data (IBSP 8714); *Iridopelma vanini* Bertani, 2012, holotype female, Brazil, state of Piauí, Parnaíba [2°53'S, 41°41'W], 5 m a.s.l., R. Bertani col., November 1994 (IBSP Ref. 74.595) and paratype male, Brazil, state of Maranhão, Barreirinhas, Parque Nacional dos Lençóis Maranhenses [2°41'S,

42°55'W], 32 m a.s.l., Equipe Biota col., 12–18 October 2001 (IBSP 11328); *Iridopelma hirsutum* Pocock, 1901, male, Brazil, state of Paraíba, João Pessoa [7°07'S, 34°52'W], P. F. L. Duarte col., 30 November 1979 (IBSP 8078); female, Brazil, state of Alagoas, Murici, E. E. Murici, UFAL (09°14'1.73"S, 35°50'1.61"W), R. Bertani, D. R. M. Ortega and R. H. Nagahama col., 16 August 2006 (MNRJ06252); *Pachistopelma bromelicola* Bertani, 2012, Paratypes 2 males, 3 females, Brazil, state of Bahia, Elísio Medrado, RPPN Jequitibá (12°52'3.20"S, 39°28'9.09"W), R. Bertani, C. S. Fukushima and R. H. Nagahama col., 07 October 2007, inside bromeliads, matured in captivity in May 2010 (MNRJ 36881); *Pachistopelma rufonigrum* Pocock, 1901, male and female, Brazil, state of Alagoas, Murici, Estação Ecológica de Murici (9°14'9.52"S, 35°48'0.25"W), 245 m a.s.l., R. Bertani, R. H. Nagahama and D. R. M. Ortega col., 11 August 2006 (MNRJ 6246 AL1100); (MNRJ 06248 and 06249); *Stromatopelma calceatum*, 1 male, 1 female, West Africa, Ivory Coast, Abidjan, Lamto Ecological Research Station (5° 0'00" W, 6°13.00' N) Dr. M.L. Celerier col., Jun 1977, matured in captivity june 1979 (LEEV 151, 152); *Typhochlaena amma* Bertani, 2012, holotype female, Brazil, state of Espírito Santo, Santa Teresa, Estação Ecológica de Santa Lúcia [19°58'S, 40°32'W], 672 m a.s.l, A. P. L. Giupponi col., February 2008 (MNRJ 06239) and paratype male, same locality, no further data (MNRJ 12926); *Typhochlaena curumim* Bertani, 2012, holotype female, Brazil, state of Paraíba, Areia, Reserva Ecológica Estadual Mata do Pau-Ferro [6°58'S, 35°42'W], 500 m a.s.l., under tree bark, A. D. Brescovit, R. Bertani, A. B. Bonaldo and S. C. Dias col., September 1999 (IBSP 8701) and paratype female (IBSP 8354), same data; male, Brazil, state of Rio Grande do Norte, Baía Formosa, lying over a leaf in a bush at night, S. N. Migliore col., 19 April 2014, S90 (MNRJ 06915); *Typhochlaena paschoali* Bertani, 2012, holotype female and immature paratype, Brazil, state of Bahia, Camacan [15°24'S, 39°30'W], no further data (MNRJ 13723); *Typhochlaena seladonia* (C. L. Koch, 1841), 1 male, 1 female exuvium, Brazil, state of Bahia, Camaçari, Jacuipe [12°42'S, 38°07'W], T. Brazil ded., August 1980 (IBSP 4551); 1 female, Brazil, state of Bahia, Salvador, Alphaville [12°56'S, 38°21'W], G. G. Montingelli col., 11 December 2001 (IBSP 109718).

Eumenophorinae:

Pelinobius muticus Karsch, 1885, male (IBSP 8530), female (IBSP 9643), both from Kenya, born in captivity.

Harpactirinae:

Pterinochilus sp., male, Angola, Biula-Dala [11°10'S, 20°12'E] (IBSP 9647); female, Africa, pet trade (IBSP 8765); Ischnocolinae: *Holothele rondoni* (L. Koch, 1875), male and female, Brazil, state of Amazonas, Iauaretê [0°36'N, 69°11'W] (IBSP 4090).

Ornithoctoninae:

Haplopelma minax (Thorell, 1897), female, Thailand, 1 mi east of Bangkok [13°43'N, 100°31'E] (IBSP 9645); Characters from males of *Haplopelma* were examined from literature (Smith & Jacobi 2015). Characters without information or inapplicable were codded as unknown.

Selenocosmiinae:

Phlogiellus johnreylazoi Nunn et al., 2016 characters information were obtained from literature (Nunn et al., 2016), characters without information or inaplicable were codded as unknown.

Coremiocnemis sp, 1 male, Malaysia, Cameron Highlands [4°28’N, 101°28’E]. R. West col. 19 April 2000. (LEEV 156). Characters from females of *Coremiocnemis* were obtained from literature (West & Nunn, 2010). Characters without information or inapplicable were codded as unknown.

Theraphosinae:

Phrixotrichus vulpinus (Karsch, 1880), 3 males, Chile (IBSP 3817–A); 1 female, Chile, Osorno [40°34'S, 73°09'W] (IBSP 3817–B); *Lasiodora* sp., male, Brazil, state of Paraíba, João Pessoa [7°07'S, 34°52'W] (IBSP 11143); female, Brazil, state of Pernambuco, Jaboatão dos Guararapes [8°06'S, 35°00'W], Conjunto Murebeca (IBSP 10293);

Subfamily Incertae sedis: *Encyocratella olivacea* Strand, 1907, holotype female, Tanzania, Amani (05°09'S, 38°36'E), Vosseler leg., November 1903 (ZMB 10484); male, Tanzania, mountains near Arusha (03°23'S, 36°40'E) wild caught, reared to maturity, 2004 (BMNH). Female holotype and 2 females paratypes of *Xenodendrophila gabrieli* Gallon, 2003, northern Tanzania, mountains near Arusha (03°23'S, 36°40'E), Joe Beraducci leg., circa April 1999 (BMNH 2005.123). Examined by Photographs; *Poecilotheria* sp., male, India, pet trade (IBSP 9660); *Poecilotheria ornata* Pocock, 1899, female, Sri Lanka, pet trade (IBSP 8767).

Characters used for cladistics

0. Anterior row of eyes: (0) procurved, (1) straight.

1. Clypeus: (0) Absent or narrow, (1) present, wide.
2. Fovea closure: (0) slit like; (1) pit-like.
3. Labial cuspules, number: (0) 30-300; (1) 0-20; (2) 350-450.
4. Sternum shape: (0) longer than wide, not truncated behind; (1) as long as wide, truncated behind.
5. Sigilla, posterior pair, position: (0) marginal, less than 1.5 diameters from margin; (1) close to the center, more than two diameters from margin.
6. Setae on metatarsi and tibia I–IV, length, males: (0) same length as other articles; (1) longer setae laterally projected, forming a brush.
7. Scopulae on metatarsi IV, division: (0) divided by setae or spiniform setae; (1) not divided.
8. Tarsal scopulae, occurrence: (0) no true scopula; (1) true scopula.
9. Tarsal scopulae, setae development: (0) scopula composed of sparse setae; (1) dense scopula that does not extend much laterally; (2) scopula very extensive laterally, giving the tarsi and metatarsi I and II a spatulate appearance.
10. Tarsi IV, division, males: (0) cracked; (1) integral.
11. Leg spines, occurrence: (0) present; (1) absent.
12. Leg spines, distribution: (0) in whole tibiae and/or metatarsi; (1) only in ventral apical tibiae and/or metatarsi.
13. Leg spines, metatarsi III and IV, ventral apical metatarsi, central spines, ocurrence: (0) Absent (Figs 3,4); (1) present (Figs 1,2).

    Pelinobilus and Ephebopus have apical spines in metatarsi III and IV on central and lateral areas, *Psalmopoeus* and *Tapinauchenius* species lack spines at central area of apical metatarsi.

14. Palpal femora, scopula on retrolateral face, occurrence: (0) absent, (1) present.
15. Palp, Leg I, trochanter, proximal part of palp femur, retrolateral palp, prolateral leg I, short ordered setae densely grouped, occurrence: (0) absent; (1) present (Figs 5,6).

    Psalmopoeus has an aggrupation of short ordered body setae easily seen in dorsal view in the appendages above.

16. Femora IV, scopulae on retrolateral face, occurrence: (0) absent; (1) present.

17. Chelicera, setae on retrolateral face (Figs 7-8), occurrence: (0) absent, (1) present.
18. Chelicerae, setae on retrolateral face, type of setae: (0) coverture short grouped hair (Fig 7), (1) Modificated plumose setae (Fig 8).

    Some genera as *Haplopelma* and *Pterinochilus* have a true scopulae or stridulatory plumose setae in the retrolateral side of chelicera. *Psalmopoeus* and *Poecilotheria* have short ordered setae, apparently of modified body setae.

19. Maxillae, spiniform setae on lower prolateral face: (0) absent; (1) present.

20. Stridulatory bristles forming a maxillary lyra and setae or strikers opposing in ventral base of chelicera: (0) absent; (1) present (Figs 9-16.).
21. Maxillary lyra, position: (0) middle area (Fig.15); (1) located on oral fringe (Figs.11-13).

    West *et al.* (2012) established in the Selenocosmiinae diagnosis that the maxillary lyra in this subfamily is located medially, not ventrally from the oral fringe as in *Psalmopoeus*.

22. Maxillary lyra, bristles shape and distribution: (0) thick bacillate setae, the most developed with very wide apices, distributed as an oval spot (Fig 15); (1) thick setae, apices not so expanded, arranged as a comb (Fig 11); (2) weak setae, without expanded apices, distribuited as an oval spot (Fig 13); (3) thick setae without a pattern (Fig 10).
    Selenocosmiinae genera have state 0, *Poecilotheria* sp. state 3 and *Psalmopoeus* spp. states 1 or 2.
23. Maxillary lyra, thick setae arranged as a comb, thick setae pattern arrange: (0) crescent in a line, setae not so curved (Fig 11); (1) in a curved line, curved setae (Figs 11, 116).
    Psalmopoeus ecclesiasticus has a curved setae line in the maxillary lyra. The other *Psalmopoeus* species have a maxillary lyra with thick, straight crescent line of setae.
24. Chelicera base, setae, shape: (0) well-developed strikers, spiniform or granulated (Fig 10); (1) filiform weak setae (Fig 12, 16)
    Poecilotheria has well-developed granulated strikers opposing the maxillary lyra on the chelicera base ventral portion. Selenocosmiinae genera and *Psalmopoeus* have filiform setae opposing the maxiilary lyra.

25. Chelicera base, weak setae, lenght and distribution: (0) short setae, before the teeth row and/or retrolateral side without an apparent pattern (Fig 14,16); (1) long setae disposed in ordered lines from the base of chelicera to the beginning of teeth row. (Fig 12)
    Most species of *Psalmopoeus* have filiform setae in the ventral basal portion of chelicera, ordered and separated. The Selenocosmiinae, *P elenae comb. n.*, *P. subcaeruleus comb. n* and *Psalmopoeus* sp. nov. have this this same type of setae in high numbers and without any apparent pattern of distribution.

26. Stridulatory bristles on coxae I, occurrence: (0) absent, (1) present.
27. Posterior lateral spinnerets, distal article, shape: (0) digitiform; (1) domed
28. Patellae and tibiae, stripes color: (0) same color of the rest of the segment; (1) white.
29. Leg rings on distal femora, tibiae and metatarsi, coloration: (0) same color of the rest of the segment; (1) white.
30. Tibiae, metatarsi and tarsi, dorsal coloration: (0) homogeneus color; (1) with black margin; (2) tibiae with homogeneus color, metatarsi with an orange/yellow/pink line from retrolateral side through the center, tarsi with a spot.
31. Color pattern, ontogenetic change: (0) pattern remains practically the same during ontogeny. (1) pattern has drastic changes during ontogeny.
32. Dorsal abdominal pattern in immatures: (0) homogeneus; (1) herringbone; (2) with zigzag central longitudinal dark stripe over a clear spot, which is marginated in black and connects to five narrow transversal black stripes; (3) two median dorso-lateral spots; (4) central longitudinal black stripe with 5-6 lateral stripes, connecting or not with the central stripe, (5) leaf pattern: black with a large central clear area having a longitudinal dark stripe, area closer to longitudinal dark stripe usually reddish; (6) central longitudinal reddish stripe inside a dark area with zigzag borders connected to transverse dark stripes, (7) longitudinal central stripe of a different color of remaining abdomen, (8) with a zig zag central longitudinal dark stripe, figure with sharp sides.

    The state of character 8 is included to those proposed by Bertani (2012), and Fukushima & Bertani (2017), considering that specimens immatures of *P. elenae* and *P. ecclesiasticus* have a zig-zag stain not marginated, very marked on the abdomen that do not correspond to the other proposed states.

33. Abdominal pattern, inmatures, central longitudinal stripe, connection with lateral stripes: (0) connected with all lateral stripes; (1) connected only with first and second lateral pair of stripes.
34. Body coloration, immatures: (0) brownish or grayish; (1) metallic green or blue.
35. Tarsi, coloration, immatures: (0) same color of other articles; (1) black.
36. Dorsal abdominal pattern, single dorsal stripe, male: (0) absent; (1) present,
37. Metatarsi and tarsi, color pattern, adults, ocurrence: (0) homogeneus color; (1) metatarsi with orange/yellow/pinkish/reddish line from retrolateral side to its center, and longitudinal to the distal metatarsi and tarsi with same colour spot (Figs 17-18).

    Psalmopoeus langenbucheri, P. pulcher, P. cambridgei, P. irminia and Poecilotheria have this pattern with different colors in metatarsi and tarsi.

38. Spermathecae occurrence: (0) present; (1) absent.
39. Spermathecae number (seminal receptacles): (0) two completely separated (1) two, fused at base; (2) one, totally fused.
40. Spermathecae, walls, shape: (0) without projections or lobes; (1) with projections or lobes.

    It was considered here as lobes the apical projections of spermatecae that have a conspicuous constriction. *Ephebopus murinus* and *Psalmopoeus reduncus* were considered with the condition 0, as they do not have a conspicuous neck forming lobules in the apice.

41. Spermatheca, apex, number of lobes: (0) one (Fig 27); (1) multilobular (Figs 198, 203); (2) one lobule subsegmented in two (Fig 229).

    Most species of *Tapinauchenius* and *Psalmopoeus* have a single lobule in the spermatheca apex. *Psalmopoeus elenae* comb. n. and *Psalmopoeus subcaeruleus* comb. n. have multiple apical lobules, and *Psalmopoeus* sp. nov. 2 has a single subsegmented lobule. *Stromatopelma robustum*, *Typhochlaena curumin*, *Typhochlaena paschoali*, *Iridopelma* spp., *Caribena laeta* and *Ybirapora sooretama* have multiple lobules.

42. Spermathecae, apical lobule, shape: (0) rounded or oval (Fig 27); (1) digitiform (Fig 88).

Most species species of *Psalmopoeus* have a digitiform apical lobule, *Tapinauchenius* has it rounded or oval, as *Y. gamba*.

43. Spermathecae, medial ventral area of spermatheca, lobules , occurrence: (0) absent; (1) present (Fig 88).

    Most species of *Psalmopoeus* have lobules in the middle of spermathecae, after the apical lobule.

44. Spermathecae, central area lobules, sclerotization: (0) sclerotization the same over the spermathecae length (Fig 152); (1) lobules more sclerotized as the rest of spermathecae (Fig 80).
45. Spermathecae, midwidth: (0) as wide as its base, or midwidth more slender than the base width, but wider than apex width; (1) midwidth expanded, about 1.5 time its basal and apical portion widths, or wider.
46. Spermathecae, shape: (0) non-spiraled or not-twisted; (1) twisted or spiraled; (2) triangular.
47. Spermathecae, weakly sclerotized area, size: (0) weakly-developed or shorter than half the lenght of the well-sclerotized area; (1) twice the lenght or the same lenght of the well sclerotized area; (2) spermatheca virtually non-sclerotized.
48. Spermathecae, curvature: (0) straight or almost so, or curved inward; (1) with an acentuated outwards curvature medially; (2) very curved inward apically (Figs 118, 203).

    State 2 was added to this character to include *Psalmopoeus* and *Tapinauchenius* very curved apically condition seen in some species.

49. Spermathecae, size: (0) more than 2.5 times spermathecae base; (1) less than 2.5 times spermathecae base.
50. Cymbium, process in retrolateral lobe, occurrence: (0) absent or very weakly-developed; (1) present, well-developed.
51. Cymbium, setae covering the retrolateral process, thickness: (0) thin; (1) thick.
52. Cymbium, process in retrolateral lobe, shape: (0) rounded; (1) sharp.
53. Cymbium, prolateral lobe, shape: (0) rounded; (1) subtriangular.
54. Tegulum, shape: (0) globous; (1) piriform.

55. Subtegulum, length: (0) small; (1) large, extending down the bulb for half of the tegulum.
56. Palpal bulb, prominence on tegulum (frontal view), occurrence: (0) absent; (1) present.
57. Palpal bulb, prominence on tegulum, development: (0) weakly-developed; (1) developed; (2) well developed.
58. Embolus, length, retrolateral view: (0) 1.5 to 2.5 times the tegulum's length; (1) smaller than tegulum's length; (2) 3.0 to 3.5 times the tegulum's length; (3) more than 4 times the tegulum's length.
59. Embolus, distal width: (0) thin, shorter than 1/5 tegulum's length; (1) thick, more than 1/3 tegulum's length.
60. Embolus, shape: (0) not flattened; (1) slightly flattened; (2) very flattened.
61. Embolus, tip: (0) tapers; (1) narrows abruptly.
62. Embolus, proximal part, frontal view, shape: (0) straight; (1) slightly curved; (2) very curved.
63. Embolus, curved, retrolateral view, angle between tegulum's margin and embolus medial portion: (0) very acute angle; (1) acute angle; (2) right or obtuse angle.
64. Embolus, distal, second curvature: (0) absent, straight or almost so (Figs 171-175); (1) slightly curved (Figs 76-80); (2) very curved (Fig 106-110).

    Some of *Psalmopoeus* species have the embolus distally curved directed to ventral side (retrolateral view).

65. Embolus, distal, constricted section slightly twisted, curved tip, occurrence: (0) without constricted twisted section; (1) with a constricted twisted area (Figs 19-23).

    Tapinauchenius species have in common a distal portion of embolus compressed, slightly twisted and having the small tip a little curved.

66. Bulb, prolateral inferior keel on embolus: (0) absent; (1) present.
67. Bulb, prolateral superior keel on embolus: (0) absent; (1) present.
68. Bulb, apical keel on embolus: (0) absent; (1) present.
69. Bulb, retrolateral keel on embolus: (0) absent; (1) present.
70. Tibial apophysis on leg I, occurrence: (0) present; (1) absent or weakly-developed
71. Tibial apophysis on leg I, shape: (0) 2 branches; (1) a single branch with a megaspine; (2) one branch with setae.

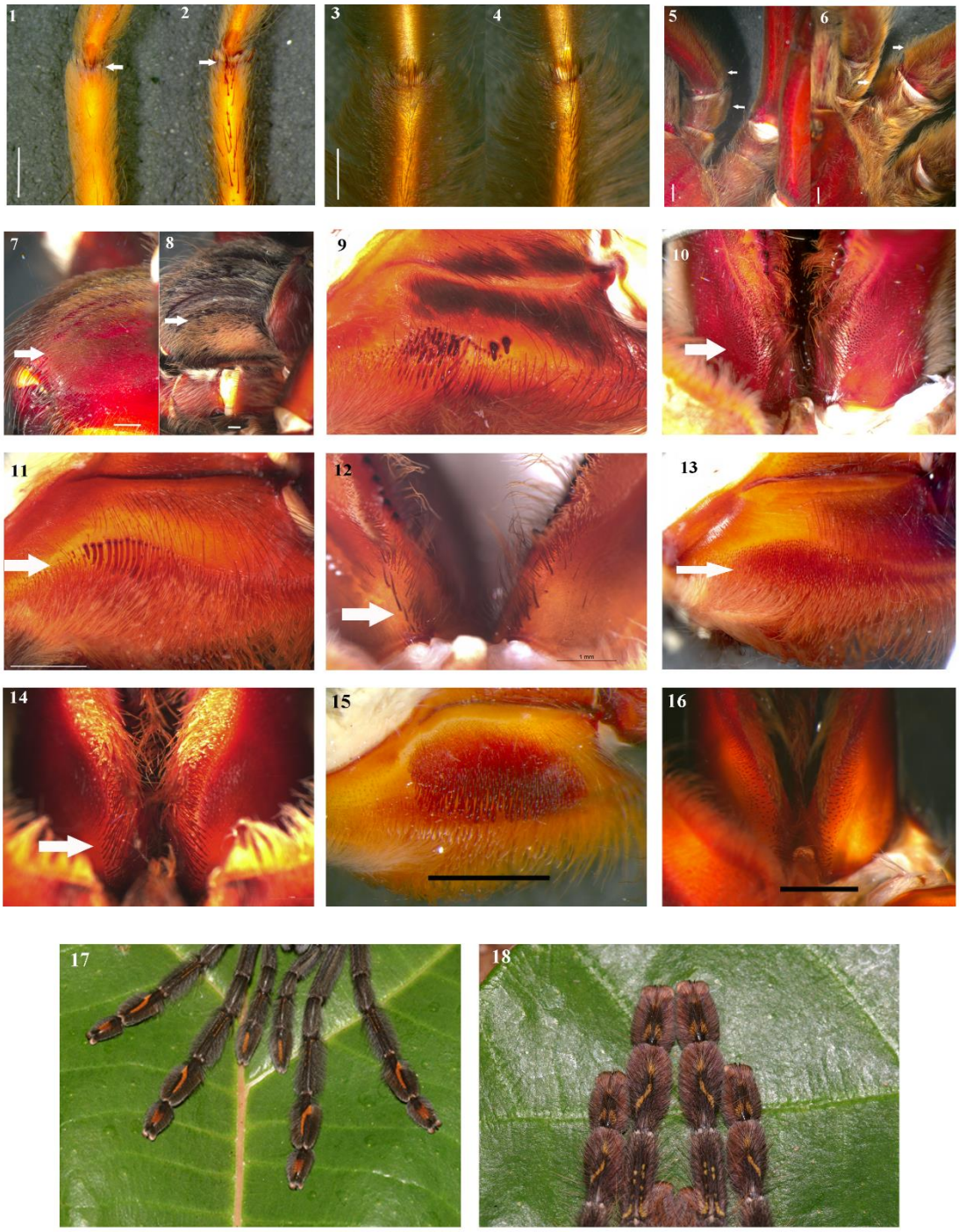
72. Tibial apophysis on leg I, one branch with setae, spiniform setae on a branch, branch development: (0) weakly-developed branch; (1) well-developed branch.
73. Tibial apophysis in leg II, occurrence: (0) absent; (1) present.
74. Type I urticating setae, occurrence: (0) absent; (1) present.
75. Type II urticating setae, any life stage, occurrence: (0) absent; (1) present.
76. Type II urticating setae, adult female, occurrence: (0) present; (1) absent.
77. Type II urticating setae, length, females: (0) up to 0.90mm; (1) more than 1 mm.
78. Type III urticating setae, occurrence: (0) absent; (1) present.
79. Type IV urticating setae, occurrence: (0) absent; (1) present.
80. Type V urticating setae, occurrence: (0) absent; (1) present.
81. Legs, ratio between length of leg IV and I, males: (0) leg IV more than 10% longer than leg I; (1) leg IV roughly the same length as leg I; (2) leg IV more than 10% shorter than leg I.
82. Legs, ratio between length of leg IV and I, females: (0) leg IV more than 10% longer than leg I; (1) leg IV roughly the same length as leg I; (2) Leg IV more than 10% shorter than leg I.
83. Habits, females: (0) retreat within surface layers of soil; (1) arboreal; (2) oportunistic; (3) fossorial.
84. Arboreal retreat made by adults: (0) built on tree trunk or on palm tree leaf base; (1) built in leaves, normally with two or more leaves connected by silk; (2) built under loosened tree bark; (3) bromelicolous.

Taxon\Character	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
M._santuario	0	0	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-
S._robustum	0	0	0	1	0	0	0	-	1	0	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	1	0	0	0	0	?	-	0	0	0	0	0	0	1	1	-
Holothele_longipes	0	0	0	0	0	0	0	0	1	0	0	0	0	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	0	0	0	0	-	0	0	0	0	0	0	1	-	-
*Pterinochilus_* sp.	0	1	0	0	0	0	0	0	1	1	1	0	0	-	0	0	0	1	1	0	0	-	-	-	-	-	0	0	0	1	0	0	1	-	0	0	0	0	0	0	0	-	-
P._muticus	0	1	0	0	0	1	0	1	1	1	1	0	1	0	1	0	0	0		0	0	-	-	-	-	-	1	0	0	1	0	0	0	-	0	0	0	0	0	0	1	-	-
*Cyriopagopus_* sp.	0	1	0	0	0	1	0	0	1	1	1	0	0	0	0	0	0	1	1	1	0	-	-	-	-	-	0	0	0	1	0	0	1	-	0	0	0	0	0	2	-	-	-
*Coremiocnemis_* sp.	0	0	0	2	0	1	0	0	1	1	0	0	1	0	0	0	0	0	-	0	1	0	0	-	1	0	0	0	0	0	0	?	0	-	0	0	0	0	0	0	1	-	-
P._johnreylazoi	0	0	0	2	0	1	0	0	1	1	0	0	1	0	0	0	0	0	-	0	1	0	0	-	1	0	0	0	0	0	0	0	?	?	?	?	0	0	0	0	0	-	-
*Lasiodora_* sp.	0	1	0	0	0	0	0	0	1	1	1	0	0	-	0	0	1	0	-	0	0	-	-	-	-	-	1	0	0	1	0	0	0	-	0	0	0	0	0	1	0	-	-
P._vulpinus	0	0	0	1	0	0	0	0	1	1	1	0	0	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	0	3	-	0	0	0	0	0	0	1	-	-
*Poecilotheria_* sp.	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	1	0	1	1	0	3	-	0	-	0	0	0	1	0	0	2	-	0	0	0	1	0	2	-	-	-
E._olivacea	0	0	1	1	0	0	0	0	1	1	1	0	0	-	1	0	0	0	-	0	0	-	-	-	-	-	0	0	0	0	0	0	1	-	0	0	0	0	1	-	-	-	-
S._calceatum	1	0	1	0	0	0	1	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	1	0	1	-	0	0	0	0	0	0	0	-	-
H._maculata	1	0	1	0	0	0	1	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	1	0	1	-	0	0	0	0	0	0	0	-	-
E._murinus	1	0	0	0	0	0	0	0	1	2	1	0	1	0	0	0	0	0	-	0	0	-	-	-	-	-	0	0	1	1	0	1	0	-	0	1	0	0	0	0	0	-	-
E._uatuman	1	0	0	0	0	0	0	0	1	2	1	0	1	0	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	2	0	1	0	-	0	1	0	0	0	0	0	-	-
T._seladonia	0	0	0	0	1	0	0	0	1	2	1	0	1	?	0	0	0	0	-	0	0	-	-	-	-	-	0	1	0	0	0	0	4	0	1	0	0	0	0	0	0	-	-
T._amma	0	0	0	0	1	0	1	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	1	0	1	0	?	?	?	?	?	0	0	0	0	0	-	-
T._curumim	0	0	0	0	1	0	1	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	1	0	1	0	0	4	2	0	1	0	0	0	0	1	1	-
T._paschoali	0	?		0	0	1	0	?		0	1	2	?		0	1	1	0	0	0	0	-	-	-	-	-	0	1	0	1	0	0	5	-	0	1	0	0	0	0	1	1	-
P._rufonigrum	1	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	0	0	1	4	2	1	0	0	0	0	0	0	0	-
P._bromelicola	1	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	0	0	1	4	0	1	0	0	0	0	0	0	0	-
I._hirsutum	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	1	5	-	1	0	1	0	0	0	1	1	-
I._vanini	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	?	?	-	?	?	0	0	0	0	1	1	-
I._oliveirai	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	1	5	-	?	?	0	0	0	0	1	1	-
C._laeta	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	1	4	2	1	0	0	0	0	0	1	1	-
Y._sooretama	0	0	0	0	0	?		0	0	1	2	1	1	-	-	0	0	0	0	0	0	-	-	-	-	-	0	0	0	1	0	1	6	-	1	0	1	0	0	0	1	1	-
Y._gamba	0	0	0	0	0	?		0	0	1	2	1	1	-	-	0	0	0	0	0	0	-	-	-	-	-	0	0	0	1	0	1	6	-	1	0	1	0	0	0	1	0	0
A._avicularia	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	?	0	1	4	2	0	1	0	0	0	0	0	-	-
A._rickwesti	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	0	5	-	0	0	0	0	0	0	0	-	-
A._taunayi	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	1	4	1	0	1	0	0	0	0	1	-	-
A._merianae	0	0	0	0	0	0	0	0	1	2	1	1	-	-	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	1	4	1	0	1	0	0	0	0	0	-	-
Psalmopoeus_cambridgei	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	4	0	0	1	0	1	0	0	1	-	1
Psalmopoeus_ecclesiasticus	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	1	1	1	0	0	0	1	0	1	8	-	0	1	0	0	0	0	1	-	1
Psalmopoeus_irminia	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	4	0	0	1	0	1	0	0	1	-	1
Psalmopoeus_langenbucheri	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	7	-	0	1	0	1	0	0	1	-	1
Psalmopoeus_pulcher	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	0	-	0	1	0	1	0	0	1	-	1
Psalmopoeus_reduncus	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	1	0	-	0	1	0	0	0	0	0	-	-
Psalmopoeus_elenae	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	0	0	0	-	0	1	1	2	-	1	0	0	0	0	1	0	1	8	-	0	1	0	0	0	0	1	1	-
Psalmopoeus_subcaeruleus	1	0	0	0	0	0	?		0	1	2	?		0	1	1	0	0	0	0	1	1	2	-	1	0	0	0	0	1	0	1	4	0	0	1	0	0	0	0	1	1	-
*Psalmopoeus_* sp._nov1	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	1	0	1	0	0	1	1	1	0	1	1	0	0	0	1	0	?	?	?	?	?	0	0	?	?	?	?	?
*Psalmopoeus_* sp._nov2	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	0	0	0	-	0	1	1	2	-	1	0	0	0	0	1	0	1	4	0	0	1	0	0	0	0	1	2	0
Tapinauchenius_latipes	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	?	?	?	?	?	0	0	0	0	1	?	0
Tapinauchenius_plumipes	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	?	?	?	0	1	0	0	0	0	1	0	0
Tapinauchenius_sanctivicenti	1	0	0	0	0	0	1	0	1	2	1	0	1	1	0	0	0	0	-	0	0	-	-	-	-	-	0	0	0	1	0	?	?	?	?	?	0	0	0	0	1	0	0

Table 1. Data matrix showing distribution of character states in cladistic analysis. (?= unknown, - = non-applicable, both treated as missing data).

Taxon\Character	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84
M._santuario	-	-	0	0	?	0	1	0	-	-	0	0	0	0	-	2	0	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0	0	0	0	0	-
S._robustum	0	-	0	0	2	0	0	0	-	-	0	0	0	1	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	0	0	0	-	-	0	0	0	0	0	3	-
Holothele_longipes	1	0	0	0	0	0	0	0	-	-	0	1	0	1	0	0	0	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0	0	0	0	3	-
***Pterinochilus_* sp.**	-	-	0	0	0	0	1	0	-	-	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	0	1	-	0	0	0	-	-	0	0	0	0	1	3	-
P._muticus	-	-	0	0	0	0	0	0	-	-	1	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	1	-	-	0	0	0	-	-	0	0	0	0	0	3	-
***Cyriopagopus_* sp.**	-	-	-	-	0	-	-	0	-	-	1	1	1	0	-	0	1	2	0	1	0	0	0	1	1	1	1	0	2	1	0	0	0	-	-	0	0	0	1	1	3	-
***Coremiocnemis_* sp.**	0	-	0	0	0	0	0	0	-	-	0	0	0	1	0	0	0	0	0	0	-	0	0	0	0	0	0	0	-	-	0	0	0	-	-	0	0	0	1	1	3	-
P._johnreylazoi	0	-	0	0	0	0	0	0	-	-	?	1	1	?	?	0	1	1	0	?	-	-	-	0	0	0	0	1	-	-	0	0	0	-	-	0	0	0	1	1	3	-
***Lasiodora_* sp.**	-	-	-	-	0	0	-	0	-	-	0	1	1	0	-	1	1	1	0	0	-	-	-	1	1	1	1	0	0	-	0	1	0	-	-	1	0	0	1	1	3	-
P._vulpinus	-	-	-	-	0	-	-	0	-	-	0	1	1	0	-	0	0	0	0	0	-	0	0	1	1	0	0	0	0	-	0	0	0	-	-	1	1	0	2	2	3	-
***Poecilotheria_* sp.**	-	-	-	-	0	-	-	0	-	-	1	0	0	0	-	1	1	0	0	0	-	-	-	1	1	1	0	1	-	-	0	0	0	-	-	0	0	0	1	1	1	-
E._olivacea	-	-	-	-	-	-	-	0	-	-	1	0	0	?	?	0	1	2	0	0	-	-	-	1	1	0	0	1	-	-	0	0	0	-	-	0	0	0	1	1	1	?
S._calceatum	-	-	0	0	0	0	0	0	-	-	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	1	-	-	0	0	0	-	-	0	0	0	1	1	1	0
H._maculata	-	-	0	0	0	0	0	0	-	-	1	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	0	1	-	-	0	0	0	-	-	0	0	0	1	0	1	0
E._murinus	-	-	0	0	0	0	0	0	-	-	1	0	0	1	1	0	0	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0	1	2	2	3	-
E._uatuman	-	-	0	0	0	0	0	0	-	-	1	0	0	1	1	2	0	0	0	0	-	0	0	0	0	0	0	0	0	-	0	0	0	-	-	0	0	1	1	1	3	-
T._seladonia	-	-	0	1	?	0	0	0	-	-	1	0	0	1	0	3	0	0	0	2	1	0	0	0	0	0	0	1	-	-	0	0	1	0	0	0	0	0	1	1	1	2
T._amma	-	-	1	0	0	1	0	0	-	-	1	0	0	0	-	0	0	0	0	2	1	0	0	0	0	0	0	1	-	-	0	0	1	0	0	0	0	0	1	1	1	?
T._curumim	-	-	0	1	0	0	0	0	-	-	1	0	0	0	-	0	0	0	0	1	2	0	0	0	0	0	0	1	-	-	0	0	1	0	0	0	0	0	1	0	1	2
T._paschoali	-	-	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	?	?	?	?	?	?	?	0	1	0	0	0	0	?	1	?	?
P._rufonigrum	-	-	0	0	0	0	1	1	0	0	1	0	0	0	-	2	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	3
P._bromelicola	-	-	0	0	0	0	1	1	0	0	1	0	0	0	-	2	0	0	0	2	0	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	3
I._hirsutum	-	-	0	1	0	0	1	1	1	0	1	0	0	0	-	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	2	1	1	1
I._vanini	-	-	0	1	0	0	1	1	1	0	1	0	0	0	-	2	0	0	0	2	2	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	1	1	1	?
I._oliveirai	-	-	0	1	0	0	0	1	1	0	1	0	0	0	-	0	0	0	0	2	2	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0	0	2	1	1	?
C._laeta		-	0	0	0	0	1	1	0	1	1	0	0	0	-	2	0	0	0	1	2	0	0	0	0	0	0	0	2	0	0	0	1	0	1	0	0	0	1	1	1	0
Y._sooretama	0	-	0	0	2	1	1	0	-	-	1	0	0	1	1	2	0	0	1	2	2	0	0	0	0	0	0	0	2	0	0	0	1	1	0	0	0	0	0	1	3
Y._gamba	0	-	0	0	2	1	1	0	-	-	1	0	0	0	-	2	0	0	0	1	2	0	0	0	0	0	0	1	-	-	0	0	1	0	0	0	0	0	1	1	1	1
A._avicularia	-	-	0	0	0	1	1	1	1	0	1	0	0	1	1	2	0	0	1	2	1	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	1	0
A._rickwesti	-	-	-	-	0	-	0	1	1	0	1	0	0	0	-	1	0	2	0	1	2	0	0	1	1	1	0	0	2	1	0	0	1	0	0	0	0	0	1	1	1	0
A._taunayi	0	-	1	0	0	1	0	1	1	0	1	0	0	1	1	2	0	0	1	2	1	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	1	1	1	0
A._merianae	-	-	0	0	1	1	1	0	-	-	1	0	0	1	1	2	0	0	0	2	1	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	0	1	1	1	?
Psalmopoeus_cambridgei	1	1	0	0	0	0	0	0	-	-	0	0	0	1	1	2	0	0	0	0	-	1	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Psalmopoeus_ecclesiasticus	1	0	0	0	0	2	0	0	-	-	0	0	0	1	0	3	0	0	0	0	-	2	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Psalmopoeus_irminia	1	1	0	0	0	0	0	0	-	-	0	0	0	1	1	2	0	0	0	1	-	1	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	2	1	2	-
Psalmopoeus_langenbucheri	1	0	0	0	0	0	0	0	-	-	0	0	0	1	1	0	0	0	0	0	-	1	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Psalmopoeus_pulcher	1	1	0	0	0	0	0	0	-	-	0	0	0	1	1	2	0	0	0	1	-	0	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Psalmopoeus_reduncus	1	-	0	0	0	0	0	0	-	-	0	0	0	1	0	0	0	0	0	1	-	0	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Psalmopoeus_elenae	0	-	0	0	0	0	0	0	-	-	0	0	0	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	0	2	-
Psalmopoeus_subcaeruleus	0	-	0	0	0	2	1	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	?	?	?	?	?	?	?	0	0	-	-	0	0	0	1	1	2	-
***Psalmopoeus_* sp._nov1**	?	?	?	?	?	?	?	0	-	-	0	0	0	1	1	0	0	0	0	1	-	1	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	-	-	-
***Psalmopoeus_* sp._nov2**	0	-	0	0	0	0	1	0	-	-	0	0	0	1	0	2	0	0	0	0	-	0	0	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Tapinauchenius_latipes	0	-	0	0	0	0	0	0	-	-	0	0	0	1	1	2	0	0	1	0	-	0	1	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-
Tapinauchenius_plumipes	0	-	0	0	0	0	1	0	-	-	0	0	0	1	1	3	0	0	1	1	-	0	1	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	2	1	2	-
Tapinauchenius_sanctivicenti	0	-	0	0	0	0	0	0	-	-	0	0	0	1	0	0	0	0	1	1	-	0	1	0	0	0	0	0	0	-	-	0	0	-	-	0	0	0	1	1	2	-

Table 1. Data matrix showing distribution of character states in cladistic analysis. (?= unknown, - = non-applicable, both treated as missing data).



Figures 1-18. Geral morphological characters. **Figures 1-2.** *Ephepopus uatuman*, apical central spine. 1, metatarsus III. **2,** metatarsus IV. **3-4.** *Tapinauchenius plumipes*, segment lacking central spine. **3,** metatarsus III. **4,** metatarsus IV. **5-6.** *Psalmopoeus irminia*, dorsal view, short ordered setae on trochantera and proximal femora. **5,** retrolateral palp. **6,** prolateral leg I. **7.** *Psalmopoeus irminia*, setae, retrolateral side of chelicera. **8.** *Pterinochilus sp*. retrolateral chelicera setae. **9-10.** *Poecilotheria* sp. **9,** Maxillary lyra, prolateral. **10,** Strikers on ventral basal portion of chelicera. **11-12.** *Psalmopoeus* sp. **11,** Maxillary lyra. **12,** filiform strikers on ventral basal portion of chelicera. 13-14. *Psalmopoesu subcaeruleus*. **13,** Maxillary lyra. **14,** filiform strikers in ventral basal portion of chelicera. **15-16.** *Coremiocnemis* sp. **15,** Maxillary lyra. **16,** filiform strikers in ventral basal portion of chelicera. **17.** *Psalmopoeus irminia*, coloration pattern on metatarsi and tarsi. **18.** *Poecilotheria* sp, color patern on metatarsi and tarsi. Scale bar= 1mm.

Taxonomy

***Tapinauchenius* Ausserer, 1871**

Mygale; C. L. Koch, 1842: 67, f. 733 (in part: *M. plumipes*); Walckenaer, 1837: 216 (in part: *M. sancti-vincentii*).

Eurypelma; Koch, 1850: 73 (in part: *E. plumipes*).

Tapinauchenius Ausserer, 1871: 127, 200 (type species by original designation *M. plumipes* C. L. Koch, 1842, holotype male in ZMB, Kat N°2044, examined); 1875: 138; Simon 1889: 214; 1892: 170-172; 1903: 958-959; Pickard-Cambrige F. 1896: 744-746; Pocock 1901: 548; Banks 1905: 302; Mello-Leitão 1923: 315, 395; Petrunkevitch 1928: 82; Roewer 1942: 257; Bonnet 1959: 4239; Raven 1985: 119; Smith 1995: 30; World Spider Catalog 2018.

Avicularia; Becker, 1879: 143 (in part: *A. deborrii*).

Diagnosis: *Tapinauchenius* species differ from those of the other Aviculariinae genera, except *Psalmopoeus*, by the males having lateral directed setae on metatarsi and tarsi, males and females by the presence of few apical spines on metatarsi and/or tibiae, and absence of urticating setae. *Tapinauchenius* spp. can be distinguished by females with spermathecae with a single apical round or oval lobule, and males with palp embolus with distal slight twisted constriction and short curved tip. In addition, *Tapinauchenius* species can be distinguished from those of *Psalmopoeus* by the absence of maxillary lyra (stridulatory organ).

Distribution: Brazil, Ecuador, French Guiana, Guyana, Saint Vincent-Union Island, Santa Lucia island, Venezuela.

Composition: *Tapinauchenius latipes* L. Koch, 1875, *Tapinauchenius plumipes* (C. L. Koch, 1842), *Tapinauchenius sanctivincenti* (Walckenaer, 1837).

Description:

Carapace longer than wide, cephalic region slightly raised. Cephalic and thoracic striae conspicuous. Fovea, deep, straight. Chelicerae without rastellum. Eye tubercle slightly raised or raised, wider than long. Clypeus absent. Anterior eye row straight. Labium wider than long, with ca. 76– 138 cuspules concentrated on anterior third center. Maxilla subrectangular, anterior lobe distinctly produced into conical process, inner angle bearing ca. 112-198 cuspules. Sternum longer than wide, posterior angle acute, not separating coxae IV. Three pairs of sigilla,

some pairs sometimes not evident. Anterior oval or rounded, middle rounded, posterior oval. All positioned one diameter or less from margin. Leg formula: I=IV II III (most species), or I IV III II (*T. plumipes* male). Laterally directed setae on metatarsi and tarsi in males. Clavate trichobothria on distal 2/3 of tarsi. Tarsi I–IV fully scopulate, IV divided by a band of sparse setae. Metatarsi I–II fully scopulate in most species, III 1/3 to 1/2 distal scopulate and IV 1/4 to 1/3 distal scopulate. Metatarsi IV divided by a row of setae. Scopulae of tarsi and metatarsi I–II very extended laterally giving them a spatulate appearance. Femora IV without retrolateral scopulae. Stridulatory setae absent. Legs with spines in ventral apical tibia and metatarsi, without central spines. ITC absent; STC with small denticles. Posterior lateral spinnerets digitiform. Urticating setae lacking. Male tibiae I with tibial apophysis with two processes, retrolateral longer than prolateral, metatarsi I folds on retrolateral side of tibial apophysis. Tibiae II lacking apophysis. Globous bulb with small subtegulum; prominence on prolateral tegulum developed (*T. plumipes and T. latipes*) or weakly-developed (*T. santivincenti*). Embolus not flattened, without keels, about 3.0 to 3.5 times tegulum's length (*T. latipes and T. sanctivincenti*) or more than 4 times tegulum's length (*T. plumipes*) in retrolateral view. Embolus medial portion and tegulum's margin form a right or obtuse angle in retrolateral view. Embolus with proximal portion straight (*T. latipes* and *T. sanctivincenti*) or slightly curved (*T. plumipes*) in frontal view, thin distal width and tip narrowing abruptly. Cymbium subtriangular with almost equal lobes, without developed rounded process on retrolateral lobe. Spermathecae straight, completely separated, elongated. Spermathecae not-twisted, with walls having a single apical lobule. Spermathecae midwidth as wide as its base width. Spermathecae with weakly-sclerotized area shorter than half the length of well-sclerotized area. Abdomen dorsum of females with homogeneously distributed setae. Legs and palps with long guard-setae having homogeneous coloration along its length. Leg rings on distal femora, tibiae and metatarsi whitish. *Tapinauchenius plumipes* lacking ontogenetic change, other species unknown. Brownish juveniles lacking metallic green or blue sheen, with black tarsi contrasting with other lighter articles (*T. plumipes*).

Key to *Tapinauchenius* species

Males

1. Embolus lenght more than 4.0 times tegulum's length (Figs 19-23)……..…***T. plumipes***

   Embolus shorter (Figs 48-52, 64-68)**...**……..…2

2. Developed prominence in tegulum (Fig 52) and embolus 3.0 to 3.5 times tegulum length……..***T. latipes***

   Weakly developed prominence in tegulum (Fig 68) and embolus 1.5 to 2.5 times the tegulum's length…….***T. sanctivincenti***

Females

1. Spermathecae length more than 2.5 times width of base (Fig27), metatarsi III and IV with ventral apical with spiniform setae (Figs 28-29)……..……***T. plumipes***

   Spermathecae shorter than 2.5 times width of base, metatarsi III and IV, ventrally, without spiniform setae .(Figs 60, 73)…….……..……2

2. Apical lobule of spermathecae oval, transversal, almost the same diameter of midwidth of spermatheca (Fig 60)……...…….……***T. latipes***

   Apical lobule of spermathecae oval, not transversal, narrower than midwidth of spermatheca (Fig 73)……..…….....***T. sanctivincentii***

***Tapinauchenius plumipes* (C. L. Koch, 1842)**

Figs 19-40, 239

Mygale plumipes C. L. Koch, 1842: 67, f. 733 (Lectotype here designated, and paralectotype, 2 males in ZMB, from Surinam, Kat N°2044, examined).

Eurypelma plumipes; C. L. Koch, 1850: 73; Simon, 1864: 67.

Tapinauchenius plumipes; Ausserer, 1871: 201; Simon, 1892: 172; Pickard-Cambridge F., 1898: 898; Petrunkevitch, 1911: 90; 1928: 82; 1939: 290; Roewer 1942: 257; Bonnet, 1959: 4239; Schmidt, 1994: 259, f. 2. World Spider Catalog 2018.

Avicularia deborrii Becker, 1879: 143 (syntypes female and male from Paramaribo, Surinam, deposited at Museé de Bruxelles, not examined). First synonymized by Simon, 1886: 133.

Ephebopus violaceus Mello-Leitão, 1930b: 56, f. 4 (holotype female from Cuminá, state of Pará, Brazil, deposited at MNRJ, examined); Petrunkevitch 1939: 292; Roewer 1942: 258; Bonnet 1956: 1710. *New synonymy.*

Avicularia violacea: Lucas, Silva & Bertani, 1992: 163.

Tapinauchenius purpureus Schmidt, 1995: 11, f. 1 (holotype female and paratype male from Piste de Coralie PK4, Porte de la Conte (Route de l'Est), Piste de l'Est, Cacao, French Guiana, A. Braunshausen, 1992/93, ded. M. Verdez, deposited at SMF38042, SMF38046, examined). First synonymized with *Tapinauchenius violaceus* by West et al. 2008.

Tapinauchenius violaceus West et al., 2008: 39, f. 21-22.

Tapinauchenius gigas Caporiacco, 1954: 50 (female lectotype belonging to *Tapinauchenius plumipes*, and a paralectotype *Ephebopus murinus*, here designed, from Saint Jean du Maroni, benoist, Guyana, December 1913, deposited at MNHN, examined); Schmidt, 1994e: 2, f. 1-3; Auer, Huber & Bochtler, 2007: 23, f. 5, 33-34, 48. *New synonymy*.

Tapinauchenius brunneus Schmidt, 1995a**:** 2, f. 1-2 (holotype male from nordbrasilien, ockert, 25 March 1994, deposited at SMZ 38008, revised illustration of type). *New synonymy.*

Diagnosis: Males and females of *Tapinauchenius plumipes* resemble those of *T. latipes* and *T. sanctivincenti* by spermathecae with a single apical lobule and straight copulatory palpal bulbs. Females can be distinguished from those of these species by elongated spermathecae with more than 2.5 times width base (Fig. 27), and presence of spiniform setae on ventral-apical metatarsi III and IV (Figs 28-29). Males can be distinguished by curved and long embolus more than 4 times tegulum's length. (Figs 19-23).

Material examined: Surinam: 1 male lectotype and 1 male paralectotype **(**ZMB, Kat N°2044-1,2)**;** Brazil, state of Amazonas, Iranduba, Vila de Paricatuba, 1 female 1 male, Almeida M.Q. col., 22 May 2017 **(**unnumbered-INPA).

Additional material examined: FRENCH GUIANA: *Cayenne*: Cayenne [4°55'N, 52°18'W], 1 female, B. Capiz col., November 2005 (LEEV 123); Le Gallion [4°46'N, 52°25'W], Emerald Jungle Village lodge, 1 female, R. West, April 1999, (LEEV124 135); same data and collector, 1 male, 8 April, 1999 (LEEV 136); 1 male, Gaston [14°18'N, 52°06'], J. Moonen col., 19 September 1991, (LEEV134), 1 immature, same data and collector, 6 April 1999, in bromeliad forest, (LEEV 137); BRASIL: *Amazonas:* Presidente Figueiredo, UHE3 Balbina [1°48'S, 59°33'W], 1 male, B. Mascarenhas col., 14 January 1948 (MPEG 005384); Manaus, Igarape Jacaré, off west side upper Rio Tarumã-Açu (02°53'49.92" S, 60°7'16.08" W), 1 female, N.

Gordon col., November 1996 (LEEV127), Manaus [3°04'S, 59°59'W], 1 Female, Gasnier T. col. (INPA-4951); São Gabriel da Cachoeira [0°07'S, 67°05'W], Morro dos Seis Lagos, 1 Female,, A.A. Lise col., 28 September-3 October 1990 (MCP-1184); 1 male, Nhamunda-Presidente Figueredo [0°18'N, 58°32'W] E.P.A.col. in bromeliad, 18 January1968 (MZUSP 10852) *Pará*: Ananindeua [1°22'S, 48°23W], 1 male, R. F. da Silva col., 13 August 1974, (LEEV 117); Belém Ilha do Mosqueiro [1°09S, 48°28'W], 6 Rua 10, 1 female, J. Macambira col., December 1989 (MCP-2688); Oriximiná, Reserva Biológica do Rio Trombetas [1°09'S, 56°42'W], 1 female, Grazia et al. col., 17 August 1979 (MCP-4760); Ourém [1°32'S, 47°06'W, 1 female, D.D. Guimarães col., 06 october 2001 (MPEG-000212); Senador José Porfirio [2°35'S, 5'°56'W], right side of Xingu river, 1 female, 04 March 2001 (MPEG000199); Jacundá [4°27'S, 49°06'W], 1 female, W.L. Overal and team col., 13 May 1984 (MPEG 005134); 1 female, Fazenda Morelândia, 13-15 November 1998, B. J. F da Silva col. (MPEG 000188);,Belém, Ilha Nova [1°14'S, 48°31'W], 1 female, R. F da Silva col., 20 April 1977 (MPEG 005196); Jurutí [2°09S, 56°05'W], Igarapé Mutum, 1 female, A.B. Bonaldo col. (MPEG 001096); 1 female, D.F. Candiani col., 19 November 2007 (MPEG 034331); 1 male, N.S. Abrahim, 22 May 2009 (MPEG 034337); *Rondonia:* Porto Velho [8°45'S, 63°53'W], 1 male, A. Nogueira, M.C. Silveira, R.Y. Lemos, S. Outeda-Jorge col., 22 March 2011,(MZUSP-40225), Porto Velho, (09°05'626" S 64°01'605"W) 1 female, 23 August 2008, in the trunk of canaminherira (LEEV-RO1713); SURINAME: Paramaribo [5°50'N, 55°11'W], 1 male, Agr Sta, V. Doesburg col., August 1962 (AMNH-39).

Redescription: Male **(**INPA- unnumbered**)**. Total length, not including chelicerae or spinnerets 24.20. Carapace 10.32 long, 9.41 wide, 5.98 high. Chelicera: 5.17 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.51, 6.20, 10.97, 9.14, 4.81, 42.63; II: 10.45, 5.05, 9.51, 8.98, 4.15, 38.14; III: 8.56, 4.06, 7.5, 8.71, 3.98, 32.81; IV: 11.3, 3.96, 8.01, 8.73, 5.55, 36.55; Palp: 6.37, 3.65, 6.52, - , 2.14, 18.68. Midwidths: femora I–IV= 1.77, 1.87, 2.08, 2.01, palp= 1.32; patella I–IV= 1.73, 1.76, 1.82, 1.72, palp= 1.48; tibiae I–IV= 1.51, 1.35, 1.43, 1.67, palp= 1.44; metatarsi I–IV= 1.03, 1.20, 1.02, 1.13; tarsi I–IV= 0.98, 1.07, 1.05, 1.09, palp= 1.31. Abdomen: 12.01 long, 7.23 wide. Spinnerets: PMS, 0.67 long, 0.27 wide, 0.25 apart; PLS, 1.43 basal, 0.85 middle, 1.55 distal; midwidths 0.35, 0.46, 0.50, respectively.

Carapace: 1.10 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.51 wide.

Eyes: eye tubercle 0.58 high, 0.91 long, 1.32 wide. Clipeus: absent. Anterior eye row straight, posterior recurved. Eye size and interdistances: AME 0.32, ALE 0.28, PME 0.15, PLE 0.23, AME–AME 0.19, AME–ALE 0.07, AME–PME 0.11, ALE–ALE 0.92, ALE–PME 0.22, PME–PME 0.74, PME–PLE 0.06, PLE–PLE 1.00, ALE–PLE 0.13.

Maxilla: length to width 1.60. Cuspules: ca. 106 spread over ventral inner heel. Labium: 0.56 long, 0.77 wide, with ca. 87 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 teeth in row. Sternum: 2.82 long, 2.00 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.86. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process of tibial apophysis; II: 2/0; III 2/2; IV 0/2.

Tibial apophysis: with two processes, retrolateral one larger than prolateral, one spine at side of prolateral, another on apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis (Fig 24).

Copulatory palpal bulb: tegulum length 0.47, width 0.75, embolus proximal width 0.25, length 1.96. Embolus proximal portion curved (ventral view). Long embolus, with an apical constriction and curved tip, twisted section (Fig 19-23).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora and tibiae brown, with blue-violet shades; abdomen purple with a proximal transversal line connected with a central vertical line forming a “T” (Figs. 24-26).

Redescription: Female (INPA-unnumbered). Total length, not including chelicerae or spinnerets 30.02. Carapace 14.92 long, 10.76 wide, 8.04 high. Chelicera: 9.96 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.35, 7.51, 10.41, 8.97, 5.09, 43.33, II: 10.98, 7.58, 10.69, 8.98, 4.58, 42.81; III: 8.70, 5.64, 7.41, 8.44, 4.12, 34.31; IV: 11.01, 6.10, 10.81, 11.58, 3.86, 43.36; Palp: 7.44, 4.90, 5.50, - , 5.81, 23.6. Midwidths: femora I–IV= 2.19, 2.09, 2.36, 2.42, palp= 2.13; patella I–IV= 2.11, 2.45, 2.07, 2.51, palp=2.37; tibiae I–IV= 2.03, 1.88, 2.27, 2.17, palp= 1.85; metatarsi I–IV=1.75, 1.69, 1.39, 1.33; tarsi I–IV= 1.65, 1.47, 1.55, 1.24, palp=

1.50. Abdomen: 14.96 long, 9.44 wide. Spinnerets: PMS, 1.05 long, 0.48 wide, 0.29 apart; PLS, 1.37 basal, 1.22 middle, 1.82 distal; midwidths 0.71, 0.73, 0.61, respectively.

Carapace: 1.39 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.84 wide.

Eyes: eye tubercle 0.57 high, 0.88 long, 1.55 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.35, ALE 0.33, PME 0.19, PLE 0.30, AME–AME 0.19, AME–ALE 0.13, AME–PME 0.13, ALE–ALE 1.10, ALE–PME 0.20, PME–PME 0.89, PME–PLE 0.11, PLE–PLE 1.18, ALE–PLE 0.18.

Maxilla: length to width 1.60. Cuspules: ca. 148 spread over ventral inner heel. Labium: 1.05 long, 1.19 wide, with ca. 136 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 teeth in row. Sternum: 3.53 long, 2.54 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

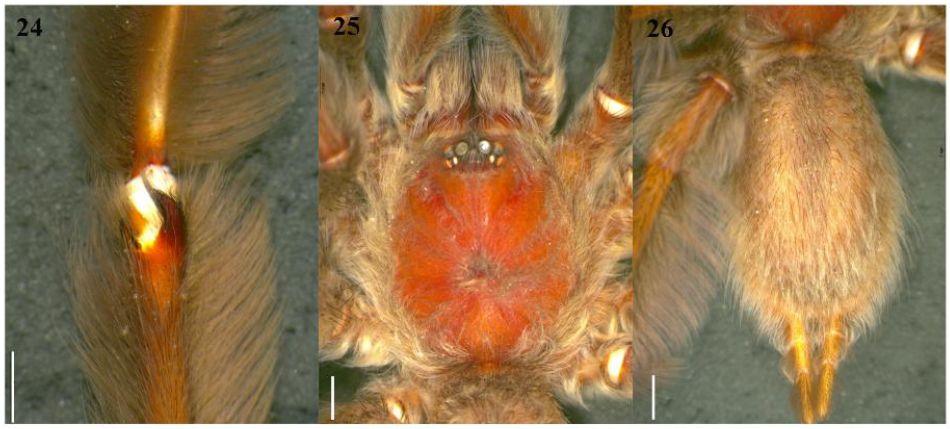
Legs: Formula: IV I II III. Length leg IV to leg I: 1.00. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 2/0; III 0/ 2; IV 0/2. Metatarsi III and IV with a half ring of spiniform setae apically.

Spermathecae: Two spermathecae completely separated, elongued, with a sclerotized apical round lobule wide or small, can be straight, directed outwards or inward (Figs 32-40).

Color pattern (in vivo): Carapace, legs, palpal femora and tibiae brown, with blue-violet shades; abdomen purple with a proximal transversal dark line connected with a central vertical line forming a “T” (Fig. 31).

Distribution: French Guiana, Suriname, Brazil.



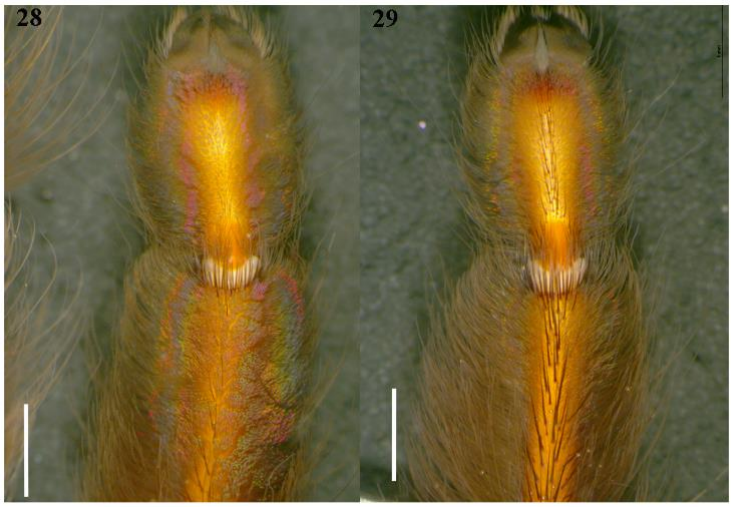
Figures 19-26. *Tapinauchenius plumipes* male. **19-20.** left palpal bulb. **19,** prolateral. **20,** retrolateral. **21,** dorsal. **22,** ventral. **23,** frontal. **24,** Left tibia I apophysis. **25.** carapace. **26,** abdomen. Scale bar= 1mm.

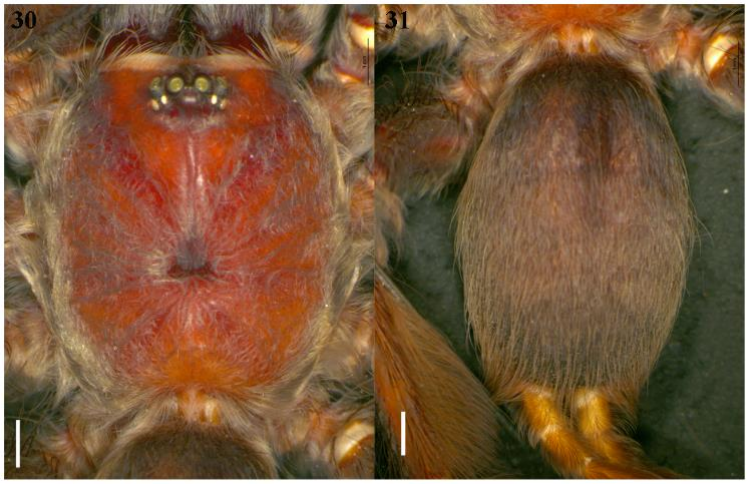
Remarks

Tapinauchenius violaceus was decribed by Mello Leitao (1930) in *Ephebobus*; posteriorly, it was transferred to *Avicularia* by Lucas, Silva & Bertani (1992). In the revision of *Ephebopus* (West et al. 2008) it was transferred to *Tapinauchenius*. The specimen is a small female with short spermathecae, one apical slightly sclerotized lobule, and pattern of coloration similar to females of *T. plumipes* according to original description: with a longitudinal abdominal line. I also found that females of *T. plumipes* has wide variation in morphology of spermathecae being short in subadult females (Figs 34-38.), having the same morphology as the *Tapinauchenius violaceus* specimen, thus I consider this species as a senior synonym of *T. plumipes n. syn.*

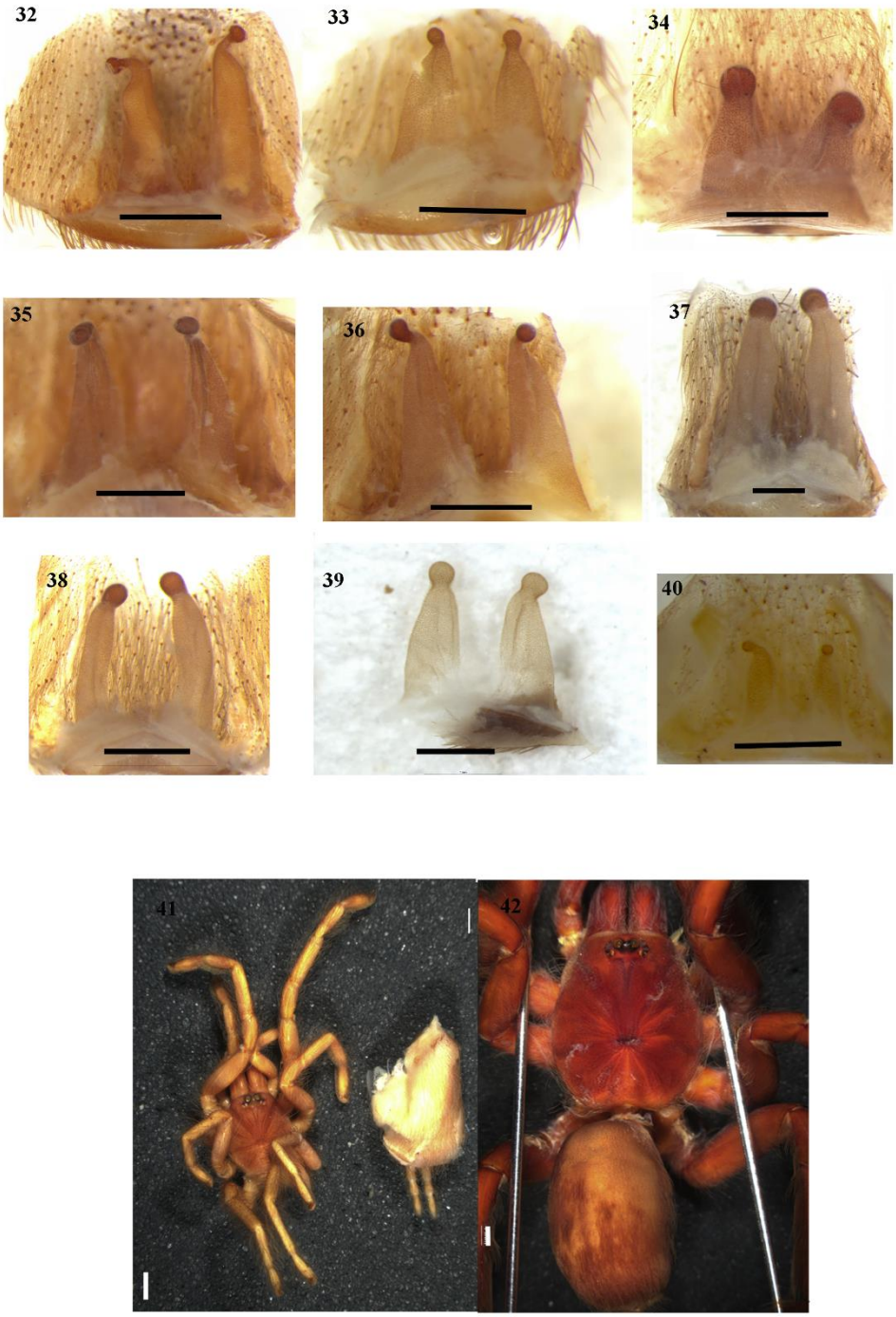
Caporiacco (1954) described *Tapinauchenius gigas* based in three syntypes, one female of *Ephebopus murinus* (Figs 46-47), and the other available specimen corresponding to *T. plumipes* female. The species was described as having reddish-brown coloration similar in body to *T. sanctivincentii*. Schmidt (1994) described posteriorly the male of the species based in one specimen of an undescribed species (*Psalmopoeus* sp. nov.2). The third syntype was not revised. Due that Caporiaco decribed *Tapinauchenius gigas* based on a female of *Tapinauchenius plumipes*, (Figs. 43-47) I consider *T. gigas* as a senior synonym of *T. plumipes*.

Tapinauchenius brunneus was described with a male specimen from Mato Grosso, Brazil, the specimen was, according to Schmidt (1995) very similar to *T. sanctivincenti*. The general morphology of copulatory palpal bulb is very similar to those of *T. plumipes*: long embolus constricted apically with a small curvature in the tip, only that it is proportionally smaller. Thus, I consider it a senior synonym of *T. plumipes n. syn.* due to this similarity.

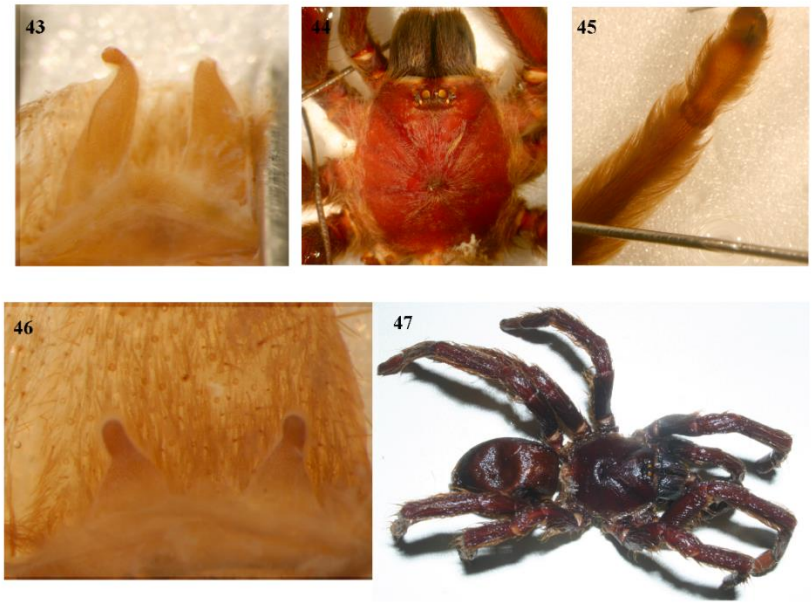




FIGURES 27-31. *Tapinauchenius plumipes* female. **27,** spermathecae. **28,** left metatarsus III. **29,** left metatarsus IV. **30.** Carapace. **31.** Abdomen. Scale bar= 1mm.



Figures 32-42. 32-40. *Tapinauchenius plumipes*, females, spermathecae variation. **41-42.** *Tapinauchenius concolor* immature sintypes. Scale bar= 1mm.



Figures 43-47. Lectotype and paralectotype of *T. gigas*. **43.** Spermathecae of lectotype female of *T. gigas*. **44.** Lectotype female of *Tapinauchenius gigas*. **45.** Lectotype female of *T. gigas*, leg IV with spiniform setae in apical metatarsi. **46.** Paralectotype female of *T. gigas*, spermathecae (*Ephebopus murinus*). **47.** Paralectotype female of *T. gigas* (*E. murinus*). Scale bar= 1mm.

***Tapinauchenius latipes* L. Koch, 1875**

Figs 48-63, 239

Tapinauchenius latipes L. Koch, in Ausserer, 1875: 183, pl. 6, f.36 (holotype male from Porto Cabello, deposited at BMNH, examined by photographs and illustrations); Petrunkevitch 1911: 90; 1939: 290; Roewer 1942: 257; Schiapelli & Gerschman, 1945: 193, pl. XVII; Schenkel, 1953: 5, f. 6a-b; Schmidt, 1995: 14, f. 2; Auer, Huber & Bochtler, 2007: 27, f. 35-36; World Spider Catalog 2018.
Tapinauchenius cupreus Schmidt & Bauer, 1996: 2, f. 1-3 (holotype male and paratypes two females from Ecuador, Bullmer, deposited at SFM 39015, examined); Auer, Huber & Bochtler, 2007: 21, f. 8, 27-28, 49. *New synonymy*.

Diagnosis: Males and females resemble those of *T. plumipes* by copulatory palpal bulb embolus straight, and spermathecaes apex with a single lobule. Males can be distinguished from it by

shorter embolus: 3.0 to 3.5 times tegulum's lengh (Figs 48-52), and females by triangular spermathecae: less than 2.5 times base width, with an oval apical lobule. (Fig 60).

Remarks.

Tapinauchenius cupreus was described by Schmidt (1995) as a very close species to *T. latipes* by the morphology of palpal bulb, differing only in the distal portion: in *T. cupreus* it is stout. Compared with the type specimen of *T. latipes*, *T. cupreus* is a very similar species having a straight embolus, medium-long. By revision of specimen of *T. latipes* it is possible to note that the "stout" termination is very variable in sizes and curvature due to the dimension of the specimens, being short, wide, or intermediate (Figs 56-59). Due to this variation, it has not been possible to establish boundaries between these two species, thus *T. cupreus* is herein considered junior-synonym of *T. latipes* junior synonym.

Material examined: VENEZUELA: Puerto Cabello, holotype male (BMNH 1961.9.26.1) ; *Amazonas:* Puerto Ayacucho [5°39'N, 67°35'W], Toucan Resort, 1 female 1 male, Rick West col., on low vegetation by creek, 19 September 1999 (LEEV 116, 150)

Additional material examined: TRINIDAD: *Tunapuna-Piarco:* Arima, Simla Biological St of Arima [10°43'N, 61°17'W], 5 males, R. West col., May 1981 (LEEV 114, 145, 146, 147, 148); 3 females, 3 immatures, same data of collection and collector (LEEV149); Arena Reserve, 1 male, Mary Nieves col., 15 May 1959 (AMNH-47); *Rio Claro-Mayaro*: Nariva Swamp, Ex campus Bush, Bush Forest [10°22'N, 61°02'W], T H G Aitken col., 15 June 1964 (AMNH-52); VENEZUELA: *Amazonas*: Puerto Ayacucho [5°39'N, 67°35'W], Toucan resort, 9 males, R. West col., September 1991 (LEEV 115, 120, 122, 129, 131, 132, 133); 1 male, same data of collection and collector, February 1992 (LEEV 121); Canon Guasuripana, On right bank of Orinoco river at mouth of Rio Atabapo, 120 m.a.s.l., (3°59'N, 67°33'W), Mc Guire col. 1976 (AMNH-24); *Miranda*: Panaquire (10°12'N, 66°14'W), J.H Frank col., 2 February 1985 (CASENT unnumbered);

Redescription: Male **(**LEEV 150**).** Total length, not including chelicerae or spinnerets 23.27. Carapace 11.25 long, 9.65 wide, 5.33 high. Chelicera: 4.07 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 12.31, 6.85, 11.20, 10.05, 4.97, 45.35; II: 10.87, 5.52, 9.08, 9.76, 4.81, 40.04; III: 9.61, 4.71, 7.45, 8.70, 4.77, 35.24; IV: 12.11, 4.97, 10.85, 12.75, 4.31, 44.99; Palp: 7.38, 3.75, 6.59, - , 2.14, 19.86. Midwidths: femora I–IV= 2.08, 1.77, 1.90, 2.05, palp= 1.20; patella I–IV= 1.78, 1.71, 1.69, 1.71, palp= 1.35; tibiae I–IV= 1.48, 1.44, 1.51, 1.70, palp=

1.44; metatarsi I–IV= 1.11, 1.08, 1.04, 0.93; tarsi I–IV= 0.93, 1.17, 1.14, 1.04, palp= 1.31. Abdomen: 9.92 long, 6.00 wide. Spinnerets: PMS, 0.84 long, 0.25 wide, 0.25 apart; PLS, 0.82 basal, 0.74 middle, 1.39 distal; midwidths 0.36, 0.34, 0.28, respectively.

Carapace: 1.17 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.53 wide.

Eyes: eye tubercle 0.31 high, 0.84 long, 1.36 wide. Clipeus: absent. Anterior eye row straight, posterior recurved. Eye size and interdistances: AME 0.35, ALE 0.30, PME 0.22, PLE 0.26, AME–AME 0.20, AME–ALE 0.10, AME–PME 0.01, ALE–ALE 1.00, ALE–PME 0.07, PME–PME 0.78, PME–PLE 0.07, PLE–PLE 1.07, ALE–PLE 0.16.

Maxilla: length to width 1.52. Cuspules: ca. 120 spread over ventral inner heel. Labium: 0.64 long, 0.80 wide, with ca. 86 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 in teeth in row. Sternum: 2.70 long, 2.11 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

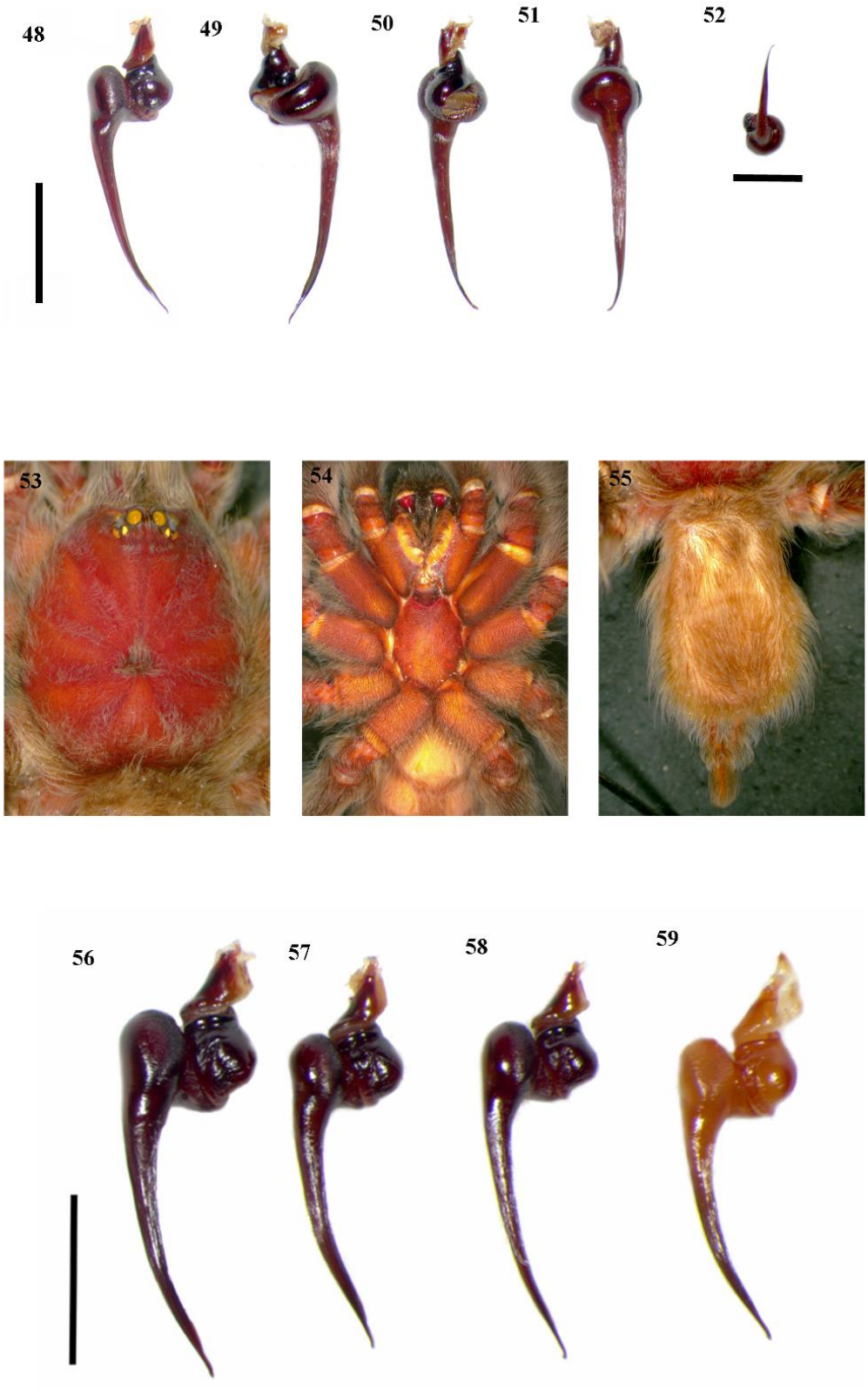
Legs: Formula: I IV II III. Length leg IV to leg I: 0.99.Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process of tibial apophysis; II: 2/0; III 1/2; IV 1/2.

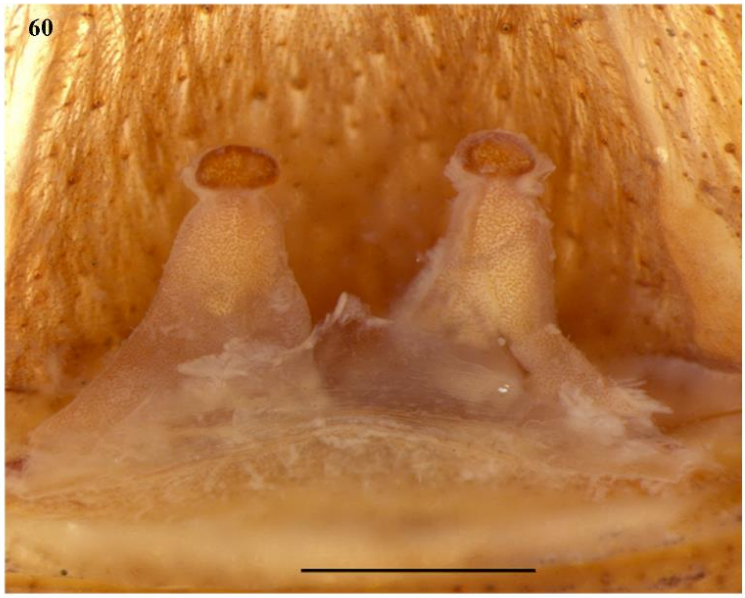
Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one on apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis.

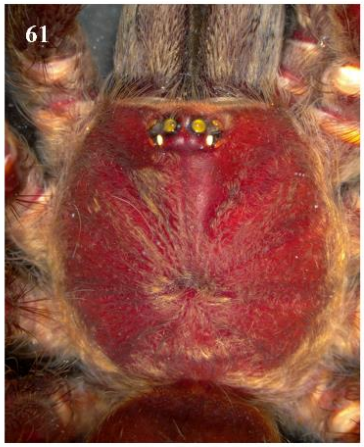
Copulatory palpal bulb: tegulum length 0.57, width 0.83, embolus proximal width 0.28, embolus length 1.83. Embolus proximal portion straight (ventral view). Long embolus, with an apical constriction and curved tip, small twisted section (Figs 48-52).

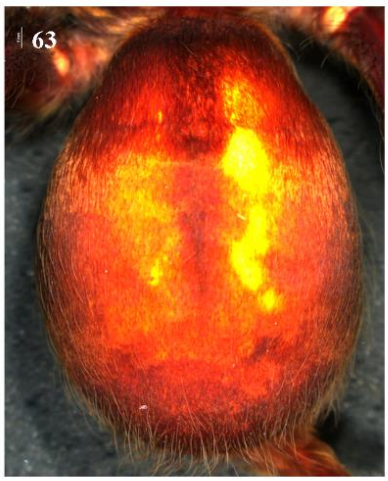
Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae brown, with golden setae (Fig 53-55, 56-59).



Figures 48-59. *Tapinauchenius latipes* male. **48-52.** Left palpal bulb. **48,** prolateral. **49,** retrolateral. **50,** dorsal. **51,** ventral. **52,** frontal. **53.** Carapace. **54.** sternum, coxae and maxillae. **55.** Abdomen. **56-59.** Variation in male palpal bulb, prolateral view. Scale bar= 1mm.







Figures 60-63. *Tapinaucheius latipes* females. **60.** Spermathecae. **61.** Carapace. **62.** sternum, coxae and maxillae. **63.** Abdomen. Scale bar= 1mm.

Redescription: Female (LEEV 116). Total length, not including chelicerae or spinnerets 34.10. Carapace 14.56 long, 12.51 wide, 8.12 high. Chelicera: 6.80 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 10.74, 6.85, 9.59, 8.40, 4.62, 40.20; II: 9.80, 5.87, 8.08, 7.56, 4.78, 36.09; III: 8.08, 5.07, 6.43, 7.19, 3.98, 30.75; IV: 10.61, 5.63, 10.00, 10.39, 4.13, 40.76; Palp: 7.24, missing. Midwidths: femora I–IV= 2.67, 2.55, 2.52, 2.32, palp= 2.24; patella I–IV= 2.35, 2.45, 2.24, 2.48, palp= missing; tibiae I–IV= 2.32, 2.03, 2.13, 2.00, palp= missing; metatarsi I–IV= 1.87, 1.83, 1.47, 1.40; tarsi I–IV= 2.07, 2.05, 1.97, 1.67, palp= missing. Abdomen: 20.26 long, 14.05 wide. Spinnerets: PMS, 1.12 long, 0.38 wide, 0.25 apart; PLS, 1.38 basal, 1.29 middle, 1.70 distal; midwidths 0.72, 0.74, 0.64, respectively.

Carapace: 1.19 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.78 wide.

Eyes: eye tubercle 0.55 high, 0.79 long, 1.39 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.33, ALE 0.29, PME 0.20, PLE 0.26, AME–AME 0.24, AME–ALE 0.10 AME–PME 0.11, ALE–ALE 1.03, ALE–PME 0.22, PME–PME 0.83, PME–PLE 0.07, PLE–PLE 1.11, ALE–PLE 0.15.

Maxilla: length to width 1.16. Cuspules: ca. 112 spread over ventral inner heel. Labium: 1.80 long, 2.01 wide, with ca. 76 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Sternum: 7.08 long, 5.73 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.01. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 2/0; III 1/ 2; IV 0/2.

Spermathecae: Two spermathecae completely separated, short and triangular, with an apical oval tranverse lobule wide or small, slightly sclerotized (Fig 60).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae brown; abdomen light brown with a central longitudinal line (Fig 61-63).

Distribution: Venezuela, Trinidad island.

***Tapinauchenius sanctivincenti* (Walckenaer, 1837)**

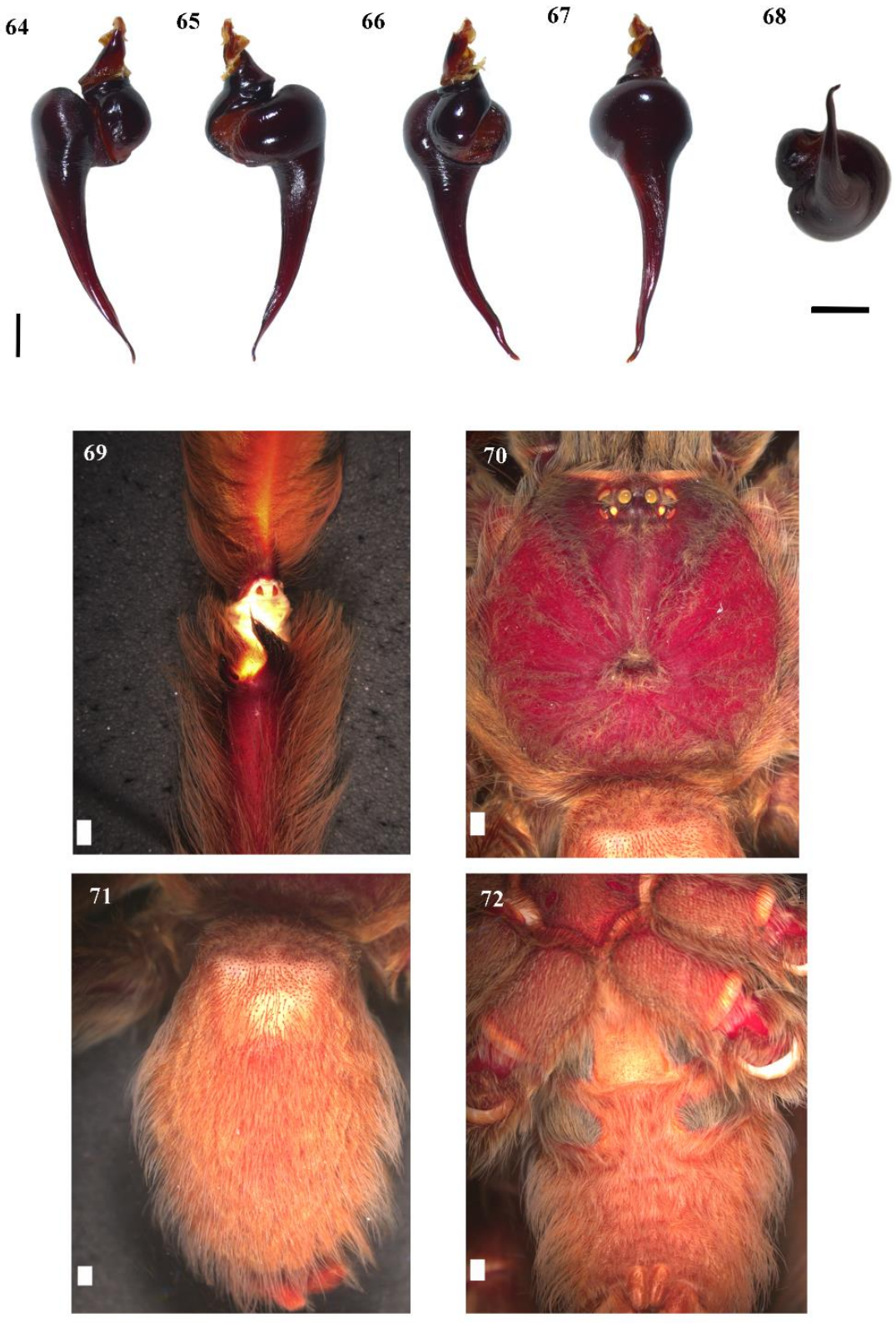
Figs 64-75, 239

Mygale sancti-vincentii Walckenaer, 1837: 216 (type male from "Noveau Mondeu", Saint Vincent, not found, presumed lost); Ausserer 1871: 217.
Eurypelma sancti-vicenti; Simon, 1864: 67.
Tapinauchenius sancti-vincenti Simon, 1892: 553; F. O. Pickard-Cambridge, 1896: 745, pl. 34, f.21; 1898: 898; Petrunkevitch 1911: 90; 1939: 291; Roewer 1942: 257.
Tapinauchenius sanctivincenti; Bonnet 1959: 4239; World Spider Catalog 2018.

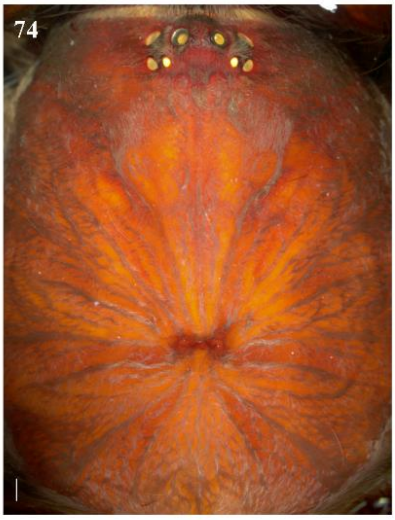
Diagnosis: Males and females resemble those of *T. latipes* by copulatory papal bulbs with straight embolus narrowing abruptly, and spermatheca with a single apical lobule. Males can be distinguished by embolus 1.5 to 2.5 times tegulum's length, marked curvature in tip and prominence in tegulum (frontal view) weakly developed. Females differ by spermathecae with small apical lobule.

Remarks: Walckenaer (1837) described *T. santivincenti* from Sain Vincent island with no further information. We found some specimens of *Tapinauchenius* from Union island, presently part of Saint Vincent and Grenadines, and from Santa Lucia island, part of Lesser Antilles, located north of the island of Saint Vincent. We consider these specimens conspecific with *T. sanctivincenti*, as they were colected near the type locality and probably are distribuited in Saint Vincent island too (which lies between Union Island and Santa Lucia Island).

Material examined: SANTA LUCIA island, Grenadines, Lesser Antilles [13°54'N, 60°58'W]: 1 male 1 female, H. Boos col. in silk retreat in low tree cavity, December 1979, (LEEV 148, 138)
Additional material examined: SANTA LUCIA island, Grenadines, Lesser Antilles: Anse Galet [14°06'N, 60°55'W], 1 female, H. Boos col. in silk retreat in low tree cavity, December 1979, (LEEV 138); 1 female 1 male, J. Burgess col. from silken retreat in tree cavities, 30 November 2007 (LEEV 139, 140); SAINT VINCENT AND GRENADINAS**:** Union Island [12°35'N, 61°26'W], near Monte Tabor, 3 males, R. Powell col. from silken retreat in tree cavities, 16 June 2010, (LEEV 141, 142, 143); 1 female (LEEV 144), 1 male, Mustique island [12°52'N, 61°10'W] near Barbados, BZ Raphael DVM col. 1991, identified as *T. plumipes* (AMNH-1 unnumbered).



Figures 64-72. *Tapinauchenius sanctivincenti* male. **64-68.** left palpal bulb. **64,** prolateral. **65,** retrolateral. **66,** dorsal. **67,** ventral. **68,** frontal. **69.** Left tibial apophysis. **70.** Carapace. **71.** Abdomen. **72.** Sternum, coxae and maxillae. Scale bar= 1mm.



Figures 73-75. *Tapinauchenius sanctivincenti* female. **73,** spermathecae. **74.** Carapace. **75.**Sternum, labium and maxillae. Scale bar= 1mm.

Redescription: Male (LEEV 140**).** Total length, not including chelicerae or spinnerets 32.87. Carapace 15.39 long, 13.04 wide, 8.10 high. Chelicera: 7.76 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 14.55, 8.84, 13.56, 12.19, 6.25, 55.39; II: 13.89, 7.59, 11.68, 11.60, 5.11, 49.87; III: 12.55, 6.12, 9.71, 11.91, 5.37, 45.72; IV: 14.60, 7.01, 14.25, 14.82, 5.82, 56.50; Palp: 9.40, 5.56, 8.31, - , 2.97, 26.24. Midwidths: femora I–IV= 3.24, 3.08, 2.77, 2.59, palp= 2.00; patella I–IV= 12.76, 2.85, 2.85, 2.92, palp= 2.24; tibiae I–IV= 2.62, 2.15, 2.20, 2.61, palp= 2.11; metatarsi I–IV= 1.66, 1.51, 1.32, 1.44; tarsi I–IV= 1.51, 1.54, 1.25, 1.37, palp= 2.07.

Abdomen: 16.93 long, 9.99 wide. Spinnerets: PMS, 0.79 long, 0.76 wide, 0.20 apart; PLS, 2.10 basal, 2.03 middle, 3.48 distal; midwidths 1.27, 0.96, 0.63, respectively.

Carapace: 1.18 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.85 wide.

Eyes: eye tubercle 0.54 high, 2.17 long, 3.42 wide. Clipeus: absent. Anterior eye row straight, posterior recurved. Eye size and interdistances: AME 0.72, ALE 0.75, PME 0.52, PLE 0.69, AME–AME 0.51, AME–ALE 0.23, AME–PME 0.01, ALE–ALE 2.37, ALE–PME 0.47, PME–PME 1.85, PME–PLE 0.08, PLE–PLE 2.56, ALE–PLE 0.37.

Maxilla: length to width 2.13. Cuspules: ca. 142 spread over ventral inner heel. Labium: 2.48 long, 2.22 wide, with ca. 138 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 teeth in row. Sternum: 8.01 long, 6.02 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin. Anterior very conspicuous.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.02. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process of tibial apophysis; II: 2/2; III 1/2; IV 0/2.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one on apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis.

Copulatory palpal bulb: tegulum length 0.57, width 0.91, embolus proximal width 0.36, length 1.97. Embolus proximal portion straight (ventral view). Short embolus, with an apical constriction and curved tip, small twisted section (Figs 64-68).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae brown-reddish; abdomen light brown. Ventrally booklungs dark (69-72).

Redescription: Female (LEEV 138). Total length, not including chelicerae or spinnerets 49.41. Carapace 22.95 long, 18.60 wide, 13.08 high. Chelicera: 12.06 long. Legs (femur, patella, tibia,

metatarsus, tarsus, total): I: 16.98, 11.01, 13.87, 13.75, 6.96, 62.57; II: 15.86, 9.96, 12.79, 13.05, 6.85, 58.52; III: 14.72, 8.82, 11.65, 13.90, 6.82, 55.91; IV: 17.45, 9.70, 15.08, 17.71, 7.33, 67.27; Palp: 12.42, 7.06, 8.17, - , 9.55. Midwidths: femora I–IV= 3.69, 3.29, 3.93, 3.89, palp= 2.64; patella I–IV= 3.72, 3.73, 3.91, 4.14, palp=2.96; tibiae I–IV= 3.46, 2.98, 2.98, 3.74, palp= 2.80; metatarsi I–IV= 2.47, 2.40, 2.09, 2.10; tarsi I–IV= 2.32, 2.25, 2.04, 2.15, palp= 2.14. Abdomen: 25.18 long, 15.97 wide. Spinnerets: PMS, 2.57 long, 1.22 wide, 0.30 apart; PLS, 3.44 basal, 5.05 middle, 5.85 distal; midwidths 2.12, 1.77, 1.33, respectively.

Carapace: 1.23 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.99 wide.

Eyes: eye tubercle 0.55 high, 2.17 long, 3.42 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.71, ALE 0.75, PME 0.52, PLE 0.69, AME–AME 0.51, AME–ALE 0.23, AME–PME 0.21, ALE–ALE 2.37, ALE–PME 0.47, PME–PME 1.84, PME–PLE 0.09, PLE–PLE 2.56, ALE–PLE 0.37.

Maxilla: length to width 1.83. Cuspules: ca. 154 spread over ventral inner heel. Labium: 3.07 long, 3.13 wide, with ca. 142 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Sternum: 11.40 long, 8.21 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin. Sigilla anterior conspicuous and posterior very round.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.07. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 2/0; III 2/ 2; IV 0/2.

Spermathecae: Two spermathecae completely separated, straight, slender at apices compared with the base, elongued, lobules weakly sclerotized (Fig 73).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae brown, with brown reddish shades, clear longitudinal stripes in patellae and femora; abdomen dark (Fig 74,75).

Distribution: Santa Lucía island, Saint Vincent, Union iland,

Taxonomy remarks:

Tapinauchenius concolor* (Caporiacco, 1947) *nomen dubium

Figs (41-42)

Pachystopelma concolor Caporiacco, 1947a: 21 (lectotype and paralectotype immature males from Guyana, Campo di Marlissa, 31 December, deposited at MZUF 507, examined).
Tapinauchenius concolor Bertani, 2012: 29.

The specimen correspond to the genus *Tapinauchenius*, but the description is based in immatures specimens, thus, this species is considered a nomen dubium, due to the impossibility of identification.

***Psalmopoeus* Pocock, 1895**

Tapinauchenius: Karsch, 1880: 387 (in part: *T. reduncus*); Pickard-Cambridge. F: 1897: 14, 40.

Psalmopoeus Pocock, 1895: 170, 178, pl. 10, f.3 (type species by original designation *P. cambridgei* Pocock, 1895, holotype female in BMNH, examined); 1901: 547; 1903: 84; Pickard-Cambrige F. 1896: 896 (= *Santaremia*, in part, *S. longipes*); Waterhouse 1902: 309; Simon 1903: 959, 960; Mello-Leitão 1923: 314, 391; Petrunkevitch 1928: 82; Roewer 1942: 256; Bonnet 1958: 3798; Raven 1985: 118; World Spider Catalog 2018.

Santaremia: Pickard-Cambridge F. 1896: 749 (in part, *S. longipes* = *P. cambridgei*).

Diagnosis: *Psalmopoeus* species differ from those of the other avicullariine genera, except from *Tapinauchenius*, by the males having setae directed laterally on their legs, males and females having few spines on tibia and metatarsi, and absence of urticating setae. It can be distinguished from *Tapinauchenius* by the presence of a stridulatory organ (maxillary lyra) composed either by thick setae on prolateral face of the maxillae forming a “comb” of arranged separated setae, or with slender setae disposed as an oval spot on the maxillae; both with long or short filiform setae on ventral-basal portion of chelicera.

Distribution: Brazil, Colombia, Costa Rica, Ecuador, México, Panamá, Perú, Trinidad and Venezuela.

Composition: *Psalmopoeus cambridgei* Pocock, 1895, *Psalmopoeus ecclesiasticus* Pocock, 1903, *Psalmopoeus emeraldus* Pocock, 1903, *Psalmopoeus intermedius* Chamberlin, 1940, *Psalmopoeus irminia* Saager, 1994, *Psalmopoeus langenbucheri* Schmidt, Bullmer & Thierer-Lutz, 2006, *Psalmopoeus plantaris* Pocock, 1903, *Psalmopoeus pulcher* Petrunkevitch, 1925, *Psalmopoeus reduncus* (Karsch, 1880), *Psalmopoeus victorii* Mendoza, 2014, *Psalmopoeus elenae,* (Schmidt, 1994) n. comb., *Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) n. comb., *Psalmopoeus* sp. nov.1, and *Psalmopoeus* sp. nov 2.

Redescription:

Carapace longer than wide, cephalic region slightly raised. Cephalic and thoracic striae conspicuous. Fovea straight, deep. Chelicerae without rastellum. Retrolateral side of chelicerae with short and ordered setae densely grouped (most species), or absent (*P. elenae n. comb.*, *P. subcaeruleus n. comb.*, *Psalmopoeus* sp. nov 2). Eye tubercle slightly raised or raised, wider than long. Clypeus absent. Anterior eye row straight. Labium wider than long, with ca. 87–195 cuspules concentrated on anterior third center. Maxillary lyra present, well-developed and formed by arranged thick setae positioned as a "comb" (Fig 11) (*P. cambridgei*, *P. ecclesiasticus*, *P. irminia*, *P. langenbucheri*, *P. pulcher*, *P. reduncus*, *P. victori*, *Psalmopoeus* sp. nov. 1) or weakly developed formed by slender setae dispersed oval on prolateral face of maxillae (Fig 13.) (*P. elenae n. comb.*, *P. subcaeruleus n.comb*, *Psalmopoeus* sp. nov. 2). Maxilla subrectangular, anterior lobe distinctly produced into conical process, inner angle bearing ca. 105-240 cuspules. Sternum longer than wide, posterior angle acute, not separating coxae IV. Three pairs of sigilla, some pairs sometimes not evident. Anterior oval or rounded, middle rounded, posterior oval. All positioned one diameter or less from margin. Leg formula: I=IV II III (most species), IV I II III (*P. elenae n. comb.* female) or I IV III II (*P. irminia* male). Clavate trichobothria on distal 2/3 of tarsi. Tarsi I–IV fully scopulate, IV divided by a band of sparse setae. Metatarsi I–II fully scopulate in most species, III 1/3 to 1/2 distal scopulate and IV 1/4 to 1/3 distal scopulate. Metatarsi IV divided by a row of setae. Scopulae of tarsi and metatarsi I–II very extended laterally giving them a spatulate appearance. Femora IV without retrolateral scopulae. Stridulatory setae absent on coxae of legs. Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I (*P. cambridgei*, *P. ecclesiasticus*, *P. irminia*, *P. langenbucheri*, *P. pulcher*, *P. reduncus*, *P. victorii*, *Psalmopoeus* sp. nov 1) or absent (*P. elenae n. comb.*, *P. subcaeruleus n. comb.*, *Psalmopoeus* sp. nov. 2). Legs with spines on ventral apical tibiae and metatarsi, without central spines. ITC absent; STC with small denticles. Posterior

lateral spinnerets digitiform. Male tibiae I with tibial apophysis with two processes, retrolateral larger than prolateral, metatarsi I folds on retrolateral side of tibial apophysis. Tibiae II lacking apophysis. Globous bulb with small subtegulum; prominence on prolateral tegulum developed (*P. cambridgei, P. irminia, P. langenbucheri., P. pulcher*) or weakly-developed (*P. ecclesiasticus, P. reduncus, P. elenae n. comb., Psalmopoeus* sp. nov 2). Embolus not flattened, without keels, about 1.5 to 2.5 times the tegulum's length (*P. reduncus, Psalmopoeus* sp. nov.2), 3.0 to 3.5 times tegulum's length (*P. cambridgei, P.irminia, P. pulcher, P. elenae n. comb., Psalmopoeus* sp. nov. 2) or more than 4 times tegulum's length (*P. ecclesiasticus*.) in retrolateral view. Embolus medial portion and tegulum's margin form a right or obtuse angle in retrolateral view. Embolus with proximal portion straight (most species) or slightly curved (*P. irminia, P. pulcher, P. reduncus*) in frontal view, thin distal width tapering. Cymbium subtriangular with almost equal lobes, without developed rounded process on retrolateral lobe. Spermathecae straight, or very curved toward center apically (*P. ecclesiasticus, P. subcaeruleus n. comb.*), completely separated. Spermathecae not-twisted, with walls with projections or lobes (except *P. reduncus*). Spermatheca with one apical digitiform lobule (most species), multiple lobules (*P. elenae* n. comb. and *P. subcaeruleus n. comb.*), or one lobule subsegmented in two (*Psalmopoeus* sp. nov 2). Abdomen dorsum of females with homogeneously distributed setae. Urticating setae lacking. Legs and palps with long guard-setae having homogeneous coloration along its length. Leg rings on distal femora, tibiae and metatarsi whitish (most species). All species showing ontogenetic changes on abdominal pattern. Brownish juveniles lacking metallic green or blue sheen, with black tarsi contrasting with other lighter articles. Juveniles having central longitudinal stripe connected with all transversal stripes in each side of abdomen (*P. cambridgei, P. irminia, Psalmopoeus* sp. nov 2), with longitudinal central stripe of a different color of remaining abdomen (*P. langenbucheri*), or with a zig zag central with sharp sides (*P. ecclesiasticus, P. elenae*).

Key to *Psalmopoeus* species

Males

1. Maxillary lyra weakly developed, setae not arranged as a crescent line (Fig 13)..……..…….2

   Maxillary lyra well-developed, setae arranged as a line (Fig 11)…….…….3

2. Embolus tapers, abdominal coloration pattern: one longitudinal line connected with at least 4 transversal lateral lines, darker than the rest of abdomen (Figs 216-226)…….....…….***Psalmopoeus* sp. nov.2**

   Embolus narrows abruptly, without abdominal pattern (Figs 186-195)……..…….....***Psalmopoeus elenae***

3. Maxillary lyra with curved setae in a curved line, copulatory palpal bulb with embolus lenght more than 4 times tegulum's length, with a very curved second half portion of embolus (Figs 106-115) ……..……..….....***P. ecclesiasticus***

   Maxillary lyra with straight setae or almost so in a crescent line, copulatory palpal bulb shorter than 4.0 times tegulum's length , with a slightly curved second half portion of embolus (Figs 76-80) ……..…….....……4

4. Embolus apical portion straight, prominence in tegulum weakly developed (Figs (171-179).....……..……***P. reduncus***

   Embolus apical portion slightly curved, prominence in tegulum developed (Figs 76-80)…….……..…….....5

5. Embolus 1.5 to 2.5 tegulum's length (Figs 206-210).....……....6

   Embolus 3.0 to 3.5 tegulum's length (Figs 76-89)…..…….....……....7

6. Proximal part of embolus straight (frontal view) (Figs 138-148)…….……...……***P. langenbucheri***

   Proximal part of embolus slightly curved (frontal view). (Figs 2016-210)……...…..***Psalmopoeus* sp. nov 1.**

7. Proximal part of embolus straight (frontal view) (Figs 76-89).....…….***P. cambridgei***

   Proximal part of embolus slightly curved (frontal view) (Figs 155-159)……..…… …..8

8. Proximal part of embolus straight (dorsal view) (Figs 122-131)…….……***P. irminia***

   Proximal part of embolus curved (dorsal view) (Figs 155-164)……***…P. pulcher***

   Females

   1. Maxillary lyra weakly developed, setae not arranged as a comb (Fig 13)……...2

Maxillary lyra well-developed, setae separated, arranged as a comb (Fig 11)…….……..……..……4

2. Apex of spermathecae multilobular (Fig 198)……...……3

   Apex of spermathecae with one lobule subdivided in two (Figs 227-232)…….……...***Psalmopoeus* sp. nov 2**

3. Spermathecae length more than 2.5 times its base width (Fig 203).....***Psalmopoeus subcaeruleus***

   Spermathecae shorter than 2.5 times its base width (Figs 196-200)……...…….***Psalmopoeus elenae***

4. Spermathecae without lobules(Figs 179-184)…….***Psalmopoeus reduncus***

   Spermathecae with lobules……..5

5. Maxillary lyra with curved setae (Fig 116), spermathecae curved at apex(Figs 116-121)……..……..……..***Psalmopoeus ecclesiasticus***

   Maxillary lyra with straight setae or almost so (Fig 160), straight spermathecae (fig 134)…….……..….6

6. Elongated spermatheca with sclerotized lobules (Figs 88,134,167)……...……..7

   Triangular spermatheca with weakly sclerotized lobules, apical lobule very joined to lobules of the central area (Figs 149-154).....***Psalmopoeus langenbucheri***

7. Spermatheca with long digitiform apical lobule, oval and very protruding lobules in central area (Figs 86-90)..…….……....***Psalmopoeus cambridgei***

   Spermatheca with short digitiform apical lobule, round and small lobules in central area (Figs 134-167)…….……..8

8. Spermatheca with wide apex before apical lobule, almost the same width of its base; abdominal longitudinal central line connected with a triangular stain of posterior portion of abdomen (Figs165-170).……..***Psalmopoeus pulcher***

   Spermatheca apex before apical lobule slender than width of its base; abdominal longitudinal dark line connected with at least 4 transversal lines, forming paired subrectangular orange macules (Figs 132-137)..……..…...….***Psalmopoeus irminia***

***Psalmopoeus cambridgei* Pocock, 1895**

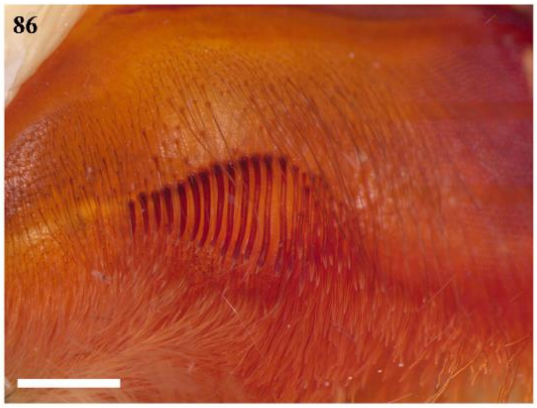
Psalmopoeus cambridgii Pocock, 1895: 178, pl. 10, f.3; F. O. Pickard-Cambridge 1898: 892, 896, pl. 54, f. 2-7; Pocock 1903: 85.
Santaremia longipes F. O. Pickard-Cambridge, 1896: 749 (female holotype from Trinidad, deposited at BMNH, 1896, not examined). First synonymized by F. O. Pickard-Cambridge 1899: 896.
Psalmopoeus cambridgei : Simon 1903: 952, 958, 960; Petrunkevitch 1911: 86; 1928: 82; 1939: 289; Roewer 1942: 256; Bonnet 1958: 3798; Schmidt, Bullmer & Thierer-Lutz 2006: 8, f. 9, 14; Mendoza 2014: 734, f. 16, 24-26; World Spider Catalog 2018.

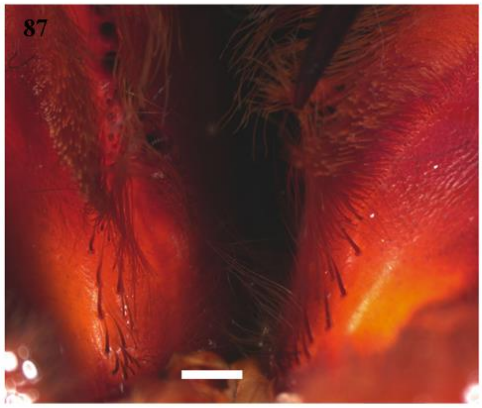
Figs 76-105, 240

Diagnosis: Females resemble those of *P. irminia*, *P. pulcher* and *P. langenbucheri* by spermathecae with apical digitiform lobule and central lobules. Females can be distinguished from those of these species by spermathecae with larger digitiform apical lobule, and central area with 2-3 protruding and well sclerotized oval lobules (Fig 88). Males resemble those of *P. irminia* and *P pulcher* by the embolus 3.0-3.5 times tegulum's length. These can be distinguished from *P. pulcher* by straight embolus in proximal part (dorsal view) (Figs 76-80). Additionally, males and females differ from those of all other species (Similar in *P. irminia*) by the color pattern, having a yellow orange line from retrolateral side of metatarsi to its center, and orange spot on dorsal tarsi. Females with one dark vertical central stripe connecting with at least 4 gray transversal lines (Fig 90).

Remarks: *Psalmopoeus cambridgei* is morphologically very similar to *P. irminia,* differing only in color pattern and spermathecae morphology. *Psalmopoeus irminia* spermathecae have a short apical lobule and lobules sclerotization are not as conspicuous as in *P. cambridgei*; nevertheless, spermathecae variation in this last species sometimes resemble those of *P. irminia*. The differences between these species are minimum due to spermathecae resemblance and very similar stridulatory organ and copulatory male bulbs. Nevertheless, I consider these as two different species with *P. cambridgei* apparently restricted to the island of Trinidad, which can represent an island endemism; and *P. irminia* distributed at south of Venezuela and at the Brazil Amazon (state of Roraima).

Figures 76-84. *Psalmopoeus cambridgei,* male. **76-79.** Left palpal bulb. **76,** prolateral. **77,** retrolateral, **78,** dorsal. **79,** ventral. **80,** frontal. **81,** Maxillary lyra. **82,** filiform strikers on chelicera. **83.** carapace. **84.** Sternum, coxae, maxillae and labium. **85.** Left tibial apophysis. Scale bar= 1mm.



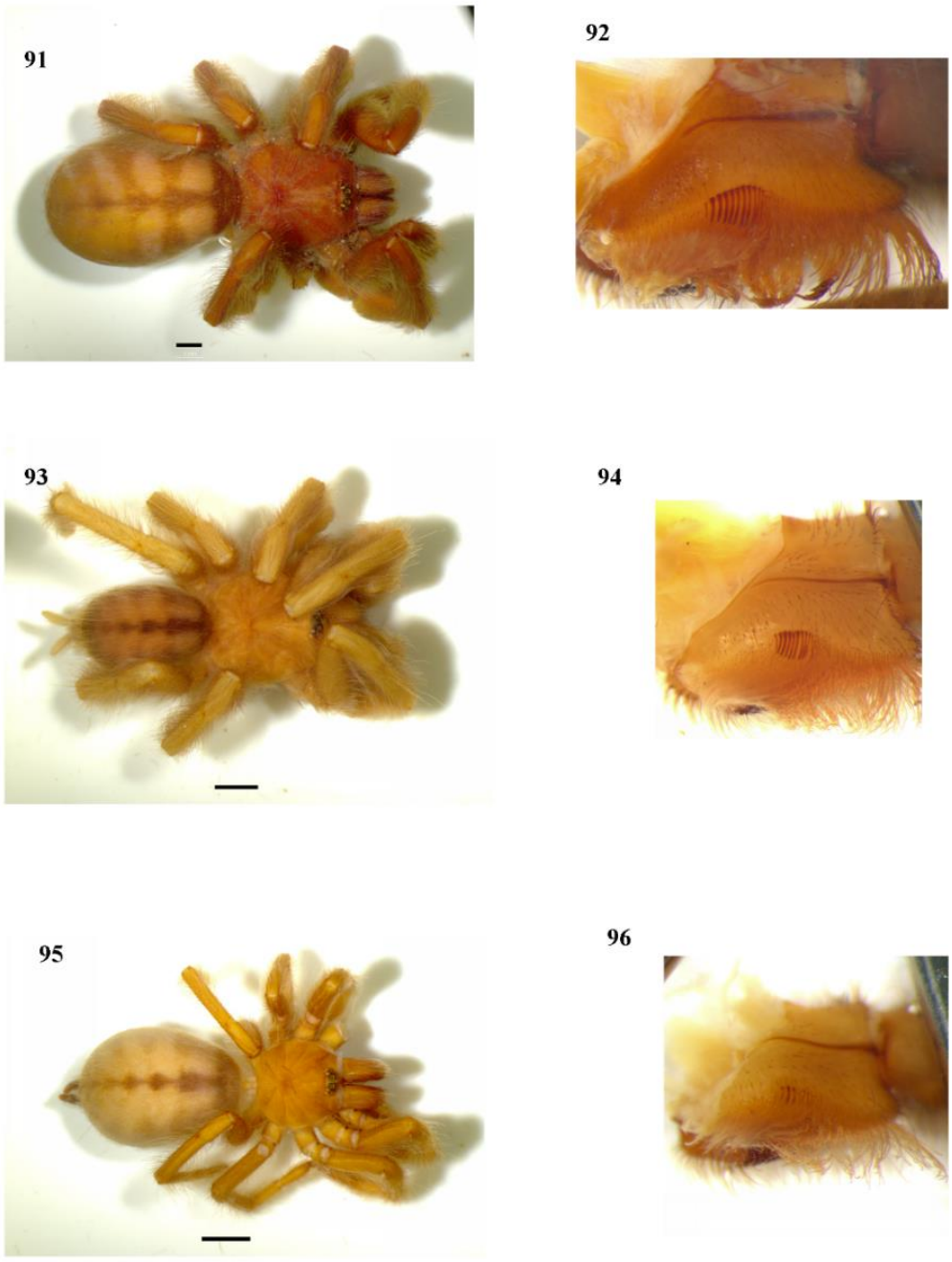


Figures 86-90. *Psalmopoeus cambridgei*, female. **86.** Maxillary lyra. **87.** filiform strikers on chelicera. **88.** Spermathecae. **89.** Carapace. **90.** Abdomen. Scale bar= 1mm.

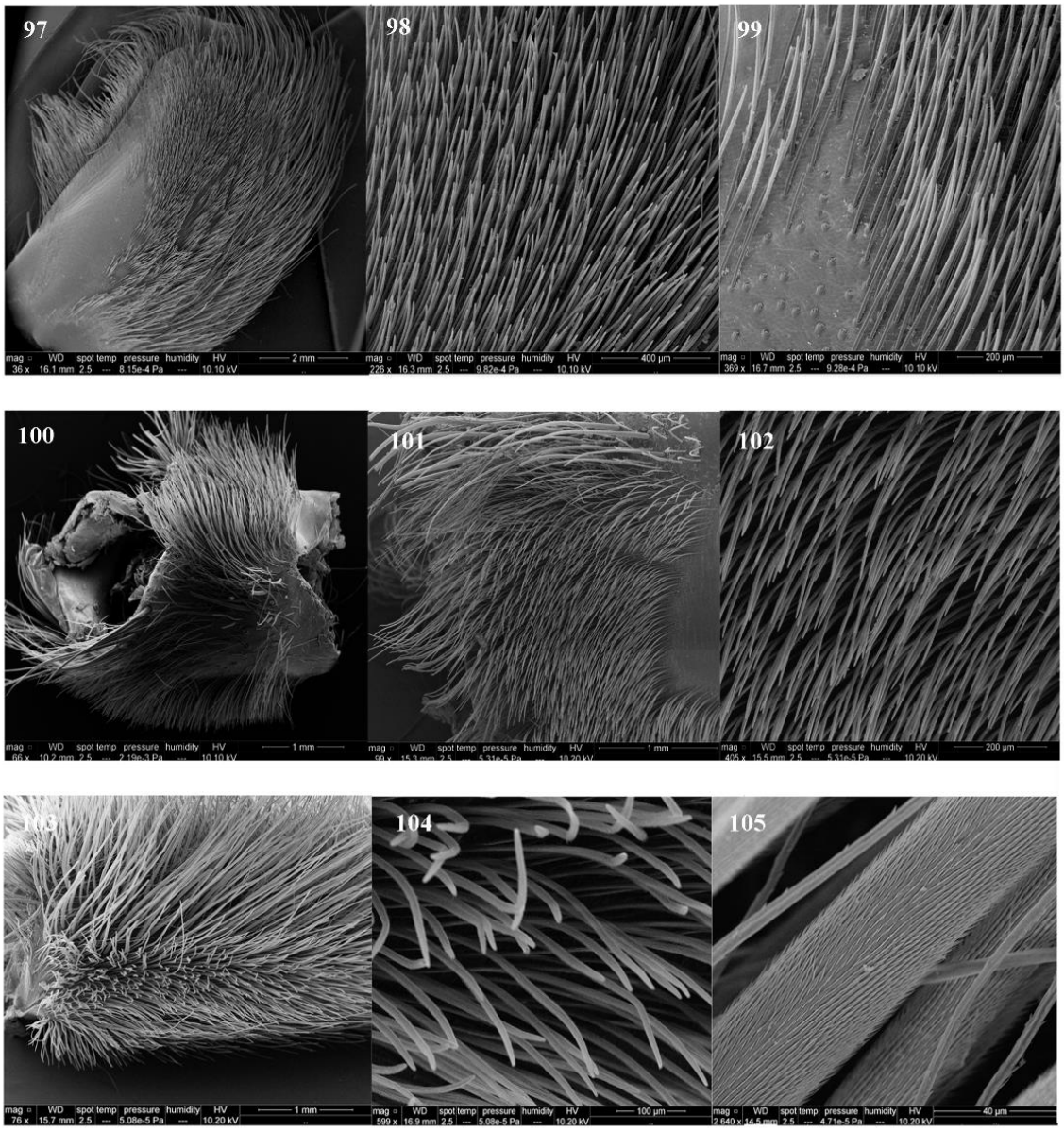
Material examined: Holotype, 1 female from East Indies, Malaysia, possibly from Penan, Malasya (BMNH unumbered); 1 female from Trinidad Island, Caribbean, Simla Biological Station of Arima [10°43'N, 61°17'W], Rick West col., May 1981; in silk retreat under tin roof (LEEV 102); 1 male, same data and collector, walking by day in old library room (LEEV 108).

Additional material examined: TRINIDAD: 1 female, "West Indies", A. Bordes col. 1972 (AMNH-37); 1 male, 1970, (AMNH-22); 1 immature, D. Brodi col., Fall 1981 (AMNH-10); 1 male, A. Burdes col., september 1972 (AMNH-11); 1 female, T.H.S Aitken col. forest swamp, 15 May 1962 (AMNH-6); 4 immatures, Arima Valley, C. Senderman col., September 1972 (AMNH-12); *San Juan-Laventille:* Maracas Bay road [10°45'N, 61°26'W], 1 female, John A. L. Cooke, February 1972 (AMNH-32); same data and collector (AMNH-63); *Sangre Grande:* N 209, B.W.I, R.G. Donald col., 6 December 1944 (AMNH-40); 1 immature, J. A. Cooke col., February 1972, (AMNH-62); *Tunapuna-Piarco:* Arima, Simla Biological Station of Arima [10°43'N, 61°17'W], 1 female, Rick West col. in silk retreat under tin roof (LEEV 110), may 1981., 1 male, 6 min n of Arima, Rick West col. silk retreat on roadside rock face, May 1981 (LEEV 104); Simla, 2 immatures, Rozen col., (AMNH-33); St Augustine [10°38'N, 61°23'W], 1 male, E.K. Waering col., April 2010 (AMNH-16); Tacarigua [10°38'N, 61°21'W], Tacarigua Orphanage, 1 male, THC, WI, AM Cea col., 7 September 1966, (AMNH-20); *Couva-Tabaquite*-Talparo: Arena Reserve [10°32'N, 61°14'W], 1 male, Mary Nieves col., 15 March 1959, (AMNH-19); Caparo [10°26'N, 61°19'W] 1 female, BWD col. from branch of bananas, March 10 1910 (AMNH-17); *Port of Spain*: Port of Spain [10°39'N, 61°31'W] 1 female, E.N, K. J Waering col., 09 November 1967, (AMNH-31); Rio *Claro-Mayaro*: Nariva Swamp, Ex campus Bush, Bush Forest [10°22'N, 61°02'W], 1 female, Ex Camp Bush, Camp Bush, T.H.S Aitken col. forest swamp, 15 May 1962, (AMNH-6).

Redescription: Female (LEEV 102). Total length, not including chelicerae or spinnerets 42.27. Carapace: 18.76 long, 16.66 wide, 10.15 high. Chelicera: 10.32 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 17.84, 10.18, 14.49, 15.37, 7.84, 65.72; II: 16.21, 9.43, 13.12, 13.43, 7.64, 59.87; III: 13.48, 7.7, 10.63, 12.35, 5.81, 49.97; IV: 16.15, 8.56, 13.96, 16.39, 5.9, 60.96. Palp: 11.64, 6.80, 8.26, -, 9.00, 35.7. Midwidths: femora I–IV = 3.73, 3.55, 3.40, 3.16, palp= 3.25; patella I–IV= 3.66, 3.46, 3.37, 3.39, palp= 3.08; tibiae I–IV= 3.28, 3.03, 2.93, 2.84, palp= 2.77; metatarsi I–IV=2.85, 2.59, 1.94, 2.02; tarsi I–IV= 2.40, 2.42, 2.49, 2.27, palp=2.67. Abdomen: 22.05 long, 15.38 wide. Spinnerets: PMS, 2.48 long, 1.07 wide, 0.74 apart; PLS, 3.82 basal, 1.95 middle, 3.31 distal; width 1.87, 1.60, 0.97, respectively.



Figures 91-96. *Psalmopoeus cambridgei*, immatures ontogeny in maxillary lyra. Scale bar= 1mm.



Figures 97-105. *Psalmopoeus cambridgei* setae short ordered setae under SEM. **97-99** retrolateral side of chelicera. **100**, trochanter leg I, dorsal view. **101** trochanter leg I, prolateral, **102,** trochanter leg I, prolateral setae. **103** femur leg I, prolateral view. **104-105** detail setae on prolateral fêmur Leg I. Scale bar= 1mm.

Carapace: 1.13 times longer than wide; cephalic region slightly raised, thoracic striae moderately marked. Fovea: deep, straight, 3.13 wide.

Eyes: eye tubercle 1.87 high, 2.98 long, 3.79 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.74, ALE 0.84, PME 0.53, PLE 0.69, AME–AME 0.69, AME–ALE 0.31, AME–PME 0.27, ALE– ALE 2.72, ALE–PME 0.57, PME–PME 2.20, PME–PLE 0.10, PLE–PLE 2.85, ALE–PLE 0.34.

Maxilla: length to width: 1.30. Cuspules: ca. 240 spread on anterior inner corner. Labium: 1.83 long, 1.83 wide, with ca. 172 cuspules. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 13 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5-6 spaced, long filiform setae, disposed on ventral-basal portion of chelicera before teeth row (Fig 87).

Sternum: 10.03 long, 6.27 wide. Sigilla: three pairs, posterior oval, anterior small hardly visible, all less than their diameter from margin.

Legs: Formula: I, IV, II, III. Length leg IV to leg I: 0.93. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a line of few setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi) Palp: 0; I: 1/ 0; II 1/0; III 0/2; IV 0/2.

Maxilla stridulatory organ: composed by 14-16 thick setae disposed on a straight crescent line, setae augment in size from the internal to external side of maxilla, longest setae flattened laterally, tips of setae with rugous texture, 7-8 slender setae after thickest ones (Fig 86). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two elongated spermathecae completely separated, straight or almost so, with 2-3 oval, protuding, sclerotized lobules disposed on a central fold on middle area of spermatheca, decreasing in size from apice, apical lobule of spermathecae digitiform and sclerotized (Fig 88).

Coloration (preserved in alcohol): Carapace, abdomen and legs brown. Metatarsi with an orange line from retrolateral side through its center, an orange spot on tarsi. Females with one dark vertical central stripe on abdomen connected with and 3-5 lighter gray transverse lines (Fig89-90).

Redescription: Male (LEEV 108) Total length, not including chelicerae or spinnerets 27.82. Carapace: 14.71 long, 13.33 wide, 7.22 high. Chelicera: 6.39 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 18.2, 8.95, 15.71, 15.66, 7.6, 66.12. II: 16.68, 8.1, 14.58, 14.8, 7.00, 61.16. III: 12.65, 5.86, 11.29, 12.4, 5.69, 47.89. IV: 16.41, 6.7, 15.11, 16.25, 6.28, 60.75. Palp 9.98, 5.50, 8.94, - ,3.62, 22.54. Midwidths: femora I–IV= 3.05, 2.72, 2.74, 2.71, palp= 2.16; patella I–IV= 2.72, 2.60, 2.48, 2.62, palp= 2.03; tibiae I–IV= 2.33, 2.04, 2.18, 2.15, palp= 2.17; metatarsi I–IV= 1.83, 1.60, 1.48, 1.35; tarsi I–IV= 1.53, 1.59, 1.45, 1.51, palp=2.11. Abdomen: 13.48 long, 8.06 wide. Spinnerets: PMS, 1.26 long, 8.06 wide, 0.20 apart; PLS, 2.43 basal, 1.61 middle, 2.95 distal; midwidths 0.64, 0.86, 0.69, respectively.

Carapace: 1.11 times longer than wide; cephalic region slightly raised,thoracic striae moderately marked . Fovea: deep, straight, 2.22 wide.

Eyes: eye tubercle 1.00 high, 2.06 long, 3.29 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.80, ALE 0.69, PME 0.39, PLE 0.65, AME–AME 0.35, AME–ALE 0.29, AME–PME 0.22, ALE– ALE 2.20, ALE–PME 0.31, PME–PME 1.88, PME–PLE 0.07, PLE–PLE 2.36, ALE–PLE 0.3.

Maxilla: length to width: 1.58. Cuspules: ca. 161 spread on anterior inner corner. Labium: 1.83 long, 1.83 wide, with ca. 131 cuspules. Labio-sternal groove shallow, flat, with two separate sigilla.

Chelicera: basal segment with 12 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 4-5 spaced long filiform setae in ventral-basal portion of chelicerae before teeth row (Fig 81).

Sternum: 7.68 long, 5.12 wide. Sigilla: three pairs, posterior oval, anterior small hardly visible, all less than one diameter from margin.

Legs: Formula: I, II, IV, III. Length leg IV to leg I: 0.92. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by a row of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi), palp = 0; I: behind retrolateral process apophysis = 1; II: 2/0; III: 2/0; IV: 2/1.

Maxilla stridulatory organ: composed by 13-14 thick setae disposed on a straight crescent line, setae augment in size from the internal to external side of maxilla, longest setae flattened laterally, tips of setae with rugous texture, 7-8 slender setae after thickest ones (Fig 82). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral process, one at the apical part of retrolateral process. Metatarsus I folds on retrolateral side of tibial apophysis (Fig85).

Copulatory palpal bulb: tegulum length 1.28, width 1.96, embolus proximal width 0.85, embolus length 4.31. Embolus proximal part straight (ventral view), first curvature not so pronounced, second one slightly pronounced (Fig 75-80).

Color pattern (preserved in alcohol): carapace, abdomen light, legs and palpal femora light brown, metatarsi light brown with an orange line starting at side going through center. Dorsal tarsi with an orange spot (Fig 83-84).

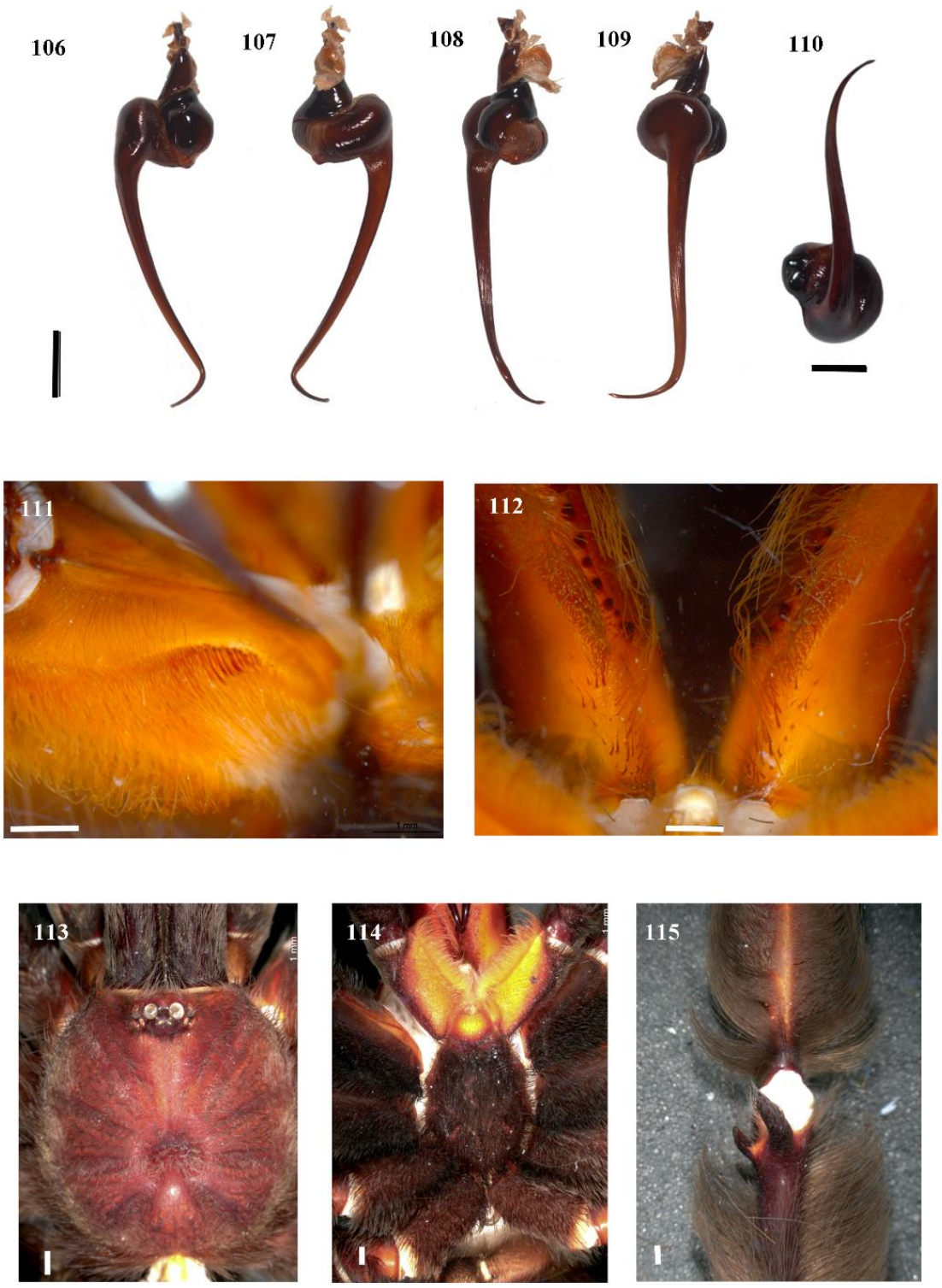
Distribution: Known only from Trinidad Island.

***Psalmopoeus ecclesiasticus* Pocock, 1903**

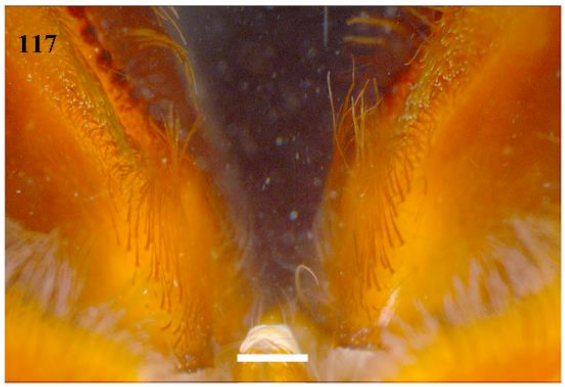
Psalmopoeus ecclesiasticus Pocock, 1903: 82, 84; Petrunkevitch 1911: 86; 1939: 289; Roewer 1942: 256; Schmidt, Bullmer & Thierer-Lutz 2006: 8, f. 10; World Spider Catalog 2018.

Figs 106- 121, 240

Diagnosis: Males can be distinguished from those of all other species by slender embolus very curved distally with length of 4 or more times tegulum's length Figs (106-111). Females resemble those of *P. cambridgei* by elongated spermathecae. It can be distinguished from this species by spermathecae apexs curved toward center, and central area with 3-4 oval lobules weakly sclerotized (Fig 118). Additionally, males and females present stridulatory organ with curved line of thick setae (Fig 111, 116).



Figures 106-115. *Psalmopoeus ecclesiasticus* male. **106-110** Left palpal bulb. **106** prolateral. **107** retrolateral. **108** dorsal. **109** ventral. **110** frontal. **111** maxillary lyra. **112** filiform strikers in ventral chelicera. **113** carapace. **114** Sternum, coxae, maxillae and labium. **115** left tibial apophysis. Scale bar= 1mm.



Figures 116-121. *Psalmopoeus ecclesisticus* female, **116** Maxillary lyra. **117** filiform strikers on chelicera. **118** spermatheca. 119, carapace. **120**, Sternum, coxae, maxillae and labium. general appearance. Scale bar= 1mm.

Material examined: Lectotype male (here designated) and 2 paratypes females, from Ecuador, Rio Sapayo (BMNH 1903.7.1.111.113); 1 female and male, from Colombia, Nariño, Barbacoas, Altaquer, Reserva Natural Río Ñambí, 1440 m.a. s.l , D. Martínez, C. Castellanos, C. Perafán col. (ICN-Ar-7507).

Additional material examined: COLOMBIA**:** *Nariño*: Barbacoas [1°40'S, 78°08'W], Altaquer, Reserva Natural Río Ñambí, 1440 m. a. s. l, 1 female, Estudiantes Universidad de Nariño col. (ICN-Ar-6928); 1 female, M. Medrano, Y. Cifuentes, D. Martínez, A. García col. (ICN-Ar-6950); 3 females 2 males 1 immature, D. Martínez, C. Castellanos, C. Perafán col. (ICN-Ar-7507); 1 female, M. Medrano, Y. Cifuentes, D. Martínez, A. García (ICN-Ar-7512); ECUADOR: *Pichincha*: 1 female, Los Bancos, 17 December 1988, Vivar col., (QCAZ-40); 1 female, Santo Domingo Magdalena, 1500 m.a.s.l, B. Yangari col., 02 November 1995, on plant of banana leaves at day (QCAZ-08); *Esmeraldas*: Alto Tambo [0°54'N, 78°32'W], 1 female (QCAZ-158).

Redescription: Male (ICN-Ar-7505). Total length, not including chelicerae or spinnerets 30.91. Carapace: 15.12 long, 14.66 wide, 7.49 high. Chelicera: 7.36 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 21.31, 8.85, 18.04, 16.57, 8.29, 73.06. II: 18.96, 7.61, 16.32, 16.09, 7.26, 66.24. III: 16.53, 6.61, 13.76, 14.54, 6.45, 57.89. IV: 18.81, 7.66, 17.48, 19.81, 6.72, 70.48. Palp: 12.55, 5.84, 11.25, - , 3.10, 32.74. Midwidths: femora I–IV= 2.39, 2.49, 2.43, 2.53, palp= 1.99; patella I–IV= 2.45, 2.54, 2.33, 2.59, palp= 2.13; tibiae I–IV= 1.76, 1.83, 1.87, 1.9, palp= 1.88; metatarsi I–IV= 1.44, 1.35, 1.56, 1.34; tarsi I–IV= 1.29, 1.37, 1.49, 1.41, palp= 1.99. Abdomen: 14.35 long, 8.77 wide. Spinnerets: PMS, 1.61 long, 0.62 wide, 0.33 apart; PLS, 2.43 basal, 2.59 middle, 2.16 distal; midwidths 1.13, 1.06, 0.87, respectively.

Carapace: 1.03 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 2.78 wide.

Eyes: eye tubercle 1.88 high, 2.38 long, 3.40 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.78, ALE 0.66, PME 0.58, PLE 0.61, AME–AME 0.60, AME–ALE 0.30, AME–PME 0.24, ALE– ALE 2.61, ALE–PME 0.19, PME–PME 2.11, PME–PLE 0.11, PLE–PLE 2.67, ALE–PLE 0.32.

Maxilla: length to width 1.69. Cuspules: ca. 111 spread over inner corner. Labium: 1.83 long, 1.83 wide, with ca. 92 cuspules. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 11 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: 3-4 lines of 6-8 long filiform setae, disposed on ventral-basal portion of chelicera, before teeth row, short setae at ectal side of chelicera (Figs 112).

Sternum: 7.58 long, 5.84 wide. Sigilla: three pairs, posterior oval, anterior very small hardly visible, all less than one diameter from margin.

Legs: Formula: I, IV, II, III. Length leg IV to leg I: 0.96. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp: 0; I: 2/0; II 2/0; III: 0/2; IV: 0/2.

Maxilla stridulatory organ: composed by 15-17 thick setae not disposed on a curved line, setae augment in size from the internal to external side of maxillae, longest ones flattened laterally, tips of setae with rugous texture, 13-15 slender setae after thickest ones (Fig 111). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral process, one at the apical part of retrolateral process. Metatarsus I folds on retrolateral side of tibial apophysis (Fig 115).

Copulatory palpal bulb: tegulum length 1.02, width 1.77, embolus proximal width 0.61, length 4.61. Embolus proximal portion straight (dorsal view), first curvature not so pronounced, second one very pronounced (Figs 106-110).

Color pattern (in vivo): Carapace and tibia, metatarsi and tarsi blue-grayish, femora black and gray, abdomen with reddish brown setae (Fig 113-114).

Redescription: Female (ICN-Ar-7505): Total length, not including chelicerae or spinnerets 35.72. Carapace: 16.47 long, 14.44 wide, 9.27 high. Chelicera: 8.85 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 17.60, 8.96, 14.25, 12.57, 7.72, 61.1. II: 15.3, 8.8, 12.93, 11.83, 6.73, 55.59. III: 13.22, 6.94, 10.35, 11.41, 5.86, 47.88. IV: 14.70, 6.90, 14.21, 15.53, 5.85, 57.19. Palp: 10.82, 5.73, 7.77, - , 7.69, 32.01. Midwidths: femora I–IV= 2.55, 2.83, 2.38, 2.50, palp= 2.19; patella I–IV= 2.81, 2.78, 2.60, 2.47, palp= 2.44; tibiae I–IV= 2.35, 2.30, 2.07, 2.09, palp=

2.24; metatarsi I–IV= 2.10, 2.04, 1.66, 1.49; tarsi I–IV= 2.24, 1.99, 1.96, 1.85, palp = 2.39. Abdomen: 17.15 long, 10.73 wide. Spinnerets: PMS, 2.34 long, 0.74 wide, 0.90 apart; PLS, 2.52 basal, 1.48 middle, 2.38 distal; width 1.73, 1.75, 1.2, respectively.

Carapace: 1.14 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 3.30 wide.

Eyes: eye tubercle 1.82 high, 2.23 long, 3.47 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.76, ALE 0.72, PME 0.47, PLE 0.63, AME–AME 0.60, AME–ALE 0.76, AME–PME 0.25, ALE–ALE 2.63, ALE–PME 0.32, PME–PME 1.98, PME–PLE 1.13, PLE–PLE 2.57, ALE–PLE 0.28.

Maxilla: length to width 1.86. Cuspules: ca. 135 spread over inner corner. Labium: 2.51 long, 2.57 wide, with ca. 133 cuspules spaced aproximately by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 14 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: 2-3 lines of 8-9 long filiform setae, disposed on ventral-basal portion of chelicera before teeth row, short setae at ectal side of chelicera (Fig 117).

Sternum: 7.65 long, 6.45 wide. Sigilla: three pairs, posterior oval, anterior small hardly visible, all less than one diameter from margin.

Legs: Formula: I, IV, II, III. Length leg IV to leg I: 0.94. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi): Palp: 0, I: 2/0, II 2/0, III: 0/2, IV: 0/2.

Maxilla stridulatory organ: composed by 15-17 thick curved setae disposed on a curved line, setae augment in size from the internal to external side of maxillae, longest ones flattened laterally, tips of setae with rugous texture, 12-15 slender setae after thickest ones (Fig 116). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two elongated spermathecae completely separated, curved toward center, with 3-4 oval, protuding, sclerotized lobules disposed on a central fold on middle area of spermathecae, decreasing in size from apice, apical lobule of spermathecae digitiform, lobules weakly sclerotized (Fig 118).

Color pattern (in vivo): Carapace and abdomen blue-gray, legs and palpal femora and tibiae blue-gray. Carapace and legs blue-greish, abdomen gray (Figs 119-121).

Distribution: Ecuador, Rio Sapayo and Carondelet; Colombia, Nariño, Barbacoas. 18-1440 m. a.s.l.

***Psalmopoeus irminia* Saager, 1994**

Figs 121- 136, 240

Psalmopoeus irminia Saager, 1994: 59, f. 2-15, 6A, 7-11; Schmidt, Bullmer & Thierer-Lutz 2006: 8, f. 11, 13; Mendoza 2014: 734, f. 17; Bertani *et al*. 2016: 1, f. 3-5; World Spider Catalog 2018.

Diagnosis: Females of *P. irminia* resemble those of *P cambridgei*, *P. langenbucheri* and *P. pulcher* by the spermathecae with digitiform apical lobule, having lobules on central area and males with copulatory palpal embolus 3.0-3.5 times tegulum's length. Females differ by shorter apical lobule, rounded lobules on central area not as protruding as in *P. cambridgei* (Fig 134, 118), and apices of spermathecae before apical lobule not as wide as in *P. pulcher* (Figs 134, 167). Males can be distinguished from those of *P. pulcher* by the smaller tegulum and straight embolus at its proximal portion (dorsal view), and embolus not as short as in *P. langenbucheri*. Males very similar to *P. cambridgei*, differing in proximal portion of embolus slightly curved (Figs 122-131).

Material examined: 1 male and 1 female from Venezuela, Amazonas, Cejal, Orinoco river, February 1992, R. West col., Silk retreat in low tree cavity, **(**LEEV 105,106).

Additional material examined: VENEZUELA: *Amazonas*: 1 male, Cejal, Orinoco river, Feb. 1992, R. West col., (LEEV 103); BRASIL: *Roraima*: 1 female, Paracaima, prox Marejon di noite Rio Miang, (04°29'44"N 61°07'27"W), 12 August 2015, M. A. Freitas, A.S. Santos, A. Abegg & F. Ortíz col., (MNRJ-6872).

Redescription: Male (LEEV 105) Total length, not including chelicerae or spinnerets 30.98. Carapace 14.60 long, 12.58 wide, 7.71 high. Chelicera: 6.85 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 17.91, 9.44, 16.77, 15.98, 7.28, 67.38; II: 17.15, 8.34, 15.13, 15.30, 7.15, 63.07; III: 12.70, 5.81, 11.09, 12.39, 5.77, 47.76; IV: 15.48, 6.14, 13.94, 14.63, 6.11, 56.30; Palp: 10.08, 5.47, 9.14, - , 3.37, 28.06. Midwidths: femora I–IV= 2.52, 2.10, 2.03, 1.54, 1.33, palp= 1.92; patella I–IV= 2.10, 2.37, 2.13, 2.25, palp = 1.96; tibiae I–IV= 2.03, 2.10, 1.66, 1.70, palp = 1.95; metatarsi I–IV= 1.54, 1.55, 1.25, 1.29; tarsi I–IV= 1.33, 1.36, 1.33, 1.24, palp = 1.93. Abdomen: 16.01 long, 8.70 wide. Spinnerets: PMS, 1.47 long, 0.47 wide, 0.50 apart; PLS, 1.48 basal, 1.06 middle, 1.81 distal; midwidths 0.82, 0.69, 0.54, respectively.

Carapace: 1.16 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.75 wide.

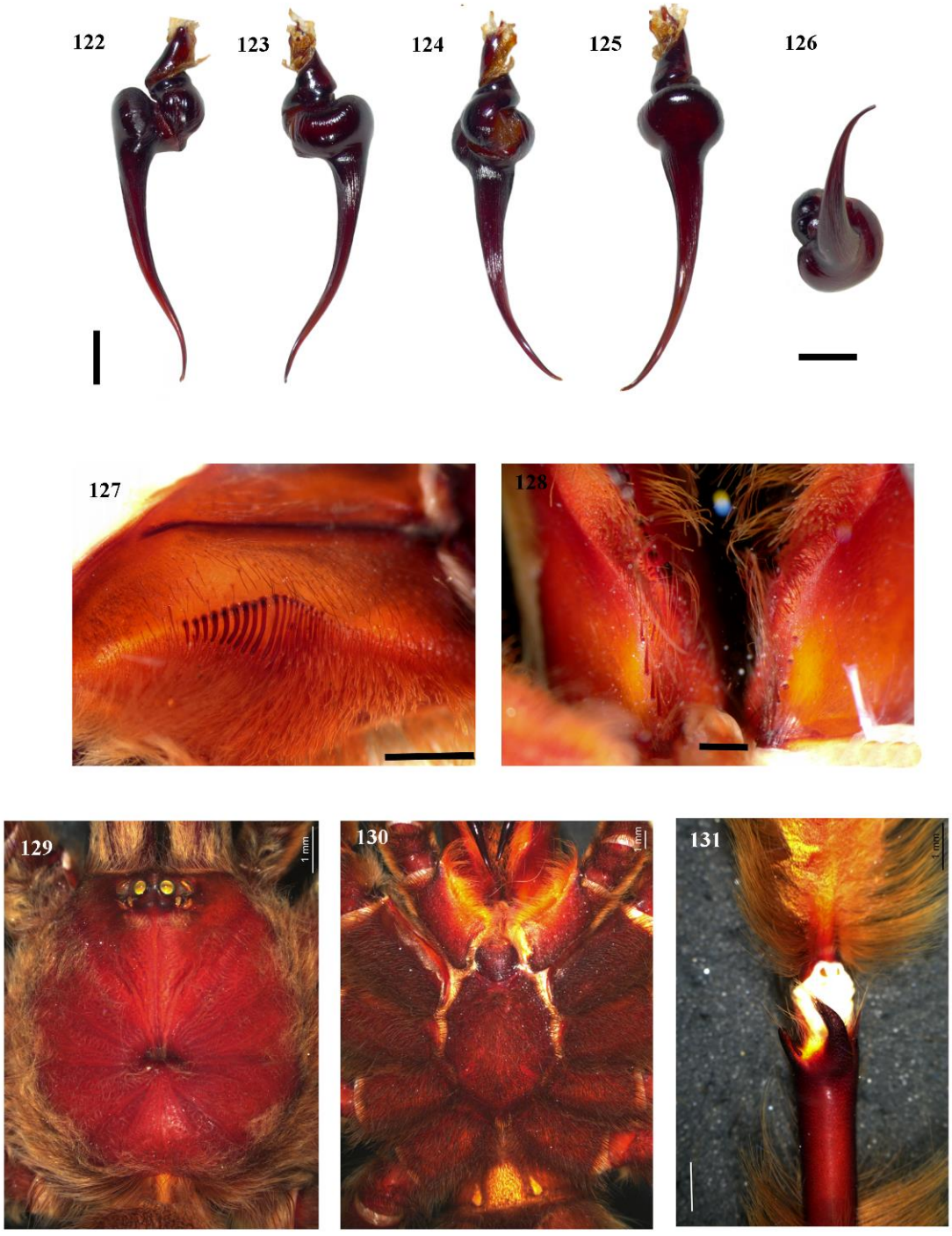
Eyes: eye tubercle 0.78 high, 2.37 long, 4.11 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.94, ALE 0.91, PME 0.57, PLE 0.77, AME–AME 0.63, AME–ALE 0.31, AME–PME 0.26, ALE– ALE 2.31, ALE–PME 0.27, PME–PME 2.25, PME–PLE 0.23, PLE–PLE 2.96, ALE–PLE 0.34.

Maxilla: length to width 1.78. Cuspules: 143 spread over ventral inner heel. Labium: 1.47 long, 1.56 wide, with ca. 158 cuspules. Labio-sternal groove shallow, flat, with two separated sigilla.

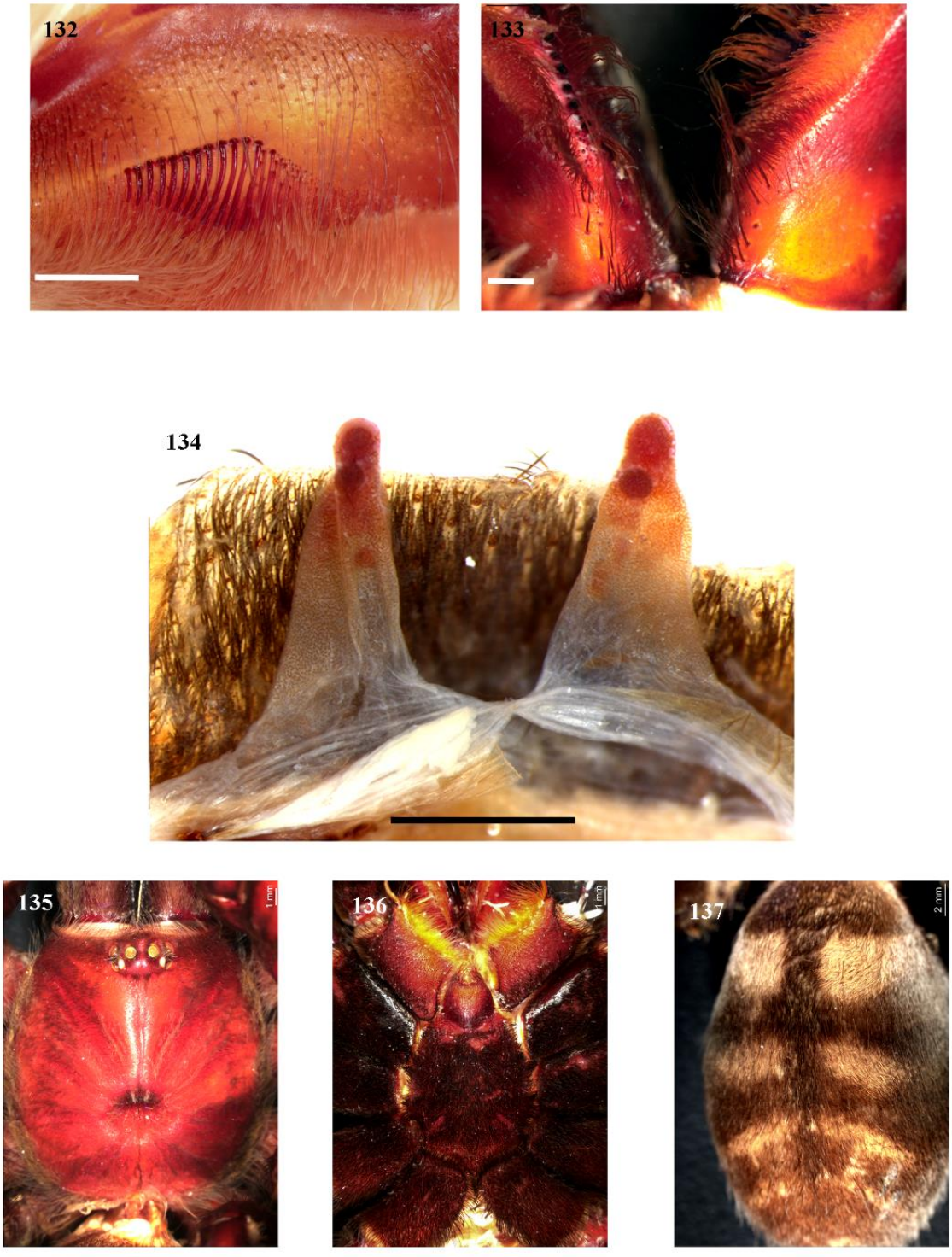
Chelicera: basal segment with 9 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 6 spaced, long filiform setae, disposed on ventral-basal portion of chelicerae before teeth row (Fig 128). Sternum: 7.10 long, 5.69 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I II IV III. Length leg IV to leg I: 0.84. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 3/4 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp: 0; I: 1 behind tibial apophysis, II: 2/0; III: 2/3, IV: 2/2.



Figures 122-131. *Psalmopoeus irminia* male. **122-126.** Left palpal bulb. **122,** prolateral. **123,** retrolateral, **124,** dorsal. **125,** ventral. **126,** frontal. **127,** Maxillary lyra. **128,** filiform strikers on chelicera.**129**, Carapace. **130.** Sternum, coxae, maxillae and labium. **131.** Left tibial apophysis. Scale bar= 1mm.



Figures 132-137. *Psalmopoeus irminia* female. **132,** Maxillary lyra. **133,** filiform strikers on chelicera. **134**, spermathecae**. 135**, carapace. **136, s**ternum, labium and maxillae. **137,** abdomen. Scale bar= 1mm.

Maxilla stridulatory organ: composed by 11 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 12-14 slender setae after thickest ones (Figs 128). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one on apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis (Fig 134).

Copulatory palpal bulb: tegulum length tegulum 1.17, width 1.78 width, embolus proximal width 0.77, embolus length 4.09. Embolus proximal part straight (ventral view), first curvature not so pronounced, second one slightly pronounced (Figs 122-126).

Color pattern (preserved in alcohol): Carapace brown, as femur of palp and metatarsi with an orange line from the retrolateral side toward the center, tarsi with an orange dorsal spot (Fig 129-130).

Redescription: Female (LEEV 106): Total length, not including chelicerae or spinnerets 43.21. Carapace: 16.97 long, 15.05 wide, 9.48 high. Chelicera: 8.88 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 15.57, 9.44, 13.25, 11.91, 6.03, 56.2; II: 14.10, 8.75, 12.37, 11.64, 6.16, 53.02; III: 12.37, 7.01, 9.85, 10.47, 5.82, 45.52; IV: 14.87, 7.22, 13.18, 13.24, 5.9, 54.41; Palp: 10.2, 5.97, 7.64, - , 7.31, 31.12. Midwidths: femora I–IV= 3.50, 3.08, 3.41, 3.01, palp = 2.45; patella I–IV= 3.07, 3.11, 2.90, 2.86, palp= 2.58; tibiae I–IV= 3.03, 2.77, 2.34, 2.66, palp= 2.44; metatarsi I–IV= 2.61, 2.13, 1.91, 1.75; tarsi I–IV= 2.16, 2.20, 2.29, 2.02, palp= 2.40. Abdomen: 24.46 long, 14.54 wide. Spinnerets: PMS, 2.07 long, 1.00 wide, 0.86 apart; PLS, 2.94 basal, 1.43 middle, 2.61 distal; midwidths 1.30, 1.02, 0.64, respectively.

Carapace: 1.13 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.59 wide.

Eyes: eye tubercle 1.34 high, 2.57 long, 3.80 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.70, ALE 0.83, PME 0.58, PLE 0.67, AME–AME 0.66, AME–ALE 0.43, AME–PME 0.27, ALE–ALE 2.78, ALE–PME 0.52, PME–PME 2.06, PME–PLE 0.16, PLE–PLE 2.89, ALE–PLE 0.35.

Maxilla: length to width 1.53. Cuspules: ca. 191 spread over ventral inner heel. Labium: 2.65 long, 2.99 wide, with ca. 190 cuspules. Labio-sternal groove shallow, flat, with two separated sigilla.

Chelicera: basal segment with 10 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5-9 spaced long filiform setae, disposed on ventral-basal portion of chelicerae before teeth row (Fig 133).

Sternum: 8.97 long, 7.35 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.97. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 3/4 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi): Palp: 0; I: 0/0; II: 2/0; III: 2/0; IV: 1/0.

Maxilla stridulatory organ: composed by 12 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 12-14 slender setae after thickest ones (Fig 132). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two elongated spermathecae completely separated, straight, with 2-3 round, sclerotized lobules disposed on a central fold on middle area, decreasing in size from apice, apical lobule of spermathecae digitiform (Fig 134).

Color pattern (preserved in alcohol): Carapace brown and abdomen with dark longitudinal line connected with at least 4 transversal lines forming orange paired macules dorsally, metatarsi with an orange line from the retrolateral side towards the segment, tarsi with an orange dorsal spot.

Distribution: Brazil: Roraima, Venezuela: Amazonas.

***Psalmopoeus langenbucheri* Schmidt, Bullmer & Thierer-Lutz, 2006**

Figs 137-153, 240

Psalmopoeus langenbucheri Schmidt, Bullmer & Thierer-Lutz, 2006: 3, f. 1-8; Samm & Schmidt, 2008**:** 14, f. 1-7; World Spider Catalog 2018.

Diagnosis: Females of *P. langenbucheri* resemble those of *P. irminia* and *P. pulcher* by the spermathecae with apical digitiform lobule and lobules in central area. Females can be distinguished from *P. pulcher* by shorter spermathecae with slender apice before digitiform lobule, from *P. irminia* by weakly sclerotized lobules and apical lobule very joined with lobules of the central area (Fig 152). Males resemble those of *Psalmopoeus* sp. nov.1 by short embolus, and differ by straight proximal part of it (Figs.138-142). Males also present a contrasting longitudinal central line on abdomen.

Material examined: Holotype female and paratype male from Venezuela, surroundings of Caripe [10°10'N, 63°30'W], Lagenbucher col., August 1994 (SMF-58086, SMF-58087).

Additional material examined: VENEZUELA: 1 male, North of Maracay, Rancho Grande roof, 10 May 1946, (AMNH unnumbered).

Redescription: Holotype female, SMF-58086. Total length, not including chelicerae or spinnerets 36.32. Carapace: 15.71 long, 13.86 wide, 8.63 high. Chelicera: 9.48 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.96, 7.39, 9.91, 9.85, 5.77, 44.88; II: 10.63, 6.74, 8.22, 8.96, 5.13, 39.68; III: 9.65, 6.16, 7.78, 8.62, 4.67, 36.88; IV: 11.85, 6.45, 10.11, 10.90, 5.15, 44.46; Palp: 9.01, 5.82, 6.04, - , 5.92, 26.79. Midwidths: femora I–IV= 2.69, 2.78, 2.74, 2.45, palp= 2.26. Patella I–IV= 2.87, 2.65, 2.67, 2.92, palp= 2.45; tibiae I–IV= 2.69, 2.32, 2.98, 2.46, palp= 2.17; metatarsi I–IV= 2.03, 1.94, 1.74, 1.55; tarsi I–IV= 1.98, 2.00, 2.03, 1.83, palp= 2.05. Abdomen: 19.90 long, 11.25 wide. Spinnerets: PMS, 1.67 long, 0.69 wide, 0.48 apart; PLS, 1.65 basal, 1.48 middle, 2.49 distal; midwidths 1.63, 1.58, 1.24, respectively.

Carapace: 1.13 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 3.22 wide.

Eyes: eye tubercle 1.34 high, 1.98 long, 3.55 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.72, ALE0.70, PME 0.54, PLE 0.65, AME–AME 0.53, AME–ALE 0.39, AME–PME 0.25, ALE–ALE 2.51, ALE–PME 0.49, PME–PME 1.89, PME–PLE 0.21, PLE–PLE 2.50, ALE–PLE 0.25.

Maxilla: length to width 1.51. Cuspules: ca. 147 spread over inner heel. Labium: 2.56 long, 2.86 wide, with 134 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 11 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5 spaced long filiform setae, disposed on a ventral-basal portion of chelicera before the teeth row (Figs 150-151). Sternum: 7.69 long, 6.27 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.99. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 2/0; II 2/0; III 1/ 2; IV 1/1.

Maxilla stridulatory organ: composed by 13-14 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 6-8 slender setae after thickest ones (Fig 149). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two triangular spermathecae completely separated, straight, with 1-2 oval lobules disposed on a central fold on middle area, apical lobule of spermathecae short, digitiform, fused with lobule from central area (Fig 152).

Color pattern (preserved in alcohol): Carapace and abdomen light brown with some golden setae; leg, palpal femora, and tibiae brown. Metatarsi with a pinkish line from the retrolateral side towards the segment, tarsi with a reddish dorsal spot.

Redescription: Paratype Male, SMF-58087. Total length, not including chelicerae or spinnerets 21.1. Carapace 9.36 long, 8.52 wide, 4.82 high. Chelicera: 5.37 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 10.95, 5.78, 9.75, 9.62, 4.80, 40.90; II: 10.59, 5.27, 9.08, 8.58, 4.80, 38.32; III: 8.61, 4.36, 7.04, 8.27, 4.08, 32.36; IV: 10.52, 4.55, 10.03, 10.63, 4.71, 40.44; Palp: 6.61, 3.82, 6.06, - , 2.09, 18.58. Midwidths: femora I–IV= 1.81, 1.54, 1.72, 1.75, palp= 1.46; patella I–IV= 2.02, 1.67, 1.65, 1.92, palp= 1.25; tibiae I–IV= 1.72, 1.37, 1.51, 1.51, palp= 1.37; metatarsi I–IV= 1.13, 1.01, 1.08, 0.99; tarsi I–IV= 1.23, 1.04, 1.07, 1.05, palp=

1.70. Abdomen: 10.93 long, 6.36 wide. Spinnerets: PMS 1.67 long, 0.69 wide, 0.54 apart; PLS, 1.64 basal, 1.00 middle, 1.68 distal; midwidths 0.86, 0.80, 0.67, respectively.

Carapace: 1.10 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 1.41 wide.

Eyes: eye tubercle 0.78 high, 1.65 long, 2.53 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.60, ALE 0.54, PME 0.31, PLE 0.45, AME–AME 0.39, AME–ALE 0.18, AME–PME 0.12, ALE–ALE 1.74, ALE–PME 0.28, PME–PME 1.36, PME–PLE 0.13, PLE–PLE 1.70, ALE–PLE 0.26.

Maxilla: length to width 1.61. Cuspules: ca. 105 spread over inner heel. Labium: 1.53 long, 1.85 wide, with ca. 87 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 11 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5-6 spaced long filiform setae, disposed on a ventral-basal portion of chelicera before the teeth row (Fig 144).

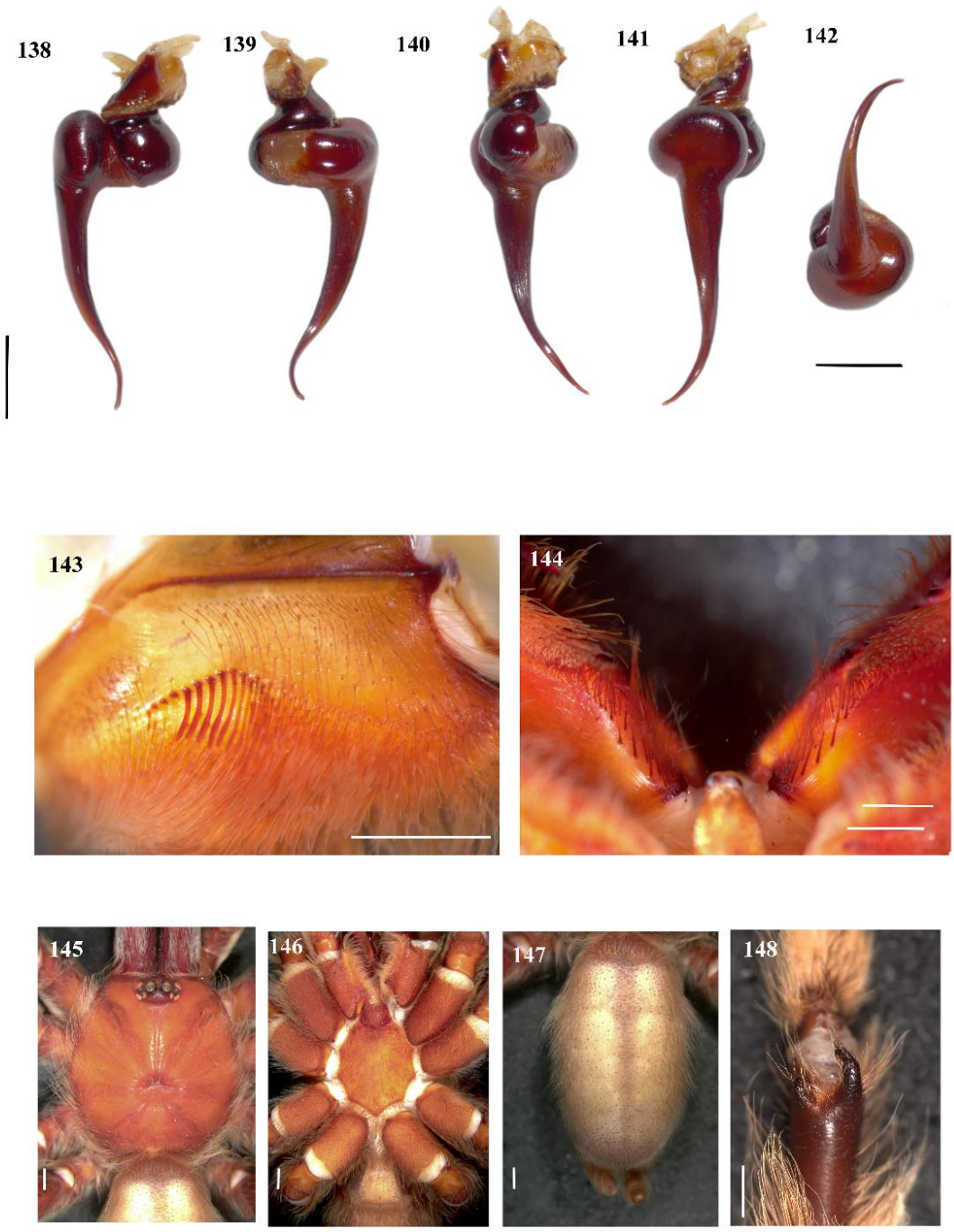
Sternum: 4.83 long, 4.14 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 0.99. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

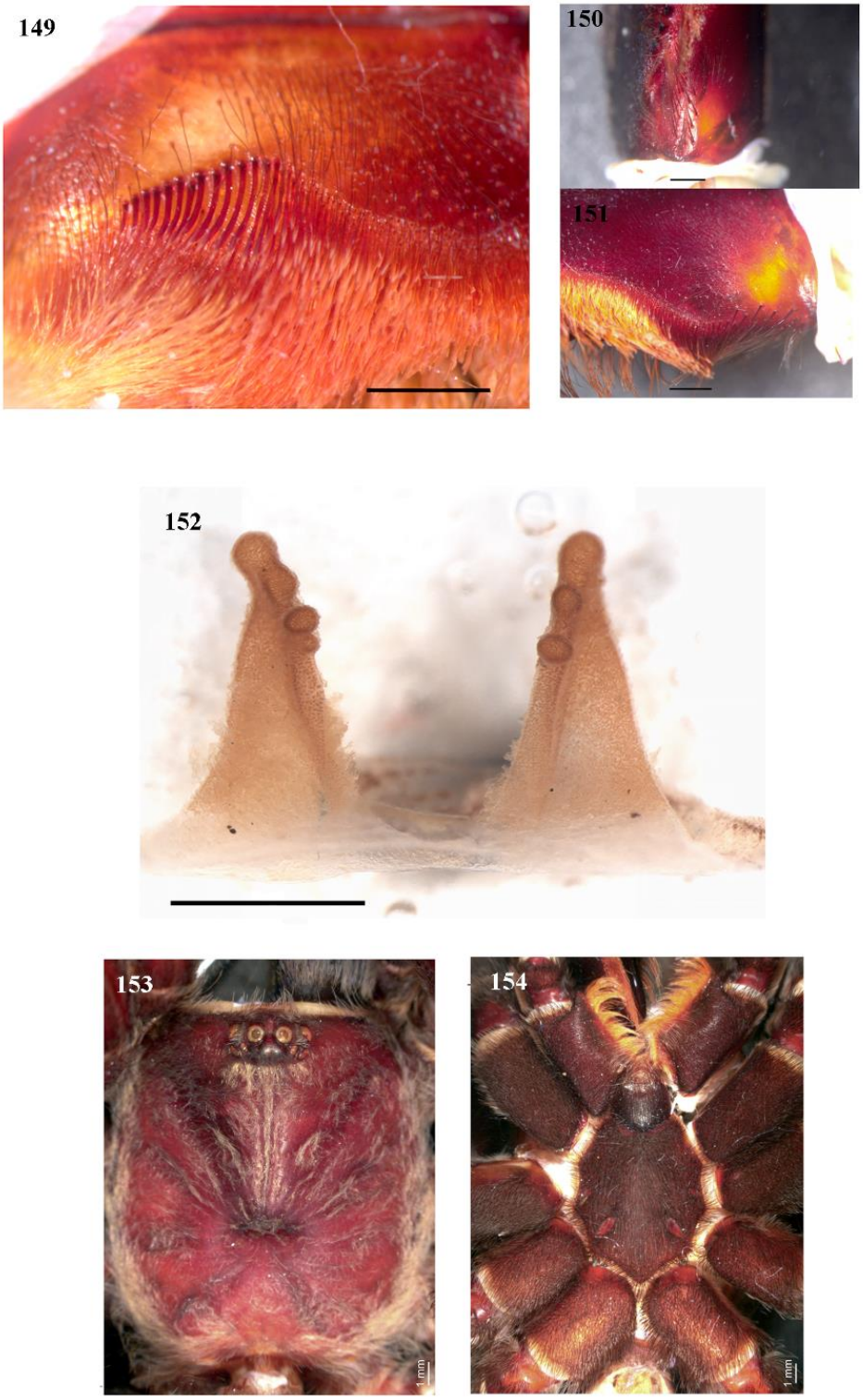
Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process; II: 2/0; III 0/2; IV 2/1.

Maxilla stridulatory organ: composed by 8-10 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 6 slender setae after thickest ones (Fig 143). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral one longer than prolateral, one spine at side of prolateral, another on apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis (Fig 148).



Figures 138-148. *Psalmopoeus langenbucheri* male, **138-142.** Left palpal bulb. **138** prolateral. **139** retrolateral. **140**, dorsal. **141** ventral. **142** frontal. **143** maxillary lyra. **144** filiform strikers on ventral chelicera. **145**, carapace. **146** Sternum, coxae, maxillae and labium. **147**, abdomen. **148** tibial apophysis. Scale bar= 1mm.



Figures 149-154 *Psalmopoeus langenbucheri* female. **149** Maxillary lyra. **150-151** filiform strikers on the chelicera. **152** spermathecae. **153**, carapace. **154** Sternum, coxae, maxillae and labium. Scale bar= 1mm.

Copulatory palpal bulb: tegulum length: 0.97, width 1.49, embolus proximal width 0.60, embolus length 2.54. Embolus proximal portion straight (ventral view), first curvature not so pronounced, second one slightly pronounced (Figs 138-142).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae light brown; abdomen beige with a dark line in its middle (Fig 147). Metatarsi with a pinkish line from the retrolateral side towards the segment, tarsi with a pinkish dorsal spot

Distribution: Venezuela, Mónadas, Caripe.

***Psalmopoeus pulcher* Petrunkevitch, 1925**

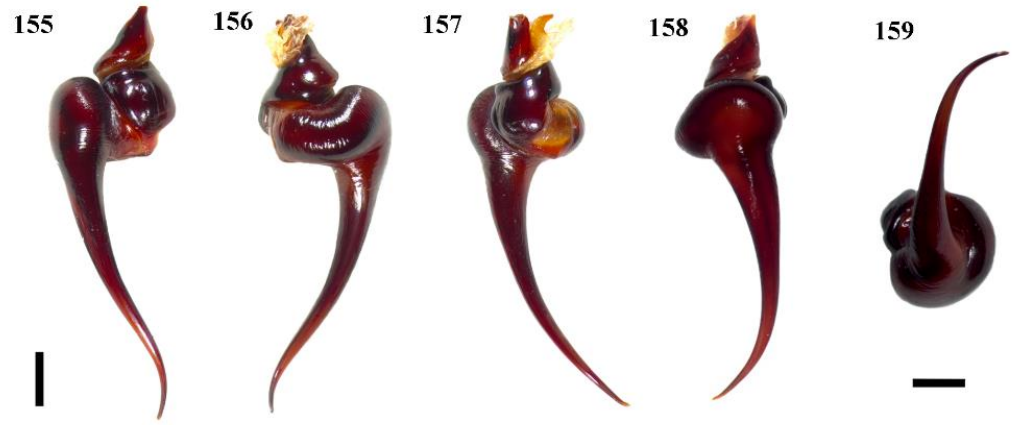
Figs 155-170, 240

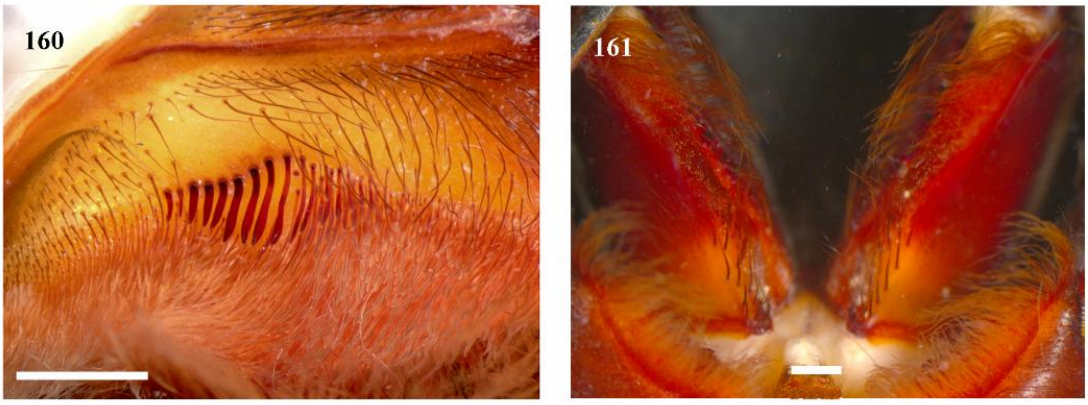
Psalmopoeus pulcher Petrunkevitch, 1925: 87, f. 2; Roewer 1942: 256; Bonnet 1958: 3798; Gabriel 2014:135; World Spider Catalog 2018.
Psalmopoeus rufus Petrunkevitch, 1925: 89. First synonymized by Gabriel 2014: 89.

Diagnosis: Males and females of *P. pulcher* resembles those of *P. cambridgei* and *P. irminia* by spermatheca with digitiform apical lobule, round lobules in central area, and copulatory palpal bulb 3.0 to 3.5 times tegulum's length. Females differ by spermathecae with 1-2 small rounded lobules on central area not as protruding as in *P. cambridgei*, and apices of spermathecae before apical lobule almost as wide as its base (Fig 167). Males can be distinguished from *P. irminia* by wider tegulum and curved embolus (dorsal view), and from *P. cambridgei* by curved embolus at proximal portion (frontal view) (Figs 155-159).

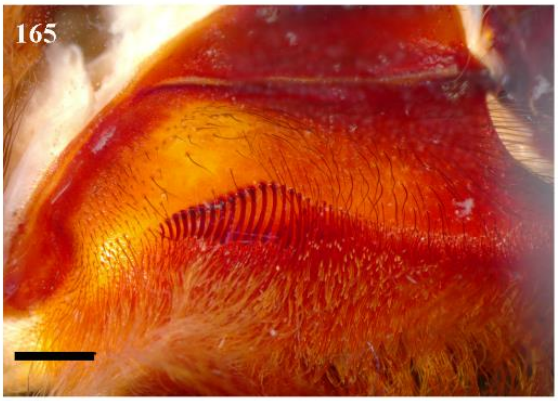
Material examined: Holotype male from Panamá, Mt Hope, Canal Zone, 1924, W.J.Baerg gift (AMNH unumbered)**;** 1 female, from Colombia, Sucre, Montes de María V/da Camarón (09°50'37.5"N, 75°17'35.2' W), Wilder Zapata col. June 2015, captured in branches of palm tree of aprox 2m, surrounded by a small lake in tripocal dry forest (ICN-Ar-8278); 1 male, Colombia, Bolivar, Turbaco, Jardín Botánico Guillermo Pinheros, (10°20'51.54" N, 75°25'30.79" W) (ICN-Ar-8280).

Additional material examined: Central America, 1 female, gift of E. Kirby Brooklin A.C.C. 3793, found on Bananas, (AMNH 4); PANAMA: Near Gamboa [9°07'N, 79°42'W] along south side of canal zone road, 1 male, R. West col., 8 August 1983, walking on ground of forest,





Figures 155-164. *Psalmopoeus pulcher* male. **155-159** Left palpal bulb. **155** prolateral. **156** retrolateral. **157** dorsal. **158** ventral. **159** frontal. **160** maxillary lyra. **161**, filiform strikers on chelicera. **162**, carapace. **163**, sternum, coxae, maxillae and labium. **164**, left tibial apophysis. Scale bar= 1mm.



Figures 165-170. *Psalmopoeus pulcher* female. **165**, maxillary lyra. **166**, filiform strikers on ventral chelicera. **167**, spermathecae, **168**, carapace. **169**, sternum, coxae, maxillae and labium. **170** abdomen. Scale bar= 1mm.

cricket predation (LEEV 101);1 female, same data and colector, silk retreat in low tree cavity, (LEEV 107), 1 male, same data, J. Huff col., Oct 2002 (LEEV 113); Barro Colorado island [9°09'N, 79°50'W], 1 female, (AMNH-21); 1 male, Canal Zone, spiders from Barro Colorado Collection of Francis J. Ryan (AMNH-27); Pearl islands, San José island [8°15'N, 79°06'W], 1 female, C. W. Myers col. by night on termite nest on side of the tree 1m and 1/2 above the ground, branch of vegetation, 15 October 1977 (AMNH-18); Rio Chagres [9°15'N, 79°28'W], 1 male, Juan Mina, RX Schick col., 17 December 1965, Bamboo internode (AMNH-3); La Chorrera [8°52'N, 79°46'W], 1 female, A. Espino col., 15 September 1975 (CASENT 9071251); COLOMBIA: *Boyacá*: Pto Boyacá, Inspección Pto Romero, Sector Dosquebradas, [5.97723, -74.59339], 1 female, LA. Gómez col. (ICN-Ar-1479); *Chocó*: Riosucio La Gira [7.43609, -77.11138], 1 female, C. Torres col. (ICN-Ar-004); *Sucre*: San Onofre, Boca Cerrada Canal del Dique, [10.04957, -75.5666], 1 immature, Manglares de Colombia Project (ICN-Ar-1514); San onofre, Boca Cerrada, Canal del Dique [10.05, -75.56671], 2 males, Giovanni A. Ulloa col. (ICN-Ar-1979); Montes de María, V/da Camarón (09°50'37.5" N, 75°17'35,2"), 1 female, W. Ricardo Borja col., June 2015 (ICN-Ar 8279); 1 immature, *Tolima:* Carmen de Apicalá, [4.14849, -74.71599], M.A. Realphe col. (ICN-Ar-unnumbered); Carmen de Apicalá, Vda San Cristobal, Q. da Lainat [4.15295, -74.71531], 1 male 1 immature, M. Ramírez col. (ICN-Ar-008).

Redescription: Male, ICN-Ar-8280. Total length, not including chelicerae or spinnerets 31.95. Carapace 14.95 long, 13.69 wide, 8.64 high. Chelicera: 7.42 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 15.98, 7.96, 13.53, 11.31, 6.38, 55.16; II: 13.45, 6.38, 11.14, 9.77, 5.69, 46.43; III: 11.71, 5.65, 9.55, 10.90, 5.55, 43.36; IV: 14.65, 6.38, 13.00, 14.10, 6.02, 54.15; Palp: 8.27, 5.27, 8.17, - , 3.09, 24.80. Midwidths: femora I–IV= 2.49, 2.08, 2.85, 2.81, palp= 2.12; patella I–IV= 2.63, 2.36, 2.73, 2.71, palp= 2.15; tibiae I–IV= 2.13, 1.90, 1.91, 2.13, palp= 1.95; metatarsi I–IV= 1.77, 1.38, 1.54, 1.54; tarsi I–IV= 1.61, 1.35, 1.57, 1.49, palp= 1.98. Abdomen: 15.02 long, 8.36 wide. Spinnerets: PMS, 1.67 long, 0.73 wide, 0.54 apart; PLS, 2.42 basal, 2.71 middle, 3.01 distal; midwidths 1.35, 1.52, 1.15, respectively.

Carapace: 1.09 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 1.71 wide.

Eyes: eye tubercle 1.69 high, 2.06 long, 3.47 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.72, ALE 0.87, PME

0.47, PLE 0.66, AME–AME 0.59, AME–ALE 0.27, AME–PME 0.21, ALE–ALE 2.32, ALE–PME 0.46, PME–PME 1.95, PME–PLE 0.20, PLE–PLE 2.63, ALE–PLE 0.27.

Maxilla: length to width 1.92. Cuspules: ca. 162 spread over inner heel. Labium: 3.00 long, 3.20 wide, with ca. 174 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5-6 spaced long filiform setae, disposed on a ventral-basal portion of chelicera before the teeth row (Fig 161).

Sternum: 9.10 long, 7.53 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.98. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process; II: 2/0; III 0/2; IV 0/2.

Maxilla stridulatory organ: composed by 9-10 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 10 slender setae after thickest ones (Fig 160). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one at the apical part of retrolateral process. Metatarsus I folds on retrolateral side of tibial apophysis.

Copulatory palpal bulb: tegulum length 1.54, width 2.26, embolus proximal width 1.05, embolus length 4.83. Embolus proximal portion straight (ventral view), first curvature not so pronounced, second one slightly pronounced (Figs 155-159).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae light brown, abdomen brown.

Redescription: Female, ICN-Ar-8278. Total length, not including chelicerae or spinnerets 47.37. Carapace 18.56 long, 16.55 wide, 11.20 high. Chelicera: 10.34 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 14.5, 8.76, 12.06, 10.84, 6.59, 52.75; II: 13.4, 8.03, 10.75, 10.05, 5.74, 47.97; III: 12.08, 7.58, 9.84, 10.5, 6.09, 46.09; IV: 15.15, 8.15, 13.58, 13.82, 6.54, 57.24; Palp: 10.05, 5.78, 7.07, - , 7.24, 30.14. Midwidths: femora I–IV= 3.53, 3.44, 3.22, 2.95, palp= 3.07. Patella I–IV= 3.16, 3.18, 3.12, 3.39, palp= 3.01; tibiae I–IV= 3.07, 2.79, 2.90, 3.03, palp= 2.67; metatarsi I–IV= 2.65, 2.44, 1.97, 1.91; tarsi I–IV= 2.45, 2.61, 2.39, 2.45, palp= 2.67. Abdomen: 26.71 long, 18.73 wide. Spinnerets: PMS, 2.32 long, 1.26 wide, 1.17 apart; PLS, 3.71 basal, 3.26 middle, 4.26 distal; midwidths 1.64, 1.72, 1.43, respectively.

Carapace: 1.12 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous.

Eyes: eye tubercle 1.48 high, 2.08 long, 3.96 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.76, ALE 0.91, PME 0.49, PLE 0.61, AME–AME 0.77, AME–ALE 0.35, AME–PME 0.32, ALE– ALE 2.66, ALE–PME 0.57, PME–PME 2.07, PME–PLE 0.15, PLE–PLE 2.89, ALE–PLE 0.35.

Maxilla: length to width 1.53. Cuspules: ca. 187 spread over inner heel. Labium: 2.95 long, 2.96 wide, with ca. 173 cuspules on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Short and ordered setae densely grouped on retrolateral side of chelicera. Strikers: line of 5-6 spaced long filiform setae, disposed on a ventral-basal portion of chelicerae before the teeth row (Fig 166).

Sternum: 9.46 long, 7.92 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.08. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi): Palp 0; I: 2/0; II 2/0; III 0/ 2; IV 0/2.

Maxilla stridulatory organ: composed by 15 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened

laterally, tips of setae with rugous texture, 8-10 slender setae after thickest ones (Fig 165). Short and ordered setae densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two spermathecae completely separated, straight, with 1-2 round, slightly sclerotized lobules disposed on middle area, decreasing in size from apice, spermatheca wide before apical lobule, almost as wide as the base, apical lobule of spermathecae digitiform, short and sclerotized (Fig 167).

Color pattern (in vivo): Carapace and abdomen light brown with some golden setae, legs and palpal femora and tibia light brown, metatarsi and tarsi pinkish, metatarsi with a pink-beige line from retrolateral side to it, reddish spot on tarsi. Abdomen with clear brown proximal portion, rest pink-beige, with a longitudinal line that connects with an apical triangular stain of posterior portion of abdomen (Figs 168-170).

Distribution: Panamá, Colombia.

***Psalmopoeus reduncus* (Karsch, 1880)**
Figs 171-185, 240

Tapinauchenius reduncus Karsch, 1880: 387.
Psalmopoeus reduncus; Simon, 1903: 960, f. 1109; Petrunkevitch 1911: 86; 1939: 290; Roewer 1942: 256; Bonnet 1958: 3798; Valerio, 1979: 302, f. 1-5; Schmidt, Bullmer & Thierer-Lutz, 2006: 8, f. 12; Gabriel, 2008: 8; Mendoza, 2014: 734, f. 14-15, 21-23, 28; World Spider Catalog 2018.
Psalmopoeus maya Witt, 1996: 1, f. 1-7; first synonymized by Gabriel (2008).

Diagnosis: Females of *P. reduncus* resemble those of *P. victori* by spermathecae lacking lobules (Fig 181), it can be distinguished from this species by spermathecae weakly sclerotized. Males resemble those of *P. victori* by copulatory palpal bulb in males with short and straight embolus. Males can be distinguished from *P. victori* by semitriangular tegulum, without constriction in proximal part of embolus (Fisg 171-175).

Material examined: 1 male, 1 female and 1 immature, from Costa Rica, Heredia, Finca La Selva, 4 Km SE Puerto Viejo de Sarapiqui, (10.45398, -84.01938), 100 m.a.s.l, October 1981, nest on tree trunks; (CASENT-9071244),1 male and 1 female Costa Rica, Heredia, Finca La

Selva, 4 Km SE Puerto Viejo de Sarapiqui, (10.45398, -84.01938), 100 m.a.s.l, data of collection: Oct/1981, col: E. Griswold (CASENT- 9071243).

Additional material examined: GUATEMALA: Izabal [15°24'N, 89°08'W], Finca Semoc, Sierra de Santa Rosa, 700 m. a. s. l., 1 female, B. Lamar col., January 1991, on tree in silk retreat, 1 meter off ground (LEEV 109); NICARAGUA: Waspuc river [14°40'N, 84°19'W], 1 male, B. Malkin col., 31 October 1955 (AMNH-5); COSTA RICA: Heredia, La Selva Biological Station [10°25'N, 84°01'W], 1 male, C. Cavalle col., August 1983 (LEEV 111); Punta Arenas, Monte Verde [10°16'N, 84°49'W], 1 male, C.W. Palmer col., 22 December 1960 (AMNH-44); PANAMA: Barro Colorado island [9°09'N, 79°50'W], Canal zone, 1 female, Landy col. (AMNH-26).

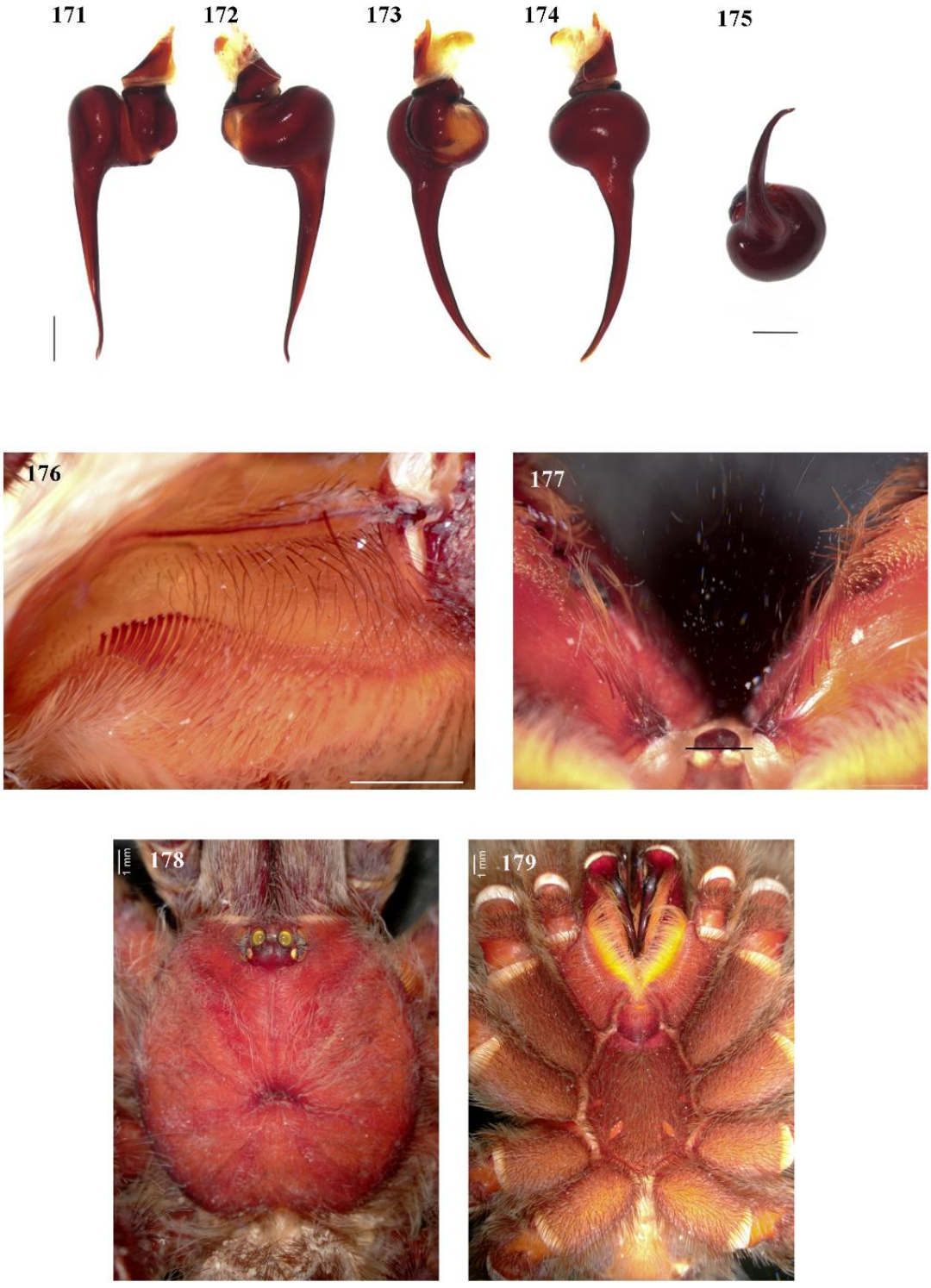
Redescription: Male CASENT 9071244. Total length, not including chelicerae or spinnerets 25.69. Carapace 13.44 long, 11.17 wide, 6.75 high. Chelicera: 6.94 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 15.58, 7.38, 13.04, 10.94, 6.36, 53.30; II: 13.55, 6.90, 11.13, 10.15, 5.85, 47.58; III: 11.49, 5.87, 9.42, 10.56, 5.48, 42.82; IV: 14.11, 6.16, 12.48, 13.73, 5.20, 52.04; Palp: 9.13, 4.95, 7.77, - , 2.84, 24.69. Midwidths: femora I–IV= 2.58, 1.92, 1.74, 2.03, palp= 1.99; patella I–IV= 2.50, 2.26, 2.16, 2.21; palp= 1.73; tibiae I–IV= 1.90, 1.81, 1.64, 1.69, palp= 1.74; metatarsi I–IV= 1.46, 1.37, 1.20, 1.08; tarsi I–IV= 1.48, 1.35, 1.27, 1.09, palp= 1.80. Abdomen: 11.69 long, 7.81 wide. Spinnerets: PMS, 1.41 long, 0.60 wide, 0.58 apart; PLS, 2.63 basal, 1.35 middle, 2.55 distal; midwidths 1.04, 0.84, 0.71, respectively.

Carapace: 1.20 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 1.68 wide.

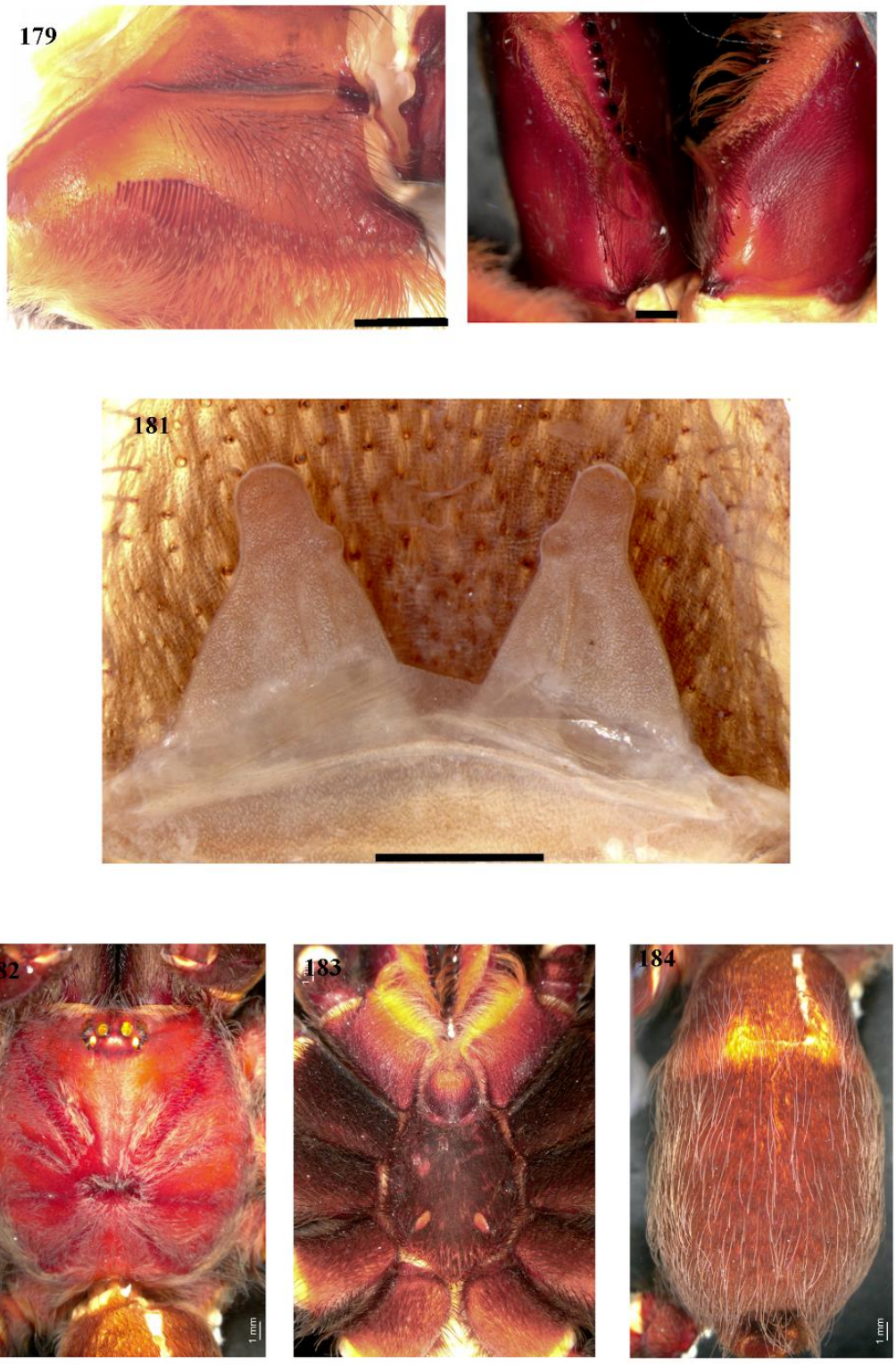
Eyes: eye tubercle 1.14 high, 1.85 long, 3.00 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.68, ALE 0.67, PME 0.47, PLE 0.69, AME–AME 0.43, AME–ALE 0.23, AME–PME 0.23, ALE–ALE 2.07, ALE–PME 0.45, PME–PME 1.60, PME–PLE 0.20, PLE–PLE 2.08, ALE–PLE 0.28.

Maxilla: length to width 1.69. Cuspules: ca. 154 spread over inner heel. Labium: 2.19 long, 1.89 wide, with ca. 124 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 11 teeth in row. Short and ordered hair densely grouped on retrolateral side of chelicera. Strikers: lines of 6-7 spaced filiform setae, disposed on a ventral-basal portion of chelicerae before the teeth row (Fig 177).



Figures 171-179. *Psalmopoeus reduncus* male, **171-175**, Left palpal bulb. **171** prolateral. **172**, retrolateral. **173**, dorsal. **174** ventral. **175** frontal. **176** maxillary lyra. **177** filiform strikers on ventral chelicera. **178** carapace. **179** sternum, coxae, maxillae and labium. Scale bar= 1mm.



Figures 180-185. *Psalmopoeus reduncus* female, **180** maxillary lyra. **181** filiform strikers on ventral chelicera. **181** spermathecae, **182**, carapace. **183** sternum, coxae, maxillae and labium. **184**, abdomen. Scale bar= 1mm.

Sternum: 6.80 long, 5.42 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.98. Clavate trichobothria: distal 1/2 distal tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process; II: 2/0; III 0/2; IV 1/2.

Maxilla stridulatory organ: composed by 10-12 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 7 slender setae after thickest ones (Fig 176). Short and ordered hair densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one at the apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis.

Copulatory palpal bulb: tegulum length 1.49, width 1.99, embolus proximal width 0.71, embolus length 3.54. Embolus proximal portion slightly curved (ventral view) (Fig 171-175).

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae light brown, abdomen brown (Fig 178-179).

Redescription: Female (CASENT- 971243). Total length, not including chelicerae or spinnerets 37.26. Carapace 17.21 long, 15.19 wide, 9.71 high. Chelicera: 8.51 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 12.91, 8.57, 10.53, 9.73, 5.93, 47.67; II: 11.73, 7.98, 9.92, 9.53, 5.57, 44.73; III: 10.34, 6.64, 8.41, 9.10, 5.19, 39.68; IV: 13.17, 7.48, 11.36, 11.86, 5.23, 49.1; Palp: 9.19, 5.79, 6.78, -, 7.60, 29.36. Midwidths: femora I–IV= 3.42, 3.18, 3.26, 2.70, palp= 2.63; patella I–IV= 3.58, 3.12, 3.17, 2.94, palp= 2.63; tibiae I–IV= 3.10, 2.75, 2.63, 2.58, palp= 2.65; metatarsi I–IV= 2.63, 2.29, 1.77, 1.84; tarsi I–IV= 2.15, 2.05, 1.97, 1.96, palp= 2.40. Abdomen: 19.18 long, 11.61 wide. Spinnerets: PMS, 1.99 long, 0.80 wide, 1.11 apart; PLS, 2.67 basal, 1.92 middle, 3.37 distal; midwidths 1.41, 1.43, 1.02, respectively.

Carapace: 1.13 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 2.97 wide.

Eyes: eye tubercle 0.81 high, 2.44 long, 3.74 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.85, ALE 0.94, PME 0.64, PLE 0.65, AME–AME 0.60, AME–ALE 0.30, AME–PME 0.19, ALE–ALE 2.57, ALE–PME 0.52, PME–PME 2.11, PME–PLE 0.24, PLE–PLE 2.90, ALE–PLE 0.36.

Maxilla: length to width 1.45. Cuspules: ca. 159 spread over ventral inner heel. Labium: 2.39 long, 3.11 wide, with ca. 137 cuspules on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 8 teeth in row. Short and ordered hair densely grouped on retrolateral side of chelicera. Strikers: line of 5-6 spaced long filiform setae, disposed on a ventral-basal portion of chelicera before the teeth row (Fig 180).

Sternum: 8.80 long, 7.52 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.03. Clavate trichobothria: distal 1/2 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 0/0; III 1/ 2; IV 0/1.

Maxilla stridulatory organ: composed by 15 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 13 slender setae after thickest ones (Fig 179). Short and ordered hair densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Spermathecae: Two spermathecae completely separated, straight, lacking lobules, a small protuberance at apex (Fig 182- 184).

Color pattern (preserved in alcohol): Carapace and abdomen light brown with some golden setae, leg and palpal femora and tibiae brown.

Distribution: Guatemala, Costa Rica, Nicaragua, Panamá.

***Psalmopoeus elenae* (Schmidt, 1994) comb. n.**

Figs 186-200, 240.

Tapinauchenius elenae Schmidt, 1994: 258, f.1; Schmidt, 1994b: 1, f. 1-2; Auer, Huber & Bochtler, 2007: 21, f. 29-31, 47; Samm & Schmidt, 2008: 14, f. 8-10; World Spider Catalog 2018.

Diagnosis: Males and females of *Psalmopoeus elenae* comb. n. resemble those of *Psalmopoeus* sp. nov. 2 and females of *P. subcaeruleus* by the presence of a weakly developed stridulatory organ (maxillary lyra) (Figs191-196). Females can be differentiated from these species by straight spermatecae, shorter than 2.5 times base width, and apex with multiple small lobules (Fig 198). Males can be distinguished by copulatory palpal embolus narrowing abruptly (Figs 186-190).

Material examined: 1 female, Brazil, Acre, Senador Guiomar [10°09’S, 67°44’W], C. Alexandre col. 12-17 July 2013 (LEEV 154); 1 male, Brazil, Rondonia, Porto Velho, Mutum [8°33’S, 63°42’W], 31-VIII-2010, Leg: Equipe Jiram. (MUZUSP-35369).

Additional material examined: VENEZUELA: *Amazonas***:** 2 males, Puerto Ayacucho [5°39’N, 67°34’W], R. West col., on low vegetation by creek, September 1991 (LEEV 120, 131); ECUADOR: *Puyo*, Pastaza [1°29’S, 78°00’W], 1 female, Norton Whitten col., 1978, (CASENT-9071252); BRAZIL: *Amapá*: Pacoval [0°03’S, 51°03’W], 1 female (3814); *Amazonas*: 1 male, Manaus, Igarapé Jacare (02°53'49.92" S, 60°7'16.08" W), off west side upper Rio Tarumã-Açu, J. Calavanti col., 01 November 1996 (LEEV 118); *Rondonia*: Porto Velho [8°46’S, 63°53’W], 1 female, M. di Bernardi col., 05-VII-1991 (MCP-1518); Abunã [9°42’S, 65°22’W], 2 females, M.C. Silveira col., 26 August 2011; (MZUSP-54914, MZUSP-39923); same loclaity, 1 male, M.C. Silveira col., 23 Janeiro 2012 (MZUSP-46302); 1 male, Caiçara, Equipe Jirau col., March 2010 (MZUSP-33835); Mutum [8°33’S, 63°42’W], 1 female, P. Colas-Rosa col. 22 May 2013,(MZUSP-54914); same locality, 1 female, S. Outena-Jorge col., 17 november 2010, collected at night (MZUSP-37479); Samuel (Hydro Electric Damp site) [8°49’S, 63°23’W], 1 female, W. Bokerman col., Janeiro 1989, fell into boat from overhead vegetation (LEEV 126); Ouro Preto do Oeste [10°43’S, 62°15’W], Paraiso river, linha 62, Km 16, 1 female, F. Ramos col., (MPEG 000216).

Rescription: Female (LEEV 154): Total length, not including chelicerae or spinnerets 40.84. Carapace 16.38 long, 14.66 wide, 8.95 high. Chelicera: 9.25 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.19, 7.57, 10.44, 8.47, 5.21, 42.88; II: 11.22, 6.89, 9.24, 8.74, 5.82, 41.91; III: 11.21, 6.26, 8.95, 9.41, 5.48, 41.31; IV: 13.37, 6.58, 12.10, 12.31, 5.42, 49.78. Palp: 9.26, 5.31, 6.31 , - , 5.81, 26.59. Midwidths: femora I–IV= 2.84, 2.70, 2.81, 2.67, palp= 2.21; patella I–IV= 3.26, 2.95, 2.82, 2.90, palp= 2.19; tibiae I–IV= 2.74, 2.46, 2.36, 2.79, palp= 2.10; metatarsi I–IV= 2.17, 2.03, 1.76, 1.67; tarsi I–IV= 2.00, 1.91, 1.88, 2.03, palp= 2.04. Abdomen: 23.15 long, 16.52 wide. Spinnerets: PMS, 2.24 long, 1.44 wide, 1.03 apart; PLS, 3.36 basal, 2.64 middle, 3.38 distal; midwidths 2.07, 2.08, 1.51, respectively.

Carapace: 1.12 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 2.19 wide.

Eyes: eye tubercle 1.18 high, 2.45 long, 4.26 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.66, ALE 0.89, PME 0.47, PLE 0.63, AME–AME 0.85, AME–ALE 0.48, AME–PME 0.37, ALE–ALE 2.84, ALE–PME 0.52, PME–PME 2.15, PME–PLE 0.27, PLE–PLE 3.06, ALE–PLE 0.38.

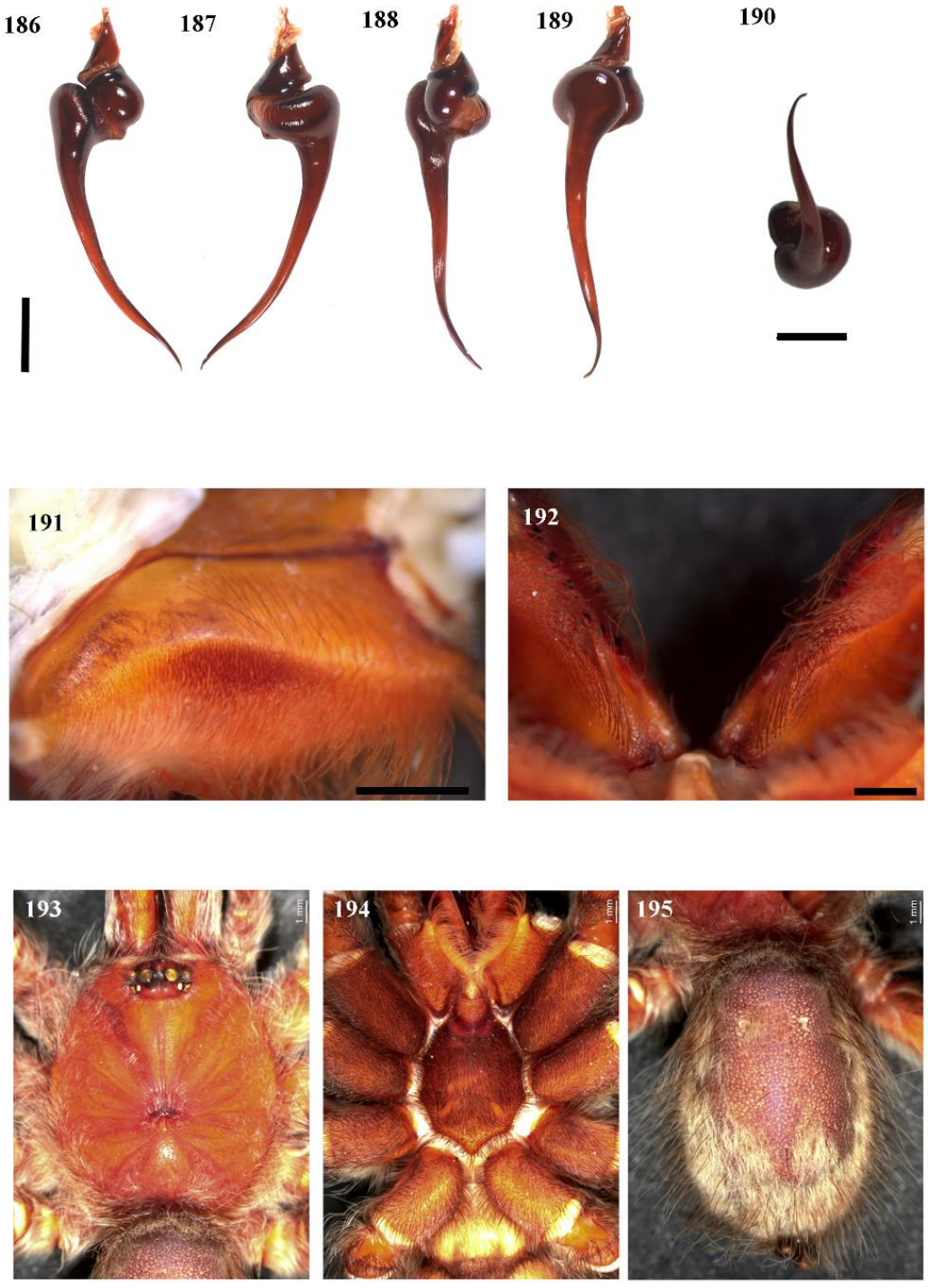
Maxilla: length to width 1.43. Cuspules: ca. 148 spread over ventral inner heel. Labium: 2.62 long, 2.58 wide, with ca. 154 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Strikers: Long and short filiform setae, disposed without pattern on a ventral-basal portion of chelicera before and beginning of teeth row (Fig 197).

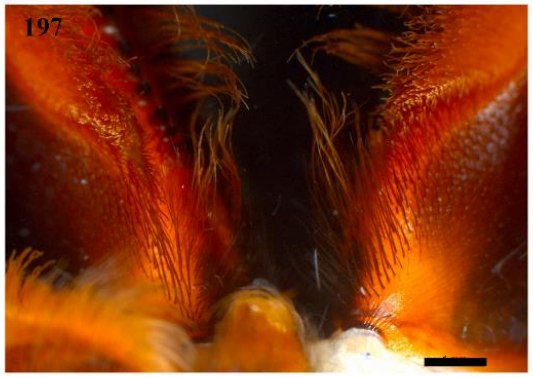
Sternum: 8.60 long, 6.03 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.16. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palp and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 0/0; III 1/ 1; IV 0/1.



Figures 186-195. *Psalmopoeus elenae* comb. n., male. **186- 190** Left palpal bulb. **186** prolateral. **187**, retrolateral. **188**, dorsal. **189**, ventral. **190**, frontal. **191** Maxillary lyra, **192** filiform strikers on ventral chelicera, **193**, carapace. **194** sternum, coxae, maxillae and labium. **195** abdomen. Scale bar= 1mm.



Figures 196- 200. *Psalmopoeus elenae* cob. n. female. **196** maxillary lyra. **197** filiform strikers on ventral chelicera. **198** spermatheca. **199**, carapace. **200** sternum, coxae, maxillae and labium. Scale bar= 1mm.

Maxilla stridulatory organ: weakly developed, composed by slightly thick setae with rugose aspect, not disposed on an ordered line, grouped like a spot on prolateral face of the maxillae (Fig 196).

Spermathecae: Two spermathecae completely separated, straight, with numerous apical small to median lobules, two striae from base to apex form a fold on ventral view (Fig 198).

Color pattern (preserved in alcohol): Carapace and abdomen light brown with golden setae, legs and palpal femora light brown, tibia and metatarsus distal with white-pink ring (Fis 199-200).

Redescription: Male (MZUSP-35369). Total length, not including chelicerae or spinnerets 25.16. Carapace 11.04 long, 9.41 wide, 7.15 high. Chelicera: 5.25 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 12.10, 6.30, 10.84, 9.15, 5.16, 43.55; II: 10.56, 5.81, 9.64, 9.12, 4.49, 39.62; III: 10.47, 5.05, 8.56, 8.78, 4.62, 37.48; IV: 11.97, 5.05, 11.48, 12.50, 4.33, 45.33; Palp: 7.71, 4.18, 6.03, - , 1.96, 19.88. Midwidths: femora I–IV= 1.85, 1.90, 1.98, 1.94, palp= 1.35; patella I–IV= 2.00, 1.91, 1.93, 1.86, palp= 1.40; tibiae I–IV= 1.55, 1.59, 1.51, 1.55, palp= 1.43; metatarsi I–IV= 1.19, 1.14, 1.04, 1.10; tarsi I–IV= 1.18, 1.17, 1.18, 1.17, palp= 1.26. Abdomen: 13.31 long, 7.71 wide. Spinnerets: PMS, 1.25 long, 0.66 wide, 0.66 apart; PLS, 1.48 basal, 1.31 middle, 2.48 distal; midwidths 0.87, 0.84, 0.69, respectively.

Carapace: 1.17 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 1.61 wide.

Eyes: eye tubercle 1.38 high, 1.74 long, 2.87 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.68, ALE 0.56, PME 0.42, PLE 0.48, AME–AME 0.57, AME–ALE 0.14, AME–PME 0.16, ALE–ALE 2.07, ALE–PME 0.26, PME–PME 1.65, PME–PLE 0.05, PLE–PLE 2.06, ALE–PLE 0.11.

Maxilla: length to width 1.92. Cuspules: ca. 135 spread over ventral inner heel. Labium: 1.43 long, 1.49 wide, with ca. 135 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 teeth in row. Strikers: Long and short filiform setae, disposed without pattern on a ventral-basal portion of chelicerae before and beginning of teeth row (Fig 192).

Sternum: 5.35 long, 4.45 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.04. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/4 distal. IV divided by rows of setae.

Spination Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process; II: 2/0; III 0/2; IV 1/2.

Maxilla stridulatory organ: weakly developed, composed by slightly thick setae with rugose aspect, not disposed on an ordered line, grouped like a spot on prolateral face of the maxillae (Fig 191).

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one at the apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis.

Copulatory palpal bulb: tegulum length 0.74, width 1.22, embolus proximal width 0.57, embolus length 3.02. Embolus proximal portion straight (ventral view). Embolus long and slender narrowing abruptly (Figs 186-190).

Color pattern (preserved in alcohol): Carapace and abdomen brown with some golden setae, leg and palpal femora brown with golden setae, tibia and metatarsus apically with white-pink ring (Figs 193-195).

Distribution: Brazil, Ecuador, Venezuela.

***Psalmopoeus subcaeruleus* (Bauer & Antonelli, 1997) comb.n.**

Figs. 201-205, 240

Tapinauchenius subcaeruleus Bauer & Antonelli, 1997: 429, f. 1-3; Auer, Huber & Bochtler, 2007: 33, f. 42-46, 51; World Spider Catalog 2018.

Diagnosis: Females of *P. subcaeruleus* comb. n. resemble those of *P. elenae* comb. n. and *Psalmopoeus* sp. nov. 2 by weakly developed stridulatory organ (maxillae lyra). It can be distinguished from *P. elenae* comb. n. by spermathecae lenght more than 2.5 times width base,

and apices directed toward center; and, from *Psalmopoeus* sp. nov. 2, by multiple lobules on the apice (Fig 203).

Material examined: 1 female from Colombia, Caquetá, Florencia [1°36S, 75°36'W] Sede de recreación antiguo Coafretal, F. Ortíz col. (ICN-Ar-7530).

Rescription: Female (ICN-Ar-7530). Total length, not including chelicerae or spinnerets 31.40. Carapace 16.26 long, 13.68 wide, 8.04 high. Chelicera: 8.31 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.95, 7.49, 9.75, 8.77, 5.21, 43.17; II: 10.92, 6.69, 8.46, 8.45, 4.85, 39.37; III: 9.92, 5.89, 7.38, 8.53, 4.84, 36.56; IV: 12.16, 6.39, 10.26, 11.29, 4.71, 44.81; Palp: 8.33, 4.90, 5.63, - , 5.44, 24.3. Midwidths: femora I–IV= 2.43, 2.74, 2.76, 2.16, palp= 2.01; patella I–IV= 2.72, 2.38, 2.70, 2.63, palp= 2.22; tibiae I–IV= 2.32, 2.14, 2.30, 2.50, palp= 2.13; metatarsi I–IV= 2.20, 1.97, 1.77, 1.66; tarsi I–IV= 1.99, 1.92, 1.85, 1.89, palp= 1.94. Abdomen: 15.16 long, 8.35 wide. Spinnerets: PMS, 1.78 long, 0.84 wide, 0.67 apart; PLS, 2.87 basal, 1.70 middle, 2.76 distal; midwidths 2.04, 1.91, 1.52, respectively.

Carapace: 1.19 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 2.01 wide.

Eyes: eye tubercle 1.24 high, 2.11 long, 3.60 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.76, ALE 0.81, PME 0.42, PLE 0.65, AME–AME 0.56, AME–ALE 0.28, AME–PME 0.30, ALE–ALE 2.61, ALE–PME 0.55, PME–PME 1.92, PME–PLE 1.18, PLE–PLE 2.75, ALE–PLE 0.29.

Maxilla: length to width 1.63. Cuspules: 141 spread over ventral inner heel. Labium: 2.09 long, 2.76 wide, with ca. 195 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Strikers: Long and short filiform setae, disposed without pattern on a ventral-basal portion of chelicera before and beginning of teeth row (Fig 212).

Sternum: 7.80 long, 5.95 wide. Sigilla: three pairs, posterior and oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.04. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/3 distal. IV divided by rows of setae.

Figures 201-205. *Psalmopoeus subcaeruleus* comb. n. female. **201** maxillary lyra. **202** filiform strikers on ventral chelicera. **203** spermatheca. **204**, carapace. **205** sternum, coxae, maxillae and labium. Scale bar= 1mm.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 2/0; III 1/ 0; IV 0/2.

Maxilla stridulatory organ: weakly developed, composed by slightly thick setae with rugose aspect, not disposed on an ordered line, grouped like a spot on prolateral face of the maxillae (Fig 211).

Spermathecae: Two spermathecae (seminal receptacles) completely separated, curved apically with constriction having lobules disposed as a crown, two striae from base to apex form a fold on ventral view (Fig 203).

Color pattern (preserved in alcohol): Carapace and abdomen dark brown, legs and palpal femora brown with golden setae; tibia, metatarsus and tarsus brown (Fis 205-205).

Male: Unknown

Distribution: Colombia, Ecuador.

***Psalmopoeus* sp. nov 1.**

Figs 206-215, 240

Diagnosis: Males of *Psalmopoeus* sp. nov 1 resemble those of *P. langenbucheri* and *P. reduncus* by short copulatory papal embolus; it can be distinguished from *P. langenbucheri* by thicker tegulum and slightly curved proximal part of embolus (frontal view) (Fig 206-210), and from *P. reduncus* by distal embolus portion curved (straight in *P. reduncus*).

Material examined: 1 Male from French Guiana, Le Gallion [4°46'N, 52°25'W], Emerald Jungle Village Lodge, 4 April 1999, R. West col., in room (LEEV 130).

Description: Holotype male (LEEV 130). Total length, not including chelicerae or spinnerets 30.21. Carapace 14.97 long, 12.67 wide, 7.45 high. Chelicera: 6.43 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 15.03, 8.11, 13.08, 12.32, 6.49, 55.03; II: 12.73, 7.03, 11.38, 11.44, 6.71, 49.29; III: 11.60, 5.82, 9.02, 10.26, 5.32, 42.02; IV: 13.43, 5.91, 12.25, 13.49, 5.84, 50.92; Palp: 9.44, 5.24, 8.31, - , 2.99, 25.98. Midwidths: femora I–IV= 2.61, 2.50, 2.54, 2.40, 2.17, palp= 1.92; patella I–IV= 2.49, 2.35, 2.21, 2.14, palp = 1.89; tibiae I–IV= 1.97, 1.70, 1.51, 1.85, palp = 1.68; metatarsi I–IV= 1.39, 1.43, 1.28, 1.24; tarsi I–IV= 1.70, 1.50, 1.55, 1.20, palp = 1.96. Abdomen: 9.92 long, 6.00 wide. Spinnerets: PMS, 1.47 long, 0.47 wide, 0.50 apart; PLS, 1.48 basal, 1.06 middle, 1.81 distal; midwidths 0.82, 0.69, 0.54, respectively.

Carapace: 1.18 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 0.84 wide.

Eyes: eye tubercle 0.59 high, 2.07 long, 3.15 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.74, ALE 0.87, PME 0.56, PLE 0.69, AME–AME 0.40, AME–ALE 0.23, AME–PME 0.16, ALE–ALE 2.02, ALE–PME 0.45, PME–PME 1.63, PME–PLE 0.15, PLE–PLE 2.20, ALE–PLE 0.29.

Maxilla: length to width 1.70. Cuspules: ca. 153 spread over inner heel. Labium: 1.83 long, 2.48 wide, with ca. 137 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 10 teeth in row. Short and ordered hair densely grouped on retrolateral side of chelicera. Strikers: lines of 10 slightly spaced, filiform setae, disposed on a ventral-basal portion of chelicerae before the teeth row (Fig 202).

Sternum: 7.45 long, 6.16 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

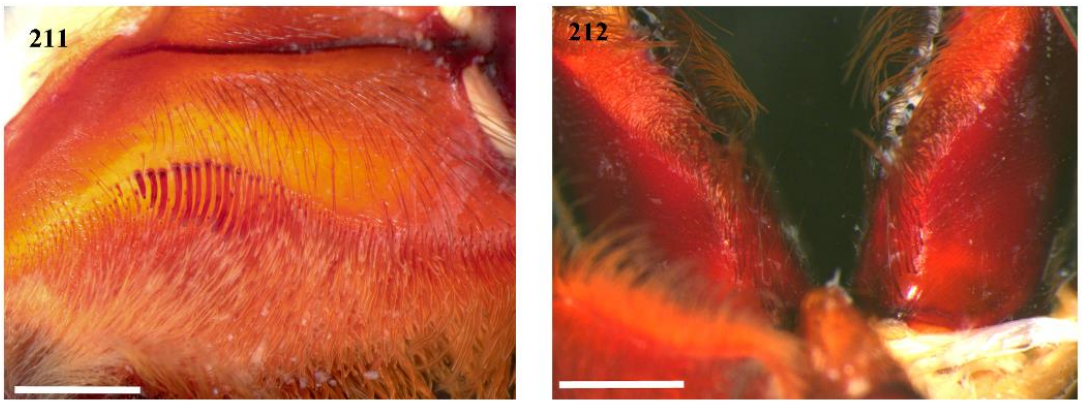
Legs: Formula: I IV II III. Length leg IV to leg I: 0.93. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 1 behind retrolateral process; II: 0/0; III 0/2; IV 0/2.

Maxilla stridulatory organ: composed by 11 thick setae forming a straight crescent line, setae augment in size from the internal to external side of maxillae; longest ones flattened laterally, tips of setae with rugous texture, 7-8 slender setae after thickest ones (Fig 201). Short and ordered hair densely grouped on retrolateral side of maxillae/coxae, trochanter and proximal part of femur of palp and prolateral side of the same articles of leg I.

Tibial apophysis: two processes, retrolateral one longer than prolateral, one spine at side of prolateral, one at the apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis.

Copulatory palpal bulb: tegulum length 1.54, width 2.18, embolus proximal width 0.82, embolus length 3.24. Embolus proximal portion slightly curved.



Figures 206-215. *Psalmopoeus* sp. nov 1, male. **206-210** left palpal bulb. **206** prolateral. **207,** retrolateral. **208,** dorsal. **209,** ventral. **210,** frontal. **211** maxillary lyra. **212,** filiform strikers on ventral chelicera. **213,** carapace. **214,** sternum, coxae, maxillae and labium. **215,** abdomen. Scale bar= 1mm.

Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae light brown; abdomen beige with brown long setae (Fig 213-215).

Female: Unknown

Distribution: French Guiana.

***Psalmopoeus* sp. nov 2.**

Figs 216-233, 240

Diagnosis: Females of *Psalmopoeus* sp nov.2 resemble those of *P. elenae* comb. n. and *P. subcaeruleus* comb. n. by weakly developed stridulatory organ (maxillary lyra) (Figs 222, 227). Females can be distinguished by elongated spermathecae more than 2.5 times width base, with one apical lobule subdivided in two (Fig 229). Males resemble those of *P. elenae* comb. n. by embolus slender, and length about 3.0 to 3.5 times tegulums length. *Psalmopoeus* sp. nov 2 males differ from *P. elenae* comb. n. by embolus decreasing width gradually(Figs 216-220).

Material examined: Holotype female from: Brazil, Amazonas, Manaus, Igarapé, Jacare, off west side upper Rio Taruma-Açu (02°53'49.92"S, 60°7"16.08" W), N. Gordon col., Nov 1996, in hatched roof of hut (LEEV 125); paratype male, from Brasil, Pará, Jurutí, Platô Capiranga, Linha 168E, (02°28'22.1"S, 56°12'29.3"W), (MPEG-Ara-15638).

Additional material examined: BRAZIL: *Amazonas*: Balbina UHE [1°54’S, 59°28’W], Uatumã river, April 1985, in Inajá tree (INPA-unumbered); 1 female, Manaus [3°04’S, 59°59’W], F.J.A. Peralta col., 06 July 1991 (INPA 4880); *Pará*: Almeirím (01°1'33"122220 S 52°34'2.78573"W), 1 female, T. Gardner and Ribeiro Junior col., 22 June 2005 (MPEG 007435); *Rondonia*: Porto Velho, Abunã [9°41’S, 65°21W], 1 Male, Equipe arachnida col., 25 March 2011 (MZUSP-39179).

Description: Female (LEEV 125). Total length, not including chelicerae or spinnerets 35.44. Carapace 13.89 long, 11.78 wide, 7.97 high. Chelicera: 7.68 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 11.88, 7.13, 9.58, 8.81, 5.08, 42.48; II: 11.13, 5.77, 8.46, 8.29, 5.52, 39.17; III: 9.37, 5.25, 7.26, 8.04, 4.75, 34.67; IV: 11.66, 5.86, 10.67, 10.97, 5.10, 44.26; Palp: 7.96, 4.65, 5.38, - , 6.39, 24.38. Midwidths: femora I–IV= 2.30, 2.50, 2.59, 2.23, palp= 1.83; patella I–IV= 2.58, 2.44, 2.36, 2.34, palp= 2.13; tibiae I–IV= 2.42, 2.15, 2.08, 2.12, palp= 1.93; metatarsi I–IV= 2.06, 1.77, 1.65, 1.47; tarsi I–IV= 1.96, 1.85, 1.66, 1.56, palp= 1.81. Abdomen:

20.88 long, 13.07 wide. Spinnerets: PMS, 0.97 long, 0.40 wide, 0.67 apart; PLS, 1.2 basal, 0.93 middle, 1.23 distal; midwidths 0.74, 0.77, 0.49, respectively.

Carapace: 1.18 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 1.63 wide.

Eyes: eye tubercle 0.62 high, 1.85 long, 3.26 wide. Clipeus: absent. Anterior eye row straight, posterior slightly recurved. Eye size and interdistances: AME 0.72, ALE 0.78, PME 0.50, PLE 0.67, AME–AME 0.46, AME–ALE 0.30, AME–PME 0.22, ALE–ALE 2.16, ALE–PME 0.42, PME–PME 1.76, PME–PLE 1.18, PLE–PLE 2.52, ALE–PLE 0.27.

Maxilla: length to width 1.63. Cuspules: ca. 197 spread over ventral inner heel. Labium: 1.05 long, 2.38 wide, with ca. 150 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 9 teeth in row. Strikers: Long and short filiform setae, disposed without pattern on a ventral-basal portion of chelicera before and beginning of teeth row (Fig 228).

Sternum: 6.92 long, 5.90 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: IV I II III. Length leg IV to leg I: 1.04. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 1/2 distal; IV 1/4 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 0; I: 0/0; II 2/0; III 0/ 2; IV 0/2.

Maxilla stridulatory organ: weakly developed, composed by slightly thick setae with rugose aspect, not disposed on an ordered line, grouped like a spot on prolateral face of the maxillae (Fig 227).

Spermathecae: Two spermathecae completely separated, slightly curved apically with a subdivided apical lobule (Fig 229).

Color pattern (preserved in alcohol): Carapace brown, leg and palpal femora brown, abdomen with a central line connected with 2-3 transversal lateral stripes (Fig 230-232).

Figures 216-226. *Psalmopoeus sp*. nov 2, male. **216- 220** left palpal bulb. **216** prolateral. **217**, retrolateral. **218**. dorsal. **219** ventral. **220** frontal. **221,** filiform strikers on ventral chelicera. **222** maxillary lyra. **223** carapace. **224** sternum, coxae, maxillae and labium. **225,** abdomen. **226** left tibial apophysis. Scale bar= 1mm.

Figures 227-232. *Psalmopoeus* sp. nov 2, female. **227** Maxillary lyra. **228** filiform strikers on ventral chelicera. **229** spermathecae, **230**, carapace. **231** sternum, coxae, maxillae and labium. **232** abdomen. Scale bar= 1mm.

Description: Paratype male **(**MPEG-Ara-15638**).** Total length, not including chelicerae or spinnerets 27.3. Carapace 12.30 long, 11.5 wide, 7.07 high. Chelicera: 6.59 long. Legs (femur, patella, tibia, metatarsus, tarsus, total): I: 14.79, 7.28, 13.31, 12.69, 6.4, 54.47; II: 13.14, 7.06, 11.29, 11.48, 5.56, 48.53; III: 11.36, 5.27, 9.62, 10.67, 5.21, 42.13; IV: 13.59, 5.89, 13.48, 13.94, 5.87, 52.77; Palp: 7.73, 4.39, 8.22, - , 2.38, 22.72. Midwidths: femora I–IV= 2.25, 1.58, 2.11, 2.28, palp= 1.66; patella I–IV= 2.16, 2.12, 2.18, 2.23, palp= 1.88; tibiae I–IV= 1.83, 1.67, 1.67, 1.81, palp= 1.73; metatarsi I–IV= 1.30, 1.32, 1.29, 1.20; tarsi I–IV= 1.18, 1.20, 1.27, 1.14, palp= 1.88. Abdomen: 13.28 long, 8.01 wide. Spinnerets: PMS, 1.39 long, 0.47 wide, 0.53 apart; PLS, 2.02 basal, 1.90 middle, 2.92 distal; midwidths 0.99, 0.87, 0.80, respectively.

Carapace: 1.08 times longer than wide; cephalic region slightly raised, thoracic striae conspicuous. Fovea: deep, straight, 2.14 wide.

Maxilla: length to width 1.81. Cuspules: ca. 202 spread over ventral inner heel. Labium: 1.71 long, 1.54 wide, with ca. 149 cuspules spaced by one diameter from each other on anterior third. Labio-sternal groove shallow, flat, with two slightly separate sigilla.

Chelicera: basal segment with 8 teeth in row. Strikers: Long and short filiform setae, disposed without pattern on a ventral-basal portion of chelicera before and beginning of teeth row (Fig 221).

Sternum: 6.03 long, 4.71 wide. Sigilla: three pairs, posterior oval, anterior small, all less than one diameter from margin.

Legs: Formula: I IV II III. Length leg IV to leg I: 0.97. Clavate trichobothria: distal 2/3 tarsi I–IV. Scopulae: Tarsi I–IV fully scopulate; IV with a few sparse setae. Metatarsi I–II fully scopulate; III 2/3 distal; IV 1/3 distal. IV divided by rows of setae.

Spination: Palps and legs (ventral apical: tibia/metatarsi): Palp 2/-; I: 1 behind retrolateral process of tibial apophysis; II: 2/0; III 2/2; IV 2/2.

Maxilla stridulatory organ: weakly developed, composed by slightly thick setae with rugose aspect, not disposed on an ordered line, grouped like a spot on prolateral face of the maxillae (Fig 222).

Tibial apophysis: two processes, retrolateral longer than prolateral, one spine at side of prolateral, one at the apical part of retrolateral side. Metatarsus I folds on retrolateral side of tibial apophysis (Fig 226).

Copulatory palpal bulb: tegulum length 0.74, width 1.22, embolus proximal width 0.57, length 3.02. Embolus proximal portion straight (ventral view). Embolus long, almost the same width on all its length without any constriction to the tip (Fig 216-220).

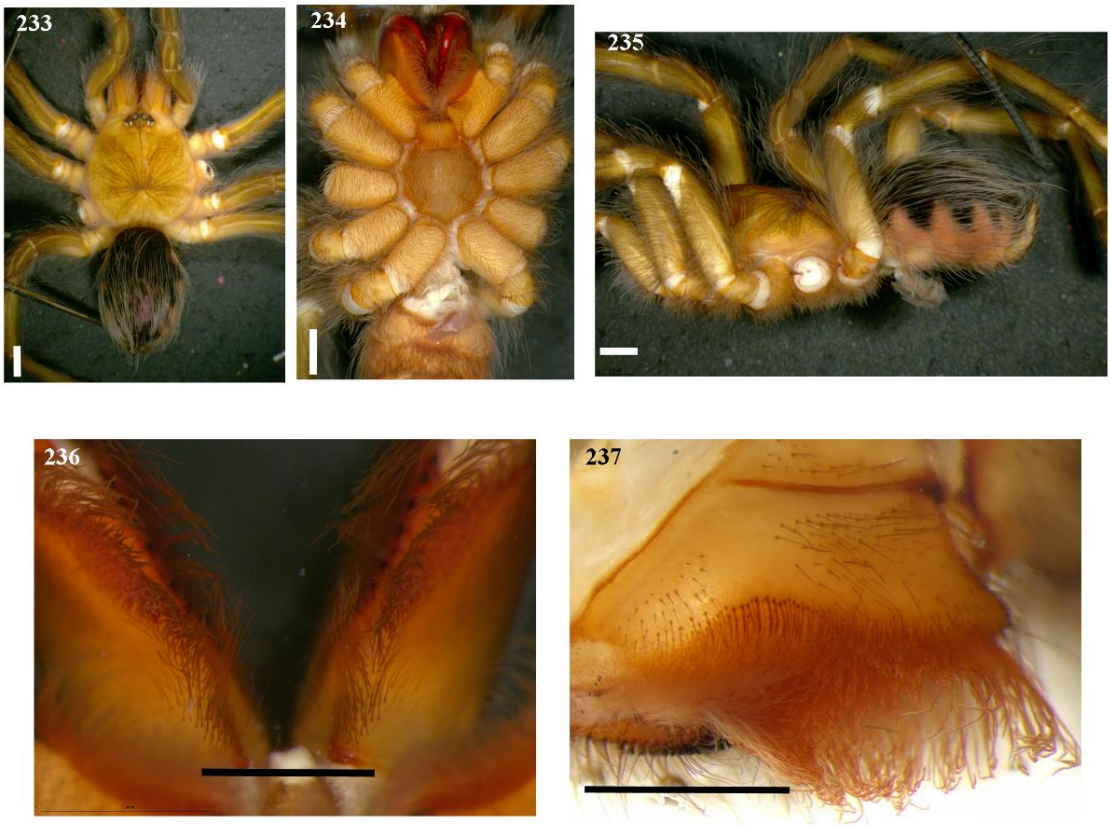
Color pattern (preserved in alcohol): Carapace, legs, palpal femora, and tibiae light brown; abdomen beige with a transversal brown line and 4 darker horizontal lateral stripes (Figs 223-225).

***Psalmopoeus emeraldus* Pocock, 1903**

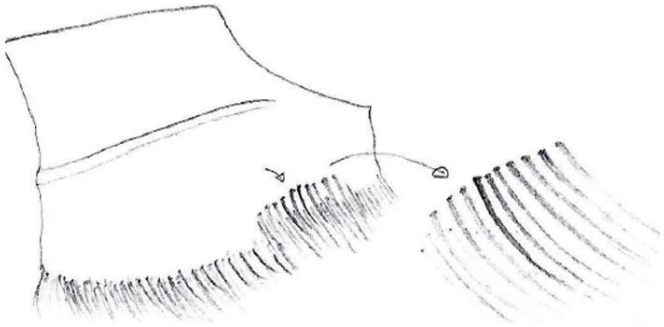
Psalmopoeus emeraldus Pocock, 1903: 84 (Female holotype from Colombia, Boyacá, Muzo, emerald mines, I. da Costa col., BMNH 1894.12.9.1, examined); Petrunkevitch 1911: 86; 1939: 289; Roewer 1942: 256; Bonnet 1958: 3798; World Spider Catalog 2018.

Remarks. Pocock (1903) described *P. emeraldus* with a small female having 28 mm in total lenght, deep olive coloration, and stridulating organ not isolated from oral fringe. The type locality of the specimen was the valley of Meta river, reported as a tributary of Magdalena river in Muzo emerald mines in Colombia. Currently, Meta river is located in colombian oriental region and it is tributary of Orinoco river. It is possible the existence of other Meta river or tributaries of Magdalena river with this name in the region at the time of collection, but it is probable that the species was found in the valley of Minero or Guiazo, rivers of the region and both tributaries of the Magdalena river.

The holotype of *Psalmopoeus emeraldus* was deposited at the British Museum of Natural History collection and preserved dry. It was not allowed to dissect the specimen in order to see the spermathecae, and characters as stridulating organ were not sufficient for species identification due to variation during ontogeny (Figs 90-95.). I found in ICN of Universidad Nacional de Colombia collection an immature *Psalmopoeus* specimen with the same pattern of stridulatory organ as in *P. emeraldus* (Figs. 233-238). The specimen is from Colombia, Santander, San Vicente de Chucurí, in the National Natural Park Serranía de Los Yariguies (ICN-Ar- unnumbered). Santander is a neighbour state of Boyacá, state of original description of *P. emeraldus,* and by the altitude and type of ecosystems of the region compared with the original location of *P. emeraldus,* it is probable that the specimen corresponds to the species, but as I have no mature specimens I can not be sure if they are conspecifics. The collection of mature specimens of the type locality region may confirm if *P. emeraldus* is a valid species.



238



Figures 233-238. Immature of *Psalmopoeus* sp., from Colombia, Santander. 233, dorsal view. 234 Sternum, maxillae, coaxes, labium. 235, abdominal pattern. 236, undeveloped strikers on ventral chelicera. 237, undeveloped maxillary lyra. 238, Ilustration of type exemplar of *P. emeraldus* (illustration by Rogerio Bertani). Scale bar= 1mm.

Therefore, I consider *P. emeraldus* a valid species until more specimens and information be available to confirm its identity.

***Psalmopoeus plantaris* Pocock, 1903**

Psalmopoeus plantaris Pocock, 1903: 83 (holotype female from Colombia, Cauca, BMNH 1846.20, examined; Petrunkevitch 1911: 86; 1939: 290; Roewer 1942: 256; Bonnet 1958: 3798; World Spider Catalog 2018.

Remarks. As with *P. emeraldus*, the type specimen of *P. plantaris* was dry pinned and it was not allowed the dissection of the specimen due to its fragility. The specimen, possibly a female, is 23 mm in total length and its type locality is Colombia, Cauca. The specimen has a similar stridulatory organ as *P. cambridgei*, but with only 12 setae. The carapace and upper side of limbs are covered with olive or greenish-yellow setae, and metatarsi and tarsi with pinkish pale at the extremeties (Pocock, 1903). This color pattern and general structure of stridulating organ resemble those found in *P. pulcher* females (Figs.). I suspect that *P. pulcher* can be a junior synonym of *P. plantaris*, and, in order to corroborate this, there is a need to review more material from the region of Cauca, Colombia. As the holotype exists and there is the possibility of the species be valid, I consider the species valid until more information and specimens from the type locality be available.

***Psalmopoeus intermedius* Chamberlin, 1940**

Psalmopoeus intermedius Chamberlin, 1940:39; World Spider Catalog 2018.

Remarks. The type exemplar was not available to study as it is on loan since 2011, and there is no prevision of return. Chamberlin (1940) described this species with a female specimen from Panama, differentiating it from the other *Psalmopoeus* species by the number of setae in the stridulatory organ, with 11 setae. He also stated the specimen has the anterior part of coxa I densely covered by setae, and anterior row of eyes procurved. As the holotype exists, and there is the possibility of the species be valid, I consider the species valid until the type be available for study.

***Psalmopoeus victori* Mendoza, 2014**

Psalmopoeus victori Mendonza, 2014: 729, f. 1-13, 18-20, 27, 29-31; World Spider Catalog 2018.

Remarks. *Psalmopoeus victori* was recently described from México. Specimens from this species were not available in the consulted collections, but according to the original description, the species is very similar to *P. reduncus* (Mendoza, 2014). I consider it as a valid species based on the diagnosis given by the author. More specimens should be revised to understand if *P. reduncus* has a wide distribution over Central America to Mexico and *P. victori* is a variation; or, if it is really a distinct species. However, *P. reduncus* seems to be very rare in its more northern distribution range, difficulting such study.

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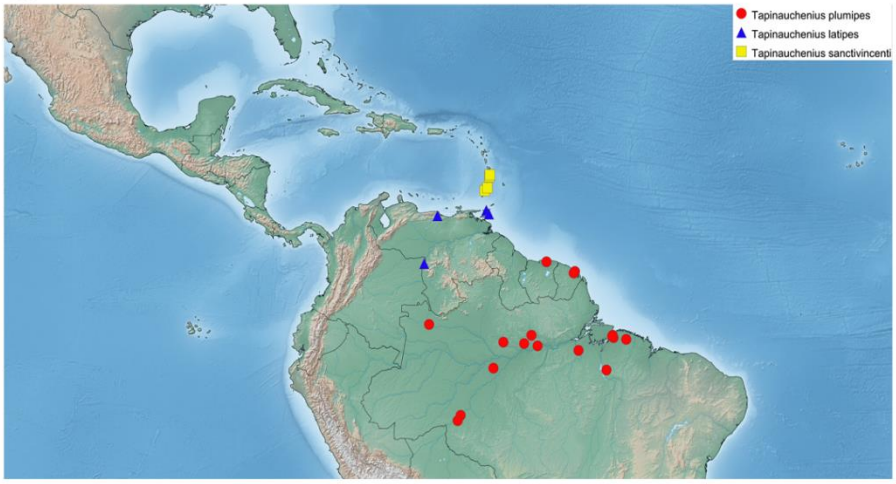

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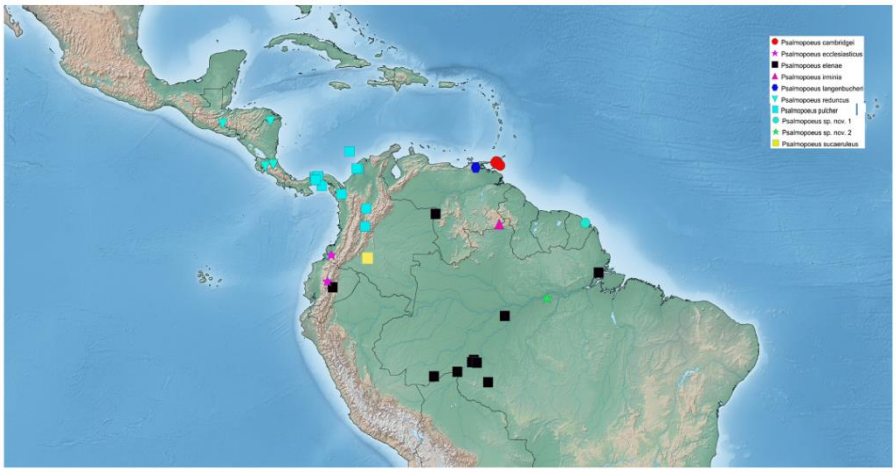

Figures 239- 240. Record maps for *Tapinauchenius* and *Psalmopoeus.*

Cladistics

Cladistic analysis carried out with equal weights with TNT using traditional search generated two cladograms. The strict consensus (Nelsen) (L =280, Ci= 41, Ri= 67) shows a cladogram totally resolved for *Tapinauchenius* + *Psalmopoeus* species (Fig. 241), recovered as a monophyletic clade and as sister group of *Ephebopus*, in accordance with other studies (West et al. 2008; Bertani 2012; Fukushima & Bertani 2017). The clade (*Ephebopus* (*Tapinauchenius* + *Psalmopoeus*) form sister clade inside of the other Avicullariinae (West et al. 2008, Fukushima & Bertani 2017).

Avicullariinae is suggested as monophyletic, including the taxa *Poecilotheria* sp. and *Encyocratella olivacea* in a derived position ((*Stromatopelma* + *Heteroscodra*) (*Encyocratella olivacea* (*A. rickwesti* + *Poecilotheria* sp.))). Nonetheless, the topology of outgroups inside Avicullariinae was not obtained as previously hypothesis proposed (West et al, 2008; Bertani, 2012; Bertani & Fukushima, 2017). The absence of information of characters of the spermatheca and presence of keels in the copulatory palpal bulb in *E. olivacea* is the possible cause of its position and relationship with the clade formed by *A. rickesti* (an Avicullariinae species with presence of keels on copulatory palpal bulb) and *Poecilotheria* sp. (a genus with keels in copulatory palpal bulb, and uncertain position in Theraphosidae subfamilies). For resolutions in the outgroups (genera of Avicullariinae) it's necessary to revise the missing species included in previously studies of the subfamily genera. As the aim of the present work is to resolve the relationships inside the ingroup, the focus was the phylogeny of *Tapinauchnius* + *Psalmopoeus.*

The clade *Tapinauchenius* + *Psalmopoeus* is supported by homoplasic character: absence of a central apical spine in metatarsi III and IV (Character 13, state 1) and by three homoplastic characters: long setae laterally projected forming a brush in males (Character 6, state 1) (homoplastic with *Heteroscodra* and *Stromatopelma*), spermathecae with projections or lobes (Character 40, state 1) (homoplastic with *S. robustum, H. longipes, P. muticus, Coremiocnemis, P. vulpinus, T. curumin, T. paschoali, Iridopelma* spp., *C. laeta, Y. gamba, Y. sooretama, A. taunayi*), and habit of females: opportunistic (Character 83 state 2)

Tapinauchenius is monophyletic and supported by one synapomorphy: constricted area on distal embolus slightly twisted and with small curved tip (Character 65, state 1), and a homoplasic character: embolus tip narrowing abruptly (Character 61, state 1)

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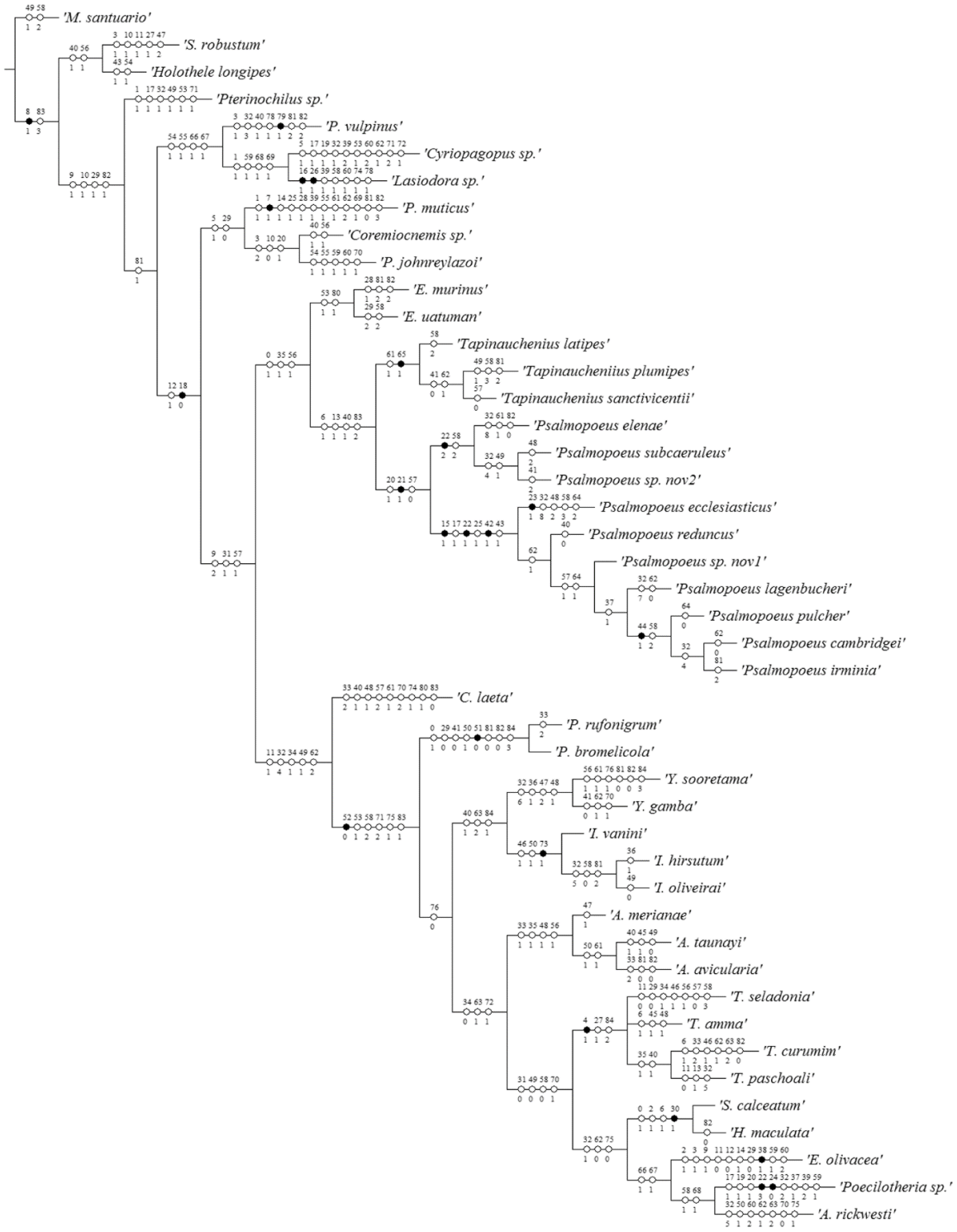

Figure 241. Cladogram consensus for two trees generated with TNT with equal weights L=280, Ci=41, Ri=67, T=0, C=0. Black circles = synapomorphies, white circles= homoplasy.

242

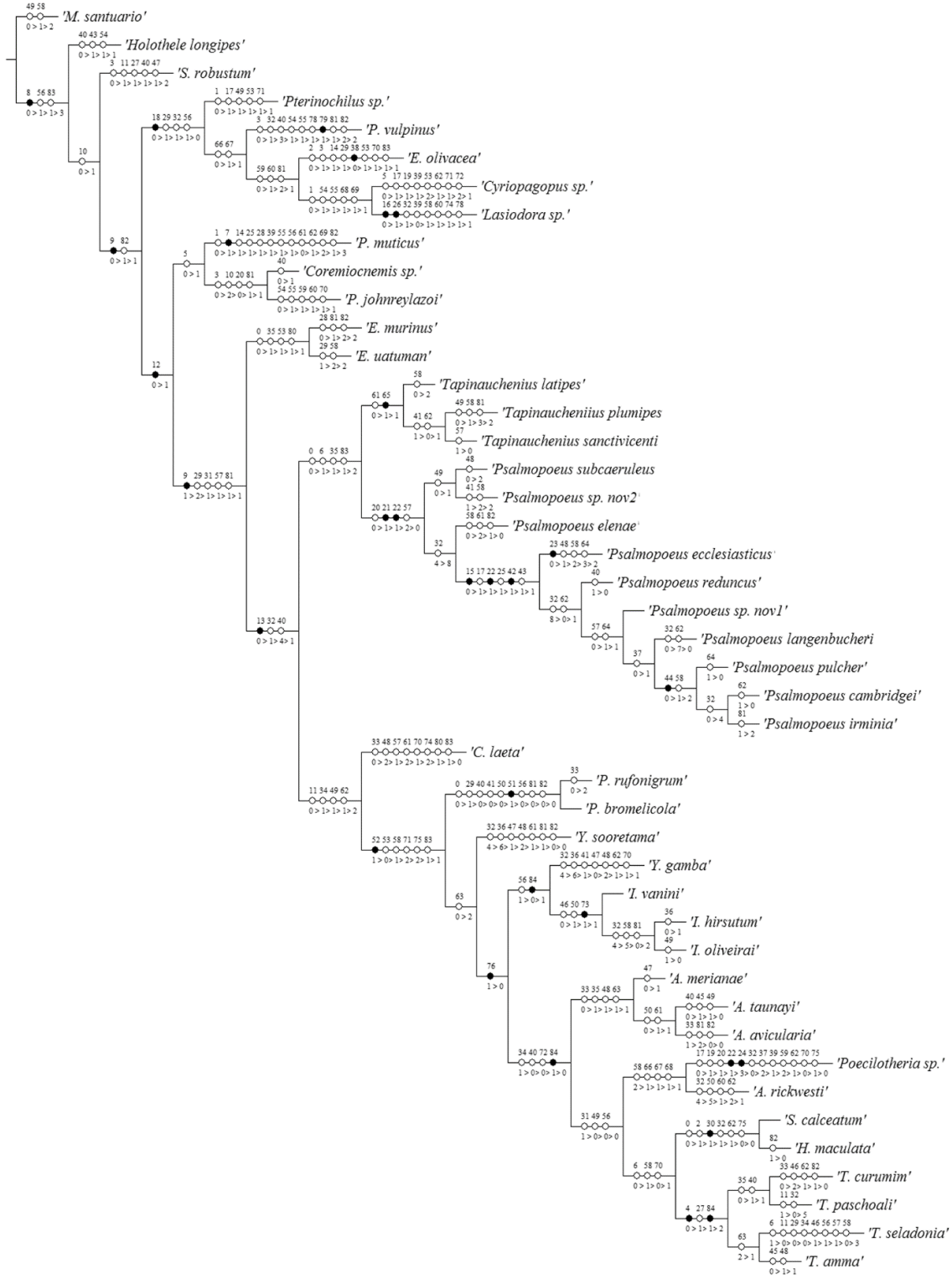

Figure 242. Cladogram generated with TNT under implied weighting, K7 = 4.909, Fit = 18.754 L=284 Ci= 41 Ri= 66 T=7 C=14. Black circles = synapomorphies, white circles= homoplasy.

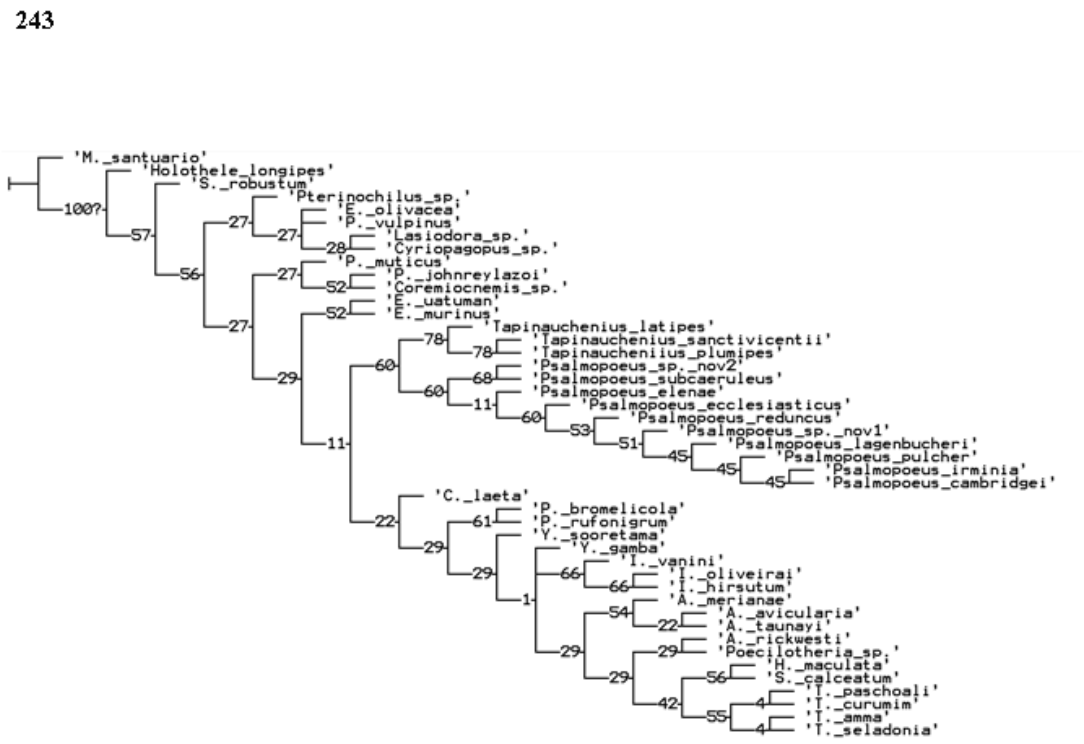

Figure 243. Bremmer relative values for cladogram generated with TNT under implied weighting, K7 = 4.909, Fit = 18.754 L=284 Ci= 41 Ri= 66 T=7 C=14

(homoplastic with *Y. sooretama*, *A. avicularia*, *A. taunayi*). *Tapinauchenius latipes* is the basal species, and *T. plumipes* and *T. sanctivincenti* form a clade sharing the character proximal portion on embolus slightly curved in frontal view (character 62, state 1), and spermathecae with a single apical lobule (Caracter 41, state 0).

Psalmopoeus is monophyletic, supported by one synapomorphy: Position of Maxillary lyra: located on the oral fringe (Character 21 state 1), and two homoplastic characters, stridulatory bristles forming a maxillae lyra and setae or strikers opposing in ventral base of chelicera (character 20, state 1) having homoplasies with (*Coremiocnemis* + *Phlogiellus*) (Selenocosmiinae), and Poecilotheria, and prominence on tegulum developed (Character 57, state 1) having homoplasies with *A. merianae*, *A. taunayi A. avicularia*, *Y. sooretama*, *E. murinus* and *E. uatuman*.

The genus is subdivided in two distinct species groups. (*Psalmopoeus elenae* (*Psalmopoeus subcaeruleus* + *Psalmopoeus* sp. Nov. 2) species originally described as *Tapinauchenius* supported by synapomorphy: Maxillary lyra, bristles shape and distribution: weak setae without

wide apices, distribuited as an oval spot in prolateral face of maxillae (Character 22, state 2), and by the homoplasy: embolus length 3.0 -3.5 times tegulums length.

Interval	Mean Fit	K	Lenght	Trees	Fit	SPR moves	Similarity	Nodes in Common
K0	50	1.385	303	1	34.098	0	0,65750	0
K1	54	1.625	303	1	32.274	0	0,65750	43
K2	58	1.912	292	1	30.358	11	0,81869	29
K3	62	2.259	289	1	28.255	10	0,80952	25
K4	66	2.688	287	2	26.065	4	0,87364	36
K5	70	3.231	287	1	23.763	0	0,86814	41
K6	74	3.941	285	1	21.325	2	0,84616	37
K7	78	4.909	284	1	18.754	1	0,87731	39
K8	82	6.308	281	1	15.986	3	0,84617	38
K9	86	8.505	281	2	13.022	0	0, 8571	41
K10	90	12.462	280	2	9.808	2	0,8314	39

Table 2. Analysis results using Mirande (2009) script, for different values of K. Trees= Number of equally parcimonious trees obtained. C= Number of steps of the most parsimonious trees. SPR moves= Number of steps required for passing one to other topology, compared with the inmediately anterior tree. Similarity = similarity according to SPR distances. Common nodes: number of nodes in common with the immediately anterior tree.

The analysis carried out here shows this species group having weakly developed maxillary lyra as the sister-group of the remaining species having well-developed maxillary lyra,

The other clade inside *Psalmopoeus* has three synapomorphies: maxillary lyra, bristles shape and distribution: thick seta arranged as a comb (Character 22, state 1), **s**permathecae with a single digitigorm apical lobule (character 42, state 1); palp and leg I, trochanter and proximal part of femur, retrolateral side of palp and prolateral side of leg I with short, ordered setae densely grouped (character 15, state 1). This group is also supported by three homoplastic characters: long weak striker setae disposed in ordered lines before teeth row on chelicera base (character 25, state; presence of chelicera setae on retrolateral face (character 17, state 1), and spermathecae with lobules on ventral central area (character 43, state 1) having homoplasy with *H. longipes.*

Psalmopoeus ecclesiasticus in the base of this clade and has several apomorphies, as embolus more than 4 times tegulum's length (Character 58, state 3), curved line setae in stridulatory organ (character 23, state 1), and spermathecae curved in their apices (Character 48, state 2). *Psalmopoeus reduncus* retains a plesiomorphic character, spermathecae lacking projections or lobes (Character 40, state 0) and the character: maxillae lyra with straight setae or almost so (character 23, state 0). The clade (*P. langenbucheri + (P. pulcher + (P. irminia +P. cambridgei*))) are morphologically very conservative especies differing in sligth diferences in sexual characters and color pattern.

For searchings using implied weights, 11 different concavities were calculated and 14 cladograms were obtained (table 2). The tree choosen for discussion was that generated in interval K=7 (weight = 4.909, 1 cladogram) (table 2), the values of SPR for this three were the hightest indicating this as the most stable tree, measured by SPR values and to be compared with the other trees generated with the other K values. Cladograms generated in the intervale K=4 were close to the value SPR of K=7, and for the ingroup it kept the same topology, differing in the outgroup: *C. laeta* forming a basal clade with *Ephebopus*.

Comparing the cladograms obtained with in the interval K=7 with the consensus tree using equal weights, it was obtained a different topology for the species of *Tapinauchenius* and *Psalmopoeus* (Fig. 242). Avicullariinae is recovered again as a monophyletic group, with basal taxon *Ephebopus,* and is composed by the same genera except for *Encyocratella olivacea,* which is more basal and sister group of the clade (*Cyriopagopus* + *Lasiodora*).

The clade *Tapinauchenius* + *Psalmopoeus* was recovered as monophyletic. *Tapinauchenius* species have the same species and topology of cladogram generated with equal weights, *Psalmopoeus* is monophyletic as in the cladogram with equal weights, but *P. elenae* is not in the clade of the species with weakly developed stridulatory organ, but as basal taxon of the clade of species with well-developed stridulatory organ (*P. elenae* (*P. ecclesiasticus* (*P. reduncus* (*Psalmopoeus* sp. nov 1 (*P. langenbucheri* (*P. pulcher* (*P. irminia* + *P.cambridgei*))))))). This position of *P. elenae* suggests again that these three species with stridulatory organ undeveloped should belong in *Psalmopoeus* and not in *Tapinauchenius*, as two of these species were formaly described. The remaining topology of the clade (*P. ecclesiasticus*, (*P. reduncus* (*Psalmopoeus* sp. nov 1. (*P. langenbucheri* (*P. pulcher* (*P. irminia* + *P cambridgei*))))), is the same as the topology obtained in the cladogram generated with equal weights.

The two topologies of trees are very similar in the relationships in the ingroup, with the difference in the position of *P. elenae*. The position of this species will be resolved with addition of more information in the cladistic analysis, for example information of the males of *P. subcaeruleus,* which remains unknown.

The two cladograms obtaind here support the hipothesis of the genera *Tapinauchenius* and *Psalmopoeus* as sister groups and belonging to the Avicullariinae in a basal position, which corroborate the results of previous publications (West et. al 2008, Fukushima & Bertani, 2017). This reinforces the argument that it is not necesary to create a new subfamily as it was proposed by Samm & Schmidt (2008), in order to mantain the subfamily as a monophyletic group.The idea of create a new subfamily was supported by a recent hypothesis of relationship of Theraphosidae subfamilies generated with molecular data (Lüddecke *et al*. 2017), in which *Psalmopoeus* and *Tapinauchenius* occupied a position outside Avicullariinae and forming a sister-group with Schismatothelinae. In this case, it is necessary to include specimens of Schismatothelinae in the morphological analysis, and to include molecular information of *Ephebopus* in the molecular phylogeny in order to compare the phylogenies generated by the two methods.

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