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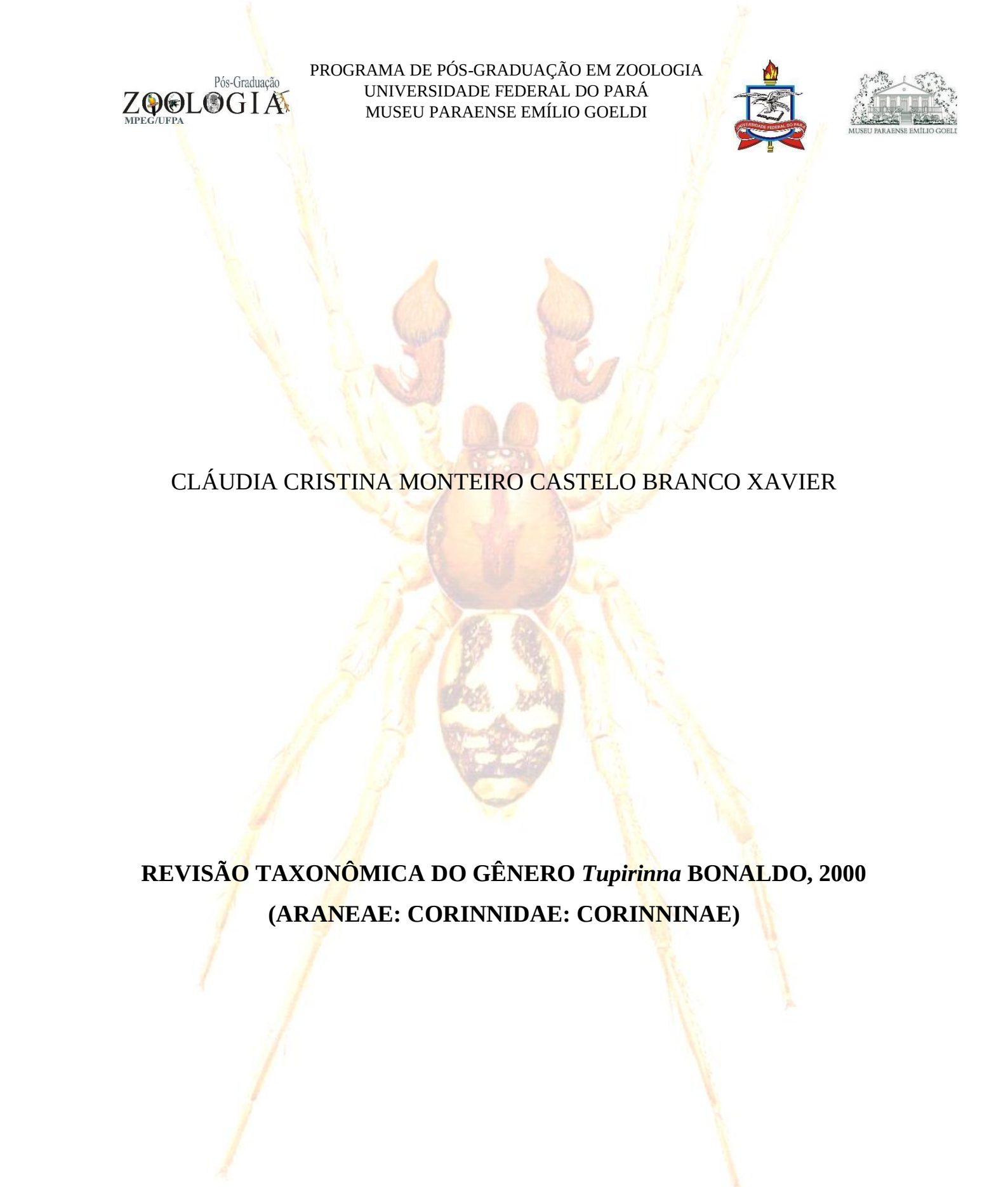

CLÁUDIA CRISTINA MONTEIRO CASTELO BRANCO XAVIER

REVISÃO TAXONÔMICA DO GÊNERO *Tupirinna* BONALDO, 2000 (ARANEAE: CORINNIDAE: CORINNINAE)

Belém – PA, 2019

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Dissertação apresentada ao Programa de Pós-Graduação em Zoologia, do convênio da Universidade Federal do Pará e Museu Paraense Emílio Goeldi, como requisito parcial para obtenção do título de Mestre em Zoologia.
Área de concentração: Evolução.
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Orientador: Alexandre Bragio Bonaldo

Belém – PA, 2019

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CLÁUDIA CRISTINA MONTEIRO CASTELO BRANCO XAVIER

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Esta dissertação não é válida como publicação, conforme capítulo 3 do CÓDIGO INTERNACIONAL DE NOMENCLATURA ZOOLOGICA. Portanto, os novos nomes e mudanças taxonômicas propostos aqui não têm validade para fins de nomenclatura ou prioridade.

WARNING

This dissertation is not valid as publication, as described in the chapter 3 of the INTENATIONAL CODE OF ZOOLOGICAL NOMENCLATURE. Therefore, taxonomic changes and new names proposed here are not valid for nomenclatural or priority purposes.

Aos meus pais, Carmen Monteiro e Jorge Xavier, por sempre incentivarem a mim e aos meus irmãos nos estudos e não medirem esforços para o nosso crescimento.

“Per aspera ad astra”.

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Ao meu namorado, Patrick Freitas, por estar ao meu lado em todos os momentos, bons e ruins. Amo você demais!

SUMÁRIO

Taxonomic revision of the genus *Tupirinna* Bonaldo, 2000 (Araneae: Corinnidae: Corinninae)

ABSTRACT

The neotropical genus *Tupirinna* Bonaldo, 2000 is revised, including 20 species. All three previously described species currently in the genus are rediagnosed and new record of *T. rosae* (Bonaldo, 2000) from Pará, Brazil is given. *T. albofasciata* (Mello-Leitão, 1943) is here redescribed based on the female lectotype, here designated. The following 17 new species are described, diagnosed and illustrated: *T. evanesca* sp. nov. (male and female from Pará, Brazil); *T. zebra* sp. nov. (male and female from Amazonas and Mato Grosso, Brazil); *T. caraca* sp. nov. (male and female from South and Southeast of Brazil); *T. urucu* sp. nov. (male from Amazonas, Brazil); *T. coari* sp. nov. (male and female from Amazonas, Brazil); *T. lata* sp. nov. (male and female from states of Bahia, Espiríto Santo, Minas Gerais, São Paulo and Santa Catarina, Brazil); *T. regiae* sp. nov. (male and female from Amazonas and Pará, Brazil); *T. mutum* sp. nov. (male and female from Pará and Mato Grosso, Brazil); *T. cruzes* sp. nov. (male and female from Rio de Janeiro, São Paulo and Santa Catarina, Brazil); *T. palmares* sp. nov. (male and female from Northeast of Brazil); *T. una* sp. nov. (male and female from Bahia, Brazil); *T. gigantea* sp. nov. (male and female from Vaupés, Colômbia and Huanuco, Peru); *T. oba* sp. nov. (female from Bahia, Brazil); *T. goeldi* sp. nov. (female from Pará, Brazil); *T. ibiapaba* sp. nov. (male and female from Ceará, Brazil); *T. luctuosa* sp. nov. (female from Minas Gerais, Brazil) and *T. araguaia* sp. nov. (male and female from Pará, Brazil). Additionally, distribution maps an identification key to males and females of all know species of *Tupirinna* is provided.

Keywords: Arachnida, Dionycha, Taxonomy, New Species, Neotropical Region.

Revisão taxonômica do gênero *Tupirinna* Bonaldo, 2000 (Araneae: Corinnidae: Corinninae)

RESUMO

O gênero neotropical *Tupirinna* Bonaldo, 2000 é revisado, incluindo 20 espécies. Todas as três espécies previamente descritas atualmente no gênero são rediagnosticadas e novos registros de *T. rosae* (Bonaldo, 2000) do Pará, Brasil são fornecidos. *T. albofasciata* (Mello-Leitão, 1943) é aqui redescrita com base no lectótipo fêmea, aqui designado. As seguintes 17 novas espécies são descritas, diagnosticadas e ilustradas: *T. evanesca* sp. nov. (macho e fêmea do Pará, Brasil); *T. zebra* sp. nov. (macho e fêmea do Amazonas e Mato Grosso, Brasil); *T. caraca* sp. nov. (macho e fêmea do Sul e Sudeste do Brasil); *T. urucu* sp. nov. (macho do Amazonas, Brasil); *T. coari* sp. nov. (macho e fêmea do Amazonas, Brasil); *T. lata* sp. nov. (macho e fêmea dos estados da Bahia, Espirito Santo, Minas Gerais, São Paulo e Santa Catarina, Brasil); *T. regiae* sp. nov. (macho e fêmea do Amazonas e Pará, Brasil); *T. mutum* sp. nov. (macho e fêmea do Pará e Mato Grosso, Brasil); *T. cruzes* sp. nov. (macho e fêmea do Rio de Janeiro, São Paulo e Santa Catarina, Brasil); *T. palmares* sp. nov. (macho e fêmea do Nordeste do Brasil); *T. una* sp. nov. (macho e fêmea da Bahia, Brasil); *T. gigantea* sp. nov. (macho e fêmea de Vaupés, Colômbia e Huanuco, Peru); *T. oba* sp. nov. (fêmea da Bahia, Brasil); *T. goeldi* sp. nov. (fêmea do Pará, Brasil); *T. ibiapaba* sp. nov. (macho e fêmea do Ceará, Brasil); *T. luctuosa* sp. nov. (fêmea de Minas Gerais, Brasil) e *T. araguaia* sp. nov. (macho e fêmea do Pará, Brasil). Além disso, mapas de distribuição e uma chave de identificação para machos e fêmeas de todas as espécies de *Tupirinna* são fornecidos.

Palavras-chave: Arachnida, Dionycha, Taxonomia, Espécies Novas, Região Neotropical

INTRODUÇÃO GERAL

A família Corinnidae Karsch, 1880 constitui-se atualmente de duas subfamílias, Corinninae e Castianeirinae, além de um grupo de gêneros denominado grupo *Pronophaea*, considerados como Corinnidae *insertae sedis* (Ramírez, 2014). As duas subfamílias formalmente reconhecidas para Corinnidae são facilmente diferenciadas pela morfologia do palpo do macho. Enquanto Corinninae apresenta o ducto espermático com percurso helicoidal (Bonaldo, 2000), em Castianeirinae, o bulbo do palpo do macho é piriforme e não possui condutor (Reiskind, 1969).

A subfamília Corinninae é composta atualmente por 208 espécies alocadas em 17 gêneros. Dentre esses, destacamos aqui o gênero *Tupirinna*, descrito por Bonaldo, 2000, para abrigar aranhas de médio porte que apresentam três faixas longitudinais de coloração contrastante na carapaça, duas laterais e uma mediana, quelíceras dos machos longas, garras com cerca da metade do comprimento das quelíceras, palpo com apófise tibial ventral articulada, tégulo pouco esclerotizado, ducto espermático pouco espiralado, êmbolo curto, de ápice simples, com um processo basal alongado curvo; epígino com apenas uma abertura de copulação e vulva com ducto copulatório alargado, formando uma bolsa copulatória.

Bonaldo (2000) descreveu *Tupirinna rosae*, espécie-tipo do gênero, com base em nove machos e doze fêmeas, para o Brasil e para a Venezuela, diagnosticada pelos seguintes caracteres: palpo do macho com Apófise Tibial Retrolateral (ATR) grande, com processo ventral (PV) bem desenvolvido; Apófise Tibial Ventral (ATV) escavada retrolateralmente; êmbolo relativamente curto, com processo basal inserido ventralmente; epígino com a borda anterior da abertura de copulação conspícua, em "V" invertido; internamente com Placa Vulvar Posterior (PVP) bem desenvolvida e bolsa copulatória não esclerotinizada.

Chickering (1937) descreveu *Parachemmis trilineatus* com base em um macho e uma fêmea da Ilha de Barro Colorado, no Panamá. Mais de seis décadas depois, Bonaldo (2000) ao analisar o material tipo transferiu essa espécie para *Tupirinna*. As ilustrações da descrição original feita por Chickering (1937) não permitem a identificação acurada a nível específico, por esse motivo, Bonaldo (2000) re-ilustrou as genitálias dessa espécie e a redescreveu, diferenciando-a de *T. rosae*.

Ramírez (2003) ao estudar a subfamília Amaurobioidinae (Anyphaenidae), percebeu que *Tasata albofasciata*, descrita por Mello-Leitão (1943) com base em macho e fêmea para o Rio Grande do Sul, Brasil, na verdade pertencia ao gênero *Tupirinna* e realizou sua transferência para este gênero. Desta forma, o gênero é composto atualmente por apenas três espécies.

Bonaldo & Brescovit (1994) reconheceram um grupo possivelmente monofilético em Corinninae, constituído pelos gêneros *Stethorrhagus* Simon, 1896 e *Parachemmis* Chickering, 1936, caracterizado pela presença de escavações no esterno e de uma apófise apical ventral articulada na tíbia do palpo dos machos. Posteriormente, Bonaldo (2000) ao propor *Tupirinna*, destacou que o gênero apresenta tais características, incluindo-o nesse grupo de gêneros. Esses três gêneros podem ser diferenciados facilmente pela morfologia da genitália. Em *Parachemmis*, o palpo do macho apresenta êmbolo longo e filiforme com extremidade simples e, em *Stethorrhagus*, a extremidade do êmbolo é bífida, com ducto ejaculatório abrindo-se em uma bifurcação. As fêmeas de *Parachemmis* diferem das de *Stethorrhagus* por apresentarem ductos de copulação separados, abrindo-se em cavidades diferentes, enquanto que as fêmeas de *Stethorrhagus* apresentam uma única abertura de copulação e um único ducto (com exceção de *S. limbatus* Simon 1896, onde ductos separados abrem-se em uma escavação comum). Além disso, *Stethorrhagus* difere de *Tupirinna* por apresentar a placa posterior cobrindo até metade da vulva em vista dorsal. Em *Tupirinna*, a placa apresenta-se de duas maneiras: pode ser bem desenvolvida, cobrindo toda vulva em vista dorsal, ou pouco desenvolvida (Bonaldo, 2000 fig. 342; Bonaldo & Brescovit, 1994).

O objetivo desse trabalho foi revisar o gênero *Tupirinna*, complementando a descrição original do gênero por Bonaldo, 2000. No presente estudo, 20 espécies do gênero *Tupirinna* são reconhecidas, dezessete das quais descritas pela primeira vez. *T. albofasciata* é diagnosticada, redescrita e ilustrada pela primeira vez com base no lectótipo fêmea, visto que o síntipo macho não foi encontrado. O registro de ocorrência do gênero é ampliado para grande parte do território brasileiro, além de novos registros para a Colômbia e o Peru.

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Capítulo 1

Taxonomic revision of the genus *Tupirinna* Bonaldo, 2000 (Araneae: Corinnidae: Corinninae)

O capítulo I desta Dissertação foi elaborado e formatado conforme as normas da publicação científica Zootaxa, as quais se encontram em anexo (Anexo 1).

TAXONOMIC REVISION OF THE GENUS *Tupirinna* BONALDO, 2000 (ARANEAE: CORINNIDAE: CORINNINAE)1

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Abstract

The genus *Tupirinna* Bonaldo, 2000 is revised, including 20 species. New record of *T. rosae* (Bonaldo, 2000) from Pará, Brazil is given. *T. albofasciata* (Mello-Leitão, 1943) is here redescribed based on the female lectotype, here designated. The following 17 new species are described, diagnosed and illustrated: *T. evanesca* **sp. nov.** (male and female from Pará, Brazil); *T. zebra* **sp nov.** (male and female from Amazonas and Mato Grosso, Brazil); *T. caraca* **sp. nov.** (male and female from South and Southeast of Brazil); *T. urucu* **sp. nov.** (male from Amazonas, Brazil); *T. coari* **sp. nov.** (male and female from Amazonas, Brazil); *T. lata* **sp. nov.** (male and female from states of Bahia, Espiríto Santo, Minas Gerais, São Paulo and Santa Catarina, Brazil); *T. regiae* **sp. nov.** (male and female from Amazonas and Pará, Brazil); *T. mutum* **sp. nov.** (male and female from Pará and Mato Grosso, Brazil); *T. cruzes* **sp. nov.** (male and female from Rio de Janeiro, São Paulo and Santa Catarina, Brazil); *T. palmares* **sp. nov.** (male and female from Northeast of Brazil); *T. una* **sp. nov.** (male and female from Bahia, Brazil); *T. gigantea* **sp. nov.** (male and female from Vaupés, Colômbia and Huanuco, Peru); *T. oba* **sp. nov.** (female from Bahia, Brazil); *T. goeldi* **sp. nov.** (female from Pará, Brazil); *T. ibiapaba* **sp. nov.** (male and female from Ceará, Brazil); *T. luctuosa* **sp. nov.** (female

[1] Artigo de acordo com as Normas de Submissão do Periódico *Zootaxa*; em **Anexo.** Normas disponíveis também em: https://www.mapress.com/j/zt/pages/view/forauthors

from Minas Gerais, Brazil) and *T. araguaia* **sp. nov.** (male and female from Pará, Brazil). Additionally, distribution maps and an identification key to males and females of all know species of *Tupirinna* is provided.

Keywords. Arachnida, Dionycha, Taxonomy, New Species, Neotropical Region.

Introduction

The genus *Tupirinnna* was proposed by Bonaldo (2000) to include two species of oddly colored spiders of the subfamily Corinninae (Corinnidae): the type species *T. rosae*, described as new in that paper and *T. trilineata* (Chickering, 1937), originally included in *Parachemmis* Chickering, 1937, a genus at that time considered to be a Liocranidae. Ramírez (2003), in his paper on the subfamily Amaurobioidinae (Anyphaenidae), transferred *Tasata albofasciata*, described by Mello-Leitão (1943) based on a male and a female from South Brazil, to *Tupirinna*. Thus, presently the genus is composed by only these three species.

The original diagnosis of *Tupirinna* was presented as follows: medium-sized spiders with three longitudinal bands of contrasting color in the carapace, two lateral and one median, long chelicerae in males, claws with about half the length of the chelicerae, male palp with ventral tibial apophysis, tegulum weakly sclerotized, spermophore little spiraled, embolus short, with simple apex and a curved elongated basal process; epigynum with only one copulatory opening an vulva with enlarged copulatory duct, forming a copulatory pouch.

Bonaldo (2000) included *Tupirinna* in a putatively monophyletic group defined by Bonaldo & Brescovit (1994) in Corinninae, at that time constituted by the genera *Stethorrhagus* Simon, 1896 and *Parachemmis* Chickering, 1936. This group of genera was characterized by the presence of two external anterolateral excavations in the sternum and by the presence of an apical ventral apophysis in the tibia of the male palp. The contrastive carapace color pattern of both sexes, the presence of a characteristic embolar process in the male palp and of the copulatory pouch in the vulva are unique

characters of *Tupirinna*. Additionally, these three genera can be easily differentiated by unique combinations of characters from genitalic morphology: in *Parachemmis* the male palp presents long and filiform embolus with a simple apex; in *Stethorrhagus* the apex of the embolus is bifid, with the ejaculatory duct opening in a fork. The females of *Parachemmis* differs from those of *Stethorrhagus* by presenting separated copulatory ducts, each one opening in a separated cavity, while the females of *Stethorrhagus* presents a single copulatory duct (with the exception of *S. limbatus* Simon, 1896, where separate ducts open in a common excavation). (Bonaldo & Brescovit, 1994; Bonaldo, 2000).

In this paper, a taxonomic revision of *Tupirinna* is presented, resulting in the recognition of 20 species, 17 of which are new. The genus presents a wide distribution, occurring from Panama (*T. trilineata*) to Southern Brazilian state of Rio Grande do Sul (*T. albofasciata* and *T. caraca* **sp. nov**). In Brazil, where 18 of the 20 species are recorded, the known distributions are mainly from Atlantic and Amazonian forest. Also, *Tupirinna* is recorded from two additional countries in South America with *T. gigantea* **sp. nov**. occuring in Colombia and Peru.

Material and methods

The examined material is deposited in the following institutions (acronyms and curators in parentheses): Museu Nacional do Rio de Janeiro, Rio de Janeiro, Brazil (MNRJ, A.B. Kury), Instituto Butantan, São Paulo, Brazil (IBSP, A.D. Brescovit), Museu Paraense Emílio Goeldi, Belém, Pará, Brazil (MPEG, A.B. Bonaldo), Universidade do Piauí, Floriano, Piauí, Brazil (CHNUFPI, E.F.B. Lima), Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre, Brazil (MCN, R. Ott), Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil (UFMG, A.J. Santos), Museu de Zoologia da Universidade de São Paulo, São Paulo, Brazil (MZUSP, R. Pinto-da-Rocha) and Instituto Nacional de Pesquisas da Amazônia, Manaus, Amazonas, Brazil (INPA, M.L. de Oliveira).

The descriptions format is based on Bonaldo (2000) and terminology on Bonaldo (2000) and Ramírez (2014). All specimens were examined in alcohol 80%, measured (in millimetres) in a Leica

M205A with LAS interative measurements software and illustrated in a LEICA MZ16 stereomicroscope with camera lucida. Images were taken using a MC 170HD camera and software LAS v4.9 in a Leica M205A. Male left palps were drawn in ventral and retrolateral views. The methodology for the studying the internal female genitalia follows Levi (1965). For scanning electron microscopy, the structures were dissected and cleaned in a SoniClean 2P ultrasonic digital washer for two minutes and submitted to a series of dehydration in increasing concentrations of ethanol (80%, 85%, 90%, 95% and 100%). The pieces were then critical-point dried, minimizing the collapse of soft structures.

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

Abbreviations: AER, anterior eyes row; ALE, anterior lateral eyes; ALS: anterior lateral spinnerets; AME, anterior median eyes; AS, apical spurn; C, conductor; CD, copulatory duct; CO, copulatory opening; DL, dorsal lobe; dVL, dorsal process of ventral lobe; E, embolus; Ed, endite; ETR, epigynal transversal ridges; FD, fertilization duct; Lb, labium; PER, posterior eyes row; PLE, posterior lateral eyes; PLS, posterior lateral spinnerets; PME, posterior median eyes; PMS, posterior median spinnerets; PTR, posterior transversal ridges; PVP posterior vulval plate; RTA, retrolateral tibial apophysis; S1, primary spermathecae; S2, secondary spermathecae; TEP, *Tupirinna* embolar process; TO, tarsal organ; TPP, tegular prolateral process; TRP tegular retrolateral process, VL, ventral lobe; VTA, tibial ventral apophysis.

Taxonomy

Corinnidae Karsh, 1878

Corinninae Karsh, 1878

Tupirinna Bonaldo, 2000

Tupirinna Bonaldo, 2000: 133 (type species by original designation, *Tupirinna rosae* Bonaldo, 2000); WSC, 2019.

Diagnosis. Representatives of *Tupirinna* share with those of *Stethorrhagus* and *Parachemmis* the presence of anterior esternal excavations in both sexes (figs. 16A, 17G) and a unique ventral tibial apophysis in the male palp (figs. 14C, 15D). They differ by the following combination of characters: carapace with three longitudinal bands of contrasting coloration, two laterals and a median one (fig. 1); long chelicerae in males, fangs about 2/3 the length of chelicerae (fig. 17D); male palp tegulum slightly sclerotized, spermophore little spiraled; embolus short, apex simple, generally with a curved elongated basal process (TEP) (figs. 3B, 11A, 12A, 15C); epigynum with one copulatory opening, vulva with enlarged copulatory duct forming a copulatory pouch (figs. 4G–H, 5E–F, 6G–H).

Description. Total length (males and females) 3,75 - 6,90. Carapace with three longitudinal bands of contrasting coloration, two laterals and a median one; suboval, longer than wide in dorsal view (fig. 1); covered by short black hairs and few erect setae, more abundant in the ocular region; with fine granulations, visible only by scanning electron microscope (fig 18A–B); largest width between coxae II and III, maximum height on palpal insertion. cephalic region low, poorly delimited, cephalic constriction slightly pronounced; anterior margin nearly straight, median anterior interocular tubercle undeveloped; thoracic region abruptly recessed in lateral view. Short, deep thoracic groove, smaller in length than MOQ; posterior margin nearly straight. Clipeous high, with about two AME diameters; clipeal groove present. Anterior eyes row strongly procurve in dorsal view; MOQ as long as wide in dorsal view, anterior width approximately equal to posterior width (fig 18A–B). Median eyes rounded, lateral eyes suboval; all eyes subequal in size. Interdistances: AME-AME separated by almost a diameter; AME-ALE by about one third of an AME diameter; PME-PME by about one diameter and a half; PME-PLE by little more than one diameter; ALE-PLE almost contiguous. **Chilum** entire, smooth, glabrous. Chelicerae with accentuated sexual dimorphism, in females, short, less than one-third of carapace length, slightly geniculate; in males, elongated, with about one-third

of carapace length, strongly geniculate (figs 17D–E; 20D–E); basal condile triangular, conspicuous; cheliceral frontal surface smooth, without granules; retrolateral surface with unconspicuous transversal ridges; fangs longer in males than in females, except in *T. zebra* **sp. nov**. Endites convergent, promargin sub-straight, retromargin with deeply notched; labium wider than long, smaller than half endites length (fig 17A). Sternum approximately as long as wide; with long hairs not inserted in tubercles; sides of anterior margin projected; anterior sternal excavations present, deep (figs. 17A; 18G). Legs long, thin, covered by simple and feathery hairs; leg IV longer than others, leg I, II and III of sub-equal length. All coxae with hairs not inserted in tubercles; tíbia I with three to four pairs of ventral setae; metatarsus I with two pairs of ventral setae. Scopular setae of tarsi I and II sparse; III and IV replaced by spiniform setae; metatarsus with no scopular setae, with inconspicuous ventro-distal setae tuft; tarsal claws with four to five large teeth; subungueal hairs dense; tarsal tricobothria in two dorsal rows; female palp tarsal claw smooth; trocanther I and II slightly notched; III and IV notched. Abdomen with abundant simple and feathery hairs (fig 17K), without erectile setae; dorsal and ventral **scutum** absent in both sexes; tracheal tubercle present. Colulus represented by a sub-triangular plate with few simple hairs.

Male palp. Tibia long, longer than half cymbial length or with same size of the cymbium; ventral lobe of retrolateral tibial apophysis always present, with or without apical spurn; dorsal lobe absent in the species of the group *rosae*; Ventral tibial apophysis present, not fused retrolaterally to tibial margin. Cymbium with Cymbial retrolateral basal process weakly developed, Cymbial prolateral basal process absent. Tegulum wide, weakly sclerotized, spermophore weakly spiralled, with from two to three wide ventral S-shaped folds; conductor hyaline; embolus fused to the tegulum, spiniform, short or long, generally with a basal process (absent in *Tupirinna evanesca* **sp. nov.**, *T. regiae* **sp. nov.**, *T. mutum* **sp. nov.**, *T. gigantea* **sp.nov.** and *T. araguaia* **sp.nov.**).

Epigynum not projected over epigastric furrow, with one copulatory opening, generally anteriorly positioned (posteriorly positioned only in *T. una* and *T. gigantea*); Posterior vulval plate

very developed in the group *rosae* (Figs 4D; 4H; 5D, 5F; 6D, 6H, 7D, 7F, 8D; 9D; 9H), weakly developed in the group *trilineata* (Figs 10D; 11D; 11H, 12H; 13F). Copulatory duct expanded medially, forming a copulatory pouch. In species with developed posterior vulval plate, copulatory pouch membranous; in species with undeveloped posterior vulval plate, copulatory pouch sclerotized; primary spermathecae globular; secondary spermathecae generaly absent, but present, small, in most species of the group *trilineata* (*T. albofasciata, T. caraca, T. lata, T. cruzes, T. palmares, T. una* e *T. oba*) Figs. 9G–H; 10C–D; 10G–H; 11C–D; 11G–H; 12C–D; 12G–H; 15I.

Natural history: Most of the examined specimens were collected in pitfall traps, while a few was collected by beating tray, which suggests that species of *Tupirinna* present diurnal habits. The typical colloration pattern of *Tupirinna* species is an example of disruptive coloration (Cott, 1957), which leads to conspicuous convergences between phylogenetically unrelated animals. For example, the coloration pattern presented by *Tupirinna* species is strickingly similar to that presented by species of the genus *Cambridgea* (Desidae), endemic to New Zealand, especially in *Cambridgea plagiata* Foster & Wilston, 1973. *Cambridgea* species share the same habit as *Tupirinna*, living mostly in the ground and being more active in the daytime.

Key to species of Tupirinna

1 Males (those of *Tupirinna urucu* unknown) 2

- Females (those of *Tupirinna albofasciata*, *T. oba, T. goeldi* and *T. luctuosa* unknown) 17

2(1) Dorsal lobe of RTA absent; ventral lobe well developed (Figs. 4B, 4F, 5B, 6B, 6F) 3

- Dorsal lobe of RTA present; ventral lobe weakly developed (Fig. 19F) 11

3(2) Ventral lobe of RTA divided basally, with large lamelar dorsal process; TEP present, small (Figs. 6F, 7B) 4

- Ventral lobe of RTA otherwise, dorsal process, if present, small (Figs. 3F, 5B) 7

4(3) Embolus short, directed retrolaterally; AS long, narrow 5

- Embolus long, directed retroapically; AS shorter, thicker 6

5(4) Ventral process of ventral lobe bifid; embolar tip filiform, curved (Figs 6E–F) ..... *Tupirinna gigantea* sp. n.

- Ventral process of ventral lobe entire, embolar tip blunt, straigth (Figs 8A–B) ..... *Tupirinna coari* sp. n.

6(4) Lamelar dorsal process of VL sub-retangular in ventral view (Fig. 8E) ... *Tupirinna urucu* sp. n.

- Lamelar dorsal process of VL tappering appically in ventral view (Fig. 8A).. *Tupirinna zebra* sp. n.

7(3) Apical spurn inserted distally on Ventral lobe of RTA; TEP absent (Figs 4A–B, E–F) 8

- Apical spurn inseted medially on Ventral lobe of RTA; TEP present (Figs 3E–F); Bonaldo, 2000: figs 339, 340) ..... *Tupirinna rosae* Bonaldo, 2000

8(7) Tegulum conspicuously projected retrolaterally, withouth apical projection (Figs 4E–F) ..... *Tupirinna araguaia* sp. n.

- Tegulum not projected retrolaterally, with apical projection 9

9(8) Embolus long, slender, without ring-like sub-apical reinforcement (Figs 4A–B) ..... *Tupirinna regiae* sp. n.

- Embolus short, wide-based, with ring-like sub-apical reinforcement 10

10(9) Tegular sub-apical projection large, superposed to embolar base in ventral view (Figs 6A–B) ..... *Tupirinna mutum* sp. n.

- Tegular sub-apical projection smaller, not superposed to embolar base in ventral view (Figs 5A–B) ..... *Tupirinna evanesca* sp. n.

11(2) *Tupirinna* embolar process parallel in relation to embolus (Figs 11E–F, 12A–B) ……..... 12

- *Tupirinna* embolar process dorsal in relation to embolus (Figs 10A–B; E–F) 14

12(11) Dorsal lobe small, with acute tip, TEP long and filiforme (Figs 11A–B) ……..…… *Tupirinna cruzes* sp. n.

- Dorsal lobe large, with blunt tip, TEP smaller, wide 13

13(12) Apical prolateral process present, TEP smaller than embolus (Figs 11E–F) ..... *Tupirinna caraca* sp. n.

- Apical prolateral process absent, TEP and embolus similarly sized (Figs 12A–B) ……..... *Tupirinna una* sp. n.

14(11) Dorsal lobe relatively large, inseted medially on tibial surface (Figs 10A–B) ..... *Tupirinna lata* sp. n.

- Dorsal lobe represented by a small sub-apical hump 15

15(14) Embolus short, sub-triangular (Figs 13A–B) ..... *Tupirinna palmares* sp. n.

- Embolus long, filiform 16

16(15) VTA longer than wide; tegular retroapical projection present ..... *Tupirinna trilineata* (Chickering, 1937)

- VTA as long as wide; tegular retroapical projection absent (Figs 8A–B) .. *Tupirinna ibiapaba* sp. n.

17(1) Epigynal plate concave; posterior vulval plate large, covering at least the posterior half of vulva …….... 18

- Epigynal plate flatered; posterior vulval plate weakly developed, not covering vulval elements 27

18(17) Copulatory oppening posteriorly or medially positioned 19

- Copulatory oppening anteriorly positioned 23

19(18) Copulatory oppening posteriorly positioned (Figs 6G–H) ..... *Tupirinna gigantea* sp. n

- Copulatory oppening medially positioned 20

20(19) Copulatory duct developed anteriorly to copulatory oppening 21

- Copulatory oppening discharging directly into copulatory pouch 22

21(20) Copulatory oppening represented by a transversal, straight slit (Figs 4C–D) ……..... *Tupirinna regiae* sp. n.

- Copulatory oppening represented by a inverted V-shaped slit ..... *Tupirinna rosae* Bonaldo, 2000

22(20) epigynal plate with median sclerotization posterior to copulatory oppening; PVP covering most of the vulval elements (Figs 7E–F) ..... *Tupirinna luctuosa* sp. n.

- epigynal plate without such sclerotization; PVP covering only posterior half of vulvae (Figs 7C–D) ..... *Tupirinna coari* sp. n.

23(18) Anterior border of copulatory oppening conspicuous 24

- Copulatory oppening margined only posteriorly 26

24(23) Copulatory oppening wide, sub-trapezoidal; PVP covering only posterior half of vulvae (Figs 8C–D) ..... *Tupirinna zebra* sp.n.

- Copulatory oppening smaller, rounded; PVP covering most of the vulval elements 25

25(24) epigynal plate posterior margin concave; copulatory oppening relatively large (Figs 18G–H) ..... *Tupirinna araguaia* sp. n.

- epigynal plate posterior margin convex; copulatory oppening relatively small (Figs 6C–D) ..... *Tupirinna mutum* sp. n.

26(23) posterior border of copulatory oppening sub-quadrangular (Figs 5C–D) ….... *Tupirinna evanesca* sp. n.

- posterior border of copulatory oppening semi-circular (Figs 6E–F) ..... *Tupirinna goeldi* sp. n.

27(17) epigynal plate with a pair of anterior pockets (Figs 12C–D) ..... *Tupirinna una* sp. n.

- epigynal plate without such structures 28

28(27) epigynal plate with transversal posterior ridges 29

- epigynal plate without such ridges 31

29(28) epigynal plate with procurved posterior ridges (Figs 11C–D) ..... *Tupirinna cruzes* sp. n.

- epigynal plate with recurved posterior ridges 30

30(29) copulatory oppening small, roudend (Figs 6G–H) ..... *Tupirinna caraca* sp. n.

- copulatory oppening large, sub-retangular (Figs 12E–F) ..... *Tupirinna oba* sp. n.

31(28) copulatory oppening rounded, with conspicuous surrounding margins; copulatory pouch inverted T-shaped (Figs 10G–H) ..... *Tupirinna lata* sp. n.

- copulatory opening with incomplete surronded margins; copulatory pouch otherwise 32

32 (31) epigynal plate with a median depression; margin of copulatory oppening procurve 33

- epigynal plate without median depression; margin of copulatory oppening recurve 34

33(32) median depression of epigynal plate sub-retangular (Figs 13E–F) …..... *Tupirinna albofasciata* (Mello-Leitão, 1943)

- median depression of epigynal plate sub-triangular (Figs 13C–D) ……..... *Tupirinna palmares* sp. n.

34(32) copulatory pouch sub-triangular (Figs 10C–D) ..... *Tupirinna ibiapaba* sp. n.

- copulatory pouch sub-quadrangular ..... *Tupirina trilineata* (Chickering, 1937).

The group *rosae*

Diagnosis. Males of the group *rosae* of *Tupirinna* are characterized by the presence of a well-developed ventral lobe of the retrolateral tibial apophysis and by the absence of a dorsal lobe (Figs. 3F, 4B, 4F, 5B; 6F); females can be recognized by the well developed posterior vulval plate, membranaceus copulatory pouch and absence of secondary spermathecae (Bonaldo, 2000: figs 341–343. Fig 5D, 6D).

***Tupirinna rosae* Bonaldo, 2000**

Figs 1, 3, Map 1

Tupirinna rosae Bonaldo, 2000: 133, figs. 7, 20, 76, 86–88, 118, 327–329, 339–343. (Type from Reserva Florestal Adolpho Ducke, Manaus, Amazonas, Brazil; deposited in INPA, not re-examined)

Diagnosis. Males of *Tupirinna rosae* differ from those of all other species with ventral lobe of RTA not divided basaly (*T. evanesca*, *T. regiae*, *T. mutum*, *T. araguaia*) by the apical spurn inserted medially on ventral lobe of RTA and by presence of a TEP (Fig. 3B). Females ressembles those of *T.*

regiae sp. n. by the copulatory duct developed anteriorly to copulatory oppening but can be recognized by the copulatory oppening represented by an inverted V-shaped slit (See Bonaldo, 2000, fig. 341).

Description. See Bonaldo (2000): 133-134

New Records. BRAZIL: *Pará*: Melgaço, Estação Científica Ferreira Penna, FLONA Caxiuanã (1°44'15.5″S 54°26'42″W), 1f# (MPEG 25674); 1m#, 28-31.X.2003, J.A.P. Barreiros leg., (MPEG 25675); 1m# (MPEG 25676); 1m# (MPEG 25677); 1m# (MPEG 25678); Tailândia: Fazenda Santa Marta (2º51'48″S 49º28'07″W), 1m#, 13-14.V.2003; Novo Progresso: Campo de Provas Brigadeiro Veloso, Serra do Cachimbo (09°16'49″S 54º56’32″W), 1m#, 07-17.IX.2003 (MPEG 3557); 1m# (MPEG 3569).

Distribution. Brazilian and Venezuelan Amazon.

***Tupirinna regiae* sp. nov.**

Figs 4A–D, Map 5

Type material. m#, holotype from Comunidade Santa Rosa (1°51'34.57"S 50°39'24.92"W), Floresta da Bacia, Melgaço, Pará, Brazil, 30.V.2016, Junior leg. (MPEG 35486). f#, paratype from Trilha Praia Alta (02°17'40.3"S 62°27'19.5"W), Parque Nacional do Jaú, Novo Airão, Amazonas, Brazil, 17-23.II.2017, Níthomas, Bernardo & Pedro leg. (MPEG 35487).

Etymology. The name is a patronym in honor of the arachnologist Regiane Saturnino.

Diagnosis. Males of *Tupirinna regiae* differ from those of *T. rosae* by the apical spurn inserted apically on ventral lobe of RTA and by absence of a TEP; they differ from those of other species with ventral lobe of RTA not divided basaly (*T. evanesca*, *T. mutum*, *T. araguaia*) by the presence of a tegular retro-apical acute projection (Figs 4A–B). Females ressemble those of *T. rosae* by the

copulatory duct developed anteriorly to copulatory oppening but can be recognized by the copulatory oppening represented by transversal straight slit (Fig. 4C).

Description. *Male* holotype (MPEG 35486). Carapace yellow, with a brown band extended over the ocular area, and brown bands. Chelicerae brown. Labium brown. Endites brown. Sternum and borders yellowish white and anterior lateral excavations brown. Legs white. Abdomen dorsum yellowish white with a pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently three black spots followed by one black transversal spot, venter yellowish white. Total length 3.87. Carapace length 1.94, width 1.62, height 0.57. Clypeus length 0.16. Eye diameters and interdistances: anterior row 0.58, posterior row 0.63, QOM: length 0.35, anterior width 0.32, posterior width 0.63, AME 0.14, PME 0.11, ALE 0.12, PLE 0.12, AME-AME 0.08, AME-ALE 0.03, PME-PME 0.15, PME-PLE 0.07, ALE-PLE 0.02. Chelicerae: length 0.96, with 5 promarginal and 3 retromargin teeth. Sternum length 0.93, width 1.02. Leg I: femur (fe) 1.75, patella (pa) 0.59, tibia (ti) 1.44, metatarsus (mt) 1.59, tarsus (ta) 0.86. II: fe 1.58, pa 0.59, ti 1.55, mt 1.39, ta 0.77. III: fe 1.71, pa 0.61, ti 1.45, mt 1.72, ta 0.61. IV: fe 2.13, pa 0.55, ti 1.31, mt 2.31, ta 0.95. Abdomen: length 2.04, width 1.05.

Female paratype (MPEG 35487). Carapace yellow, with a brown guitar-shaped band extended over the ocular area, and brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with distal region of lateral surfaces of the tibia black. Abdomen dorsum grey with a pair of black longitudinal spots in the cardiac area; in the middle region, one longitudinal black spot crossed by three horizontal black spots. Contour of the spinnerets black, venter yellow. Total length 4.5. Carapace length 2.07, width 1.76, height 0.73. Clypeus length 0.18. Eye diameters and interdistances: anterior row 0.59, posterior row 0.63, QOM: length 0.33, anterior width 0.35, posterior width 0.36, AME 0.15, PME 0.1, ALE 0.13, PLE 0.13, AME-AME 0.08, AME-ALE 0.03, PME-PME 0.15, PME-PLE 0.08, ALE-PLE 0.03. Chelicerae: length 0.89. Sternum length 1.14, width 1.06. Leg I: femur (fe) 1.77, patella (pa) 0.78,

tibia (ti) 1.79, metatarsus (mt) 1.34, tarsus (ta) 0.88. II: fe 1.79, pa 0.65, ti 1.35, mt 1.32, ta 0.92. III: fe 1.91, pa 0.71, ti 1.53, mt 1.69, ta 0.76. IV: fe 2.24, pa 0.84, ti 2.19, mt 2.56, ta 1.1. Abdomen: length 2.31, width 1.57.

Variation. Length (2m#) total 2.06-4.41, carapace 1.82-2.13, femur I 1.68-1.97; (2f#) total 5.19, carapace 2.0-2.12, femur I 1.77-1.96.

Other material examined. BRAZIL. **Pará**. *Belém*: Bosque Rodrigues Alves (1°25′49″S 48°27′22.3″W), 1m#, 26.III.2001, J.A.P. Barreiros leg. (MPEG 35489); Mocambo (1°26'48"S 48°25'1"W), 1m#, 13-15.XII.2007, B.V.B. Rodrigues & J.M.B. Pereira-Filho leg. (MPEG 35488); Parque Estadual do Utinga (1°25'18.8"S 48°25'48.3"W), 1m#, 23-30.X.2010, E.L.S. Costa *et al.* leg. (MPEG 35491); 1m#, 23-30.X.2010, E.L.S. Costa *et al.* leg. (MPEG 35492); *Bragança*: Reserva Extrativista Marinha Caeté-Taperaçú, Fazenda Salinas (00°55'27"S 46°40'20.4"W), 1m#, 19.XII.2006, A.B. Quadros *et al.* leg. (MPEG 35490); *Igarapé-Açu*: (1°08'05"S 47°34'01"W), 1m#, 14.IX.2011, S. Ribeiro & M.B. Aguiar-Neto leg. (MPEG 35494); 1m#, 14.IX.2011, S. Ribeiro & M.B. Aguiar-Neto leg. (MPEG 35495); 1m#, 23.XI.2011, S. Ribeiro leg. (MPEG 35496); *Melgaço*: Estação Científica Ferreira Penna, FLONA Caxiuanã (1°47'32.7"S 51°25'59.2"W), 1m#, 16.09.2006, A.C. Nascimento leg. (MPEG 35497); 1m#, 07.11.2005, J.A.P. Barreiros leg. (MPEG 35498); 1m# (MPEG 35499); 1m# (MPEG 35493); *São Geraldo do Araguaia*: Área de Proteção Ambiental São Geraldo (6°18'59.29"S 56°28'1.60"W), 1m#, 25.IV.2009, U. Oliveira & M.D. Miranda leg. (UFMG 5771); *Senador José Porfírio*: (02°35'27"S 51°57'15"W), 2m# and 1f#, 05.III.2001, leg. (MPEG 004993); 1f#, 02.III.2001 (MPEG 011277).

Distribution. States of Pará and Amazonas, Brazil.

***Tupirinna araguaia* sp. nov.**

Figs 4E–H, Map 5

Type material. m#, holotype from Serra das Andorinhas (6°13'10.47"S 48°26'17.97"O), São Geraldo do Araguaia, Pará, Brazil, 30.X-07.XI.2011, A.B. Bonaldo et al leg. (MPEG 35480). f#, paratype, same data (MPEG 35481); m#, same data (MPEG 35482).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna araguaia* differ from those of all other species with ventral lobe of RTA not divided basaly (*T. rosae*, *T. evanesca*, *T. regiae*, *T. mutum*) by tegulum strongly pronounced retrolaterally and by the absence of tegular apical projection (Figs 4E–F). Females ressembles those of *T. mutum* by the rounded copulatory oppening but can be recognized by the concave posterior margin of epigynal plate (Figs. G–H).

Description. *Male* holotype. Carapace yellow, with a brown band extended over the ocular area, and brown laterals. Chelicerae dark brown. Labium brown. Endites brown. Sternum and borders yellow with anterior lateral excavations brown. Legs yellow, with proximal and distal region of the lateral surfaces of tibia black and lateral surfaces of patella I and II black. Abdomen dorsum yellow with one pair of black longitudinal spots in the cardiac area; in the middle region, one pair of black spots on each side followed by three black spots, subsequently one subretangular black spot. Contour of the spinnerets black., venter yellow. Total length 4,76. Carapace length 2,25, width 1,89, height 0,83. Clypeus length 0,15. Eye diameters and interdistances: anterior row 0,64, posterior row 0,67, QOM: length 0,36, anterior width 0,34, posterior width 0,39, AME 0,10, PME 0,10, ALE 0,13, PLE 0,10, AME-AME 0,12, AME-ALE 0,05, PME-PME 0,17, PME-PLE 0,80, ALE-PLE 0,04. Chelicerae: length 1,18. Sternum length 1,14, width 1,03. Leg I: femur (fe) 1,94, patella (pa) 0,89, tibia (ti) 2,00, metatarsus (mt) 1,87, tarsus (ta) 0,86. II: fe 2,04, pa 0,77, ti 1,91, mt 1,76, ta 0,91. III: fe 2,09, pa 0,72, ti 1,57, mt 2,03, ta 0,99. IV: fe 2,50, pa 0,90, ti 2,05, mt 2,89, ta 1,03. Abdomen: length 2,29, width 1,58.

Female paratype (MPEG 35481) Carapace yellow, with a brown band extended over the ocular area, and brown laterals. Chelicerae dark brown. Labium brown. Endites brown. Sternum and

borders yellow with anterior lateral excavations brown. Legs yellow, with proximal and distal region of the lateral surfaces of tibia black and lateral surfaces of patella I and II black. Abdomen dorsum as in male, except the last black spot in the abdomen which is by three subtriangular black spots connected one to another., venter yellow. Total length 6,04. Carapace length 2,44, width 1,98, height 0,90. Clypeus length 0,22. Eye diameters and interdistances: anterior row 0,63, posterior row 0,70, QOM: length 0,40, anterior width 0,36, posterior width 0,36, AME 0,16, PME 0,15, ALE 0,10, PLE 0,12, AME-AME 0,11, AME-ALE 0,04, PME-PME 0,16, PME-PLE 0,05, ALE-PLE 0,06. Chelicerae: length 1,09. Sternum length 1,14, width 1,20. Leg I: femur (fe) 2,14, patella (pa) 0,76, tibia (ti) 1,84, metatarsus (mt) 1,92, tarsus (ta) 0,96. II: fe 2,10, pa 0,82, ti 1,84, mt 1,88, ta 0,94, pa 0,87, ti 2,09, mt 2,95, ta 1,01. Abdomen: length 3,45, width 2,44.

Variation. Length (1m#) total 4.3, carapace 1.98, femur I 2.0;

Material examined. Only the type material

Distribution. State of Pará, Brazil.

***Tupirinna evanesca* sp. nov.**

Figs 5A–D; 14A–F, Map 2

Type material. m#, holotype from Itaituba km 18 (4°16'9"S 55°59'23"W), Altamira, Pará, Brazil, 8-17.IV.1985, N. Degallier leg. (MPEG 35471); f#, paratype from Floresta Nacional de Caxiuanã (01°57'38.9"S 51°36'45.3"W), Igarapé Caquajó, Plote PPBio, Portel, Pará, Brazil, 10.V.2005, D.F. Candiani leg. (MPEG 35473).

Etymology. The specific name is a noun in apposition taken from the spell “evanesca” of the Harry Potter’s Universe by J.K. Rowling. This spell is used to make things disappear. The name alludes to the absence of *Tupirinna* embolar process in *T. evanesca*, that was lost, in other words, disappeared.

Diagnosis. Males of *Tupirinna evanesca* resembles those of *T. mutum* by the presence of a subapical embolar reinforcement ring but can be recognized by the presence of a small sub-apical tegular process inserted apart from embolar base (fig 5A); females resemble those of *T. goeldi* by the interrupted anterior border of copulatory oppening but are readly recognized by the posterior border of copulatory oppening being sub-quadrangular (figs 5C–D).

Description. *Male* (MPEG 35471). Carapace yellow, with dark brown "strip" extended over the ocular area, and dark brown bands. Chelicerae brown. Labium pale brown. Endites pale brown. Sternum and borders yellowish white, anterior lateral excavations pale brown. Legs pale yellow, with posterior ventral and lateral surfaces of the tibia stained black. Abdomen dorsum denied, venter white. Total length 4.07. Carapace length 1.96, width 1.59, height 1,00. Clypeus length 0.23. Eye diameters and interdistances: anterior row 0.5, posterior row 0.55, QOM: length 0.28, anterior width 0.26, posterior width 0.34, AME 0.09, PME 0.11, ALE 0.09, PLE 0.1, AME-AME 0.1, AME-ALE 0.04, PME-PME 0.12, PME-PLE 0.07, ALE-PLE 0.03. Chelicerae: length 0.98, with 4 promarginal and 3 retromargin teeth. Sternum length 0.95, width 0.98. Leg I: femur (fe) 1.66, patella (pa) 0.65, tibia (ti) 1.21, metatarsus (mt) 1.29, tarsus (ta) 0.65. II: fe 1.77, pa 0.65, ti 1.5, mt 1.29, ta 0.65. III: fe 2.01, pa 0.62, ti 1.33, mt 1.71, ta 0.87. IV: fe 2.11, pa 0.65, ti 1.75, mt 2.21, ta 0.96. Abdomen: length 2.02, width 1.5.

Female paratype (MPEG 35473). Carapace yellow, with dark brown "strip" extended over the ocular area, and black bands. Chelicerae brown. Labium pale brown. Endites pale brown. Sternum and borders yellowish white, anterior lateral excavations pale brown. Legs pale yellow, with posterior ventral and lateral surfaces of the tibia stained black. Abdomen dorsum grey with a pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently a single black transverse spot followed by a smaller black transverse spot. Contour of the spinnerets of black color, venter white. Total length 4.86. Carapace length 2.02, width 1.63, height 1.05. Clypeus length 0.2. Eye diameters and interdistances: anterior row 0.58, posterior row 0.65,

QOM: length 0.28, anterior width 0.31, posterior width 0.38, AME 0.1, PME 0.12, ALE 0.12, PLE 0.11, AME-AME 0.12, AME-ALE 0.04, PME-PME 0.14, PME-PLE 0.08, ALE-PLE 0.01. Chelicerae: length 0.92, with 5 promarginal and 3 retromarginal teeth. Sternum length 0.98, width 1.02. Leg I: femur (fe) 1.95, patella (pa) 0.72, tibia (ti) 1.54, metatarsus (mt) 1.47, tarsus (ta) 0.83. II: fe 1.83, pa 0.66, ti 1.61, mt 1.59, ta 0.89. III: fe 1.77, pa 0.53, ti 1.47, mt 1.82, ta 0.83. IV: fe 2.32, pa 0.7, ti 1.86, mt 2.53, ta 0.94. Abdomen: length 2.57, width 1.62.

Variation. Length (2m#) total 4.41, carapace 2.13, femur I 1.89; (3f#) total 4.73-4.84, carapace 1.84-2.02, femur I 1.80.

Other material examined. BRAZIL. **Pará**: Altamira, Itaituba km 18, 1m# (MPEG 35472); 1m# (MPEG 35476); Melgaço, Estação Científica Ferreira Penna, FLONA Caxiuanã (01°44'18.02"S 51°27'48.01"W), 1f#, 11-20.VII.1998, B. Silva leg. (MPEG 003260); (1°47'32.7"S 51°25'59.2"W), 1f#, 02.06.2006, E.J. Sales leg. (MPEG 335475); (1°44'14.67"S 51°27'18.84"W), 1f#, 18-IV-2006, C.A. Souza leg. (MPEG 35474).

Distribution. Pará state, Brazil.

***Tupirinna goeldi* sp. nov.**

Figs 5E–F, Map 2

Type material. f#, holotype from Museu Goeldi Research *Campus* (1°27′3.13″S 48°26′44.412″W), Belém, Pará, Brazil, IX.2014, P. Pantoja & C. Xavier leg. (MPEG 35477). f#, paratype from Bosque Rodrigues Alves (1°25′51.84″S 48°27′28.64″W), Belém, Pará, Brazil, 25.X.2001, J.A.P. Barreiros leg. (MPEG 35478);

Etymology. The specifici name is a noun in apposition after the place where the holotype was collected: the Museu Paraense Emílio Goeldi research *campus*.

Diagnosis. Females of *Tupirinna goeldi* resemble those of *T. evanesca* by the interrupted anterior border of copulatory oppening but are readly recognized by the U-shaped posterior border of copulatory opening (Figs 5E–F).

Description. *Female* holotype (MPEG 35477). Carapace yellow, with a brown band extended over the ocular area, and black laterals. Chelicerae dark brown. Labium brown. Endites brown. Sternum and borders yellow with anterior lateral excavations brown. Legs yellow, with lateral surfaces of patella black; proximal and distal regions of the lateral surfaces of tibia black. Abdomen dorsum yellow with one pair of longitudinal black spots in the cardiac area; in the middle region one pair of black spots on each side followed by three black spots, subsequently one subretangular black spots with one yellow spot inside on each side. Contour of the spinnerets black., venter yellow. Total length 4,85. Carapace length 2,16, width 1,84, height 0,55. Clypeus length 0,17. Eye diameters and interdistances: anterior row 0,63, posterior row 0,67, QOM: length 0,35, anterior width 0,34, posterior width 0,38, AME 0,13, PME 0,11, ALE 0,13, PLE 0,08, AME-AME 0,12, AME-ALE 0,05, PME-PME 0,16, PME-PLE 0,08, ALE-PLE 0,04. Chelicerae: length 0,99. Sternum length 1,18, width 1,15. Leg I: femur (fe) 2,13, patella (pa) 0,92, tibia (ti) 1,83, metatarsus (mt) 2,28, tarsus (ta) 0,89. II: fe 1,98, pa 0,90, ti 1,78, mt 1,63, ta 0,90. III: fe 2,06, pa 0,80, ti 1,63, mt 1,96, ta 0,93. IV: fe 2,54, pa 0,82, ti 2,05, mt 2,87, ta 0,93. Abdomen: length 2,61, width 1,68.

Male: Unknown.

Variation. Length (2f#) total 4.76-4.85, carapace 2.05-2.16, femur I 0.92-2.13;

Material examined. Only the type material.

Distribution. State of Pará, Brazil.

***Tupirinna mutum* sp. nov.**

Figs 6A–D, Map 5

Type material. m#, holotype from Acampamento Mutum (01°36'44.7"S 56°11'39.2"W), Juruti, Pará, Brazil 13.II.2007, N.F. Lo-Man-Hung & J.A.P. Barreiros leg. (MPEG 19945). f#, paratype from Acampamento Mutum (02°33'18.0"S 56°13'22.4"W), Juruti, Pará, Brazil 20.VIII.2011, E.G.S. Cafofo leg. (MPEG 19950).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna mutum* resemble those of *T. evanesca* by the presence of a subapical embolar reinforcement ring (Fig. 5A) but can be recognized by the presence of a large, blunt sub-apical tegular process superposed to embolar base (Figs 5A–B); females resemble those of *T. araguaia* by the continuous borders of copulatory oppening but can be recognized by the smaller size of the copulatory oppenings and by the convex epigynal plate posterior margin (Figs 5C–D).

Description. *Male* holotype (MPEG 19945). Carapace orange, with a brown band extended over the ocular area, and dark brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum and borders yellow with anterior lateral excavations brown. Legs yellow, with lateral surfaces of the patella black; proximal and distal region of the lateral surfaces of tibia black. Abdomen dorsum grey with a pair of black longitudinal spots in the cardiac area; in the middle region, a pair of black transversal spots followed by three black transversal spots; after that, one black transversal spot and a black spot close to the spinnerets, venter yellow. Total length 4.92. Carapace length 2.36, width 1.92, height 1.25. Clypeus length 0.15. Eye diameters and interdistances: anterior row 0.67, posterior row 0.73, QOM: length 0.37, anterior width 0.37, posterior width 0.37, AME 0.15, PME 0.1, ALE 0.15, PLE 0.13, AME-AME 0.08, AME-ALE 0.04, PME-PME 0.15, PME-PLE 0.1, ALE-PLE 0.02. Chelicerae: length 1.1, with 5 promarginal and 3 retromargin teeth. Sternum length 1.06, width 1.13. Leg I: femur (fe) 2.11, patella (pa) 0.82, tibia (ti) 2.15, metatarsus (mt) 1.71, tarsus (ta) 0.94. II: fe 1.99, pa 0.81, ti 1.9, mt 1.28, ta 0.97. III: fe 2.1, pa 0.75, ti 1.54, mt 1.07, ta 0.89. IV: fe 2.25, pa 0.75, ti 1.9, mt 2.23, ta 1.03. Abdomen: length 2.4, width 1.64.

Female paratype (MPEG 19950). Carapace orange, with a brown band extended over the ocular area, and dark brown bands. Chelicerae brown. Labium brown. Endites brown. Sternum and borders yellow with anterior lateral excavations brown. Legs yellow, with lateral surfaces of the patella black; proximal and distal region of the lateral surfaces of tibia black. Abdomen dorsum grey with two pairs of black spots in the cardiac area; in the middle region, two pairs of black spots on each side; followed by a huge black transversal spot with three triangular peaks in the upper portion, after that a semicircular black spot close to the spinnerets, venter grey. Total length 5.31. Carapace length 2.06, width 1.68, height 1.22. Clypeus length 0.14. Eye diameters and interdistances: anterior row 0.56, posterior row 0.62, QOM: length 0.36, anterior width 0.33, posterior width 0.35, AME 0.12, PME 0.11, ALE 0.13, PLE 0.11, AME-AME 0.11, AME-ALE 0.04, PME-PME 0.12, PME-PLE 0.1, ALE-PLE 0.05. Chelicerae: length 1.08, with 5 promarginal and 3 retromargin teeth. Sternum length 1.08, width 1.07. II: fe 1.78, pa 0.67, ti 1.43, mt 2.33, ta 0.95. III: fe 1.91, pa 0.59, ti 1.53, mt 1.67, ta 0.82. IV: fe 2.35, pa 0.78, ti 1.97, mt 2.38, ta 0.8. Abdomen: length 2.97, width 1.98.

Variation. Length (3m#) total 4.31-5.12 carapace 2.03-2.51, femur I 1.85-2.15.

Other material examined. BRAZIL. **Pará**. Juruti: Acampamento Mutum (01°36'44.7"S 56°11'39.2"W), 1m#, 22.XI.2007, D.F. Candiani & N.F. Lo-Man-Hung leg. (MPEG 019947); 1m#, 22.XI.2007, D.F. Candiani & N.F. Lo-Man-Hung leg. (MPEG 019948); 1m#, 11.II.2007, J.A.P. Barreiros leg. (MPEG 019946); Várzea Piranha (02°12'39.2"S 56°07'12.7"W), 1m#, 24.VIII.2011, E.G.S. Cafofo leg. (MPEG 019949); Mato Grosso. Cuiabá: Unidade de Conservação Parque Mãe Bonifácia (15°34'40.92"S 56°06'17.49"W), 1m#, 01-30.VIII.2007, S.E. Marçal leg. (MPEG 35500).

Distribution. States of Pará and Mato Grosso, Brazil.

***Tupirinna gigantea* sp. nov.**

Figs 6E–H, Map 5

Type material. m#, holotype, from Estácion Biológica Mosiro Itajúra (Caparú) (1°2'24"S 69°18'36"W), Lago Taraira, Bajo Rio Apaporis, Taraira, Vaupés, Colombia, III.2002, J. Pinzón leg. (ICN – Ar 10640). f#, paratype, same data (ICN – Ar 10641); m#, paratype, same data (ICN – Ar 10642).

Etymology. The specific name is a Latin adjective meaning gigantic, alluding to the fact that the specimens of this species are the larger in size than those of all known species of the genus.

Diagnosis. Males of *Tupirinna gigantea* differ from those of all other species with ventral lobe of RTA divided basally (*T. coari*, *T. zebra* and *T. urucu*) by the ventral process of the ventral lobe of RTA bifid (Fig 6E). They further ressamble those of *T. coari* by the short embolus, directed retrolaterally and long, narrow AS, differing by the filiform, curved embolar tip (Figs. 6E–F); females resemble those of *T. coari* by the epigynal plate concave but can be recognized by the copulatory opening posteriorly positioned (Figs. 6G–H).

Description. *Male* holotype (ICN - Ar 10640). Carapace brown, with a black band extended over the ocular area, and black laterals. Chelicerae brown. Labium brown. Endites brown. Sternum orange with borders and anterior laateral excavations brown. Legs brown, with ventral surfaces of the femur yellow and lateral porterior surfaces of tibia black. Abdomen dorsum black with two pairs of white horizontal spots on each side, venter black. Total length 5,87. Carapace length 2,73, width 2,31, height 0,70. Clypeus length 0,22. Eye diameters and interdistances: anterior row 0,72, posterior row 0,80, QOM: length 0,47, anterior width 0,43, posterior width 0,41, AME 0,17, PME 0,14, ALE 0,13, PLE 0,15, AME-AME 0,10, AME-ALE 0,07, PME-PME 0,13, PME-PLE 0,12, ALE-PLE 0,05. Chelicerae: length 1,47. Sternum length 1,33, width 1,39. Leg I: femur (fe) 2,70, patella (pa) 1,10, tibia (ti) 2,62, metatarsus (mt) 2,69, tarsus (ta) 1,44. II: fe 2,74, pa 0,97, ti 2,46, mt 2,69, ta 1,40. III: fe 2,70, pa 1,04. IV: fe 3,34, pa 0,96, ti 2,88, mt 4,08, ta 1,71. Abdomen: length 3,14, width 1,93.

Female paratype from Bajo Rio Araporis, Lago Taraira, Estácion Biológica Mosiro Itajúara (Caparú, Taraira, Vaupés, Colômbia (ICN - Ar 10641). Carapace brown, with a black band extended

over the ocular area, and black laterals. Chelicerae brown. Labium brown. Endites brown. Sternum orange with borders and anterior laateral excavations brown. Legs brown, with ventral surfaces of the femur yellow and lateral porterior surfaces of tibia black. Abdomen dorsum black with one longitudinal white spot in the cardiac area, in the middle region one transversal white spot and a pair of white spots close to the spinnerets., venter black. Total length 6,90. Carapace length 2,88, width 2,18, height 1,15. Clypeus length 0,25. Eye diameters and interdistances: anterior row 0,76, posterior row 0,85, QOM: length 0,45, anterior width 0,38, posterior width 0,45, AME 0,12, PME 0,14, ALE 0,12, PLE 0,13, AME-AME 0,14, AME-ALE 0,09, PME-PME 0,14, PME-PLE 0,14, ALE-PLE 0,05. Chelicerae: length 1,17. Sternum length 1,50, width 1,59. Leg I: femur (fe) 2,91, patella (pa) 1,26, tibia (ti) 2,80, metatarsus (mt) 2,58, tarsus (ta) 1,39. II: fe 2,93, pa 1,22, ti 2,78, mt 2,46, ta 1,34. III: fe 2,79, pa 1,18, ti 2,38, mt 2,90, ta 1,28. IV: fe 3,58, pa 1,19, ti 2,93, mt 3,98, ta 1,55. Abdomen: length 3,80, width 2,50.

Variation. Length (3m#) total 5.71-6.11, carapace 2.76-2.88, femur I 2.5; (1f#) total 6.69, carapace 2.73, femur I 2.53.

Material examined. PERU. Huanuco. Rio Yuyapichis - Panguana Biological Station (09°37'S 74°56'W), 1m#, 29.X-26.XI.1983, M. VEIHEAGK leg.; 1f#, 26.XI-24.XII.1983, M. VEIHEAGK leg.; 1m#, 23-14.XI.1983, M. VEIHEAGK leg.

Distribution. Peru and Colombia.

***Tupirinna coari* sp. nov.**

Figs 7A–D, Map 5

Type material. m#, holotype, from Porto Urucu (04°53'04.8"S 65°09'12.4"W), Coari, Amazonas, Brazil, 12.VII.2003, M.C.S. Costa leg. (MPEG 35484). f#, paratype from Base de Operações Geólogo

Pedro de Moura (04°48'56"S 65°1'53"W), Urucu, Coari, Amazonas, Brazil, 02.IX.2006, D.F. Candiani leg. (MPEG 35513); f#, same data, (MPEG 35512).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna coari* resamble those of *T. gigantea* by the short embolus, directed retrolaterally and long, narrow AS, differing by the simple, comma-shaped embolus without extended tip (Figs 7A–B); females resemble those of *T. gigantea* by the epigynal plate concave but can be recognized by the copulatory oppening anteriorly positioned, surrounded by a dark rounded spot (Figs 7C–D).

Description. *Male* holotype (MPEG 35484). Carapace orange, with brown band extended over the ocular area, and dark brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with lateral surfaces of the patella black; proximal and distal region of the lateral surfaces of tibia black. Abdomen dorsum yellow with a pair of black longitudinal spots in the cardiac area; in the middle region one huge subretangular black spot with two pairs of yellow spots inside. Contour of the spinnerets black., venter yellow with a brown rectangular spot. Total length 4.5. Carapace length 2.43, width 1.98, height 1.14. Clypeus length 0.19. Eye diameters and interdistances: anterior row 0.68, posterior row 0.77, QOM: length 0.4, anterior width 0.36, posterior width 0.41, AME 0.19, PME 0.14, ALE 0.16, PLE 0.16, AME-AME 0.06, AME-ALE 0.03, PME-PME 0.12, PME-PLE 0.09, ALE-PLE 0.02. Chelicerae: length 1.27. Sternum length 1.16, width 1.17. Leg I: femur (fe) 2.1, patella (pa) 0.72, tibia (ti) 2.02, metatarsus (mt) 1.67, tarsus (ta) 0.96. II: fe 2.12, pa 0.77, ti 1.8, mt 2.17, ta 1.09. III: fe 2.08, pa 0.7, ti 1.59, mt 2.18, ta 0.98. IV: fe 2.55, pa 0.77, ti 2.03, mt 2.59, ta 1.44. Abdomen: length 2.13, width 1.22.

Female paratype (MPEG 35513). Carapace yellow, wiith a black small spot on the middle area, and black bands. Chelicerae yellow. Labium yellow. Endites yellow. Sternum with borders and anterior lateral excavations brown. Legs yellow. Abdomen dorsum white with a pair of black circular spots followed by a black subrectangular transversal spot in the cardiac area; followed by four pairs

of black transversal spots until the end of the abdomen., venter white with the area of tracheal turbercle. Total length 5.84. Carapace length 2.6, width 2,09, height 0.83. Clypeus length 0.28. Eye diameters and interdistances: anterior row 0.68, posterior row 0.77, QOM: length 0.37, anterior width 0.38, posterior width 0.43, AME 0.15, PME 0.16, ALE 0.12, PLE 0.13, AME-AME 0.09, AME-ALE 0.04, PME-PME 0.11, PME-PLE 0.09, ALE-PLE 0.03. Chelicerae: length 1.19. Sternum length 1.27, width 1.24. Leg I: femur (fe) 2.12, patella (pa) 0.94, tibia (ti) 1.96, metatarsus (mt) 2.12, tarsus (ta) 1.15. II: fe 2.39, pa 0.89, ti 1.98, mt 2.06, ta 1.17. III: fe 2.5, pa 0.96, ti 2.02, mt 2,19, ta 1.2. IV: fe 2.73, pa 0.96, ti 2.47, mt 3.28, ta 1.4. Abdomen: length 2.85, width 1,97.

Variation. Length (1m#) total 5.12, carapace 2.04, femur I 1.91.

Material examined. Only the type material.

Distribution. Brazil, Amazonas State, Coari.

***Tupirinna zebra* sp. nov.**

Figs 8A–D; 15A–i, Map 2

Type material. m# holotype from Brazil, Amazonas, 60 km. N. Manaus, Fazenda Esteio ZF-3 Km 23 (2°27′59.976″S 59°50′45.348″W), 31.X.1985, B.C. Klein *leg*. (FZB - 19312). f# paratype from Brazil, Amazonas, 60 km. N. Manaus, Fazenda Esteio ZF-3 Km 23 (2°27′59.976″S 59°50′45.348″W), 31.X.1985, B.C. Klein *leg*. (FZB - 19312).

Etymology. The specific name is a noun in apposition, in reference to the white and dark pattern of the abdomen, ressembling that of a zebra.

Diagnosis. Males of *Tupirinna zebra* differ from those of other species with ventral lobe of RTA divided basaly (*T. coari* and *T. urucu*), except from those of *T. urucu*, by the conic, elongated embolus, directed retro-apically; they differ from those of *T. urucu* by the lamelar dorsal process of

VL tappering appically in ventral view (Figs 7A–B); females differ from those of all other *Tupirinna* species by the wide, sub-trapezoidal copulatory opening (Figs 7C–D).

Description. *Male* holotype from Reserva Ducke, Manaus, Amazonas, Brazil (FZB 19312). Carapace orange, with brown medium band extended over the ocular area, and brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum yellow, anterior lateral excavations brown. Legs yellow. Abdomen dorsum pale yelow, two grey longitudinal spots connected in the posterior region of the cardiac area; in the middle region, one grey longitudinal spot corred by two horizontal grey spots. Contour of the spinnerets brownish grey, venter pale yellow. Total length 4.99. Carapace length 2.44, width 1.99, height 1.11. Clypeus length 0.23. Eye diameters and interdistances: anterior row 0.64, posterior row 0.7, QOM: length 0.38, anterior width 0.35, posterior width 0.39, AME 0.1, PME 0.13, ALE 0.12, PLE 0.11, AME-AME 0.14, AME-ALE 0.07, PME-PME 0.12, PME-PLE 0.06, ALE-PLE 0.03. Chelicerae: length 1.34, with 4 promarginal and 3 retromargin teeth. Sternum length 1.17, width 1.17. Leg I: femur (fe) 2.23, patella (pa) 0.82, tibia (ti) 2.95, metatarsus (mt) 2.18, tarsus (ta) 0.99. II: fe 2.13, pa 0.85, ti 1.99, mt 2.14, ta 0.97. III: fe 2.4, pa 0.72, ti 1.6, mt 1.93, ta 1.14. IV: fe 2.52, pa 0.8, ti 2.46, mt 1.36, ta 1.32. Abdomen: length 2.47, width 1.57.

Female paratype from Farm Esteio ZF-3 km 23, 60km North Manaus city, Amazonas, Brazil (FZB 19312). Carapace orange, with pale brown medium band over the ocular area, and brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum yellow, borders of anterior lateral excavations black. Legs yellow. Abdomen dorsum as in male, venter white. Total length 5.8. Carapace length 2.54, width 2.25, height 1.32. Clypeus length 0.3. Eye diameters and interdistances: anterior row 0.7, posterior row 0.79, QOM: length 0.33, anterior width 0.39, posterior width 0.44, AME 0.11, PME 0.15, ALE 0.12, PLE 0.15, AME-AME 0.13, AME-ALE 0.06, PME-PME 0.13, PME-PLE 0.11, ALE-PLE 0.04. Chelicerae: length 1.42, with 4 promarginal and 3 retromargin teeth. Sternum length 1.31, width 1.31. Leg I: femur (fe) 2.59, patella (pa) 0.95, tibia (ti) 2.36, metatarsus

(mt) 2.26, tarsus (ta) 1.16. II: fe 2.66, pa 1,00, ti 2.33, mt 2.55, ta 1.22. III: fe 2.67, pa 1,00, ti 2.3, mt 2.3, ta 1.2. IV: fe 3.1, pa 0.91, ti 2.89, mt 3.56, ta 1.34. Abdomen: length 3.33, width 2.06.

Variation. Length (3m#) total 5-5.36, carapace 2.37-2.54, femur I 2.10-2.40.

Other material examined. BRAZIL. **Amazonas**. *Manaus*: Fazenda Esteio ZF-3 Km 23 (2°27′59.976″S 59°50′45.348″W), 1m#, 07.I.1986, B.C. Klein leg. (FZB – 19313); 1m#, 14.V.1985, B.C. Klein leg. (FZB - 19832); 1m#, 14.V.1985, B.C. Klein leg. (FZB - 19309); 1m#, 07.I.1986, B.C. Klein leg. (FZB - 19311); Campus da UFAM Manaus, Setor Norte (3°5'14"S 59°57'26"W), 1m#, 06.XII.2012, Thiago Carvalho & José Paulo Neto leg. (MPEG.ARA 35501); Fazenda Dimona (2°30'S 60°W), 1m#, VII.2006, A.J. Santos leg. (IBSP 80033; Reserva Ducke (2°57'42"S 59°55'40"W), 1m#, 15.IX-20.X.2006, J.L.P. Souza leg. (INPA - AR 8803); 1m#, 15.IX-20.X.2006, J.L.P. Souza leg. (INPA - AR 8804); 1m#, 15.XII.1971-09.I.1972, U. Irnnler leg.; 1m#, 08-29.X.1971, U. Irnnler leg.; 2m#, 1-21.X.1971, U. Irnnler leg.; 1m# and 1f#, 31.I-19.II.1972, U. Irnnler leg.; 1m# and 1f#, 22.IV-16.V.1972, U. Irnnler leg.; 1m# and 1f#, 21.X-14.XI.1971, U. Irnnler leg.; 1f#, 11.III-02.IV.1972, U. Irnnler leg.; 1m# and 3f#, 05.IX-01.X.1971, U. Irnnler leg.; 4m#, 14-15.XI.1971, U. Irnnler leg.; 1m#, 23.III.1992, H. Höfer leg. (IBSP 10702); 1m#, 23.III.1992, H. Höfer leg. (IBSP 10704); 1f#, 31.VIII.1992, H. Höfer leg. (IBSP 10701); *Novo Airão*: Parque Nacional do Jaú, 1m#, leg. (MPEG 35502); Trilha do Caju (02°18'14.6"S 62°29'23.4"W), 1m#, 20.II-01.III.2017, Nithomas, Bernardo & Pedro leg. (MPEG 35503); 1m#, (MPEG 35504); 1f#, (MPEG 35505); **Mato Grosso**. *Aripuanã*: Reserva Humboldt (10°10′1″S 59°27′32″W), 1m#, 28.I.1976, L.P. Albuquerque leg. (FZB – 19315).

Distribution. States of Amazonas and Mato Grosso, Brazil.

***Tupirinna urucu* sp. nov.**

Figs 8E–F, Map 2

Type material. m#, holotype from Brazil, Amazonas, Coari, Urucu, Base de Operações Geólogo Pedo de Moura (04°52'07.6"S 65°15'53.6"W), 01.X.2004, A.B. Bonaldo, D.F. Candiani & J.A. Marin-Fernandes leg. (MPEG 35483).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna urucu* differ from those of other species with ventral lobe of RTA divided basaly (*T. coari*, *T. zebra* and *T. urucu*), except from those of *T. zebra*, by the conic, elongated embolus, directed retro-apically (Figs 8C–D); they differ from those of *T. zebra* by the lamelar dorsal process of VL sub-rectangular in ventral view.

Description. Male holotype (MPEG 35483). Carapace orange, with brown band extended over the ocular area, and dark brown bands. Chelicerae dark brown. Labium brown. Endites brown. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow. Abdomen dorsum yellow with two longitudinal brown spots, connected in the posterior region; followed by a huge brown subretangular spot. Contour of the spinnerets brown., venter white with a brown rectangular spot. Total length 4.65. Carapace length 2.2, width 2.02, height 1.07. Clypeus length 0.23. Eye diameters and interdistances: anterior row 0.68, posterior row 0.79, QOM: length 0.41, anterior width 0.4, posterior width 0.43, AME 0.16, PME 0.15, ALE 0.16, PLE 0.14, AME-AME 0.07, AME-ALE 0.05, PME-PME 0.14, PME-PLE 0.13, ALE-PLE 0.07. Chelicerae: length 1.19, with 4 promarginal and 3 retromargin teeth. Sternum length 1.18, width 1.21. Leg I: femur (fe) 2.19, patella (pa) 0.89, tibia (ti) 2.32, metatarsus (mt) 2.25, tarsus (ta) 0.93. II: fe 2.18, pa 0.72, ti 2.2, mt 2.19, ta 1.11. III: fe 2.32, pa 0.84, ti 2.07, mt 2.38, ta 1.19. IV: fe 2.6, pa 0.71, ti 2.14, mt 3.12, ta 1.11. Abdomen: length 2.31, width 1.39.

Female: Unknown

Material examined. Only the type material.

Distribution. Brazil, Amazonas State, Coari.

***Tupirinna luctuosa* sp. nov.**

Figs 7E–F, Map 3

Type material. f#, holotype from Brasil, Minas Gerais, Leme do Prado, Estação Ecológica de Acauã (17°8'0.7"S 42°46'5.1"W), 18-28.II.2013, P.H. Martins leg. (UFMG 20014).

Etymology. The specific name is a latim adjective meaning sorrowful, in reference of the recent environmental tragedies of Mariana and Brumadinho, caused by the lack of maintence of minning dams in the state of Minas Gerais.

Diagnosis. Females of *Tupirinna luctuosa* differ from those of all other species with copulatory ducts medially positioned (*T. rosae, T. regiae* and *T. coari*) by the epigynal plate with median sclerotization posterior to copulatory opening (Figs 7E–F).

Description. *Female* holotype (UFMG 20014). Carapace with a brown band extended over the ocular area, and black bands. Chelicerae yellow. Labium brown. Endites yellow. Sternum yellow with borders brown and borders of anterior lateral excavations black. Legs yellow, with proximal region of lateral surfaces of patella black; proximal and distal region of lateral surfaces of tibia black; distal region of metatarsus black; base os spines black on femur, tibia and metatarsus. Abdomen dorsum grey with one pair of longitudinal black spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently two black spots in the middle followed by a huge semicircle black spot connected with the countour of spinnerets black, venter grey. Total length 4.89. Carapace length 2.12, width 1.82, height 0.77. Clypeus length 0.17. Eye diameters and interdistances: anterior row 0.59, posterior row 0.63, QOM: length 0.34, anterior width 0.34, posterior width 0.34, AME 0.15, PME 0.1, ALE 0.12, PLE 0.1, AME-AME 0.1, AME-ALE 0.03, PME-PME 0.14, PME-PLE 0.1, ALE-PLE 0.03. Chelicerae: length 0.87. Sternum length 1.23, width 1.21. II: fe 1.92, pa 0.67, ti 1.55, mt 1.64, ta 0.83. III: fe 1.98, pa 0.79, ti 1.5, mt 1.94, ta 0.88. IV: fe 2.39, pa 0.86, ti 1.95, mt 2.72, ta 1.01. Abdomen: length 2.7, width 1.86.

Male: Unknown.

Material examined. Only the type material.

Distribution. State of Minas Gerais, Brazil.

The group *trilineata*

Diagnosis. Males of the group *trilineata* of *Tupirinna* are characterized by weakly developed ventral lobe of the retrolateral tibial apophysis and by the presence of a dorsal lobe (Figs 10F,11B, 11F, 12B); females can be recognized by the undeveloped posterior vulval plate, sclerotized copulatory pouch and presence of small secondary spermathecae (except in *T. trilineata* and *T. ibiapaba* in which it is absent) (Figs. 11D, 12F, 13E).

***Tupirinna trilineata* (Chickering, 1937)**

Parachemmis trilineatus Chickering, 1937: 41, plate 2, figs. 28, 31, 35, 38, plate 4, figs. 49, 51 (Type from Barro Colorado Island, Zona do Canal, Panama; in the Museum of Comparative Zoology, not re-examined)

Tupirinna trilineata Bonaldo, 2000: 134, figs. 344-347.

Diagnosis. Males of *Tupirinna trilineata* differ from those of other species with embolar process dorsal in relation to embolus and dorsal lobe of RTA respresented by a small retro-apical hump (*T. palmares* and *T. ibiapaba* by the combined presence of a long, filiform embolus, ATV longer than wide and by the presence of a tegular retroapical projection; females resemble those of *T. ibiapaba* by the incomplete, recurve margins of the copulatory oppening, differing by the sub-quadrangular copulatory pouch.

Description. See Bonaldo (2000): 134-136

Distribution. South Central America.

***Tupirinna ibiapaba* sp. nov.**

Figs 10A–D, Map 3

Type material. m#, holotype from Brasil, Ceará, Ubajara, Chapada do Ibiapaba, Sítio do Alemão (3°50'50.7"S 40°53'18.5"W), 21.X.2012, W.A. Souza et al leg. (UFMG 14852). f#, paratype, Parque Nacional de Ubajara, Trilha da Samamabaia (3°50'19.4"S 40°53'58.6"W), 25.X.2011, L.S. Carvalho et al leg (CHNUFPI 2402).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna ibiapaba* differ from those of other species with embolar process dorsal in relation to embolus and dorsal lobe of RTA respresented by a small retro-apical hump (*T. trilineata* and *T. palmares*) by the combined presence of a long, filiform embolus, ATV as long as wide and by the absence of a tegular retroapical projection (Figs 9A–B); females resemble those of *T. ibiapaba* by the incomplete, recurve margins of the copulatory oppening, differing by the sub-triangular copulatory pouch (Figs 9C–D).

Description. *Male* holotype (UFMG 14852). Carapace orange, with a brown band extended over the ocular area, and brown bands. Chelicerae orange. Labium brown with top edge pale brown. Endites orange. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow. Abdomen dorsum yellow with one pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently one black subretangular spot, yellow in the middle portion. Contour of the spinnerets black., venter yellow. Total length 4.91. Carapace length 2.74, width 2.28, height 0.66. Clypeus length 0.13. Eye diameters and interdistances: anterior row 0.72, posterior row 0.77, QOM: length 0.41, anterior width 0.38, posterior width 0.39, AME 0.14, PME 0.12, ALE 0.14, PLE 0.1, AME-AME 0.12, AME-ALE 0.06, PME-PME 0.15, PME-PLE 0.13,

ALE-PLE 0.04. Chelicerae: length 1.55. Sternum length 1.34, width 1.32. II: fe 2.08, pa 0.9, ti 2.16, mt 1.94, ta 1,00. III: fe 2.38, pa 0.88, ti 1.88, mt 2.14, ta 1.03. IV: fe 2.52, pa 0.92, ti 2.11, mt 3.2, ta 1.1. Abdomen: length 2.35, width 1.52.

Female paratype (CHNUFPI 2402). Carapace orange, with a brown band extended over the ocular area, and black bands. Chelicerae orange. Labium brown. Endites yellow. Sternum and anterior lateral excavations yellow with borders brown. Legs yellow. Abdomen dorsum grey with spots as in male, venter yellow. Total length 5.51. Carapace length 2.63, width 2.22, height 1.14. Clypeus length 0.17. Eye diameters and interdistances: anterior row 0.69, posterior row 0.76, QOM: length 0.32, anterior width 0.38, posterior width 0.42, AME 0.15, PME 0.12, ALE 0.12, PLE 0.12, AME-AME 0.12, AME-ALE 0.07, PME-PME 0.15, PME-PLE 0.1, ALE-PLE 0.03. Chelicerae: length 1.2. Sternum length 1.44, width 1.37. Leg I: femur (fe) 1.88, patella (pa) 0.99, tibia (ti) 1.89, metatarsus (mt) 1.91, tarsus (ta) 0.84. III: fe 1.63, pa 0.98, ti 1.95, mt 2.26, ta 0.97. IV: fe 2.96, pa 1.03, ti 2.33, mt 3.03, ta 1.08. Abdomen: length 2.74, width 1.89.

Material examined. Only the type material.

Distribution. State of Ceará, Brazil.

***Tupirinna cruzes* sp. nov.**

Figs 11A–D, Map 4

Type material. m#, holotype from Brasil, São Paulo, Mogi das Cruzes, Parque Natural Municipal Serra do Itapety (01°36'44.7"S 56°11'39.2"W), Equipe Biota leg. (IBSP 54625). f#, paratype from Brasil, Salesopólis, Estação Ecológica Boraceia (23°37'51"S 45°52'11"W), 09-11.VII.2005. (IBSP 55155).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna cruzes* ressamble those of *T. caraca* and *T. una* by the TEP parallel in relation to embolus but differ by the small RTA's dorsal lobe, with acute tip and by the long, filiforme TEP (Figs 10A–B). Females share with those of *T. caraca* and *T. oba* the epiginal plate with posterior transversal ridges, but can be readly recognized by the procurve posterior transversal ridges (Figs 10C–D).

Description. *Male* holotype (IBSP 54625). Carapace brownish orange, with a dark brown band gradually lighter extended over the ocular area, and black bands. Chelicerae brown. Labium brown. Endites yellow. Sternum yellow with borders brown and anterior lateral excavations dark brown. Legs yellow, with the lateral surfaces of patella (proximal region), tibia (proximal and distal region) and the distal region of the metatarsus black. Abdomen dorsum yellow with two pairs of longitudinal black spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently two black spots in the middle followed by a semicircular black spot. Contour of the spinnerets black., venter yellow. Total length 5.43. Carapace length 2.53, width 2.11, height 1.18. Clypeus length 0.21. Eye diameters and interdistances: anterior row 0.74, posterior row 0.62, QOM: length 0.33, anterior width 0.36, posterior width 0.41, AME 0.16, PME 0.13, ALE 0.1, PLE 0.11, AME-AME 0.07, AME-ALE 0.04, PME-PME 0.09, PME-PLE 0.05, ALE-PLE 0.03. Chelicerae: length 1.41. Sternum length 1.34, width 1.31. Leg I: femur (fe) 2.59, patella (pa) 0.83, tibia (ti) 1.34, metatarsus (mt) 2.22, tarsus (ta) 1.1. II: fe 2.51, pa 0.84, ti 2.3, mt 2.28, ta 0.98. III: fe 2.51, pa 0.88, ti 1.93, mt 2.45, ta 2.46. IV: fe 1.12, pa 0.98, ti 2.56, mt 3.57, ta 0.92. Abdomen: length 2.77, width 1.77.

Female paratype (IBSP 55155). Carapace orange, with a brown band extended over the ocular area, and black bands. Chelicerae brown. Labium brown. Endites yellow. Sternum yellow with borders and anterior lateral excavations brown. Legs pale brown, except femur yellow, with posterior region of lateral surfaces of tibia black. Abdomen dorsum yellow with two pairs of longitudinal black spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently

one huge black spot with two yellow spots in the middle. Contour of the spinnerets black., venter yellow. Total length 5.44. Carapace length 2.32, width 1.94, height 0.74. Clypeus length 0.2. Eye diameters and interdistances: anterior row 0.64, posterior row 0.73, QOM: length 0.26, anterior width 0.35, posterior width 0.4, AME 0.09, PME 0.12, ALE 0.11, PLE 0.13, AME-AME 0.12, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.01, ALE-PLE 0.02. Chelicerae: length 1.02. Sternum length 1.26, width 1.2. Leg I: femur (fe) 1.9, patella (pa) 0.83, tibia (ti) 1.88, metatarsus (mt) 1.6, tarsus (ta) 0.87. II: fe 1.68, pa 0.79, ti 1.58, mt 0.93, ta 0.94. III: fe 1.95, pa 0.78, ti 1.57, mt 1.59, ta 0.87. IV: fe 2.62, pa 0.71, ti 2.03, mt 2.74, ta 0.98. Abdomen: length 2.79, width 2.35.

Variation. Length (3m#) total 5.06-5.19, carapace 2.03-2.49, femur I 1.80-2.39; (3f#) total 4.70-6.43, carapace 2.13−2.70, femur I 1.76-2.35.

Other material examined. BRAZIL. **São Paulo**. *Biritiba-Mirim*: Barragem do Rio Biritiba (23°34'53"S 45°58'19"W), 1f#, 10-15.V.2003, Equipe Biota leg. (IBSP 117453); *Mogi das Cruzes*: Parque Natural Municipal da Serra do Itapety, 1m#, Equipe Biota leg. (IBSP 54654); *Peruíbe*: Estação Ecológica Jureia Itatins, 1m#, 17-21.III.1997, A.D. Brescovit *et al*. leg. (IBSP 9583); *Salesopólis*: Estação Biológica Boraceia (23°37'51"S 45°52'11"W), 1f#, 8-10.XI.1942, B. Soares leg .(MZUSP 10719); *São Bernardo do Campo*: Clube de Campo São Camilo, 3f#, C.V. Janini *et al*. leg. (IBSP 136554); *Ubatuba*: Praia do Sono, Reserva de Juatinga (23°20'06"S 44°37'44"W), 1m#, 7-17.VI.2002, I. Cizauskas & A.G. Sugimoto leg. (IBSP 43423); **Rio de Janeiro**. *Cachoeiras do Macacu*: Reserva Ecológica Guapiaçu (22°27'12"S 42°46'12"W), 2m#, 11.III. 2001, R. Baptista et al leg. (MNRJ 3018); *Rio de Janeiro*: Floresta da Tijuca (22°57'47"S 43°14'40"W), 1m#, I.1974, M. Alvarenga leg.; **Santa Catarina**. *Florianópolis*: Lagoa do Peri (27°43'S 48°32'W), 1f#, 2007, M.I.M. Hernández leg. (IBSP 117338); (27°35'49"S 48°32'56"W), 1m#, 12.02.2007, R.S. Melo leg. (IBSP 72661); *Urussanga*: Rio Molha (28°31'04"S 49°19'15"W), 1m#, 04-11.IX.2007, R. Teixeira leg. (IBSP 133895);

Distribution. States of Rio de Janeiro, São Paulo and Santa Catarina, Brazil.

***Tupirinna caraca* sp. nov.**

Figs 11E–H; 16A–I; 17A–L, Map 3

Type material. m#, holotype from Brazil, Minas Gerais, Santa Bárbara, Pico do Sol, RPPN Santuário do Caraça (20°3'31.85"S 43°30'19.72"W), 7.XI.2009, L.N. Perillo leg. f#, paratype, same as the holotype, 10.II.2010. L.N. Perillo leg.

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna caraca* ressamble those of *T. una* by the TEP parallel in relation to embolus, the long RTA's dorsal lobe, with blunt tip but differ by the presence of a tegular apical prolateral process and by the TEP smaller than embolus (Figs 10E–F). Females share with those of *T. oba* the recurved posterior transversal ridges on epigynal plate, but can be readly recognized by the small, rounded copulatory opening (Figs 10G–H).

Description. *Male* holotype (UFMG 6647). Carapace pale brown, with brown band extended over the ocular area, and brown bands. Chelicerae pale brown. Labium pale brown. Endites pale brown. Sternum pale brown, anterior lateral excavations brown. Legs yellow, with posterior ventral and lateral surfaces of the tibia stained black. Abdomen dorsum yellow with a pair of brown longitudinal spots in the cardiac area; in the middle region, two pairs of brown spots on each side; subsequently a single brown transverse spot. Contour of the spinnerets brown., venter white. Total length 5.76. Carapace length 2.55, width 2.2, height 1.39. Clypeus length 0.15. Eye diameters and interdistances: anterior row 0.74, posterior row 0.84, QOM: length 0.44, anterior width 0.4, posterior width 0.45, AME 0.14, PME 0.13, ALE 0.13, PLE 0.13, AME-AME 0.12, AME-ALE 0.06, PME-PME 0.14, PME-PLE 0.12, ALE-PLE 0.06. Chelicerae: length 1.62, with 4 promarginal and 4 retromargin teeth. Sternum length 1.3, width 1.26. Leg I: femur (fe) 2.4, patella (pa) 0.88, tibia (ti) 2.25, metatarsus (mt) 2.16, tarsus (ta) 1.08. II: fe 2.39, pa 0.85, ti 2.06, mt 2.1, ta 1.1. III: fe 2.4, pa

0.77, ti 2.06, mt 2.45, ta 1.09. IV: fe 2.87, pa 0.86, ti 2.61, mt 3.37, ta 1.29. Abdomen: length 3.06, width 1.78.

Female paratype (UFMG 6577). Carapace yellow, with brown band extended over the ocular area, and brown bands. Chelicerae orange. Labium yellow. Endites yellow. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with posterior ventral and lateral surfaces of the tibia stained black. Abdomen dorsum grey with one pair of brown longitudinal spots; in the middle region, one pair of brown longitudinal spots, connected in the anterior region with two brown spots on each side, two brown spots; subsequently one huge black spot. Contour of the spinnerets black, venter yellow. Total length 6.24. Carapace length 2.5, width 1.94, height 1,00. Clypeus length 0.12. Eye diameters and interdistances: anterior row 0.66, posterior row 0.71, QOM: length 0.37, anterior width 0.35, posterior width 0.37, AME 0.16, PME 0.11, ALE 0.13, PLE 0.11, AME-AME 0.12, AME-ALE 0.05, PME-PME 0.18, PME-PLE 0.13, ALE-PLE 0.04. Chelicerae: length 1.16, with 4 promarginal and 3 retromargin teeth. Sternum length 1.32, width 1.24. Leg I: femur (fe) 2.29, patella (pa) 0.74, tibia (ti) 2.11, metatarsus (mt) 1.77, tarsus (ta) 0.92. II: fe 2.17, pa 0.57, ti 1.92, mt 1.67, ta 0.98. III: fe 2.15, pa 0.74, ti 1.87, mt 2.03, ta 0.97. IV: fe 2.67, pa 0.8, ti 2.45, mt 3.03, ta 1.09. Abdomen: length 3.37, width 1.86.

Variation. Length (5m#) total 5.16-6.97, carapace 2.49-2.64, femur I 2.24-3.04; (5f#) total 6.91−8.43, carapace 2.52−3.15, femur I 2.38-2.71.

Other material examined. BRAZIL. **Minas Gerais**. *Nova Lima*: RPPN Mata Samuel de Paula (20°00'S 43°52'W), 3m#, 12-18.X.2006, J.P.P. Pena-Barbosa et al. leg. (UFMG 2816); 1f#, 12-14.X.2006, J.P.P. Pena-Barbosa et al. leg. (UFMG 2499); 1m#, 12-18.X.2006, J.P.P. Pena-Barbosa et al. leg. (UFMG 2500); *Rio Preto*: (22°04'49"S 43°49'42"W), 1m#, 14-20.V.2002, R. Baptista *et al.* leg. (MNRJ 07597); 1f#, 14-20.V.2002, R. Baptista *et al.* leg. (MNRJ 07596); *Santa Bárbara*: RPPN Santuário do Caraça, Pico do Sol (20°3'31.85"S 43°30'19.72"W), 1m#, 7.X.2010, L.N. Perillo leg. (UFMG 6646); 1m#, 22.XI.2009, L.N. Perillo leg. (UFMG 6648); *Santana do Riacho*: Parque

Nacional da Serra do Cipó, Vale do Rio Bocaina (19°20'57"S 43°37'10.16"W), 1m#, 12.XII.2004, E.S.S. Álvares leg. (UFMG 1346); **Espírito Santo**. *Santa Teresa*: Reserva Biológica Augusto Ruschi (19°53'05"S 40°32'47"W), 1f#, IV-VIII.2006, T. Souza; T. Bernabé; E. Soveiro leg. (IBSP 121339); 1f#, IV-VIII.2006, T. Souza; T. Bernabé; E. Soveiro leg. (IBSP 121652); **Rio de Janeiro**: *Teresopólis*: Parque Nacional da Serra dos Órgãos (22°53'S 43°09'W), 1m# 11-12.III.2005, Denis R Pedroso & Victor G. D. Orrico leg. (MNRJ 07585); **São Paulo**. *Embu-Guaçu*: (23°49'21"S 46°48'56"W), 2m#, VI-VII.2007, R. Pando leg. (IBSP 117651); *Mogi das Cruzes*: Parque das Neblinas (23°44'52"S 46°09'44"W), 1m#, 01.XI.2005, M.U. Prado leg. (IBSP 143185); 1f#, 01.XI.2005, M.U. Prado leg. (IBSP 143186); *Peruíbe*: Estação Ecológica Jureia Itatins (24°33'S 47°13'2"W), 1m#, 26.IV-3.V.1999, A.D. Brescovit *et al*. leg. (IBSP 25692); *Santo André*: Parque Duque de Caxias (23°38'47"S 46°32'11"W), 1m#, 2004, A. Macedo leg. (IBSP 75198); Reserva Biológica do Alto da Serra de Paranapiacaba (23°46'00"S 46°18'20"W), 1m#, 16.XI.2006, M.U. Prado leg. (IBSP 142637); *São Bernardo do Campo*: Clube de Campo São Camilo (23°45'42"S 46°33'47"W), 4m#, 13-20.X.2008, C.V. Janini *et al*. leg. (IBSP 136554); Parque Estoril (23°46'24"S 46°30'52"W), 1m#, 28.IX-02.X.2006, B. Távora leg. (IBSP 72240); 1m#, 28.IX-02.X.2006, B. Távora leg. (IBSP 72242); *São Luís do Paraitinga*: Parque Estadual da Serra do Mar, Núcleo Santa Virginia (23°20'06"S 45°08'45"W), 1m#, 10.IV.2005, M.U. Prado leg. (IBSP 143295); *São Paulo*: Jardim Angela, Reservatório do Guarapiranga (46°43'59.880"W 23°43'59.880"S), 1m#, 06-12.XI.1999, R.P. Indicatti leg. (IBSP 131846); Parque do Estado (23°38'24.6"S 46°37' 03.1"W), 1m#, 01-07.XI.2001, Jr Valvassori leg. (IBSP 59194); Parque Estadual da Serra do Mar, Núcleo Santa Virginia, 1m#, 19.XII.2004, M.U. Prado leg. (IBSP 58537); 1m#, 13.XII.2005, M.U. Prado leg. (IBSP 58553); 1m#, 10.IV.2005, M.U. Prado leg. (IBSP 58567); Parque Estadual Fontes do Ipiranga, 1f#, 18-25.X.2003, Jr Valvassori leg. (IBSP 115843); Reservatório Guarapiranga, Jardim Ângela, 5m# and 1f#, R.P. Indicatti leg. (IBSP 79931); **Paraná**. *Pinhão*: UHE Segredo - Reserva Rio dos Touros (25°47′34.98″S 52°6′46.98″W), 2m# and 1f#, 22.II.1992, R. Pinto-da-Rocha leg.; unknow specific locality, 1m#, 18.III.1997 (MCP - 8783); **Santa Catarina**. *Três Barras*: Floresta Nacional

de Três Barras (26°10-26°15'S 50°10'-50°15'W), 1m#, IV.2009-III.2010, C.B. Gross Kopf leg. (IBSP 168852); *Urussanga*: Rio Molha (28°25'28"S 49°18'28"W), 1m#, 04-11.IX.2007, R. Teixeira leg. (IBSP 133893); **Rio Grande do Sul**. *São Francisco de Paula*: CPCN Pró-Mata (29°28′51.816″S 50°10′27.3″W), 1f#, 14.VI.2002, R. Ott leg. (MCN/FZBRS - 39570); 1f#, 13.XI.2001, R. Ott leg. (MCN/FZBRS - 39571); 1f#, 02.II.2002, R. Ott leg. (MCN/FZBRS - 39572); 1m#, 03.III.2001, R. Ott leg. (MCN/FZBRS - 39573); 1m#, 03.III.2001, R. Ott leg. (MCN/FZBRS - 39574); 1m#, 07.VI.2001, R. Ott leg. (MCN/FZBRS - 39575); Potreiro Velho (29°24'52"S 50°15'24"W), 3f#, 02.VI.2000 (MCTP 14632); 1m#, VIII.2001, Luís A. Bertoncello *et al.* leg. (MCTP 23057); 1f#, 02.IV.2000, Arno A. Lise leg. (MCTP 14598); 1f#, 15.XII.2001, Ricardo Ott et al leg. (MCTP 18796); 1m#, III.2002, Luís A. Bertoncello *et al*. leg. (MCTP 23058); 2f#, 23.VII.1999, Arno A. Lise leg. (MCTP 31918); 1f#, 02.I.2002, Ricardo Ott *et a.l* leg. (MCTP 18792); 1m#, 08.III.2002, Ricardo Ott *et al*. leg. (MCTP 18790); 1f#, 14.IV.2002, Ricardo Ott *et al*. leg. (MCTP 18795); 1f#, IV.2001, Ricardo Ott & Arno A. Lise leg. (MCTP 21731).

Distribution. South and Southeast of Brazil.

***Tupirinna una* sp. nov.**

Figs 12A–D, Map 4

Type material. m#, holotype from Brazil, Bahia, Una, Estação Ecológica de Una (14°48'S 39°02'W), X.1999-IX.2000, M.F. Dias leg. (IBSP 63986); m#, paratype, X.1999-IX.2000, M.F. Dias leg. (IBSP 63985) and f#, paratype, 15-28.XI.2000, A.D. Brescovit *et al.* leg. from the same locality (IBSP 46787).

Etymology. The specific name is a noum in apposition after the type locality.

Diagnosis. Males of *Tupirinna una* ressamble those of *T. caraca* by the TEP parallel in relation to embolus, the long RTA's dorsal lobe, with blunt tip but differ by the absence of a tegular apical prolateral process and by the TEP and the embolus similarly sized (Figs 11A–B). Females

differ from those of all other species of *Tupirinna* by the presence of a conspicuous pair of anterior pockets (Figs 11C–D).

Description. *Male* holotype (IBSP 63986). Carapace orange, with a brown band extended over the ocular area, and black bands. Chelicerae brown. Labium brown with sclerotized "pockets" on the anterior region. Endites yellow. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with lateral surfaces of the patella black; proximal and distal region of the lateral surfaces of tibia black. Abdomen dorsum grey with a pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently one huge black subretangular spot. Countour of spinnerets black., venter pale yellow. Total length 4.55. Carapace length 2.18, width 1.9, height 1,00. Clypeus length 0.2. Eye diameters and interdistances: anterior row 0.64, posterior row 0.71, QOM: length 0.4, anterior width 0.36, posterior width 0.38, AME 0.16, PME 0.1, ALE 0.14, PLE 0.1, AME-AME 0.06, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.1, ALE-PLE 0.03. Chelicerae: length 1.41. Sternum length 1.15, width 1.07. Leg I: femur (fe) 1.97, patella (pa) 0.79, tibia (ti) 1.47, metatarsus (mt) 1.41, tarsus (ta) 0.8. II: fe 1.87, pa 0.78, ti 1.57, mt 1.38, ta 0.78. III: fe 1.87, pa 0.74, ti 1.45, mt 1.75, ta 0.89. IV: fe 2.2, pa 0.77, ti 1.79, mt 2.37, ta 0.97. Abdomen: length 2.21, width 1.48.

Female paratype (IBSP 46787). Carapace yellow, with a brown band extended over the ocular area, and black bands. Chelicerae yellow. Labium brown with sclerotized "pockets" on the anterior region. Endites brown. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with lateral surfaces of the patella black; distal region of the lateral surfaces of tibia black. Abdomen dorsum grey with one pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently three black spots in the same row followed by a subretangular black spot. Countour of the spinnerets black., venter yellowish grey. Total length 4.47. Carapace length 1.77, width 1.48, height 0.46. Clypeus length 0.09. Eye diameters and interdistances: anterior row 0.47, posterior row 0.53, QOM: length 0.32, anterior width 0.24, posterior

width 0.31, AME 0.12, PME 0.1, ALE 0.1, PLE 0.08, AME-AME 0.05, AME-ALE 0.04, PME-PME 0.1, PME-PLE 0.07, ALE-PLE 0.03. Chelicerae: length 0.74, with 4 promarginal and 3 retromargin teeth. Sternum length 1.05, width 1.03. Leg I: femur (fe) 1.54, patella (pa) 0.6, tibia (ti) 1.32, metatarsus (mt) 1,00, tarsus (ta) 0.66. II: fe 1.52, pa 0.65, ti 1.19, mt 1.24, ta 0.67. III: fe 1.43, pa 0.63, ti 1.23, mt 1.45, ta 0.64. IV: fe 1.6, pa 0.68, ti 1.66, mt 1.88, ta 0.86. Abdomen: length 2.22, width 1.49.

Variation. Length (1m#) total 3.9, carapace 1.84, femur I 1.26.

Material examined. Only the type material.

Distribution. State of Bahia, Brazil.

***Tupirinna oba* sp. nov.**

Figs 12 E–F, Map 4

Type material. f#, holotype from Brazil, Bahia, Salvador, Cabula, Campus 19° Batalhão Caçadores (14°48'S 39°02'W), I-VI.2007, D. Uzel et al leg. (IBSP 135845); f#, paratype from Brasil, Bahia, Lafaiete Coutinho, (13°24'24"S 40°45'42"W), VII.2006-VII.2007, J. Romão *leg*. (IBSP 145525)

Etymology. The specific epitet is a noun in apposition reffering to the goddess Obá, from the Afro-Brazilian religion candomblé.

Diagnosis. Females of *Tupirinna oba* share with those of *T. caraca* the recurved posterior transversal ridges on epigynal plate, and with those of *T. albofasciata* and *T. palmares* by the presence of a well-defined median depression in the epigynal plate. They can be distingished from those of the former by the larger, sub-rectangular copulatory oppening and from those of the later by the presence of epigynal transversal ridges (Figs 11E–F).

Description. *Female* holotype (IBSP 135845). Carapace orange, with a brown band gradually lighter extended over the ocular area, and black laterals. Chelicerae orange. Labium orange. Endites

yellow. Sternum and anterior lateral excavations yellow with borders brown. Legs yellow, with lateral surfaces of the patella black; distal region of the lateral surfaces of tibia black. Abdomen dorsum yellow with one pair of longitudinal black spots in the cardiac area; in the middle region, two pairs of black spots on each side, followed by one subretangular black spot. Contour of the spinnerets black., venter yellow. Total length 5,82. Carapace length 2,59, width 2,09, height 1,15. Clypeus length 0,20. Eye diameters and interdistances: anterior row 0,70, posterior row 0,76, QOM: length 0,37, anterior width 0,39, posterior width 0,40, AME 0,16, PME 0,11, ALE 0,13, PLE 0,11, AME-AME 0,12, AME-ALE 0,04, PME-PME 0,16, PME-PLE 0,11, ALE-PLE 0,03. Chelicerae: length 1,19, with 5 promarginal teeth. Sternum length 1,34, width 1,36. Leg I: femur (fe) 2,21, patella (pa) 0,72, tibia (ti) 2,13, metatarsus (mt) 1,95, tarsus (ta) 0,90. II: fe 2,24, pa 0,79, ti 1,98, mt 2,02, ta 0,89. III: fe 2,11, pa 0,67, ti 1,67, mt 1,76, ta 0,99. IV: fe 2,65, pa 0,95, ti 2,55, mt 2,41, ta 1,03. Abdomen: length 2,90, width 1,87.

Male: Unknown.

Variation. Length (4f#) total 5.57-6.5, carapace 2.46-2.69, femur I 2.23-2.37.

Other matherial examined. BRAZIL. **Bahia**. *Salvador*: Campus 19° Batalhão Caçadores, Cabula (12°57'27"S 38°28'10"W), 1f#, I-VI.2007, D. Uzel *et al.* leg. (IBSP 135847); 1f#, 06-11.VI.2007, D. Uzel leg. (IBSP 135430); 1f#, I-VI.2007, D. Uzel *et al.* leg. (IBSP 135846); *Uruçuca*: (14°35′30.33″S 39°17′4.16″W), 1f#.

Distribution. State of Bahia, Brazil.

***Tupirinna palmares* sp. nov.**

Figs 13A–D, Map 3

Type material. m#, holotype, from Brazil, Alagoas, Maceió, Boa Vista Farm [09°39'57"S 35°44'06"W], 17.XII.2005, G. Quintela leg. (IBSP 85193). Paratype: f#, same data (IBSP 85193).

Etymology. The specific ephitet is a noun in apposition referring to the Quilombo dos Palmares, in the State of Alagoas, Brazil. Quilombos were settlements found by escaped slaves during Brazilian colonial period.

Diagnosis. Males of *Tupirinna palmares* ressamble those of *T. lata* by the TEP dorsal in relation to embolus but differ by the RTA's dorsal lobe sub-apical represented by a small hump and by the wide-based sub-triangular embolus (Figs 12A–B). Females share with those of *T. albofasciata* the epiginal plate with a well-defined median depression, differing by the median depression being sub-triangular (Figs 12C–D).

Description. *Male* holotype (IBSP 85193). Carapace orange, with a brown band extended over the ocular area, and dark brown bands. Chelicerae brown. Labium brown with sclerotized "pockets" on the anterior region. Endites brown. Sternum yellow with borders and anterior lateral excavations dark brown. Legs yellow, with posterior region of lateral surfaces of tibia black. Abdomen dorsum yellow with a pair of longitudinal black spots in the cardiac area; in the middle region, two pairs of black spots on each side; subsequently, one subretangular black spot yellow in the middle. Contour of the spinnerets black., venter yellow. Total length 4.87. Carapace length 2.32, width 1.99, height 0.45. Clypeus length 0.18. Eye diameters and interdistances: anterior row 0.6, posterior row 0.69, QOM: length 0.37, anterior width 0.33, posterior width 0.39, AME 0.16, PME 0.14, ALE 0.11, PLE 0.12, AME-AME 0.08, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.09, ALE-PLE 0.03. Chelicerae: length 1.57. Sternum length 1.19, width 1.19. Leg I: femur (fe) 1.62, patella (pa) 0.82, tibia (ti) 2,00, metatarsus (mt) 1.93, tarsus (ta) 0.98. II: fe 1.66, pa 0.67, ti 1.71, mt 1.99, ta 0.92. III: fe 1.63, pa 0.69, ti 1.69, mt 2.17, ta 0.95. IV: fe 2.03, pa 0.77, ti 2.3, mt 2.84, ta 1.13. Abdomen: length 2.3, width 1.4.

Female paratype (IBSP 85193). Carapace orange, with a brown band extended over the ocular area, and dark brown bands. Chelicerae brown. Labium brown with sclerotized "pockets" on the anterior region. Endites brown. Sternum yellow with borders and anterior lateral excavations brown.

Legs yellow, with posterior region of lateral surfaces of tibia black. Abdomen dorsum grey with a pair of longitudinal black spots in the cardiac area; in the middle region (three pairs of rounded black spots on each side connected between them, followed by a huge subquadrangular black spot., venter grey. Total length 4.47. Carapace length 2.1, width 1.85, height 1.11. Clypeus length 0.14. Eye diameters and interdistances: anterior row 0.61, posterior row 0.7, QOM: length 0.28, anterior width 0.31, posterior width 0.39, AME 0.11, PME 0.14, ALE 0.1, PLE 0.13, AME-AME 0.11, AME-ALE 0.06, PME-PME 0.1, PME-PLE 0.07, ALE-PLE 0.03. Chelicerae: length 0.94. Sternum length 1.13, width 1.2. Leg I: femur (fe) 2.02, patella (pa) 0.82, tibia (ti) 1.79, metatarsus (mt) 1.55, tarsus (ta) 0.82. II: fe 2.08, pa 0.84, ti 1.77, mt 1.74, ta 0.87. III: fe 1.92, pa 0.62, ti 1.52, mt 1.59, ta 0.83. IV: fe 2.39, pa 0.84, ti 2.03, mt 2.54, ta 0.83. Abdomen: length 2.37, width 1.49.

Variation. Length (3m#) total 4.25-4.86, carapace 1.72-2.49, femur I 1.91-2.19; (2f#) total 5.24-6.56, carapace 2.28-2.38, femur I 1.86-2.

Other material examined. BRAZIL. **Ceará**. *Guaramiranga*: Serra de Baturité, Parque das Trilhas (04°16'S 38°56'W), 1m#, VII.2002, I. Quintet *et al.* leg. (IBSP 97901); **Paraíba**. *Areia*: Parque Estadual Mata do Pau Ferro (6°57'55.4"S 35°45'0"W), 1f#, 15.VII.2011, J.B.R. Alencar leg. (CHNUFPI 2417); 1m#, 19.III.2011, A.M.P. Lima leg. (CHNUFPI 2423); 1m#, 26-30.IX.2011, F.S. Silva & A.S. Medeiros leg. (CHNUFPI 2433); **Alagoas**. *Maceió*: Fazenda Boa Vista (09°39'57"S 35°44'06"W), 1m#, 28.X.2006, G. Quintela leg. (IBSP 85194); **Bahia**. *Abaíra*: Mata da Forquilha, Serra do Barbado, Distrito de Catolés (13°17'27"S 41°54'6"W), 3m# and 1f#, 3.XI.2013, L.S. Carvalho & M.B. da Silva leg. (UFMG 15033); *Jequié*: (13°43'12"S 40°12'29"W), 1m#, 1.III.2004-11.I.2005, L. Bocardo leg. (IBSP 66347); *Lafaiete Coutinho*: (13°24'24"S 40°45'42"W), 1m#, VII.2006-VII.2007, J. Romão leg. (IBSP 145523); 1m#, VII.2006-VII.2007, J. Romão leg. (IBSP 145516); *Mata de São João*: RPPN Dunas Santo Antônio (12°27'30"S 37°55'59"W), 1m#, 18-25.I.2006, J.P. de S. Alves leg. (IBSP 75172); *Mucugê*: RPPN Adilia Paraguaçu (12°59'41"S 42°2'14"W), 1m#, XII.2003, J.P. de S. Alves leg. (IBSP 71095); *Salvador*: Campus 19° Batalhão Caçadores, Cabula (12°57'27"S 38°28'10"W), 1m#, I.VI.2007, D. Uzel *et al.*leg. (IBSP 135848);

Una: Estação Ecológica de Una (14°48'S 39°02'W), 1m#, X.1999-IX.2000, M.F. Dias leg. (IBSP 65445).

Distribution. Northeast of Brazil.

***Tupirinna albofasciata* (Mello-Leitão, 1943)**

Figs 13E–F, Map 1

Tasata albofasciata Mello-Leitão, 1943: 238, fig 65 (male and female sintypes from Rio Grande do Sul, B. Rambo col., MNRJ 42.526, male lost, female examined, here designed lectotype).

Tupirinna albofasciata; Ramírez, 2003: 230.

Note. The male syntype of *Tupirinna albofasciata*, from Rio Grande do Sul, was not found in MNRJ. We were not able to find a male specimen matching the female here described and the only source of information on the male form of this species still remains the original description. Nevertheless, judging by the illustrations presented (Mello-Leitão 1943: fig 65, 65a), the male syntype was either a Corinnidae or an Anyphaenidae. The vial MNRJ 42.526 contains only one fem# specimen, designated here as lectotype. Ramírez (2003: 230), when correctly transfering this species to *Tupirinna*, has mistakenly reffered the sintypes to MNRJ 670. This vial actually contains the sintypic series of *Tasata taperae* (Mello-Leitão, 1929) (examined).

Diagnosis. Females of *T. albofasciata* share with those of *T. palmares* the epiginal plate with a well-defined median depression, differing by the median depression being sub-rectangular (Figs E–F).

Description. *Female* lectotype (MNRJ 42526). Carapace pale brown, with a brown band extended over the ocular area, and brown laterals. Chelicerae pale brown with apices brown. Labium brown. Endites pale yellow. Sternum and borders yellow with anterior lateral excavations pale brown. Legs brownish. Abdomen dorsum yellow with one pair of longitudinal brown spots in the cardiac

area; in the middle region, two pairs of brown spots on each side; subsequently two brown spots in the middle followed by a huge brown "C" spot. Contour of spinnerets brown., venter pale yellow. Total length 4.92. Carapace length 2.19, width 1.97, height 0.93. Clypeus length 0.15. Eye diameters and interdistances: anterior row 0.65, posterior row 0.71, MOQ: length 0.36, anterior width 0.36, posterior width 0.40, AME 0.1, PME 0.11, ALE 0.12, PLE 0.1, AME-AME 0.12, AME-ALE 0.04, PME-PME 0.18, PME-PLE 0.12, ALE-PLE 0.04. Chelicerae: length 0.94. Sternum length 1.19, width 1.19. Leg measurements: I: femur (fe) 1.94, patella (pa) 0.79, tibia (ti) 1.75, metatarsus (mt) 1.54, tarsus (ta) 0.73. II: fe 1.61, pa 0.80. III: fe 1.82, pa 0.76, ti 1.42, mt 1.86, ta 0.75. IV: fe 2.27, pa 0.79, ti 1.95, mt 2.65, ta 0.91. Abdomen: length 2.57, width 1.70. Leg spination: I – femur d1-1-1, p0-0-1; tíbia v2-2-2; metatarso v2-2-0. II – femur d1-1-1, p0-1-1; tíbia v2-2-2-2; no metatarsus and tarsus. III – femur d1-1-1, p0-1-1, r0-1-1; tíbia p1-1-0, r1-1-0, v2-2-0; metatarso p1-1-0, r1-1-0, v2-2-2. IV – femur d1-1-1, p0-1-1, r0-1-1; tíbia p1-1-0, r1-1-0, v2-2-0; metatarso p1-1-0, r1-1-0, v2-2-2.

Material examined. Only the type material.

Distribution. Know only from the type locality.

***Tupirinna lata* sp. nov.**

Figs 10E–H; 18A–L; 19A–F, Map 4

Type material. m#, holotype from Brazil, São Paulo, Jundiaí, Parque Estadual Serra do Japi (23°17"S 46°59"W), 16.V.2008, J. Sobjack leg. (UFMG 7387). f#, paratype, same locality as the holotype, 13.XI.2007, J. Sobjack leg. (UFMG 7427).

Etymology. The specific name is a latim adjective meaning wide, in reference to the wide, inverted T-Shaped copulatory pouch.

Diagnosis. Males of *Tupirinna lata* ressamble those of *T. palmares* by the TEP dorsal in relation to embolus but differ by the relatively large, medially inserted RTA's dorsal lobe and by the narrow-based, spiniform embolus (Figs 9E–F). Females are readly distinguished from those of all other *Tupirinna* species by the wide, inverted T-Shaped copulatory pouch (Figs 9G–H).

Description. *Male* holotype (UFMG 7387). Carapace yellow, with a brown band extended over the ocular area, and brown bands. Chelicerae yellow. Labium brown. Endites yellow. Sternum yellow with borders and anterior lateral excavations brown. Legs yellow, with proximal and distal region of the lateral surfaces of tibia and the distal region of metatarsus black. Abdomen dorsum grey with a pair of black longitudinal spots in the cardiac area; in the middle region, a pair of black spots on each side, followed by three black transversal spots; subsequently one black horizontal spot in the middle followed by one black C-shaped spot. Contour of the sinnerets black., venter yellow. Total length 4.66. Carapace length 2.18, width 1.9, height 0.92. Clypeus length 0.11. Eye diameters and interdistances: anterior row 0.64, posterior row 0.7, QOM: length 0.34, anterior width 0.36, posterior width 0.39, AME 0.13, PME 0.12, ALE 0.13, PLE 0.11, AME-AME 0.1, AME-ALE 0.05, PME-PME 0.14, PME-PLE 0.12, ALE-PLE 0.04. Chelicerae: length 1.15, with 4 promarginal and 3 retromargin teeth. Sternum length 1.08, width 1.14. Leg I: femur (fe) 1.91, patella (pa) 0.74, tibia (ti) 1.82, metatarsus (mt) 1.6, tarsus (ta) 0.98. II: fe 1.74, pa 0.76, ti 1.75, mt 1.62, ta 0.89. III: fe 1.82, pa 0.75, ti 1.57, mt 1.79, ta 1.04. IV: fe 2.53, pa 0.71, ti 1.89, mt 1.9, ta 0.87. Abdomen: length 2.29, width 1.47.

Female paratype (UFMG 7427). Carapace orange, with a brown band extended over the ocular area, and brown bands. Chelicerae orange. Labium brown. Endites orange. Sternum yellow with borders and anterior lateral excavations brown, femur, patella and tibia yellow; metatarsus and tarsus orange; with proximal region of patella, proximal and distal region of the lateral surfaces of tibia and the distal region of metatarsus black. Abdomen dorsum yellow with a pair of black longitudinal spots in the cardiac area; in the middle region, two pairs of black spots on each side; followed by one huge

black horizontal spot leaked in the middle. Contour of the spinnerets black., venter yellow. Total length 5.45. Carapace length 2.32, width 2.01, height 0.9. Clypeus length 0.13. Eye diameters and interdistances: anterior row 0.61, posterior row 0.66, QOM: length 0.4, anterior width 0.35, posterior width 0.36, AME 0.14, PME 0.1, ALE 0.12, PLE 0.11, AME-AME 0.08, AME-ALE 0.02, PME-PME 0.15, PME-PLE 0.11, ALE-PLE 0.04. Chelicerae: length 0.98, with 5 promarginal and 3 retromargin teeth. Sternum length 1.27, width 1.21. Leg I: femur (fe) 1.96, patella (pa) 0.81, tibia (ti) 1.9, metatarsus (mt) 1.54, tarsus (ta) 0.88. II: fe 2.11, pa 0.86, ti 1.75, mt 1.63, ta 0.93. III: fe 2.01, pa 0.74, ti 1.7, mt 1.72, ta 0.94. IV: fe 2.17, pa 0.84, ti 2.08. Abdomen: length 2.88, width 1.94.

Variation. Length (3m#) total 5.05-5.74, carapace 2.26-2.23, femur I 2.08-2.23; (3f#) total 7.03, carapace 2.45, femur I 2.27.

Other material examined. BRAZIL. **Bahia**. Itamarajú: Fazenda Jacarandá (16°42′45.61″S 40°13′8.58″W), 1m#, 08.XII.1977, I.S. Santos leg. (FZB - 11430); Espírito Santo. Apiacá: Fazenda Santa Maria (21°05'17"S 41°34'27"W), 1f#, 19.VII.1991, R. Baptista & A. B. Kury leg. (MNRJ 07607); São Mateus: Reserva Florestal do Vale do Rio Doce (19°06'S 39°45'W), 1m#, 19-25.VII.1997, A.D. Brescovit *et al*. leg. (IBSP 12996); Minas Gerais. Belo Horizonte: Parque Municipal das Mangabeiras (19°57'14.86"S 43°54'19.15"W), 1m#, 5-12.XII.2008, H.H. Santos *et al.* leg. (UFMG 8496); Catas Altas: RPPN Santuário do Caraça (20°5'51"S 43°29'18"W), 1m#, 2010, L.N. Perillo leg. (UFMG 6760); Santa Bárbara: RPPN Santuário do Caraça, Pico do Sol (20°3'31.85"S 43°30'19.72"W), 5m#, 21.VIII.2010, L.N. Perillo leg. (UFMG 6644); 2m#, 15.IX.2010, L.N. Perillo leg. (UFMG 6645); Chapecó: (27°05'31"S 52°36'56"W), 1m#, 04.IX.2009, Rafael C. Francisco leg. (MCTP 29575); 1m#, 04.IX.2009, Rafael C. Francisco leg. (MCTP 29576); Guatambú: (27°07'28"S 52°47'14"W), 1m#, 04.IX.2009, Rafael C. Francisco leg. (MCTP 29573); 1f#, 12.XII.2013, Rafael C. Francisco leg. (MCTP 37876); São Paulo. Botucatu: Fazenda Butignoli (22°51'26"S 48°26'02"W), 1m#, 09.IX.1987, I.M.P. Rinaldi & L.C. Forti leg.; Fazenda Edgardia (22°49′56.17″S 48°25′11.89″W), 1m#, 07.X.1984, I.M.P. Rinaldi & L.C. Forti leg. (tombo); 1f#, 10.IX.1987, I.M.P. Rinaldi & L.C. Forti leg.; Itapevi: (23°32'43"S 46°55'59"W), 1m#, I-XII.1999, C.

Bertim & V. Onofrio leg. (IBSP 115667); Mairiporã: (23°19′10.2″S 46°35′24.97″W), 1m#, VIII.1989, L. Borimecico leg. (60260); Mogi das Cruzes: Parque Natural Municipal da Serra do Itapety (23°30'22"S 46°11'59"W), 1m#, 13-18.X.2003, Equipe Biota leg. (IBSP 55035); São Paulo: Parque Alfredo Volpi (23°35'21"S 46°42'03"W), 1m#, 18-25.VII.2005, A. Bagio leg (IBSP 59320); Reservatório Guarapiranga, Jardim Ângela, 1m#, R.P. Indicatti leg (IBSP 79931); Reservatório Guarapiranga, Parque Ilha dos Eucaliptos (23°40'17"S 46°43'39"W), 1m#, 07-13.X.2003, I. Cizauskas & C.R.M. Garcia leg. (IBSP 62178); 1m#, 07-13.X.2004, I. Cizauskas & C.R.M. Garcia leg. (IBSP 62179); 1m#, 09-15.IX.1999, R.P. Indicatti leg, (IBSP 131675); (23°33′41.00″S 46°43′50.80″W), 1m#, VIII.1972, Alunos ICB leg. Distribution. States of Bahia, Espírito Santo, Minas Gerais, São Paulo and Santa Catarina, Brazil.

Discussion

The addition of 17 new species to *Tupirinna* permited the amendment of the diagnosis and the description of the genus provided by Bonaldo (2000), which were originally based on only two species. The present redescription of *T. albofasciata* and the description of *T. caraca, T. urucu, T. lata, T. cruzes, T. palmares, T. una* and *T. oba* leaded to further modification in the genus diagnosis, due to the fact that these species present a small secondary spermathecae, absent in all other females of the genus. Since the epigynal morphology varies greatly among representative of the *Stethorrahgus-Parachemmis-Tupirina* complex, it is not possible at this time to make inferences on the phylogenetic significance of the presence or absence of the secondary spermathecae in *Tupirinna*. However, if the presence of sencodary spermathecae is considered plesiomorphic at this level, a possible monophyletic group composed by all *Tupirinna* species but the ones above listed would be conceivable. Another character listed as diagnostic to *Tupirinna* by Bonaldo (2000), the presence of the *Tupirinna* embolar process, also proved to be variable when a larger sample of species is taken in consideration. From the 20 species here recognized, five (*T. regiae, T. araguaia, T. evanesca, T.*

mutum and *T. gigantea*) do not present a recognizable embolar process. The absence of this structure could be interpreted as an apomorphic loss and, under this assumption, the presence of an embolar process would be still considered as a synapomorphy of the genus. The only characters listed in the original diagnosis that could be considered unambiguous synapomorphies of the genus are the presence of the median dark band on the carapace (since lateral bands are also presente in *Stethorrhagus limbatus* Simon) and the enlargement of the epigynal copulatory duct forming the copulatory pouch.

Two groups of species are here defined based on the morphology of the retrolateral tibial apophysis and of the posterior vulval plate. The group *rosae*, which harbors the type-species and other 10 species (*T. rosae, T. evanesca, T. zebra, T. coari, T. regiae, T. mutum, T. goeldi, T. luctuosa, T. gigantea, T. urucu* and *T. araguaia*) appears to be monophyletic, sharing the following putatively synapomorphic characters: a well-developed ventral lobe of the retrolateral tibial apophysis, by the absence of a dorsal lobe in m#s and the presence of a well developed posterior vulval plate, which covers a membranaceus copulatory pouch. The development of the PVP can be related with the rigidity of the copulatory pouch, since the copulatory pouch in species with a well developed PVP is membranous (*T. rosae* group) and in species with the sclerotized copulatory pouch the PVP is poorly developed. Thus, it is here suggested that the development of the PVP is dependend with the membranous condition of copulatory pouch, being possibly an adaptation related to the protection of a membranous structure.

In species of the group rosae the apical spurn on RTA's ventral lobe is readly recognizable In a subgroup composed by *T. rosae*, *T. regiae*, *T. araguaia*, *T. evanesca* and *T. mutum*, the RTA's ventral lobe is only distally divided and the large excavated dorso-lateral section of the retrolateral surface of the tibia is conspicuous in the retrolateral view. On the other hand, in a sub-group composed by *T. coari*, *T. zebra*, *T. urucu* and *T. gigantea*, the RTA's ventral lobe is divided baselly and the the

dorsal process of the ventral lobe is dorsally displaced, which could lead this structure to be confused with the RTA's dorsal lobe present in other species of the genus (group *trilineata*).

The second group of species here defined, the group trilineata harbors all remaining known species (*T. trilineata*, *T. ibiapaba*, *T. cruzes*, *T. caraca*, *T. una*, *T. oba*, *T. palmares*, *T. albofasciata* and *T. lata*). In this group, the RTA has a weakly developed ventral lobe and dorso-lateral section of the retrolateral surface of the tibia present a reconizable RTA's dorsal lobe. In two species (*T. caraca* and *T. una*) the RTA's dorsal lobe is large and blunt, while it is relatively small and pointed in *T. cruzes* and *T. lata*. In the remaining species known by m#s in this group (*T. palmares*, *T. ibiapaba* and *T. trilineata*) the RTA's dorsal lobe is represented only by a small hump. Fem#s of the group trilineata present undeveloped posterior vulval plate and sclerotized copulatory pouch, which could be considered as simplesiomorphies. Most of the species in this group also present another possible plesiomorphic condition, the presence of small secondary spermathecae. Two species however do not present such structures (*T. trilineata* and *T. ibiapaba*), which could suggest that these species are more closely related to the group rosae or, alternatively, indicate the occurrence of independent instances of loss of the secondary spermathecae.

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new species to this paper. This work is part of the M.Sc. dissertation of the first author advised by the second author in the Programa de Pós-Graduação em Zoologia, Universidade Federal do Pará / Museu Paraense Emílio Goeldi supported by Coordenação de Aperfeiçoamento de Pessoal do Nível Superior - Capes (CX #1696922/2017-0) and by Conselho Nacional de Pesquisa e Desenvolvimento Tecnológico – CNPq (ABB PQ grant # 304965/2012-0).

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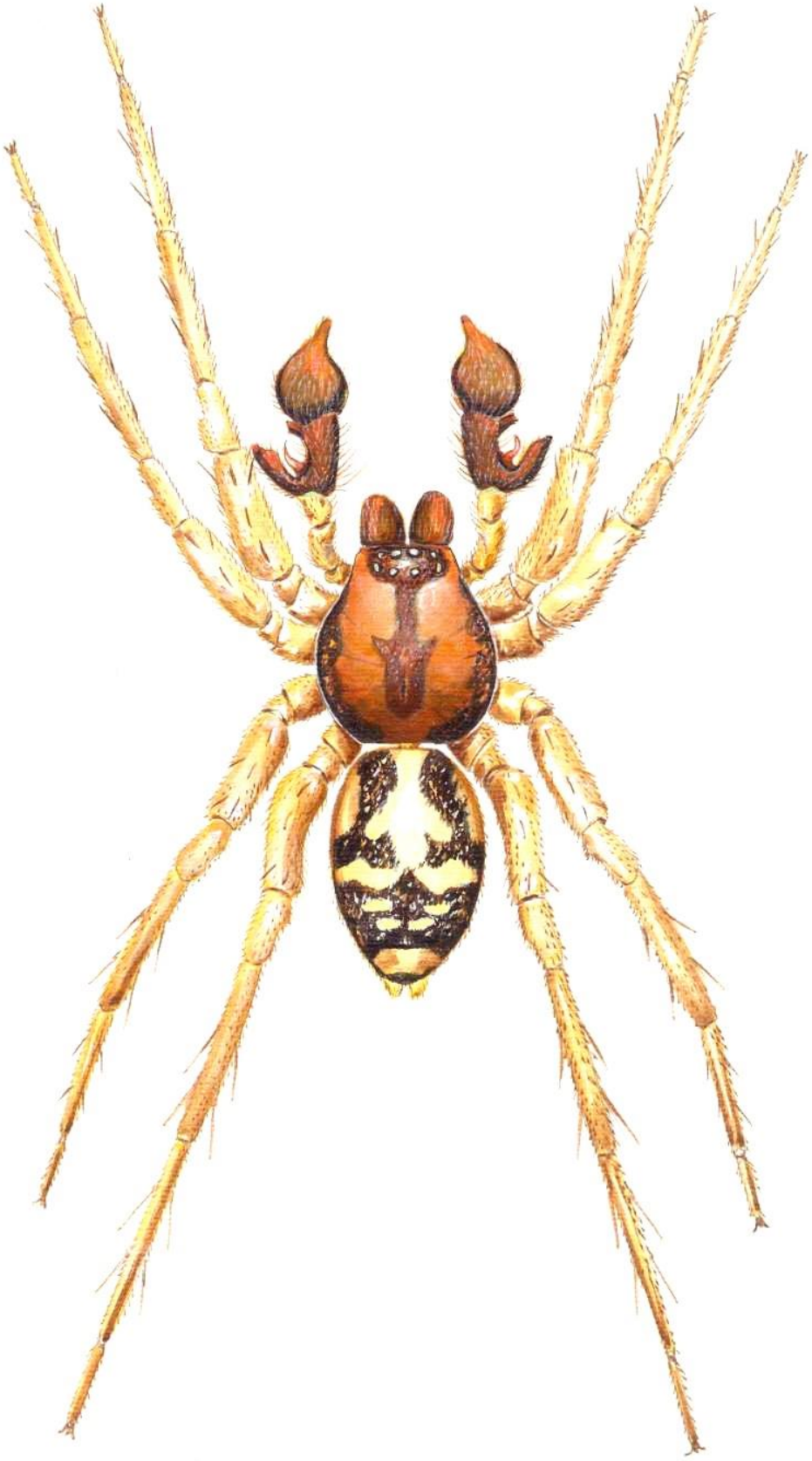


FIGURE 1. *Tupirinna rosae* Bonaldo, 2000, male, dorsal view. Watercolor drawing by Rejane Rosa.

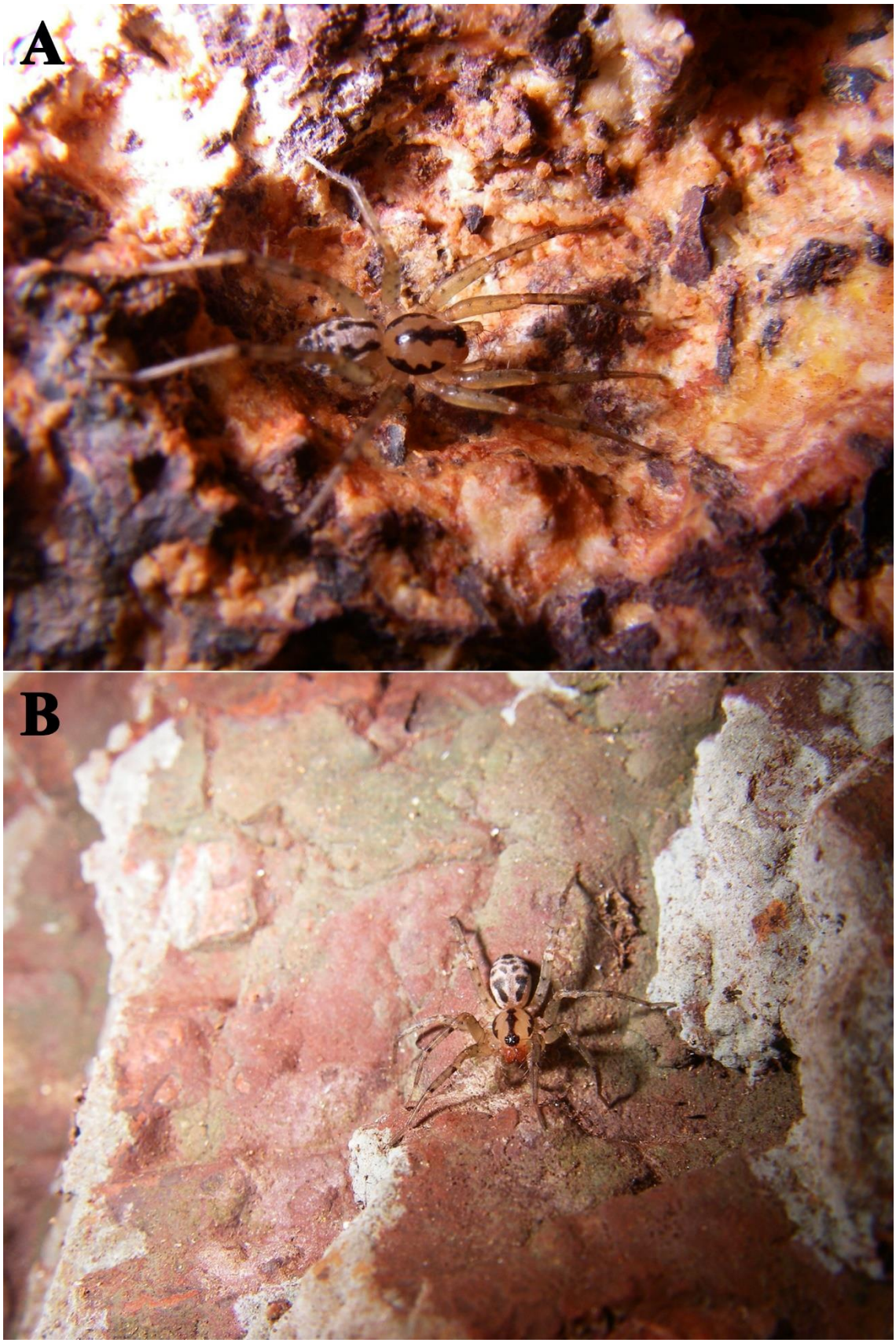


FIGURE 2. A–B. *Tupirinna* sp. live juvenile from Carajás, Pará state, Brazil. Photo: Robson Zampaulo.

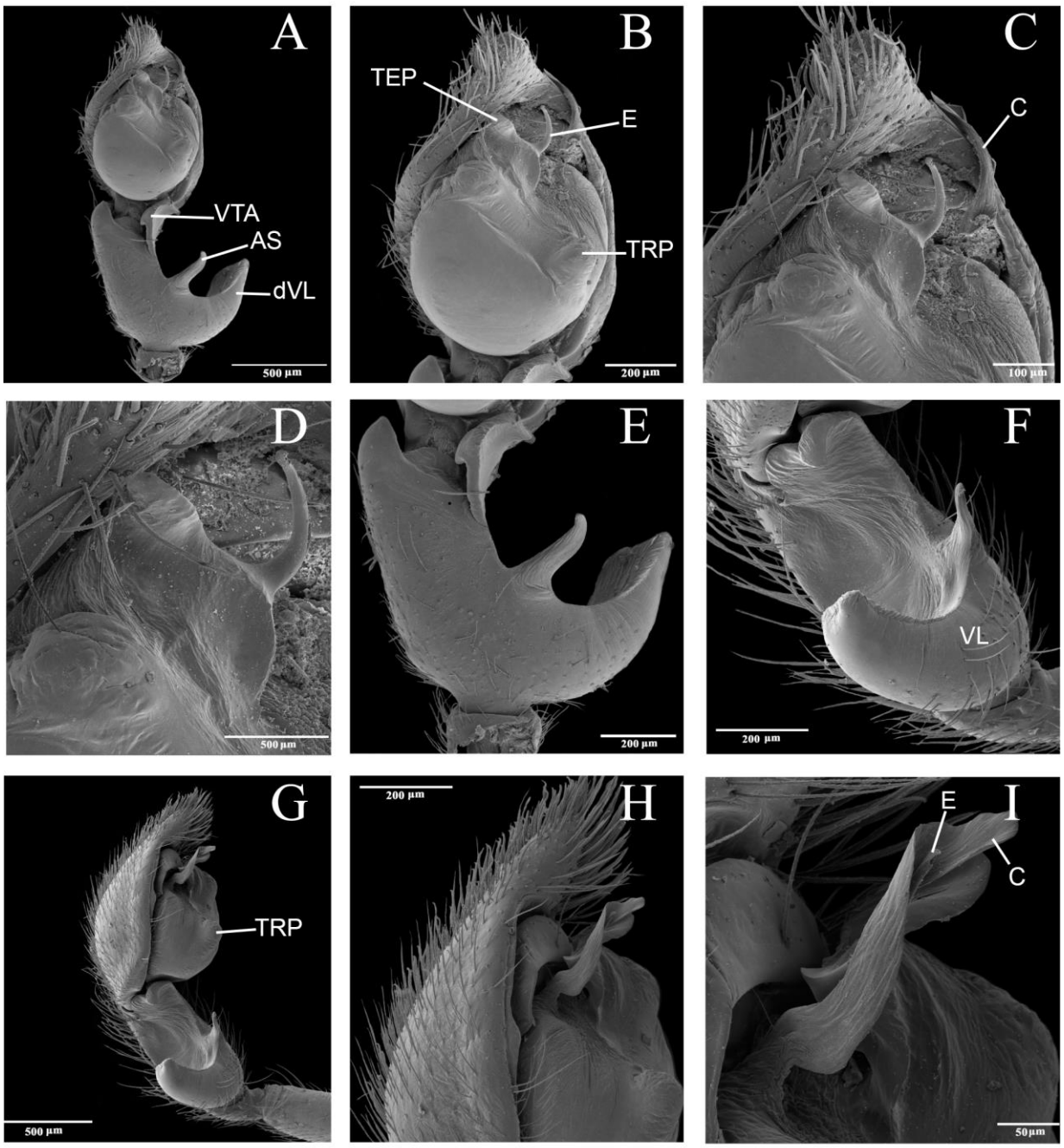


FIGURE 3. *Tupirinna rosae*: **A**–**E**: male palp ventral view. **B**–**D:** palp; **E:** tibia. **F**–**I**. male palp retrolateral view. **F:** tibia; **G**–**H.** palp; **I:** embolus and conductor detail. Abbreviations: AS, apical spurn; C, conductor; dVL, dorsal process of ventral lobe; E, embolus; TEP, *Tupirinna* embolar process; TRP, tegular retrolateral process; VL, ventral lobe; VTA, ventral tibial apophysis.

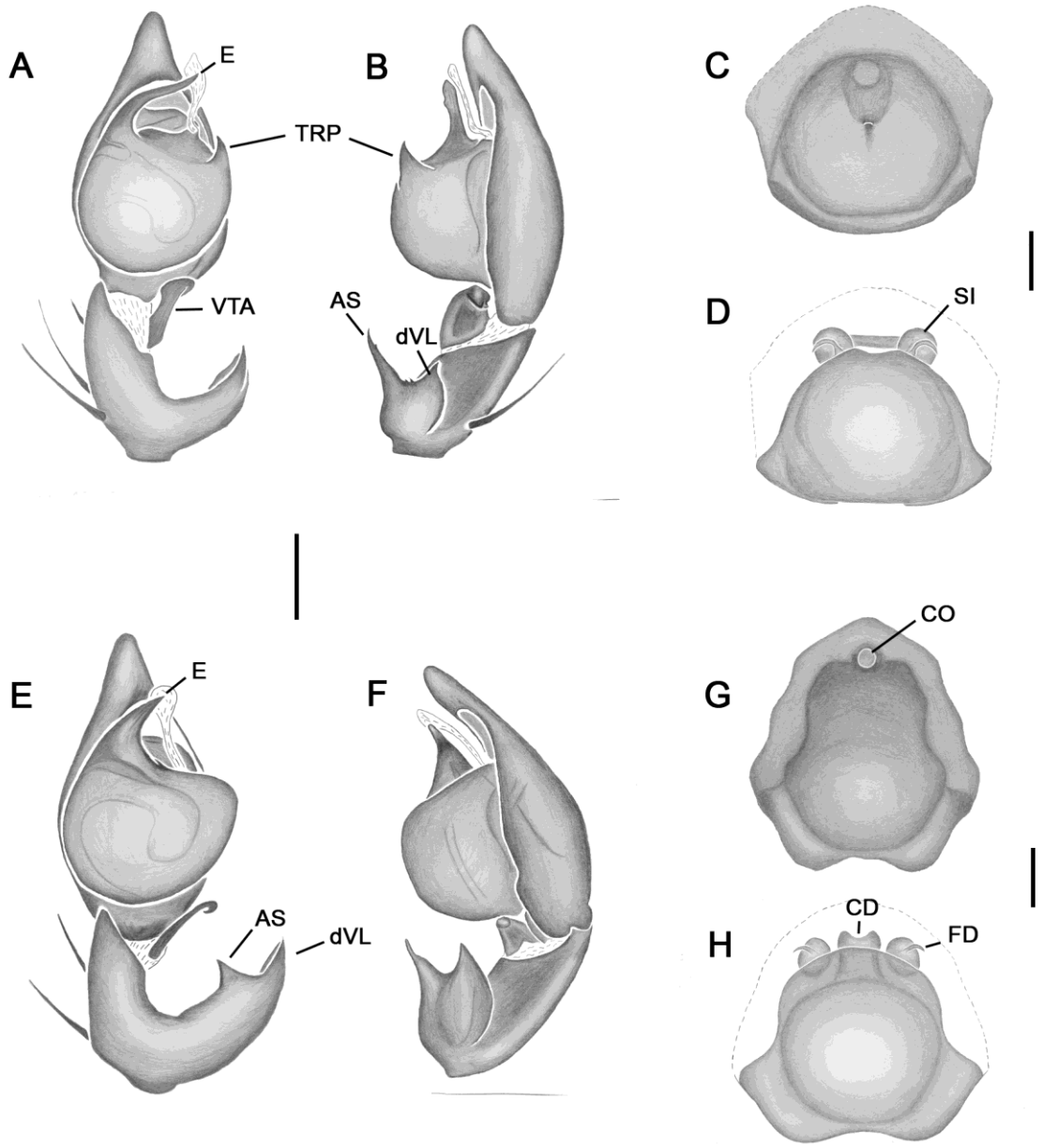


FIGURE 4. *Tupirinna regiae* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C-D. C.** ventral view. **D.** dorsal view. *Tupirinna araguaia* **sp. nov E**–**H**: **E**–**F** epigynum. **E.** ventral view. **F.** retrolateral view. **G**–**H. G.** ventral view. **H.** dorsal view (scale bar 0.5 mm). Abbreviations: AS, apical spurn; CD, copulatory duct; dVL, dorsal process of ventral lobe; E, embolus; FD, fertilization duct; SI, primary spermathecae; TRP – Tegular Retrolateral Process; VTA, ventral tibial apophysis.

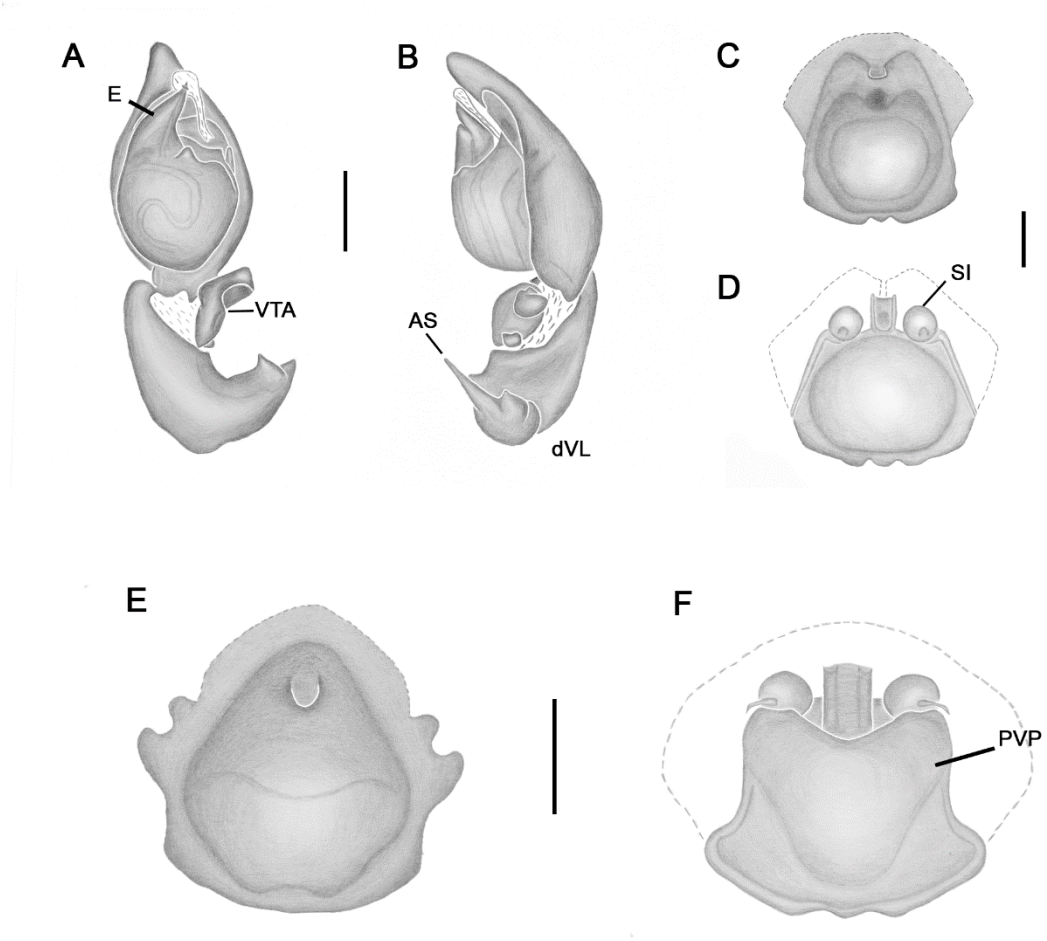


FIGURE 5. *Tupirinna evanesca* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna goeldi* **sp. nov E**–**F** epigynum. **E.** ventral view. **F.** dorsal view. (scale bar 0.5 mm). Abbreviations: AS, apical spurn; dVL, dorsal process of ventral lobe; E, embolus; SI, primary spermathecae; PVP – Posterior Vulval Plate; VTA, ventral tibial apophysis.

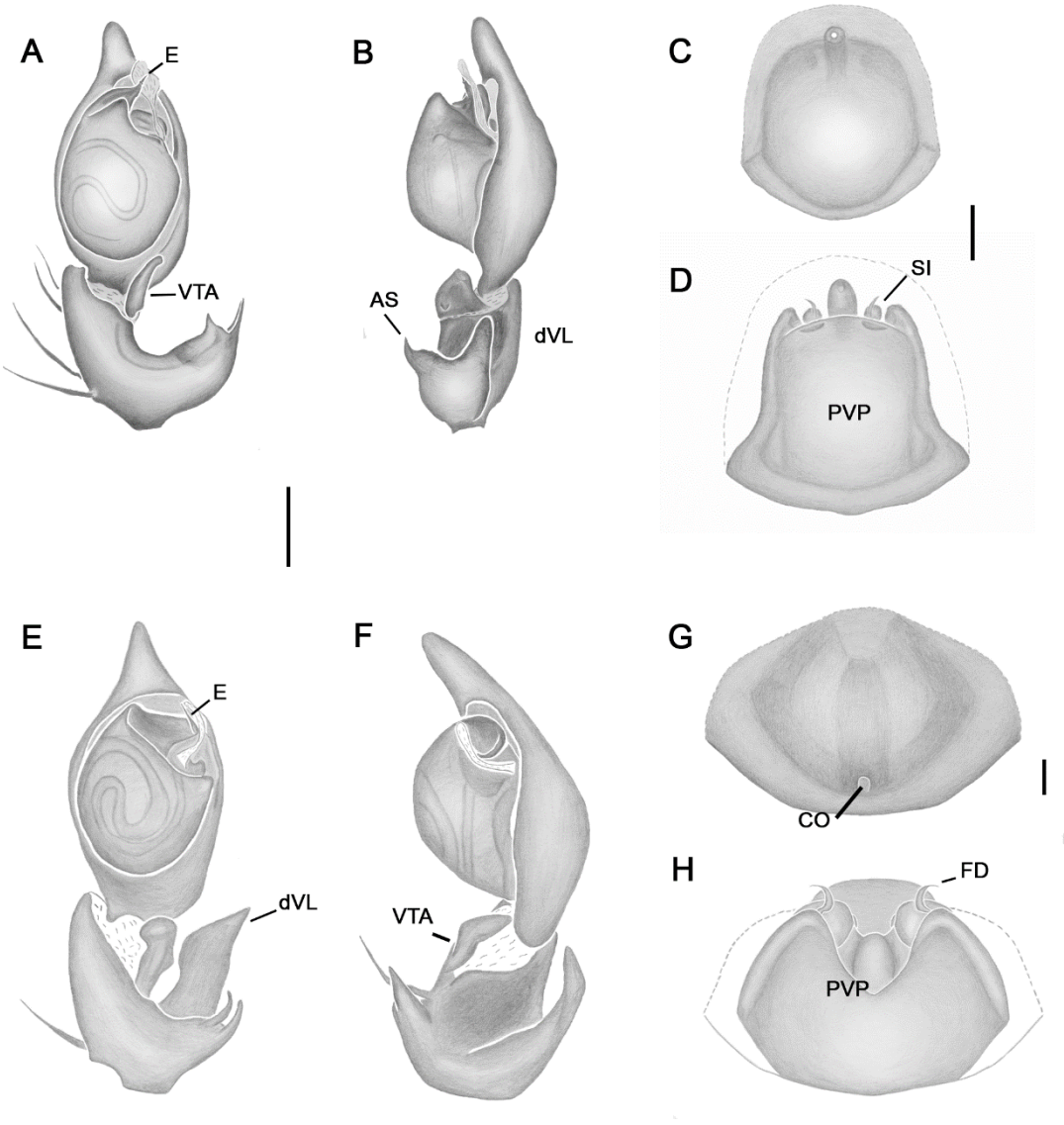


FIGURE 6. *Tupirinna mutum* **sp. nov. A**–**D**: **A-B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna gigantea* **sp. nov E**–**H**: **E**–**F** male palp. **E.** ventral view. **F.** retrolateral view. **G**–**H.** epigynum **G.** ventral view. **H.** dorsal view (scale bar 0.5 mm). Abbreviations: AS, apical spurn; CO, copulatory opening; dVL, dorsal process of ventral lobe; E, embolus; FD, fertilization duct; SI, primary spermathecae; PVP, posterior vulval plate; VTA, ventral tibial apophysis.

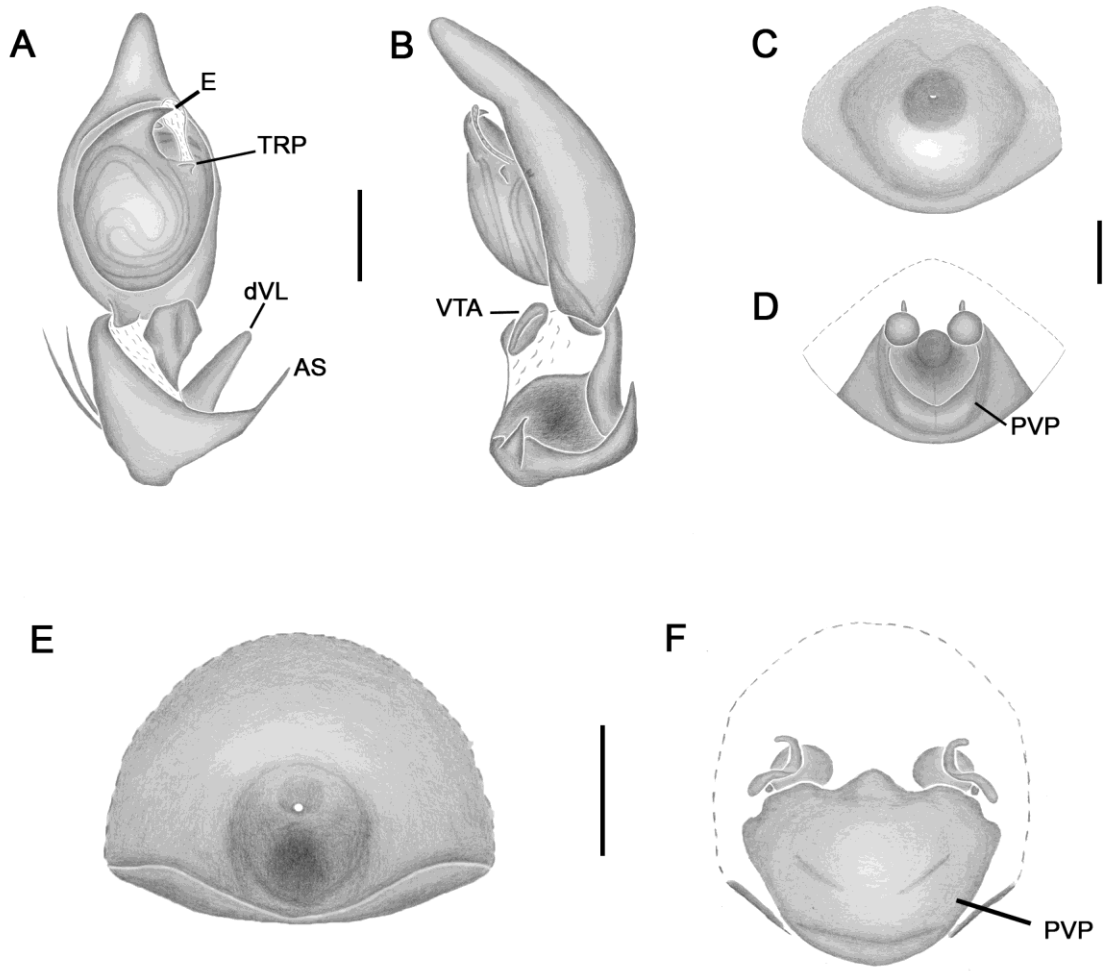


FIGURE 7. *Tupirinna coari* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna luctuosa* **sp. nov E**–**F** epigynum. **E.** ventral view. **F.** dorsal view. (scale bar 0.5 mm). Abbreviations: AS, apical spurn; CD, copulatory duct; dVL, dorsal process of ventral lobe; E, embolus; FD, fertilization duct; PVP, posterior vulval plate; SI, primary spermathecae; TRP, tegular retrolateral process; VTA, ventral tibial apophysis.

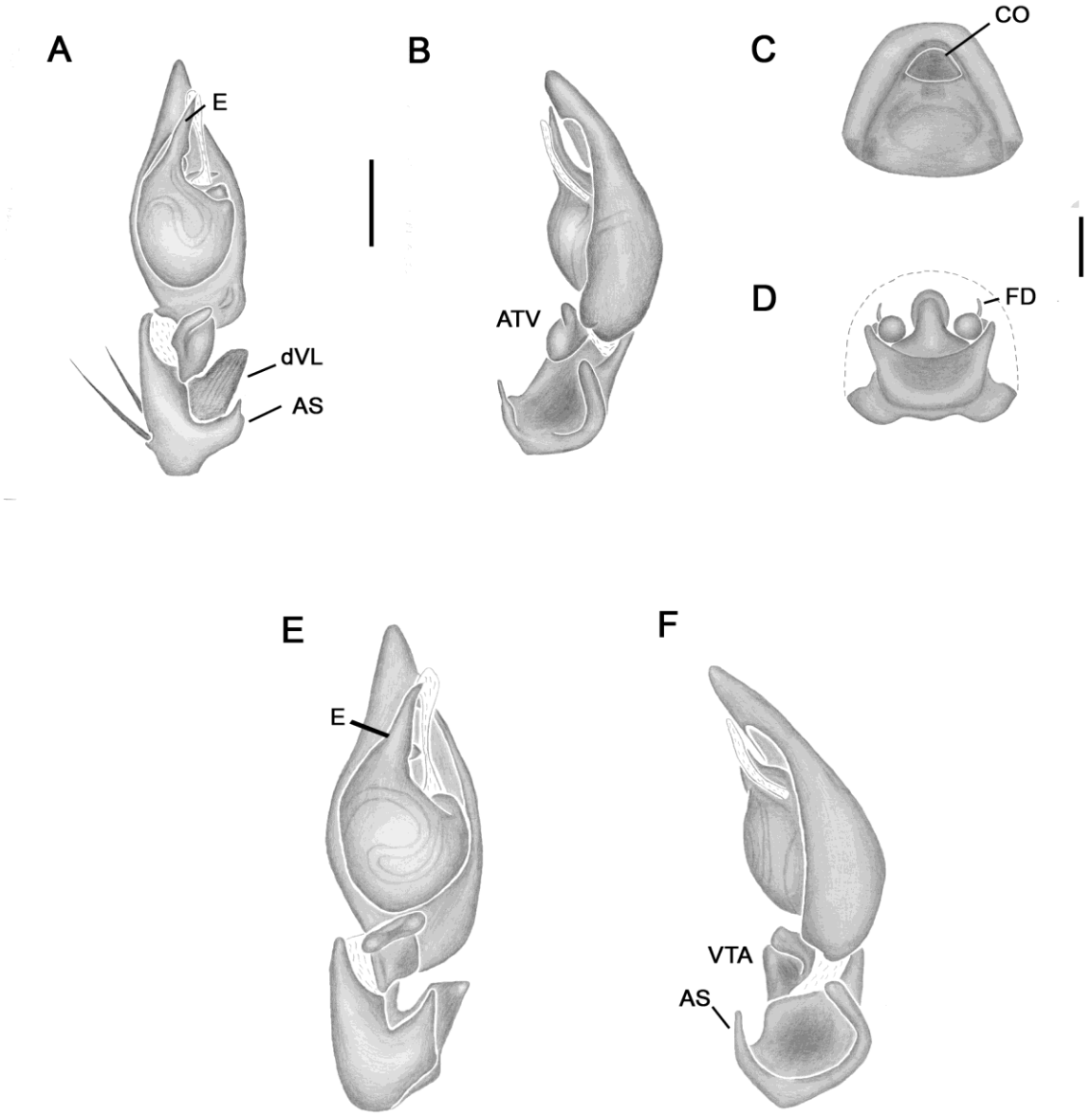


FIGURE 8. *Tupirinna zebra* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view *Tupirinna urucu* **sp. nov E**–**F** male palp. **E.** ventral view. **F.** dorsal view. (scale bar 0.5 mm). Abbreviations: AS, apical spurn; dVL, dorsal process of ventral lobe; E, embolus; FD, fertilization duct; VTA, ventral tibial apophysis.

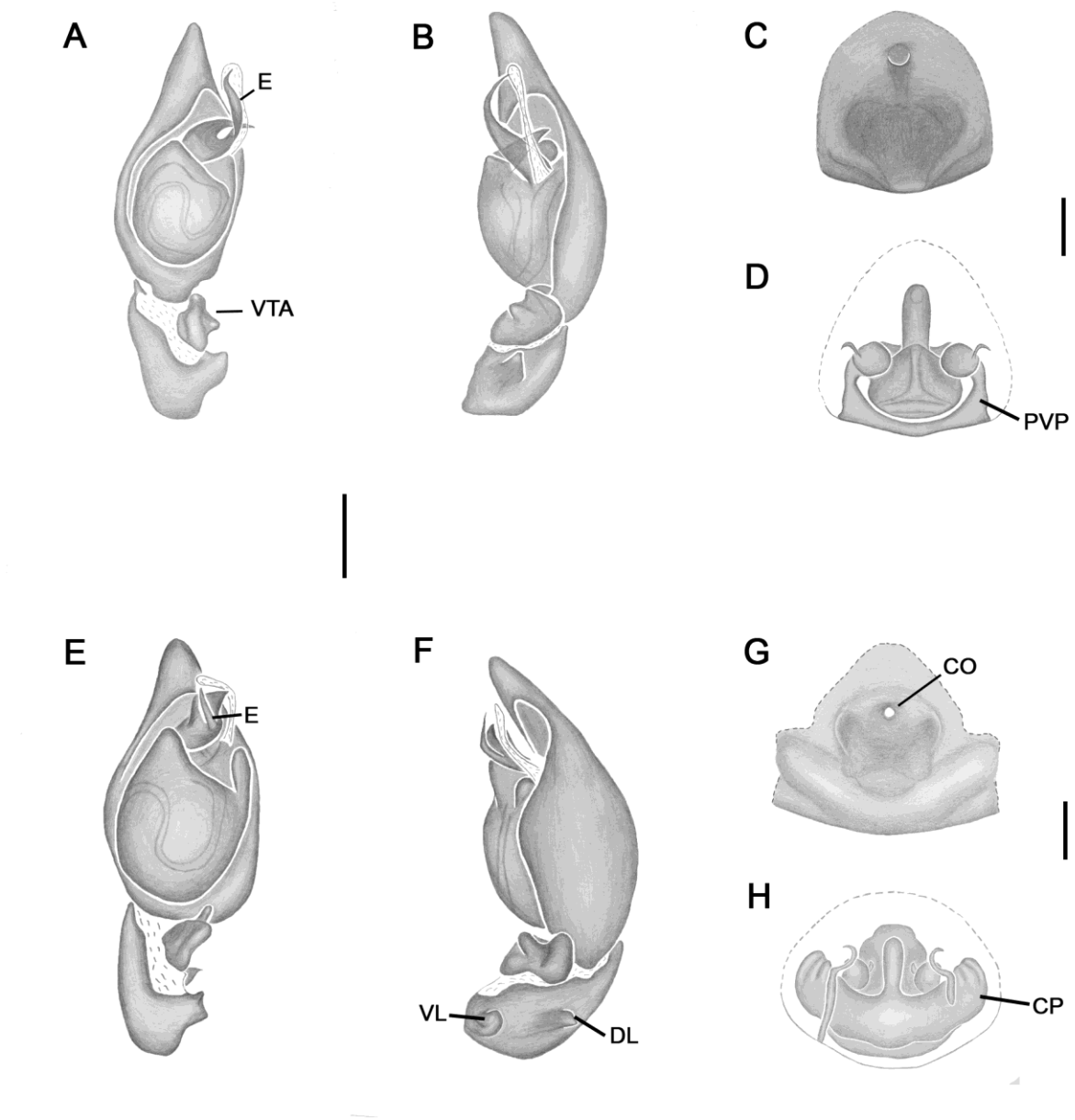


FIGURE 9. *Tupirinna ibiapaba* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna lata* **sp. nov A**–**D**: **E**–**F** male palp. **E.** ventral view. **F.** retrolateral view. **G**–**H.** epigynum **G.** ventral view. **H.** dorsal view (scale bar 0.5 mm). Abbreviations: CO, copulatory opening; CP, copulatory pouch; DL, dorsal lobe; dVL, dorsal process of ventral lobe; E, embolus; PVP, posterior vulval plate; VL, ventral lobe; VTA, ventral tibial apophysis.

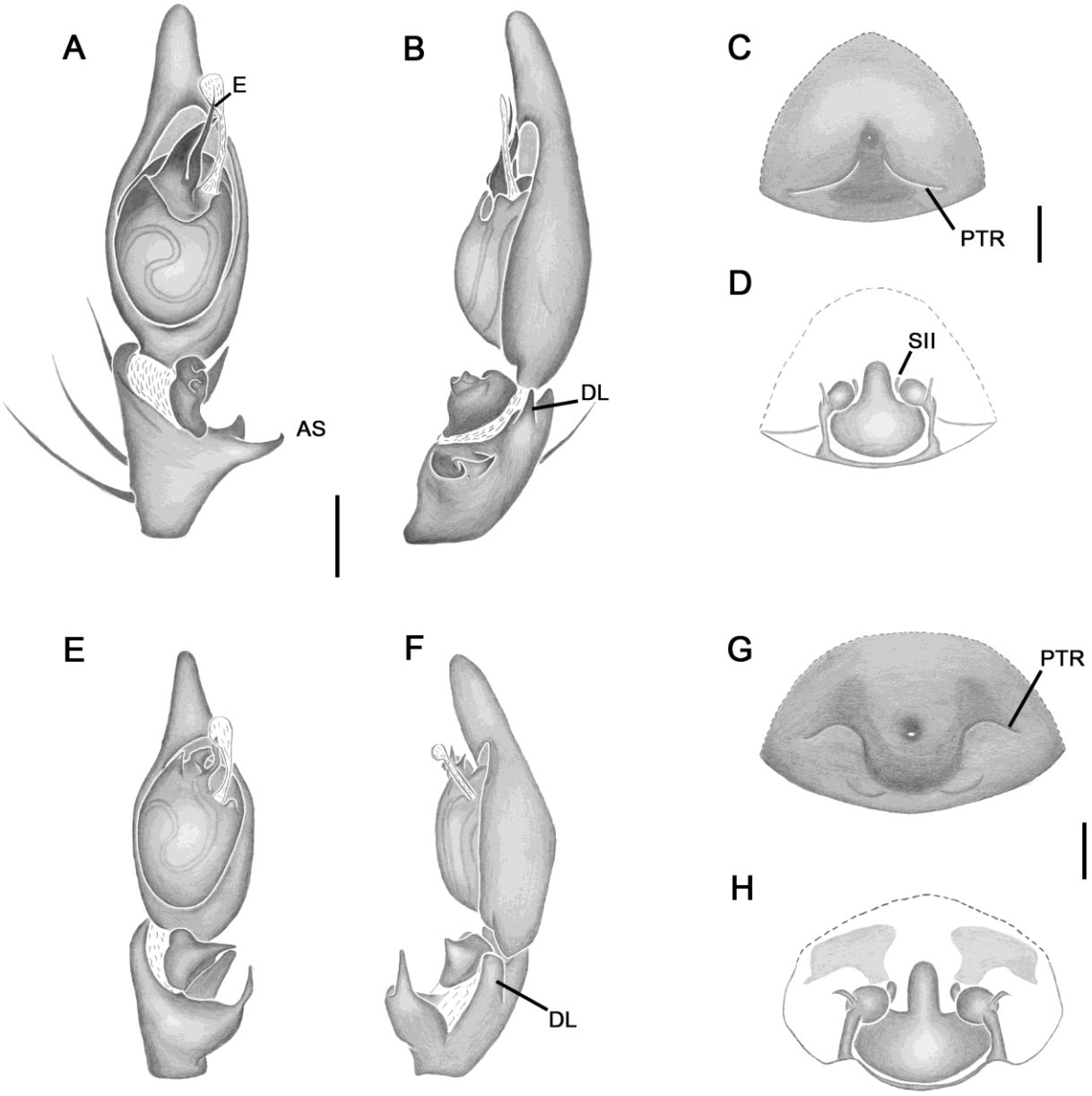


FIGURE 10. *Tupirinna cruzes* **sp. nov. A–D**: **A–B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna caraca* **sp. nov A**–**D**: **E**–**F** male palp. **E.** ventral view. **F.** retrolateral view. **G**–**H.** epigynum **G.** ventral view. **H.** dorsal view (scale bar 0.5 mm). Abbreviations: AS, apical spurn; DL, dorsal lobe; E, embolus; PTR, posterior transversal ridge SII, secondary spermathecae.

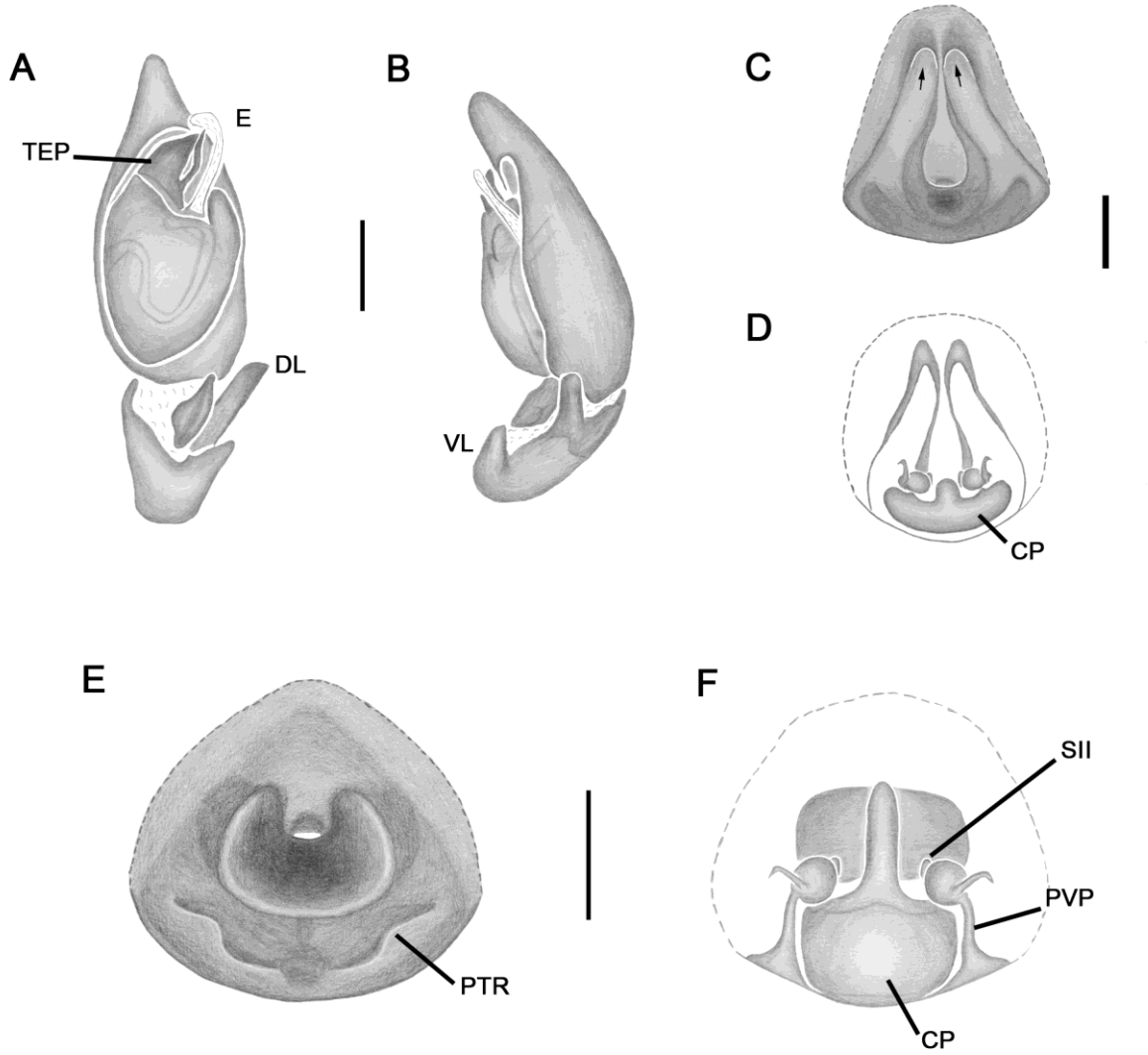


FIGURE 11. *Tupirinna una* **sp. nov. A**–**D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna oba* **sp. nov E**–**F** epigynum. **E.** ventral view. **F.** dorsal view. (scale bar 0.5 mm). Abbreviations: CP, copulatory pouch; DL, dorsal lobe; E, embolus; PTR, posterior transversal ridge; PVP, posterior vulval plate; SII, secondary spermathecae; TEP, *Tupirinna* embolar process; arrows, pockets.

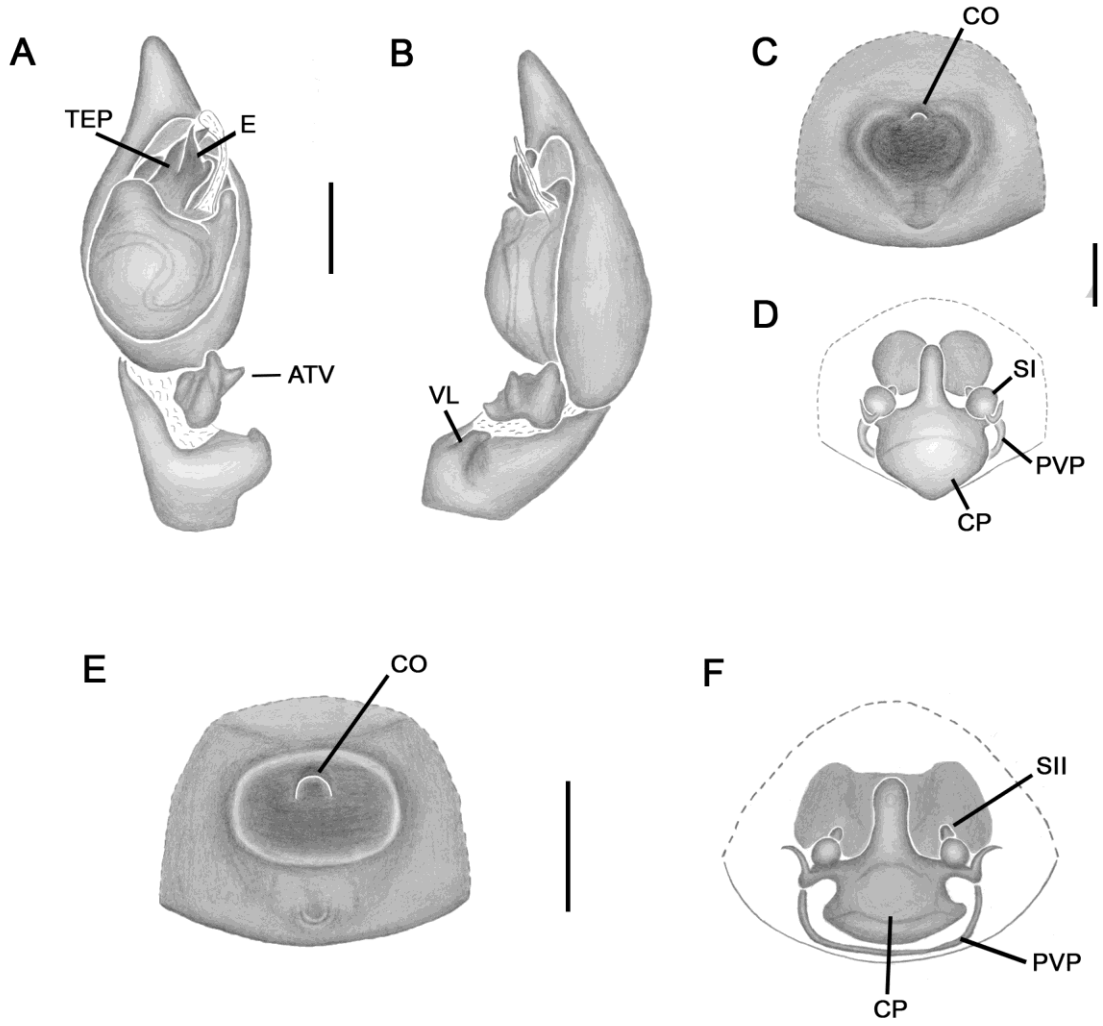


FIGURE 12. *Tupirinna palmares* **sp. nov. A-D**: **A**–**B** male palp. **A.** ventral view. **B.** retrolateral view. **C**–**D.** epigynum **C.** ventral view. **D.** dorsal view. *Tupirinna albofasciata*. **E**–**F** epigynum. **E.** ventral view. **F.** dorsal view. (scale bar 0.5 mm). Abbreviations: CO, copulatory opening; CP, copulatory pouch; DL, dorsal lobe; E, embolus; FD, fertilization duct; PVP, posterior vulval plate; SI, primary spermathecae; SII, secondary spermathecae; TEP, *Tupirinna* embolar process; VL, ventral lobe, VTA, ventral tibial apophysis.

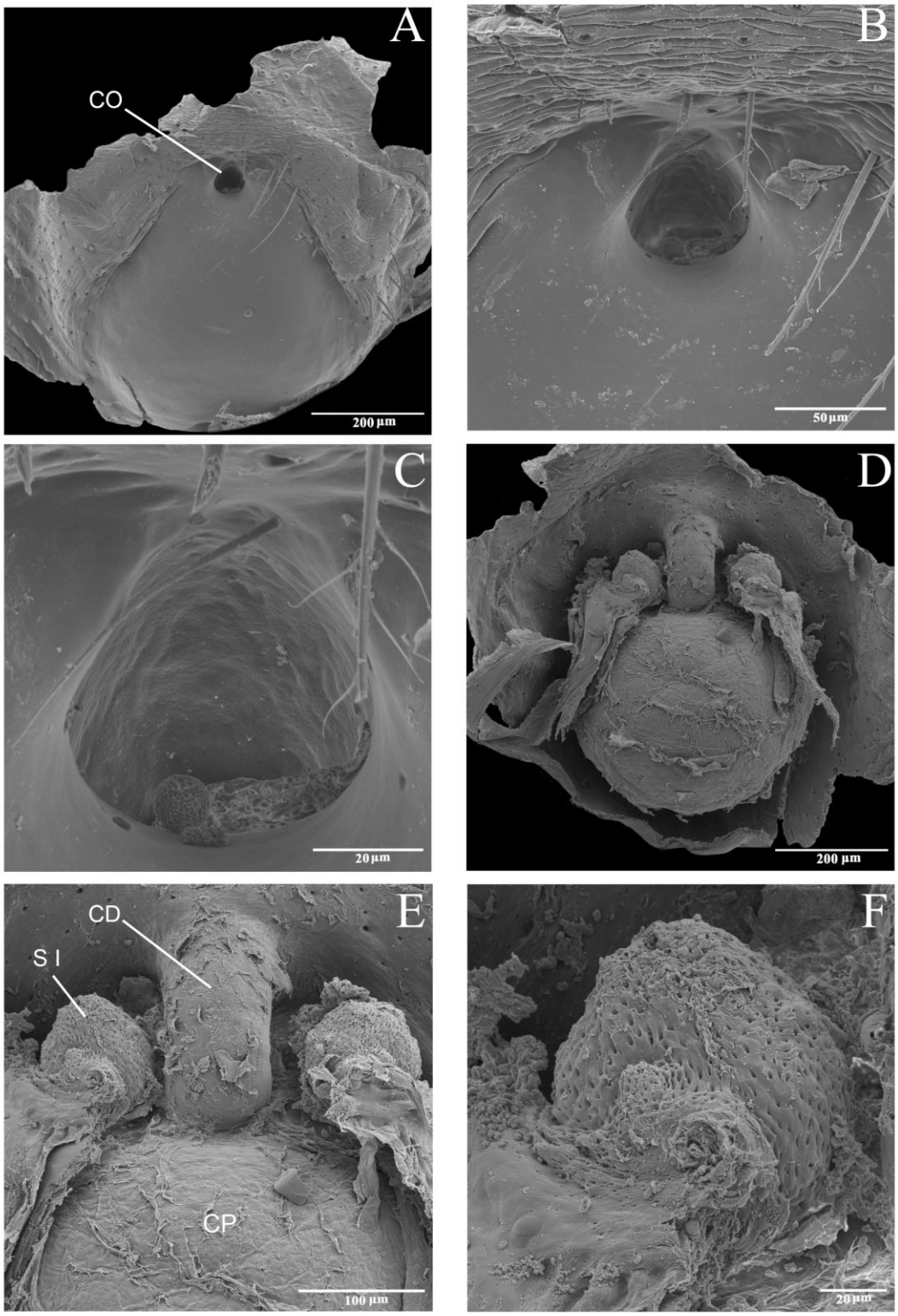


FIGURE 13. *Tupirinna evanesca* **sp. nov. A**–**F**: female genitalia. **A**–**C:** ventral view. **A:** epigynum; **B:** copulatory opening; **C:** copulatory opening detail. **D**–**F:** dorsal view with PVP removed. **D**–**E.** epigynum; **F:** primary spermatheca detail. Abbreviations: CD, copulatory duct; CO, copulatory opening; CP, copulatory pouch; PVP, posterior vulval plate; SI, primary spermathecae.

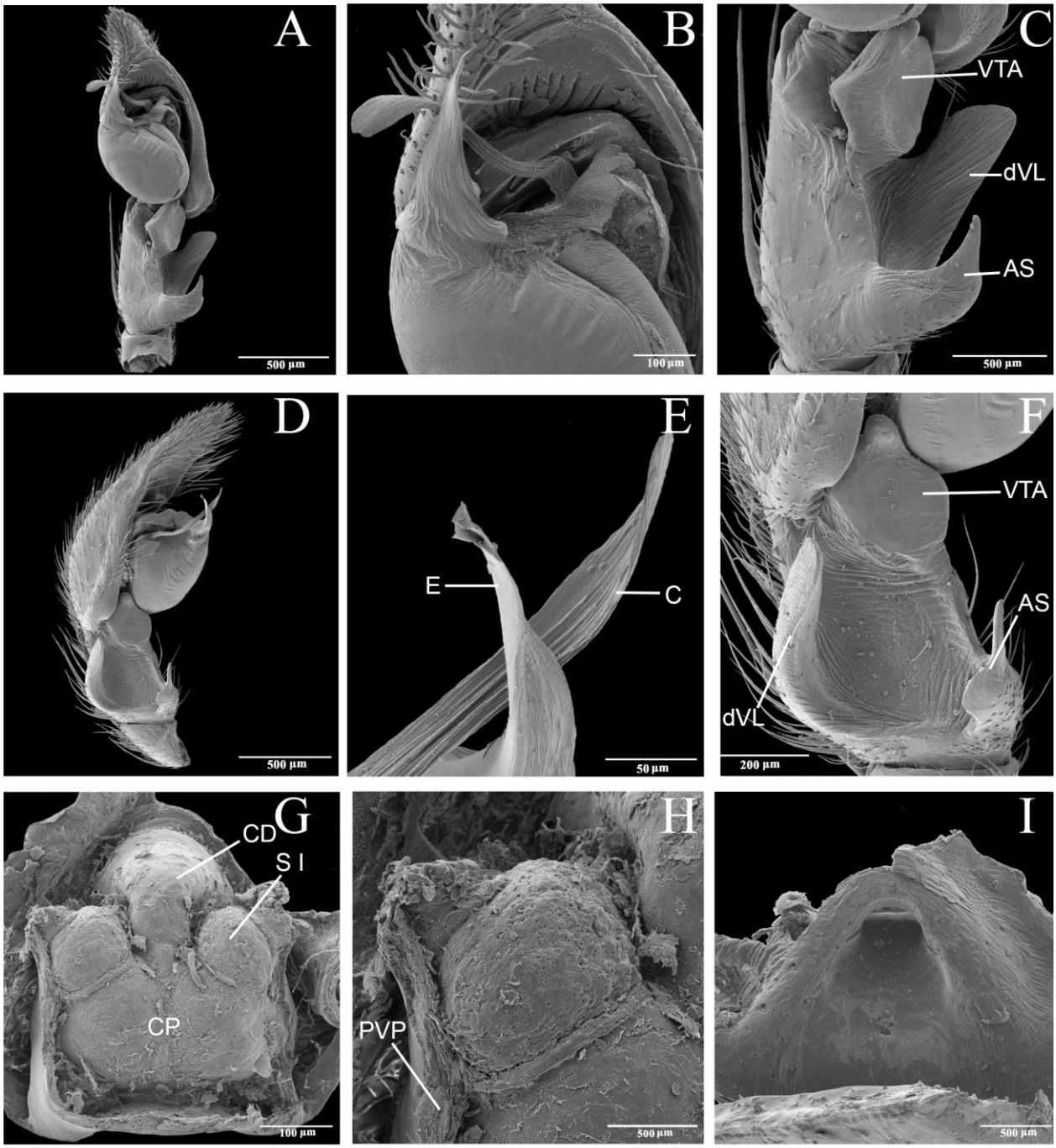


FIGURE 14. *Tupirinna zebra* **sp. nov. A-F**: male palp. **A**–**C:** ventral view. **A:** palp; **B:** sclerites of palp; **C:** tíbia. **D**–**F:** retrolateral view. **D.** palp; **E:** embolus and conductor detail; **F:** tíbia. **G**–**I:** female genitalia. **G**–**H.** dorsal view. **G:** epigynum. **H:** primary spermatheca. **I:** copulatory opening in ventral view. Abbreviations: AS, apical spurn; C, conductor; CD, copulatory duct; CP, copulatory pouch; dVL, dorsal process of ventral lobe; E, embolus; PVP, posterior vulval plate; SI, primary spermathecae; VTA, ventral tibial apophysis.

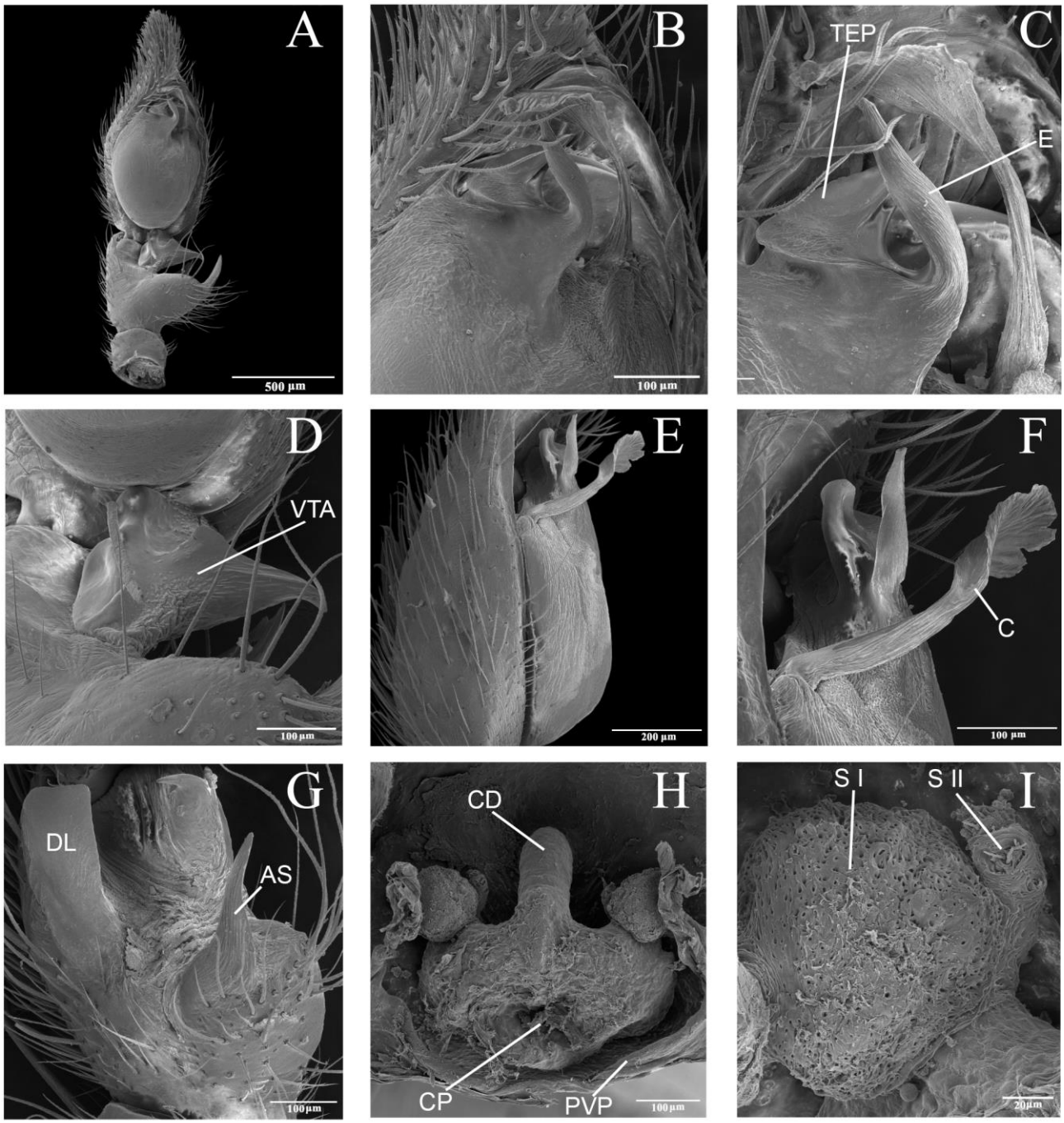


FIGURE 15. *Tupirinna caraca* **sp. nov. A**–**G**: male palp. **A**–**D:** ventral view. **A:** palp; **B:** sclerites of palp; **C:** embolus and conductor detail; **D:** VTA. **E**–**G:** retrolateral view. **E.** palp; **F:** embolus and conductor detail; **G:** tíbia. **H**–**I:** fem# genitalia dorsal view. **H:** epigynum. **I:** primary and secondary spermatheca. Abbreviations: AS, apical spurn; C, conductor; CD, copulatory duct; CP, copulatory pouch; DL, dorsal lobe; E, embolus; PVP, posterior vulval plate; SI, primary spermathecae; SII, secondary spermathecae VTA, ventral tibial apophysis.

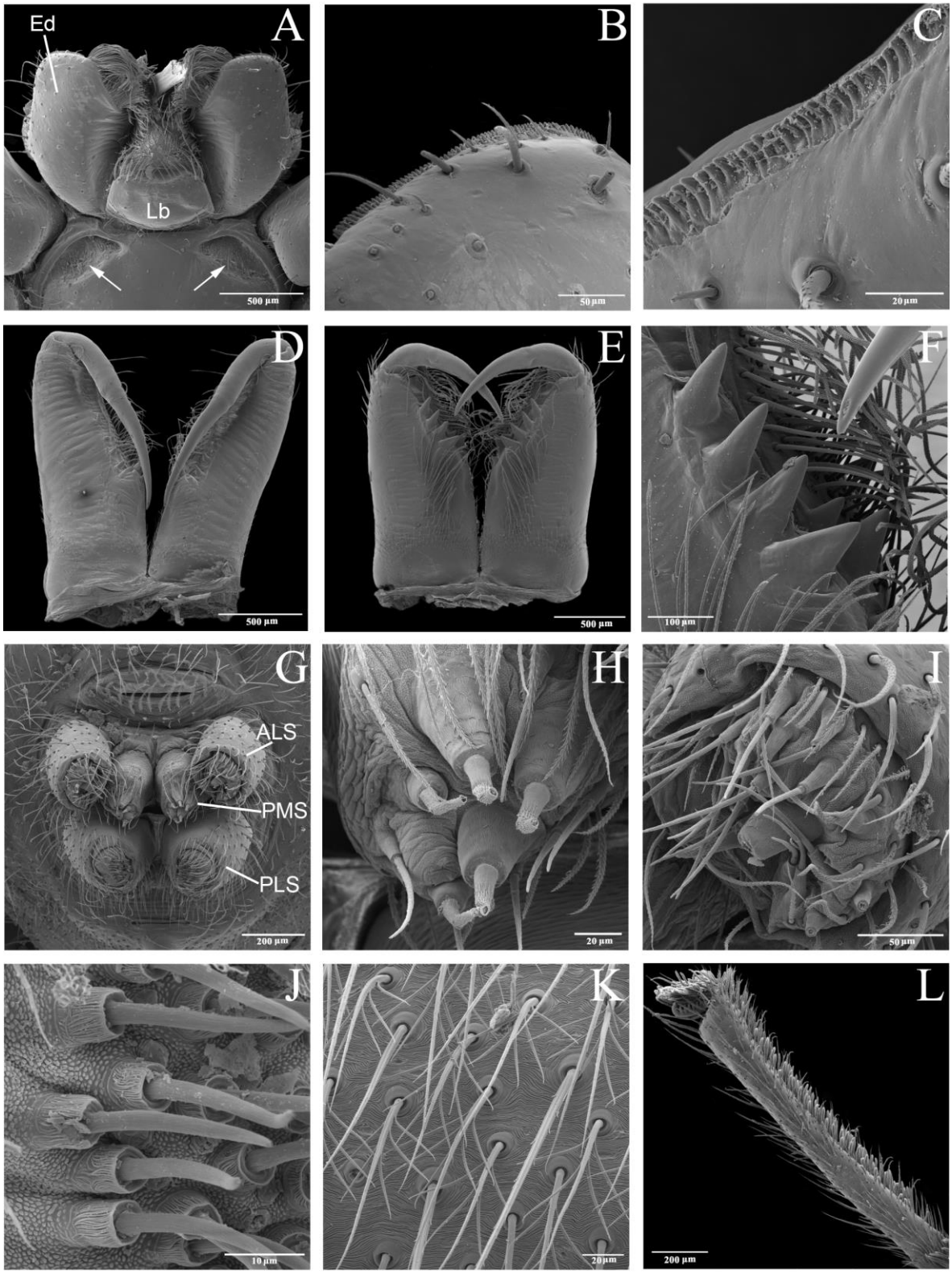


FIGURE 16. *Tupirinna caraca* **sp. nov. A**–**D:** male. **A.** endites, labium and anterior margino of sternum; **B**–**C.** endites; **D.** chelicerae. **E**–**L:** female. **E.** chelicerae. **F**. chelicerae teeth. **G**–**J**. spinnerets. **K.** abdômen setae. **L**. tarsus retrolateral view. Abbreviations: ALS, anterior lateral spinnerets; Ed, endites; Lb, labium; PLS, posterior lateral spinnerets; PMS, posterior median spinnerets. Arrows: anterior lateral excavations on sternum.

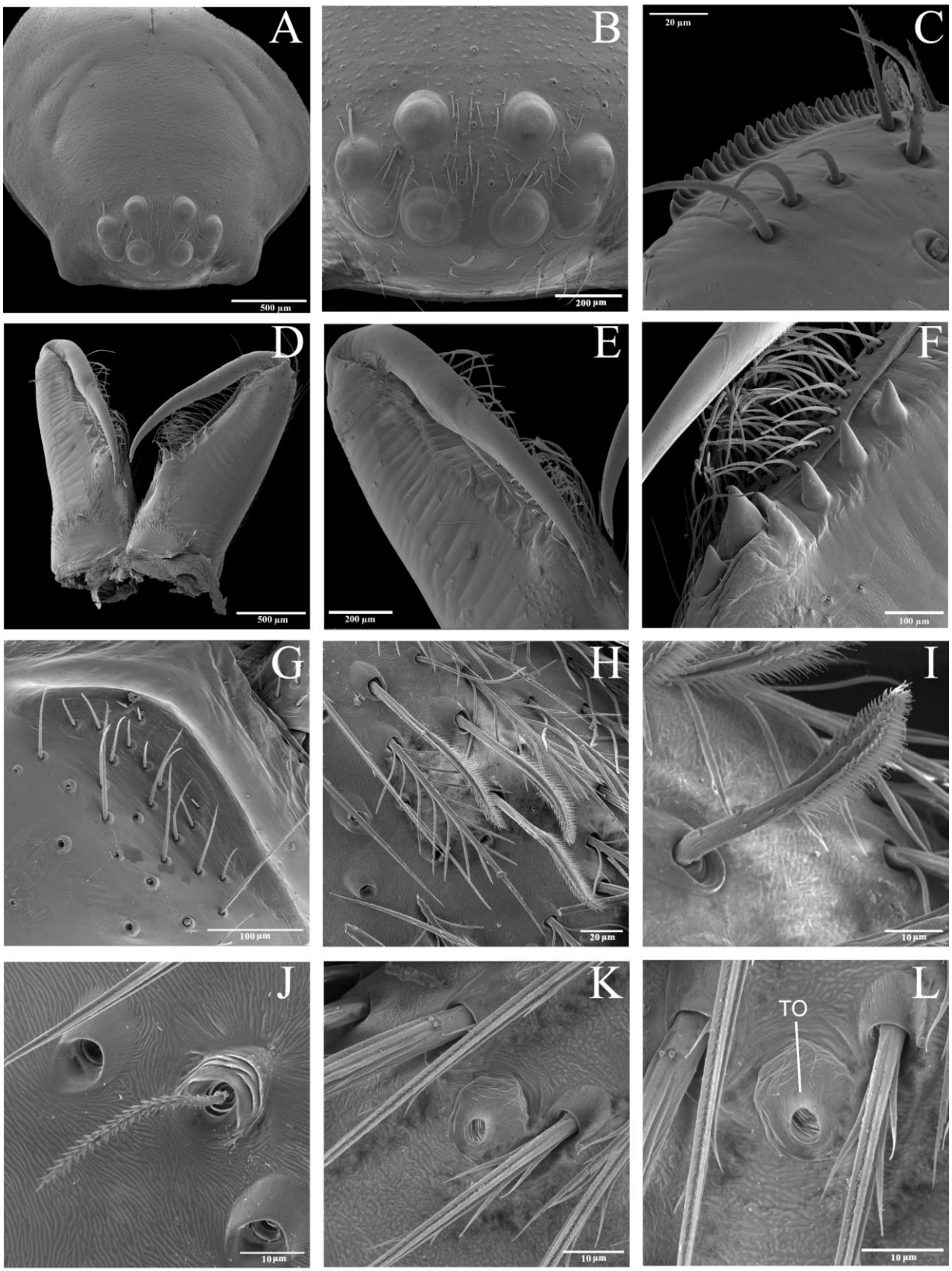


FIGURE 17. *Tupirinna lata* **sp. nov.** male. **A**–**B:** carapace. **C.** endites. **D**–**F:** chelicerae. **F.** chelicerae teeth. **G.** anterior lateral excavation in sternum. **H**–**I:** Leg I tíbia. **J.** leg II – tricobothria. **K**–**L.** leg III -tarsal organ. Abbreviation: TO, tarsal organ.

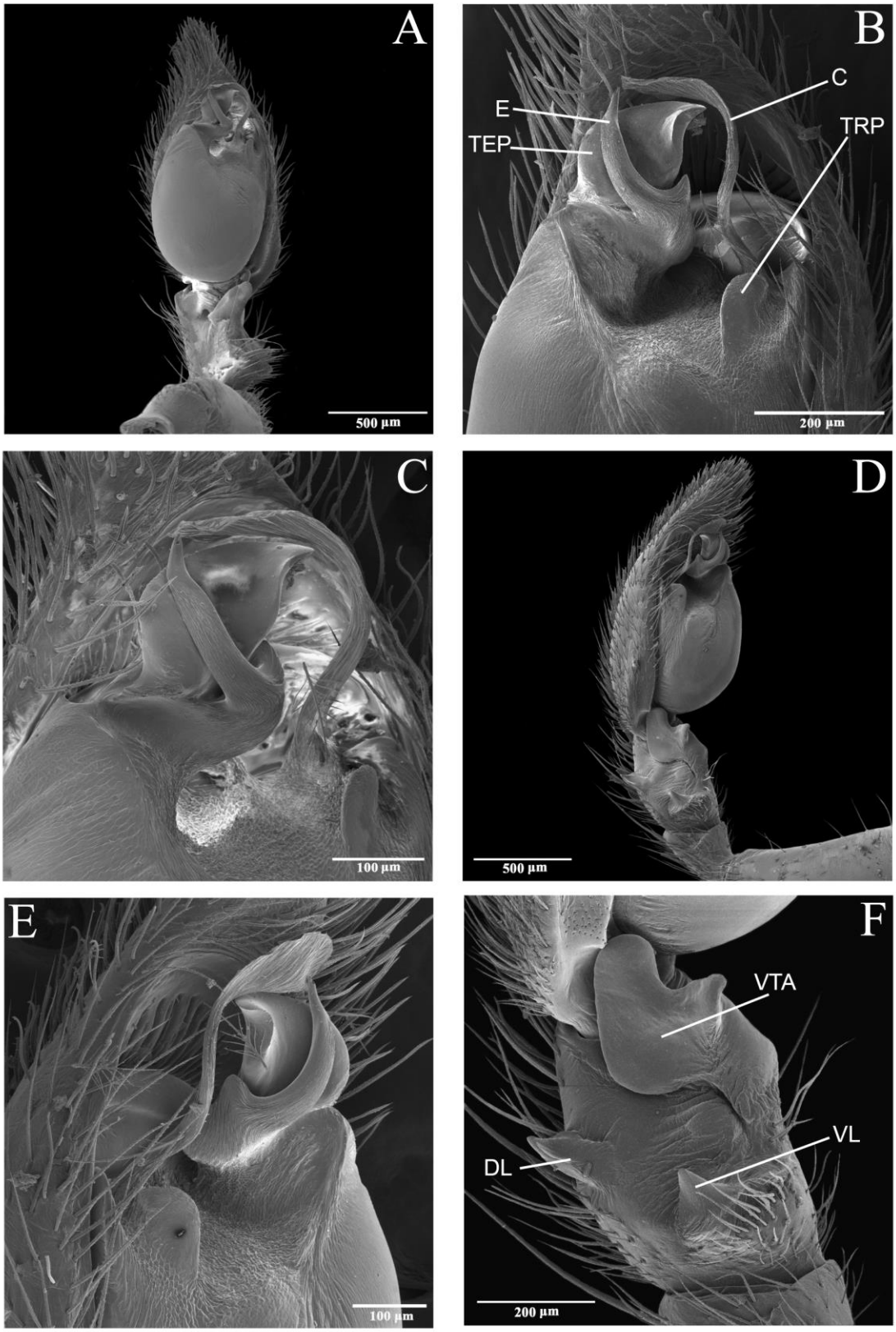
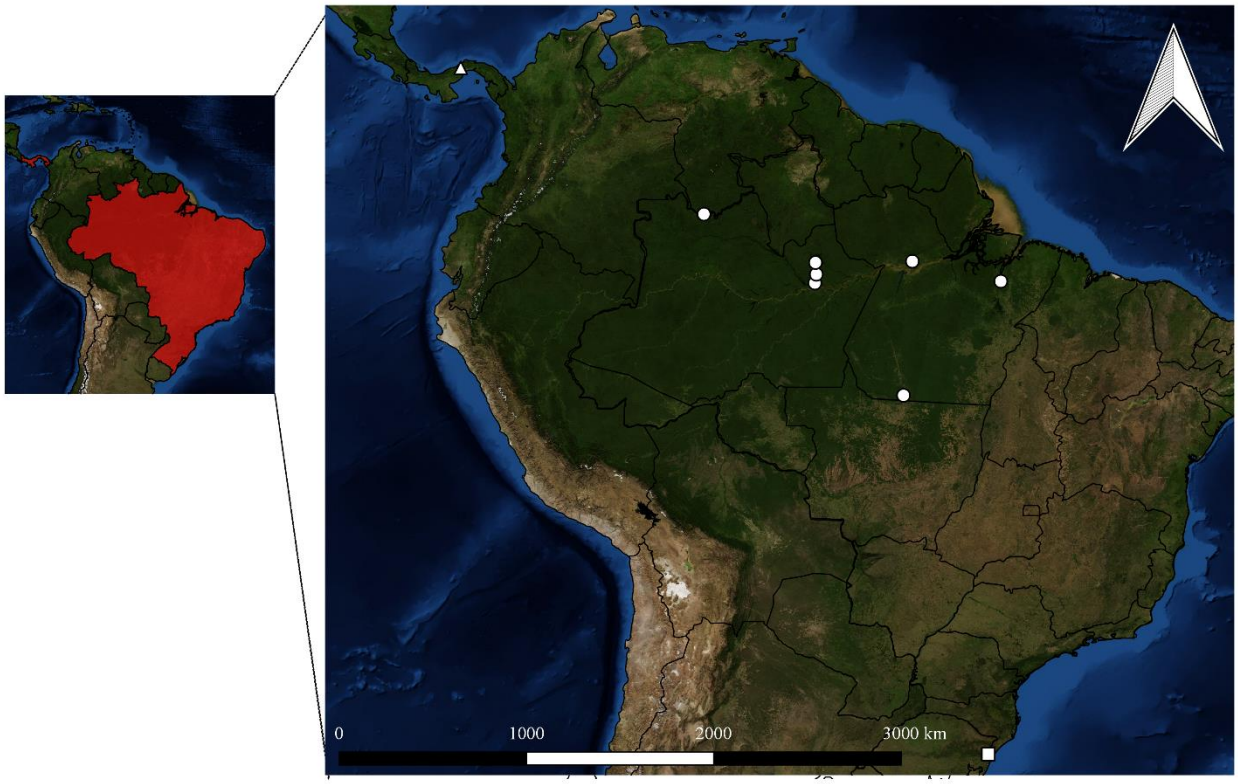
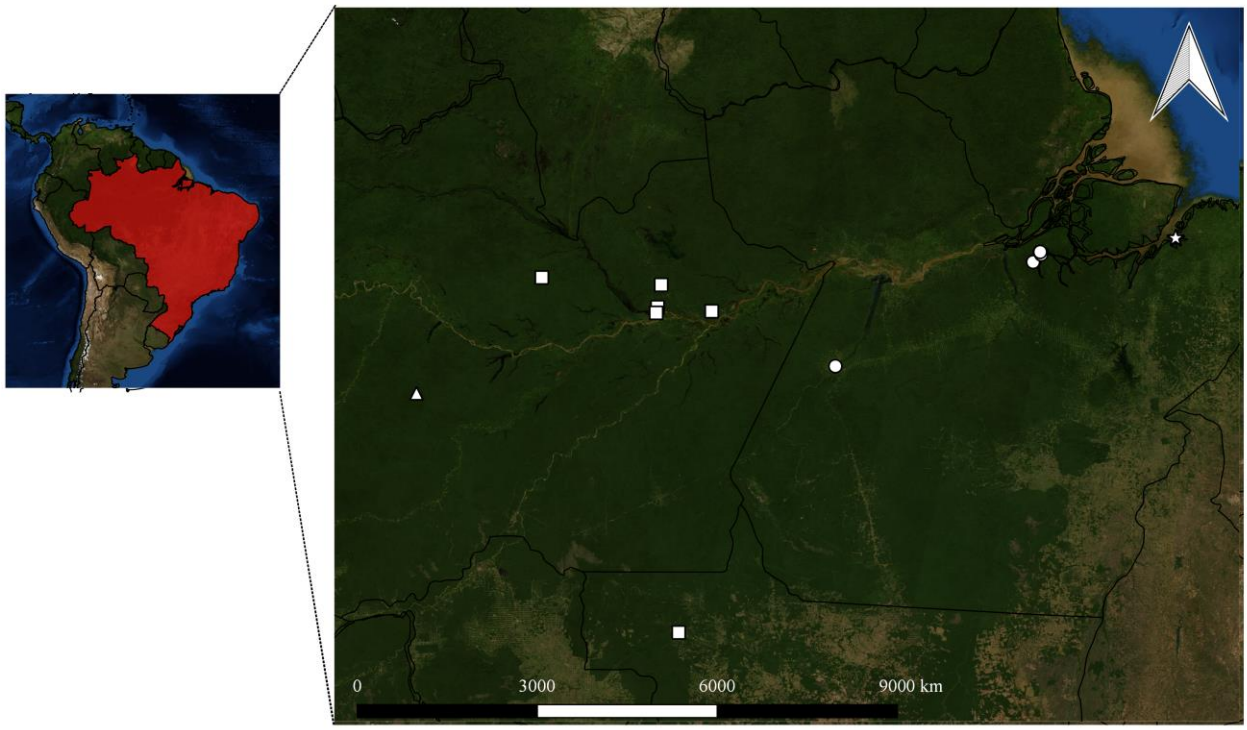


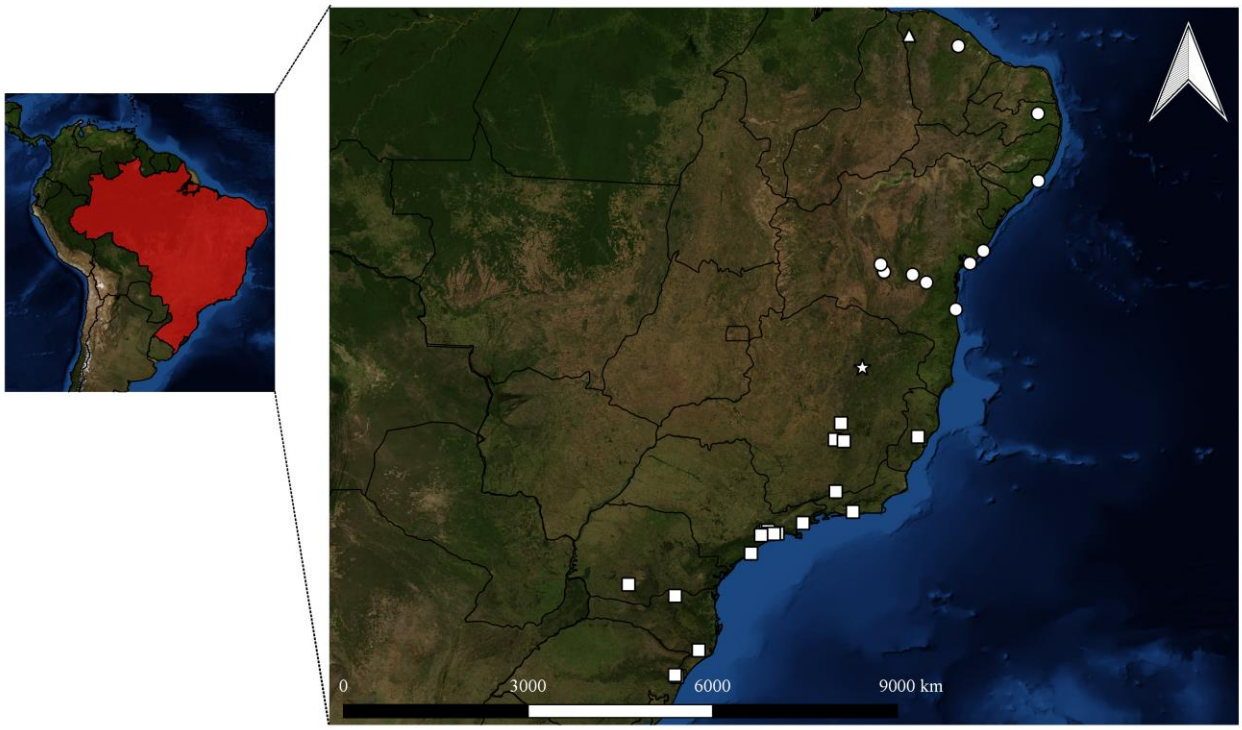
FIGURE 18. *Tupirinna lata* **sp. nov.** male palp. **A**–**C:** ventral view. **A**–**B:** palp. **C**. sclerites. **D**–**F.** retrolateral view. **D.** palp. **E.** sclerites. **F.** tíbia. Abbreviations: C, conductor; DL, dorsal lobe; E, embolus; TEP, Tupirinna embolar process; TRP, tegular rettrolateral projection; VL, ventral lobe; VTA, ventral tibial apophysis.


0
1000
2000
3000 km
Tupirinna albofasciata
Tupirinna rosae
Tupirinna trilineata

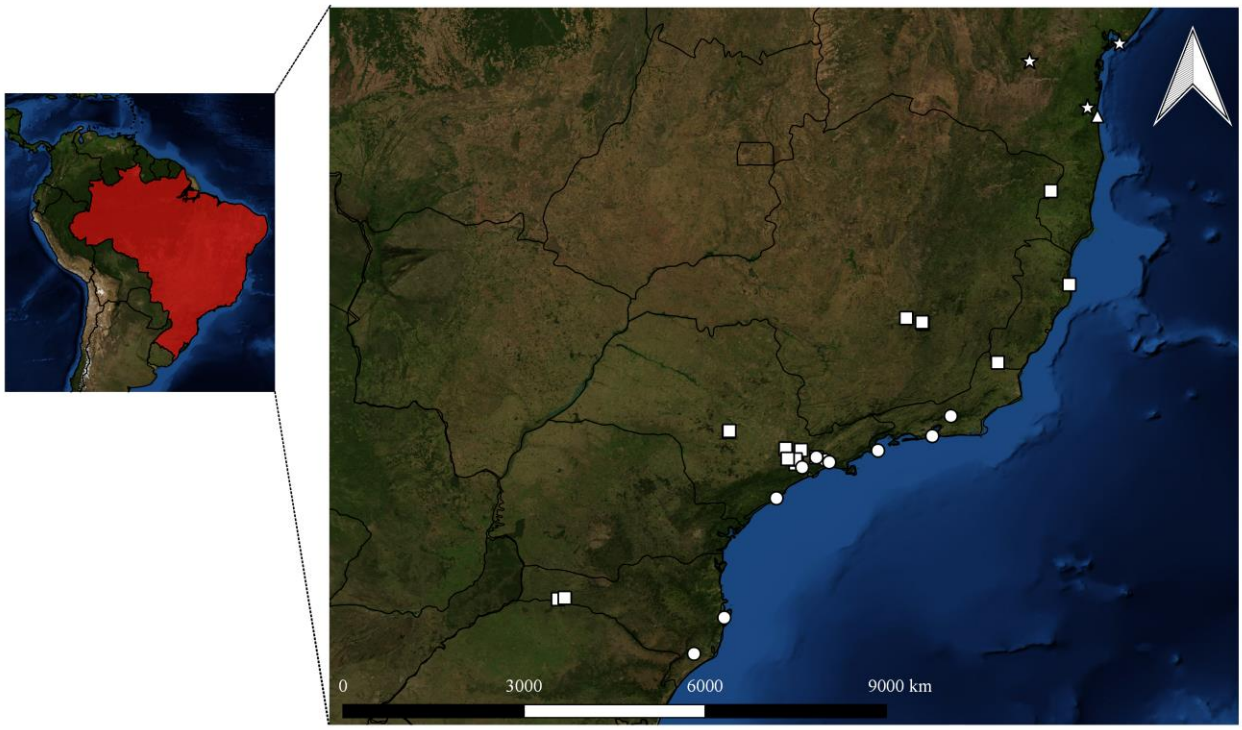
Map 1.


0
3000
6000
9000 km
Tupirinna zebra sp. n.
Tupirinna evanesca sp. n.
Tupirinna goeldi sp. n.
Tupirinna urucu sp. n.

Map 2.


0
3000
6000
9000 km
Tupirinna caraca sp. n.
Tupirinna palmares sp. n.
Tupirinna ibiapaba sp. n.
Tupirinna luctuosa sp. n.

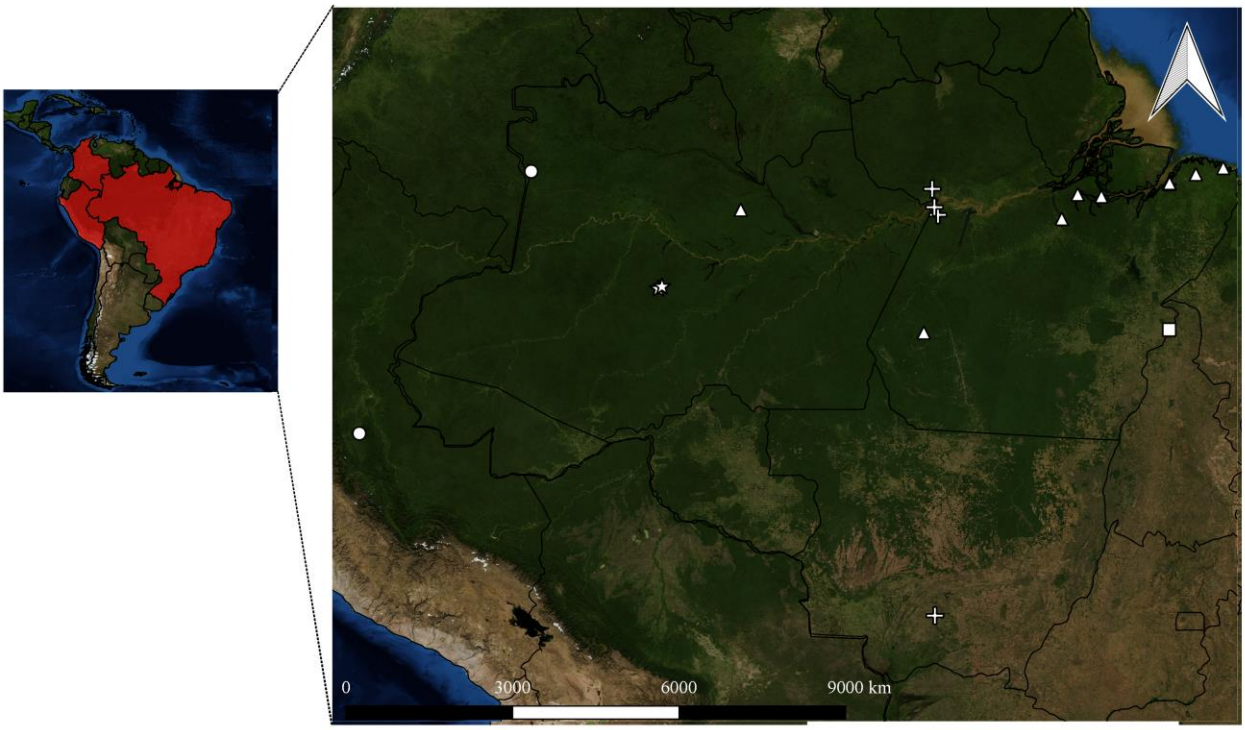
Map 3.



□ *Tupirinna lata sp. n.* ○ *Tupirinna cruzes sp. n.* △ *Tupirinna una sp. n.*

☆ *Tupirinna oba sp. n.*

Map 4.


0
3000
6000
9000 km
Tupirinna araguaia sp. n.
Tupirinna gigantea sp. n.
Tupirinna coari sp. n.
Tupirinna mutum sp. n.
Tupirinna regiae sp. n.

Map 5.

ANEXO

Normas para formatação e submissão de artigos – Zootaxa ISSN 1175-5326 (Print Edition) & ISSN 1175-5334 (Online Edition)

Preparation of manuscripts

1) *General.* All papers must be in English. Authors whose native language is not English are encouraged to have their manuscripts read by a native English-speaking colleague before submission. Nomenclature must be in agreement with the *International Code of Zoological Nomenclature* (4th edition 1999), which came into force on 1 January 2000. Author(s) of species name must be provided when the scientific name of any animal species is first mentioned (the year of publication needs not be given; if you give it, then provide a full reference of this in the reference list). Authors of plant species names need not be given. Metric systems should be used. If possible, use the common font Times New Roman and use as little formatting as possible (use only **bold** and *italics* where necessary and indentions of paragraphs except the first). Special symbols (e.g. m# or fem# sign) should be avoided because they are likely to be altered when files are read on different machines (Mac versus PC with different language systems). You can code them as m# and f#, which can be replaced during page setting. The style of each author is generally respected but they must follow the following general guidelines.

2) The **title** should be concise and informative. The higher taxa containing the taxa dealt with in the paper should be indicated in parentheses: e.g. A taxonomic revision of the genus *Aus* (Order: family).

3) The **name(s) of all authors** of the paper must be given and should be typed in the upper case (e.g. ADAM SMITH, BRIAN SMITH & CAROL SMITH). The address of each author should be given in *italics* each starting a separate line. E-mail address(es) should be provided if available.

4) The **abstract** should be concise and informative. Any new names or new combinations proposed in the paper should be mentioned. Abstracts in other languages may also be included in addition to English abstract. The abstract should be followed by a list of**key words**that are not present in the title. Abstract and key words are not needed in short correspondence.

5) The arrangement of the **main text** varies with different types of papers (a taxonomic revision, an analysis of characters and phylogeny, a catalogue etc.), but should usually start with an **introduction** and end with a list of **references**. References should be cited in the text as Smith (1999), Smith & Smith (2000) or Smith *et al.* (2001) (3 or more authors), or alternatively in a parenthesis (Smith 1999; Smith & Smith 2000; Smith *et al.* 2001). All literature cited in the text must be listed in the references in the following format (see a sample page here in PDF).

A) **Journal paper**:

Smith, A. (1999) Title of the paper. *Title of the journal in full*, volume number, page range.

B) **Book chapter**:

Smith, A. & Smith, B. (2000) Title of the Chapter. *In*: Smith, A, Smith, B. & Smith, C. (Eds), *Title of Book.* Publisher name and location, pp. x–y.

C) **Book**:

Smith, A., Smith, B. & Smith, C. (2001) *Title of Book*. Publisher name and location, xyz pp.

D) **Internet resources**

Author (2002) Title of website, database or other resources, Publisher name and location (if indicated), number of pages (if known). Available from: http://xxx.xxx.xxx/ (Date of access).

Dissertations resulting from graduate studies and non-serial proceedings of conferences/symposia are to be treated as books and cited as such. Papers not cited must not be listed in the references.

Please note that:

(1) **journal titles must be written in full (not abbreviated)**

(2) **journal titles and volume numbers are followed by a ","**

(3) **page ranges are connected by "n dash", not hyphen "-", which is used to connect two words.**

For websites, it is important to include the last date when you see that site, as it can be moved or deleted from that address in the future.

On the use of dashes: (1) Hyphens are used to link words such as personal names, some prefixes and compound adjectives (the last of which vary depending on the style manual in use). (2) En-dash or en-rule (the length of an 'n') is used to link spans. In the context of our journal that means numerals mainly, most frequently sizes, dates and page numbers (e.g. 1977–1981; figs 5–7) and also geographic or name associations (Murray–Darling River; a Federal–State agreement). (3) Em-dash or em-rule (the length of an 'm') are used far more infrequently, and are used for breaks in the text or subject, often used much as we used parentheses. In contrast to parentheses an em-dash can be used alone; e.g. What could these results mean—that Niel had discovered the meaning of life? En-dashes and em-dashes should not be spaced.

6) Legends of **illustrations** should be listed after the list of references. Small illustrations should be grouped into plates. When preparing illustrations, authors should bear in mind that the journal has a matter size of 25 cm by 17 cm and is printed on A4 paper. For species illustration, line drawings are preferred, although good quality B&W or colour photographs are also acceptable. See a guide here for detailed information on preparing plates for publication.
7) **Tables**, if any, should be given at the end of the manuscript. Please use the table function in your word processor to build tables so that the cells, rows and columns can remain aligned when font size and width of the table are changed. Please do not use Tab key or space bar to type tables.
8) **Keys** are not easy to typeset. In a typical dichotomous key, each lead of a couplet should be typed simply as a paragraph as in the box below:
1 Seven setae present on tarsus I ; four setae present on tibia I; leg I longer than the body; legs black in color ... Genus A
- Six setae present on tarsus I; three setae present on tibia I; leg I shorter than the body; legs brown in color ... 2
2 Leg II longer than leg I ... Genus B
- Leg II shorter than leg I ... Genus C

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collections. Authors are also advised to request registration numbers of deposited material in advance of the acceptance of papers to avoid unnecessary delay of publication. Some countries (e.g. Australia) require that primary type specimens be deposited in collections of the country of origin; authors are advised to take this into consideration.

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Please follow the above basic guidelines and check if your manuscript has been prepared according to the style and format of the journal. Authors are encouraged to submit manuscripts by e-mail as attachments to the subject Editors responsible for your taxa or subject areas; manuscripts on small insect orders without subject editors should be submitted to Dr **Ernest Bernard** (ebernard@utk.edu); manuscripts on other invertebrate taxa without subject editors should be submitted to the Chief editor.

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