

PONTIFÍCIA UNIVERSIDADE CATÓLICA DO RIO GRANDE DO SUL  
FACULDADE DE BIOCÊNCIAS  
PROGRAMA DE PÓS-GRADUAÇÃO EM ZOOLOGIA

**THE ORB-WEAVING SPIDER *EUSTALA* DESCRIBED FROM  
SOUTHERN BRAZIL (ARANEAE, ARANEIDAE)**

**Maria Rita Muniz Poeta**

**DISSERTAÇÃO DE MESTRADO**  
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**Orientador: Dr. Arno Antonio Lise**

**DISSERTAÇÃO DE MESTRADO  
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2013**

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## **WARNING**

This dissertation is not valid as publication, as described in the chapter 3 of the International Code of Zoological Nomenclature. Therefore, taxonomic changes and new names proposed here are not valid for nomenclatural or priority purposes.

**“A ignorância gera confiança com mais frequência do que o conhecimento: são aqueles que sabem pouco, e não aqueles que sabem muito, que tão positivamente afirmam que esse ou aquele problema jamais será resolvido pela ciência”**

*Charles Darwin*

*Dedico aos meus pais Maria Vanir Muniz Poeta e Luiz Carlos Poeta e  
aos meus padrinhos Eda Poeta Ferreira e Sérgio Gilberto Prates  
Ferreira, os quais sempre apoiaram e incentivaram  
o meu crescimento pessoal e profissional.*

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## RESUMO

A família Araneidae Clerck, 1757 agrega 3029 espécies em 168 gêneros. Aranhas comuns na natureza, tecem teias orbiculares bidimensionais na vegetação arbustiva e arbórea e, aparentemente, têm hábitos noturnos. *Eustala* Simon, 1895 ocorre em todo o continente Americano e parece ser o gênero Neotropical de Araneidae com maior riqueza de espécies. O gênero contém cerca de 90 espécies, das quais 16 são descritas do Brasil. O macho caracteriza-se pelo palpo com única macrocerda patelar, apófise média cônica e esbranquiçada, voltada posteriormente e pela apófise terminal que é um prolongamento esclerotizado sobre a apófise subterminal, em forma de balão transparente. As fêmeas se caracterizam pelo epígino com escape dirigido anteriormente, podendo ser liso ou anelado. O padrão de colorido frequente no dorso do abdômen é o fólio, no entanto, muitos espécimes variam na coloração, podendo ser mais ou menos pigmentados. Apesar de frequentemente colecionadas as espécies desse gênero são pouco conhecidas, visto que são escassos os trabalhos taxonômicos do gênero para a América do Sul. Assim, este estudo visa contribuir para o conhecimento das espécies brasileiras de *Eustala*, através da diagnose e ilustração das espécies dos estados da região Sul do Brasil, dando continuidade ao trabalho iniciado sobre o gênero no estado do Rio Grande do Sul. Para a execução deste projeto, o material de *Eustala* depositado nas coleções aracnológicas das regiões Sudeste e Sul do Brasil foram examinados. As ilustrações foram realizadas com o auxílio de câmara-clara acoplada ao microscópio estereoscópio. O palpo esquerdo foi ilustrado nas vistas ventral e mesial e o epígino nas vistas ventral, posterior e lateral. No presente trabalho são redescritas *Eustala ulecebrosa* (Keyserling, 1892), do Rio Grande do Sul e *E. mourei* Mello-Leitão, 1947, do Paraná. Oito novas espécies são descritas do Sul do Brasil: *E. guarani* **sp. nov.**, do Paraná; *E. catarina* **sp. nov.**, de Santa Catarina e *E. ericae* **sp. nov.**, *E. cidae* **sp. nov.**, *E. lisei* **sp. nov.**, *E. cuia* **sp. nov.** e *E. farroupilha* **sp. nov.**, todas baseadas em machos e fêmeas, e *E. eldorado* **sp. nov.**, baseada em exemplar macho, do Rio Grande do Sul. As espécies *Eustala albiventer* (Keyserling, 1884), *E. taquara* (Keyserling, 1892), *E. minuscula* (Keyserling, 1892), *E. itapocuensis* Strand, 1916, *E. photographica* Mello-Leitão, 1944, *E. levii* e *E. palmares*, Poeta, Marques & Buckup, 2010 apresentam novos registros de ocorrência no Brasil e *E. perfida* Mello-Leitão, 1947, tem primeiro registro para o Uruguai.



## ABSTRACT

The Araneidae Clerck, 1757 has 3029 species in 168 genera. They are common in nature, weaving orbicular bidimensional webs on trees and bushes and, apparently, have nocturnal habits. Spiders of *Eustala* Simon, 1895 occur throughout all American continent and it seems to be the most speciose Neotropical Araneidae genus. The genus contains about 90 species, 16 of which have been described from Brazil. The male is characterized by the palpus with only one patellar macroseta; conic, whitish hanging down posteriorly median apophysis and the terminal apophysis is a sclerotized extension, resting on a transparent, balloon-like, subterminal apophysis. The females are characterized by the epigynum with ringed scape pointed anteriorly. The most common pattern color on the abdomen dorsum is a folium. However, this could vary from specimen to specimen, being more or less pigmented. Although frequently collected, species of this genus are poorly known, at present, there are just a few studies on the genus from South America. Thus this study aims to contribute to the knowledge of the Brazilian species of *Eustala*, through diagnosis and illustrations of species from Southern Brazil, giving continuity to the work initiated about the genus on Rio Grande do Sul state. In order to carry out this study, *Eustala* material from several arachnological collections was analyzed. Illustrations were made with the aid of camera lucida coupled to the stereoscopic microscope. The left male palpus was illustrated on mesal and ventral views; the epigynum was illustrated on ventral, posterior and lateral views. In current study *Eustala ulecebrosa* (Keyserling, 1892), from Rio Grande do Sul and *E. mourei* Mello-Leitão, 1947, from Paraná are illustrated and redescribed. Eight new species from Southern Brazil are described: *E. guarani* **sp. nov.**, from Paraná; *E. catarina* **sp. nov.**, from Santa Catarina and *E. ericae* **sp. nov.**, *E. cidae* **sp. nov.**, *E. lisei* **sp. nov.**, *E. cuia* **sp. nov.** and *E. farroupilha* **sp. nov.**, all based on males and females and *E. eldorado* **sp. nov.**, based only on males, from Rio Grande do Sul. *Eustala albiventer* (Keyserling, 1884), *E. taquara* (Keyserling, 1892), *E. minuscula* (Keyserling, 1892), *E. itapocuensis* Strand, 1916, *E. photographica* Mello-Leitão, 1944, *E. levii* and *E. palmares*, Poeta, Marques & Buckup, 2010 present new distribution records from Brazil and *E. perfida* Mello-Leitão, 1947 has a first record in Uruguay.

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## APRESENTAÇÃO

Araneidae Clerck, 1757, atualmente é a terceira maior família de aranhas do mundo, compreendendo 3029 espécies incluídas em 168 gêneros (Platnick 2013). As aranhas dessa família tecem teias orbiculares bidimensionais na vegetação arbustiva e arbórea (Dondale *et al.* 2003), ocorrem praticamente em todos os continentes e apresentam forma, tamanho e colorido variados.

O aracnólogo Herbert W. Levi trabalhou intensamente com Araneidae e revisou grande parte dos gêneros dessa família. Levi (2002) publicou uma chave dicotômica para 65 gêneros de Araneidae que ocorrem no continente americano, e as caracteriza como aranhas não cribeladas, com três unhas tarsais, falsas unhas e oito olhos. Diferem-se das demais famílias pelo palpo do macho com rotação no bulbo. Nas fêmeas o epígino, frequentemente, apresenta escapo ou lóbulo; as aberturas copulatórias são posteriores ou, raramente, ventrais (Levi 2002).

Ao longo dos anos, foram realizados diversos estudos acerca das relações de parentesco dos grupos de Araneae, Orbicularie (Coddington & Levi 1991; Griswold *et al.* 1998, entre outros). Atualmente, quanto a sua filogenia, a família Araneidae é considerada um táxon monofilético (Scharff & Coddington 1997), tendo como grupo-irmão todas as demais famílias da superfamília Araneoidea (Coddington 2009).

*Eustala* Simon, 1895, exclusivo do continente americano, abrange, até o momento, 94 espécies descritas (Platnick 2013). O gênero se apresenta atualmente como monofilético, e tem como grupos mais próximos *Wixia* O. P.-Cambridge, 1882 e *Acacesia* Simon, 1895 (Coddington 2009).

O palpo do macho de *Eustala* tem como característica principal a apófise média cônica, esbranquiçada e voltada posteriormente e a apófise subterminal em forma de balão transparente. As fêmeas apresentam o epígino com escapo voltado anteriormente, diferentemente dos demais gêneros da família. O abdômen, geralmente, tem formato subtriangular, com uma mancha branca mediana no ventre (comum também a *Larinia* Simon, 1874 e a *Metepeira* F.O.P.-Cambridge, 1903). O padrão de colorido mais comum é o fólio, que se repete nas espécies, dificultando a associação de machos e fêmeas (Levi 1977). São frequentemente colecionadas e abundantes nas coleções científicas, no entanto, na América do

Sul, as espécies de *Eustala* ainda são pouco conhecidas, visto que são escassos os trabalhos taxonômicos sobre o gênero para a região.

As descrições originais das espécies de *Eustala* descritas do Brasil são, usualmente, baseadas no padrão de colorido, caráter de pouco valor diagnóstico, e ilustrações que carecem de detalhes morfológicos, sendo, assim, inadequadas para a determinação das espécies. Herbert W. Levi, ao longo dos anos, ilustrou muitos dos espécimes-tipo de *Eustala* da América Central e do Sul os quais estão disponíveis *online* (Levi 2007; Levi *et al.* 2010) e possibilitam a determinação dessas espécies.

Para a exequibilidade do presente projeto, limitou-se a área de abrangência do estudo, devido à extensão do território nacional e do elevado número de espécies que teriam de ser trabalhadas. Sendo assim, apresenta-se uma revisão parcial do gênero, através da análise das espécies descritas dos estados do Paraná, Santa Catarina e Rio Grande do Sul, complementando estudos prévios do gênero nessa região realizados por Poeta *et al.* (2010a, b).

O artigo **“The orb-weaving spider *Eustala* described from Southern Brazil (Araneae, Araneidae): eight new species, redescription and new records”** será submetido para a revista online *Zootaxa*, e apresenta a descrição de oito novas espécies de *Eustala*, redescricao de *E. ulecebrosa* (Keyserling, 1892), do Rio Grande do Sul, de *E. mourei* Mello-Leitão, 1947, do Paraná, além de novos registros ocorrência para as espécies descritas do Sul do Brasil.

## PRESENTATION

Araneidae Clerck, 1757, currently is the third largest family of spiders in the world, with 3029 species in 168 genera (Platnick 2013). These orb-weaver spiders living on the tree-shrub strata (Dondale *et al.* 2003), occur in almost all continents and vary in shape, size and color.

The arachnologist Herbert W. Levi worked intensively in Araneidae and reviewed most genera. Levi (2002) published an identification key for 65 American araneid genera, and characterized them as ecribellated, three-clawed spiders, with eight eyes in two rows. The araneid males differ from the other families by the rotated palpal bulb. The females present an epigynum frequently with scape or lobe, the openings are, usually, on posterior view (Levi 2002).

Over the years, several studies were done about de Araneae, Orbicularie relationships (Coddington & Levi 1991; Griswold *et al.* 1998, entre outros). Currently, Araneidae family is considered as a monophyletic group (Scharff & Coddington 1997), being as sister-group of all Araneoidea families (Coddington 2009).

The American orb-weaver genus *Eustala* Simon, 1895, has, until now, 94 known species (Platnick 2013). This genus, currently, is considered as monophyletic, and is closely related with *Wixia* O. P.-Cambridge, 1882 and *Acacesia* Simon, 1895 (Coddington 2009).

The male palpi present a characteristic whitish cone-shaped median apophysis hanging down posteriorly, and a transparent bubble-like subterminal apophysis. The females have an epigynum with an anteriorly projecting scape, differently of other Araneidae genera (Levi 1977). The abdomen is usually subtriangular, with a ventral white patch (as in *Larinia* Simon, 1874 and *Metepeira* F.O.P.-Cambridge, 1903). The color pattern is usually folium, making it difficult to match male and female of the same species by this feature (Levi 1977). These spiders are frequently collected and common on scientific collections, however, on South America, this genus is still poorly known, as there are just a few taxonomic studies about *Eustala* into this region.

The species of *Eustala* described from Brazil, usually presents original descriptions based on color patterns, and poor illustrations without morphological details, which difficult the identification of species. Herbert W. Levi, over the years, illustrated many type-species of *Eustala* from Central and South America that are available online and made possible the identification of these species (Levi 2007; Levi *et al.* 2010).

For the feasibility of this project, the study area was limited, due the extension of Brazil, and the possible elevated number of species that would have to be analyzed. In this way, here is presented a partial review of *Eustala*, through the study of species described from Paraná, Santa Catarina and Rio Grande do Sul states, complementing previous studies of the genus in the region by Poeta *et al.* (2010a, b).

The article “**The orb-weaving spider *Eustala* described from Southern Brazil (Araneae, Araneidae): eight new species, redescription and new records**” will be submitted to the eletronical journal Zootaxa, and presents the description of eight new species of *Eustala*, redescription of *E. ulecebrosa* (Keyserling, 1892), from Rio Grande do Sul, and of *E. mourei* Mello-Leitão, 1947, from Paraná, also new records to the species of *Eustala* from Southern Brazil.

**THE ORB-WEAVING SPIDER *EUSTALA* DESCRIBED FROM SOUTHERN  
BRAZIL (ARANEAE, ARANEIDAE): EIGHT NEW SPECIES, REDESCRIPTIONS  
AND NEW RECORDS**

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**Abstract.** Eight new species of *Eustala* are described from Southern Brazil: *E. guarani* **sp. nov.**, from Paraná; *E. catarina* **sp. nov.**, from Santa Catarina and *E. ericae* **sp. nov.**, *E. cidae* **sp. nov.**, *E. lisei* **sp. nov.**, *E. cuia* **sp. nov.**, *E. farroupilha* **sp. nov.**, from Rio Grande do Sul, based on males and females. *Eustala eldorado* **sp. nov.**, from Rio Grande do Sul, based on males only. *Eustala ulecebrosa* (Keyserling, 1892), described from Rio Grande do Sul and *E. mourei* Mello-Leitão, 1947, from Paraná, are redescribed and illustrated. New records of *Eustala albiventer* (Keyserling, 1884), *E. taquara* (Keyserling, 1892), *E. minuscula* (Keyserling, 1892), *E. itapocuensis* Strand, 1916, *E. photographica* Mello-Leitão, 1944, *E. levii* and *E. palmares*, Poeta, Marques & Backup, 2010 are presented. *Eustala perfida* Mello-Leitão, 1947, described from Paraná, presents first record from Uruguay. Distribution maps are provided for these species of *Eustala*.

**Key words:** taxonomy, geographical distribution, Neotropical region

### **Introduction**

The orb-weaving genus *Eustala* was proposed by Simon (1895) with *Epeira anastera* Walckenaer, 1841, as type-species. Simon (1895) diagnosed the genus by the female with a unique epigynum which has its scape projecting anteriorly. The male was proposed by Walckenaer (1841) as *Epeira illustrata*, nowadays synonymized with *Eustala anastera*.

Eleven species were described from Central America by O.P.-Cambridge (1889) and F.O.P.-Cambridge (1904) and one by Chamberlin (1925). Chickering (1955) added 26 new species. Because of the difficult to match males and females, Chickering (1955) described

some new species based on one sex only.

Levi (1977) reviewed 13 species from North and Central America adding two new species, two new combinations and two synonymies and the remains species were redescribed and illustrated. The author also emphasized the difficulty of match males and females of the same species by color pattern (Levi 1977). Throughout the years, the author examined and illustrated the genitalia of 63 type specimens of *Eustala*, including those described from South America, which are available online (Levi 2007; Levi *et al.* 2010).

The knowledge of Southern Brazilian fauna of the genus had the contributions of Keyserling (1892, 1893) who described five new species from state of Rio Grande do Sul; Strand (1916), with one species from state of Santa Catarina; Mello-Leitão (1947) with two species from Paraná. Poeta *et al.* (2010a, b) complemented the descriptions of some of these species and added descriptions of four new species based on males and females.

Currently, 94 species of *Eustala* are described and 25 presents records in Brazil, of which 19 are originally described from this country (Table 1) (Platnick 2013).

The current study has emphasis on *Eustala* species from Southern Brazil because of the richness and abundance of this genus on the Neotropical Region. Of the 12 species described from Southern Brazil, *Eustala ulecebrosa* (Keyserling, 1892) and *E. mourei* Mello-Leitão, 1947 are redescribed and illustrated, eight new species are described and new distribution records of *E. albiventer* (Keyserling, 1884), *E. minuscula* (Keyserling, 1892), *E. itapocuensis* Strand, 1916, *E. photographica* Mello-Leitão, 1944, *E. perfida* Mello-Leitão, 1947 and *E. palmares*, Poeta *et al.* 2010 are presented.

## **Material and methods**

The specimens were examined, illustrated and measured in alcohol 80% under a stereomicroscope fitted with a *camera lucida*. Measurements are in millimeters. The nomenclature of the genital structures and description follow Levi (1977). The abbreviations used in figures follow Levi (1977) and Poeta *et al.* (2010a, b). The male left palpi were illustrated in ventral and mesal views and the epigyna in ventral, posterior and lateral views. The species of *Eustala* described from Southern Brazil are presented here in chronological order.

The illustrations were processed with Gimp 2.8 and the final plates were edited with



**Table 1.** List of *Eustala* species that occur in Brazil. (\*) Indicate which are described from Brazil; (\*\*) indicate which are described from Southern Brazil (Platnick 2013).

<i>Eustala</i>	Sex	Type locality	Distribution
** <i>albiventer</i> (Keyserling, 1884)	♂♀	Santa Isabela, RS, Brazil	Brazil (SC, RS)
** <i>belissima</i> Poeta et al. 2010	♂♀	Cambará do Sul, RS, Brazil	Brazil (RS)
** <i>crista</i> Poeta et al. 2010	♂♀	Iraí, RS	Brazil (PR, SC, RS)
* <i>gonygaster</i> (C. L. Koch, 1838)	♂♀	Brazil	Brazil, Guyana
<i>guttata</i> F. O. P.-Cambridge, 1904	♂♀	Bugaba, Panama	Mexico to Brazil
<i>illicita</i> (O. P.-Cambridge, 1889)	♂♀	Guatemala	México, Guatemala, Brazil (RR, MT)
** <i>itapocuensis</i> Strand, 1916	♂♀	Joenville, SC, Brazil	Brazil (SC, RS)
** <i>levii</i> Poeta et al. 2010	♂♀	São Francisco de Paula, RS, Brazil	Brazil (PR, SC, RS)
** <i>minuscula</i> (Keyserling, 1892)	♂♀	RS, Brazil	Brazil (SC, RS)
** <i>mourei</i> Mello-Leitão, 1947	♂♀	Barigui, Curitiba, PR	Brazil (PR)
* <i>mucronatella</i> (Roewer, 1942)	♂♀	"Neu Holland"	Brazil (rs?)
<i>nasuta</i> Mello-Leitão, 1939	♂♀	Guyana	Guyana, Brazil (PA, GO, BA, MT)
* <i>nigerrima</i> Mello-Leitão, 1940	♀	Campos dos Goytacazes, RJ, Brazil	Brazil (RJ)
<i>novemmamillata</i> Mello-Leitão, 1941	♀	Santa Fé, Argentina	Argentina (Santa Fé)
<i>pallida</i> Mello-Leitão, 1940	♀	Rio Xingu (PA, MT), Brazil	Brazil (PA, MT)
** <i>palmares</i> Poeta et al. 2010	♂♀	Palmares do Sul (RS), Brazil	Brazil (RJ, PR, SC, RS); Uruguay (Artigas)
** <i>perfida</i> Mello-Leitão, 1947	♂♀	Volta Grande, PR, Brazil	Brazil (PR, SC, RS)
<i>photographica</i> Mello-Leitão, 1944	♂♀	Buenos Aires, Argentina	Brazil (PR, RS); Uruguay (Artigas); Argentina (Buenos Aires)
** <i>saga</i> (Keyserling, 1893)	♂♀	Male, Uruguay; female, RS, Brazil	Brazil (RS), Uruguay
* <i>sagana</i> (Keyserling, 1893)	♂♀	Rio de Janeiro, Brazil	Brazil (RJ, SP, PR, RS)
<i>secta</i> Mello-Leitão, 1945	♂♀	Misiones, Argentina	Brazil (GO, PR, RS); Argentina (Misiones)
** <i>taquara</i> (Keyserling, 1892)	♂♀	Taquara, RS, Brazil	Brazil (RJ, SP, PR, SC, RS)
<i>tridentata</i> (C. L. Koch, 1838)	♂♀	Brazil	Brazil, French Guiana
* <i>trinitatis</i> (Hogg, 1918)	♀	Isl. Trindade, S. Atlantic, Brazil	Brazil (Trindade)
* <i>tristis</i> (Blackwall, 1862)	♀	Brazil	Brazil
** <i>ulecebrosa</i> (Keyserling, 1892)	♀	Taquara, Rio Grande do Sul	Brazil (PR, RS)
<i>vegeta</i> (Keyserling, 1865)	♂♀	Neu Granada, Colombia	Mexico to Brazil, Hispaniola
* <i>vellardi</i> Mello-Leitão, 1924	♀	Rio de Janeiro	Brazil

Inkscape 0.48. Species records were plotted in maps using Google Earth 6.2 (<http://earth.google.com>) and were assembled and edited using Quantum GIS 1.8.0 (Nanni *et al.*). Latitude and longitude data for locality records are approximated calculated with Google Earth 6.2.

The specimens studied are deposited in the following institutions (acronyms and curators in parenthesis): Instituto Butantan, São Paulo (IBSP, D.M Barros-Battesti); Museu de Ciências Naturais, Fundação Zoobotânica do Rio Grande do Sul, Porto Alegre (MCN, E.H. Buckup and R. Ott); Museu de Ciências e Tecnologia da Pontifícia Universidade Católica do Rio Grande do Sul, Porto Alegre (MCTP, A.A. Lise); Museu de História Natural Capão da Imbuia, Curitiba (MHNCI, L.M. Abe); Museu Nacional do Rio de Janeiro, Rio de Janeiro (MNRJ, A.B. Kury); Museu de Zoologia da Universidade de São Paulo, São Paulo (MZSP, R. Pinto da Rocha).

In the current study, the males and females specimens sampled together were tentatively considered as conspecific. This decision was taken in order to maintain taxonomic stability, do not give more scientific names that could be, possibly, synonymized in future and overestimate the total number of species.

## TAXONOMY

### Family Araneidae Clerck, 1957

#### *Eustala* Simon, 1895

*Eustala* Simon, 1895: 795. Type species *Epeira anastera* Walckenaer, 1841 by original designation. The genus is feminine. Levi 1977: 114; Levi 2002.

**Diagnosis.** Differently of the other Araneidae genera, females of *Eustala* present the epigynum with a scape projecting anteriorly instead of posteriorly. The males can be distinguished by the palpi with an unusual white cone-shaped median apophysis which hanging down the venter of the palpus (Levi 1977).

***Eustala albiventer* (Keyserling, 1884)**

Figure 1

*Epeira albiventer* Keyserling 1884: 651, est. 21, fig. 3, female holotype from Santa Isabela (nowadays, Santa Isabel do Sul, 2nd district of Arroio Grande), Rio Grande do Sul, Brazil, deposited in the National Museum of Ireland. Examined by H.W. Levi, in 1969 (Levi 2007, figures). Keyserling 1892: 157, est. 8, fig. 115.

*Araneus albiventer*; Petrunkevitch 1911: 278.

*Metazygia albiventer*; Mello-Leitão 1943: 186.

*Eustala albiventer*; Levi 1991: 178.

*Epeira sanguinosa* Keyserling 1893: 225, est. 11, figs 167, female holotype from Taquara, Rio Grande do Sul, Brazil, H. von Ihering. Deposited in The Natural History Museum, London. Examined by H.W. Levi, in 1975 (Levi 2007, figures). Synonymy established by Poeta *et al.* (2010a): 155.

*Araneus sanguinosus*; Petrunkevitch 1911: 314.

*Eustala sanguinosa*; Roewer 1942: 766; Mello-Leitão 1943: 179

*Eustala albiventer*; Poeta *et al.* 2010a: 155, figs 20-24; Platnick 2013.

**Distribution.** Brazil: São Paulo, Paraná, Santa Catarina and Rio Grande do Sul (Fig. 1).

**Additional material examined.** BRAZIL, *São Paulo*: Campos do Jordão, 22°40'S, 45°34'W, 1♀, 15.XII.1944, F. Lane (MZSP 9623); São Paulo (Bairro Jurubatuba), 23°31'S, 46°38'W, 1♀, 06.VII.1941, F. Lane (MZSP 9627). *Paraná*: 1♀, R. Hertel (MHNCI 3434); Morretes (Serra da Graciosa), 25°21'S, 48°46'W, 1♀, 09-20.I.1995, Equipe do Laboratório de Aracnologia (MCTP 6950); Curitiba, 25°15'S, 49°14'W, 1♂, Dr. Curival (MHNCI 3451); 1♀, R. Hertel (MHNCI 3434); Imbituva, 25°02'S, 50°33'W, 85♀, 1935, V. Staviarski (MNRJ 4528). *Santa Catarina*: Florianópolis (Reserva Biológica Marinha do Arvoredo), 27°04'S, 48°18'W, 1♀, 03-07.V.1995, A.A. Lise *et al.* (MCTP 6319). *Rio Grande do Sul*: Caxias do Sul, 28°53'S, 51°06'W, 1♂, 18-21.XI.1993, A.A. Lise (MCTP 32540); São Francisco de Paula, 29°14'S, 50°31'W, 1♀, 25-28.IV.1996, A.A. Lise (MCTP 10511); 2♂, 1♀, 09-12.I.1997, A.A. Lise *et al.* (MCTP 10842, 10483); (Potreiro Velho) 1♀, 05-08.XII.1996, A.A. Lise *et al.* (MCTP 13927); 1♂, 1♀, 14-17.XII.1996, A.A. Lise (MCTP 10933, 10936); 3♀, 05-09.III.1997, A.A. Lise *et al.* (MCTP 14041, 14046); 1♀, 10-13.IV.1997, A.A. Lise (MCTP

31996); 1♀, XI.1997, R. Merke (MCTP 10050); 1♀, 05-09.XII.1997, A.A. Lise (MCTP 32537); 1♂, 12-14.XI.1998, A.A. Lise (MCTP 32000); 1♂, 04-06.I.1999, A.A. Lise (MCTP 15687); 1♂, VIII.2001, L.A. Bertoncetto (MCTP 22901); Capão da Canoa/Capão Novo, 29°46'S, 49°58'W, 1♀, 17-18.IV.1993, A.A. Lise (MCTP 3134); Cidreira, 29°46'S, 49°58'W, 5♀, 28.VII.1994, L. Koch (MCTP 32536); 1♂, 7♀, 01.IV.2000, J.A.M. Pinto (MCTP 18148); Novo Cabrais (Parque Witeck), 29°36'S, 52°55'W, 1♀, 19.X.2001, R.G. Buss (MCTP 13056); Cachoeira do Sul (Cordilheira), 29°53'S, 52°55'W, 2♀, 26.XI.1992 (MCTP 3695); 1♀, 04.V.1993 (MCTP 3581); 1♂, 12.XI.1993 (MCTP 4265), all collected by R.G. Buss; (Porteira Sete) 1♂, 3♀, 26.VII.1992 (MCTP 32558); 6♂, 6♀, 31.X.1992 (MCTP 32548); 1♀, 25.V.1993 (MCTP 4598); (Alto das Casemiras) 2♂, 25.IV.1993 (MCTP 3997), all collected by R.G. Buss; Guaíba, 30°00'S, 51°18'W, 4♀, 29.XI.1994 (MCTP 5682); 2♀, 13.X.1995 (MCTP 7748, 7749); 1♂, 15.III.1996 (MCTP 8374); (Fazenda São Maximiano) 1♀, 24.X.1995 (MCTP 6896); 15♀, 26.III.1994 (MCTP 32569), all collected by A.A. Lise *et al.*; Viamão, 29°59'S, 51°00'W, 1♀, 25.XI.1994, A.A. Lise *et al.* (MCTP 5808); 1♀, I-II.1995, L.A. Chiaradia (MCTP 6660); 1♀, 12.V.1995, A.A. Lise (MCTP 7302); 1♂, 15.XII.1995, A.A. Lise *et al.* (MCTP 8795); Tavares, 31°10'S, 51°03'W, 1♀, 09.XII.1990, N. Silveira (MCTP 98); Capão do Leão, 31°45'S, 52°25'W, 1♂, 27.XI.2000 (MCTP 11723); 10♀, 28.III.2001 (MCTP 13331, 31980, 31999, 32533, 32584), all collected by E.N.L. Rodrigues; Rio Grande, 32°01'S, 52°06'W, 1♂, XII.2004, F.A.P. Santos (MCTP 21766); 1♂, 1♀, II.2005, F.A.P. Santos (MCTP 21764, 21765); (Estação Ecológica do Taim), 32°28'S, 52°34'W, 1♀, 12.IX.1991, A.A. Lise (MCTP 1007).

### ***Eustala minuscula* (Keyserling, 1892)**

#### Figure 1

*Epeira minuscula* Keyserling 1892: 140, est. 7, figs 103 a-e, male and female syntypes from Rio Grande do Sul, Brazil, H. von Ihering, deposited in The Natural History Museum, London. Examined by H.W. Levi in 1973 (Levi 2007, figures).

*Araneus minusculus*; Petrunkevitch 1911: 304.

*Eustala minuscula*; Mello-Leitão 1919: 16; 1943: 179; Bonnet 1956: 1841; Platnick 1993: 434; Levi 2007; Poeta *et al.* 2010a: 159; Buckup *et al.* 2010: 489; Platnick 2013.

*Mangora minuscula*; Roewer, 1942: 774.

**Distribution.** Brazil: São Paulo, Paraná, Santa Catarina and Rio Grande do Sul (Fig. 2).

**Additional material examined.** BRAZIL, *São Paulo*: São José do Barreiro (Serra da Bocaina), 22°30'S, 44°34'W, 1♀, 01-31.I.1963, Vulcano (MZSP 7844). *Paraná*: Ponta Grossa (Vila Velha), 25°04'S, 49°56'W, 1♀, F. Lange (MHNCI 1899); Clevelândia (Fazenda Tunas, Rio Chopim), 26°24'S, 52°26'W, 2♂, II.2001, R.S. Brenils (MNRJ 3642). *Santa Catarina*: Chapecó (Quebra-queixo), 26°55'S, 52°33'W, 1♂, 26-27.II.2002, M. Kammers (MCTP 12920); Rio Uruguai, 27°08'S, 53°03'W, 1♂, 1♀, 02.IX.2010, R.C. Francisco (MCTP 34474). *Rio Grande do Sul*: Erval Grande, 27°20'S, 52°33'W, 1♂, 17-20.IV.1992, A. Braul (MCTP 31963); 1♂, 3♀, 17-20.V.1992, A. Braul (MCTP 2057, 2060, 2222); Marcelino Ramos, 27°19'S, 51°53'W, 1♀, II.1989, A. Braul (MCTP 19777); Nova Prata, 28°40'S, 51°35'W, 1♀, 06.IX.1987, F.C. Quadros (MCTP 26133); Caxias do Sul, 28°53'S, 51°06'W, 1♀, 03-05.XI.1994, A.A. Lise (MCTP 5325); (Fazenda Souza), 1♂, 18-21.XI.1993, A.A. Lise (MCTP 32539); 1♀, 11-12.XI.1995, Equipe do Laboratório de Aracnologia (MCTP 7138); São Francisco de Paula, 29°14'S, 50°31'W, 1♀, 21-24.III.1995, R. Ott (MCTP 10379); 2♀, 25-28.VII.1996, A.A. Lise *et al.* (MCTP 10168); 1♂, 1♀, 09-12.I.1997, A.A. Lise *et al.* (MCTP 10841, 10849); (Potreiro Velho) 3♀, 05-08.XII.1996 (MCTP 13903, 13928); 1♀, 08.XII.1996 (MCTP 13925); 1♀, 14-17.XII.1996 (MCTP 31966); 1♂, 05-09.XII.1997 (MCTP 15689); 2♀, 19.III.1998 (MCTP 15688); 1♀, I.1999 (MCTP 32627), all collected by A.A. Lise; Itaara, 29°26'S, 53°43'W, 1♂, 01.XII.2005, L. Indrusiak (MCTP 21526); 1♂, 16.II.2006, L. Indrusiak (MCTP 21527); 1♀, 28.III.2006, L. Indrusiak (MCTP 21524); 1♀, 22.XI.2006, A.A. Lise *et al.* (MCTP 20625); 2♀, 14.IV.2007, A.A. Lise *et al.* (MCTP 20626); 1♀, 14.IX.2007, A.A. Lise *et al.* (MCTP 20747); Rio Uruguai (BR-153), 1♀, IX.1989, Equipe Itá-Machadinho (MCTP 817); Santo Antônio da Patrulha, 29°42'S, 50°30'W, 1♂, 27.III.1994, L. Koch (MCTP 31978); Xangri-lá, 29°47'S, 50°02'W, 3♀, 24.II.1993, A.A. Lise (MCTP 2978); Viamão, 29°59'S, 51°00'W, 1♂, 2♀, 25.XI.1994, A.A. Lise *et al.* (MCTP 5809); 2♀, 29.XI.1994, A.A. Lise *et al.* (MCTP 32545); 1♂, 2♀, 02.XII.1994, A.A. Lise *et al.* (MCTP 5867); 1♂, 12.V.1995, A.A. Lise (MCTP 8542); 1♀, 18.IV.1998, A.A. Lise (MCTP 10233); (Estação Fitotécnica de Águas Belas) 1♀, 06.V.1994, A.A. Lise *et al.* (MCTP 4673); 3♂, 12.VIII.1994, A.A. Lise *et al.* (MCTP 5256); Guaíba, 30°00'S, 51°18'W, 1♀, 25.X.1994, A.A. Lise *et al.* (MCTP 5658); Porto Alegre, 30°01'S, 51°13'W, 1♂, 18.V.1991, C.L. Dorneles (MCTP 987); (Vila Nova) 1♂, 05.IX.1996, E.L.C. da Silva (MCTP 28579); 1♀, Pio

Buck (MNRJ 2368).

***Eustala taquara* (Keyserling, 1892)**

Figure 2

*Epeira taquara* Keyserling 1892: 143, est. 7, fig. 105, female holotype from Taquara, Rio Grande do Sul, Brazil, H. von Ihering, deposited in The Natural History Museum, London. Examined by H.W. Levi in 1975 (Levi 2007, figures).

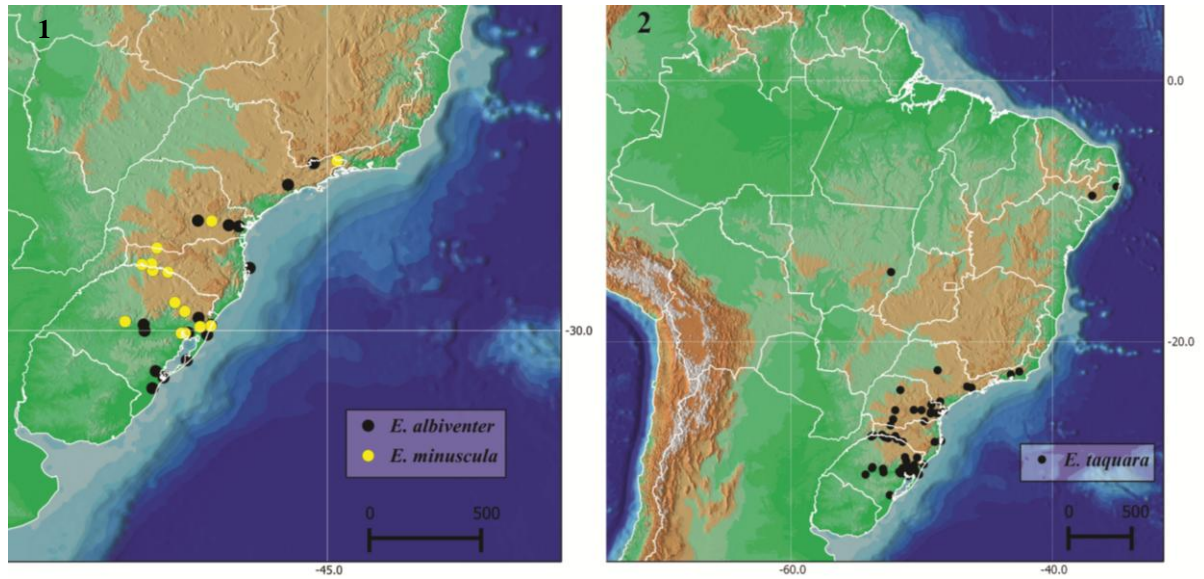
*Araneus taquara*; Petrunkevitch 1911: 318.

*Eustala taquara*; Mello-Leitão 1919: 16; Roewer 1942: 766; Mello-Leitão 1943: 179; Bonnet 1956: 1841; Poeta *et al.* 2010a: 157, figs 25-29; Buckup *et al.* 2010: 489; Platnick 2013.

*Eustala ulecebrosa*; Podgaiski *et al.* 2007: 6, table 1 (examined, misidentification).

**Distribution.** Brazil: Pernambuco, Mato Grosso, Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul (Fig. 3).

**Additional material examined.** BRAZIL, *Pernambuco*: 1♂, 1♀, R. von Ihering (MNRJ 41993); Moreno, 8°07'S, 35°05'W, 1♀, B. Pickel (MNRJ 280). *Mato Grosso*: Nova Chavantina, 14°21'S, 52°19'W, 1♀, X.1946, H. Sick (MZSP 9652). *Rio de Janeiro*: Nova Friburgo, 22°17'S, 42°31'W, 1♂, 1♀, C. Mello-Leitão (MNRJ 41435, 41438); Petrópolis, 22°30'S, 43°11'W, 1♂, C. Mello-Leitão (MNRJ 358). *São Paulo*: Mogi das Cruzes, 23°27'S, 46°10'W, 1♂, X.1941, Araujo (MZSP 9599); São Paulo (Santo Amaro, Cocaia, Represa Nova), 23°23'S, 46°29'W, 1♂, IX.1941, H. Urban (MZSP 9669); 1♀, 04.IV.1948, H. Urban (MZSP 7716); 1♀, V.1951, H. Urban (MZSP 9531); Boracéia, 22°03'S, 48°45'W, 1♀, 28.II.1947, P. Biasi (MZSP 6114); 1♂, 28.II.1949, L. Travassos Filho (MZSP 9661); 3♀, 22-23.II.1961, P. Biasi (MZSP 1228); Iporanga, 24°25'S, 48°31'W, 1♀, 01-03.XI.1963, Leme (MZSP 4006). *Paraná*: 3♀, IX.1944, R. Lange (MHNCI 343-345); 2♂, 1♀, F. Lange (MNRJ 42509, 42513); 1♀, (MHNCI, 3578); 1♀, IV.1942, Pe. Moure (MHNCI 2366); Clevelândia (Fazenda Tunas, Rio Chopin), 26°24'S, 52°26'W, 3♂, 4♀, II.2001, R.S. Brenils (MNRJ 3641, 3642); Cerro Azul, 24°49'S, 49°15'W, 1♀, O. Leonardos (MNRJ 1207); Rio Negro,



**Figures 1, 2.** Geografic distribution records of *Eustala*. Figure 1, *Eustala albiventer* (Keyserling, 1884): black circle; *E. minuscula* (Keyserling, 1892): yellow circle. Figure 2, *E. taquara* (Keyserling 1892): black circle. Scale bars: 500 km.

26°05'S, 49°48'W, 1♀ (MNRJ 58069); Pinhais (Serra da Farinha Seca), 25°22'S, 49°09'W, 1♀, 15-20.IX.1995, Equipe Laboratório de Aracnologia (MCTP 7624); Morretes (Serra da Graciosa, 25°21'S, 48°46'W), 1♂, 2♀, 09-20.I.1995, Equipe do Laboratório de Aracnologia (MCTP 6928, 6951, 7173); (Prainha) 1♀, 28.IV-25.VIII.1996, J.A. Caetano (IBSP 7308); Curitiba (Barigui) 25°30'S, 49°19'W, 1♀, XI.1994, R. Lange (MHNCI 297); 2♀ (MHNCI 3863, 4583); (Pilarzinho, 25°17'S, 49°15'W), 1♀, X.1945 (MHNCI 2954); Guaraqueçaba, 25°14'S, 48°20'W, 1♀, VII.1944, Hartz (MHNCI 290); Valle Grande, 1♂, 2♀, IV.1943, R. Hertel (MHNCI 2280-2284); Marumbi, 23°23'S, 51°32'W, 1♀ (MHNCI 3174); Candói/Mangueirinha (Usina Hidrelétrica de Segredo), 25°55'S, 52°11'W, 1♀, III.1996, Chagas Jr. *et al.* (IBSP 10490); 3♀, 31.VIII.1996, A.D. Brescovit (IBSP 10488); Imbituva, 25°02'S, 50°33'W, 2♀, 1935, V. Staviarski (MNRJ 4524); Ponta Grossa (Vila Velha), 25°04'S, 49°56'W, 5♀, 17.VIII.1947, K. Imaguire (MZSP 7850). *Santa Catarina*: Florianópolis (Córrego Grande), 27°35'S, 48°33'W, 1♀, 10-15.II.2002, D. Pedroso (MNRJ 3657); Itapiranga, 27°10'S, 53°42'W, 1♂, Pio Buck (MNRJ 41952); Urussanga (Rio Molha), 28°31'S, 49°19'W, 2♀, 22.V-21.VI.2008, R.A. Teixeira (MCTP 31839); 3♂, 29.XII.2008, R.A. Teixeira (MCTP 31823); Rancho Queimado, 27°28'S, 48°54'W, 3♂, 4♀, 09-13.X.1995, A.A. Lise *et al.* (MCTP 6971-6974, 7048, 7051); Concórdia, 27°03'S, 48°31'W, 1♀, IX.1988,

Projeto Itá-Machadinho (MCTP 492); Chapecó, 26°55'S, 52°33'W, 1♂, 5♀, IX.2012, R.C. Francisco (MCTP 34473); Rio Uruguai, 27°08'S, 53°03'W, 1♀, 02.XI.2010 R.C. Francisco (MCTP 34472); Rio Jacutinga, 27°13'S, 52°12'W, 1♀, II.1989, Equipe Itá-Machadinho (MCTP 6475). *Rio Grande do Sul*: 6♂, 9♀, Pe. Rambo (MNRJ 2379, 42080, 42084, 42088); Derrubadas (Parque Estadual do Turvo, 27°04'S, 53°45'W), 1♀, 01.II.1996, A.B. Kury & R. Pinto da Rocha (MZSP 14814); Rio dos Índios, 27°05'S, 52°45'W, 1♀, 23.IX.2008, R.C. Francisco (MCTP 29735); Erval Grande, 27°20'S, 52°33'W, 1♂, 17-20.V.1992, A. Braul (MCTP 2058); Marcelino Ramos, 27°19'S, 51°53'W, 2♂, 1♀, II.1989, A. Braul (MCTP 18778, 32575); Barracão, 27°32'S, 51°21'W, 1♂, II.1989, Equipe Itá-Machadinho (MCTP 799); São Francisco de Paula, 29°14'S, 50°31'W, 4♂, 3♀, 21-24.III.1995, R. Ott (MCTP 10380); 4♂, 2♀, 24.X.1996, R. Ott (MCTP 10587, 10588, 30230, 30239, 33604); 7♂, 7♀, 09-12.I.1997, A.A. Lise *et al.* (MCTP 10880); (Potreiro Velho), 1♂, 9♀, 21-24.III.1995, R. Ott (MCTP 32577); 4♂, 2♀, 21-24.III.1995, A.A. Lise (MCTP 11963, 11991, 12009, 12012); 1♀, I.1996, A.A. Lise *et al.* (MCTP 8302); 1♂, 17.XI.1996, A.A. Lise (MCTP 14380); 3♂, 3♀, 05-08.XII.1996, A.A. Lise (MCTP 14137, 14138, 14140, 31998); 2♂, 1♀, 14-17.XII.1996, A.A. Lise (MCTP 10932, 10934); 1♀, 07.I.1997, A. Specht (MCTP 10905); 5♀, 05-09.II.1997, A.A. Lise (MCTP 11975); 2♂, 8♀, 05-09.III.1997, A.A. Lise (MCTP 14044, 15957, 15959, 32538); 3♀, 02.V.1997, A.A. Lise (MCTP 13996); 4♂, 10♀, 10-13.VI.1997, A.A. Lise (14201, 14203, 14204, 14240, 14244, 15691, 15692, 15694, 30235); 2♂, 3♀, 19.III.1998, A.A. Lise (MCTP 31982); 7♂, 8♀, 12-14.XI.1998, A.A. Lise (MCTP 12730, 12731, 15698, 15699); 1♀, 12-15.XI.1998, A.A. Lise (MCTP 32535); 1♂, 2♀, 05-08.XII.1998, A.A. Lise *et al.* (MCTP 13904, 14136); 1♂, 2♀, I.1999, A.A. Lise (MCTP 32587); 1♀, 16-17.III.2001, A.A. Lise (MCTP 14339); 1♀, 13-14.IV.2012, M. Ávila & N. Albuquerque (MCTP 33501); (FLONA- Floresta Nacional de São Francisco de Paula), 3♂, 4♀, 19.XII.2010, R.A. Teixeira (MCTP 33055, 33056, 33105, 33106, 33109); 2♂, 10♀, 23.II.2011, R.A. Teixeira (MCTP 32956-32960, 33673); 2♂, 2♀, 02.III.2011, R.A. Teixeira (MCTP 32926, 32957, 33336); Caxias do Sul, 28°53'S, 51°06'W, 1♀, VII.1999, C.D.C. Rosa (MCTP 11740); (Fazenda Souza), 1♂, 18-21.XI.1993, A.A. Lise (MCTP 32541); Itaara, 29°26'S, 53°43'W, 1♂, 16.II.2006, L. Indrusiak (MCTP 21523); 1♀, 22.XI.2006, A.A. Lise *et al.* (MCTP 20623); 1♂, 23.VI.2007, A.A. Lise *et al.* (MCTP 20632); 1♀, 14.IX.2007, A.A. Lise *et al.* (MCTP 20624); Santa Maria (Perau Velho), 29°35'S, 53°46'W, 1♂, 1♀, 12.VIII.1998, I. Indrusiak & C. Katziak (MCTP 32578); Santo Antônio da Patrulha, 29°42'S, 50°30'W, 1♀, 27.III.1994, L. Koch (MCTP 31972); São Jerônimo, 29°54'S, 51°41'W, 1♀, 25.VI.2005, A.P. Santos (MCTP



17045); Novo Cabrais (Parque Witeck), 29°36'S, 52°55'W, 1♂, 2♀, 24.VII.2008 (MCTP 28186); 3♂, 2♀, 23.VIII.2008 (MCTP 28138); 7♂, 5♀, 27.I.2010 (MCTP 27882, 27883); 8♂, 6♀, 19.X.1987 (MCTP 28328-28330); 3♂, 25.X.2007 (MCTP 28401); 1♂, 4♀, 02.XI.2007 (MCTP 28438, 28439, 28422); 1♂, 4♀, 20.XI.2007 (MCTP 20323, 20342); 4♀, 03.I.2008; 8♂, 12♀, 21.I.2008 (MCTP 28366-28368); 1♂, 2♀, 18.II.2008 (MCTP 28289); 1♂, 1♀, 25.III.2008 (MCTP 28226); 1♂, 2♀, 08.IV.2008 (MCTP 28202); 2♀, 15.IV.2008 (MCTP 28125); 1♂, 01.V.2008 (MCTP 28266); 1♀, 18.VII.2008 (MCTP 28169); 1♀, 23.VIII.2008 (MCTP 28140); 12♂, 12♀, 11.IX.2008 (MCTP 27989, 28068, 28069, 28071); 3♂, 5♀, 09.X.2008, (MCTP 28023, 28024); 1♂, 9♀, 01.XI.2008 (MCTP 27952, 27953, 27988); 5♂, 4♀, 07.XI.2008 (MCTP 28456, 28459); 1♂, 1♀, 27.I.2010 (MCTP 27884), all collected by R.G. Buss; Cachoeira do Sul (Cordilheira), 29°53'S, 52°55'W, 3♂, 3♀, 09.IX.1992 (MCTP 3404, 3405, 3434); 1♂, 04.X.1992 (MCTP 3406); 1♀, 30.XII.2000 (MCTP 4358); (Cordilheira, Fazenda das Pedras) 1♂, 2♀, 27.X.1992 (MCTP 3707, 3708); 2♂, 18.V.1993 (MCTP 3990); (Alto das Casemiras) 1♂, 1♀, 08.VIII.1992 (MCTP 3407); 4♂, 3♀, 14.X.1992 (MCTP 3429, 3686, 32549), all collected by R.G. Buss; Santa Cruz, 30°01'S, 54°14'W, 1♀, 20.XI.1994, R. Ott (MCTP 6603); Antônio Prado, 28°43'S, 51°16'W, 1♂, 19.II.1995, P.L. Oliveira (MCTP 6147); Jaquirana, 28°42'S, 50°15'W, 1♂, 28.VIII.2002, R. Cunha (MCTP 15283); Taquara (Morro da Pedra), 29°33'S, 50°46'W, 2♀, 17.II.1995, A.D. Brescovit (IBSP 6699, 6705); Dom Pedro de Alcântara, 29°33'S, 49°50'W, 1♀, 07-09.V.1992, A. Braul (MCTP 32552); 1♂, 4♀, 30.IV.1993, A.A. Lise (MCTP 3180, 3181); 1♂, 1♀, 18-19.1993, A. Braul & C. Queiroz (MCTP 4116); Montenegro, 29°37'S, 51°26'W, 2♂, 12.I.2012, G. S. de Carvalho & D. Sebhen (MCTP 33360); Eldorado do Sul, 30°01'S, 51°36'W, 1♀, 18-19.IX.1993, A. Braul & C. Queiroz (MCTP 4119); Guaíba, 30°00'S, 51°18'W, 1♀, 03.VII.1994 (MCTP 4794); 1♂, 17.III.1995 (MCTP 8011); 1♂, 15.III.1996 (MCTP 8375); (Fazenda São Maximiano) 3♀, 26.III.1994 (MCTP 32568); 1♀, 14.VII.1995 (MCTP 6687); 2♀, 08.XI.2008 (MCTP 25946, 25947), all collected by, A.A. Lise *et al.*; Porto Alegre, , 2♂, 4♀, Pio Buck (MNRJ 41919); Cidreira, 29°46'S, 49°58'W, 1♀, 28.VII.1994, L. Koch (MCTP 4930); Viamão, 29°59'S, 51°00'W, 7♂, 24.III.1995, A.A. Lise *et al.* (MCTP 5932); 1♀, 12.V.1995, A.A. Lise *et al.* (MCTP 7816); 5♂, 4♀, 09.XII.1995, A.A. Lise *et al.* (MCTP 7778); 2♂, 3♀, 08.III.1996, A.A. Lise *et al.* (MCTP 7900, 7901); 1♂, 1♀, 08.XII.1999, A. Braul (MCTP 10986, 10988); (Itapuã, Granja Itapuã), 1♀, 13.V.1995, M. Demoliner (MCN 6629); 1♀, 08.XII.1992, A.P. Peterson (MCTP 2802); 2♂, 1♀, 05.V.1994, R. Balestrin (MCTP 4841); 1♂, 5♀, 19.VIII.1994, A.A. Lise *et al.* (MCTP 5297); 1♀, 23.IX.1994, A.A.

Lise *et al.* (MCTP 8394); 1♂, 2♀, 07.X.1994, A.A. Lise (MCTP 5624, 12251); 1♂, 1♀, 25.XI.1994, A.A. Lise *et al.* (MCTP 5810, 5835); 7♂, 13♀, 29.XI.1994, A.A. Lise *et al.* (MCTP 32544); 2♂, 1♀, 02.XII.1994, A.A. Lise *et al.* (MCTP 5906); 1♂, 4♀, 24.III.1995, A.A. Lise *et al.* (MCTP 5931, 7339); 4♂, 14♀, 12.V.1995, A.A. Lise (MCTP 31979); 3♀, 07.VI.1995, A.A. Lise *et al.* (MCTP 6668); 2♂, 2♀, 25.VIII.1995, A.A. Lise *et al.* (MCTP 8541); 1♂, 10.X.1995, A.A. Lise *et al.* (MCTP 6829); 1♀, 22.XI.1995, A.A. Lise *et al.* (MCTP 8637); 3♂, 2♀, 12.I.1996, A.A. Lise *et al.* (MCTP 8353, 8354, 9218); 2♂, 23.I.1996, A.A. Lise *et al.* (MCTP 9219); 1♀, 23.VI.1995, A.A. Lise *et al.* (MCTP 8543); 2♂, 4♀, 15.XII.1995, A.A. Lise *et al.* (MCTP 31994); (Instituto Marista Graças) 3♀, 20.V.1994, A.A. Lise *et al.* (MCTP 4749); 1♀, 18.V.1998, P. Prates (MCTP 30236); (Estação Fitotécnica de Águas Belas) 2♀, 06.V.1994, A.A. Lise *et al.* (MCTP 4670); 9♂, 13♀, 12.VIII.1994, A.A. Lise *et al.* (MCTP 5254, 32562, 32567); 3♂, 2♀, 23.IX.1994, A.A. Lise *et al.* (MCTP 5499, 5500); 1♀, 23.VI.1995, A.A. Lise *et al.* (MCTP 6761); 3♂, 5♀, 25.VIII.1995, A.A. Lise *et al.* (MCTP 7557); 2♂, 3♀, 10.X.1995, A.A. Lise *et al.* (MCTP 6808, 6809); São Leopoldo, 29°45'S, 51°13'W, 1♀, 24.II.1984 (MCTP 343); 1♂, 2♀, 19.VIII.1986 (MCTP 307); 5♂, 17.XI.1986 (MCTP 361, 364); 2♀, 24.IV.1987 (MCTP 382); 3♀, 25.IX.1987 (MCTP 354), all collected by C.J. Becker; Novo Hamburgo, 29°39'S, 51°06'W, 1♀, 22.IX.1986 (MCTP 293); 1♀, 01.X.1986 (MCTP 250); 1♂, 03.IV.1987 (MCTP 32559); 1♂, 15.IV.1988, (MCTP 277), all collected by C.J. Becker; Campo Bom, 29°38'S, 51°00'W, 2♂, 1♀, 25.VIII.1986 (MCTP 32577); 1♀, 17.XII.1986 (MCTP 138); 1♂, 3♀, 19.X.1987 (MCTP 32560); 1♀, 18.XI.1987 (MCTP 196); 1♂, 14.XII.1987 (MCTP 208), all collected by C.J. Becker; Sapucaia do Sul, 29°47'S, 51°06'W, 1♀, 22.V.1989, (MCTP 3575); 1♀, 28.XI.1993, (MCTP 3551), all collected by C.J. Becker; Capão do Leão, 31°45'S, 52°25'W, 3♀, 27.II.2001 (MCTP 13157, 15614); 1♀, 28.III.2001 (MCTP 32532), all collected by E.N.L. Rodrigues.

***Eustala ulecebrosa* (Keyserling, 1892)**

Figures 3, 7-10

*Epeira ulecebrosa* Keyserling 1892: 104, est. 5, figs 77 and 77a, female holotype from Taquara, Rio Grande do Sul, Brazil, H. von Ihering, deposited in The Natural History Museum, London. Examined by H. W. Levi in 1973 (Levi 2007, figures).

*Araneus ulecebrosus*; Petrunkevitch 1911: 321.

*Eustala ulecebrosa*; Mello-Leitão 1919: 470; Roewer 1942: 766; Mello-Leitão 1943: 179; 1947: 243; Bonnet 1956: 1842; Levi 2007; Buckup *et al.* 2010: 489; Platnick 2013.

**Note.** The holotype was not found in The Natural History Museum (Mrs Janet Beccaloni, Curator of Arachnida and Myriapoda, The Natural History Museum, personal communication). The female was determined as *Eustala ulecebrosa* based on type illustrations by Levi (2007).

**Diagnosis.** The epigynum (Figs 7-9; see Levi 2007, figures) of *Eustala ulecebrosa* resembles that of *E. taquara* (see Poeta *et al.* 2010a: 157, figures 25-29) by the long ringed scape, and differs by the anterior portion of the median plate elevated and heart-shaped (posterior view, Fig. 8). The base of the scape of *Eustala ulecebrosa* is wide, unlike *E. taquara*, on lateral view (Fig. 9).

#### **Description**

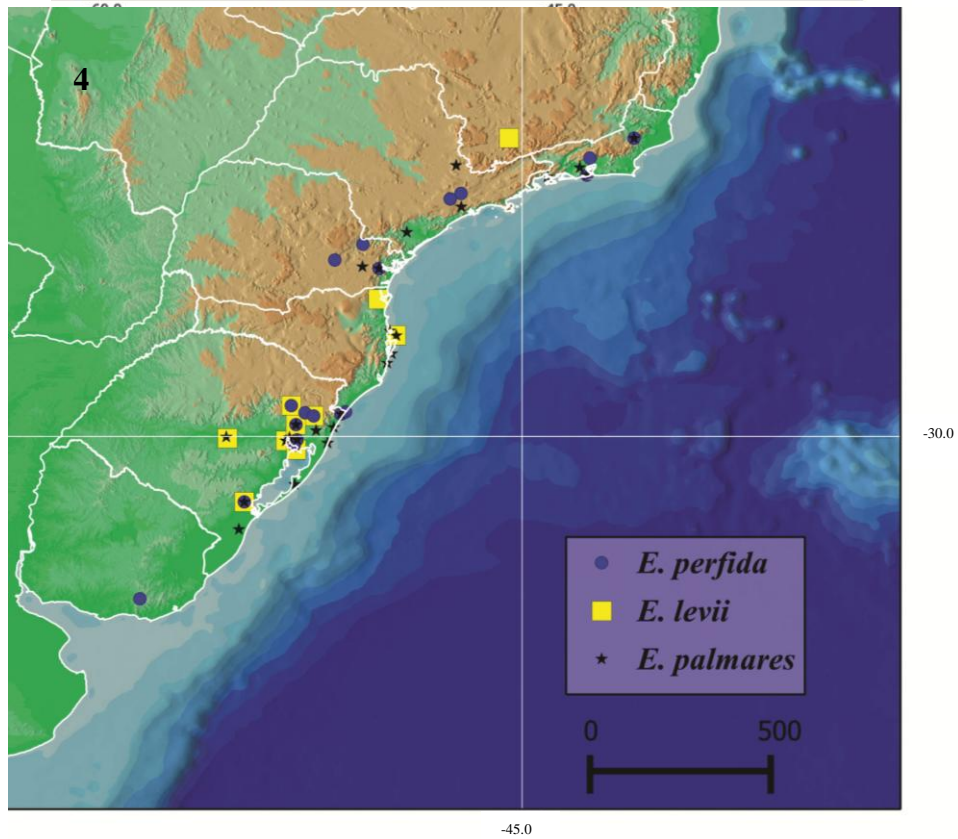
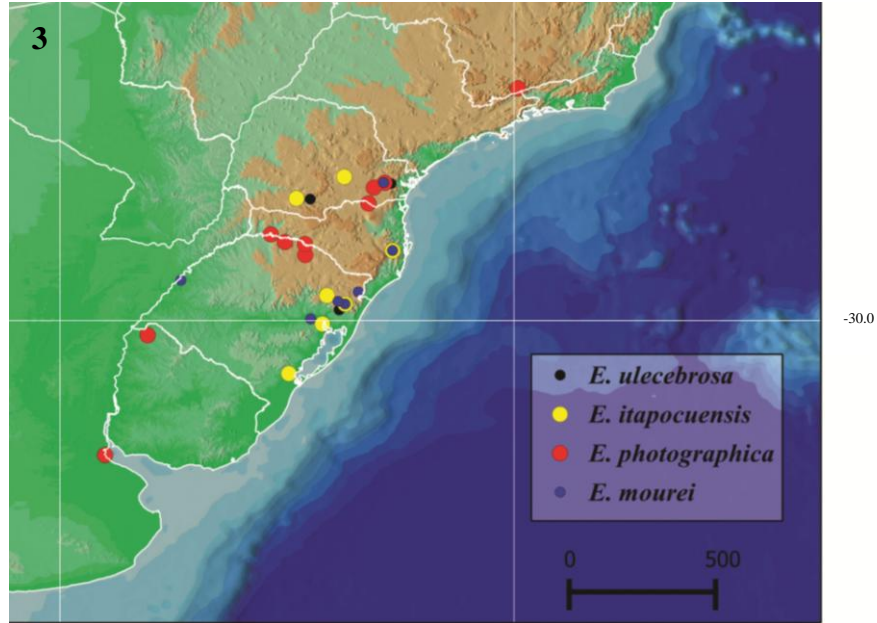
**Male.** Unknown.

**Female** (MNRJ 6492)

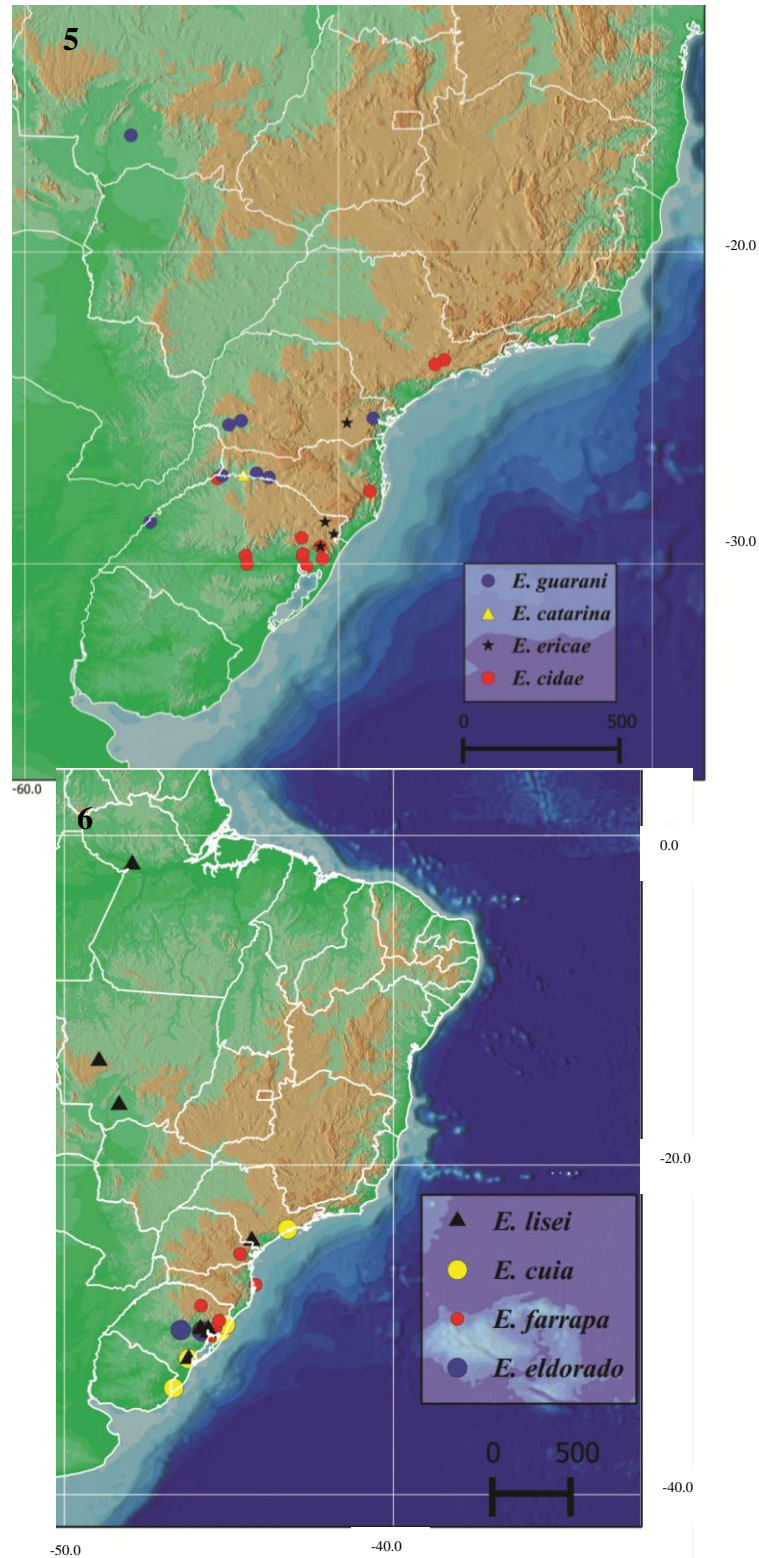
Carapace dark orange, many dark brown setae for allover cephalotorax, and a white setae around the lateral eyes. Posterior median eyes and lateral eyes with dark borders. Sternum orange with white pigment and a brown border. The abdomen is subtriangular, with two terminal projections (Fig. 10). Dorsum white with a dark brown folium and dark brown stains. Venter light-brown, with a brown stain from the spinnerets to the epigastric furrow and an almost losangular central white patch. Legs orange with some brown bands (not well demarcated). Total length 10.9. Carapace length 4.2, width 3.6. Leg formula 1243. Length leg I: femur 5.3; patella+tibia 6.2; metatarsus 4.8; tarsus 1.3; total 17.6. Patella+tibia II 5.8; III 2.9; IV 5.1.

**Variation.** The median plate of the epigynum without a well-demarcated projection (ventral view) as illustrated in this study and by Levi (2007). Yellow legs with brown bands. A especimen presents greenish abdomen color pattern with the folium and a large totally white region.

**Distribution.** Brazil: Paraná (Mello-Leitão 1947); Rio Grande do Sul (type-locality, Keyserling 1892) (Fig. 4).



**Figures 3, 4.** Geographic distribution records of *Eustala*. Figure 3, *E. ulecebrosa* (Keyserling, 1892): black circle; *E. itapocuensis* Strand, 1916: yellow circle; *E. photographica* Mello-Leitão, 1944: red circle; *E. mourei* Mello-Leitão, 1947: blue circle. Figure 4, *E. perfida* Mello-Leitão, 1947: blue circle; *E. levii* Poeta, Marques & Buckup, 2010: yellow square; *E. palmares* Poeta, Marques & Buckup, 2010: star. Scale bars: 500 km.



**Figures 5, 6.** Geographic distribution records of *Eustala*. Figure 5, *Eustala guarani* sp. nov.: blue circle; *E. catarina* sp. nov.: yellow triangle; *E. ericae* sp. nov.: star; *E. cidae* sp. nov.: red circle. Figure 6, *E. lisei* sp. nov.: black triangle; *E. cuia* sp. nov.: yellow circle; *E. farrapilha* sp. nov.: red circle; *E. eldorado* sp. nov.: blue circle. Scale bars: 500 km.

**Additional material examined.** BRAZIL, *Paraná*: Piraquara (Volta Grande), 25°26'S, 49°04'W, 1♀, II.1945, R. Hertel (MHNCI 2450); Bituruna, 26°09'S, 21°33'W, 2♀, 1935, V. Staviarski (MNRJ 6492).

***Eustala itapocuensis* Strand, 1916**

Figure 3

*Eustala itapocuensis* Strand 1916: 107, male holotype from Joinville, Santa Catarina, Brazil (Forschunginkstitut und Naturmuseum Senckenberg). Examined by H.W. Levi in 1976 (Levi 2007, figures); Roewer 1942: 765; Bonnet 1956: 1840; Poeta *et al.* 2010b: 270, figs 16-21; Buckup *et al.* 2010: 489; Platnick 2013.

**Distribution.** Brazil: *Paraná*, Santa Catarina and Rio Grande do Sul (Fig. 4).

**Additional material examined.** BRAZIL, *Paraná*: Imbituva, 25°02'S, 50°33'W, 4♀, 1935, V. Staviarski (MNRJ 4529); Mangueirinha (Usina Hidrelétrica de Segredo, Estância Vigor), 25°55'S, 52°11'W, 1♀, 23.I.1992, R. Pinto da Rocha & M.R.S. Lopes (MZSP 14679). *Santa Catarina*: Rancho Queimado, 27°28'S, 48°54'W, 1♀, 09-13.X.1995, A.A. Lise *et al.* (MCTP 6998). *Rio Grande do Sul*: Caxias do Sul, 28°53'S, 51°06'W, 1♀, 03-05.XII.1994, A.A. Lise (MCTP 5324); 1♂, 1♀, 11-12.XI.1995, Equipe do Laboratório de Aracnologia (MCTP 7319, 31989); São Francisco de Paula (Potreiro Velho), 29°14'S, 50°31'W, 1♀, I.1996, A.A. Lise (MCTP 8301); Guaíba, 30°00'S, 51°18'W, 1♀, 05.XII.1995, A.A. Lise *et al.* (MCTP 8568); Capão do Leão, 31°45'S, 52°25'W, 1♀, 30.XII.2000, E.N.L. Rodrigues (MCTP 12471).

***Eustala photographica* Mello-Leitão, 1944**

Figure 3

*Eustala photographica* Mello-Leitão 1944: 329, figs 13, 14, female holotype from Punta Chica, Buenos Aires, Argentina, Prosen, deposited in Museo de La Plata (MLP 15955). Examined by H. W. Levi in 1974 (Levi 2007, figures). Brignoli 1983: 270; Poeta *et al.* 2010a: 158, figs 30-34; Buckup *et al.* 2010: 489; Platnick 2013.

**Distribution.** Brazil: Minas Gerais, Paraná, Santa Catarina and Rio Grande do Sul. Uruguay: Artigas (Poeta *et al.* 2010a). Argentina (Buenos Aires, type-locality, Mello-Leitão 1944) (Fig. 4).

**Additional material examined.** BRAZIL, *Minas Gerais*: Itamonte, 22°17'S, 44°52'W, 1♀, 01-05.XI.2007, K. Ramos (MCTP 7817). *Paraná*: Balsa Nova, 25°34'S, 49°37'W, 1♂, 30.XII.1967 (MHNCI 4479); Curitiba (Barigui), 25°15'S, 49°14'W, 1♂, R. Lange (MHNCI 294, deposited on MZSP). *Santa Catarina*: Mafra (The old “Estação Ferroviária de Avencal Paraná-Santa Catarina”, nowadays, Mafra, SC), 26°05'S, 49°48'W, 5♀, VII.1943, R. Lange (MHNCI 2028-2044); Rio Uruguai, 27°08'S, 53°03'W, 2♀, 02.IX.2010, R.C. Francisco (MCTP 34479). *Rio Grande do Sul*: Erval Grande, 27°20'S, 52°33'W, 1♀, 17-20.V.1992, A. Braul (MCTP 32534); Marcelino Ramos, 27°19'S, 51°53'W, 1♀, II.1989, A. Braul (MCTP 32576); Rio Apuaê, 27°48'S, 51°53'W, 1♀, II.1989, Equipe Itá-Machadinho (MCTP 795).

### *Eustala mourei* Mello-Leitão, 1947

Figures 3, 11-13

*Eustala mourei* Mello-Leitão 1947: 241, figs 9-10, two males and two females syntypes from Barigui, Curitiba, Paraná, Brazil, deposited in Museu Paranaense, (nowadays Museu de História Natural Capão da Imbuia, MHNCI 2507, 2508, 2509, 2510). Brignoli 1983: 270; examined by H. W. Levi in 1988 (Levi 2007, figures); Pinto-da-Rocha & Caron 1989: 1025, designed a male lectotype, MHNCI 2508 and the specimens 2507, 2509 and 2510, as paralectotype; Platnick 2013.

**Note.** Only the lectotype (MHNCI 2508) and an ordinary specimen, males, from the same locality, (MHNCI 2108) were examined (May, 2012). The paralectotypes (MHNCI 2507, 2509 and 2510) are apparently lost.

**Diagnosis.** The male palpus of *Eustala mourei* (Figs 11, 12) is similar to that of *E. orina* (Chamberlin, 1916) (see Levi 2007, figures) by the terminal laminar apophysis and a subterminal apophysis with a transparent projection (Levi 2007). The palpus of *E. mourei* (Figs 11, 12) differs from this species by the elongated and a thin projection of the subterminal apophysis, and the conductor with a different shape. The epigynum of *E. mourei*

(Levi 2007, figures) resembles that of *E. orina* (see Levi 2007, figures) by the ringed scape with a narrowed apex however *E. mourei* differs from this species by the large and straight median plate, on posterior view.

### **Description**

#### **Male** (Lectotype, MHNCI 2508)

Carapace pale-yellow; narrow ocular area, median and lateral eyes with a black border and many white setae near the lateral eyes. Sternum pale yellow with a white pigment and a large gray border. Abdomen subtriangular, dorsum whitish crackled with a greenish well-defined folium (Fig. 13). Venter light yellow with a well-defined dark gray stain from the spinnerets to the epigastric furrow and an elongated white central patch. Legs pale-yellow with light-brown bands. Total length 6.4. Carapace length 3.1, width 2.8. Leg formula 1243. Length leg I: femur 4.0; patella+tibia 4.2; metatarsus 2.6; tarsus 1.2; total 12.0. Patella+tibia II 3.7; III 1.7; IV 2.9.

#### **Female**

The female paralectotype was not found, but it was illustrated by H.W. Levi in 1988 (see Levi 2007, figures).

**Variation.** Presence of terminal hump on abdomen. Abdomen whitish with a light-brown folium; with a transversal brown line; greenish with a folium, or without folium. Male (n=5): total 6.5-5.1; carapace length 3.1-3.7, width 2.8-2.9.

**Distribution.** Brazil: Paraná (type-locality, Mello-Leitão 1974); Santa Catarina and Rio Grande do Sul (Fig. 3).

**Additional material examined.** BRAZIL, *Paraná*: Curitiba (Barigui), 25°15'S, 49°14'W, 1♂, X.1944, R. Lange (MHNCI 2108). *Santa Catarina*: Rancho Queimado, 27°28'S, 48°54'W, 2♂, 09-13.X.1995, A.A. Lise *et al.* (MCTP 6975, 7049); 1♂, 15-19.XI.1995, A.B. Bonaldo (MCN 26779). *Rio Grande do Sul*: São Borja (Reserva Biológica São Donato), 28°38'S, 56°00'W, 1♂, 21.I.2012, M. Machado (MCTP 34836); São Francisco de Paula, 29°14'S, 50°31'W, 1♂, 24.X.1996, R. Ott (MCTP 10589); (Usina Hidrelétrica Passo do Inferno) 1♂, 26.IX.2000, E.H. Buckup (MCN 33365); (Potreiro Velho) 1♂, 19-22.III.1998, A.A. Lise (MCTP 15685); 2♂, 26-28.X.2012, M.R.M. Poeta (MCTP 35512); Cambará do Sul, 29°02'S, 50°08'W, 1♂, 25.XI.1993, A.B. Bonaldo (MCN 24327); Canela, 29°21'S, 50°48'W, 1♂, 07.X.1964, A.A. Lise (MCN 45737); Triunfo (Estação Ambiental Braskem, ex Parque Copesul), 29°56'S, 51°43'W, 1♂, 07.XII.2005, A. Barcelos (MCN 40076).



## *Eustala perfida* Mello-Leitão, 1947

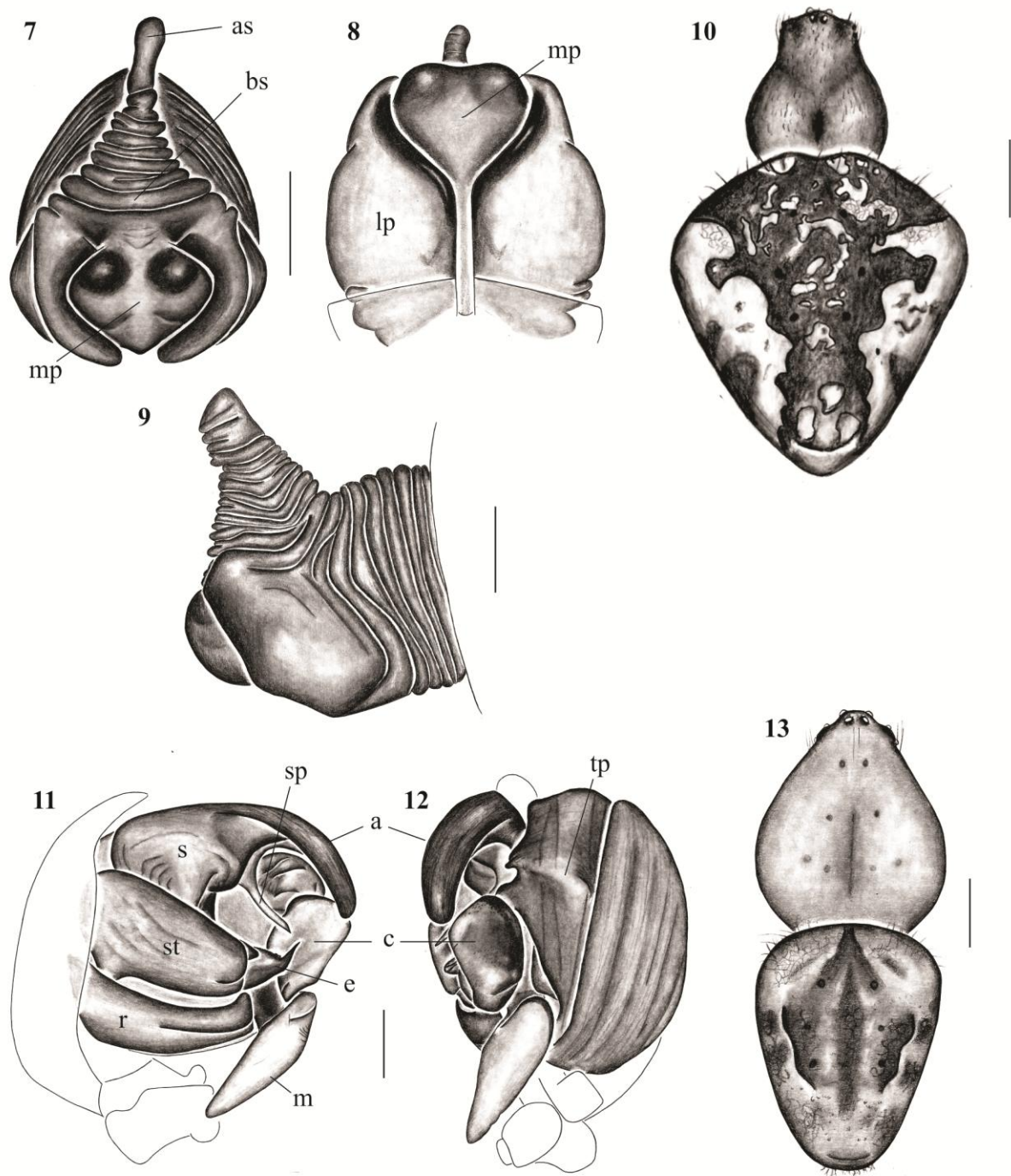
### Figure 4

*Eustala perfida* Mello-Leitão 1947: 243, fig. 11, female holotype from Volta Grande, Paraná, Brasil, B. Hertel, deposited in the Museu Paranaense, nowadays Museu de História Natural Capão da Imbuia, Curitiba (MHNCI 2495). Holotype examined by H.W. Levi in 1988 (Levi 2007, figures); Brignoli, 1983:270; Poeta *et al.* 2010b: 271, figs 22-26; Buckup *et al.* 2010: 489; Platnick 2013.

**Distribution.** Brazil: Rio de Janeiro, São Paulo; Paraná (type-locality, Mello-Leitão 1947); Santa Catarina and Rio Grande do Sul (Poeta *et al.* 2010b). Uruguay: Ciudad de Minas (Fig. 4).

**Additional material examined.** BRAZIL, *Rio de Janeiro*: Santa Maria Madalena (PARES do Desengano, Morumbeca), 21°56'S, 42°00'W, 1♀, 13-17.V.2008, A. Chagas-Jr., A. Kury, C. Sampaio & T. Moreira (MNRJ 13989); Petrópolis, 22°29'S, 43°10'W, 1♂, Borgmeyer (MNRJ 359); Rio de Janeiro (Parque Nacional da Tijuca, Mata Pai Ricardo), 22°53'S, 43°12'W, 1♀, V.2005, E.H. Wienskoski (MNRJ 14629). *São Paulo*: São Paulo (P.E.S. da Cantaneira, Pinheirinho), 23°27'S, 46°38'W, 1♀, 13.VIII.2000 (MZSP 24665);

P.E.S. da Cantaneira, Sede), 1♀, 09.VIII.2000 (MZSP 24664); (P.E.S. da Cantaneira, Pedra Grande), 1♀, 24.VI.2001 (MCTP 24666), all collected by R. Pinto da Rocha *et al.*; Cotia (Fragmento Florestal Pedroso), 23°35'S, 46°55'W, 1♀, 09.XII.2001, A. Nogueira *et al.* (MZSP 23939). *Paraná*: Cerro Azul, 24°49'S, 49°15'W, 7♀ (MNRJ 1196); Morretes (Serra da Graciosa), 25°21'S, 48°46'W, 1♀, 09-20.I.1995, Equipe do Laboratório de Aracnologia (MCTP 6929); Ponta Grossa (Vila Velha), 25°04'S, 49°56'W, 2♀, 17.VIII.1947, K. Imaguire (MZSP 7850). *Rio Grande do Sul*: Torres (Itapeva), 29°20'S, 49°43'W, 2♀, 30.X.1954, Alunos (MCTP 3887); Dom Pedro de Alcântara, 29°33'S, 49°50'W, 1♀, 18-19.IX.1993, A. Braul & C. Queiroz (MCTP 32565); Caxias do Sul, 28°53'S, 51°06'W, 8♀, 18-21.XI.1993, A.A. Lise *et al.* (MCTP 4138, 32543); 2♂, 10♀, 11-12.XI.1995, Equipe do Laboratório de Aracnologia (MCTP 7364, 7367); São Francisco de Paula, 29°14'S, 50°31'W, 1♀, 24.X.1996, R. Ott (MCTP 10590); (Potreiro Velho), 1♂, 1♀, 17.V.1995, R. Ott (MCTP 6542); 2♀, 05-08.XII.1996, A.A. Lise (MCTP 32013); 1♀, 20.XI.1998, A.A. Lise *et al.* (MCTP 14450); 1♀, VIII.2001, L.A. Bertoncetto *et al.* (MCTP 22902); 1♀, XII.2001, L.A. Bertoncetto *et al.* (MCTP 22906); Canela, 29°21'S, 50°48'W, 1♀, 12.I.1997, J.W. Thomé (MCTP 12178);



**Figures 7-13.** *Eustala ulecebrosa* (Keyserling, 1892). Epigynum: 7, ventral; 8, posterior; 9, lateral; 10, female habitus, dorsal view. *Eustala mourei* Mello-Leitão, 1947. Palpus: 11, mesal; 12, ventral; 13, habitus, dorsal view. Abbreviations: **a**, terminal apophysis; **as**, apex of the scape; **bs**, base of the scape; **c**, conductor; **e**, embolus; **lp**, lateral plate; **m**, median apophysis; **mp**, median plate; **r**, radix; **s**, subterminal apophysis; **sp**, subterminal apophysis projection; **st**, stipe; **tp**, tegular projection. Scale bars: 7-9, 11, 12, 0.25 mm; 10, 2mm; 13, 1 mm.

Viamão, 29°59'S, 51°00'W, 1♀, 07.X.1994, A.A. Lise *et al.* (MCTP 5594); 1♀, 07.VII.1995 A.A. Lise *et al.* (MCTP 8343); 1♀, 08.XII.1999, A. Braul (MCTP 10987); (Instituto Marista Graças) 1♀, 20.V.1994, A.A. Lise *et al.* (MCTP 4719); Porto Alegre (Reserva Biológica do Lami), 30°01'S, 51°13'W, 2♂, 1♀, 10.XI.1991, D. Picada (MCTP 1587); Campo Bom, 29°38'S, 51°00'W, 1♀, 18.XI.1987, C.J. Becker (MCTP 187); Capão do Leão, 31°45'S, 52°25'W, 1♂, 22.VII.2001, E.N.L. Rodrigues (MCTP 15391). URUGUAY, *Departamento Lavalleja*: Ciudad de Minas (Parque de Vocaciones), 34°21'S, 55°14'W, 8♀, X.2005, E.H. Wienskoski (MNRJ 42477).

### ***Eustala levii* Poeta, Marques & Buckup, 2010**

#### Figure 4

*Eustala levii* Poeta *et al.* 2010a: 151, figs 8-13, one male holotype and one female paratype from São Francisco de Paula (Fazenda Três Cachoeiras), 05.XI.1998, A.B. Bonaldo (MCN 29718). Paratypes: one female, with the same locality as holotype, 05.XI.1998, L. Moura (MCN 29716); one female, São Francisco de Paula (Usina Passo do Inferno), 16.XII.1999, A.B. Bonaldo (MCN 31715); one male, São Francisco de Paula (Passo dos Bugres), 04.XI.1998, L. Moura (MCN 29705); one male, Triunfo, 21.IX.1989, E.H. Buckup (MCN 18660), all from Rio Grande do Sul, Brazil. Buckup *et al.* 2010a: 489; Platnick 2013.

**Distribution.** Brazil: Minas Gerais; Paraná, Santa Catarina and Rio Grande do Sul (Poeta *et al.* 2010a) (Fig. 4).

**Additional material examined.** BRAZIL, *Minas Gerais*: Lambari (Parque Estadual Nova Baden), 21°57'S, 45°20'W, 2♀, 05.III.2003, S. Buys (MNRJ 3912). *Santa Catarina*: Florianópolis (Reserva Biológica Marinha do Arvoredo), 27°04'S, 48°18'W, 1♂, 13-14.X.1994, A.A. Lise *et al.* (MCTP 5085); 1♂, 1♀, 03-07.V.1995, A.A. Lise *et al.* (MCTP 6305, 6321); 1♀, 05-06.X.1995, A.A. Lise *et al.* (MCTP 7481); Joinville, 26°17'S, 48°50'W, 1♀ (MNRJ 2375). *Rio Grande do Sul*: São Francisco de Paula (Potreiro Velho), 29°14'S, 50°31'W, 1♂, 05-08.XII.1996, A.A. Lise (MCTP 32001); Guaíba, 30°00'S, 51°18'W, 1♀, 05.XII.1995, A.A. Lise *et al.* (MCTP 7398); Viamão (Morro do Fortaleza), 29°59'S, 51°00'W, 1♀, 21-22.IX.1992, A. Braul (MCTP 32579); Campo Bom, 29°38'S, 51°00'W, 1♀, 19.X.1987, C.J. Becker (MCTP 131); Caxias do Sul, 28°53'S, 51°06'W, 1♂, 11-12.XI.1995,

Equipe do Laboratório de Aracnologia (MCTP 31986); 1♂, 18-21.XI.1993, A.A. Lise (MCTP 32542); Cachoeira do Sul (Alto das Casemiras), ), 29°53'S, 52°55'W, 1♂, 1♀, 14.XI.1992, R.G. Buss (MCTP 32550); (Capão Grande) 1♂, 10.X.1992, R.G. Buss (MCTP 3433); Maquiné (Barra do Ouro), 29°40'S, 500/12'W, 1♂, 04.XII.2010, R.A. Teixeira (MCTP 31761); Capão do Leão, 31°45'S, 52°25'W, 1♂, 22.X.2000 (MCTP 13079); 1♀, 19.I.2001 (MCTP 12385); 1♂, 28.IX.2001 (MCTP 13372), all collected by E.N.L. Rodrigues.

***Eustala palmares* Poeta, Marques & Buckup, 2010**

Figure 4

*Eustala palmares* Poeta *et al.* 2010a: 152, figs 14-19, one male holotype and female paratype from Palmares do Sul, Rio Grande do Sul, Brazil, 11.XI.2003, Equipe Probio (MCN 36612). Paratypes: 20 males, 27 females, with the same data as holotype (MCN 46637, 46638); eight males, five females, Santo Antônio da Patrulha, 19.VII.2000, A.B. Bonaldo (MCN 33133); three males, three females, Eldorado do Sul, 29.X.1998, A.B. Bonaldo (MCN 29663, 46511), all from Rio Grande do Sul, Brazil. Buckup *et al.* 2010: 489, Platnick 2013.

**Distribuição.** Brazil: Rio de Janeiro, São Paulo, Paraná, Santa Catarina and Rio Grande do Sul. Uruguay (Artigas, Poeta *et al.* 2010a) (Fig. 4).

**Additional material examined.** BRAZIL, *Rio de Janeiro*: Angra dos Reis, 23°00'S, 44°18'W, 1♂, 20.VII.1966, P. Mountouchet (MZSP 9607); Santa Maria Madalena (PARES do desengano, Morumbéca), 21°56'S, 42°00'W, 1♀, 13-17.V.2008, A. Chagas-Jr., A. Kury, C. Sampaio & T. Moreira (MNRJ 9005); Rio de Janeiro (Serra da Carioca), 22°53'S, 43°12'W 1♀, 31.VII.2005, E.H. Wienskoski (MNRJ 14630); Nova Iguaçu, 22°45'S, 43°26'W, 1♂, H.B. de Freitas (MNRJ 353). *São Paulo*: Eldorado, 24°30'S, 48°05'W, 1♀, 12.IV.1942, F. Lane (MZSP 4913); Caraguatatuba (Praia de Cocanha), 23°35'S, 45°18'W, 1♂, 1♀, III.1967, R. Biasi (MZSP 5965); São Bernardo do Campo (Represa), 23°48'S, 46°37'W, 1♀, 12.X.1941, F. Lane (MZSP 470); Amparo, 22°41'S, 46°45'W, 1♀, 26.XI.1942, F. Lane (MZSP 8061). *Paraná*: Morretes (Serra da Graciosa), 25°21'S, 48°46'W, 1♂, 4♀, 09-20.I.1995, A.A. Lise *et al.* (MCTP 7039, 7416, 7419). Curitiba, 25°15'S, 49°14'W, 1♀,

21.I.1965, C. do Valle (MZSP 4325). *Santa Catarina*: Porto Belo (Ilha João da Cunha), 27°09'S, 48°32'W, 3♂, 3♀, 07.XII.1992, R.G. Buss (MCTP 3116); Garopaba, 28°01'S, 48°36'W, 1♀, 29.VII.1994, R.G. Buss (MCTP 5043); Florianópolis (Reserva Biológica Marinha do Arvoredo), 27°04'S, 48°18'W, 27°04'S, 48°18'W, 1♂, 3♀, 15-16.X.1993, A.A. Lise *et al.* (MCTP 4055, 30240); 1♂, 1♀, 15-16.IV.1994, A.A. Lise *et al.* (MCTP 4982, 4983); 2♂, 6♀, 05-06.X.1995, Equipe do Laboratório de Aracnologia (MCTP 7530); 2♀, 03-04.V.1996, A.A. Lise *et al.* (MCTP 6320, 9671); Lagoinha Leste, 27°46'S, 48°29'W, 1♀, 16.X.1998, A.A. Lise (MCTP 12803). *Rio Grande do Sul*: Rio Uruguai (BR-153), 1♂, II.1989, Equipe Itá-Machadinho (MCTP 787); Dom Pedro de Alcântara, 29°33'S, 49°50'W, 1♀, 07-09.V.1992, A. Brault (MCTP 2211); Capão da Canoa/Capão Novo, 29°46'S, 49°58'W, 1♂, 1♀, 17-18.IV.1993, A.A. Lise (MCTP 32551); Campo Bom, 29°38'S, 51°00'W, 1♀, 14.XII.1987, C.J. Becker (MCTP 32561); Cidreira, 29°46'S, 49°58'W, 1♂, 6♀, 01.IV.2000, J.A.M. Pinto (MCTP 32574); Viamão, 29°59'S, 51°00'W, 1♂, 07.X.1994, A.A. Lise *et al.* (MCTP 23949); Porto Alegre, 30°01'S, 51°13'W, 1♂, 18.V.1991, C. L. Dorneles (MCTP 32573); Guaíba, 30°00'S, 51°18'W, 1♂, 26.VIII.1994 (MCTP 7980); 1♂, 24.X.1995 (MCTP 9042); 1♂, 1♀, 15.III.1996 (MCTP 8376, 24150); (Fazenda São Maximiano), 1♀, 26.III.1994 (MCTP 32570); 1♂, 26.VIII.1994 (MCTP 32566); 2♂, 7♀, 24.X.1995 (MCTP 4938, 6897, 6898, 9041), all collected by A.A. Lise *et al.*; Capão do Leão, 31°45'S, 52°25'W, 1♂, 17.VII.2000 (MCTP 11408); 3♂, 4♀, 30.XII.2000 (MCTP 12449, 12450, 12470, 12485, 12486, 13436); 3♂, 6♀, 19.I.2001 (MCTP 3121, 12386-12388, 13152, 13435, 13460); 5♀, 28.III.2001 (MCTP 13290, 32583, 32585); 1♀, 24.VII.2001 (MCTP 13436); 1♂, 28.IX.2001 (MCTP 32580), all collected by E.N.L. Rodrigues; Tavares, 31°10'S, 51°03'W, 1♀, 10.XII.1990, N. Silveira (MCTP 123); Santo Antônio da Patrulha, 29°42'S, 50°30'W, 1♂, 1♀, 27.III.1997, L. Koch (MCTP 31970); Cachoeira do Sul (Porteira Sete), 29°53'S, 52°55'W, 1♂, 3♀, 31.X.1992 (MCTP 32547); 2♀, 17.IV.1993 (MCTP 3599); 1♀, 25.V.1993 (MCTP 4003), (Capão Grande) 2♀, 10.X.1992 (MCTP 3428); (Capanetinho) 1♂, 17.X.1992 (MCTP 3437); 1♀, 12.V.1993 (MCTP 32554); 1♂, 29.VIII.1993 (MCTP 32555), all collected by R.G. Buss; Rio Grande (Estação Ecológica do Taim), 32°28'S, 52°34'W, 3♂, 1♀, 12.V.1991, A.A. Lise (MCTP 1011).

***Eustala guarani* sp. nov.**

Figures 5, 14-20

**Type material.** Male holotype and female paratype from Rio Guarani, foz do córrego Três Barras, Três Barras do Paraná, Paraná, Brazil, 25°24'S, 53°10', 20-26.II.1993, A.B. Bonaldo (MCN 22996). Paratype: four males and five females, with the same data as holotype (MCN 49299).

**Etymology.** Noun in apposition taken from the type locality.

**Diagnosis.** *Eustala guarani* sp. nov. (Figs 14-15) similar to *E. taquara* (see Poeta *et al.* 2010a: 157, figures 25-29) by the palpus with a sub-rectangular conductor, on ventral view (Fig. 15) differs by the conductor on mesal view (Fig. 14) that has a sinuous border, unlike *E. taquara* in which it is rounded. Also *E. taquara* palpus presents a strongly flexed terminal apophysis and that is curved in *E. guarani* sp. nov. palpus (mesal view, Fig. 14). The epigynum of *E. guarani* sp. nov. (Figs 17-19) resembles that of *E. histrio* Mello-leitão, 1948 (see Levi 2007, figures) by the narrowed and elongated apex of scape (Fig. 17). Differs from these species by the too narrow median plate posteriorly (on posterior view, Fig. 18)

**Description**

**Male** (holotype, MCN 22996)

Carapace pale yellow, long white setae around the lateral eyes and short brown setae near the thoracic furrow. Posterior median eyes and lateral eyes with dark borders. Sternum pale yellow. The abdomen is oval longer than wide. Dorsum grayish with black marks as a folium and a white patch anteriorly resembling a butterfly (Fig. 16). Venter pale yellow, light brown on the center part, without the median white patch. Legs dark yellow. Total length 5.4. Carapace length 2.6, width 2.2. Leg formula 1243. Length leg I: femur 3.3; patella+tibia 3.9; metatarsus 2.3; tarsus 0.8; total 10.3. Patella+tibia II 3.6; III 1.6; IV 2.8.

**Female** (paratype, MCN 22996)

Coloration as in male. Abdomen subtriangular without the white patch anteriorly (Fig. 22). Ventral white patch almost imperceptible. Total length 6.8. Carapace length 2.8, width 2.3. Leg formula 1243. Length leg I: femur 3.3; patella+tibia 3.8; metatarsus 2.5; tarsus 1.0; total 10.6. Patella+tibia II 3.4; III 1.3; IV 3.2.

**Variation.** Male (n=5): total 4.7-5.9; carapace length 2.5-2.8, width 2.1-2.2. Female (n=5): total 4.3-6.8; carapace length 1.8-2.8, width 1.8-2.3. Some individuals (males and females) present a yellowish abdomen with white folium; or gray with a white patch as a

butterfly, as the holotype. Carapace and legs orange. Legs with brown bands.

**Distribution.** Brazil: Mato Grosso, Paraná, Santa Catarina and Rio Grande do Sul (Fig. 5).

**Additional material examined.** BRAZIL, *Mato Grosso*: Poconé (orto Cercado), 16°13'S, 56°36'W, 1♀, 04-10.VIII.1992, A.A. Lise & A. Brul (MCTP 2457). *Paraná*: Capitão Leônidas Marques (Usina Hidrelétrica de Salto Caxias, Rio Iguazu), 25°29'S, 53°35'W, 1♀, 20-28.III.1993, A.B. Bonaldo (MCN 23448); Morretes (Serra da Graciosa), 25°21'S, 48°46'W, 2♂, 09-20.I.1995, Equipe do Laboratório de Aracnologia (MCTP 6930, 6947). *Santa Catarina*: Itapiranga, 27°10'S, 53°42'W, 1♀, Pio Buck (MNRJ 41966); Chapecó, 26°55'S, 52°33'W, 1♀, 03.III.2011, R.C. Francisco (MCTP 35519); Rio Jacutinga (BR 283/RS), 27°13'S, 52°12'W, 1♀, XII.1988, Equipe Itá-Machadinho (MCTP 821). *Rio Grande do Sul*: São Borja (Reserva Biológica Donato), 28°38'S, 56°00'W, 1♂, 31.I.2012, M. Machado (MCTP 34895).

***Eustala catarina* sp. nov.**

Figures 5, 21-27

**Type material.** Male holotype from Rio Uruguay, Santa Catarina, Brazil, 27°08'S, 53°03'W, 02.IX.2010, R.C. Francisco (MCTP 35517). One male and two females paratypes, with the same data as holotype (MCTP 35518).

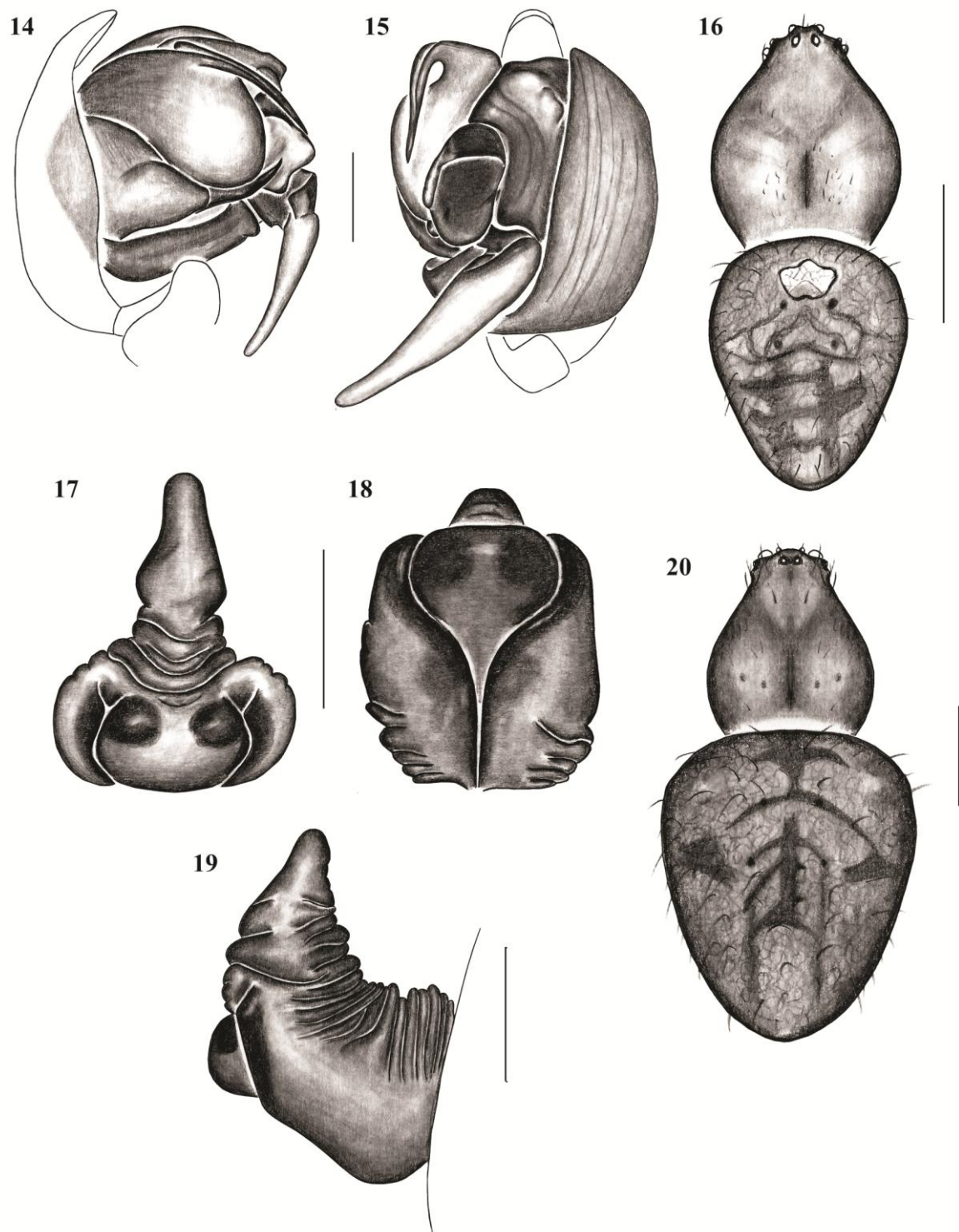
**Etymology.** Noun in apposition taken from the type locality.

**Diagnosis.** Males of *Eustala catarina* sp. nov. differ from others species of the genus by the sinuous tegulum (Figs 21, 22) and by the thin terminal apophysis with a pointed projection, on ventral view (Fig. 22). The epigynum of *Eustala catarina* sp. nov. (Figs 24-26) close to *E. guarani* sp. nov. by the scape narrowed in the apex, can be distinguished by the rounded and deep openings (ventral view, Fig. 24) and by the larger median plate (posterior view, Fig. 25).

**Description**

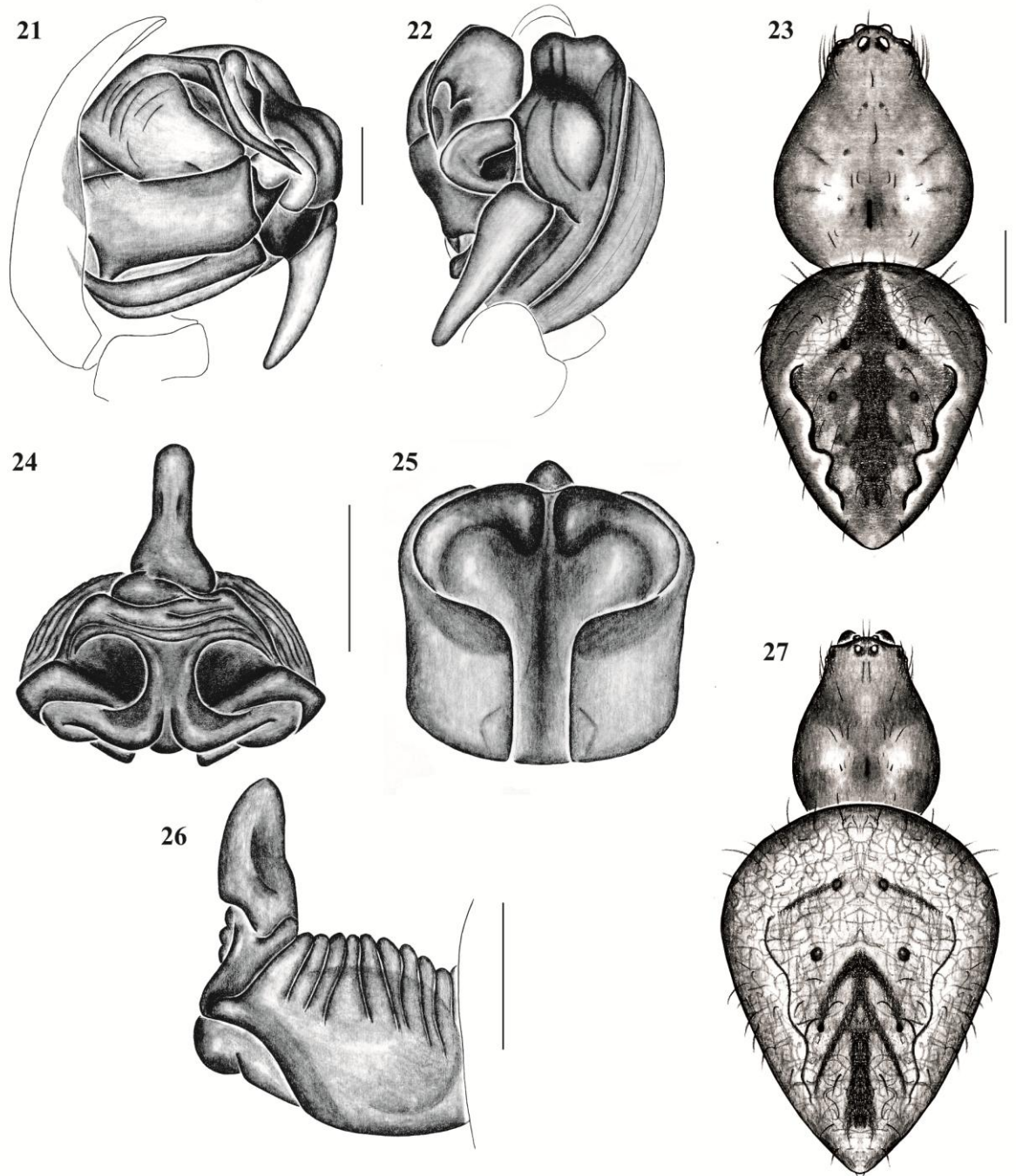
**Male** (holotype, MCTP 35517)

Carapace pale yellow, with brown dots, high thoracic area and deep thoracic furrow. Posterior median eyes and lateral eyes with dark borders. Sternum pale yellow. The abdomen



**Figures 14-20.** *Eustala guarani* sp. nov. Palpus: 14, mesal; 15, ventral; 16, male habitus, dorsal view. Epigynum: 17, ventral; 18, posterior; 19, lateral; 20, female habitus, dorsal view. Scale bars: 14, 15, 17-29, 0.25 mm; 16, 20, 2 mm.





**Figures 21-27.** *Eustala catarina* sp. nov. Palpus: 21, mesal; 22, ventral; 23, male habitus, dorsal view. Epigynum: 24, ventral; 25, posterior; 26, lateral; 27, female habitus, dorsal view. Scale bars: 21, 22, 24-26, 0.25 mm; 23, 27, 1 mm.

is subtriangular, with posterior projection. Dorsum light brown with a dark brown folium, well delimited and with white pigment anteriorly (Fig. 23). Venter yellow with a well-defined stain from the spinnerets to the epigastric furrow and an elongated median white patch. Legs pale yellow with light brown bands. Total length 4.5. Carapace length 2.0, width 1.9. Leg formula 1243. Length leg I: femur 3.0; patella+tibia 3.4; metatarsus 2.2; tarsus 1.0; total 9.3. Patella+tibia II 2.6; III 1.4; IV 2.2.

**Female** (paratype, MCTP 35518)

Carapace, eyes, sternum and legs as observed on males. Abdomen subtriangular, crackled coloration on the dorsum, with a light gray folium and two laterals brown stains (Fig. 27). Venter as the males. Total length 6.9. Carapace length 2.2, width 1.9. Leg formula 1243. Length leg I: femur 3.1; patella+tibia 3.4; metatarsus 2.3; tarsus 0.9; total 9.7. Patella+tibia II 3.3; III 1.6; IV 2.6.

**Variation.** Male (n=2): total 4.5-4.6; carapace length 2.4-2.3, width 2.0-1.9. Female (n=2): total 5.3-6.9; carapace length 2.1-2.2, width 1.8-1.9. In both sexes the carapace and legs orange, with darker bands on legs. Abdomen dark gray and the folium slightly apparent.

**Distribution.** Brazil: Santa Catarina (Fig. 5).

**Additional material examined.** Only type material.

***Eustala ericae* sp. nov.**

Figures 5, 28-35

**Type material.** Male holotype and female paratype from Potreiro Velho, São Francisco de Paula, Rio Grande do Sul, Brazil, 29°14'S, 50°31'W, XII.1996, A.A. Lise (MCTP 14139). Paratypes: one female from São Luiz do Purunã, Paraná, Brazil, 27.IV.1967, P. Biasi (MZSP 7024); one male and one female, Potreiro Velho, São Francisco de Paula, Rio Grande do Sul, Brazil, 20.I.1994, A.A. Lise (MCTP 4507); one female, Cambará do Sul, Rio Grande do Sul, Brazil, 30.VIII.1994, N. Silveira (MCN 25806).

**Etymology.** The specific name is a patronymic in honor to the Brazilian arachnologist Erica Helena Buckup.

**Diagnosis.** Males of *Eustala ericae* sp. nov. (Figs 28, 29) close to those of *E. photographica* (see Poeta *et al.* 2010a, figures 30, 31) by the prominent tegular projection and

by the laminar terminal apophysis. The male palpus of *E. ericae* **sp. nov.** differs from these species by lack of the subterminal projection and by the distal part of the embolus hidden by the conductor in mesal view (Fig. 28), however at ventral view the embolus is completely notable (Fig. 29). The epigynum (Figs 32-34) of *E. ericae* **sp. nov.** is similar to that of *E. photographica* (see Poeta *et al.* 2010a, figures 32-34) by the short and ringed scape and the large posterior median plate. However, *E. ericae* **sp. nov.** presents two distinct circular projections on the median plate, in ventral and posterior views (Figs 32, 33), unlike *E. photographica*.

### **Description**

#### **Male** (holotype, MCTP 14139)

Carapace orange, median anterior eyes and lateral eyes projected (Figs 30, 31), the last ones with white long setae, median posterior eyes with dark borders. Sternum pale yellow with grayish border. Abdomen oval, longer than wide, dorsum whitish with gray folium, ventral surface grayish with the white median patch inconspicuous (Fig. 30). Legs yellowish. Total length 3.9. Carapace length 2.2, width 1.8. Leg formula 1243. Length leg I: femur 2.5; patellae+tibia 2.9; metatarsi 1.8; tarsi 0.7; total 7.9. Patellae+tibia II 2.4; III 1.4; IV 2.2.

#### **Female** (paratype, MCTP 14139)

Carapace pale yellow with a white stain like a “V”, the thoracic area with white setae. Posterior median eyes with dark borders. Sternum pale yellow with grayish border. Abdomen oval, longer than wide, dorsum pale yellow, with a dark gray stain that extends vertically through the abdomen, and a partial folium (Fig. 35). Venter orange with a well-defined dark gray stain from the spinnerets to the epigynum. Median white patch elongated. Legs yellowish. Total length 5.6. Carapace length 2.3, width 1.9. Leg formula 1243. Length leg I: femur 2.3; patella+tibia 3.1; metatarsus 1.9; tarsus 0.8; total 8.1. Patella+tibia II 2.7; III 1.4; IV 2.1.

**Variation.** Male (n=2): carapace length 1.9-2.2, width 1.6-1.8. Female (n=5): total length 4.7-5.6; carapace length 1.9-2.3, width 1.4-1.9. Orange carapace and legs. White stain in the carapace dimmed or absent. Subtriangular or oval abdomen.

**Distribution.** Brazil: Paraná and Rio Grande do Sul (Fig. 5).

**Additional material examined.** BRAZIL, *Rio Grande do Sul*: Bom Jesus (Fazenda Aver), 28°39’S, 50°26’W, 3♀, 24.III.1989, A.B. Bonaldo (MCN 18458, 18460); (Fazenda Santa Cruz), 2♀, 28-31.III.1998, A.B. Bonaldo (MCN 29284, 29285); Cambará do Sul, 29°02’S, 50°08’W, 2♀, 09.I.1976, A.A. Lise (MCN 3336, 4049); 2♀, 20.X.1994, N. Silveira (MCN

25822); 1♀, II.2006; 1♀, IV.2006; 1♀, XI.2006 (MCTP 33344-33346) all collected by LOAM, Projeto Fogo, UNISINOS; (Itaimbezinho) 3♀, 27.IV.1985, A.A. Lise (MCN 13292); 1♀, 18.V.1985, A.A. Lise (MCN 13301); São Francisco de Paula (Potreiro Velho), 29°14'S, 50°31'W, 1♀, 10-13.IV.1997, A.A. Lise (MCTP 14243).

***Eustala cidae* sp. nov.**

Figures 5, 36-42

**Type material.** Male holotype from São Leopoldo, Rio Grande do Sul, Brazil, 29°45'S, 51°13'W, 01.IX.1986, C.J. Becker (MCTP 334). Paratypes: one male, one female, P.E.S. da Cantaneira, Pedra Grande, São Paulo, Brazil, 20.XII.2000, R. Pinto da Rocha (MZSP 24667, 24671); one female, Rancho Queimado, Santa Catarina, Brazil, 09-13.X.1995, A.A. Lise *et al.* (MCTP 7050); one female, Rancho Queimado, Santa Catarina, Brazil, 15-18.XI.1995, A.B. Bonaldo (MCN 26770); one male, Cachoeira do Sul (Parque Witeck), Rio Grande do Sul, Brazil, 09.X.2008, R.G. Buss (MCTP 28025).

**Etymology.** The specific name is a patronymic in honor to the Brazilian arachnologist Maria Aparecida de Leão Marques, nicknamed Cida.

**Diagnosis.** The males of *Eustala cidae* sp. nov. (Figs 36, 37) share with those of *E. crista* (see Poeta *et al.* 2010b, figures 10, 11) the reduced terminal and subterminal apophysis, but differs by the conductor shape, and the elongated, thin and curved embolus (Fig. 36). The epigynum of *Eustala cidae* sp. nov. (Figs 39-41) resembles to that of *E. pallida* Mello-Leitão, 1940 (see Levi 2007) by the ringed scape, but it is distinguished by the conspicuous and very sclerotized projected median plate (Figs 39, 40)

**Description**

**Male** (holotype, MCTP 334)

Carapace teardrop-shaped, orange, cephalic area narrow with white long setae around the lateral eyes and in the thoracic furrow, anterior median eyes projected and posterior median eyes dark bordered, light brown stains on the cephalic area. Sternum pale yellow with white pigment and gray border. Abdomen shield-shaped, longer than wide, with a posterior hump. Dorsum yellowish with gray spots, folium with a median dark brown patch and four white patches anteriorly (Fig. 38). Venter pale yellow with well-defined dark gray lines of the

spinnerets to the epigastric furrow and the median white patch elongated. Legs pale yellow gray banded, trochanters darker in dorsal view. Total length 7.8. Carapace length 3.9, width 3.4. Leg formula 1243. Length leg I: femur 6.8; patella+tibia 6.9; metatarsus 4.4; tarsus 1.6; total 19.7. Patella+tibia II 5.0; III 1.6; IV 2.2.

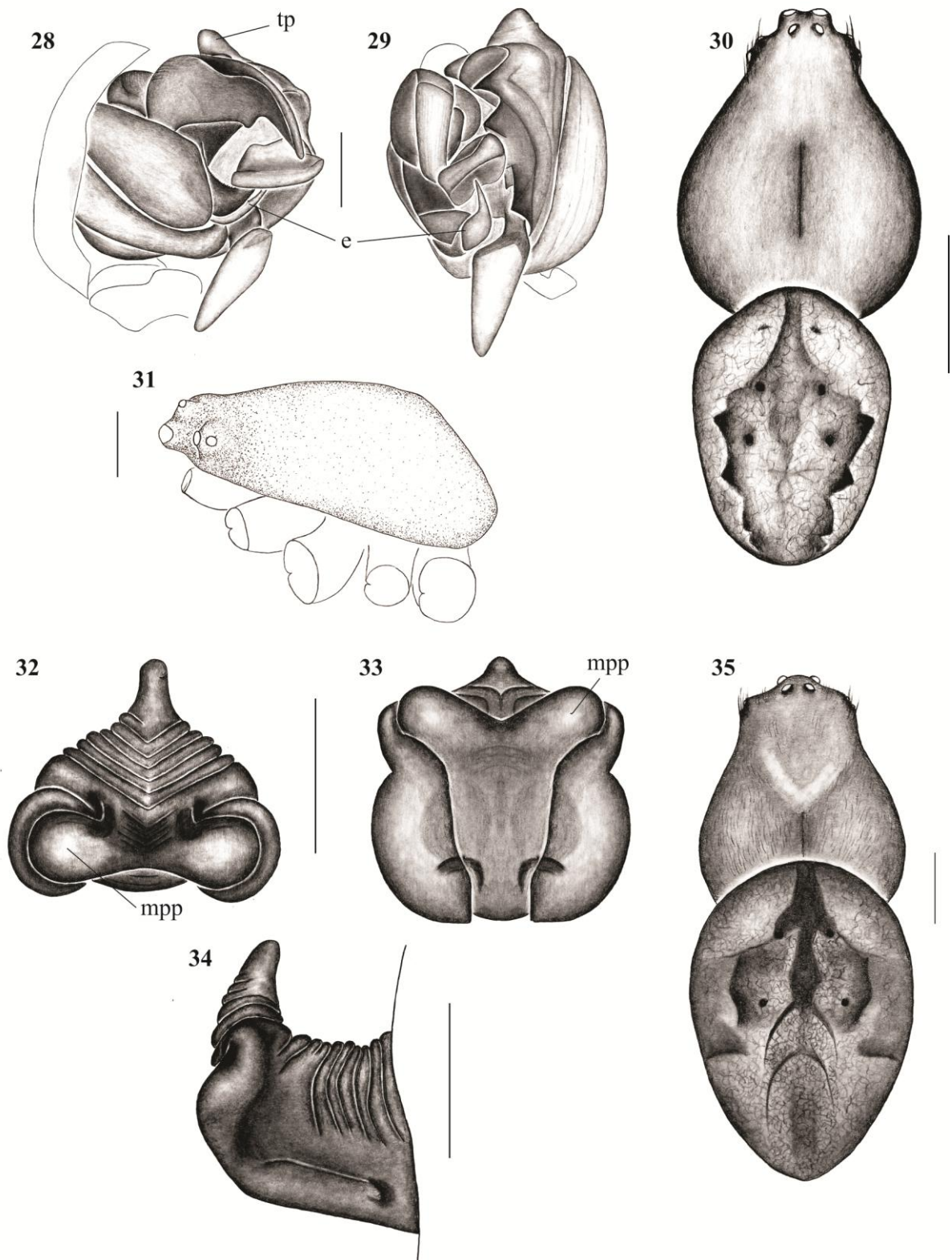
**Female** (paratype, MCTP 7050)

Carapace orange, with many long white setae around the lateral eyes, posterior median eyes and lateral eyes with dark borders. Sternum orange with light-gray border, a central white pigment and long brown setae. The abdomen is subtriangular with inconspicuous posterior hump (Fig. 42). Dorsum pale yellow with a slightly visible folium. Venter pale yellow with a delimited whitish area from the epigastric furrow to the spinnerets, with the white median patch elongated. Legs orange. Total length 8.1. Carapace length 3.0, width 2.6. Leg formula 1243. Length leg I: femur 5.0; patella+tibia 5.8; metatarsus 2.6; tarsus 1.0; total 14.4. Patella+tibia II 4.7; III 2.3; IV 4.0.

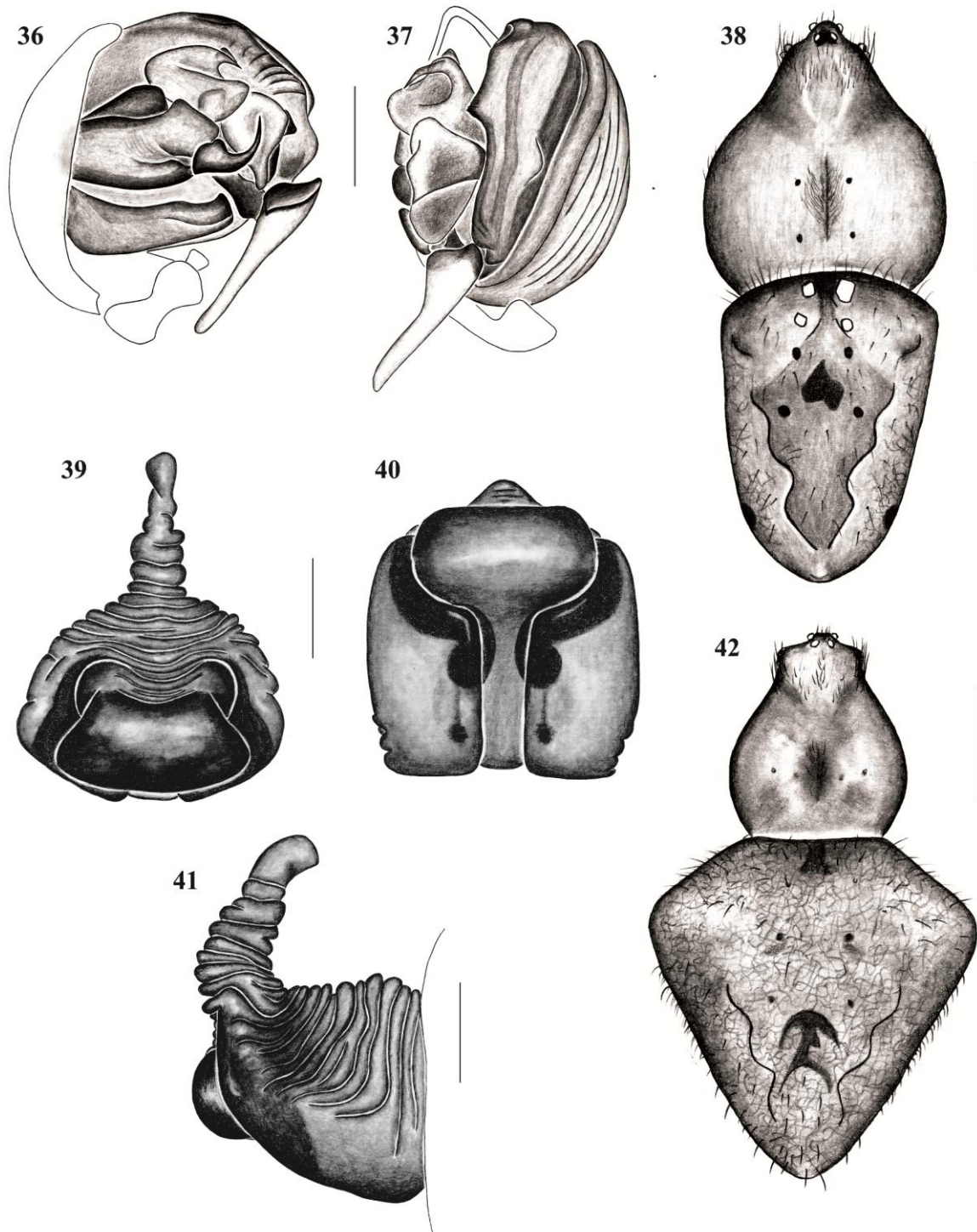
**Variation.** Male (n=4): total length 6.5-7.8; carapace length 3.6-3.9, width 3.1-3.4. Legs and carapace yellowish; the stains on the cephalic area darker. Abdomen whitout well-defined folium and sometimes with a dark brown longitudinal band. Female (n=5): total length 7.2-9.4; carapace length 2.6-3.8, width 2.2-3.0. Carapace pale-yellow, with brown stains and brown setae. Legs pale-yellow with brown bands. Cephalotorax with a longitudinal dark-brown stain. Abdomen with conspicuous posterior hump, dorsum with a triangular dark-brown stain or a couple of dark brown stains posteriorly.

**Distribution.** Brazil: São Paulo, Santa Catarina and Rio Grande do Sul (Fig. 5).

**Additional material examined** BRAZIL, *São Paulo*: São Paulo (P.E.S. da Cantareira, Sede), 23°27'S, 46°38'W, 1♀, 28.X.2000, R. Pinto da Rocha *et al.* (MZSP 24673); Cotia (Reserva Florestal Morro Grande), 23°35'S, 46°55'W, 3♀, 16.XII.2002, A. Nogueira *et al.* (MZSP 23919, 23920). *Rio Grande do Sul*: Derrubadas (Parque Estadual do Turvo), 27°04'S, 53°45'W, 2♀, 19-22.X.2004, R. Ott *et al.* (MCN 38606, 38686); Caxias do Sul, 28°53'S, 51°06'W, 1♀, 18-21.XI.1993, A.A. Lise (MCTP 4139); São Francisco de Paula (Usina Passo do Inferno), 29°14'S, 50°31'W, 1♀, 16.XI.2006, A.A. Lise (MCTP 20341); Novo Hamburgo, 29°39'S, 51°06'W, 1♀, 27.VIII.1982, C.J. Becker (MCN 11065); Santo Antônio da Patrulha, 29°42'S, 50°30'W, 1♀, 18.VI.2000, A.B. Bonaldo (MCN 33112); São Leopoldo, 29°45'S, 51°13'W, 1♂, 01.IX.1986, C.J. Becker (MCTP 334); 1♂, 26.X.1976, C.J. Becker (MCN 4682); Viamão, 29°59'S, 51°00'W 1♂, 08.X.1997, L.A. Moura (MCN 28513); Novo Cabrais (Parque Witeck), 29°36'S, 52°55'W, 1♂, 09.X.2008, R.G. Buss (MCTP 28025).



**Figures 28-35.** *Eustala ericae* sp. nov. Palpus: 28, mesal; 29, ventral; 30, male habitus, dorsal view; 31, male cephalothorax, lateral view. Epigynum: 32, ventral; 33, posterior; 34, lateral; 35, female habitus, dorsal view. Abbreviations: **e**, embolus; **mpp**, median plate projection; **tp**, tegular projection. Scale bars: 28, 29, 32-34, 0.25 mm; 31, 0.5 mm; 30, 35, 1 mm



**Figures 36-42.** *Eustala cidae* sp. nov. Palpus: 36, mesal; 37, ventral; 38, male habitus, dorsal view. Epigynum: 39, ventral; 40, posterior; 41, lateral; 42, female habitus, dorsal view. Scale bars: 36, 37, 0.5 mm; 39-41, 0.25 mm; 38, 42, 2 mm.

***Eustala lisei* sp. nov.**

(Figures 6, 43-49)

**Type material.** Male holotype from Parque Estadual do Delta do Jacuí (Fazenda Pontal), Triunfo, Rio Grande do Sul, Brazil, ), 29°56'S, 51°43'W, 28.I.1999, A.B. Bonaldo (MCN 30206). Paratypes: two females, Pantanal, Mato Grosso, Brazil, 16°13'S, 56°36'W, 04-10.VIII.1992, A.A. Lise & A. Braul (MCTP 2304); one male, Estação Ambiental Braskem (ex Parque Copesul), Triunfo, Rio Grande do Sul, Brazil, 29°56'S, 51°43'W 11.X.1992, M.A.L. Marques (MCN 22342); one male, Hortobotânico Irmão Teodoro Luis, Capão do Leão, Rio Grande do Sul, Brazil, 31°45'S, 52°25'W, 25.V.2001, E.N.L. Rodrigues (MCN 46400); one female, Arroio do Salso (Serraria), Porto Alegre, Rio Grande do Sul, Brazil, 30°01'S, 51°13'W, 17.X.2003, R. Ott & I. Heydrich (MCN 36351); one female, Ilha das Flores, Porto Alegre, Rio Grande do Sul, Brazil, 29°58'S, 51°15'W, 12.X.1998, L. Moura (MCN 31034).

**Etymology.** The specific name is a patronymic in honor to the Brazilian arachnologist Arno Antônio Lise.

**Diagnosis.** The palpus of *Eustala lisei* sp. nov. (Figs 43, 44) is similar to those of *E. bellissima* (see Poeta *et al.* 2010, figures 4, 5) by the sub-rectangular and large conductor (ventral view, Fig. 44), but differs from these species by the excavated tegular projection, on mesal view (Fig. 43), and by the lack of the embolus projection, that is characteristic on *E. bellissima*. The *Eustala lisei* sp. nov. epigynum (Figs 46-48) is similar to the other species of genus by the ringed scape but differs from this species by the long and sinuous scape, with a median wide part ended in a thin portion (ventral view, Fig. 46) and, on posterior view (Fig. 47) the median plate is narrowed posteriorly, funnel-like.

**Description**

**Male** (holotype, MCN 30206)

Carapace pale yellow, with light gray stains. Sternum pale yellow with gray border. Abdomen subtriangular, with a few setae; dorsum whitish with a gray greenish folium (Fig. 45). Posterior median eyes and lateral eyes with dark borders. Venter light yellow with a circular median white patch and white pigment near the spinnerets. Legs pale yellow with brown bands. Total length 3.8. Carapace length 2.0, width 1.8. Leg formula 1243. Length leg I: femur 2.8; patella+tibia 3.4; metatarsus 1.8; tarsus 0.8; total 8.8. Patella+tibia II 2.4; III 1.2; IV 2.1.



**Female** (paratype, MCN 36351)

Carapace pale yellow with light-brown patches and a central white pigment on the cephalic region. Posterior median eyes and lateral eyes with dark borders. Sternum pale yellow, grayish, dark-gray on the borders with white pigment. Dorsum of abdomen subtriangular, crackled coloration white with gray pigment, with a dark gray folium, and a posterior hump (Fig. 49). Venter light gray with white pigment from the spinners to the epigastric furrow; median central white undistinguished. Legs pale yellow with light brown bands. Total length 5.1. Carapace length 2.3, width 1.9. Leg formula 1243. Length leg I: femur 3.1; patella+tibia 3.1; metatarsus 2.2; tarsus 0.9; total 9.3. Patella+tibia II 2.8; III 1.5; IV 2.7.

**Variation.** Male (n=3): total 4.1-3.8; carapace length 2.0-2.0, width 1.8-1.9. Female (n=5): total 6.0-4.3; carapace length 2.4-1.7, width 2.1-1.6. Legs and carapace orange. Bands on the legs more or less wide. Inconspicuous abdominal projections. Abdomen pale yellow with a longitudinal brown stain. Venter of the abdomen pale yellow with a median circular white patch.

**Distribution.** Brazil: Pará, Mato Grosso, São Paulo and Rio Grande do Sul (Fig. 6).

**Additional material examined.** BRAZIL, *Pará*: Oriximiná, 1°40'S, 55°53'W, 1♀, 12.XII.2004, F. Picanço (MCN 38146). *Mato Grosso*: Campo Novo do Parecis (Salto do Utariti), 13°40'S, 57°53'W 1♀, 30.VII.1961, K. Lenko (MZSP 11266). *São Paulo*: Iporangá, 24°25'S, 48°31'W, 1♀, 01.XI.1961, Lenko & Reichosa (MZSP 6827). *Rio Grande do Sul*: Capão do Leão (Hortobotânico Irmão Teodoro Luís), 31°45'S, 52°25'W, 1♀, 25.V.2001, E.N.L. Rodrigues (MCN 46402); Triunfo (Parque Copesul de Proteção Ambiental), 29°56'S, 51°43'W, 1♀, 29-30.IV.2003, R. Ott (MCN 35718).

***Eustala cuia* sp. nov.**

(Figures 6, 50-58)

**Type material.** Male holotype from Lagoa do Capivari, Capivari do Sul, Rio Grande do Sul, Brazil, 30°08'S, 50°30'W, 20.V.2004, Equipe Probio (MCN 37373). Paratypes: one male, Raiz da Serra, Cubatão, São Paulo, Brazil, 23°53'S, 46°25'W, Biugo (MZSP 8054); one male and one female, Hortobotânico Irmão Teodoro Luis, Capão do Leão, Rio Grande do Sul, Brazil, 31°45'S, 52°25'W, 25.V.2001, E.N.L. Rodrigues (MCN 49062); one male, Reserva

Biológica do Lami, Porto Alegre, Rio Grande do Sul, Brazil, 30°01'S, 51°13'W, 19.X.2001, E.L.C. Silva & C.E. Ferro (MCN 37721).

**Etymology.** The specific name is a noun in apposition refers to the conductor shape (on ventral view) that resembles a “cuia”, used to drink “chimarrão” or “mate”, a typical hot drink from Rio Grande do Sul.

**Note.** The apex of scape was accidentally broken, made impossible to illustrate this part on lateral view.

**Diagnosis.** *Eustala cuia* **sp. nov.** palpus (Figs 50, 51) differs from those of other species of the genus by the conductor with an apical deeply scavation anteriorly, on mesal view (Fig. 50). The female of *E. cuia* **sp. nov.** (Figs 54-56), similar to the others species by epigynum with a ringed scape, but can be differentiated from these species by the ringed median plate (ventral view, Fig. 54), and by the two round depressions on the median plate, on posterior view (Figs 55).

#### **Description**

**Male** (holotype, MCN 37373)

Carapace pale yellow, light-brown bands, many white setae on cephalotorax, and longer ones around the lateral eyes. Posterior median eyes and lateral eyes with dark borders. Sternum pale yellow with gray border and a white pigment. The abdomen is subtriangular, with two terminal projections (Figs 52, 53). Dorsum whitish with gray pigment and a greenish-gray folium. Venter dark-brown, without the central median white patch. Legs yellow with dark-brown bands. Total length 5.2. Carapace length 2.4, width 2.0. Leg formula 1243. Length leg I: femur 3.1; patella+tibia 3.8; metatarsus 2.7; tarsus 1.0; total 10.6. Patella+tibia II 2.8; III 1.4; IV 2.9.

**Female** (paratype, MCN 49602)

Carapace orange, light-brown bands, many white setae sparsely distributed, and longer ones around the lateral eyes, as the male. Clipeo with white setae. Posterior median eyes and lateral eyes with dark borders. Sternum orange with gray border and almost totally covered with white pigment. Abdomen as the male, with more conspicuous projections anteriorly and posteriorly (Figs 57, 58). Venter white with a gray stain from the epigastric furrow to the spinnerets with a large central median white patch. Legs orange with dark-brown bands. Total length 11.0. Carapace length 3.5, width 3.9. Leg formula 1243. Length leg I: femur 5.4; patella+tibia 6.7; metatarsus 4.5; tarsus 1.5; total 18.1. Patella+tibia II 6.0; III 3.2; IV 5.3.

**Variation.** Male (n=7): total 3.8-7.5; carapace length 1.9-3.8, width 1.4-3.0. Carapace and legs orange. Inconspicuous abdominal projection. Central white patch on the venter of the abdomen absent.

**Distribution.** Brazil: São Paulo and Rio Grande do Sul (Fig. 6).

**Additional material examined.** BRAZIL, *Rio Grande do Sul*: Porto Alegre (Reserva Biológica do Lami), 30°01'S, 51°13'W, 1♂, 10, 11.XII.2001, E.L.C. Silva & C.E. Ferro (MCN 37722); Maquiné (Estação Experimental da Fepagro), 29°40'S, 500/12'W, 1♂, 06-08.III.1998, A.B. Bonaldo (MCN 29022); Santa Vitória do Palmar (Estação Ecológica do Taim), 33°31'S, 53°21'W, 1♂, 27.XI.1985, M. Rosenau (MCN 14011).

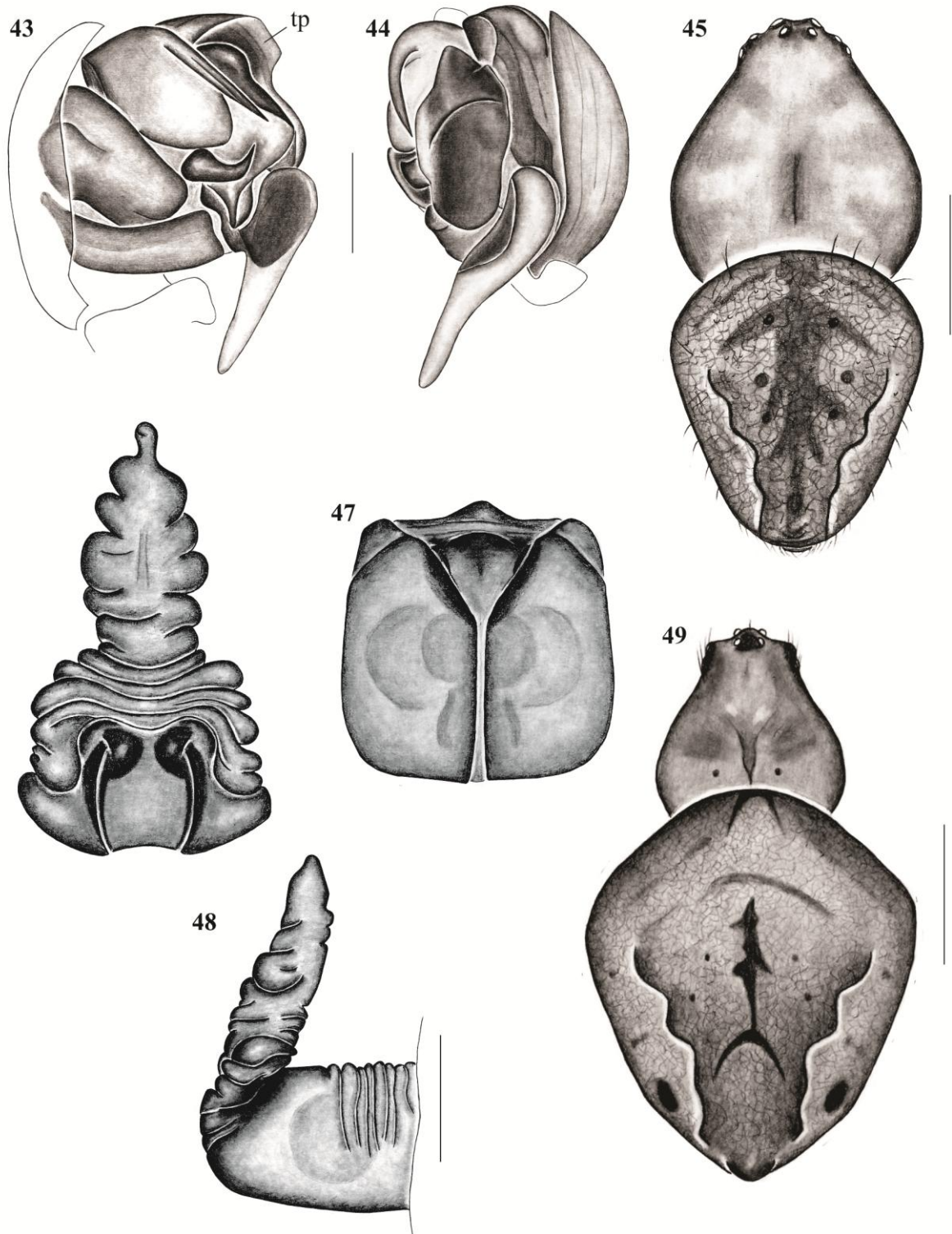
***Eustala farroupilha* sp. nov.**

(Figures 6, 59-65)

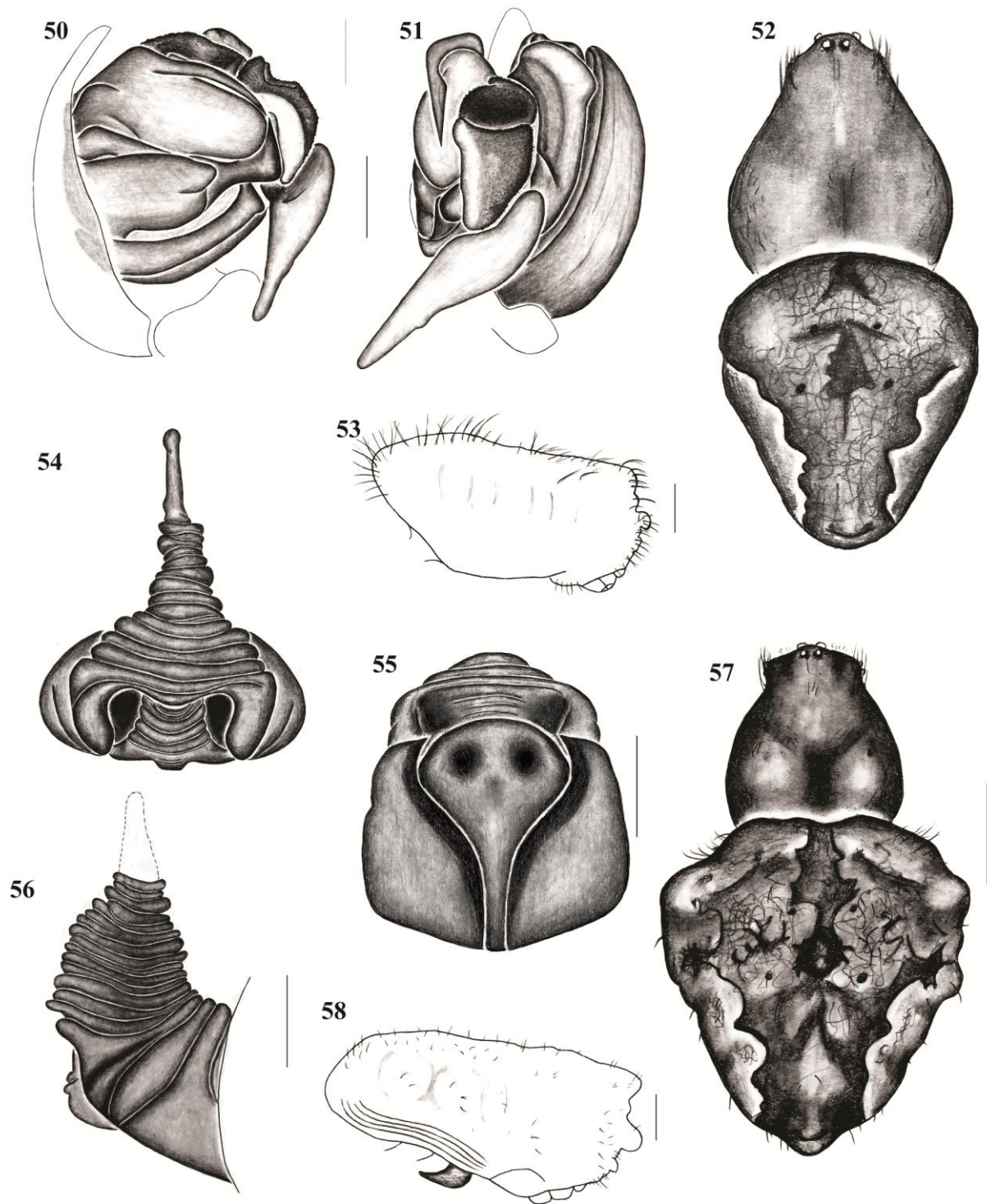
**Type material.** Male holotype and female paratype from Morro da Fortaleza, Itapuã, Viamão, Rio Grande do Sul, Brazil, 29°59'S, 51°00'W, 21-22.IX.1992, A. Bräul (MCTP 2652). Paratypes: three females, with the same data as holotype (MCTP 34689); two males, Parque Tingui, Curitiba, Paraná, Brazil, 25°15'S, 49°14'W, VII.1995, J. Ricetti & E. Xavier (MCTP 35516).

**Etymology.** The specific name "*farroupilha*" is in honor to "Revolução Farroupilha", that occurs in Rio Grande do Sul, Brazil (1835-1845).

**Diagnosis.** The male palpus of *Eustala farroupilha* sp. nov. (Figs 59, 60) resembles to that of *E. mourei* (Figs 11, 12) by the terminal laminar apophysis and a subterminal apophysis with a transparent projection. However, the male of *Eustala farroupilha* sp. nov. differs from these species by the long and thin embolus and by the subterminal apophysis projection, which is shorter (mesal view, Fig. 59) than that present in *E. mourei*. *Eustala farroupilha* sp. nov. palpus, also, presents a tegulum with a strongly serrated border (ventral view, Fig. 60). The epyginum of *E. farroupilha* sp. nov. (Figs 62-64) has a short ringed scape, as *E. mourei* (see Levi 2007, figures), but differs by the narrow portion on the median plate on posterior view (Fig. 64), instead of straight, as illustrated by Levi (2007).



**Figures 43-49.** *Eustala lisei* sp. nov. Palpus: 43, mesal; 44, ventral; 45, male habitus, dorsal view. Epigynum: 46, ventral; 47, posterior; 48, lateral; 49, female habitus, dorsal view. Scale bars: 43, 44, 46-48, 0.25 mm; 45, 49, 1 mm.



**Figures 50-58.** *Eustala cuia* sp. nov. Palpus: 50, mesal; 51, ventral; 52, male habitus, dorsal view; 53, male abdomen, lateral view. Epigynum: 54, ventral; 55, posterior; 56, lateral; 57, female habitus, dorsal view; 58, female abdomen, lateral view. Scale bars: 50, 51, 54-56, 0.25 mm; 52, 53, 57, 58, 1 mm.

## Description

**Male** (holotype, MCTP 2652)

Carapace orange; narrow ocular area, median posterior eyes and lateral eyes with a black border and a few white setae near the lateral eyes. Sternum pale yellow with a white pigment and a light-gray border. Abdomen subtriangular, dorsum whitish crackled with a greenish folium and a posterior hump (Fig 61). Venter whitish with a well-defined dark gray stain from the spinnerets to the epigastric furrow and an small white central patch. Legs pale-yellow with light-brown bands. Total length 5.1. Carapace length 2.2, width 2.6. Leg formula 1243. Length leg I: femur 3.8; patella+tibia 4.5; metatarsus 2.8; tarsus 1.1; total 12.2. Patella+tibia II 3.7; III 1.7; IV 2.9.

**Female** (paratype, MCTP 2652).

Carapace dark-yellow with white pigment; median posterior eyes and lateral eyes with a black border and a few white setae near the lateral eyes. Sternum yellow with a white pigment and a gray border. Abdomen subtriangular, dorsum whitish crackled with a brown losangular stain and a posterior hump (Figs 65). Venter yellowish with a well-defined dark gray stain from the spinnerets to the epigastric furrow and a small white central patch. Legs pale-yellow with light-brown bands. Total length 6.1. Carapace length 2.3, width 2.0. Leg formula 1243. Length leg I: femur 4.1; patella+tibia 3.6; metatarsus 2.4; tarsus 0.9; total 11.0. Patella+tibia II 3.2; III 1.4; IV 2.3.

**Variation.** Male (n=5): total 5.2-6.7; carapace length 2.2-3.2, width 2.3-2.7. The carapace orange with long brown par of setae anteriorly. The abdomen oval, light yellow and the inconspicuous projections. Female (n=4): total 5.9-6.8; carapace length 2.0-2.5, width 1.8-2.1. The color of abdomen like the male holotype, greenish, with not well-demarcated folium.

**Distribution.** Brazil: Paraná, Santa Catarina and Rio Grande do Sul (Fig. 6).

**Additional material examined.** BRAZIL, *Santa Catarina*: Florianópolis (Reserva Biológica Marinha do Arvoredo), 27°04'S, 48°18'W, 1♂, 05-06.X.1995, A.A. Lise *et al.* (MCTP 7448). *Rio Grande do Sul*: São Francisco de Paula, 29°14'S, 50°31'W, 1♂, 24.X.1996, R. Ott (MCTP 10589); Guaíba, 30°00'S, 51°18'W, 2♂, 26.VIII.1994, A.A. Lise *et al.* (MCTP 7979); Viamão (Itapuã, Praia das Pombas), 29°59'S, 51°00'W, 1♂, 19.I.1977, E.H. Buckup (MCN 5036); 1♂, 15.I.2002, H.P. Romanowski (MCN 34802); Glorinha, 29°52'S, 50°47'W, 1♂, 14.VII.2000, A.B. Bonaldo (MCN 33062); Triunfo (Estação Ambiental Braskem, ex Parque Copesul), 29°56'S, 51°43'W, 2♂, 25.III.2005, R. Ott (MCN 39963, 39996); 1♂, 07.XII.2005, A. Barcelos (MCN 40076); 1♂, 13.IX.2011, M.A.L. Marques

(MCN 48196); Porto Alegre (Morro São Pedro), 30°01'S, 51°13'W, 1♂, 26.XI.2003, R. Ott & A. Barcelos (MCN 36357); Guabiju (Fundação Cultural e Social Guabijuense), 28°32'S, 51°41'W, 1♂, 09-11.X.2000, A. Franceschini (MCN 33387).

***Eustala eldorado* sp. nov.**

(Figures 6, 66-69)

**Type material.** Male holotype from Fazenda São José, Eldorado do Sul, Rio Grande do Sul, Brazil, 30°01'S, 51°36'W, 12.X.1998, L. Moura (MCN 29742). One male paratype from Cachoeira do Sul, Rio Grande do Sul, Brazil, 29°53'S, 52°55'W, 02.XII.1992, R.G. Buss (MCTP 3674).

**Etymology.** Name in apposition taken from the type locality.

**Diagnosis.** *Eustala eldorado* sp. nov. palpus (Figs 66, 67) differs from those of other species of the genus by the conspicuous pointed tegular projection and by a long and strongly sinuous embolus, on mesal view (Fig. 66).

**Description**

**Male** (holotype, MCN 29742)

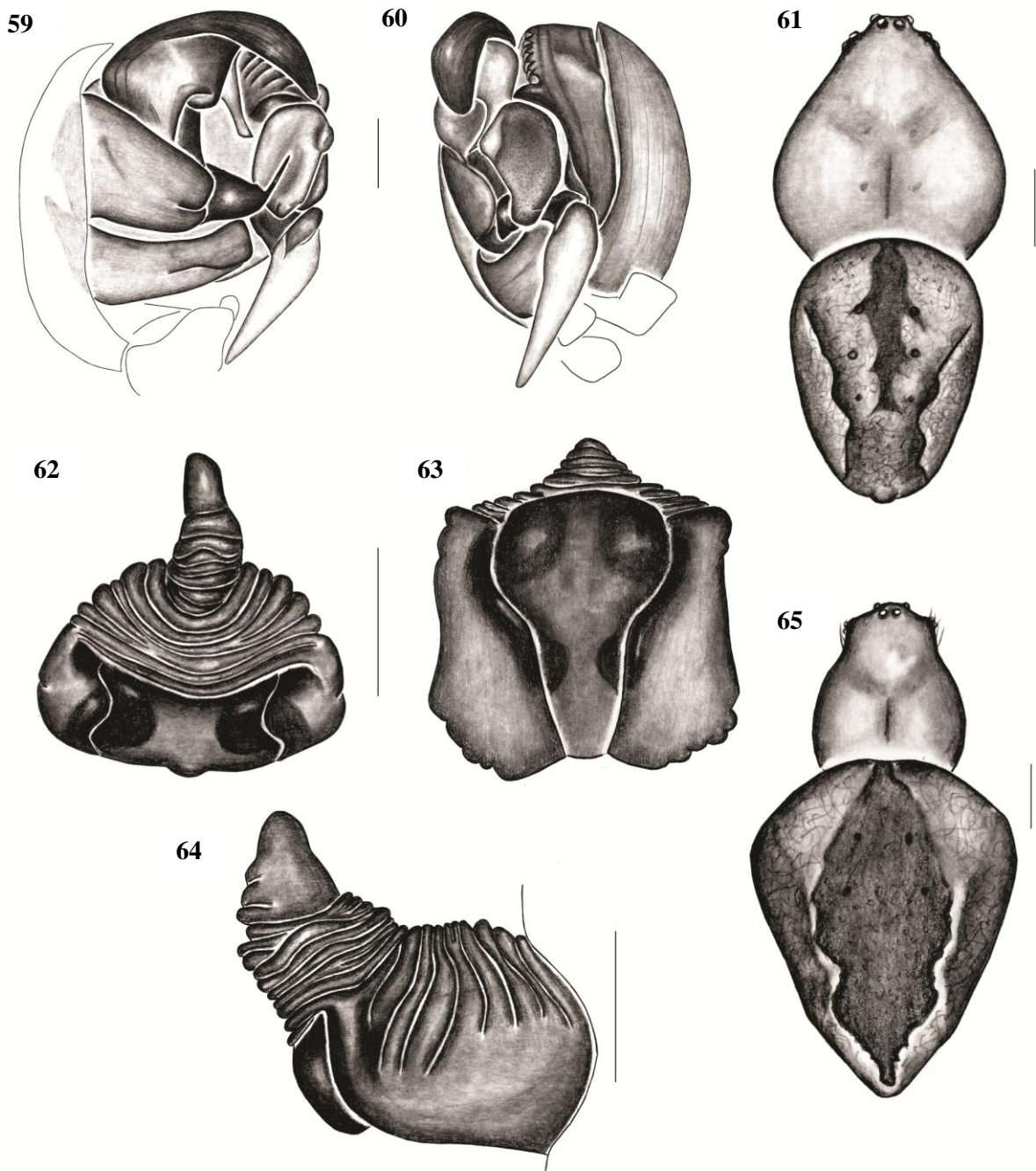
Carapace pale yellow with many setae near the thoracic furrow. Sternum pale yellow with gray border. The abdomen is diamond-like, with a little posterior projection, with numerous setae, and two additional terminal projections (Figs 68, 69). Dorsum light yellow with a wide dark gray folium. Venter light yellow with a well-defined dark gray stain from the spinnerets to the epigastric furrow, with the white median patch circular. Legs yellow with brown bands. Total length 7.9. Carapace length 3.5, width 2.9. Leg formula I/II/IV/III; length leg I: femur 5.1; patella+tibia 6.6; metatarsus 4.4; tarsus 0.7; total 16.8. Patella+tibia II 4.9; III 2.5; IV 4.5.

**Female.** Unknown.

**Variation.** Orange carapace and legs. Bands on the legs more or less wide. Inconspicuous abdominal projections. Male (n=2): total 7.7-7.9; carapace length 3.5-3.7, width 2.8-2.9.

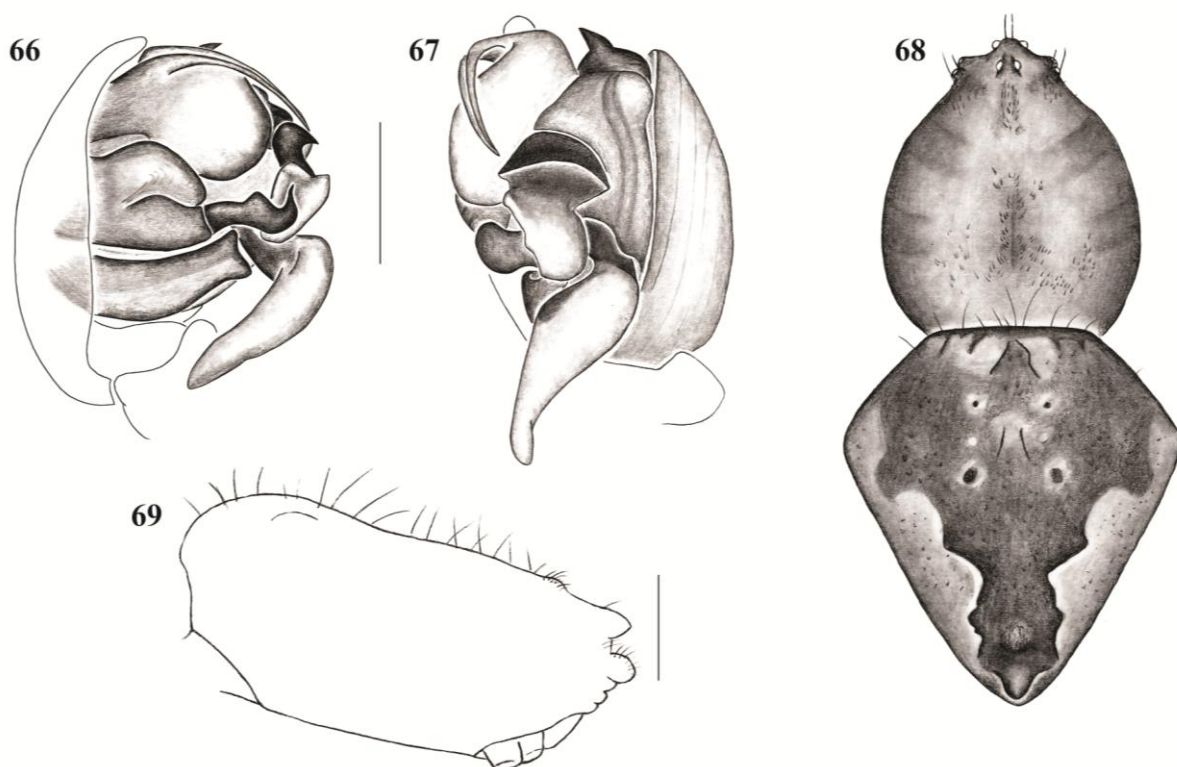
**Distribution.** Brazil: Rio Grande do Sul (Fig. 6).

**Additional material examined.** Only type material.



**Figures 59-65.** *Eustala farroupilha* sp. nov. Palpus: 59, mesal; 60, ventral; 61, male habitus, dorsal view. Epigynum: 62, ventral; 63, posterior; 64, lateral; 65, female habitus, dorsal view. Scale bars: 59, 60, 62-64, 0.25 mm; 61, 65, 1 mm.





**Figures 66-69.** *Eustala eldorado* sp. nov. Palpus: 66, mesal; 67, ventral; 68, male habitus, dorsal view; 69, male abdomen, lateral view. Scale bars: 66, 67, 0.25 mm; 68, 69, 1 mm.

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