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First record of *Eustala vellardi* Mello-Leitão, 1924 (Araneae: Araneidae) in Argentina, with notes on opisthosomal polymorphism

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Abstract: The first Argentinian record of *Eustala vellardi* Mello-Leitão, 1924 is provided, extending the known distribution of this species in South America. Also, variations in the colour patterns of the opisthosoma are described for males and females. Changes in the habitus pattern could not be attributed to sexual dimorphism, according to our field observations.
Key words: Araneae, Araneidae, orb weavers, grassland, Chaco, Corrientes, Argentina.

Primer registro de *Eustala vellardi* Mello-Leitão, 1924 (Araneae: Araneidae) de Argentina, y menciones de polimorfismo en el opistosoma
Resumen: Se provee el primer registro de Argentina de *Eustala vellardi*, extendiéndose la distribución conocida de la especie en Sudamérica. También se mencionan nuevas variaciones en los patrones opistosomales, tanto en machos como hembras. Dichos patrones no pueden ser atribuidos a un dimorfismo sexual, de acuerdo a lo hallado en el campo.
Palabras clave: Araneae, Araneidae, arañas orbiculares, pastizal, Chaco, Corrientes, Argentina.

Introduction

The genus *Eustala* Simon, 1895, belongs to Araneidae, one of the most abundant families in the world (World Spider Catalog, 2018) member of orb-weaver guild. Its monophyletic condition was supported by Scharff & Coddington (1997). This American genus is well known and inhabits particularly over shrub vegetation and/or trees. They are mostly nocturnal and remove the web at daytime. *Eustala* spiders tend to rest with spread legs in their webs (Levi, 1977). Seven species of *Eustala* are known in Argentina (Catálogo de arañas de Argentina, 2018), to which we intend to add a further specie, contributing to taxonomical diversity of the genus in our country.

The main objective of this work is to report, for the first time, the presence of *E. vellardi* in two provinces of the Northeast Argentina. The specimens were collected in Corrientes province around Iberá marshlands and along wetlands of Ramsar sites in Chaco province (Figure 1).

Materials and methods

The reported spiders in Corrientes province were collected into the boundaries of the Iberá marshlands, located in the north – center of the province (Figure 1, label 12). These are under the influence of three different phytogeographic provinces (Carnevali, 1994): Humid Chaco, Paranaense and Espinal. In Chaco province, the spiders were collected from wetlands of Ramsar sites (Figure 1, label 13), represented by a long strip bounded on the north by Bermejo River, to the south by the parallel 28°, to the east by Paraná and Paraguay rivers and to the West by the National Route Nº 11. The area of collection is included in the biogeographic region of Humid Chaco or Oriental Chaco and belongs to Grate Chaco sector (Morrone, 2001).

In each environment, nocturnal visual samplings of the spiders located in the foliage and vegetation of the forest and the pastureland were carried out using head flashlights. All samples were preserved in 70% ethylic alcohol. The samples were processed in the Arthro-

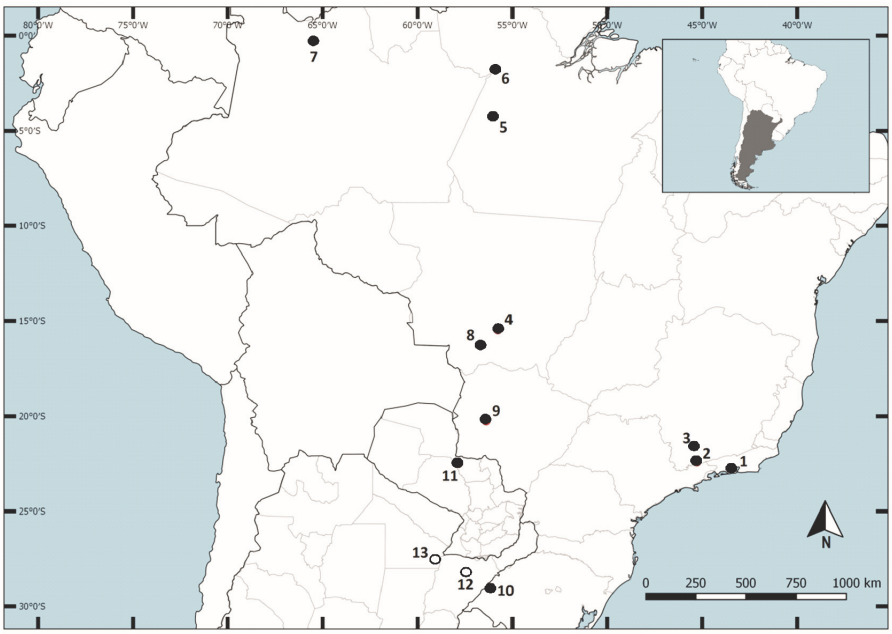


Fig. 1. Distribution of *Eustala vellardi*. Black dots are historic localities. White dots are new record. 1. Nova Iguaçu, Rio de Janeiro. 2. Rio Claro, Minas Gerais. 3. Verginha, Minas Gerais. 4. Chapada dos Guimarães, Mato Grosso. 5. Itaituba, Pará. 6. Oriximiná, Pará. 7. Santa Isabel do Rio Negro, Amazonas. 8. Poconé, Mato Grosso. 9. Miranda, Mato Grosso do Sul. 10. São Borja, Rio Grande do Sul. 11. Concepción, Paraguay. 12. Iberá marshlands, Corrientes. 13. Ramsar site, Chaco.

pods laboratory (FaCENA-UNNE) and incorporated into the CARTROUNNE (Colección de Artrópodos de la Universidad Nacional del Nordeste) collection with serial numbers.

Identification. *Eustala vellardi* correspond to Mello-Leitão (1924), who describes it by having a narrow and long cephalothorax with a cephalic region slightly above to the thorax, which is well delimited by divergent grooves and with posterior eyes greater than the anterior ones. Legs with abundance of spines distributed irregularly. Abdomen elongated in tip to both ends, with fusiform form (Figures 2, 4, 5, 6 and 7). Epigynum elevated and in hart shape, with an anterior notch from which appears a short scape, small and pointy headed forward (Figure 3). The male palp has an acute terminal apophysis and a very short embolus (Figure 8). These characters were analyzed taking into consideration the descriptions of Chickering (1955), Levi (1977) and Poeta & Teixeira (2017). The species was confirmed by expert María Rita Poeta (pers. comm., April 24th of 2017).

Once identified the specimens, photographies were obtained by a Canon Eos Rebel T3i digital camera mounted over a binocular stereomicroscope. Images were processed with COMBINEZP 1.0.0 (http://combinezp.software.informer.com/) and Adobe Photoshop CC version 14.0.

In order to illustrate the distribution map (Figure 1), historical records on the geographic distribution of the species were obtained from published data. When geographic coordinates were not provided by references, data were geolocated with GOOGLE EARTH PRO 7.3.1. The distribution map was composed using QUANTUM GIS 2.18.

New records

ARGENTINA: *Corrientes province*: Reserva Paraje Galarza (Santo Tomé department), in pastureland, 28°06'07"S, 56°41'27"W, 23.XI. 2012, 6♀ 1♂, G. Avalos (CARTROUNNE 8538), 9♀ 4♂, G. Avalos (CARTROUNNE 8539), 6♀ 3♂, G. Avalos (CARTROUN NE 8542), Colonia Montaña (San Miguel department), in pastureland, 28°03'02"S, 57°32'55"W, 06.XI.2014, 3♀, I. Zanone (CARTROUNNE 8540), Reserva San Nicolas (San Miguel department), in pastureland, 28°10'41"S, 57°26'51"W, 20.XI.2012, 1♀, I. Zanone (CARTROUNNE 8543), Estancia San Juan Poriajú (San Miguel department), in pastureland, 27°41'53"S, 57°11'53"W, 28.XI.2013, 2♀, G. Avalos (CARTROUNNE 8548, Reserva Cambyreta (Ituzaingó department), in pastureland, 27°52'6"S, 56°52' 50"W, 3♀, I. Zanone (CARTROUNNE 8541), Establecimiento Puerto Valle (Ituzaingó department), 27°36'7"S, 56°30'39"W, 24.III.2015, 16♀ 1♂, I. Zanone (CARTROUNNE 8547). *Chaco province*: Estancia María Zaida, Basail (San Fernando department), in pastureland, 27°44'59"S, 59°13'36"W, 19.XI.2014, 6♀, I. Zanone (CARTROUNNE 8544), General Vedia (Bermejo department), in pastureland, 26°55'50"S, 58°38'52"W, 10.XII.2015, 15♀, I. Zanone (CARTROUNNE 8545), Estancia La Querencia, Basail (San Fernando department), in forest, 27°42'40"S, 59°13'06"W, 16.XI.2015, 1♀, I. Zanone (CARTROUNNE 8546).

Known distribution. Brazil and Paraguay.

Discussion

Eustala vellardi was known from Brazil and Paraguay (Mello-Leitão, 1924; Poeta & Teixeira, 2017), our record being the first of this species from Argentina. Levi (1977) mentioned that *Eustala* builds their webs often in dead branches and trees trunks, but majority of the specimens here considered built theirs on leaves of poaceae plants from pastureland.

Mello-Leitão (1924) characterized the species by having five equidistant black circular spots along the median region of the opisthosoma and on each side four small fuzzy dots. However, the analyzed spiders in both Argentinean provinces present different habitus pattern. In one case, the specimen shows a sinuous brown longitudinal stripe. This stripe goes from end to another of the abdomen and includes the four small fuzzy dots (Figures 5 and 7). The second pattern comprises a smooth opisthosoma with one or more longitudinal irregular-shaped stains (Figure 6). The new variations of the habitus patterns here mentioned are equally seen both in males and females, so they could not be considered as sexual dimorphism characters.

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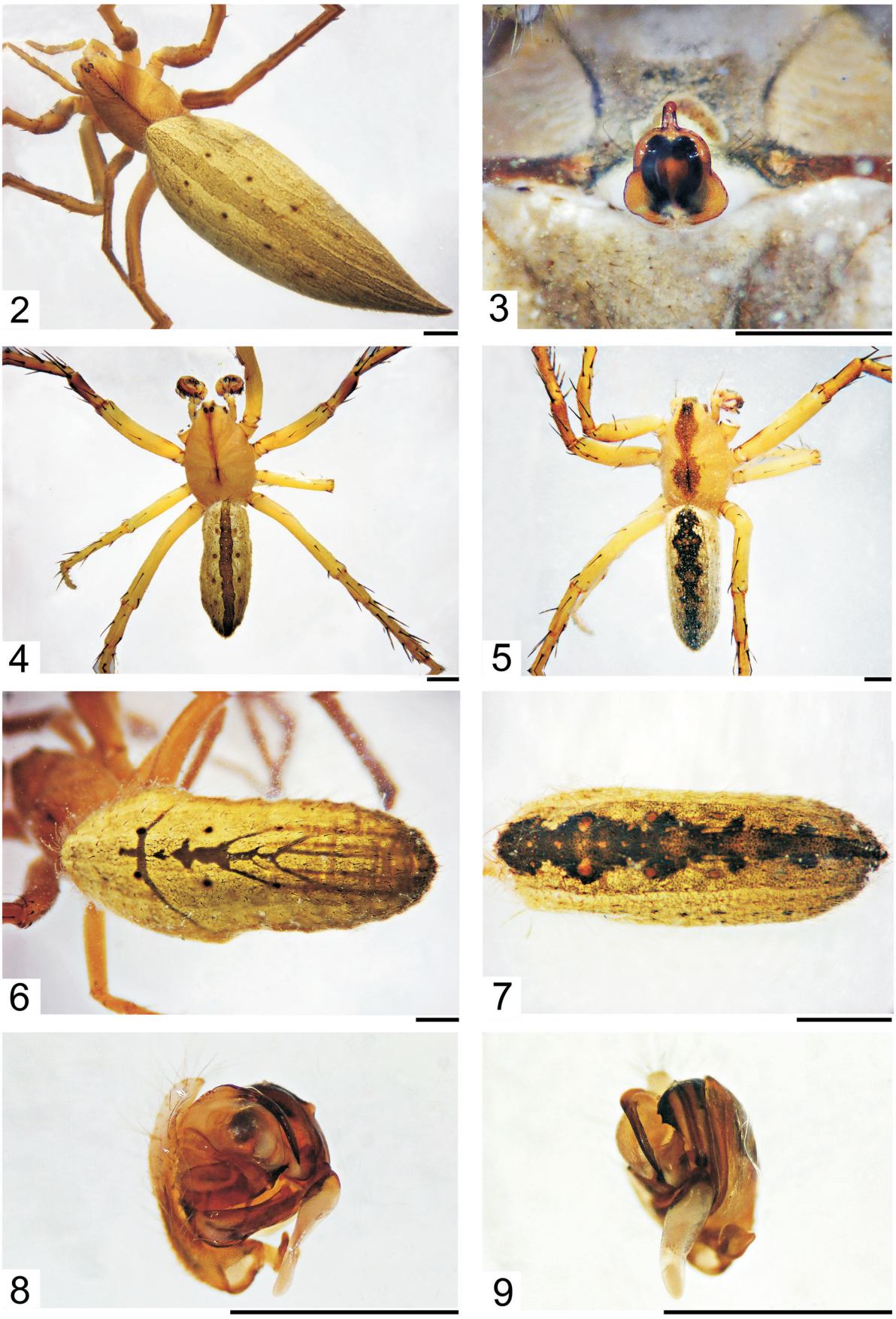


Fig. 2-9. *Eustala vellardi* from Corrientes and Chaco. **2 and 5:** Dorsal view ♀. **3:** Epigynum. **4, 5 and 7:** Dorsal view ♂. **8:** Left palpus. 9**:** Mesal view of left palpus. Scale bar 1mm.