

**ADDITION OF A SPIDER FAMILY FOR URUGUAY:
FIRST RECORD OF *IVIRAIVA PACHYURA*
(MELLO-LEITÃO, 1935) (ARANEAE: HERSILIIDAE),
WITH NOTES ON ITS NATURAL HISTORY AND
DISTRIBUTION**

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The family Hersiliidae Thorell, 1870 comprises small to medium spiders with 15 genera and 179 described species, distributed in tropical and subtropical regions worldwide (World Spider Catalog 2015). Members of this family present tuberculated eyes, flattened body and very long posterior lateral spinnerets. These well-developed spinnerets are used during the characteristic hunting behavior described for members of this family: the spider immobilizes its prey by performing rapid turns around the victim while raising its spinnerets and depositing silk over the prey (Lawrence 1964; Benoit 1967; Eberhard 1967). The genus *Iviraiva* Rheims & Brescovit, 2004 comprises two species known for Brazil, Bolivia, Paraguay and northern Argentina. In a recent spider survey carried out in northwestern

Uruguay specimens of *Iviraiva pachyura* (Mello-Leitão, 1935) were collected. This constituted the first record of the species and of the family Hersiliidae for Uruguay, and the southern most report for both taxa in South America.



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Material and Methods

The individuals were collected near Paysandú City (32°21'5.66"S & 58°3'36.94"W), in a country house area characterized by the presence of grassland and exotic trees. The specimens were captured by hand late at night, approximately 03:00hr, using head lamps. The collected specimens are preserved in 70% alcohol and deposited in the arachnological collection of Facultad de Ciencias, Universidad de la República (FCE-Ar), Uruguay. The distribution map was made using SimpleMapp (Shorthouse 2010). Records from other countries for this species follow Rheims & Brescovit (2004). The measurements of the specimens and egg sacs are provided in millimeters.

Results

We collected seven individuals in the field: three males and four females, identified as belonging to the species *Iviraiva pachyura*. We recognized specimens of



DATA DEFICIENT	LEAST CONCERN	NEAR THREATENED	VULNERABLE	ENDANGERED	CRITICALLY ENDANGERED	EXTINCT IN THE WILD	EXTINCT
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Iviraiva pachyura



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I. pachyura by the presence of the diagnostic characters indicated by Rheims & Brescovit (2004), mainly by the morphology of the female epigynum and male palpal organ.

***Iviraiva pachyura* (Mello-Leitão, 1935)
(Images 1–3; Fig. 1)**

Material examined: Uruguay: Paysandú: 5km from Paysandú City (32°21'5.66"S & 58°3'36.94"W): 11.i.2013, 2 females, A. Laborda (FCE-Ar 4050); 19.i.2013, 1 male, A. Laborda (FCE-Ar 4051); 13.i.2014, 2 females, 2 males, 5 egg sacs, A. Laborda (FCE-Ar 4818).

Description: Colour of living specimens (Images 1A, 2A): Males and females present a similar coloration. This spider is very cryptic with its habitat, with a pattern of spots on the body and legs very similar to tree bark. Carapace dark brown, densely covered with white setae. Moss green abdomen with light spots, black cardiac mark and two anterior lateral black spots. Light brown legs, with moss green and brown spots. Light brown spinnerets with transversal brown bands, densely covered by setae. Measurements: females (N=4): total length: 6.4–8.0; carapace length: 2.4–2.8; carapace width: 2.5–3.1; males (N=3): total length: 5.2–5.4; carapace length: 2.3; carapace width: 2.3. A complete

description and diagnosis of the species is given in Rheims & Brescovit (2004).

Egg sac: A female collected in summer (13.i.2014) produced an egg sac in the laboratory two days later. At the field, four egg sacs were found in the foliage of *Cupressus* sp. and *Melia azedarach* L. trees. The egg sac of *I. pachyura* resembles the shape of a spinning top, composed by dark and dense silk, with lighter bottom and a central projection (Image 3B-C). The egg sac is suspended from a single strong stalk of dark silk, which is fixed to a leaf or thin branch (Image 3B). Measurements (N=5): length (excluding the stalk): 12.4–18.0; width (at the widest part): 5.0–5.7; stalk length: 8.4–14.7.

Distribution: Northeastern and central Brazil, northern Argentina, Paraguay and now in northern Uruguay (Fig. 1).

Natural history: We found that in the night specimens stayed on branches of *Melia azedarach* trees located between 2–4 m high. In the field we observed some specimens feeding on adults of Tenebrionidae (Coleoptera).

Discussion and Conclusions

The species was found inhabiting branches of non-

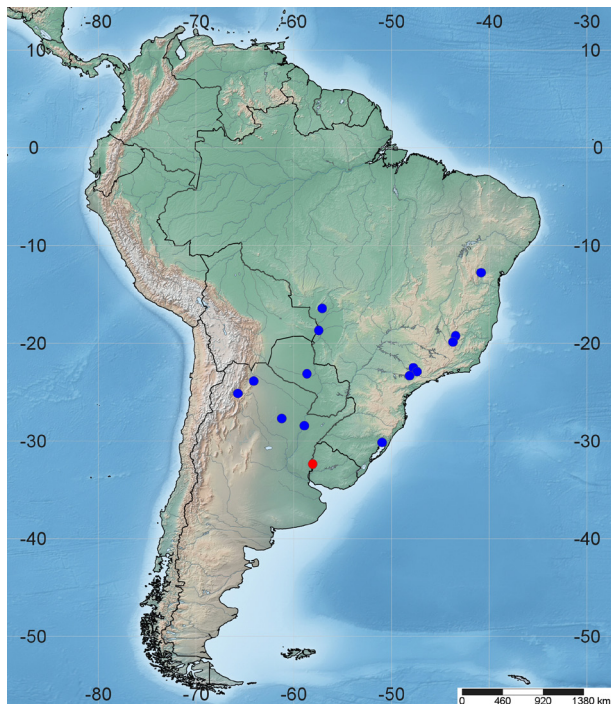


Figure 1. Geographic distribution of *Iviraiva pachyura*. Literature records: blue circle, new record: red circle.

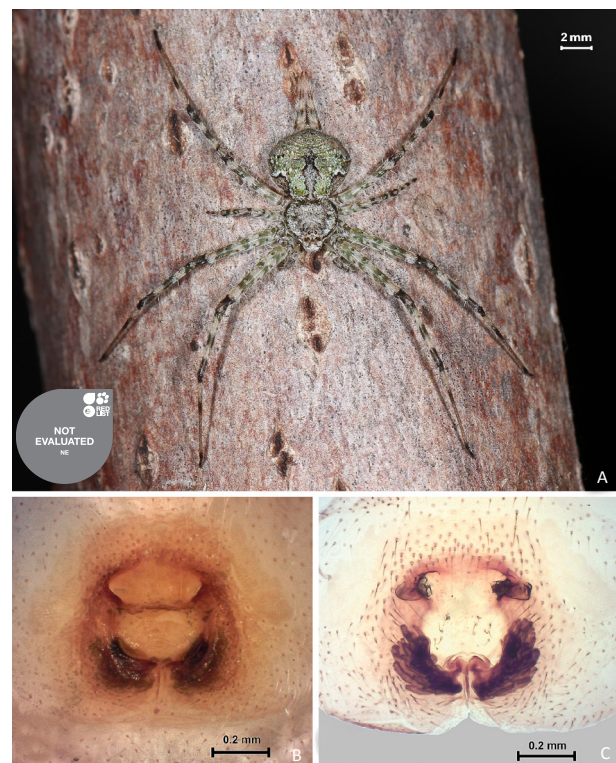


Image 1. *Iviraiva pachyura*, female (FCE-Ar 4050). A - specimen alive; B - epigyne, ventral view; C - epigyne, dorsal view. © A - Bruno Vivián; B,C - Álvaro Laborda.

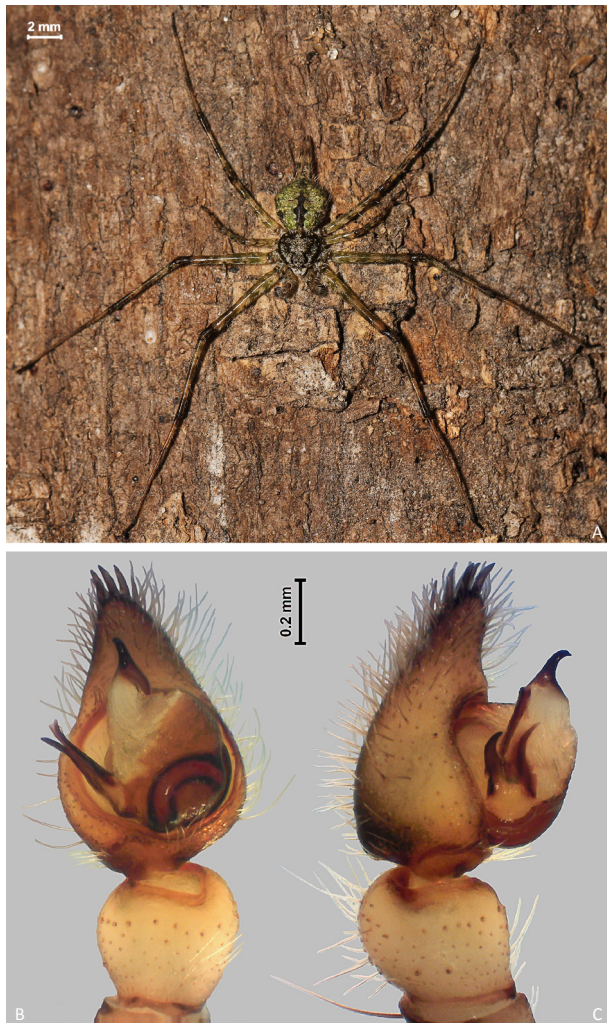


Image 2. *Iviraiva pachyura*, male.
 A - specimen alive (FCE-Ar 4818); B - left palp, ventral view (FCE-Ar 4051); C - left palp, retrolateral view (FCE-Ar 4051).
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native trees in a country house (Image 3A). This is in agreement with Avalos et al. (2013), who indicated the presence of a large number of specimens of this species in commercial plantations of *Citrus sinensis* (L.) Osbeck (Rutaceae) in Corrientes Province, Argentina, 450km northwest from Paysandú. These findings confirm the positive effects of human impact in the establishment of *I. pachyura*. An important territorial extension of the northwestern Uruguayan territory is dedicated to citrus plantations, what could provide suitable habitat for this species, enabling the expansion of its distribution range.

Here we provide the description of the egg sac of *Iviraiva pachyura*; however, for other species of the family the structure of the egg sacs is known. Smithers (1945) reported the construction of round egg sacs, attached to the underside of a stone and covered



Image 3. Collecting site and egg sac of *Iviraiva pachyura*.
 A - Site where *Iviraiva pachyura* was found, a rural environment with the presence of non-native trees such as *Melia azedarach* and *Cupressus* sp.; B - an egg sac in the foliage of a *Cupressus* sp. tree (FCE-Ar 4818); C - detail of an egg sac (FCE-Ar 4818).
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with stone chips, for the Afrotropical genus *Tyrotama*, Dippenaar-Schoeman & Jocqué (1997) observed a similar egg sac structure in other Afrotropical spiders of the genus *Hersiliola*. Foord & Dippenaar-Schoeman (2006) reported for *Hersilia sericea* Pocock, 1898 the construction of flat and oval egg sacs on the surface of tree trunks which were camouflaged with bits of bark. Baehr & Baehr (1987) studying Australian fauna, described the egg sacs of several species of the genus *Tamopsis* which were rounded or oval and flattened. This shape of egg sac seems to be quite common in the family; however, in the same contribution, the authors described the egg sac of *Tamopsis grayi* Baehr & Baehr, 1987, which has a globular form and fixed on a long stalk. This structure is very similar to that observed in *I. pachyura*, what could suggest a convergence of the egg sac structure in these two species. Probably the function of suspended egg sacs could be protection against generalist predators like ants (Hieber 1992).

Future studies will focus on biological aspects of this species, its distribution in the country and how it could be influenced by anthropic effects.

References

- Avalos, G., M.E. Bar, E.B. Oscherov & A. Gonzalez (2013).** Diversidad de Araneae en cultivos de *Citrus sinensis* (Rutaceae) de la Provincia de Corrientes, Argentina. *Revista de Biología Tropical* 61(3): 1243–1260.
- Baehr, B. & M. Baehr (1987).** The Australian Hersiliidae (Arachnida: Araneae): Taxonomy, phylogeny, zoogeography. *Invertebrate Taxonomy* 1: 351–437; <http://dx.doi.org/10.1071/IT9870351>
- Benoit, P.L.G. (1967).** Révision des espèces africaines du genre *Hersilia* Sav. et Aud. *Revue de Zoologie et de Botanique Africaines* (Belgium) 76: 1–36.
- Dippenaar-Schoeman, A. & R. Jocqué (1997).** African Spiders: An identification manual. Plant Protection Research Institute Handbook no. 9. Pretoria: Agricultural Research Council
- Eberhard, W.G. (1967).** Attack behavior of digueid spiders and the origin of prey wrapping in spiders. *Psyche* 74: 173–181.
- Foord, S.H. & A.S. Dippenaar-Schoeman (2006).** A Revision of the Afrotropical species of *Hersilia* Audouin (Araneae: Hersiliidae). *Zootaxa* 1347: 1–92.
- Hieber, C.S. (1992).** Spider cocoons and their suspension systems as barriers to generalist and specialist predators. *Oecologia* 91: 530–535.
- Lawrence, R.F. (1964).** A conspectus of South African spiders. *Department of Agricultural Technical Services. South Africa. Science Bulletin* 369: 64pp.
- Rheims, C.A. & A.D. Brescovit (2004).** Revision and cladistic analysis of the spider family Hersiliidae (Arachnida, Araneae) with emphasis on Neotropical and Nearctic species. *Insect Systematics & Evolution* 35: 189–239; <http://dx.doi.org/10.1163/187631204788912355>
- Shorthouse, D.P. (2010).** Simple Mappr, an online tool to produce publication-quality point maps. <<http://www.simplemappr.net>>. Accessed 10 February 2014.
- Smithers, R.H.N. (1945).** The Hersiliidae (Araneae) of South Africa. *Transactions of the Royal Society of South Africa* 31: 1–18.
- World Spider Catalog (2015).** World Spider Catalog. Natural History Museum Bern. Available online at <http://wsc.nmbe.ch>, version 16.5. Accessed on 9 August 2015

