A new species of *Plesiopelma* from Uruguay (Araneae, Theraphosidae, Theraphosinae)

Uma nova espécie de *Plesiopelma* do Uruguai (Araneae, Theraphosidae, Theraphosinae)

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Abstract: We describe and illustrate a new tarantula species of the genus *Plesiopelma* from Lavalleja and Maldonado, Uruguay. *Plesiopelma arevaloae* sp. nov. is distinguished from other known species by morphological characters and molecular evidence.

Keywords: Taxonomy. Morphology. Molecular. Tarantula.

Resumo: Descrevemos e ilustramos uma nova espécie de tarântula do gênero *Plesiopelma* de Lavalleja e Maldonado, Uruguai. *Plesiopelma arevaloae* sp. nov. é distinguida de outras espécies conhecidas por caracteres morfológicos e evidências moleculares.

Palavras-chave: Taxonomia. Morfologia. Molecular. Tarântula.

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INTRODUCTION

Theraphosidae is the most speciose family within Mygalomorphae spiders comprising 168 genera and 1,117 species (World Spider Catalog, 2024). They are mostly large, hairy spiders that live in burrows, under stones or in silken retreats on the ground or on trees (Pérez-Miles, 2020). Theraphosidae occurs mainly in tropical and subtropical regions and occupies habitats from deep caves up to 4,000 m (Mendoza & Francke, 2017; Ferretti et al., 2018). More than a half of the species of the family are included in the subfamily Theraphosinae, endemic of the Neotropics. Due to their homogeneity and conservative morphology, its taxonomy was in a chaotic state (Raven, 1990; Pérez-Miles et al., 1996; Bertani, 2001; Ferretti & Barneche, 2013). However, in the last two decades, theraphosid systematics has progressed considerably, recently the incorporation of molecular characters led several authors to propose well supported phylogenies (Hamilton et al., 2011, 2014, 2016; Hendrixson et al., 2013, 2015; Wilson et al., 2013; Montes de Oca et al., 2016; Ortiz & Francke, 2016, 2017; Mendoza & Francke, 2017, 2020; Turner et al., 2018; Lüddecke et al., 2018; Hüsser, 2018; Fabiano-da-Silva et al., 2019; Foley et al., 2019, 2021; Candia-Ramírez & Francke, 2020; Korba et al., 2022; Galleti-Lima et al., 2023; Biswas et al., 2023). Despite these advances, the diversity of tarantulas, mainly in the New World, probably remains underestimated but molecular markers have demonstrated to be useful tools to reveal cryptic species, redundantly described taxa, and intraspecific and interspecific paraphyly (Hamilton et al., 2016).

The genus *Plesiopelma* Pocock 1901 was described based on a male of the type species *Plesiopelma myodes* Pocock 1901 from Uruguay. *Plesiopelma* is characterized by a combination of characters: the presence of convergent setae on dorsal abdomen, males with a retrolateral basal nodule on metatarsi I; most males with a subapical tooth on palpal bulb; prolateral superior and inferior keels well developed on bulb. Females with two spiral-shaped spermathecal receptacles (Ferretti & Barneche, 2013). The genus comprises thirteen species registered in Argentina, Brazil, Paraguay, Bolivia, Uruguay and Venezuela (World Spider Catalog, 2024). *Plesiopelma* was considered a senior synonym of *Ceropelma* Mello-Leitão 1923 by Pérez-Miles et al. (1996) who transferred their five species and proposed the following combinations: *Plesiopelma flavohirtus* (Simon 1889), *Plesiopelma semiauranticum* (Simon 1897), *Plesiopelma insulare* (Mello-Leitão 1923), *Plesiopelma longisternale* (Schiapelli & Gerschman 1942) and *Plesiopelma gertschi* (Caporiacco 1955). Pérez-Miles et al. (1996) also considered that *Plesiopelma imperatrix* Piza, 1976, was not *Plesiopelma* because of the presence of types I and III urticating setae and the spermathecal morphology with a single receptacle. *Plesiopelma rectimanus* (Mello-Leitão, 1923) was transferred from *Hapalopus* Ausserer 1875 by Pérez-Miles et al. (1996). Yamamoto et al. (2007) transferred *Plesiopelma physopus* (Mello-Leitão, 1926) and *Plesiopelma minensis* (Mello-Leitão 1943) from *Tmesiphantes* Simon 1892 and Yamamoto et al. (2012) transferred *Catanduba flavohirtus* Yamamoto, Lucas & Brescovit 2012 from *Plesiopelma*. Ferretti and Barneche (2013) described *Plesiopelma paganoi* and *Plesiopelma aspidosperma,* both species are restricted to the northern province of Salta, Argentina.

Recently Ferretti et al. (2024) studied several populations from Argentina of the widespread tarantula *P. longisternale* using morphological characters and molecular markers. Their results revealed the presence of a new species from Catamarca, Argentina, *Plesiopelma absconditus* Ferretti, Nicoletta & Soresi 2024.

Studying the material of *Plesiopelma* from several sites of Uruguay deposited in the arachnological collection of the Facultad de Ciencias (FCE-My), we found some individuals from Lavalleja and Maldonado that fit with the diagnosis of the genus but differs from all known species. We collected additional material from the same sites, performed a molecular study, and included it in the phylogeny recently published by Ferretti et al. (2024). Both morphological and molecular results congruently support the presence of a new species, consequently we propose *Plesiopelma arevaloae* sp. nov. which is here diagnosed, described and illustrated.

MATERIAL AND METHODS

Studied individuals were deposited in the arachnological collection of the *Facultad de Ciencias*, Montevideo, Uruguay (Curator: Dr. Miguel Simó). Description style, terms and morphological characters examined are the usually used in the standards of Theraphosidae taxonomy (Pérez-Miles, 2020) and specially used in last *Plesiopelma* studies (Ferretti & Barneche, 2013; Ferretti et al., 2024). All measurements are given in millimeters and were taken with an ocular micrometer and digital caliper. Photographs were taken with a Leica M205A stereomicroscope. Palpal bulbs were removed from palp for examination and photographed in prolateral and retrolateral views. Spermathecae were dissected and cleared by immersion in clove oil to make transparent tissues that cover the structure. For the study of urticating setae, they were removed from six different points of the urticating patch on the abdomen (central and lateral lines, anterior, medial and posterior) using a forceps and examined by an optical microscope (Nikon YS 100). Description and notation for leg and palpal spines follow Petrunkevitch (1925).

Abbreviations: AME = anterior median eyes, ALE = anterior lateral eyes, PME = posterior median eyes, PLE = posterior lateral eyes, PLS = posterior lateral spinneret, PMS = posterior median spinneret, PI = prolateral inferior keel, PS = prolateral superior keel, D =dorsal, V= ventral, P = prolateral, R = retrolateral, PCR = polymerase chain reaction.

This paper and its nomenclatural acts have been registered in ZooBank, the online registration system for the ICZN (http://zoobank.org/ urn:lsid:zoobank.org:pub:2CA474CA-9C5A-456A-B193-C20A3CB90C28).

MOLECULAR PROCEDURES AND ANALYSIS

For DNA extraction, the tissue was digested with proteinase K and lysis buffer, then the proteins were precipitated with sodium chloride while the DNA was precipitated with isopropanol, which was resuspended in water (protocol modified from Miller et al., 1988). The mitochondrial marker cytochrome oxidase subunit 1 (COI) was used. For PCR amplification, the universal primers LCO-1490 and HCO-2198 were used (Folmer et al., 1994). The PCR was performed using NZYtech Green Master Mix following their standard protocol. The PCR was performed in the SimpliAmp thermocycler (appliedbiosystems by thermo fisher scientific) and Ferretti et al. (2024) cycling conditions were followed. The PCR products were sent for purification and subsequent sequencing to the company Macrogen (South Korea), where both strands were sequenced. The chromatograms were inspected and the sequences were edited using MEGA11 (Tamura et al., 2021), obtaining a fragment of 595 base pairs for two individuals (FCE-My 1440, FCE-My 1441).

We added 16 sequences belonging to *Plesiopelma longisternale* and *P. absconditus* and five sequences of *Grammostola* Simon 1892 as an outgroup (Table 1). An alignment was made with the ClustalW algorithm of MEGA11. A genetic distance matrix was calculated using the p-distance model in MEGA11. Three phylogenetic inferences were performed with the softwares MEGA11, IQ-TREE (Nguyen et al., 2015) and BEAST2 (Bouckaert et al., 2014). 1. Phylogeny in MEGA11: Maximum likelihood inference under a Tamura-Nei evolutionary model with 1,000 bootstrap iterations. 2. Phylogeny in IQ-TREE: Maximum likelihood inference performed in the online server (IQ-TREE, n. d.) with 1,000 iterations of 'ultrafast bootstrap.' The automatic model selection using ModelFinder according to the BIC criteria was TIM3+F+G4. 3. Phylogeny in BEAST2: Bayesian inference. The XML file was created in BEAUti, and two independent runs were performed in BEAST2, with the default parameters. The Monte-Carlo Markov chains were run for 100 million generations, and trees were sampled every 10,000 generations, so 10,000 trees were saved. Trees were annotated with TreeAnotator with a burnin of 10%. In TRACER (Rambaut et al., 2018) the convergences of the independent runs were checked. Also, it was confirmed that the estimated sample sizes (ESS) for each parameter were greater than 200, as an indicator of independence

Table 1. Samples taken from the Genbank.

	Sample	NCBI Code
Plesiopelma absconditus	El Singüil 29	PP028752.1
	El Singüil N3	PP028762.1
	El Singüil N4	PP028763.1
Plesiopelma longisternale	Cumbrecita 30	PP028753.1
	Cumbrecita 31	PP028754.1
	Cumbrecita 34	PP028757.1
	Balcarce 36	PP028759.1
	Tandil N5	PP028764.1
	Tandil N6	PP028765.1
	Villa Ojo de Agua 43	PP028760.1
	Villa Ojo de Agua 44	PP028761.1
	Achiras 33	PP028756.1
	Alpa Corral 35	PP028758.1
	FUNKE 27	PP028750.1
	Lihue Calel 32	PP028755.1
	PPET 28	PP028751.1
Out-group	*Grammostola andreleetzi* Vol 2008	KT965218.1
	Grammostola anthracina C.L. Koch 1842	KT965202.1
	Grammostola burzaquensis Ibarra 1946	KT965249.1
	Grammostola pulchra Mello-Leitão 1921	KT965206.1
	Grammostola quirogai Montes de Oca, D'Elía & Pérez-Miles 2016	KT965275.1

between the samples in the run. Following the principles of integrative taxonomy, we delimited the species based on the congruence of the results obtained across the different sources of data (Padial et al., 2010; Schlick-Steiner et al., 2010; Carstens et al., 2013).

RESULTS

PHYLOGENY AND SPECIES DELIMITATION

The results of the three phylogenetic inferences were congruent. In the present study, the greater diversity in *P. logisternale* is related with the number of terminals included in the analysis, due to the greater geographic range. *Plesiopelma* samples from Argentina were resolved into two separate clades corresponding to *P. longisternale* and *P. absconditus*. Individuals from Lavalleja and Maldonado (Uruguay) were grouped as a distinct clade, with individuals from Argentina as a sister group, with high statistical support in the three inferences (bootstrap = 100, ultrafast bootstrap = 100, posterior probability = 1) (Figure 1). In addition, the genetic distances of the *Plesiopelma arevaloae* sp. nov. samples from Uruguay were always higher than 10% in comparison with all other populations considered (Table 2). The results based on molecular evidence were supported by the morphological differences found, particularly in the number of labial and maxillary cuspules, the morphology of the copulatory bulb in males, the morphology of spermathecae in females and the body size (see below).

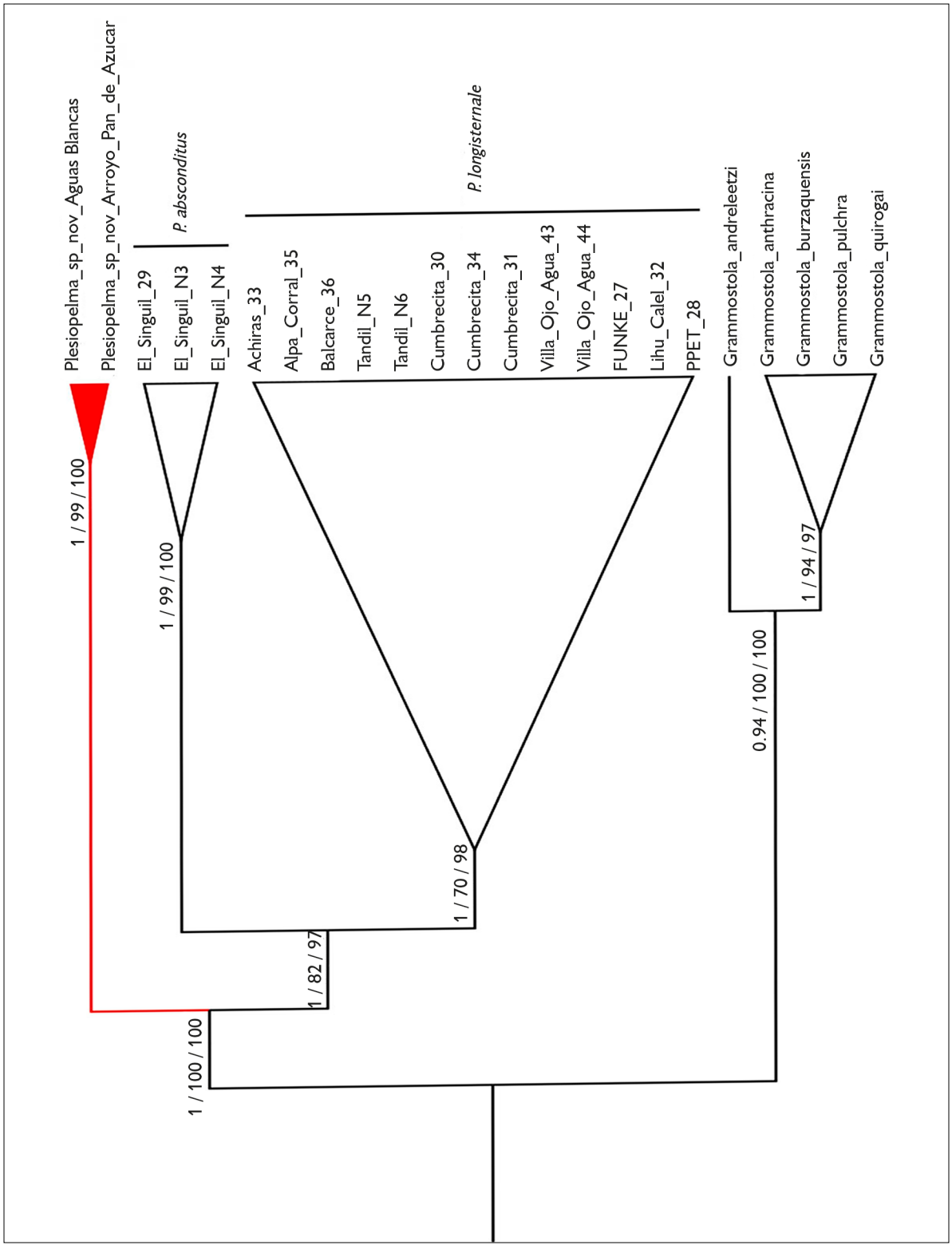

Figure 1. Summary of maximum likelihood and bayesian inference trees showing node support (posterior probability/ultrafast Bootstrap – IQ-TREE/Bootstrap - Mega).

Table 2. Inter-population p-distances calculated for COI sequences: a pairwise genetic distance measure based on nucleotide differences, where the numbers in e-ach column correspond to those of each sample.

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1	Aguas Blancas 1441																						
2	Arroyo Pan de Azucar 1440	0,02																					
3	*Plesiopelma absconditus*	0,12	0,11																				
4	*Plesiopelma absconditus*	0,12	0,11	0,00																			
5	*Plesiopelma absconditus_*	0,12	0,11	0,00	0,00																		
6	Achiras 33	0,11	0,10	0,08	0,08	0,08																	
7	Alpa Corral 35	0,11	0,10	0,08	0,08	0,08	0,00																
8	Balcarce 36	0,10	0,10	0,08	0,08	0,08	0,01	0,01															
9	Tandil N5	0,10	0,10	0,08	0,08	0,08	0,01	0,01	0,01														
10	Tandil N6	0,10	0,10	0,08	0,08	0,08	0,01	0,01	0,00	0,00													
11	Cumbrecita 30	0,11	0,11	0,08	0,08	0,08	0,01	0,01	0,01	0,01	0,01												
12	Cumbrecita 34	0,11	0,11	0,08	0,08	0,08	0,01	0,01	0,01	0,01	0,01	0,00											
13	Cumbrecita 31	0,11	0,11	0,08	0,08	0,08	0,01	0,01	0,01	0,02	0,01	0,00	0,00										
14	Villa Ojo Agua 43	0,11	0,11	0,08	0,08	0,08	0,01	0,01	0,01	0,02	0,02	0,01	0,01	0,01									
15	Villa Ojo Agua 44	0,11	0,11	0,08	0,08	0,08	0,01	0,01	0,01	0,02	0,02	0,01	0,01	0,01	0,00								
16	FUNKE 27	0,12	0,11	0,08	0,08	0,08	0,01	0,01	0,02	0,03	0,03	0,02	0,02	0,02	0,02	0,02							
17	Lihu Calel 32	0,11	0,10	0,08	0,08	0,08	0,00	0,00	0,01	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01						
18	PPET 28	0,11	0,10	0,08	0,08	0,08	0,00	0,00	0,01	0,02	0,02	0,01	0,01	0,01	0,01	0,01	0,01	0,00					
19	*Grammostola andreleetzi*	0,15	0,15	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16				
20	*Grammostola anthracina*	0,16	0,15	0,17	0,17	0,17	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,16	0,17	0,16	0,16	0,14		
21	*Grammostola burzaquensis*	0,18	0,18	0,17	0,17	0,17	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,18	0,13	0,10		
22	*Grammostola pulchra*	0,17	0,17	0,16	0,16	0,16	0,16	0,16	0,16	0,15	0,15	0,16	0,16	0,16	0,16	0,16	0,17	0,16	0,16	0,14	0,11	0,09	
23	*Grammostola quirogai*	0,17	0,16	0,18	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,17	0,18	0,17	0,17	0,14	0,11	0,11	0,10

TAXONOMY

Family Theraphosidae Thorell, 1869
Subfamily Theraphosinae Thorell, 1870
Genus *Plesiopelma* Pocock 1901
Plesiopelma Pocock, 1901:553; Petrunkevitch, 1911:85; Pérez-Miles et al., 1996:55 (removed of synonymy of *Citharacanthus*)
Citharacanthus Pocock, 1901:551; Pérez-Miles et al., 1996:46 (in part). *Dryptopelma* Simon, 1889:402 (in part)
Eurypelma C. L. Koch, 1850:70 (in part); Roewer, 1942:240 (in part); Brignoli, 1983:137 (in part)
Ceropelma Mello-Leitão, 1923:175; Pérez-Miles et al., 1996:55 (Synonymy with *Plesiopelma*)

Type species: *P. myodes* Pocock, 1901, by monotypy.

Plesiopelma arevaloae Arias & Pérez-Miles sp. nov.
http://zoobank.org/urn:lsid:zoobank.org:act:5D52BDB9-6F88-4CB5-B4CD-E89C695FBBFB
(Figures 2-6, 8, 9; Table 3 and 4)

Type material. Holotype ♂. Uruguay, Lavalleja, Aguas Blancas (34º 32' S, 55º 24' W), 15 May 2008, C. Perafán, L. Baruffaldi, F. Pérez-Miles (FCEMy-0773). Paratypes ♀, same locality, 7 July 2000, F.G. Costa, F. Pérez-Miles, M. Pérez, (FCEMy-1415). Aguas Blancas (34° 32' S, 55° 24' W): 15 May 2008, 1 ♂, Baruffaldi, Perafán, Montes de Oca & Pérez-Miles (FCE-My 0772). Aguas Blancas (34° 32' S, 55° 24' W): 15 May 2008, 1♂, Baruffaldi, Perafán, Montes de Oca & Pérez-Miles (FCE-My 0777). Aguas Blancas (34° 32' S, 55° 24' W): 15 May 2008, 2 ♂, Baruffaldi, Perafán, Montes de Oca & Pérez-Miles (FCE-My 0783). Aguas Blancas (34° 32' S, 55° 24' W): 15 May 2008, 1 ♂, Baruffaldi, Perafán, Montes de Oca & Pérez-Miles (FCE-My 0776). Aguas Blancas (34° 32' S, 55° 24' W), 2 ♀, (FCE-My 1415).

Non-type material. Maldonado: Sierra de las Animas (34º 42' S, 55° 19' W): 19 April 1953, 1 ♂, P.R. San Martín, L.C Zolessi (FCE-My 0659). Sierra de las Ánimas (34° 42' S, 55° 19' W): 19 April 1953, 1 ♂, P.R. San Martín, L.C Zolessi (FCE-My 0660). Sierra de las Ánimas (34° 42' S, 55° 19' W): 19 April 1953, 1 ♂, P.R. San Martín, L.C Zolessi (FCE-My 0450). Sierra de las Ánimas (34° 42' S, 55° 19' W): 19 April 1953, 1 ♀, P.R. San Martín, L.C Zolessi (FCE-My 0520). Sierra de las Ánimas (34° 42' S, 55° 19' W): 01 October 1962, 1 ♀, P.R. San Martín (FCE-My 0481). Sierra de las Ánimas (34° 42' S, 55°19' W): 13 April 1987, 1 ♀, (FCE-My 0528). Sierra de las Ánimas (34° 42' S, 55° 19' W): 08 December 1984, 1 ♀, M. Menenghel. (FCE-My 0499). Sierra de las Ánimas (34° 42' S, 55° 19' W): 13 April 1987, 1 ♀, De Leon, E Gudynas, F. Pérez-Miles (FCE-My 0504). Sierra de las Ánimas (34° 42' S, 55° 19' W): 19 April 1953, 1 ♀, P.R. San Martín, L.C Zolessi (FCE-My 0481). Maldonado, Arroyo Pan de Azúcar (34° 38' S, 55° 14' W): 10 June 2023, 1 ♀, F. Pérez-Miles (FCE-My 1440). Uruguay, Lavalleja, Aguas Blancas (54° 32' S, 55° 24' W), June 2023, 1 ♀, F. Pérez-Miles (FCE-My 1441).

Figure 2. *Plesiopelma arevaloae* sp. nov. paratype male (FCEMy-783): A) carapace, B) sternum, C) abdomen, dorsal view, D) abdomen, ventral view.

Geographic range. Lavalleja and Maldonado, Uruguay (Figure 7).

Diagnosis. *Plesiopelma arevaloae* sp. nov. differs from most of *Plesiopelma* species, except from *P. insulare* and *P. paganoi*, by the high number of labial and maxillary cuspules;more than 125-138 labial and 251-188 maxillary; male-female (Figures 2B, 6B). In other species the number of labial cuspules is about: 30 to 48 (males), 67 to 90 (females) while maxillary cuspules from 90 to 96 (males) and 67 to 197 (females). Male differs from *P. insulare* by the aspect of the palpal bulb with narrower PS and PI and the more proximal location of the embolus tooth (Figure 3). Additionally, it differs from *P. paganoi* in the presence of embolus tooth and smaller body size. Also differs from male *P. longisternale* in the absence of a group of short thick spines on the metatarsal nodule on leg I (Figures 4A-4B). Additionally, it differs from the male of *P. myodes* in the smaller body size (26 mm total length in *P. myodes* and 14-18 mm in *P. arevaloae* sp. nov.). Females additionally differ from other species in the shorter spermathecal receptacles (Figure 8).

Description. Color *in ethanol* (male holotype FCEMy-0773): carapace and legs dorsally dark brown with whitish setae on carapace border, coxae and trochanters. Abdomen dorsally black with reddish setae on live spiders (Figure 2). Urticating setae type III (on the center of the patch) and IV (on the periphery) present. Total length (not including chelicerae or spinnerets) 16.1. Cephalothorax 8.2 long, 7.2 wide. Abdomen 6.3 long, 4.2 wide. Spinnerets: PMS, 1.0 long, 0.15 wide; PLS, 1.7 basal, 0.95 middle, 1.35 digitiform distal. Eyes: tubercle length 0.9, width 1.2. Clypeus narrow, 0.2. Anterior eyes row procurved, posterior row recurved. Eyes sizes and interdistances: AME 0.18, ALE 0.28, PME 0.15, PLE 0.23, AME – AME 0.25, AME – ALE 0.13, PME – PME 0.55, PME – PLE 0.08, ALE – PLE 0.13. Fovea transverse, procurved, 1.4 wide. Labium length 1.5, width 1.4, with ca.125 cuspules. Maxillae each with ca. 251 cuspules spread over internal face. Sternum: length 3.8, width 2.4. Chelicerae with 10 large teeth on promargin, a group of 6 smaller basal teeth behind promarginal line. Length of legs and palpal segments in Table 3. Tarsi I – IV densely scopulate, scopula I entire, II-IV divided by lines of setae, increasing in width towards posterior legs. Metatarsi I fully scopulate, II-III 1/2 apical scopulate, IV 1/3 apical scopulate. Spination: femora of palp 1D; I 1P; II 1D; III; 1D, IV 0. Tibiae: palp 1D; I 2D, 3V; II 1P, 5V; III 2P, 2R, 5V; IV 2P, 2R, 5V. Metatarsi: I 1 V; II 1D, 2V; III 3P, 1R, 6V; IV 2P, 3D, 2R, 5V. Tarsi I – IV, palps 0. Presence of spiniform setae on the retrolateral face of palpal tibia (Figure 3). Tibia I with ventral apophysis formed by two branches (Figure 4): prolateral smaller, with a basal megaspine, absence of spines on inner face; retrolateral

Figure 3. *Plesiopelma arevaloae* sp. nov. holotype male (FCEMy-773). Left palp, arrow shows a field of spiniform setae, retrolateral view.

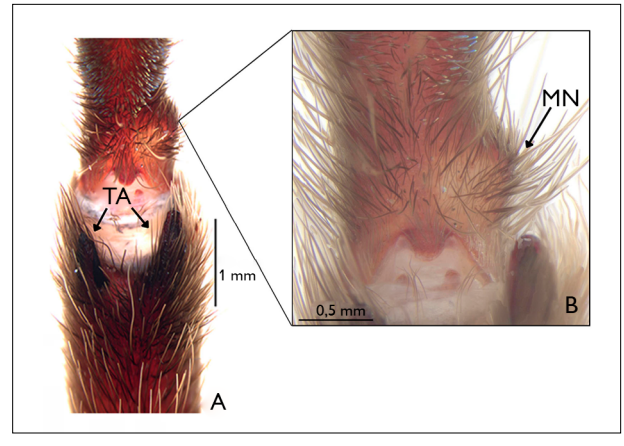

Figure 4. *Plesiopelma arevaloae* sp. nov. holotype male (FCEMy-773): A) left leg I showing tibial apophyses (TA) and metatarsal node (MN), ventral view, B) close up of the metatarsal node (MN).

Table 3. Length of legs and palp of *Plesiopelma arevaloae* sp. nov. holotype male.

	I	II	III	IV	Palp
Femur	7.7	6.5	5.7	7.2	4.2
Patella	4.1	3.4	3.2	3.3	2.4
Tibia	5.4	4.3	3.6	5.6	3.8
Metatarsus	4.3	3.8	3.8	6.0	-
Tarsus	3.2	2.7	3.2	3.8	1.8

larger with a subapical megaspine and five short spines on inner face. Metatarsus of leg I with basal retrolateral rounded nodule slightly developed (Figure 4) and flexes between both branches of tibial apophysis, touching their medial portion. Male palpal bulb piriform, tapering abruptly, with well-developed PI and PS, close and about parallel to each other (Figure 5). Embolus slender, as long as half of the total bulb length. Subapical tooth present on the middle of the embolus length (Figure 5C).

Female. Color *in ethanol* (paratype FCEMy-1415): carapace and legs dorsally brown with whitish setae on carapace border, coxae and trochanters. Abdomen dorsally black with reddish setae in live spiders (Figure 6). Color alive as in Figure 9. Urticating setae type III (on the center of the patch) and IV (on the periphery) present. Total length (not including chelicerae or spinnerets) 18.8. Cephalothorax 7.4 long, 6.3 wide. Abdomen 11.7 long, 7.9 wide. Spinnerets: PMS, 0.9 long, 0.14 wide; PLS, 1.6 basal, 1.15 middle, 1.05 digitiform distal. Eyes: tubercle length 0.7, width 1.10. Clypeus narrow, 0.3. Anterior eyes row procurved, posterior row recurved. Eyes sizes and inter distances: AME 0.13, ALE 0.28, PME 0.13, PLE 0.24, AME – AME 0.28, AME – ALE 0.10, PME – PME 0.55, PME – PLE 0.05, ALE – PLE 0.08. Fovea transverse, procurved, 0.8 wide. Labium length 1.05, width 1.50, with ca. 138 cuspules.

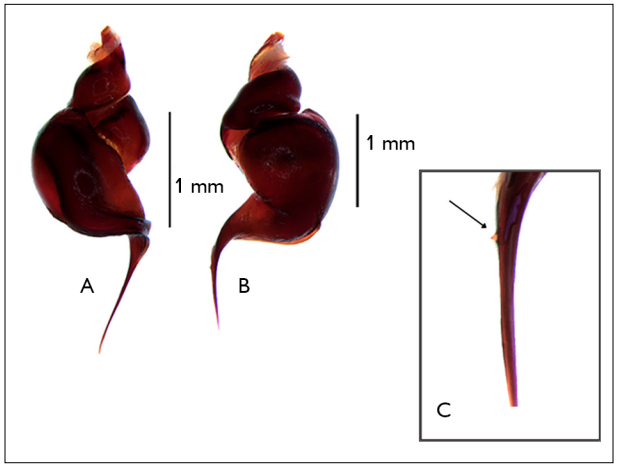

Figure 5. *Plesiopelma arevaloae* sp. nov. holotype male (FCEMy-773). Left palpal bulb. A) Prolateral view, B) retrolateral view, C) close up of distal embolus, arrow shows the tooth.

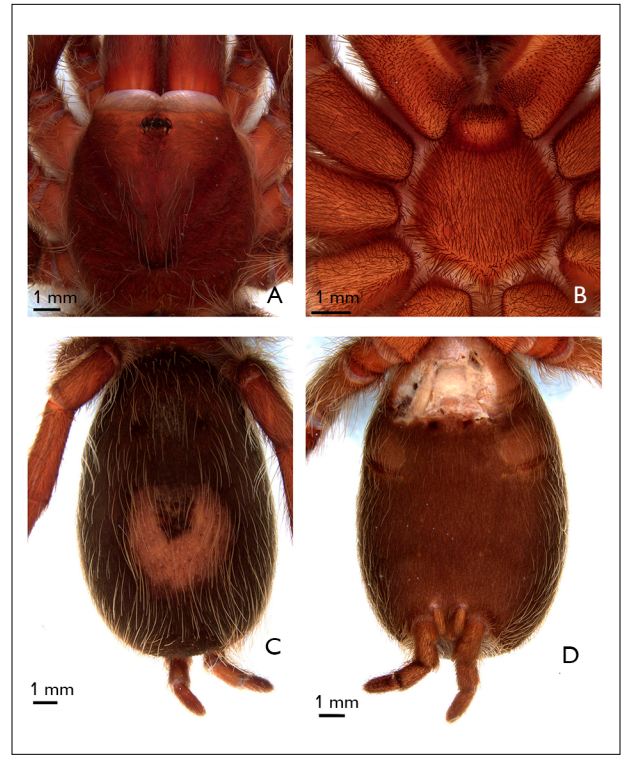

Figure 6. *Plesiopelma arevaloae* sp. nov. paratype female (FCEMy-1415): A) carapace, B) sternum, C) abdomen, dorsal view, D) abdomen, ventral view.

Maxillae each with ca. 188 cuspules spread over internal face. Sternum: length 3.45, width 3.55. Chelicerae with 10 large teeth on promargin, a group of 9 smaller basal teeth behind promarginal line. Length of legs and palpal segments in Table 1. Tarsi I – IV densely scopulate, scopula I entire, II-IV divided by lines of setae, increasing in width towards posterior legs. Metatarsi I 2/3 apical scopulate, II-III 1/2 apical scopulate, IV 1/3 apical scopulate. Spination: femora of palp 0; I 0; II 1D; III and IV 0. Tibiae: palp 3V; I 0; II 0; III 2P, 1R, 1V; IV 2R, 5V. Metatarsi: I 1 V; II 2V; III 3P, 1C, 6V; IV 1P, 2R, 6V. Tarsi I – IV, palps 0. Spermathecae constituted by two separated tubular sinusoidal receptacles with the fundus subglobose; receptacles are shorter than other *Plesiopelma* species (Figure 8).

Etymology. The specific name is a tribute to Julia Arévalo, born in Lavalleja, Uruguay (1898-1985) and the first woman senator in Latin America.

Comments on distribution and habitat. *Plesiopelma arevaloae* sp. nov. was found in the "Sierras del Este" eco-region (Brazeiro, 2015), particularly in stony hills ranges in the departments of Maldonado and Lavalleja where the Cuchilla Grande extends (Figure 10). In these hills, the heights vary between 200 and 500 meters above sea level, the average annual temperature is 17 °C and annual rainfall varies between 1,000 and 1,200 mm, the landscape has a matrix of meadow with patches of tree and shrub vegetation, as well as rocky outcrops (Evia & Gudynas, 2000). The spiders are usually found under rocks, in shelters that they cover with abundant and dense silk; the refuges are similar to those of *P. longisternale* (Pérez-Miles & Ferretti, 2014). The region contains an intermediate level of specific richness of vertebrates and woody species with few endemic species but a considerable number of indicator species (Brazeiro, 2015). Grassland and hill forest vegetation predominate.

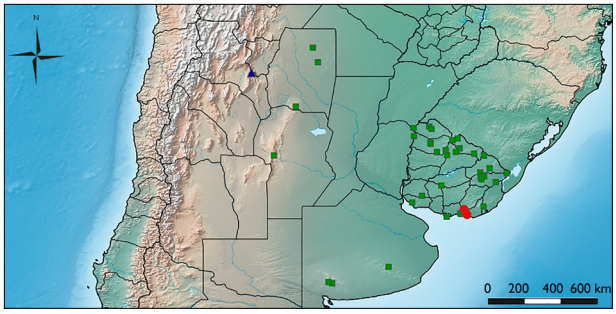

Figure 7. Geographic distribution of *Plesiopelma arevaloae* sp. nov. (red circles), *Plesiopelma longistarnale* (green squares) and *Plesiopelma absconditus* (blue triangle). Map: Arias (2024).

Figure 8. *Plesiopelma arevaloae* sp. nov. paratype female (FCEMy-1415). Spermathecae, ventral view.

Figure 9. *Plesiopelma arevaloae* sp. nov. female, habitus.

Figure 10. Habitat of the type locality of *Plesiopelma arevaloae* sp. nov. in Uruguay, Lavalleja, Aguas Blancas. Photo: González (2024).

Table 4. Length of legs and palp of *Plesiopelma arevaloae* sp. nov. paratype female.

	I	II	III	IV	Palp
Femur	5.2	4.8	3.9	5.6	4.0
Patella	3.4	2.9	2.3	3.0	2.4
Tibia	3.9	3.0	2.5	3.9	2.5
Metatarsus	2.6	2.4	2.8	4.0	-
Tarsus	2.3	2.2	2.2	2.7	2.7

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AUTHORS' CONTRIBUTION

V. Arias contributed to conceptualization, data curation, analysis, methodology, research, and writing (original draft); M. Hilario to data curation, analysis, research, and writing (review and editing); N. Ferretti to analysis, research, and writing (review and editing); and F. Pérez-Miles to conceptualization, analysis, methodology, research, project administration, and writing (review and editing).