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A new species of *Castianeira* (Araneae: Corinnidae: Castianeirinae) from central South America

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Abstract

Castianeira monai sp. nov. is described based on specimens from south-western Paraguay and southern Bolivia, the new species has a distribution in Humid Chaco and the Beni Savanna ecoregion. The new species is distinct in embolic morphology with two thicker basal coils and four thinner tapering coils to apex, also the proportions of anterior eyes, the presence of distinct anterior abdominal spines, tibia I ventral spination 3-2 and a bright red abdomen and orange carapace separate this species from Neotropical congeners.

Keywords: ant-mimic • Bolivia • Humid Chaco • taxonomy

Introduction

Castianeira Keyserling, 1879 contains 121 species (World Spider Catalog 2023), making it the largest genus within Corinnidae (Karsch, 1880). It is a troublesome genus because it is not monophyletic, with substantial variation exhibited across the intercontinental distribution of the genus; indeed, the African species (and genera within) are currently being revised (Haddad, pers. comm.). In South America, 39 species of *Castianeira* are currently known (World Spider Catalog 2023), including the type species *C. rubicunda* Keyserling, 1879 from Colombia.

Castianeira is generally seen as the dumping ground genus for “somewhat unspecialised weakly mimetic ground-dwelling castianeirine spiders” (Haddad 2012: 152). A general diagnosis that can be applied to the genus includes: weakly mimetic with slender legs, posterior eye row weakly to moderately procurved, anterior median eyes usually larger than laterals, in males a large dorsal scutum covering most of the abdomen, in females covering up to ½ abdomen or absent, ventral epigastric scutum present in both sexes and the absence of a proximal retrolateral apophysis on the cymbium (Haddad 2012; Deeleman-Reinhold 2001).

Between 2018–2020, a preliminary survey into the spider fauna of the south-western Paraguayan department of Ñeembucú in the Humid Chaco ecoregion was initiated by the author. Several interesting castianeirines have been published from these collections including the discovery of two

species of the genus *Grismadox* by Pett, Rubio & Perger (2022), and first confirmed males (and new records) of *Castianeira spinipalpis* Mello-Leitão, 1945 (Pett & Perger 2021). The objective of this paper is to report on a new species of *Castianeira*, based on four male specimens, two from Ñeembucú in Paraguay, and two Bolivian specimens loaned to the author from Staatliches Museum für Naturkunde Karlsruhe (Germany).

Materials and methods

All material is preserved in 70% ethanol. The left pedipalp of the male holotype was dissected and illustrated. Examinations were carried out with an AmScope ZM-4T stereomicroscope or an Olympus BX61. Images were taken using either a Zeiss Discovery V12 with an AxioCam 208 colour camera or an Olympus BX61 with a DP74 camera. All images were z-stacked with between 10–30 images merged into a single photomontage using Helicon Focus 6.7 (www.heliconsoft.com). Pedipalp illustrations were made by using a Wacom One graphics tablet with images underlaid at 60% opacity on the program Autodesk Sketchbook (see Cala-Riquelme 2021). Images were adjusted in Adobe Photoshop version 21.0.1 for contrast and white balance. Plates were also composed in Adobe Photoshop.

Abbreviations: AE = anterior eyes, AER = anterior eye row, AME = anterior median eyes, AL = abdomen length, ALE = anterior lateral eyes, AW = abdomen width, CH = carapace height, CL = carapace length, CW = carapace width, Em = embolus, RTA = dorsal retrolateral tibial apophysis, PE = posterior eyes, PER = posterior eye row, PLE = posterior lateral eyes, PME = posterior median eyes, SD = sperm duct, SL = sternum length, SW = sternum width.

Collection abbreviations: BMNH = British Museum of Natural History, London; CIPLT = Ar – Colección Científica Para La Tierra, Pilar, Paraguay; MACN = Museo Argentino Ciencias Naturales “Bernardino Rivadavia”, Buenos Aires, Argentina; SMNK = Staatliches Museum für Naturkunde Karlsruhe, Karlsruhe, Germany.

Corinnidae Karsch, 1880

Castianeirinae Reiskind, 1969

Castianeira Keyserling, 1879

Castianeira monai sp. nov. (Figs. 1–8)

Material examined: Holotype ♂ PARAGUAY: Ñeembucú department, Desmochados, Estancia Cabaña Santa Elisa II, 22 June 2020, Brogan L. Pett & Varvara Vladimirova leg. (CIPLT-Ar 692(1)). Paratypes: 1♂ PARAGUAY: same data as holotype (except CIPLT-Ar 1777). BOLIVIA: 1♂ Beni, Ballivian, Espiritu, 02 April 1987, W. Hanagarth & J. Sarmiento leg. (SMNK-ARA 13459). 1♂ same data as previous, except 01 April 1987 (SMNK-ARA 13317).



Figs. 1–4: *Castianeira monai* sp. nov., male holotype. **1** habitus, dorsal view; **2** same, lateral view; **3** same, ventral view; **4** same, frontal view. Scale bar = 0.5 mm.

Etymology: The specific epithet refers to the Guaraní mythological figure Moñái, the third cursed child of Tau and Kerana, lord of the air and spirit of open fields. Moñái takes the form of a large serpent with two horns on his head that function as antennae, the horns also have hypnotic powers. Reference is made to the distinct anterior abdominal spines of *Castianeira monai* sp. nov.

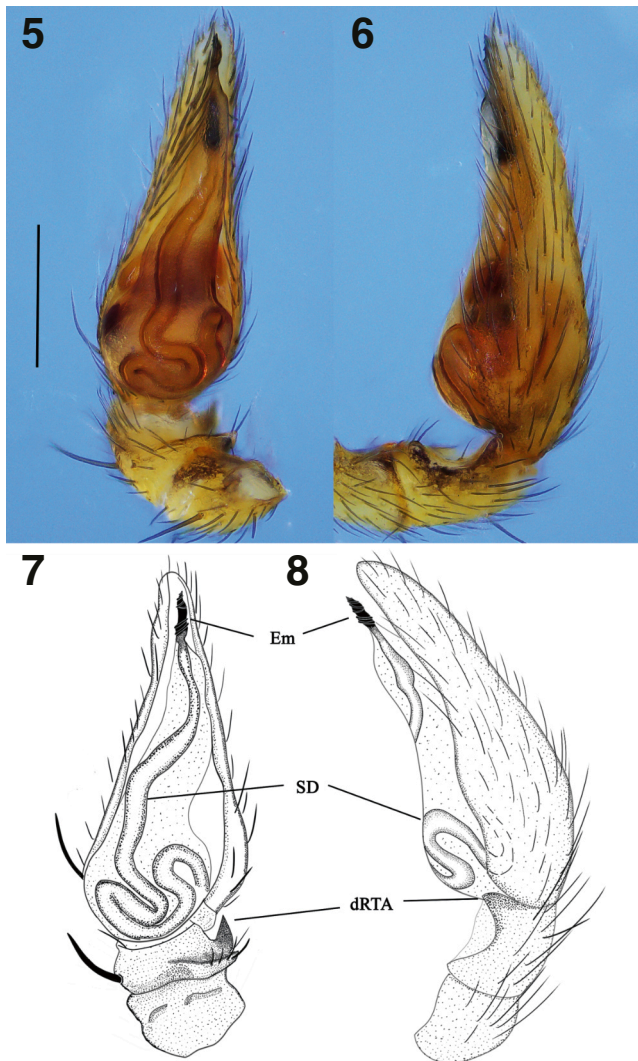
Diagnosis: Embolic morphology separates this species from all others in the genus. Embolus with two thick basal coils before a small gap then four thinner tapering coils to a sharp point. *Castianeira monai* sp. nov. shares 3-2 ventral tibia I spines with seven South American congeners: *C. albivulvae* Mello-Leitão, 1922, *C. cylindracea* Simon, 1896, *C. littoralis* Mello-Leitão, 1926, *C. rutilans* Simon, 1896, *C. tenuiformis* Simon, 1896, and *C. valida* Keyserling, 1891. *Castianeira monai* sp. nov. may be separated from those species by: 1) orange oval carapace (v. elongated black carapace in *C. albivulvae*, *C. cylindracea*, *C. tenuiformis*, black carapace in *C. dubia* and *C. rutilans*); 2) sparse short white setae on carapace (v. covered with yellow setae in *C. cylindracea*, covered with white setae in *C. rutilans* and *C. valida*); 3) red abdomen with posterior black transverse band of setae (v. dark abdomens ranging from completely black to violet in all other species, some with transverse silver bands); 4) two distinct, straight anterior abdominal spines (v. absent in all other species); 5) AME appearing roughly 1.5× ALE (v. AME 2–3× larger than ALE in *C. albivulvae*, *C. cylindracea*, *C. dubia*, and *C. valida*); 6) PER straight to weakly recurved from above (v. procurved in *C. dubia*, *C. rutilans*, *C. tenuiformis*, and *C.*

valida); 7) PEs not considerably smaller than AEs (v. PEs considerably smaller than AEs in *C. cylindracea* and *C. tenuiformis*).

Castianeira monai sp. nov. is clearly differentiated from all Central American congeners by the embolus with two broader basal coils before a small gap and a thrice coiled sharp apex (see Reiskind (1969) for illustrations of all known Central American species).

Type material examined for comparison: BMNH: *Castianeira brevis* Keyserling, 1891 1♀ BRAZIL: Corcovado. *Castianeira maculata* Keyserling, 1891, 1♀ BRAZIL: Alto da Serra Nova Friburgo; *Castianeira obscura* Keyserling, 1891, 1♂ BRAZIL: Espirito Santo; *Castianeira onerosa* (Keyserling, 1891), 1♀ BRAZIL: Palmeiras, St Antonios & Rio Pamba; *Castianeira valida* Keyserling, 1891, 1♀ BRAZIL: Espirito Santo; *Castianeira vittata* Keyserling, 1891, 1♀ BRAZIL: Blumenau. MACN: *Castianeira argentina* Mello-Leitão, 1942, 1♀ ARGENTINA: Villa Unión, Santiago del Estero; *Castianeira buelowae* Mello-Leitão, 1946, 1♂ PARAGUAY: Puerto Pinasco; *Castianeira spinipalpis* Mello-Leitão, 1945 1♀; *Castianeira claverensis* Mello-Leitão, 1943, 1♀ ARGENTINA: Mina Clavero (Córdoba); *Castianeira pictipes* Mello-Leitão, 1942, 1♂ 1♀ ARGENTINA: Luján, Santiago del Estero; *Castianeira xanthomela* Mello-Leitão, 1941, 1♀ ARGENTINA: Silva.

Description of male holotype: Measurements: CL 1.56, CW 0.97, CH 0.56, SL 0.72, SW 0.58, AL 1.96, AW 0.94, chelicera length 0.36, chelicera width 0.22. Legs: I: 0.94, 0.32, 0.92, 0.98, 0.68. II: 0.92, 0.28, 0.80, 0.82, 0.59. III: 0.89, 0.32, 0.78, 0.90, 0.51. IV: 1.22, 0.38, 1.18, 1.38, 0.70.



Figs. 5–8: *Castianeira monai* sp. nov., pedipalp. **5, 7** ventral views; **6, 8** retrolateral views. Scale bar = 0.5 mm.

Eyes: AME 0.10, ALE 0.07, PME 0.08, PLE 0.08. Colouration (Figs. 1–4): Carapace bright orange with distinct band of black around lateral margins, eyes ringed in black, very sparse short white setae at highest concentrations just posterior to PLEs, sternum orangish brown; legs brownish orange, with black stripes especially prolaterally on femorae I–III and tibiae III & IV, coxae all light; dorsal scutum generally red, with three very faint bands of short white setae in anterior 3/5th interspersed with scutum with faint black mottling, band of mid-length golden setae around 4/5th length followed by darker band of black mottling, venter orangish red with lighter ventral scutum.

Carapace (Figs. 1–2) low, generally oval $\sim 1.5\times$ longer than wide, sloping proximally about half fovea length posterior to fovea; cephalic region weakly projected and sub-rectangular. Eyes (Fig. 4): PER straight to slightly recurved in dorsal view but clearly moderately procurved in anterior view, AER weakly procurved; AME just less than $1.5\times$ size of ALE. Sternum (Fig. 3) broad shield-shaped, devoid of setae. Legs: formula 4123, all slender, all femora with at least two strong dorsal spines. Chelicera with two teeth on both promargin and retromargin; apical promargin tooth larger, retromarginal teeth same sizes. Abdomen (Figs. 1–3) pear shaped, gradually widening along its length until reaching widest point at 4/5th along length; pair of sclerotized spines at anterior end of scutum projected at 180° angle. Pedipalp (Figs. 5–8) tibia with two prolateral spines and a retrolateral concavity with distinctive claw-like RTA structure; bulb pear shaped, with medial, prolateral and retrolateral loop of sperm duct, long neck before sclerotized, nearly straight multi-coiled embolus about 1/8th bulb length, basal two coils thicker and closer together, small gap before tightly wound mass of five and a half gradually tapering coils to pointed apex. Leg spination: I femur p11 d3, tibia

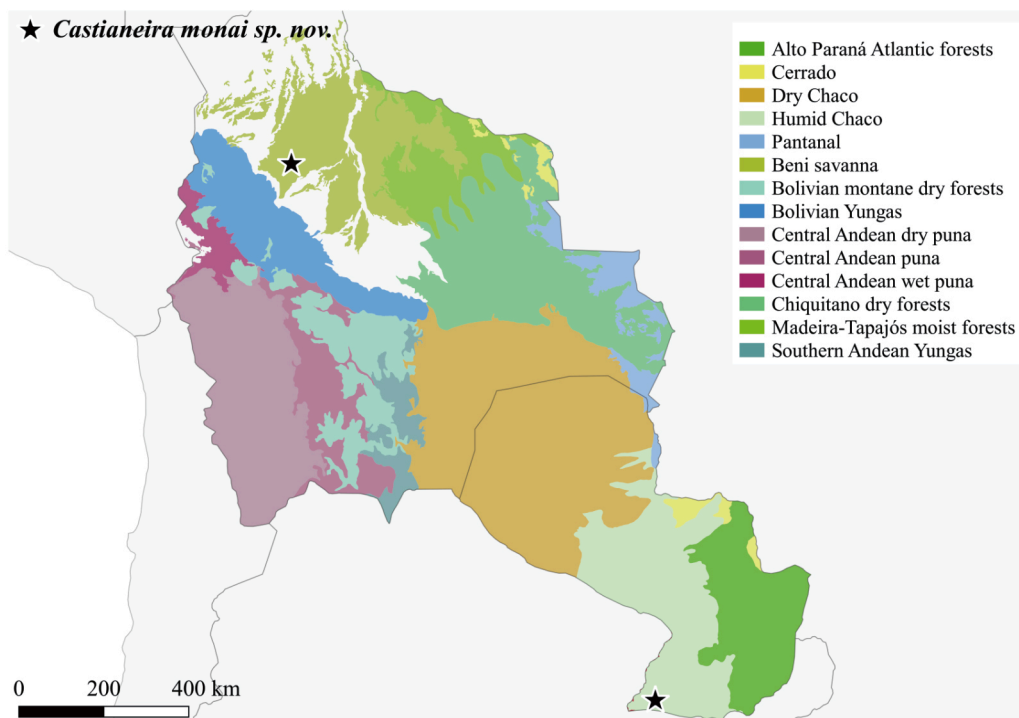


Fig. 9: Ecoregion map of Paraguay and Bolivia showing type localities of *Castianeira monai* sp. nov.

3-2 (3plv 2rlv, note: basal plv spine is very small, less than half length and width of other tibia I spines), metatarsus 2-2. II.

Distribution and natural history (Fig. 9): The species is known from seasonally flooded grasslands in a wetland region in southwestern Paraguay (Humid Chaco habitat), and from the Beni Savanna ecoregion in Bolivia.

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References

- CALA-RIQUELME, F. 2021: Autodesk Sketchbook: An application that minimizes time and maximizes results of taxonomic drawing. *Zootaxa* **4963**: 557–586.
- DEELEMEN-REINHOLD, C. L. 2001: *Forest spiders of South East Asia*. Leiden: Brill.
- HADDAD, C. R. 2012: *Advances in the systematics and ecology of African Corinnidae spiders (Arachnida: Araneae), with emphasis on the Castianeirinae*. PhD thesis, University of the Free State, Bloemfontein.
- KARSCH, F. 1880: Arachnologische Blätter (Decas I). *Zeitschrift für die Gesamten Naturwissenschaften, Dritte Folge* **5**: 373–409.
- KEYSERLING, E. 1879: Neue Spinnen aus Amerika. *Verhandlungen der Kaiserlich-Königlichen Zoologisch-Botanischen Gesellschaft in Wien* **29**: 293–350.
- KEYSERLING, E. 1891: *Die Spinnen Amerikas. Brasilianische Spinnen*. Nürnberg: Bauer & Raspe: **3**: 1–278.
- MELLO-LEITÃO, C. F. DE 1922: Novas clubionidas do Brasil. *Archivos da Escola Superior de Agricultura e Medicina Veterinaria, Rio de Janeiro* **6**: 17–56.
- MELLO-LEITÃO, C. F. DE 1926: Algumas aranhas do Brasil meridional. *Boletim do Museu Nacional do Rio de Janeiro* **2**: 1–18.
- MELLO-LEITÃO, C. F. DE 1941: Las arañas de la provincia de Santa Fe colectadas por el Profesor Birabén. *Revista del Museo de La Plata (N.S., Zool.)* **2**: 199–225.
- MELLO-LEITÃO, C. F. DE 1942: Arañas del Chaco y Santiago del Estero. *Revista del Museo de La Plata (N.S., Zool.)* **2**: 381–426.
- MELLO-LEITÃO, C. F. DE 1943: Arañas nuevas de Mendoza, La Rioja y Córdoba colectadas por el Professor Max Birabén. *Revista del Museo de La Plata (N.S., Zool.)* **3**: 101–121.
- MELLO-LEITÃO, C. F. DE 1945: Arañas de Misiones, Corrientes y Entre Ríos. *Revista del Museo de La Plata (N.S., Zool.)* **4**: 213–302.
- MELLO-LEITÃO, C. F. DE 1946: Arañas del Paraguay. *Notas del Museo de la Plata* **11**(Zool. 91): 17–50.
- PETT, B. L. & PERGER, R. 2021: Contributions to the knowledge of Neotropical Castianeirinae (Araneae: Corinnidae): redescription of *Castianeira spinipalpis* Mello-Leitão, 1945, with first description of the male, and description of a new *Myrmecotypus* O. Pickard-Cambridge, 1894 from the Bolivian Moxos plains. *Zootaxa* **5058**: 145–158.
- PETT, B. L., RUBIO, G. D. & PERGER, R. 2022: *Grismadox* gen. nov., a new Neotropical genus of ant-resembling spiders (Araneae, Corinnidae, Castianeirinae), including the description of two new species from Bolivia and Paraguay. *Zoosystematics and Evolution* **98**: 1–11.
- REISKIND, J. 1969: The spider subfamily Castianeirinae of North and Central America (Araneae, Clubionidae). *Bulletin of the Museum of Comparative Zoology* **138**: 163–325.
- SIMON, E. 1896: Descriptions d'araignées nouveaux de la famille des Clubionidae. *Annales de la Société Entomologique de Belgique* **40**: 400–422.
- WORLD SPIDER CATALOG 2023: *World spider catalog, version 24.0*. Bern: Natural History Museum, online at <http://wsc.nmbe.ch>