



The first *Myrmecotypus* O. P.-Cambridge (Araneae: Corinnidae) from Argentina: description of *Myrmecotypus iguazu* new species

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The Castianeirinae genus *Myrmecotypus* was described by O. Pickard-Cambridge (1894) and currently includes eight species. All of them, except the atypical *M. lineatus* (Emerton 1909) (only record from USA), occur in the Neotropical region (known from Mexico to Panamá), Panamá being the southern most representative distribution of genus. Reiskind (1969) carried out the revision of the subfamily Castianeirinae Reiskind 1969 from North and Central America, concluding that much more study of more extensive collections will be needed to clarify the origin and distribution of South American species of this subfamily.

The influence of selection for ant-mimicry still poses many difficulties in the classification of the spider taxa involved (Reiskind 1966; 1977). Ant-mimicry implies an extreme specialization that leads in many cases to well defined, easily identifiable genera, e.g. *Myrmecium* Latreille 1824 and *Sphecotypus* O.P.-Cambridge 1895; in other cases, the selection for mimicry results in a morphological convergence that makes the separation difficult, either in genera *Myrmecotypus* and *Apochinomma* Pavesi 1881, both extremely similar but the latter of African origin, and it is not known with certainty if it really occurs in Neotropical areas (Candiani pers. comm.). Nevertheless, some characters exist that can be useful diagnoses. The genus *Myrmecotypus* has been retained on the ground that the posterior row of eyes is only slightly wider than the anterior and almost straight; the posterior median eyes are further from each other than from the lateral eyes, and the anterior medians are much larger than the anterior lateral; the thoracic groove is absent, with a slight depression instead; moreover, the abdomen of *Myrmecotypus* is only very slightly petiolated (Cambridge 1897–1905).

The present work enhances the geographical distribution of *Myrmecotypus*, describing a new species from Argentina that represents the southernmost record of the genus so far.

Materials and methods

Specimens were collected in two localities in the Misiones Province, Argentina, the vegetation of which corresponds to the Paranaense phytogeographic region (Cabrera & Willink 1980), comprising subtropical rainforests. Descriptions and terminology mainly follow Reiskind (1969). Female epigynum was dissected and cleared in clove oil to study the internal structures (Levi 1965). Illustrations were made on photograph models and using a Leica MS5 stereoscopic microscope; a photo was taken with a Nikon D80 digital camera of a female spider in its natural habitat. All measurements were taken with a micrometric ocular and are in millimeters. Because the selection for ant mimicry in spiders influences their morphology, several morphological indices as mimicry indicators are used in this description, following Reiskind (1969). The derived measurements of these indices are useful in making objective comparisons between different species, because the emphasis on linear size, which is so variable, is diminished (Reiskind 1969). The specimens examined were deposited in the following institutions (abbreviations and curators in parenthesis): Colección Nacional Aracnológica, Museo Argentino de Ciencias Naturales “Bernardino Rivadavia”, (MACN-Ar, C. Scioscia & M. Ramírez); Museo de La Plata (MLP, L. Pereira); Colección Aracnológica de la Cátedra de Diversidad Animal I, Facultad de Ciencias Exactas, Físicas y Naturales, Universidad Nacional de Córdoba (CDA, L.E. Acosta); and Colección de Artrópodos de la Facultad de Ciencias Exactas y Naturales y Agrimensura, Universidad Nacional del Nordeste (CARTROUNNE, G. Avalos).

Taxonomy

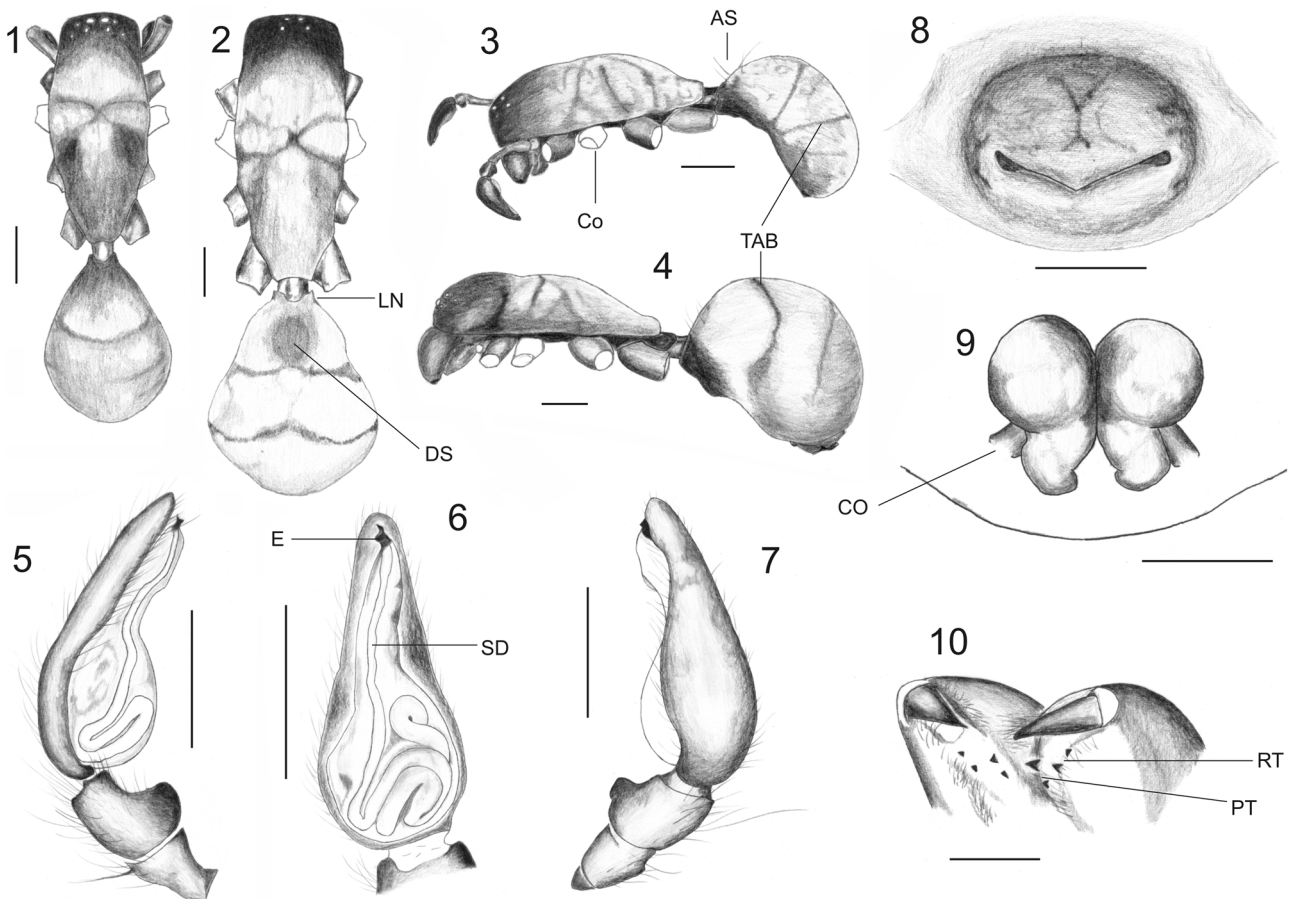
Corinnidae Karsch, 1880

Myrmecotypus O. P.-Cambridge, 1894*Myrmecotypus iguazu* sp. nov.

Figs. 1–12

Type material. Holotype male (MACN-Ar 19708) and paratype (allotype) female (MACN-Ar 19709) from Iguazú National Park (25°41'S, 54°26'W), Misiones Province, ARGENTINA, 8 January 2009, G. Rubio and M. Arbino coll. Paratypes: same locality, 15 January 2005, G. Rubio coll., one male (CARTROUNNE 7818); same locality, 8 January 2009, G. Rubio and M. Arbino coll., one male (CDA 000.806), three females (CDA 000.807, CDA 000.808, CDA 000.810), one female (MLP 17926); same locality, 20 January 2005, G. Rubio coll., one male (CDA 000.811); Uruguáí Wildlife Reserve (25°59'S, 54°05'W), Misiones Province, ARGENTINA, 7 March 2009, G. Rubio coll., one female (CDA 000.809).

Etymology. The specific name is a noun in apposition that refers to the type locality: Iguazú National Park, Misiones Province, Argentina.



FIGURES 1–10. *Myrmecotypus iguazu* sp. nov. 1–4, body view (1, male dorsal; 2, female dorsal; 3, male lateral; 4, female lateral). 5–7, left male palp (5, prolateral; 6, ventral; 7, retrolateral). 8–9, epigynum (8, ventral view; 9, dorsal view). 10, chelicerae (ventral view of female). (LN = lateral notches; DS = dorsal sclerite; Co = coxa II; AS = abdominal setae; TAB = transverse abdominal bands; E = embolus; SD = sperm duct; CO = copulatory opening; RT = retromarginal teeth; PT = promarginal teeth). Scale bars: 1–4, 1 mm; 5–7 and 10, 0.5 mm; 8–9, 0.25 mm.

Diagnosis. *Myrmecotypus iguazu* sp. nov. resembles *M. pilosus* O.P.-Cambridge 1898 by having tibia I ventral spination 3-3, and only coxae II translucent white, but can be distinguished from this species by its great body size and the male and female genital structure (Figs. 1–9). Differs from other *Myrmecotypus* species by a combination of the

following characters: only coxae II white (Figs. 1–4); chelicerae with two retromarginal teeth and two promarginal teeth (Fig. 10). In addition, it differs from all of them by its great size, except *M. rettenmeyeri* Unzicker 1965, from which it differs by the male genitalia (Figs. 5–7) and by the lack of a longitudinal row of dense hairs in the thoracic region (Fig. 3).



FIGURES 11–12. *Myrmecotypus iguazu* sp. nov. Habitus in nature (Iguazú National Park, 2009).

Description. Male (holotype). Total length 7.08; carapace length 3.85; carapace width 1.67; carapace index 43.38; sternum length 1.73; sternum width 0.80; sternum index 46.24. Femur IV length 3.14; femur IV width 0.52; leg thickness index 16.56; leg length index 81.56. Abdomen length 2.96; abdomen width 2.04; abdomen index 68.92. Pedicel length 0.27. Embolus length 0.076; bulb length 0.97; male genital index 7.85. Carapace long and narrow, deep reddish-black, with a moderate constriction between the cephalic and thoracic regions, covered with refractory golden pubescence reinforced on the sides and groove region. Four faint black hairy narrow bands starting at the groove region and running laterally toward both sides (Figs. 1, 3). Eyes small and equally sized, except anterior median eyes about two times the diameter of anterior lateral eyes. Both rows of eyes slightly recurved, posterior row about one-third wider than anterior row (Fig. 1). Carapace somewhat narrowed in head region (cephalic width index 76.05). Abdomen oval (wider posteriorly) and completely covered by a deep reddish-black dorsal sclerite with refractory golden pubescence, and two faint thin transverse black bands (Figs. 1, 3). Few sparse, moderately plumose short white hairs over the dorsum. Epigastric sclerite not extending to spinnerets, and inframammillary sclerite reddish-black. Abdomen very slightly petiolated (only a pair of lateral notches) (Fig. 3). Two pairs of abdominal setae anteriorly, first pair thin and long, second moderately thick and more separate to each other than the first. Sternum reddish-black, elongate, with isolated thin white hairs. Chelicerae reddish-black with internal edge orange, with two moderately small retromarginal teeth and two promarginal teeth. Fangs red. Only coxae II translucent white, remaining coxae brown-black (Figs. 1, 3). Trochanter I and II yellow-orange ventrally (II lighter than I), trochanter IV notch absent. Metatarsi I red-brown proximally and yellow-brown distally, tarsi yellow-brown (leg II somewhat darker). Remaining legs brown-black and moderately hirsute. Tibiae and metatarsi IV hirsute, with heavy black hairs, especially on ventral side. Tibia I ventral spination: 3-3, moderately long and thin. Leg formula: IV-I-III-II. Pedipalp with a blunt and very short tibial apophysis (Figs. 5, 7). Tarsus with a globose genital bulb drawn out into a long neck with a small, twisted, sclerotized embolus; palpal ducts with two loops both lateral to the embolus tube (Fig. 6).

Female (paratype [allotype]). Total length 9.68; carapace length 5.03; carapace width 2.12; carapace index 42.15; sternum length 2.31; sternum width 0.87; sternum index 37.66. Femur IV length 4.25; femur IV width 0.64; leg thickness index 15.06; leg length index 84.49. Abdomen length 4.13; abdomen width 3.25; abdomen index 78.69; dorsal sclerite length 1.37; dorsal sclerite width 1.06; dorsal sclerite index 77.37. Pedicel length 0.52. Carapace as in male. Four faint black thin hair bands starting at groove region and running laterally toward both sides (Figs. 2, 4). Eyes and eyes rows as in male. Cephalic region narrower than thoracic region (cephalic width index 81.13). Abdomen pear-shaped, wider

posteriorly, with a moderately small, reddish-black dorsal sclerite. Hair covering as in male (Figs. 2, 4). Epigastric and inframammillary sclerites yellow-brown. Abdomen very slightly petiolated (only a pair of lateral notches) (Fig. 2). Abdominal setae and sternum as in male. Chelicerae reddish-black (orange internal edge) with two retromarginal teeth, the distal slightly smaller than the proximal, and two promarginal teeth, the distal larger than the proximal (Fig. 10). Fangs red. Only coxae II white, rest brown-black (Figs. 2, 4). Trochanter I and II orange-brown ventrally (in II more light than I), trochanter IV notch absent. Metatarsi I red-brown proximally and yellow-brown distally, tarsi yellow-brown (leg II somewhat darker). Remaining legs as in male. Leg formula as in male.

Variation. Males (four): total length 6.05–7.28; carapace length 3.16–3.92; carapace width 1.56–1.80; sternum length 1.54–1.82; sternum width 0.74–0.88. Femur IV length 2.45–3.40; femur IV width 0.45–0.52. Abdomen length 2.69–3.08; abdomen width 1.84–2.18. Pedicel length 0.20–0.45. Bulb length 0.83–1.02. Dorsal sclerite cover full to 95%. Females (six): total length 9.68–8.34; carapace length 5.06–4.40; carapace width 2.16–1.94; sternum length 2–2.50; sternum width 0.87–1.04. Femur IV length 3.56–4.31; femur IV width 0.50–0.64. Abdomen length 3.36–4.13; abdomen width 2.68–3.25; dorsal sclerite length 1.04–1.80; dorsal sclerite width 1.06–1.24; the abdomen can be slightly oval. Pedicel length 0.32–0.56. The refractory pubescence of carapace and abdomen can be all golden or all silvery.

Natural history. In Arbino & Rubio (in prep.) we have studied part of the natural history of *Myrmecotypus iguazu*. This species is an ant-mimic spider, males or females with golden or silvery pubescence, that has specialized mimicry to the ant *Camponotus sericeiventris* Guérin 1838. They have a single species as their model and their mimetic modifications are clearly associated with that species (Figs. 11–12). Although the ant has a wide distribution almost occupying the whole Neotropical area (Wheeler 1931; Kempf 1972; Fernández & Sendoya 2004), we corroborate the coexistence with *M. iguazu* in the Argentinean NE. In this way *M. iguazu* is an ecological equivalent of the spider *M. rettenmeyeri* from Panama (Arbino & Rubio in prep.).

Distribution. This species is the southern most representative of the genus and is hitherto known from the type locality in Iguazú National Park and from Urugua-í Wildlife Reserve, Misiones Province, Argentina.

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