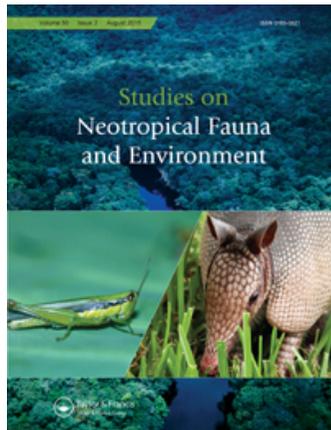


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A new species of *Castianeira* Keyserling (Araneae, Corinnidae) from Buenos Aires, Argentina

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A new species of the spider genus *Castianeira* (Araneae: Corinnidae) from Argentina, *C. coquito*, is described on the basis of male and female specimens collected in northeastern Buenos Aires Province and the Ciudad Autónoma de Buenos Aires, Argentina. This new species is characterized by its diminutive size and by the very globose copulatory bulb with a thick neck. It is the sixth species of the genus reported for the country.

Una nueva especie del género *Castianeira* (Araneae: Corinnidae) de Argentina, *C. coquito*, se describe en base a especímenes machos y hembras colectados en el noreste de la provincia de Buenos Aires y en la Ciudad Autónoma de Buenos Aires, Argentina. Esta nueva especie se caracteriza por su diminuto tamaño y por el bulbo copulador muy globoso con un cuello grueso. Es la sexta especie del género reportada para el país.

Keywords: ant-mimicry spider; Buenos Aires; Castianeirinae; taxonomy

Introduction

The castianeirine spider genus *Castianeira* Keyserling, 1879 currently includes 126 species distributed globally, except for Australia and adjacent islands (World Spider Catalog 2015). Reiskind (1969) revised 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. So far there are five *Castianeira* species known in Argentina (World Spider Catalog 2015): *C. argentina* Mello-Leitão, 1942, *C. claverensis* Mello-Leitão, 1943, *C. pictipes* Mello-Leitão, 1942, *C. spinipalpis* Mello-Leitão, 1945 and *C. xanthomela* Mello-Leitão, 1941.

Although Reiskind (1969, p. 171) stated that the genus *Castianeira* is probably monophyletic, a clear and indisputable synapomorphy for the genus has never been proposed. Traditional diagnostic features for *Castianeira* are the anterior eye row moderately recurved, the posterior row weakly to moderately procurved, the eyes moderately small to large, and the anterior median eyes usually larger than the lateral ones (Reiskind 1969), to which we add here the

following: labium wider than long, trochanters notched; femur I with dorsal and prolateral spines, tibia I and II with usually three pairs of ventral spines, metatarsi with two; dorsal scutum covering most of the abdomen in males, small or absent in females; ventral epigastric scutum present, anterior end dorsally rounded; male palpal cymbium without proximal retrolateral apophysis (Deeleman-Reinhold 2001). Historically, genitalic characters have been underestimated for separating castianeirine genera; they are remarkably conservative across all castianeirines, because the structure of the epigynes and male palpal bulbs are homogeneous throughout the subfamily. The above concept of *Castianeira* was consistent among many authors (Dondale & Redner 1982; Camargo & Ferrández 1984; Marusik 2009; Marusik & Mikhailov 2010). However, evidence suggests that a phylogenetic revision is urgently needed, given that it is unlikely that all the species now listed in the genus would belong to a natural group, and that the genus has been used as a wastebasket group for relatively unmodified castianeirines (see, for example, Haddad 2013, p. 14).

In recent surveys of the spider fauna from Costanera Sur Ecological Reserve (Ciudad

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Autónoma de Buenos Aires) and Otamendi Natural Reserve (northeastern Buenos Aires Province), many specimens with the above-mentioned combination of characters (traditionally defining *Castianeira*) were collected near the delta of the Paraná River and the Río de la Plata estuary. After the examination of these specimens and after reviewing the entire collection of the Museo Argentino de Ciencias Naturales), we found that they do not belong to any of the previously known taxa. In this contribution we describe and illustrate this new species for the Argentine fauna, which we name *C. coquito* sp. nov.

This new species shows some unusual features (very small size, short and globose copulatory bulb), but are these characters merely autapomorphies or do they reveal that this species belongs to a different genus? In the absence of a phylogenetic background for the group, we tentatively place this new species in *Castianeira*, waiting for subsequent studies that can test and refine the generic concept, including its probable split into several smaller and more clearly defined genera.

Materials and methods

Morphological terms, abbreviations and the format of the description follow Reiskind (1969), and the genitalic terminology follows Ramírez (2014). Epigynes were dissected and cleared in clove oil to study the internal structures, as in Levi (1965); the male bulb was similarly prepared. Illustrations were made on photograph models and using a Leica® M60 stereomicroscope (Leica Microsystems, Wetzlar, Germany). Photographs of living specimens were taken with a Nikon® D80 digital camera (Nikon Corporation, Tokyo, Japan). All measurements were taken with a micrometric ocular and are expressed in millimeters. Eye sizes were measured as the maximum diameter dorsally. Leg measurements are shown as: total length (femur, patella and tibia, metatarsus, tarsus). Specimens examined are deposited in the Arachnological collection of Museo Argentino de Ciencias Naturales “Bernardino Rivadavia” (MACN-Ar, C. Scioscia & M. Ramírez) and the arachnid collection of the Instituto de Biología Subtropical (IBSI-Ara, G. Rubio). Abbreviations: ALE, anterior lateral eye; AME, anterior median eye; CD, copulatory duct; CO, copulatory opening; DS, dorsal scutum; E, embolus; FD, fertilization duct; Fu, fundus; PLE, posterior lateral eye; PME, posterior median eye; PwfS, patch of white feathery setae; SD, sperm duct; ST I, primary spermatheca (posterior); ST II, secondary spermatheca (anterior).

Results

Taxonomy

Corinnidae Karsch, 1880

Castianeirinae Reiskind, 1969

Castianeira Keyserling, 1879

Castianeira coquito sp. nov.

Figures 1–3

Type material

Holotype ♂ (MACN-Ar 34100; temporary preparation GDR 0427) from Otamendi Natural Reserve (S34.228199°, W58.900172°; 18 m asl), Ingeniero Otamendi, Campana, Buenos Aires Province, ARGENTINA, 15 November 2012, GD Rubio, AO Porta, LN Piacentini & EM Soto coll. Paratypes: 2 ♀ (MACN-Ar 34101; temp. prep. GDR 0411), 1 ♀ (MACN-Ar 34099; temp. prep. GDR 0404), 1 ♀ (MACN-Ar 34103; temp. prep. GDR 0405), 1 ♀ (MACN-Ar 34097; temp. prep. GDR 0406), 1 ♂ (IBSI-Ara 00248; temp. prep. CJG 3186; CJG 1405; GDR 0407), 5 ♀ (IBSI-Ara 00245; temp. prep. GDR 0408), 1 ♀ (MACN-Ar 34110; temp. prep. GDR 0409) and 1 ♀ (MACN-Ar 34104; temp. prep. CJG 3188; CJG 1408; GDR 0410) with same data as for holotype.

Etymology

The specific name is a noun in apposition; *coquito* is the Spanish diminutive of *coco* referring to the patches of white feathery setae that look like *coco rallado* (“grated coconut”) sprinkled on the abdomen of these spiders (Figures 1A, D, 3).

Diagnosis

Males of *C. coquito* sp. nov. differ substantially from all other *Castianeira* by the unique shape of the copulatory bulb: very globose and with a thick neck, unlike any other species of the genus (Figure 2B–E). Moreover, both sexes of this species differ from all other species by their diminutive size, except for *C. trimac* Reiskind, 1969, from which they differ by the ST II spherical rather than elongated (Figure 2G) and the above-mentioned male characteristics.

Description

Male (holotype). Total length 2.35. Carapace length 1.05, carapace width 0.70. Sternum length 0.57, sternum width 0.45. Clypeus height at ALE 0.025, clypeus height at AME 0.062. Eye sizes: AME

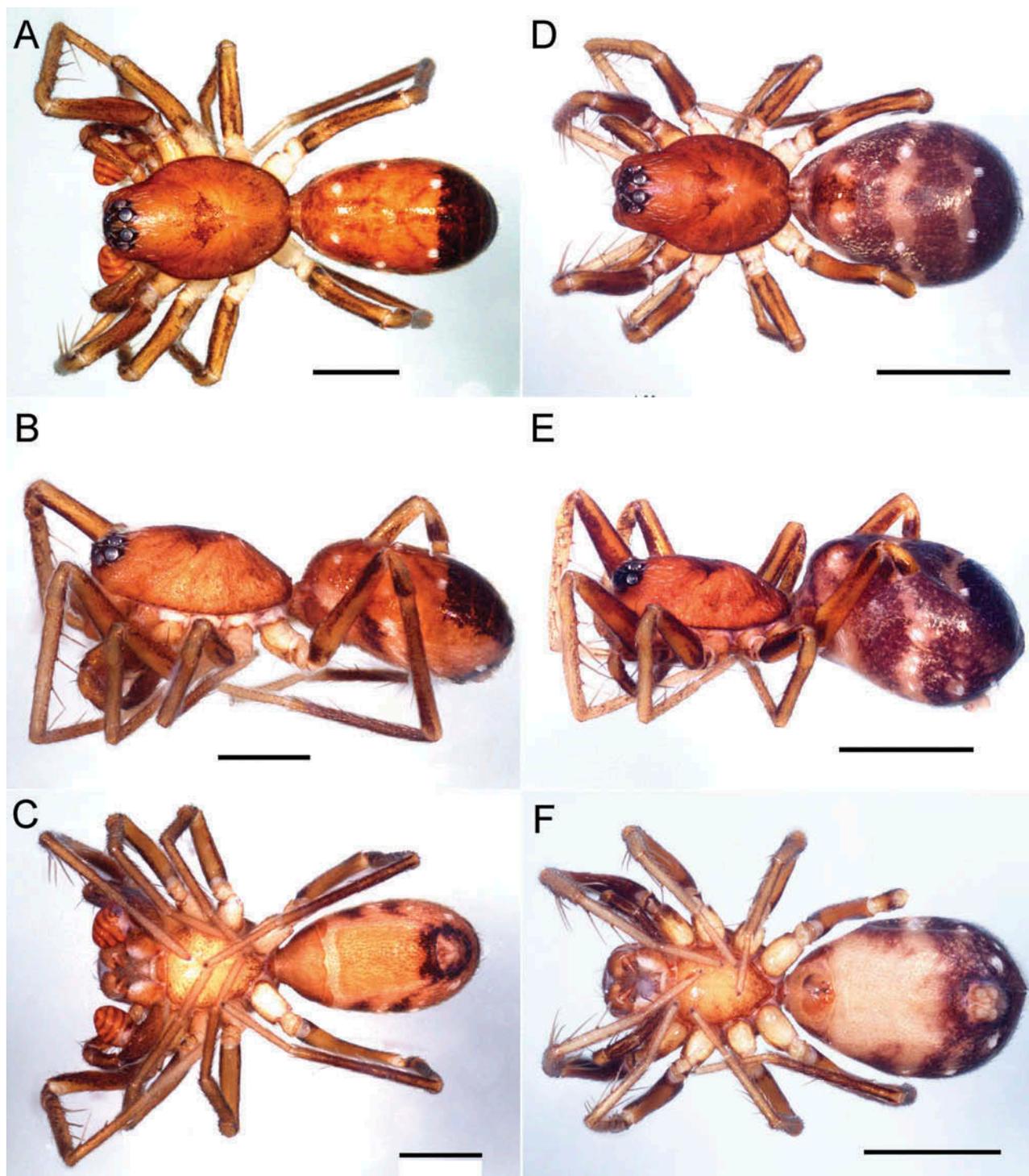


Figure 1. *Castianeira coquito* sp. nov. Habitus of preserved specimens; A–C, male in A, dorsal; B, lateral; and C, ventral views; D–F, female in D, dorsal; E, lateral; and F, ventral views. Scale bars: A–C, 0.5 mm; D–F, 1 mm.

0.037, ALE 0.055, PME 0.067, PLE 0.062. Leg measurements: I 2.81 (0.77, 0.97, 0.60, 0.47); II 2.29 (0.65, 0.72, 0.50, 0.42); III 2.06 (0.55, 0.67, 0.52, 0.32); IV 3.32 (0.85, 1.11, 0.86, 0.50). Leg formula: 4123. Abdomen length 1.15, abdomen width 0.67.

Carapace short and wide, narrowing to cephalic region. Fovea on the middle of carapace slightly marked. Color reddish-orange, covered with refractory white pubescence; eyes region darker (Figures 1A, B, 2A). Eyes medium-sized to large,

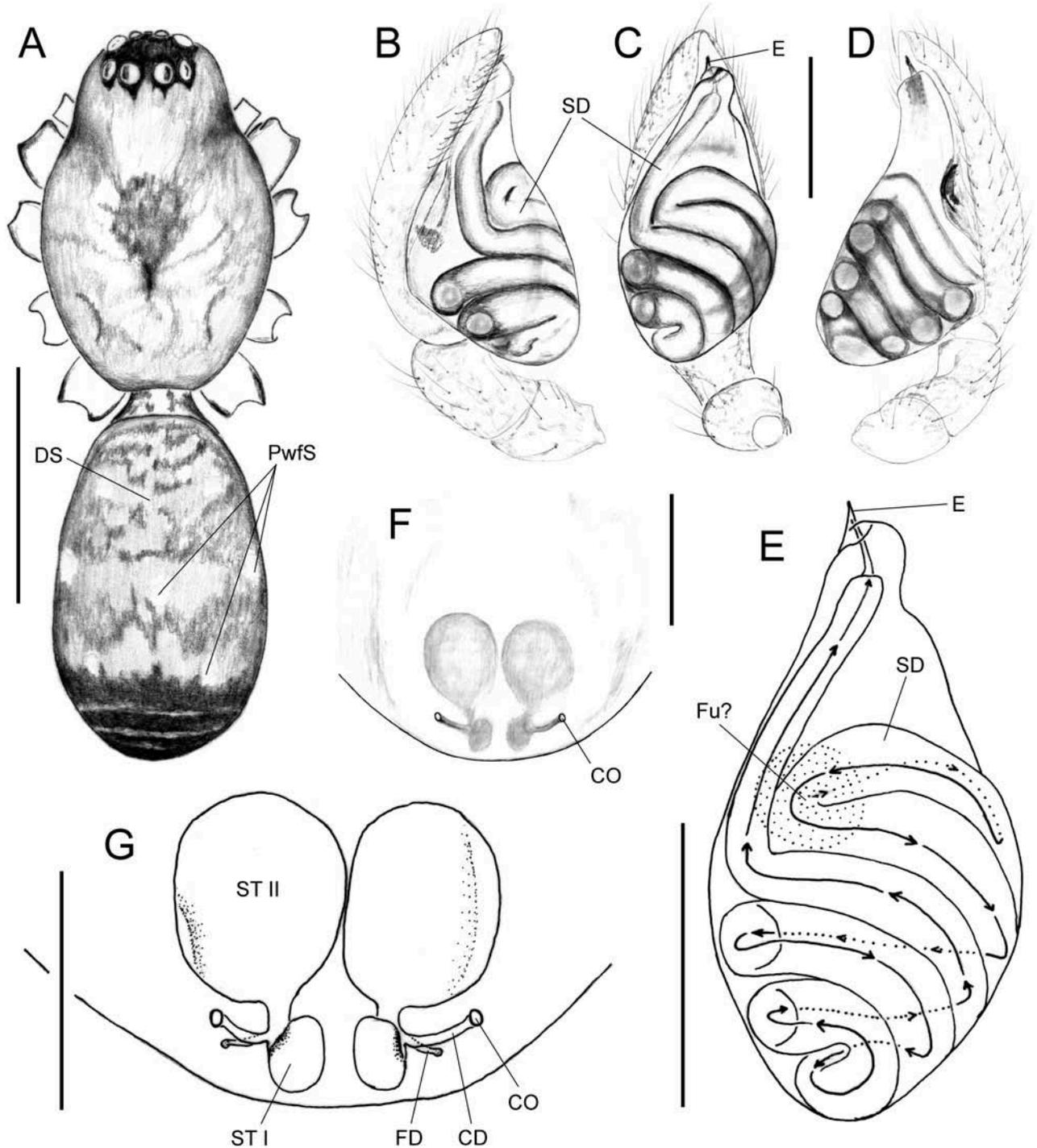


Figure 2. *Castianeira coquito* sp. nov. (Paratypes). A, male habitus in dorsal view; B–E, male left palp in B, prolateral; C, ventral; D, retrolateral; and E, cleared ventral views; F–G, epigyne in F, ventral; and G, cleared ventral views. CD, copulatory duct; CO, copulatory opening; DS, dorsal scutum; E, embolus; FD, fertilization duct; Fu, fundus; Pwfs, patch of white feathery setae; SD, sperm duct; ST I, primary spermatheca (posterior); ST II, secondary spermatheca (anterior). Scale bars: A, 0.7 mm; B–G, 0.2 mm.

except AME that are much smaller. Anterior row of eyes recurved, posterior row procurved. Sternum light brown-yellow with scattered small dark spots, longer than wide, shield-shaped; labium and endites light

brown (Figure 1C). Chelicerae light brown, two small promarginal teeth and two retromarginal teeth more proximally placed. Fangs light brown, with dense hairs where articulates. Abdomen oval, longer

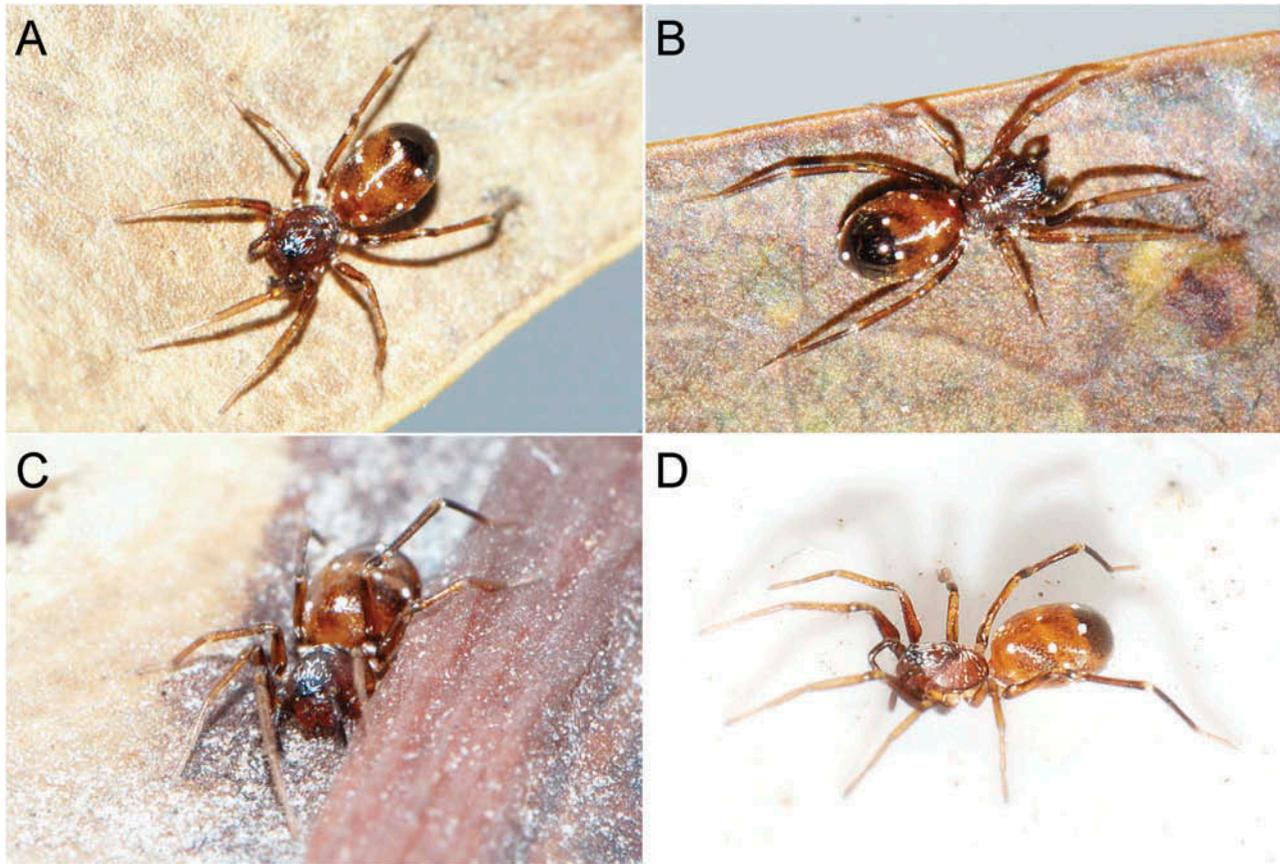


Figure 3. *Castianeira coquito* sp. nov. Habitus of a live female from Otamendi Natural Reserve.

than wide, completely covered by reddish-orange dorsal sclerite with patches of white feathery setae, dark brown to black on the posterior third (Figures 1A, B, 2A). Epigastric sclerite round, light brown, darker to the sides (Figure 1C); ventral sclerite rectangular, longer than wide, light brown, brown-black posteriorly (Figure 1C); inframammillary sclerite not visible. Coxae and trochanters pale yellow; femora light brown, with two dark lateral longitudinal lines and one thinner dorsal; patellae and tibiae following pattern similar of the femora; metatarsi and tarsi brown, metatarsus IV darker. Legs moderately hirsute. Femur dorsal spination 1-0; tibia I ventral spination 2-2-2 (bristles), moderately long and thin. Pedipalp without tibial apophysis (Figure 2B-D). Genital bulb globose, extending into thick neck, ending in a short, pointed, sclerotized embolus (Figure 2B-E); sperm ducts thick and tight, with four visible loops (Figure 2C-E).

Female (paratype MACN-Ar 34101; temp. prep. GDR 0411). Total length 3.20. Carapace length 1.20, carapace width 0.87. Sternum length 0.67, sternum width 0.57. Clypeus height 0.050, clypeus height at AME 0.10. Eye sizes: AME 0.053, ALE 0.075, PME

0.075, PLE 0.075. Leg measurements: I 3.45 (0.95, 1.25, 0.70, 0.55); II 2.85 (0.82, 0.95, 0.61, 0.47); III 2.47 (0.67, 0.82, 0.61, 0.37); IV 4.04 (1.05, 1.37, 1.07, 0.55). Leg formula: 4123. Abdomen length 1.77, abdomen width 1.15. Carapace as in male (Figures 1, 2A). Fovea slightly marked, on the middle of carapace. Color pattern and pubescence as in male (Figure 1). Eyes medium to large, AME smaller. Anterior row of eyes recurved, posterior row procurved. Sternum, labium, endites and chelicerae as in male (Figure 1C, F). Abdomen oval, longer than wide, slightly more globose than in male (Figure 1A, D); dorsum with a very small reddish-orange anterior sclerite, with patches of white feathery setae, black on the posterior third (Figures 1D, E, 3). Epigastric sclerite round, translucent yellow, weaker than in male; ventral and inframammillary sclerites absent (Figure 1F). Legs moderately hirsute, color as in male. Femora dorsal spination 1-0; femur I prolateral 0-0-1; ventral spination on tibia I 1-2-2-2, metatarsus I 2-2, tibia II 1-2-2, metatarsus II 2-2 (smaller than metatarsus I). Epigyne with very small, circular and posterolaterally placed copulatory opening (Figure 2F); copulatory ducts short (Figure 2F, G);

fertilization duct (FD) visible, toward the dorsal side of the copulatory duct (Figure 2G); anterior (ST II) and posterior (ST I) spermathecae oval, ST II much larger than ST I (Figure 2G).

Variation. Without significant variation in males ($n = 10$); in some females ($n = 10$) the course of the copulatory duct may be slightly more curved than in others, and some individuals have abdomens that are more pigmented than others.

Natural history

In Otamendi, these spiders were found in leaf litter, from which they were collected manually and using pitfall traps. The ecosystem is composed of shrubs of *Baccharis salicifolia* (Ruiz & Pav.) Pers. (“chilcal”) (Asterales: Asteraceae), although a few specimens were obtained by pitfall traps in the “talar” (forest of *Celtis tala* Gillies ex Planchon (Urticales: Cannabaceae). In Costanera Sur reserve, where all specimens were caught with pitfall traps, the habitat is a recently developed riparian plant community. Because of its resemblance to small ants, and known history about *Castianeira* and castianeirine mimicry (Reiskind 1969), this spider species is also expected to be an ant mimic; however, a close inspection and more fieldwork are needed to determine which ant species is used as model.

Distribution

All but one single specimen were collected in north-eastern Buenos Aires Province and Ciudad Autónoma de Buenos Aires, Argentina, near the coast of the Paraná River and the Río de la Plata estuary. The only record outside that region (Carlos Casares, about 260 km to the interior of Buenos Aires Province) is remarkable, and might suggest a wider distribution.

Other material examined

ARGENTINA: Buenos Aires Province: Baradero (S33.810682°, W59.508456°), 1 ♀ (MACN-Ar 16721), no date, MJ Ramírez & PA Goloboff coll.; Baradero, Ferrocarril General Bartolomé Mitre (S33.819777°, W59.51376°), 1 ♀ (MACN-Ar 16786), January 1982, same collectors; Carlos Casares (S35.626417°, W61.357787°), 1 ♀ (MACN-Ar 16773), 27 February 1980, PA Goloboff coll.; Campana, Otamendi Natural Reserve (S34.227480°, W58.898602°, ±300 m), site 1, “chilcal”, 4 ♂ and 4 ♀ (MACN-Ar 34117), 14 December 1997, B Fuentes & O Di Iorio coll., site 2,

“chilcal denso”, 1 ♂ and 2 ♀ (MACN-Ar 34124), 25 October 1997, same coll., 2 ♂ (MACN-Ar 34130), 15 November 1997, same coll., 1 ♂ and 3 ♀ (MACN-Ar 34113), 4 ♂ and 3 ♀ (MACN-Ar 34119), 27 December 1997, same coll., 1 ♂ and 2 ♀ (MACN-Ar 34125), 9 January 1998, same coll., 1 ♀ (MACN-Ar 34114), 25 March 1998, same coll., site 3, “chilcal ralo”, 2 ♂ (MACN-Ar 34122), 25 October 1997, same coll., 2 ♀ (MACN-Ar 34095), 20 December 1997, same coll., 2 ♂ and 2 ♀ (MACN-Ar 34128), 27 December 1997, same coll., 1 ♀ (MACN-Ar 34121), 18 March 1998, same coll., site 4, “talar”, 3 ♀ (MACN-Ar 34129), 20 January 1998, same coll., 2 ♂ (MACN-Ar 34134), 15 February 1998, same coll., 1 ♀ (MACN-Ar 34098), 22 February 1998, same coll. **Ciudad Autónoma de Buenos Aires:** Costanera Sur Ecological Reserve, site 1, forest of *Tessaria integrifolia* (S34.604583°, W58.350008°; 8 m asl), 1 ♂ (MACN-Ar 33677), 1 ♀ (MACN-Ar 33673), 1 ♂ and 1 immature (MACN-Ar 33690), 6 ♂ (MACN-Ar 33606), 10 November 2008, A Mamani & P Turienzo coll.; 1 ♂ and 2 ♀ (MACN-Ar 33695), 2 ♂ (MACN-Ar 33691), 1 ♂ (MACN-Ar 33678), 24 November 2008, A Mamani & LV Zapata coll.; 1 ♂ (MACN-Ar 33681), 2 December 2012, P Turienzo coll.; 1 ♀ (MACN-Ar 33697), 1 ♂ and 1 ♀ (MACN-Ar 33680), 3 ♀ (MACN-Ar 33675), 1 ♀ (MACN-Ar 33683), 8 December 2012, same collector; 4 ♀ (MACN-Ar 33694), 1 ♀ (MACN-Ar 33689), 1 ♂ (MACN-Ar 33698), 20 December 2012, same collector; 1 ♂ and 1 ♀ (MACN-Ar 33682), 1 ♀ (MACN-Ar 33684; temp. prep. LOZ 0194), 5 January 2009, A Mamani & M Benedictto coll.; 2 ♀ (MACN-Ar 33699), 19 January 2009, A Mamani, P Turienzo & LV Zapata coll.; 1 ♀ (MACN-Ar 33688), 16 February 2009, A Mamani, & P Turienzo coll.; 1 ♂ (MACN-Ar 34242), 24 October 2011, LV Zapata, GD Rubio, MA Izquierdo, M Guala & CJ Grismado coll.; site 2, “de los lagartos” trail (S34.601608°, W58.361979°; 8 m asl), 1 ♂ (MACN-Ar 33696), 27 October 2008, A Mamani coll.; same site, 1 ♀ and 1 immature (MACN-Ar 33685), 24 November 2008, A Mamani & LV Zapata coll.; 2 ♀ (MACN-Ar 33674), 8 December 2008, P Turienzo coll.; 1 ♀ and 1 immature (MACN-Ar 33686), 2 March 2009, A Mamani & P Turienzo coll.; 1 ♀ (MACN-Ar 33700), 16 March 2009, same collectors; site 3, grassland next to “del medio” trail (S34.607752°, W58.359823°; 12 m asl), 1 ♂ (MACN-Ar 33676), 27 October 2008, A Mamani coll.; 1 ♂ (MACN-Ar 33693), 1 ♂ (MACN-Ar 33687), 24 November 2008, A Mamani & LV Zapata coll.; 1 ♀ (MACN-Ar 33679), 19 January 2009, A Mamani, P Turienzo & LV Zapata coll.; 1 ♀ (MACN-Ar 33692), 16 February 2009, A Mamani, & P Turienzo coll.

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Disclosure statement

No potential conflict of interest was reported by the authors.

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