Formiciform Salticidae (Araneae). Two new combinations and four new species of the genera Martella and Sarinda

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Formiciform Salticidae (Araneae). Two new combinations and four new species of the genera Martella and Sarinda. — Female specimens of Sarinda utingae Galiano, 1967 and Sarinda camba Galiano, 1969 are described for the first time and the species are transferred to Martella as new combinations. Three new species of Martella from Brazil and one species of Sarinda from Argentina are described. The main diagnostic character separating Martella from Sarinda is the structure of the female internal genitalia.

Key words: Araneae, Salticidae, Martella, Sarinda, Argentine, Brazil.

(Rebut: 14 III 96; Acceptació condicional: 18 VI 96; Acc. definitiva: 10 IX 96)


Introduction

The ant-like genera Sarinda Peckham & Peckham, 1892 and Martella Peckham & Peckham, 1892 have been revised in previous papers (Galiano, 1964, 1965, 1967, 1969). Several species have been found in association with black ants [S. marcosi Toledo Piza, 1937, S. nigra Peckham & Peckham, 1892, S. imitans Galiano, 1965, S. camba Galiano, 1965 (Galiano, 1965, 1969), Martella furva (Chickering, 1946) (Reiskind, 1977)] and are considered Batesian mimics (Reiskind, 1977). The spiders of both genera have a black body with the cephalic region being higher than the thoracic region and separated from it by a transverse band of white hairs. Sarinda species have an elongated body, abdominal constriction and one or more transverse yellow bands, while those of Martella lack ab-
dominal constriction but may have transverse bands. The legs are slender and the female palps are greatly large and palette-shaped with dense fringes of dark hairs.

*Galiano* presently contains 18 species and *Martella* includes seven species. It is probable that some of the eight species of *Sarinda* and the six of *Martella* represented by one sex only will eventually prove to be male/female of the same species. The ant-like appearance of these spiders makes it difficult to assign the species to genus. At present, the two genera are separated mainly by genitalic characters.

In this paper, supplemental information about *Martella* is given. The females of *Sarinda utingae* and *Sarinda camba* are described for the first time and on the basis of their epigynal conformation, the species are transferred to *Martella* as new combinations. Four other new species are described: *Sarinda chacoensis* n. sp. from Argentina; *Martella pasteurii* n. sp., *Martella amapa* n. sp. and *Martella gandu* n. sp. from Brazil.

Material and methods

The format of descriptions follows GALIANO (1963); leg spination is described as in PLATNICK & SHADAB (1975) with minor changes. The specimens were frozen during copulation with a mixture of carbon dioxide and ether and then preserved in ethanol 70%.

Abbreviations: AME. Anterior median eyes; ALE. Anterior lateral eyes; PME. Posterior median eyes; PLE. Posterior lateral eyes. v. Ventral; p. Prolateral; r. Retrolateral; ap. Apical. MACN. Museo Argentino de Ciencias Naturales 'Bernardino Rivadavia'; MNRJ. Museu Nacional de Rio de Janeiro; CEPEC. Centro de Pesquisas do Cacau, Bahia, Brazil.

Systematics

**Martella utingae** (Galiano, 1967) n. comb. (figs. 1-4, 22)


Description

Female. Total length 4.65 mm. Carapace length 1.87 mm, width 1.20 mm, height 0.93 mm. Ocular quadrangle length 0.80 mm, first row width 1.18 mm, third row width 1.20 mm. Distances ALE-PME 0.22 mm, PME-PLE 0.18 mm. AME diameter 0.42 mm. Clypeus height 0.05 mm. Chelicerae: promargin with five teeth, retromargin with three. Legs IV-I-III-II. Leg spination: femora and patellae I-IV 0. Tibiae I v 2-2-2-2-2; II v 2-2-2; III, IV 0. Metatarsi I, II v 2-2; III p 1-1; IV p 1ap, r 1ap. Epigynum (figs. 1-3): posterior border with a large copulatory pocket, wider on each side; two large oval atria with sclerotized rims, separated by a septum. Large copulatory openings, followed by a very large membranous compartment dilated posteriorly and ectad from which the spermaticheal and glandular ducts originate. The internal structure of the epigynum of *M. utingae* bears close resemblance with that of *M. maria* Peckham & Peckham, 1892, but differs in the form of the membranous compartment.

Note

Living specimens were kept at the laboratory in Buenos Aires, where behaviour and mating were observed. Copulation took place on the walls of the bottle, outside the nest. One were frozen while mating. The position of the different structures was observed in these preserved specimens (fig. 4). The retrolateral tibial apophysis of the palp is engaged on the extreme side of the copulatory pocket of the epigynum. The inflation of the basal haematodocha forces the tegulum out of the alveolus and also produces a rotation that places the embolus in the furrow formed between the cymbium and para-cymbium. The embolic tip is inserted in the copulatory opening on the atrium (left palp on the left side of the epigynum). In this species the cymbium lacks ectal apophysis and the tip of the embolus is twisted (fig. 22).

Material examined

Martella camba (Galiano, 1969) n. comb. (figs. 5-7, 24)

Sarinda camba Galiano 1969: 251, figs. 12-19 (male holoty whole)

Description
Female. Total length 4.27 mm. Carapace length 2.03 mm, width 1.30 mm, height 0.97 mm. Ocular quadrangle length 0.90 mm, first row width 1.28 mm, third row width 1.30 mm. Distances ALE-PME 0.22 mm,
PME-PLE 0.18 mm. AME diameter 0.45 mm. Clypeus height 0.10 mm. Chelicera: promargin with five teeth, retromargin with three or four. Legs IV-I-III-II. Leg spination: Femora and patellae I-IV 0. Tibiae I v 2-2-2-2-2; II v 1r-2-2; III, IV 0. Metatarsi I, II v 2-2; III p 1-1; r 1-1; IV 0. Epigynum (figs. 5-7): copulatory pocket deeper and narrower than in *M. utingae*; two atria with almost circular sclerotized rims, separated by a septum; large copulatory openings connected with the membranous compartment from which the spermathecal and glandular ducts originate.

Note
M. J. Ramírez collected one male and three females in the same area. Matings have not been observed, but it is almost certain that both male and females belong to the same species. The palp of this species has no cymbial apophysis and the tip of the embolus ends in an enlargement covered by denticles (fig. 24).

Material examined
Argentina, Misiones Province, National Park Iguazú, 1 ♀ N°9454 MACN, col. Galiano, XI 70; 3 ♀ 1 ♂ N°9455 MACN, col. M. J. Ramírez, II 95.

**Martella amapa** n. sp. (fig. 8)

Etymology
The specific name is a noun in apposition taken from the type locality.

Diagnosis
*Martella amapa* seems closest to *M. pottsi* Peckham & Peckham, 1892, but differs in the contiguous copulatory openings and the forward directed glandular ducts.

Description
Female holotypus. Total length 5.00 mm. Carapace length 1.93 mm, width 1.25 mm, height 0.93 mm. Ocular quadrangle length 0.87 mm, first row width 1.23 mm, third row width 1.22 mm. Distances ALE-PME 0.23 mm, PME-PLE 0.18 mm. AME diameter 0.45 mm. Clypeus height 0.05 mm. Chelicerae: pro-margin with four teeth, retromargin with three. Legs IV-I-III-II. Leg spination: Femora and patellae I-IV 0. Tibiae I, right v 2-2-2-2; left v 2-2-2-2; II v 2-2-2; III, IV 0. Metatarsi I-III v 2-2; IV v 2ap. Epigynum (fig. 8): copulatory pocket; spermathecae spherical, glandular ducts directed forward.

Material examined

**Martella gandu** n. sp. (figs. 9-14, 23)

Etymology
The specific name is a noun in apposition taken from the type locality.

Diagnosis
Males of *Martella gandu* can be distinguished from those of *M. pottsi* by the following characters: five pairs of spines on tibia I, cheliceral fangs with median apophysis, bifid retrolateral tibial apophysis, lack of proximal ectal apophysis on cymbium; from males of *M. utingae* are distinguished by the form of the embolus and that of the tibial apophysis. Females of *M. gandu* can be distinguished from those of *M. pottsi* by the glandular ducts directed forward and from *M. utingae* by the shape of the membranous compartments of the epigynum.

Description
Female holotypus. Total length 4.27 mm. Carapace length 1.87 mm, width 1.20 mm, height 0.97 mm. Ocular quadrangle length 0.85 mm, first row width 1.17 mm, third row width 1.20 mm. OMP equidistant from ALE and PLE. AME diameter 0.40 mm. Clypeus height 0.05 mm. Chelicerae short, vertical; promargin with five teeth, retromargin with three. Legs IV-I-III-II. Leg spination: Femora and patellae I-IV 0. Tibiae I v 2-2-2-2-2; II v 2-2-2; III-IV 0. Metatarsi I, II v 2-2; III p 1-1, r 1-1; IV p 1-1. Epigynum (figs. 9-11): plate with two oblique atria separated by a median septum that is narrow anteriorly; posterior border projecting backward and covering the copulatory pocket; spermathecae spherical, contiguous.

Male allotypus. Total length 4.00 mm. Carapace length 1.90 mm, width 1.27 mm, height 0.98 mm. Ocular quadrangle length 0.82 mm, first row width 1.13 mm, third row width 1.15 mm. Distances ALE-PME 0.17 mm, PME-PLE 0.20 mm. AME diameter 0.40 mm. Clypeus height 0.06 mm. Chelicerae length 0.87 mm, diverging on apical half; promarginal apophysis with four teeth on internal side; retromargin with two teeth; fangs with apophysis on internal side (fig. 12). Two bands of white hairs on anterior face: one with dense short hairs occupying the length of the internal border and the other on the basal three quarters of the external border, with long but less dense hairs. Legs IV-I-III-II. Leg spination: Femora I p 1ap; II p 1, r 1; III, IV p 1, r 1, d 1 ap. Patellae I-IV 0. Tibiae I v 2-2-2-2-2; II v 2-2-2; III, IV v 2 ap. Metatarsi I, II v 2-2; III p 1-2, r 1-2; IV p 1-1, r 1-1. Palps (figs. 13, 14, 23): length of the articles, femur 0.70 mm, patella 0.45 mm, tibia 0.77 mm, cymbium 0.83 mm. Retrolateral tibial apophysis with bifid tip; ventral tibial apophysis blunt; proximal ectal area of the cymbium smooth. Tip of the embolus enlarged, with a narrow pars pendula. Abdomen with dorsal scutum.

Variants on paratypes: one male has shorter chelicerae (0.68 mm), with three retromarginal teeth. Leg spination of one female: femur II p 1ap; metatarsus II p 1-2.

Material examined
Brazil, Bahia: Gandu, ♂ holotypus, ♀ allo-
typus and 1 ♂ paratypus (MNRJ) col. CEPEC
Nº 3201, VII 68; Canavieiras, Camacan, 1 ♀
paratypus Nº 9457 MACN, col. Rore-Gon-
çoalvez, 23 VIII 68; Camacan, 1 ♀ paratypus Nº
9458 MACN, col. CEPEC; Itamarajú, 2 ♀ ♀
paratypus Nº 9459 MACN, col. Rore-Gonçoalvez,
25 VIII 68.

Martella pasteuri n. sp. (figs. 15-21, 25)

Etymology
The specific name is a patronym in honour
of the French chemist and bacteriologist
Louis Pasteur.

Diagnosis
Martella pasteuri can be distinguished from
the other species of the genus by the pres-
ence of a proximal ectal corrugated field on
the cymbium. The epigynum differs from
that of M. amapa n. sp. in the copulatory
openings wide apart, placed in
the other species of the genus by the pres-
ence of a proximal ectal corrugated field on
the cymbium. The epigynum differs from
that of M. amapa n. sp. in the copulatory
openings wide apart, placed in
that of M. potssi in the glandular ducts directed
forward.

Description
Female holotypus. Total length 4.40 mm.
Carapace length 1.97 mm, width 1.20 mm,
height 0.97 mm. Ocular quadrangle length
0.84 mm, width of first and third rows 1.23
mm. Distances ALE-PME 0.20 mm, PME-PLE
0.18 mm. AME diameter 0.43 mm. Clypeus
height 0.04 mm. Chelicerae: promargin with
eight teeth, left retromargin with four teeth,
right with three. Legs IV-I-III-II. Leg spination:
Femora I, II, IV 0; III p 1ap. Tibiae I v 2-2-2-2-2;
II v 2-2-2; III p 1; IV p 1-1. Metatarsi I, II v 2-2;
III v 2-2, p 1, r 1; IV v 2ap. Patellae
I-IV 0. Tibiae I v 2-2-2-2-2; II v 2-2-2; III v
2ap, p 1, r 1; IV v 2ap. Metatarsi I, II v 2-2;
III v 2-2, p 1, r 1; IV p 1-2, r 1. Palps (figs.
18-20, 25): length of the articles: femur
0.87 mm, patella 0.55 mm, tibia 1.13 mm,
cymbium 0.77 mm. Ventral and retrolateral
apophyses small, the last with acute tip;
corrugated field on retrolateral basal cymbi-
um (fig. 18, CF); embolus slender, a lit-
tle enlarged at the tip (fig. 25). Abdomen
with a weak dorsal scutum.

Variants on paratypes: one male and one
female have four retromarginal teeth.

Material examined
Brazil, Amazonas: Reserva Ducke (26 km NE
from Manaus), ♂ holotypus, ♀ allo-
typus and ♀ paratypus (MNRJ), col. Galiano,
VIII 71; 2 ♀ ♀, 4 ♀ ♀ paratypi Nº 9460 MACN, col.
Galiano, VII 1971; Pará, Belém: Fazenda
Velha, 2 ♀ ♀ Nº 9461 MACN, col. Galiano,
VIII 70.

Sarinda chacoensis n. sp. (figs. 26-28)

Etymology
The specific name is an adjective derived from
the type locality.

Diagnosis
Sarinda chacoensis differs from all the other
species of the genus in the extremely short
epigynal ducts.

Description
Female holotypus. Total length 4.52 mm.
Carapace length 2.00 mm, width 1.13 mm,
height 0.80 mm. Ocular quadrangle length
0.78 mm, first and third rows width 1.12 mm.
Distances ALE-PME 0.23 mm, PME-PLE 0.20
mm. AME diameter 0.40 mm. Clypeus height
0.06 mm. Chelicerae: promargin with three
Teeth; retromargin with four, the apical one
bifid. Epigynum (figs. 26-28): copulatory
pocket narrow, copulatory openings near
middle, copulatory duct almost straight,
median duct with two turns, glandular duct
as in Martella gandu n. sp.; promarginal
apophysis with five teeth on internal side,
retromargin with three teeth (fig. 21). Legs
I-IV-I-III-II. Leg spination: Femora I p 1ap; II
p 2ap; III p 2ap, r 1 ap; IV p 2 ap. Patellae
I-IV 0. Tibiae I v 2-2-2-2-2; II v 2-2-2; III v
2ap, p 1, r 1; IV v 2ap. Metatarsi I, II v 2-2;
III v 2-2, p 1, r 1; IV p 1-2, r 1. Palps (figs.
18-20, 25): length of the articles: femur
0.87 mm, patella 0.55 mm, tibia 1.13 mm,
cymbium 0.77 mm. Ventral and retrolateral
apophyses small, the last with acute tip;
corrugated field on retrolateral basal cymbi-
num (fig. 18, CF); embolus slender, a lit-
tle enlarged at the tip (fig. 25). Abdomen
with a weak dorsal scutum.

Variants on paratypes: one male and one
female have four retromarginal teeth.


Discussion

Up to now, the following genitalic characters have been considered diagnostic for Martella and Sarinda: a. Females of Sarinda are defined by two pairs of spermathecae and spiralled median and copulatory ducts; while those of Martella have only one pair of spermathecae and no copulatory ducts, because the copulatory entry is connected directly to a membranous compartment from which the spermathecal and glandular ducts originate. b. Males of Martella have a proximal ectal apophysis on the cymbium which is absent in Sarinda.

According to the length of the embolus, males of Sarinda have been arranged (Galiano, 1965) in two groups: 1. Species with a long embolus, describing two or more turns around the tegulum [S. nigra, S. marcosi, S. silvatica Chickering, 1946, S. panamae Galiano, 1965, S. capibarae Galiano, 1967, S. ruficeps (Simon, 1901)]; 2. Species with a relatively short embolus, with one turn or less around the tegulum [S. armata Peckham & Peckham, 1892, S. hentzi (Banks, 1903), S. cutleri (Richman, 1965), S. imitans]. The tegulum and embolus of the species of the second group (one turn or less) are similar to those of the Martella species described up to now and the males could be accurately assigned to genus only if the females of the species are known.

The females of Martella utingae n. comb., Martella camba n. comb. and Martella gandu n. sp. present the genitalic structure of Martella species while the males have palps similar to the Sarinda group 2. Martella pasteuri n. sp. has a corrugated field (fig. 18) at the place of the ectal cymbial apophysis which is interpreted as a substitute for the apophysis. It appears that Martella is comprised of species both with and without cymbial apophysis and there

short and wide; posterior spermathecae bigger than anterior.

Material examined
Argentina, Chaco Province: Selva del Río de
could be intermediate forms.

On the basis of the data given in this paper, it is evident that the principal diagnostic structures separating Martella from Sarinda are those of the internal female genitalia.

Acknowledgements

I would like to thank Dr. Ana Timotheo da Costa for the loan of the undetermined collections of Salticidae from CEPEC; Lic. Martin Javier Ramirez for collecting specimens, and both he and Dr. C. L. Scioscia for helpful comments on an earlier draft of this paper. My thanks also go to Mrs. Patricia Sarmiento from Museo de La Plata for the assistance with the scanning electron micrographs.

References


