

A NEW SPECIES OF *CHARINUS* SIMON 1892 (AMBLYPYGI: CHARINIDAE) FROM THE LEEWARD ISLANDS, LESSER ANTILLES

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Abstract: A new species of the genus *Charinus* Simon 1892 is herein described on the basis of four adult specimens collected in two localities of Saint-Barthélemy (Leeward Islands of the Lesser Antilles). This represents both the first record of the family Charinidae Quintero 1986 from the Leeward Islands, and its first species to be described from the Lesser Antilles.

Key words: Amblypygi, Charinidae, *Charinus*, new species, Lesser Antilles.

Una especie nueva de *Charinus* Simon 1892 (Amblypygi: Charinidae) de las Islas de Sotavento, Antillas Menores.

Resumen: Se describe una especie nueva del género *Charinus* Simon 1892, sobre la base de cuatro especímenes adultos colectados en dos localidades de San Bartolomé (Islas de Sotavento de las Antillas Menores). Este representa el primer registro de la familia Charinidae Quintero 1986 para las Islas de Sotavento y su primera especie descrita de las Antillas Menores.

Palabras claves: Amblypygi, Charinidae, *Charinus*, nueva especie, Antillas Menores.

Taxonomy / Taxonomía: *Charinus bruneti* n. sp.

Introduction

In the West Indies, the family Charinidae Quintero 1986 is widely distributed and well diversified in the Greater Antilles: 12 species of the single genus *Charinus* Simon 1892 have been described from Cuba, Jamaica, Hispaniola, Puerto Rico and the Virgin Islands (Quintero, 1983; Armas & Teruel, 1997; Armas & Ávila, 2001; Armas & Pérez, 2001; Harvey, 2003; Armas, 2004, 2006, 2007, 2010).

But its occurrence in the Lesser Antilles has been documented only once: Armas (2006: 242) recorded an undescribed species from the Grenadines, in the Windward Islands. According with Luis F. de Armas (pers. comm., August 25, 2011), the Grenadines species is that illustrated by Armas (2006: 225, fig. 1) on the basis of a photograph provided by Rev. Mark da Silva.

Recently, several specimens of *Charinus* were collected at two localities of Saint-Barthélemy, in the northern Leeward Islands, Lesser Antilles. The careful comparison of these specimens to the remaining Antillean members of the genus demonstrated that it represents a new species, which is described in the present paper.

Methods & material

The specimens were studied, measured, drawn and photographed under a Zeiss Stemi 2000-C stereomicroscope, equipped with line scale and grid ocular micrometers, and a Canon PowerShot A620 digital camera, all calibrated to 20x. Digital images were slightly processed with Adobe Photoshop® 8.0, only to optimize bright and contrast features. Nomenclature and measurements follow Quintero (1983). All specimens are deposited in the collection of the Centro Oriental de Ecosistemas y Biodiversidad, Santiago de Cuba (BIOECO), with labels originally written in Spanish (transcribed into English in the present text).

Systematics

Charinus bruneti, new species

Fig. 1-4. Table I

TYPE DATA: SAINT-BARTHÉLEMY: Anse des Flamands: Petite Anse; June 29, 2011; K. Questel; one adult female holotype and one adult male paratype (BIOECO). **Note:** the female was selected as holotype because it is the best preserved specimen (apical halves of both legs I and right leg IV are detached from the body, but no segments are missing); the male has all legs heavily dismembered, but no segments are missing either.

OTHER MATERIAL EXAMINED: SAINT-BARTHÉLEMY: Anse des Flamands: Petite Anse; September 29, 2011; K. Questel; one adult male and one adult female (kept alive by the second author). Vitet; December 6, 2010; K. Questel; one adult male and one adult female (BIOECO). **Note:** the specimens from Vitet were not designated as types because both are very poorly preserved: completely dismembered, original coloration faded, and many leg segments missing (including most of legs I).

DIAGNOSIS: Species of moderately small size (3.9–5.4 mm) for the genus. Coloration olive-brown, immaculate. Carapace with median and lateral eyes well developed; frontal area widely convex. Leg I with 22 tibial and 39 tarsal segments. Leg IV with trisegmented basitibia. Tarsomere II of legs II–IV with an almost complete whitish ring.

DISTRIBUTION (fig. 4): This species is apparently endemic from the small island of Saint-Barthélemy (Leeward Islands), in the Lesser Antilles.

ETHIMOLOGY: This species is named after William Brunet, who has been a decisive support to continue the passion for nature of the second author (KQ), from an early age.

DESCRIPTION:

ADULT FEMALE HOLOTYPE: **Coloration** (fig. 1) uniformly olive-brown, slightly darker on carapace and pedipalps, ventrally paler; chelicerae reddish; intersegmental membranes whitish. Median eyes and median ocular tubercle blackish; lateral eyes whitish, lateral ocular tubercles blackish. **Pedipalps** (fig. 1c) not attenuated, densely covered by minute scale-like tubercles and granules in all segments except postarsus. Trochanter densely covered with very large and stout spiniform setae all over, with two anteroventral spines (short, stout and widely spaced); ventroapical spur very long, sharp and curved upwards. Femur dorsally with four spines (Fd-1 > Fd-2 > Fd-3 > Fd-4), plus more than 10 very large and stout spiniform setae; ventrally with three spines (Fv-1 > Fv-2 > Fv-3), plus five spiniform setae of various sizes. Patella moderately flat; dorsally with three very large spines (Pd-1 < Pd-2 < Pd-3), plus a very large spine-like setiferous tubercle distal to Pd-3, and two much smaller basal from Pd-1; ventrally with two spines (Pv-1 < Pv-2). Tibia markedly flat, coriaceous, with only a few setiferous tubercles scattered (mostly on dorsal surface); dorsally with two spines (Td-1 almost twice as short as Td-2); ventrally with one spine (Tv-1), which is shorter than Td-2 but longer than Td-1). Basitarsus dorsally with two spines (Bd-1 about twice as short as Bd-2); ventrally smooth. Postarsus long, sharp, evenly curved inwards and smooth. **Carapace** (fig. 1c) markedly cordiform, 1.36 times wider than long. Tegument coriaceous, densely covered by minute tubercles and granules, and with a few short spiniform setae scattered. Frontal margin very wide and only slightly convex, with six short spiniform setae; posterior margin with more than 20 short spiniform setae evenly distributed up to the lateral margins. Median eyes and median ocular tubercle well developed; lateral eyes and lateral ocular tubercles well developed. **Tergites** (fig. 1a) with the same sculpture and setation as on carapace. **Ventral region** (figs. 1b, d) with genital operculum large, posterior margin widely rounded. Tritosternum long and very narrow, with one apical macroseta plus eight spiniform setae of various sizes (not aligned in pairs, nor clearly definable as either sub-basal or basal in placement). Tetrasternum very weakly sclerotized, wider than long and with paired lateral macrosetae plus two smaller setae longitudinally placed to the right of median axis. Pentasternum very weakly sclerotized, wider than long and with three macrosetae (paired laterals and median). Sternites largely not visible due to attached egg-sac. **Legs** (figs. 1a–b) slender but not unusually attenuated, all femora densely covered with minute scale-like tubercles and rigid setae of various sizes. Leg I flagellum with 22 tibial and 39 tarsal segments; first tarsomere about three times longer than second. Leg IV with trisegmented basitibia. Tarsomere II of legs II–IV with an almost complete whitish ring.

MALE (fig. 2; tab. I): in general it is similar to the holotype male, slight sexual dimorphism evident by: **(a)** size smaller; **(b)** pedipalps slightly more slender; **(c)** carapace proportionally narrower, with frontal margin narrower and more prominent; **(d)** genital operculum narrower, with posterior margin more prominent, and with heavily sclerotized sclerites in the opistogeminate organs.

VARIATION: The coloration in live specimens is darker and has a reddish hue, but after alcoholic preservation it rapidly changes to the pattern described above.

Table I. Measurements (mm) of the types of *Charinus bruneti* sp.n. Abbreviations: length (L), width (W), depth (H).

Dimensions		Female holotype	Male paratype
Carapace	L / A	2.2 / 3.0	1.6 / 2.1
Abdomen	L	3.2	2.3
Pedipalp	L	4.8	3.1
Femur	L / A	1.3 / 0.5	0.9 / 0.2
Patella	L / A	1.7 / 0.5	1.1 / 0.3
Tibia	L	0.8 / 0.3	0.5 / 0.2
Basitarsus	L	0.6	0.4
Postarsus	L	0.4	0.2
Leg I Femur	L	4.1	2.9
Leg IV Femur	L	2.8	2.0
Total	L	5.4	3.9

The holotype female is the largest of all four specimens (tab. I). The paratype male is almost 30% smaller than the holotype, but it is undoubtedly an adult: its genitalia is fully developed, including the small sclerotized parts of the opistogeminate organs; this specimen closely matches in size both adults from Vitet.

It is worth to mention here that both type-specimens have identical segmentation of leg I, without any variation.

COMPARISONS: The presence of fully developed median eyes and median ocular tubercle unambiguously distinguishes *Charinus bruneti* n.sp. from all other Antillean members of the genus except *Charinus acosta* (Quintero 1983) and *Charinus victori* Armas 2011, but the tibial/tarsal segmentation pattern of leg I is a clearly diagnostic character: the new species herein described possesses 22/39 segments, while these numbers are 23/41 in *Ch. acosta*, and 21/33 in *Ch. victori*. Further, their geographical distribution is widely allopatric: these two species are endemic from the Greater Antilles (Cuba and Puerto Rico, respectively).

The described species geographically closest to Saint-Barthélemy is *Charinus muchmorei* Armas & Teruel 1997 from St. John (U.S. Virgin Islands), which lies 200 km to the WNW. But this species completely lacks median eyes, and has 23 tibial segments in leg I.

Last, the undescribed species depicted by Armas (2006: figure 1) from the Grenadines (600 km to the SSE), looks morphologically closest to the South-American species of the genus, whilst *Charinus bruneti* n.sp. is definitely most similar to the Greater Antillean taxa.

NATURAL HISTORY: All specimens were collected under rocks in wet, densely forested ravines. Of the Petite Anse sample, the two specimens from June 29 (types) were found near a termite mound; from those captured on September 29, one was under the same rock as a juvenile *Phrynus goesii* Thorell 1889, and the other was near a nest of the ant *Cyphomyrmex* sp.

► **Fig. 1.** Adult female holotype of *Charinus bruneti* n.sp.: **a)** entire dorsal view; **b)** entire ventral view; **c)** anterior part of carapace, pedipalps and chelicerae, dorsal view; **d)** sternal region.

► **Fig. 2.** Adult male paratype of *Charinus bruneti* n.sp.: **a)** entire dorsal view; **b)** entire ventral view; **c)** carapace; **d)** genital operculum.

► **Fig. 3.** Live adults of *Charinus bruneti* n.sp. from Petite Anse, photographed in its natural habitat on September 29, 2011: **a)** male; **b)** female.

1a



1b



1c



1d



2a



2b



2c



2d



3a



3b



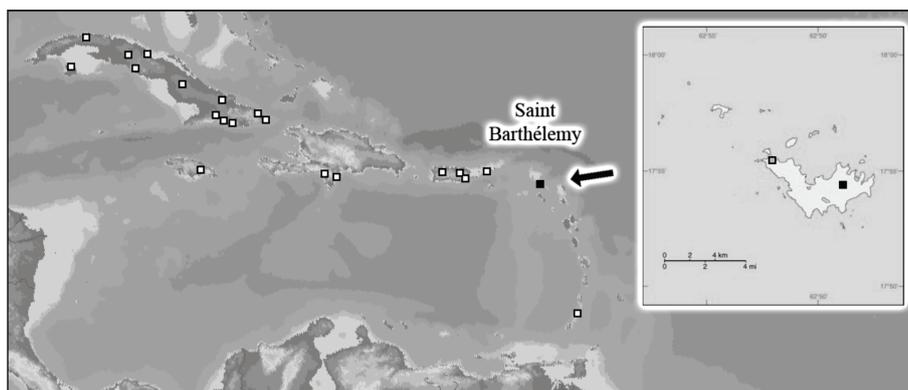


Fig. 4. Known geographical distribution of the genus *Charinus* in the West Indies (white squares) and Saint-Barthélemy (black squares). The inset shows the precise occurrences of *Charinus bruneti* n.sp.: Petite Anse (grey square) and Vitet (black square).

A third specimen was also found on September 29 at Petite Anse, but as soon as the rock was turned, an individual of the lizard *Anolis gingivinus* suddenly came to predate upon it.

The female holotype is ovigerous: it carries nine large eggs attached to the underside of abdomen (fig. 1b).

COMMENTS: All Antillean species of *Charinus* spp. are restricted in distribution to single islands (Armas, 2004, 2006, 2007, 2010; Teruel *et al.*, 2009; Teruel, 2011), thus, *Charinus bruneti* n.sp. is most likely endemic from Saint-Barthélemy. Two additional arachnid species have recently been described as endemic from this island: the scorpion *Oiclus questeli* Teruel 2008 and the solifugid *Ammotrechella beatriceae* Teruel & Questel 2011.

The present discovery of *Charinus* at Saint-Barthélemy, coupled with the undescribed species recorded from the Grenadines (Armas, 2006), suggest that this genus may be widespread in the Lesser Antilles. The lack of published records could be due to the fact that these tiny whip-spiders are easily mistaken by non-specialized collectors as small juveniles of the common *Phrynus* spp., and discarded.

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