Description of the male of *Chactas braziliensis* Lourenço, Aguiar & Franklin 2005 (Scorpiones: Chactidae)

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Abstract — *Chactas braziliensis* Lourenço, Aguiar & Franklin 2005 was described on the basis of four adult females collected in the state of Amazonas, Brazil, and represents the only species of this genus in the country. In this paper, the male of this species, which has never been recorded, is described for the first time by using a specimen taken from the state of Acre, Brazil. Males of *C. braziliensis* can be distinguished from those of other small (up to 35 mm) *Chactas* species (*C. adornelae* Rossi 2014 and *C. koepcke* Lourenço & Dastych 2001) by the numbers of pedipalp femur carinae and pectinal teeth.

Key words — Acre state, Amazon forest, Arachnida, scorpion, Parque Nacional Serra do Divisor

Introduction

The genus *Chactas* Gervais 1844 belonging to the family Chactidae Pocock 1893 is characterized by 4 to 6 trichobothria on the ventral aspect of patella, and fixed finger of chela without an extra-large accessory tooth; male pedipalps very long and slender compared to those of females (Lourenço & Dastych 2001). This Neotropical scorpion genus occurs exclusively from Central to South America (Lourenço 1991; Teruel & Cozjin 2011), and in the Caribbean Islands (Francke & Boos 1986). Currently, most of species being found in Colombia and Venezuela (González-Sponga 1996; Lourenço 1997). Few species are known from other South American countries (Rossi 2014).

This genus was originally described by Gervais (1844) for *Chactas vanbenedenii* (Gervais 1843) from Colombia. According to Lourenço (2014), morphological diagnosis of *Chactas* species is rather difficult, mainly because several species are extremely similar. Thus, the taxonomic resolution of *Chactas* has been the subject of constant debate (Lourenço 2014). Kraepelin (1912) revised the genus proposing the existence of three natural groups of species within *Chactas*. Later, Mello-Leitão (1945) raised these groups to the subgenera rank. In 1978, González-Sponga proposed the creation of two new subgenera on the basis of the relative number of trichobothria. However, Lourenço (1997) suggested that the variation in this single character is not sufficient for the division of the genus into subgenera.

Despite Brazil's vast area, only a single *Chactas* species, *Chactas braziliensis*, has been recorded in the country. This species was described on the basis of four female individuals collected from the western portion of Amazonas state in the Amazon Basin (Lourenço et al. 2005). To date, males of this species remain unknown. Recently a chactid scorpion collected in the Parque Nacional Serra do Divisor, Acre, near the Peruvian border in 2001 was sent to the Universidade Federal de Pernambuco in Recife, Brazil, and it was identified as a male of *Chactas braziliensis*. The male of this species is described for the first time in this paper.

Materials and methods

Measurements were taken using a digital caliper and are given in mm. Photos were taken using a DSLR Nikon D5500 with an 18–55 mm Nikkor lens and an attached Raynox DCR-250 lens. Drawings were prepared by using photographs taken on Inkscape 0.92, using a Wacom MTE-450 Bamboo tablet. The morphological terminology mostly follows Ochoa et al. (2010; 2013). The material examined is deposited in the Arachnological collection of the Universidade Federal de Pernambuco, Recife, Brazil. Comparisons with *C. braziliensis* were made through a holotype high definition photos and other *Chactas* species were made through the revision of the bibliography.

Fig. 1. Distribution of *Chactas braziliensis*. Circle: type locality; star: the new locality shown in this study.

Taxonomy

Chactas braziliensis Lourenço, Aguiar & Franklin 2005

Chactas braziliensis Lourenço, Aguiar & Franklin 2005, p. 2, figs. 1–13.

Type material. Female holotype and three female paratypes from Guajara, Amazonas state, Brazil deposited in Instituto Nacional de Pesquisas da Amazônia (INPA), Manaus and Muséum National d'Histoire Naturelle, Paris. Collection date 13–19/VI/1995.

New record. One male. Brazil, Acre, Parque Nacional da Serra do Divisor, Moa River, Gibraltar locality (Fig. 1), one male, November 20, 2001, Souza, M. B., deposited in CA-UFPE #1542.

Distribution. Known only from western Amazonas, Brazil.

Diagnosis. Males of *C. braziliensis* show morphological affinities with others small (up to 35 mm) congeners such as *C. koepcke* Lourenço & Dastych 2001 and *C. adornelae* Rossi 2014. *Chactas braziliensis* can be distinguished from these species by the following combination of characters: four carinae present on pedipalp femur of *C. braziliensis*, while the number of carinae is 3 in *C. adornelae* and 5 in *C. koepcke*. Males of *C. braziliensis* possess eight pectinal teeth, while *C. adornelae* and *C. koepcke* possess seven teeth.

Description of male. Measurements. Total length 34.2. Prosoma: length 4.9; anterior width 3.2; posterior width 5.3. Mesosoma length 12.7. Metasomal segment I: length 2.2; width 2.5; depth 2.0. Metasomal segment II: length 2.2; width 2.1; depth 2.0. Metasomal segment III: length 2.8; width 2.1; depth 2.1. Metasomal segment IV: length 3.6; width 2.1; depth 2.1. Metasomal segment V: length 5.8; width 1.9; depth 1.7. Vesicle: width 1.8; depth 1.7. Pedipalp: patela length 6.2; width 1.8; femur length 5.8; width 1.7; chela length 10.7; width 2.5; depth 2.2; movable finger length 4.8. **Coloration** (Fig. 2). **Prosoma.** Blackish-brown; Chelicerae yellow with reticulated brownish spots; fingers uniformly dense, blackish-brown; some teeth reddish. Pedipalps, femur and patella blackish-brown; chela hand reddish-brown; finger blackish. Legs yellowish-brown with yellow basitarsus and telotarsus. **Mesosoma.** Tergites blackish-brown with central longitudinal yellowish strip. **Metasoma.** Segments blackish-brown with blackish zones over carinae; vesicle yellowish-brown with reddish stinger. Venter and sternites brownish-yellow with some yellowish zones; pectines and genital operculum more pale than sternites. **Morphology. Prosoma.** Weak concavity in anterior margin; lustrous and acarinate; lateral sides show very thin granulation; shallow furrows (Fig. 3). Sternum pentagonal, wider than long. Tergites acarinate, smooth and shiny with lateral punctations. Pectinal tooth count 8-8, fulcra absent (Fig. 4). Sternites smooth and shiny; spiracles small and

Fig. 2. Adult male of *Chactas braziliensis*. A, dorsal aspect; B, ventral aspect. Scales = 1 cm.

Fig. 3. Prosoma of *Chactas braziliensis*.

Fig. 4. Genital operculum and pectin of *Chactas braziliensis*.

oval in shape. Pedipalps: Femur with dorsal internal, dorsal external, and ventral internal carinae strongly marked, ventral external carina weakly marked, internal face moderately granulated, dorsal and ventral faces without granulations, smooth. Patella smooth and lustrous; dorsal internal and ventral internal carinae moderate; ventral external carinae vestigial; other carinae absent. Chela lustrous; dorsal internal carina weak; other carinae vestigial; internal face with a few weak granules, other faces smooth. Dentate margins on movable and fixed fingers with a median denticle row composed of 8 groups of granules. Chelicerae with typical dentition of the family Chactidae (Vachon 1963), intense setation ventrally. Trichobothriotaxy type C; neobothriotaxic

‘majorante’ (Vachon 1974); chela with 4 ventral trichobothria; patella with 5 ventral and 17 external trichobothria (Fig. 5). Ventral surface of tarsus in legs III and IV with a median series of small spinules and 5 external and 4 internal setae. **Metasoma.** Segments with a lustrous tegument; segments I and II with two dorso-lateral spines, segment I with a vestigial dorso-lateral and median lateral carinae, others carinae absent. Segment II with weak dorso-lateral and median lateral carinae, vestigial lateral inframedian carinae, others carinae absent. Segment III with weak dorso-lateral and median lateral carinae, vestigial lateral inframedian carinae, others carinae absent. Segment IV with a moderate dorso-lateral carinae, weakly median lateral and lateral in-

Fig. 5. Trichobothrial pattern of male *Chactas braziliensis*. A, femur, dorsal aspect; B, chela dorso-external aspect; C, chela ventral aspect; D, chela internal aspect; E, patella dorsal aspect; F, patella external aspect; G, patella ventral aspect. Scales = 3 mm.

framedian carinae, others carinae absent. Segment V with moderate median lateral and ventrosubmedian carinae, small spinoid granulations on ventral aspect, others carinae absent. Vesicle lustrous and with minute granulation.

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