

FURTHER ADDITIONS TO THE CHACTID SCORPIONS OF BRAZILIAN AMAZONIA (ARACHNIDA: SCORPIONES: CHACTIDAE)

Wilson R. Lourenço¹, Juliana Araujo² & Elizabeth Franklin²

¹ Muséum national d'Histoire naturelle, Département de Systématique et Evolution, Section Arthropodes (Arachnologie), CP 053, 57 rue Cuvier 75005 Paris, France. – arachne@mnhn.fr

² National Institute for Amazon Research - INPA, Dept. of Entomology - CPEN, CP 478, CEP 69.011-970 - Manaus, Amazonas, Brazil

Abstract: Amazonian scorpions belonging to the family Chactidae Pocock, 1893 are studied. The male of *Hadrurochactas polisi* (Monod & Lourenço, 2001) is recorded for the first time and a short diagnosis is proposed. A new species is described, *Broteochactas cauaburi* sp. n., based on a female specimen collected in the upper Rio Negro region in Brazil.

Key words: Scorpiones, Chactidae, *Broteochactas cauaburi* sp. n., Upper Rio Negro, Amazonia, Brazil.

Adiciones a la fauna de escorpiones cáctidos de la Amazonia brasileña (Arachnida: Scorpiones: Chactidae)

Resumen: Se estudian los escorpiones amazónicos de la familia Chactidae Pocock, 1893. Se registra por primera vez el macho de *Hadrurochactas polisi* (Monod & Lourenço, 2001) y se propone una diagnosis breve. Se describe una especie nueva, *Broteochactas cauaburi* sp. n., a partir de una hembra colectada en la región del alto Río Negro, en Brasil.

Palabras clave: Scorpiones, Chactidae, *Broteochactas cauaburi* sp. n., alto Río Negro, Amazonia, Brazil

Taxonomy / Taxonomía: *Broteochactas cauaburi* sp. n.

Introduction

Contributions to the knowledge of the Amazonian scorpion fauna and in particular of the elements belonging to the family Chactidae Pocock, 1893 have been the subject of several previous studies (e.g. Lourenço & Pinto da Rocha, 2000; Monod & Lourenço, 2001; Pinto da Rocha *et al.*, 2002; Lourenço & Araujo, 2004; Lourenço & Molteni Machado, 2004; Lourenço *et al.*, 2005; Lourenço, 2008; Lourenço & Duhem, 2009). However, Amazon region remains one of the world's most diverse for its fauna of scorpions. Inventory on the Amazonian scorpion fauna began in the second half of the 19th century and was for the first time synthesised in a monograph by Mello-Leitão (1945). Since then other contributions have been published, noticeably González-Sponga (1996) and Lourenço (2002a,b). On account of the diversity and richness of the Amazonian scorpion fauna, the discovery and description of new species is by no means unusual (Lourenço, 2002a,b). In this contribution, a new species belonging to the genus *Broteochactas* Pocock, 1893 is described from the Upper Rio Negro region.

Methods

Illustrations and measurements were made with the aid of a camera lucida and an ocular micrometer attached to a Wild M5 stereo-microscope. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations are those developed by Vachon (1974) and the morphological terminology mostly follows Hjelle (1990).

Taxonomic treatment

Family Chactidae Pocock, 1893

Genus *Hadrurochactas* Pocock, 1893

Hadrurochactas polisi (Monod & Lourenço, 2001)

Broteochactas polisi Monod & Lourenço, 2001: 196.

This species was described by Monod and Lourenço (2001) as *Broteochactas polisi*, based on one female specimen collected at Campina field station, 43 km north of Manaus city. Subsequently, the genus *Hadrurochactas* was fully revalidated and the species transferred to it (Lourenço, 2010). Until now, the species was known based exclusively on the holotype female. In this study, we identify a pre-adult male of this species, collected at Manaus, 'do Cabo Frio', in a primary forest region. A short diagnosis is proposed for this specimen.

MATERIAL EXAMINED: Brazil, Amazonas, Manaus, 'do Cabo Frio', 19/VIII/2005 (F. B. Baccaro). 1 pre-adult male deposited in the INPA-0613.

DIAGNOSIS: Small scorpion, 17.7 mm in total length, including telson. Coloration dark brown with light spots varying from yellowish to light brown. Body and appendages smooth; only metasomal segments showing some weakly marked granulations. Telson thin and elongated with spine-like granules on ventral aspect; aculeus short, subaculear tubercle preceded by small spines. Pectines with 10-10 teeth. Fixed and movable fingers of pedipalps with 5-6 rows of linear granules; three accessory granules on the extremity of fingers. Trichobothrial pattern of type C, neobothriotaxic (majorante) 'major neobothriotaxy'. Legs with two rows of irregularly arranged thin setae.

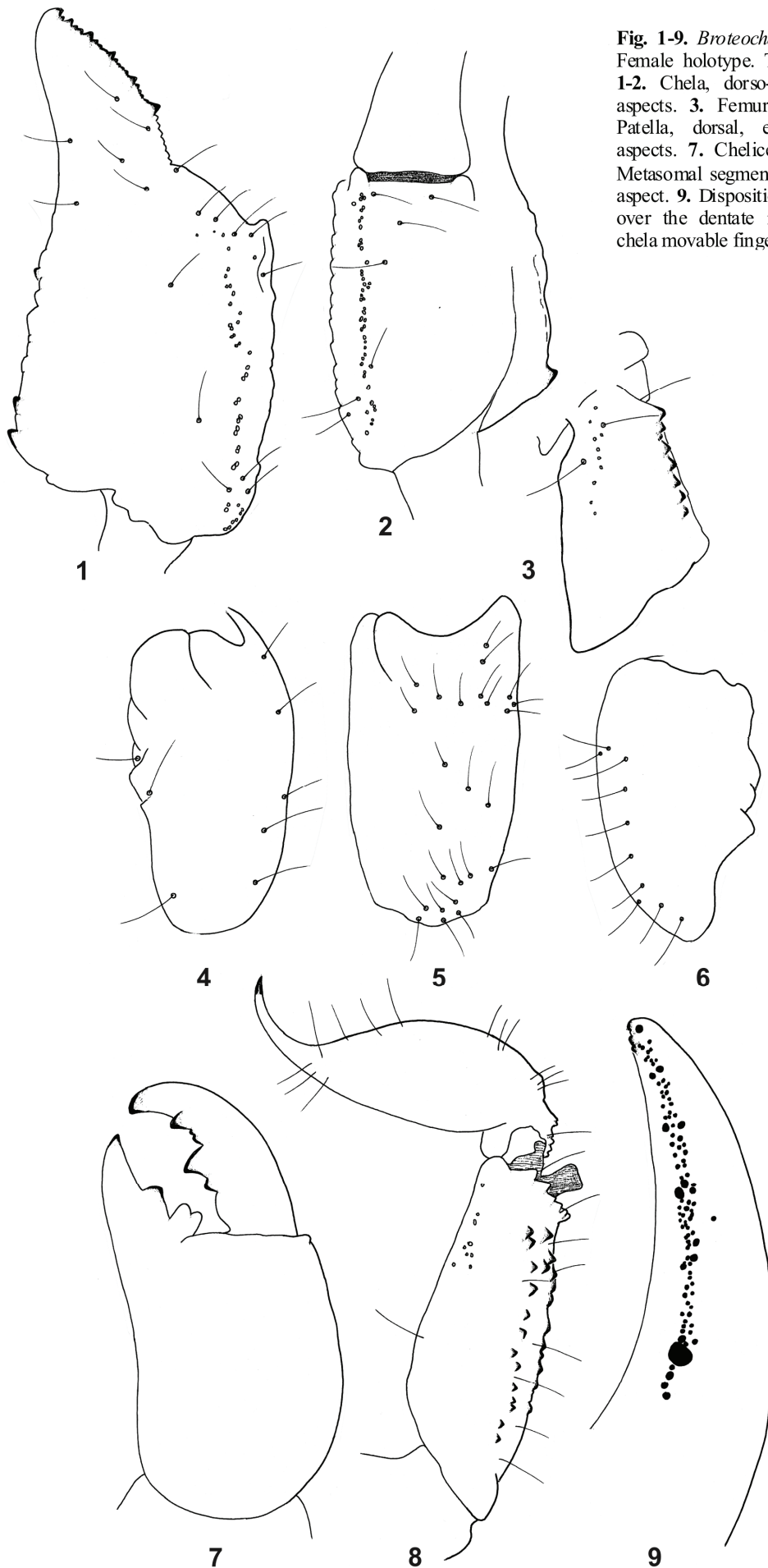
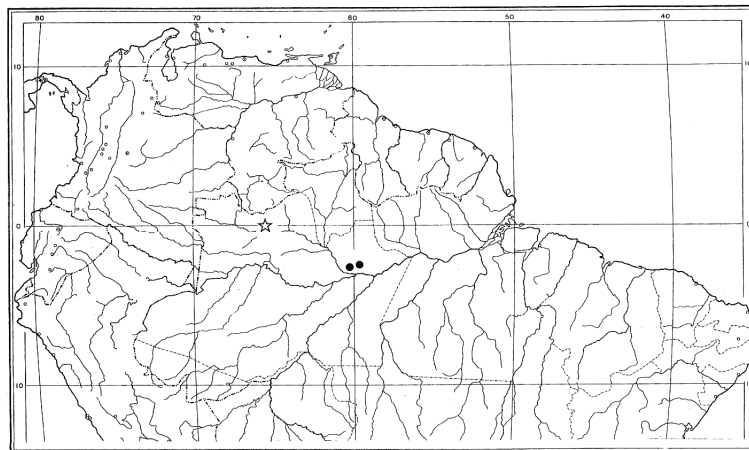


Fig. 1-9. *Broteochactas cauaburi* sp. n. Female holotype. Trichobothrial pattern. **1-2.** Chela, dorso-external and ventral aspects. **3.** Femur, dorsal aspect. **4-6.** Patella, dorsal, external and ventral aspects. **7.** Chelicera, dorsal aspect. **8.** Metasomal segment V and telson, lateral aspect. **9.** Disposition of the granulations over the dentate margins of pedipalpal-chela movable finger.

Fig. 10. Map of the Amazon region, showing the known distribution for *Hadrurochactas polisi* (black circles) and the type locality of *Broteochactas cauaburi* sp. n., (white star).



ECOLOGY: The Tropical Ecological Assessment Monitoring (TEAM) site is situated in forest reserve 3402 (Cabo Frio) of the Biological Dynamics of Forest Fragments Project (BDFFP) (59°54'59"W; 2°23'37"S), about 80 km northeast of Manaus. The site is in relatively undisturbed upland (terra-firme) forest on moderately rugged terrain (elevation 50-120 m a.s.l.), with small streams in the valleys. The flora is extremely diverse, with approximately 1000 species of trees. The canopy height is about 35 m, with some emergent trees reaching up to 50 m. The understorey is relatively open and characterized by an abundance of stemless palms (Baccaro *et al.*, 2010).

Genus *Broteochactas* Pocock, 1893

Broteochactas cauaburi sp. n.

Fig. 1-9.

MATERIAL: Brazil, Amazonas State, Upper Rio Negro, in the region of 'Cabeça do Cachorro', Rio Cauaburi (N. P. Penny), 15/XII/1980: Female holotype. Type material deposited in the National Institute for Amazon Research (INPA-0591).

ETYMOLOGY: The specific name is placed in apposition to the generic name and refers to the region of Rio Cauaburi, where the new species was collected.

DIAGNOSE. Small scorpion, 22 mm in total length. Coloration reddish-yellow to reddish-brown. Body and appendages very weakly granulated, smooth and lustrous without punctations. Metasomal carinae vestigial or absent; only segment V shows some spinoid granules on ventral aspect. Pectines with 6-6 teeth. Trichobothrial pattern of type C neobothriotaxic 'majorante'.

Broteochactas cauaburi sp. n. can be included in the 'Broteochactas' species group (Lourenço, 2002b). The new species is distinguished from others *Broteochactas* and in particular from *B. neblinensis* González-Sponga, 1991, which occurs in the border between the Brazilian state of Amazonas and Venezuela, by the following features: (i) carapace, tergites and metasomal tegument exclusively smooth and lustrous (ii) overall size smaller (iii) metasomal carinae vestigial or absent. Moreover, both species are isolated by the Tepuys 'Pico da Neblina' and '31 de Março', which represent important geographical barriers (Lourenço, 1994).

DESCRIPTION (based on female holotype).

Coloration. Basically reddish-yellow to reddish-brown. Pro-soma: carapace reddish-brown. Tergites reddish-brown, slightly paler than carapace. Metasomal segments reddish-brown, darker than tergites; vesicle yellowish; aculeus reddish. Chelicerae reddish-yellow intensely marked with variegated blackish spots; fingers uniformly deep reddish-yellow. Pedipalps reddish; femur and patella darker than chela. Legs yellowish with diffused brownish spots. Venter and sternites yellowish; only sternite VII has some diffused brownish spots; pectines and genital operculum slightly paler than sternites.

Morphology. Carapace lustrous and acarinate, without punctations; furrows shallow. Sternum pentagonal, wider than long. Tergites acarinate, without granulations, smooth and shiny. Pectinal tooth count 6-6, fulcra absent. Sternites smooth and shiny, VII acarinate; spiracles with a round-shape. Metasomal segments IV and V longer than wide; metasomal tegument lustrous without granulations; segment V with small spinoid granulations ventrally. Carinae on segments I-V vestigial or absent; ventral carina absent from segments I to IV. Pedipalps: femur with dorsal internal, dorsal external and ventral internal carinae weakly marked; ventral external carina vestigial; tegument smooth; internal aspect very weakly granular. Patella smooth; all carinae weak to vestigial. Chela with minute granulations; ventral and dorsal median carina weakly to moderately developed; internal aspect with a few weak granules. Dentate margins on movable and fixed fingers with 6 rows of granules. Chelicerae with a dentition typical of Chactidae (Vachon, 1963), and with dense setation ventrally and internally. Trichobothrial pattern of type C, neobothriotaxic (majorante) 'major neobothriotaxy'. (Vachon, 1974).

Morphometric values of the female holotype. Total length (including the telson), 24.7. Carapace: length, 3.2; anterior width, 2.3; posterior width, 3.3. Mesosoma length, 11.2. Metasomal segments. I: length, 1.0; width, 1.8; II: length, 1.2; width, 1.5; III: length, 1.3; width, 1.4; IV: length, 1.6; width, 1.3; V: length, 2.5; width, 1.2; depth, 1.1. Telson length, 2.7. Vesicle: width, 1.0; depth, 0.8. Pedipalp: femur length, 2.2, width, 1.1; patella length, 2.5, width, 1.3; chela length, 4.9, width, 1.7, depth, 2.2; movable finger length, 2.5.

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