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## A new species of *Brotheas* C. L. Koch, 1837 (Scorpiones, Chactidae) from Bolivia

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(with 11 figures)

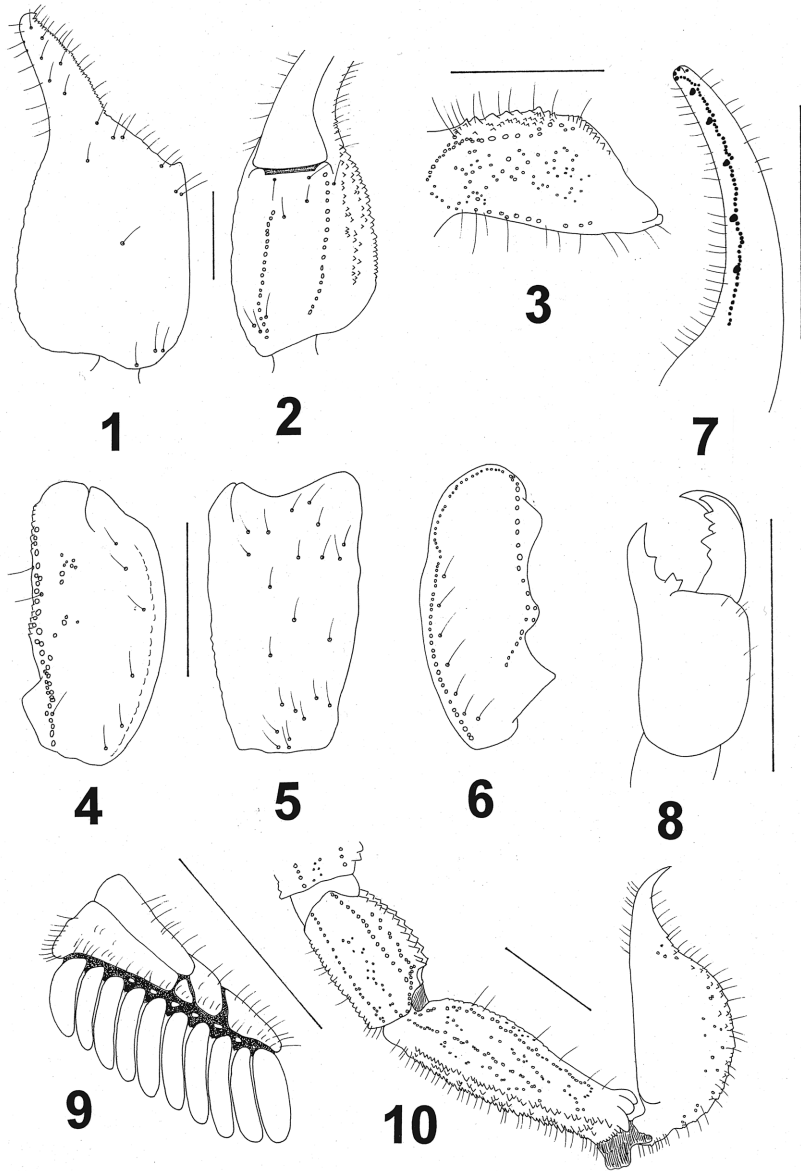
### Abstract

A new species of scorpion belonging to the genus *Brotheas* C. L. Koch, 1837 (family Chactidae Pocock, 1893), is described on the basis of one male specimen collected in Bolivia (W of Manoa, nearby the Abuna river) at the border with Brazil. The new species is characterized by reddish-yellow coloration, the carapace strongly convex and body and appendix weakly granulated. This new species is the first element of the family Chactidae ever reported from Bolivia.

**Key words:** Scorpiones, Chactidae, *Brotheas*, new species, Bolivia.

### Introduction

The family Chactidae Pocock, 1893 is one of the scorpion groups best represented in the neotropical scorpion fauna. Most of South American species are concentrated in the Amazonian and Guayanian floristic Provinces (Mori 1991, Prance & Lovejoy 1985, Adis 2002). Several species, however, are also distributed in the periphery of this core area, in zones such as in the Pacific coastal forests of Colombia and Ecuador or in highlands in the Andes (Lourenço 1983, 1995, 1997, Sissom 2000). In South America, chactid scorpions have been reported, up to now, from Colombia, Ecuador, Peru, Venezuela, Trinidad, Tobago, Guyana, Suriname, French Guiana and Brazil (Lourenço 1983, 1986, 1991, 1995, 1997, 2002,



**Figs 1-10.** *Brotheas bolivianus* sp. n. Holotype ( $\sigma$ ): 1-6, trichobothrial pattern; 1-2, chela, dorso-external and ventral aspects; 3, femur, dorsal aspect; 4-6, patella, dorsal, external and ventral aspects; 7, disposition of granulations on the dentate margins of the pedipalp chela movable finger; 8, chelicera, dorsal aspect; 9, pecten; 10, metasomal segments IV-V and telson, lateral aspect. (Scale bars = 3 mm).

Gonzalez-Sponga 1996, Sissom 2000).

One unexplained gap was represented by Bolivia, since a part of the Amazonian territory is located in this country. The only possible explanation to this gap is unquestionably the lack of precise faunistic inventories in Bolivia.

In this note, the first record of a chactid scorpion is provided for Bolivia and a new species of *Brotheas* C. L. Koch, 1837 is described from the Bolivian Amazonia.

### Methods

Illustrations and measurements were made using a Wild M5 stereo-microscope with a drawing tube and an ocular micrometer. Measurements follow those of Stahnke (1970) and are given in mm. Trichobothrial notations are those developed by Vachon (1974) and the morphological terminology mostly follows that of Vachon (1952) and Hjelle (1990).

### Taxonomy

Family Chactidae Pocock, 1893  
Genus *Brotheas* C. L. Koch, 1837

*Brotheas bolivianus* sp. n.

(Figs 1-10)

TYPE MATERIAL. Holotype (♂). Bolivia, W of Manoa, nearby the Abuna river at the border with Brazil, November 1983 (coll. H. Bauer); deposited in the Zoologisches Museum Hamburg (ZMH Acc. No. A24/08).

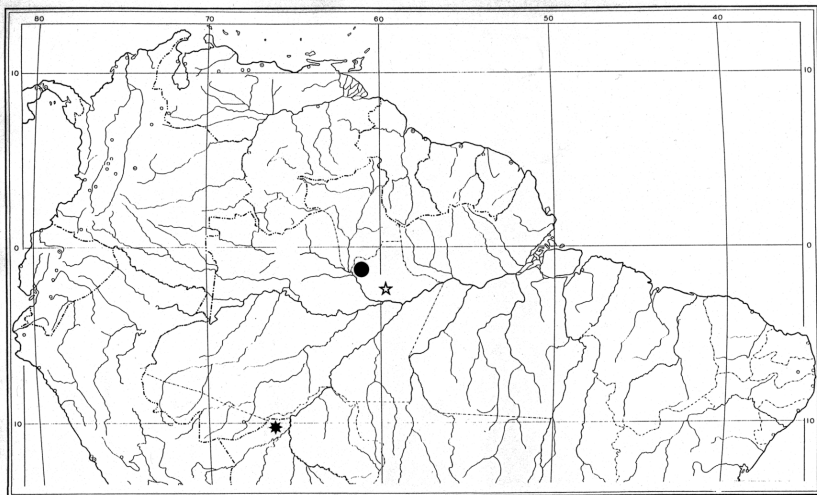
ETYMOLOGY. The specific name refers to the country where the new species was found.

DIAGNOSIS. Scorpions moderate in size, 43 mm in total length. Coloration reddish-yellow to reddish-brown. Carapace strongly convex and weakly granulated, with only minute punctations on posterior half; tergites punctuated with only a few granules on VII. Pectines with 10-11 teeth in male. Dentate margins on movable and fixed fingers composed of 5-6 rows of granules. Trichobothrial pattern type C neobothriotaxic 'majorante'.

DESCRIPTION based on male holotype. Measurements follow the description.

Coloration. Basically reddish-yellow to reddish-brown. Prosoma: carapace reddish-brown. Tergites reddish-brown, with one longitudinal pale yellow stripe. Metasomal segments reddish-yellow, with slightly darker zones over carinae; vesicle yellowish; aculeus reddish. Chelicerae yellowish with a darker zone at the base of fingers; fingers yellowish with reddish denticles. Pedipalps reddish-brown with darker zones over the carinae. Legs reddish-yellow to yellow without spots. Venter reddish-yellow; sternites yellowish; pectines and genital operculum slightly paler than sternites.

**MORPHOLOGY.** Carapace strongly convex with a few granulations on the lateral and anterior edges; the other zones with punctations; furrows moderately deep to shallow. Sternum pentagonal, wider than long. Tergites acarinate, with only minute granulations on VII; other tergites with punctations. Pectinal tooth count 10-11, fulcra absent. Sternites smooth and shiny, with minute punctations; VII acarinate. Metasomal segments I and II wider than long; III with equal length and width; IV and V longer than wide; metasomal tegument with a few granulations and punctations; segment V with small spinoid granulations ventrally. Carinae on segments I-V moderate; ventral carina absent from segment I; vestigial on II, weakly to moderately marked on segments III-IV. Vesicle globular with small spinoid granules on ventral surface. Pedipalps: Femur with dorsal internal, dorsal external and ventral internal carinae moderately marked; ventral external carina vestigial; dorsal, ventral and internal faces moderately granular. Patella with some minute granulations but mostly punctated; dorsal internal and ventral internal carinae moderate to weak ventral external, external and ventral internal carinae vestigial. Chela with minute granulations; ventral and dorsal median carina moderately marked; other carinae weakly marked to vestigial; internal face with several granules. Dentate margins on movable and fixed fingers composed of 5-6 rows of granules. Chelicerae with the dentition typical of the family Chactidae (Vachon 1963), and with intense setation ventrally and internally. Trichobothriotaxy type C; neobothriotaxic 'majorante' (Vachon 1974).



**Fig. 11.** Type localities of *Brotheas bolivianus* sp. n. in Bolivia (black star) and those of *B. amazonicus* Lourenço (white star) and *B. henriquesi* Lourenço & Molteni (black circle).

Morphometric values (in mm) of the male holotype. Total length 42.5 (excluding the vesicle). Carapace: length 7.2; anterior width 4.3; posterior width 7.3. Metasomal segments. I: length 2.7; width 3.9; II: length 3.2; width 3.7; III: length 3.5; width 3.5; IV: length 4.4; width 3.4; V: length 7.7; width 3.2; depth 2.7. Vesicle: width 3.7; depth 3.2. Pedipalp: femur length 4.9, width 2.2; patella length 5.5, width 2.4; chela length 11.3, width 4.0, depth 4.5; movable finger length 4.5.

REMARKS. *Brotheas bolivianus* sp. n. possess moderately developed carinae on the metasomal segments, and some spinoid granules on the ventral surface of segment V. The new species can be distinguished from other taxa in the genus *Brotheas* and in particular from *B. amazonicus* Lourenço, 1988 and *B. henriquesi* Lourenço & Molteni Machado, 2004 (both distributed in the regions of Manaus and middle Rio Negro in the state of Amazonas in Brazil) by the following features: (i) front of the carapace strongly convex, whereas in the other two species these are more straight, (ii) carapace and tergites weakly granulated or mostly punctuated, (iii) a smaller size, (iv) a paler coloration reddish to reddish-yellow. For more details on *B. amazonicus* and *B. henriquesi* refer to Lourenço (1988) and Lourenço & Molteni Machado (2004).

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