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DESCRIPTION OF A NEW GENUS AND SPECIES OF SCORPION (BOTHRIURIDAE) FROM BRAZIL

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Abstract

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The taxonomic difficulties which can be encountered in the study of scorpions belonging to the family Bothriuridae Simon are discussed briefly. Since the 1960s and 1970s several problems have been elucidated, in particular by San Martin and Maury. A new genus and new species *Brazilobothriurus pantanalensis* gen. nov. sp. nov., are described from Brazil. *Brazilobothriurus pantanalensis* is characterised by a unusual trichobothrial pattern of eight ventral trichobothria on each pedipalp chelae. Some information is given on the habitat of the new taxon and on the area where it originates, – the „ Pantanal " of Mato Grosso.

Introduction

Scorpions of the family Bothriuridae Simon, 1880 have always been considered difficult and complex taxa, and this, in particular, holds true for the genus *Bothriurus* Peters. This genus was described in 1861 and contained six valid species by the end of the 19th century. However, they were difficult to identify correctly as defined by Kraepelin (1899), who did not recognise many species which are regarded as valid today (Maury, 1981a).

Better characterisation of species in most bothriurid genera eventually became possible through new characters, such as those based on the structure of the hemispermatophores, trichobothrial patterns, and carinal morphology. This new approach was first attempted by San Martin (1963) and followed in the 1970s by Maury (1971), who described several additional bothriurid species and improved the classification at the subfamily and genus level. Maury (1975a) suggested that the genus *Bothriurus* was in fact composed of several

genera, and he described the genus *Orobothriurus* for several species from the Andean regions of Argentina, Chile, Bolivia and Peru.

Eighteen bothriurid specimens collected in the region of the „Pantanal“ in the State of Mato Grosso do Sul, Brazil, in 1963, belong to an additional new genus and species which are described below.

Brazilobothriurus gen.nov.

Diagnosis: General morphology similar to that of the genus *Bothriurus* Peters. *Brazilobothriurus* gen.nov. can be readily distinguished from all the other genera of the sub-family Bothriurinae by the following combination of characters: pedipalp chela with 8 ventral trichobothria (Fig. 3); inner margins of pedipalp-chela fingers furnished with a single row of granules (Fig. 4); male chela with an apophysis on inner surface near fixed finger (Fig. 3). Legs with very small pedal spurs present on legs III and IV. Other genera included in the sub-family Bothriurinae such as *Bothriurus*, *Orobothriurus* Maury, *Phoniocercus* Pocock and *Thestylus* Simon differ by having pedipalp chela with 5 ventral trichobothria (Fig. 6); *Cercophonius* Peters, *Centromachetes* Lönnberg and *Urophonius* Pocock, have the inner edges of their pedipalp-chela fingers lined with numerous granules arranged in 2 to 5 irregular rows (in some species, only the basal part of the dentate edge bears 2 rows of granules);.*Timogenes* Simon has a semicircular depression (Maury, 1975b) instead of an apophysis on the inner surface of the male chela.

Type and only known species: *Brazilobothriurus pantanalensis* n.sp.

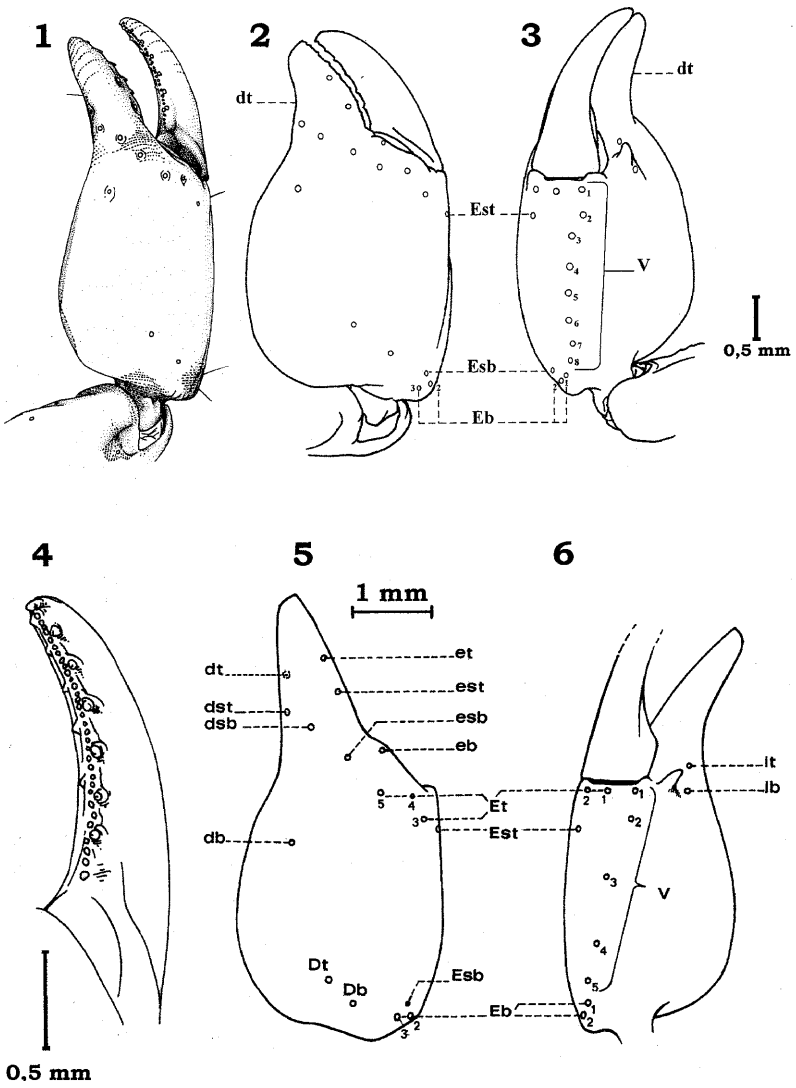
Etymology: The generic name is a combination of „Brazil“ and „Bothriurus“; its gender is male.

Brazilobothriurus pantanalensis sp.nov. (Figs. 1-4 & 7-14)

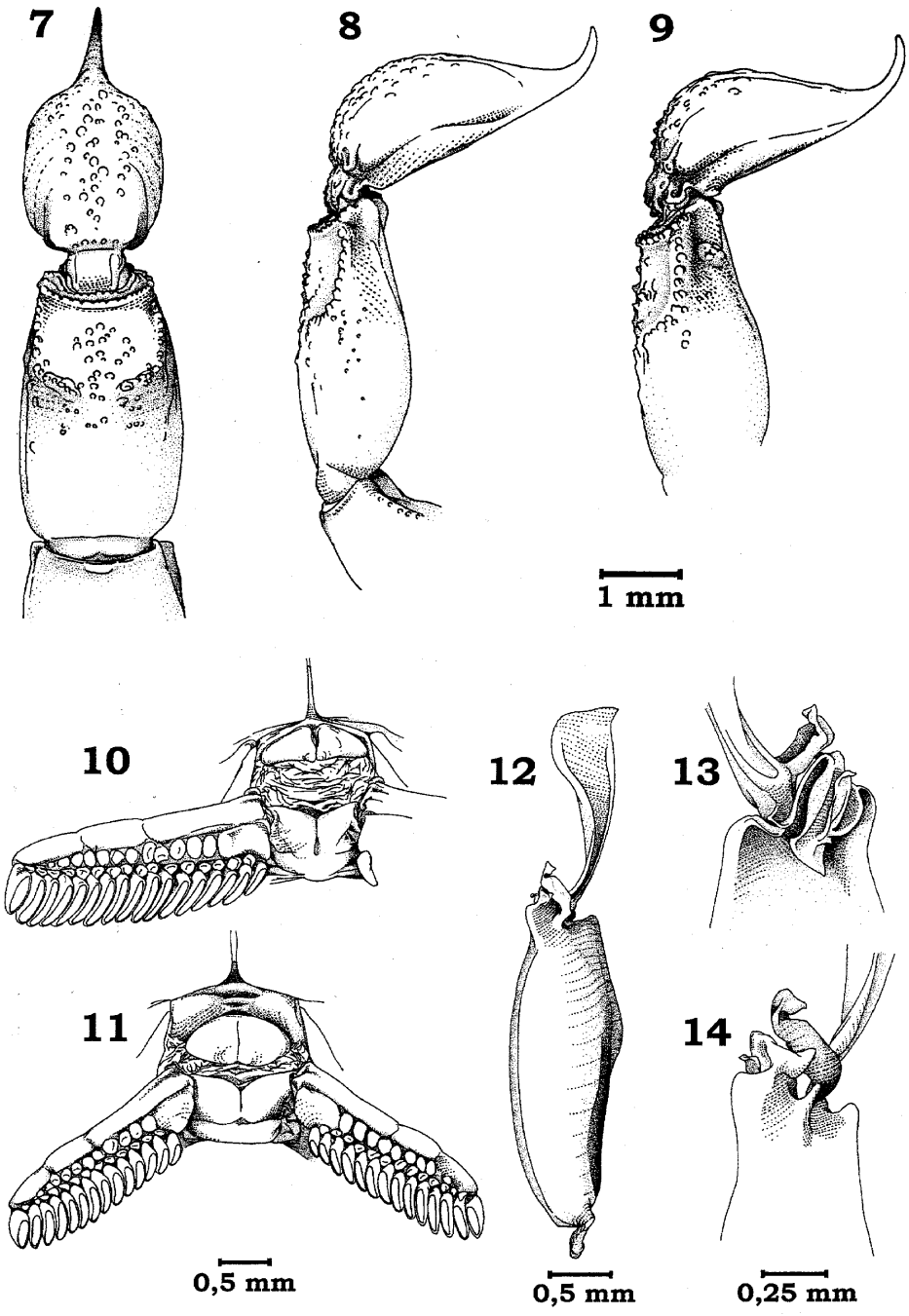
Type: Brazil, Mato Grosso do Sul, Corumbá, south of Fazenda Salina, 12-VI-1963 (E. Kleber, leg). Collected in association with *Tityus mattogrossensis*. Holotype ♂, allotype ♀, 12 paratype ♂♂ and 4 paratype ♀♀s. The holotype, allotype and two paratypes ♂♂ are deposited in the Muséum d'Histoire naturelle de Geneve, 8 paratypes (5 ♂♂ and 3 ♀♀) in the Muséum National d'Histoire Naturelle, Paris, 3 paratypes (2 ♂♂ and 1 ♀) in the Zoologisches Museum der Universität Hamburg and 3 paratypes (3 ♂♂) in the Museum Nacional, Rio de Janeiro.

Etymology: The specific name refers to the region of the „Pantanal“ in Brazil in which the species occurs (Fig. 15).

Description: Male holotype. Coloration: Body generally yellowish-brown. Prosoma: carapace brown with several yellowish spots, two on the anterior margin distinct and sometimes confluent; eyes surrounded by black pigmentation. Mesosoma: tergites brown with confluent vestigial yellowish spots and one median longitudinal yellow stripe; venter and sternites yellowish without spots; pectines and genital operculum pale yellow. Metasoma: all segments yellowish with longitudinal brown spots laterally and ventrally,



Figs 1-4. *Brazilobothriurus pantanalensis* gen.nov. sp.nov. 1. Pedipalp chela of female allotype, dorsal aspect. 2. Pedipalp chela of male paratype, dorsal aspect. 3. Idem, ventral aspect. 4. Edge of pedipalp-chela movable finger; Figs 5-6. *Bothriurus araguayae* VELLARD, 1934 (after LOURENÇO, MAURY, 1979). 5. Pedipalp chela of male holotype, dorsal aspect. 6. Idem, ventral aspect.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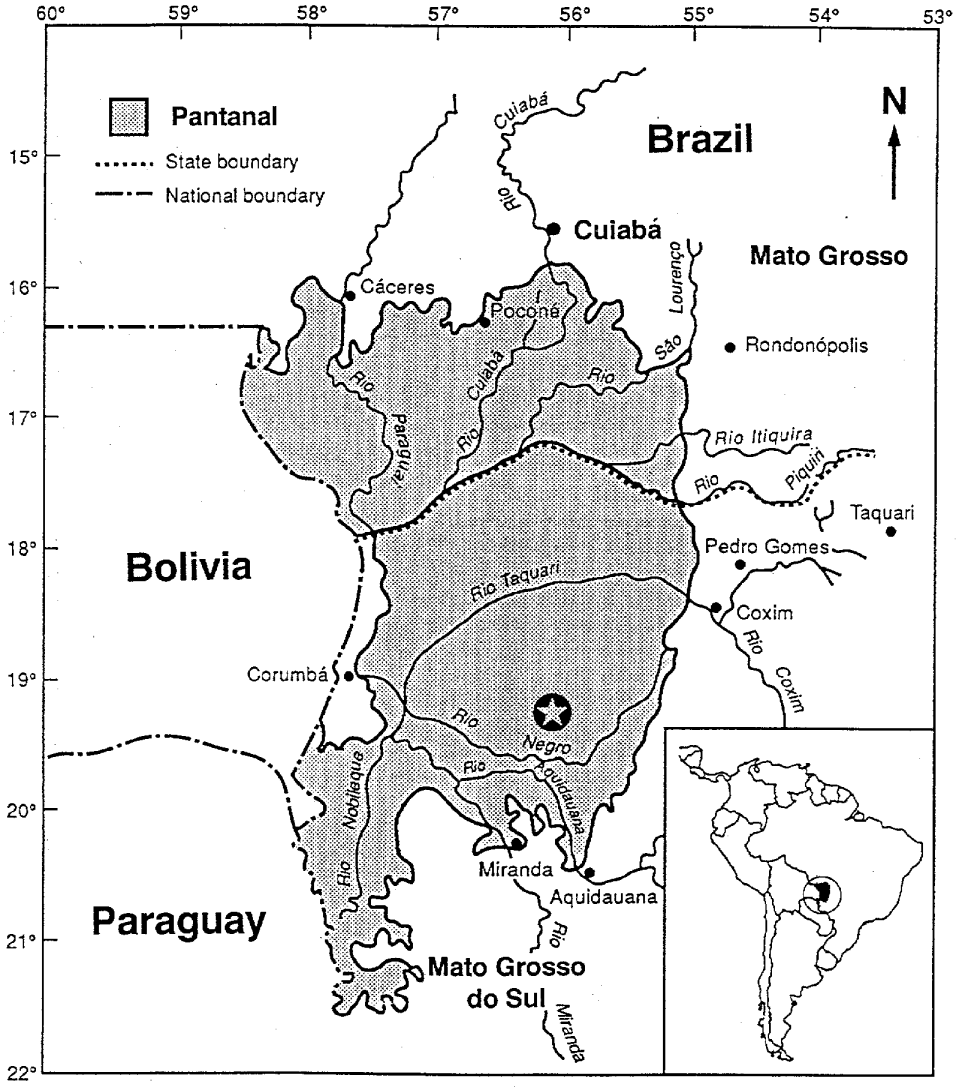

Fig. 15. Map showing the location of the „Pantanal do Mato Grosso", and the type-locality of *Brazilobothriurus pantanalensis* gen.nov. sp.nov. (white star in black circle; modified after Ponce, da Cunha, 1993).

Figs 7-14. *Brazilobothriurus pantanalensis* gen.nov. sp.nov. 7. Telson and metasomal segment V of male holotype, ventral aspect. 8. Idem, lateral aspect. 9. Telson and metasomal segment V of female allotype, lateral aspect. 10. Pectine and genital operculum of male holotype, ventral aspect. 11. Pectine and genital operculum of female allotype, ventral aspect. 12. Left hemispermatophore of male paratype. Global external aspect. 13. Capsular region of left hemispermatophore, internal aspect. 14. Idem, external aspect.

except on segment V where the spots are variegated and reddish brown; vesicle yellowish with very light brown spots; dark red. Chelicerae yellowish with some variegated brown spots; fingers dark reddish brown. Pedipalps reddish brown, with several diffuse brown spots, in particular on femur and tibia. Legs pale yellow with diffuse brownish spots on the proximal segments.

Morphology: Carapace punctate to smooth, weakly granular on the interocular area; anterior margin broadly rounded; keels absent; all furrows very weakly pronounced. Median ocular tubercle distinctly anterior to the center of the carapace. Three pairs of small lateral eyes, the posterior one being very much reduced. Sternum slit-like. Mesosoma: tergites punctate with only a few granules. Tergite VII with four indistinct keels. Venter: genital operculum divided longitudinally, each half with a roughly triangular shape. Pectines: pectinal tooth count 17-17 teeth (Fig. 10). Sternites smooth, with moderately elongated stigmata; VII without keels. Metasoma: segments I to IV with moderately to weakly pronounced dorsolateral and lateral keels moderately. Ventral keels absent on segments I to IV, present and shaped like an arc on segment V (Fig. 7). Intercarinal spaces smooth, with scattered granules on the lateral faces of segment V. Telson almost entirely smooth with only a few small granules on the ventral surface; aculeus short and weakly curved (Fig. 8). Cheliceral dentition characteristic of the family Bothriuridae (Vachon, 1963). Pedipalps weakly granular, almost smooth; femur pentacarinate with moderate keels and granular dorsal face; tibia and chela smooth and punctate, few granules on chela; keels vestigial; movable fingers with a line of granules not clearly divided into rows (Fig. 4). A moderately large apophysis is present on inner aspect of chela at the base of the movable finger (Fig. 3). Trichobothriotaxy of type C: neobothriotaxy (Vachon, 1973). Chela with a total of 30 trichobothria, 8 of them on the ventral aspect (Fig.3); tibia with 19, femur with 3 trichobothria. Legs: tarsi of legs III and IV with 2 rows of 3 spines and several very thin setae on the ventral surface. Hemispermatophore as shown in figures 12 to 14. The distal lamina is reduced whereas the trunk is large. This type of hemispermatophore being also found in *B. araguayae* (Lourenço, Maury, 1979).

Measurements (in mm): Carapace: length 3.1; anterior width 2.2; posterior width 3.4. Metasomal segment I: length 1.9; width 2.2. Metasomal segment V: length 3.7; width 2.0; depth 1.5. Vesicle: width 1.7; depth 1.3. Pedipalp: femur length 2.1; width 0.9; tibia length 2.3; width 0.9; chela length 4.4; width 2.3; depth 1.8; movable finger length 2.0.

Female (allotype): Coloration similar to that of male, but generally paler. Morphology: body more robust; genital operculum more oval in shape; pectines smaller and with 14-14 teeth (Fig. 11); telson proportionally shorter (Fig. 9); pedipalps smooth, with fewer granules on femur and pedipalp chela more elongated, narrower (Fig. 1). Pedipalp chela without apophysis on inner surface.

Measurements (in mm): Carapace: length 3.8; anterior width 2.6; posterior width 3.8. Metasomal segment I: length 2.0; width 2.3. Metasomal segment V: length 3.6; width 2.2; depth 1.7. Vesicle: width 1.7; depth 1.3. Pedipalp: femur length 2.0; width 1.0; tibia length 2.4; width 1.0; chela length 4.4; width 1.6; depth 1.6; movable finger length 2.2.

Variability of characters in paratypes: Paratypes, same data as holotype and allotype. There is no obvious variability of characters in paratypes, except in pectinial tooth count. The number of pectinial teeth varies between 16 and 20 (mostly 17-18) in males (n=13) and between 13 and 16 (mostly 14) in females (n=5).

Some ecological considerations about the „Pantanal"

The region of the Pantanal comprises an alluvial area of 150 000 km^2 in the upper Paraguay basin of central-western Brazil. This is one of the largest tropical wetland ecosystems in the world. The region has a seasonal climate with three to four dry months. During the rainy season from November to April, the precipitation is 1000-1400 mm. The average annual temperature is 25°C with maxima around 40°C during the dry season.

According to EITEN (1982), the Pantanal region is a complex of many vegetation types, a large proportion of which are inundated each year. The configuration of the area results in its isolation from surrounding formations, and endemics can be expected to occur in the region. A similar formation is found in the Bananal Island on the Araguaia River in west central State of Goiás. Some faunal associations can be seen between the two formations. In the case of scorpions, at least one species, *Ananteris mariaterezae* LOURENÇO (Buthidae) is present in both formations (LOURENÇO, 1982). As for the bothriurids, *Bothriurus araguayae* VELLARD is the only species known from Bananal Island (LOURENÇO, MAURY, 1979).

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