

## Redescription of *Tityus blaseri* (Scorpiones: Buthidae) from Goiás, Brazil

Wilson R. Lourenço<sup>1</sup>, Monique B. Knox<sup>2</sup> and Edvard D. Magalhães<sup>3</sup>

<sup>1</sup> Laboratoire de Zoologie (Arthropodes), M.N.H.N., 61 rue de Buffon 75005 Paris France

<sup>2</sup> Gerência de Controle de Zoonoses, ISDF, Estrada do Contorno do Bosque, lote 4 s/número.70800-200. Brasília D.F., Brazil

<sup>3</sup> Instituto Geabrasil, Av. W3 Norte 513, Bloco A, sala 302 .70760-515 Brasília D.F., Brazil

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**Abstract:** The scorpion *Tityus blaseri* Mello-Leitão, 1931, is redescribed from new adult specimens, confirming the validity of this enigmatic species. The new material is from caves in the area of Niquelândia, Goiás, Brazil. Moreover, *Tityus blaseri* does not belong to the «*Tityus clathratus* group» of species, but is more closely related to *Tityus fasciolatus* Pessôa and *Tityus charreyroni* Vellard, which belong to the «*Tityus bahiensis* group» of species.

**Key words:** Scorpion, taxonomy, redescription, geographic distribution.

In a paper concerning the classification and distribution of the scorpions of the genus *Tityus*, Mello-Leitão (1931) described a new species, *Tityus blaseri*, to which he provided a short description and only one rather poor photograph. According to Mello-Leitão, the type specimen on which the description of this new species was based consisted of a small (35 mm) female collected in Veadeiros, a small village situated in the Central Plateaux of Brazil, in the state of Goiás. At that time Mello-Leitão included *Tityus blaseri* in the group of small scorpions defined as «A-Group *Tityus clathratus* (Koch)». In his monograph on South American scorpions (Mello-Leitão, 1945), *Tityus blaseri* is redescribed and placed once again in the «*Tityus clathratus* group». Since this last publication, no further mention has been made in the literature to *Tityus blaseri*. In his study of several species of *Tityus* from

Central Brazil, Lourenço (1980) was unable to trace the type material and regarded the species as uncertain.

During recent field work carried out by Instituto Geabrasil as part of a speleological study in the region of Niquelândia in the state of Goiás, Brazil, several scorpion specimens were collected inside of the Riacho Fundo cave by one of the junior authors (E.D.M.). Part of this material was sent to the senior author who believed at first that he was faced with a new species of *Tityus*. Several characters of these *Tityus*, however, reminded him of the enigmatic *Tityus blaseri*. Moreover, the two localities Veadeiros and Niquelândia are in the same geographical region.

One further request was made to the new curator of Arachnida in the «Museu nacional, Rio de Janeiro». This proved successful and the

type material of *Tityus blaseri* was located. Close examination of this material, revealed two immature females presenting several characters different from those described by Mello-Leitão in his original description, thereby attesting of the inexactitude of this description. Close comparison of the type material and the immature specimens found in the Niquelândia cave led us to the conclusion that both belonged to the same species, *Tityus blaseri*. It also confirmed the valid status of this species. Moreover, *Tityus blaseri* does not belong to the «*Tityus clathratus* group», being in fact related to species such as *Tityus fasciolatus* Pessôa and *Tityus charreyroni* Vellard. Without exceptions, the species of the «*Tityus clathratus* group» have a very rhomboidal and stocky subaculeus tooth, whereas in the species of the «*Tityus bahiensis* group» the subaculeus tooth is always strong and spinoid. The most significant differences between these three species lie in their patterns of pigmentation (for comparisons see illustrations in Lourenço 1980). For this reason we provide a redescription of *Tityus blaseri* based on an adult male found in the cave.

### REDESCRIPTION

*Tityus blaseri* Mello-Leitão, 1931, Ann. Acad. Brasil. Sci., 3: 122.

*Tityus blaseri*: Mello-Leitão, 1945, Arq. Mus. Nac., 40: 316.

Redescription based on a single adult male collected in the cave at Niquelândia, Goiás, Brazil, XII/1995 (deposited in the MNHN, Paris) (Measurements in Table 1).

Coloration. Basically yellowish red to yellowish brown. Prosoma: carapace brownish; eyes feebly marked with black pigment. Mesosoma: brownish-yellow; tergite VII yellowish. Metasoma: segments I to III yellowish; IV yellowish-red and V reddish. Vesicle: same colour as segment V. Venter yellow. Chelicerae yellowish with variegated dark pigmentation; fingers dark. Pedipalps: yellowish; fingers reddish. Legs yellowish without any diffuse fuscous spots.

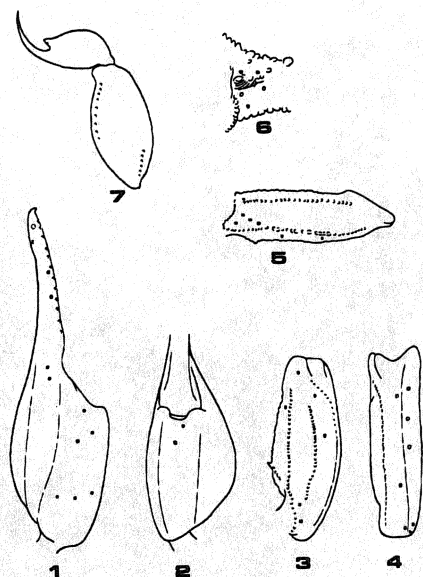
TABLE I

*Measurements (in mm) of the described specimen*

<i>Tityus blaseri</i> (male from Niquelândia, Goiás)	
Carapace:	
length	6.6
anterior width	4.6
posterior width	7.6
Metasoma. segment I.	
length	4.3
width	3.8
Metasoma. segment V.	
length	8.9
width	4.2
depth	4.2
Vesicle:	
width	2.8
depth	3.0
Femur	
length	6.7
width	2.2
Tibia,	
length	7.7
width	2.7
Chelae:	
length	14.3
width	4.1
depth	4.1
Movable finger:	
length	8.9

Morphology. Carapace moderately granular; anterior margin with a median concavity. Anterior median superciliary and posterior median keels moderate. All furrows moderately deep. Median ocular tubercle anterior of the centre. Three pairs of lateral eyes. Sternum triangular. Mesosoma: tergites moderately to strongly granular. Median keel strong in all tergites. Tergite VII pentacarinat. Venter: genital operculum divided longitudinally. Pectines: pectinal tooth count 25-25; basal middle lamellae of the pectines not dilated (in contradiction with what was reported by Mello-Leitão, 1931). Sternites almost smooth with elongate stigmata; VI with two keels, VII with four keels; all very feeble. Metasoma: segments I to IV with dorsolateral and lateral supramedian

keels crenulate. Lateral inframedian keels on segment I complete, crenulate; on II represented by only a few distal granules; absent from III and IV. Ventrolateral keels and ventral submedian keels strongly crenulate on segments I to III. Intercarinal spaces feebly granular. Segment V with dorsolateral keels very feeble; other keels vestigial. Lateral intercarinal spaces smooth. Telson, smooth with a long and strongly curved aculeous; subaculeus tooth strong and spinoid. Cheliceral dentition characteristic of the family Buthidae; ventral aspect of both fingers and manus with dense, long setae.



Figs. 1 to 7. *Tityus blaseri*, male from the caves of Niquelândia in Goiás Brazil. Figs. 1 to 5. Trichobothriotaxy. 1 and 2. Chelae, dorso-external and ventral views. 3 and 4. Tibia, dorsal and external views. 5 and 6. Femur, dorsal view and detail of the internal view. Fig. 7. Fifth segment and telson (same male), lateral view.

Pedipalps: femur pentacarinat; tibia with 7 keels; chelae with 9 keels, moderate or vestigial; all faces feebly granular. Movable fingers with 17 oblique rows of granules. Trichobothriotaxy; orthobothriotaxy A- $\alpha$ . Legs: tarsus with numerous short fine setae ventrally.

**Variation:** Mello-Leitão described *Tityus blaseri* based on a single female specimen. The

examination of the type material deposited in the «Museu Nacional» at Rio de Janeiro, revealed, however, two specimens, both immature females. The pectines of both specimens presented 24-24 and 21-23 teeth, which is in contradiction with the number cited by Mello-Leitão in his original description, 22. This probably corresponds to an error of this author. Other specimens: With the same data of collection as those of the described male. 1 female, immature (24-23); basal middle lamellae of the pectines not dilated; 1 male (26-26); 1 male (25-25); 1 female, badly preserved; pectines destroyed.

**Material Examined:** Types: MNRJ. 11.2.82, *Tityus blaseri* M. Leit. (typus), Brazil, Rio São Miguel, Goyaz (coll. Blaser). Brazil, Goiás, Niquelândia, XII/1995 (E.D. Magalhães), 1 male, 2 females and 2 immature males.

**Some data about the caves:** The scorpions were collected in September and November of 1995 in four investigations of the Riacho Fundo cave (14° 28' 27" S; 48° 20' 04" W; 570m). They were found in a gallery located more than 60 m from the entrance in a tunnel-like structure largely occupied by bats (*Pteronotus parnelli*). The scorpions were found under stone blocks on the floor. Like all other Buthidae previously found in caves, *Tityus blaseri* does not show any modifications for cave life and can only be considered as troglaxene (Lourenço & Francke 1985). Another population could possibly be found outside the cave.

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## RESUMEN

Se redescubre el escorpión *Tityus blaseri* Mello-Leitão, 1931, con base en nuevos especímenes adultos, confirmando la validez de esta enigmática especie. El material nuevo procede de cavernas en el área de Niquelândia, Goiás, Brazil. Además, *Tityus blaseri* no pertenece al grupo de especies «*Tityus clathratus*» sino que está más cercanamente emparentado con *Tityus fasciolatus* Pessôa y *Tityus charreyroni* Vellard, que pertenecen al grupo de especies llamado «*Tityus bahiensis*».

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