

*Tityus (Atreus) timendus* Pocock, 1898  
(Scorpiones, Buthidae), an enigmatic scorpion  
from Ecuador

*Tityus (Atreus) timendus* Pocock, 1898  
(Scorpiones, Buthidae), um escorpião  
enigmático do Equador

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The buthid scorpion *Tityus timendus* was originally described by POCOCK (1898) from Cavachi in Ecuador, in a paper devoted to several species of the genus *Tityus* collected by Rosenberg. The description of *T. timendus* was brief and not followed by any illustrations. Subsequently, this species was reported by KRAEPELIN (1899) and MELLO-LEITÃO (1931, 1932, 1939, 1945) who published translations of the description presented by POCOCK (1898), or merely listed it. In his monograph about South American scorpions, MELLO-LEITÃO (1945) included *Tityus timendus* in his “group L” of the type “*Tityus asthenes*”. Several decades later, LOURENÇO (1988) in a study about buthid scorpions from Ecuador, suggested that *T. timendus* (as *Tityus rosenbergi* Pocock, 1898, also described from Cavachi), should be considered as a junior synonym of *Tityus asthenes* Pocock, 1893. This last species was described from Poruru in Peru (POCOCK, 1893). This decision was a mistake, since the original type specimen of *Tityus timendus* described by POCOCK (1898) has not been studied. In fact, the holotype of *T. timendus* remains the only known specimen of this species (LOURENÇO, 1988).

A new reanalysis of the holotype of *T. timendus* led to the conclusion that the species is valid and certainly belongs to the subgenus *Atreus* Gervais (LOURENÇO, 2006). This subgenus consists mainly of large blackish species of *Tityus*. Moreover, the reanalysis shows that *T.*

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*timendus* is in fact closely related to *Tityus pachyurus* Pocock, 1897, known from Colombia and Panama (POCOCK, 1897; LOURENÇO, 1997, 2000; LOURENÇO & MÉNDEZ, 1984). However, *T. pachyurus* was never recorded from Ecuador (LOURENÇO, 1988). Here, *Tityus timendus* is redescribed and properly illustrated.

## METHODS

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

### *Tityus (Atreus) timendus* Pocock, 1898 (Figs. 1-10)

*Tityus timendus* Pocock, 1898: 414. Kraepelin, 1899: 80. Mello-Leitão, 1945: 431; Lourenço, 1988: 683.

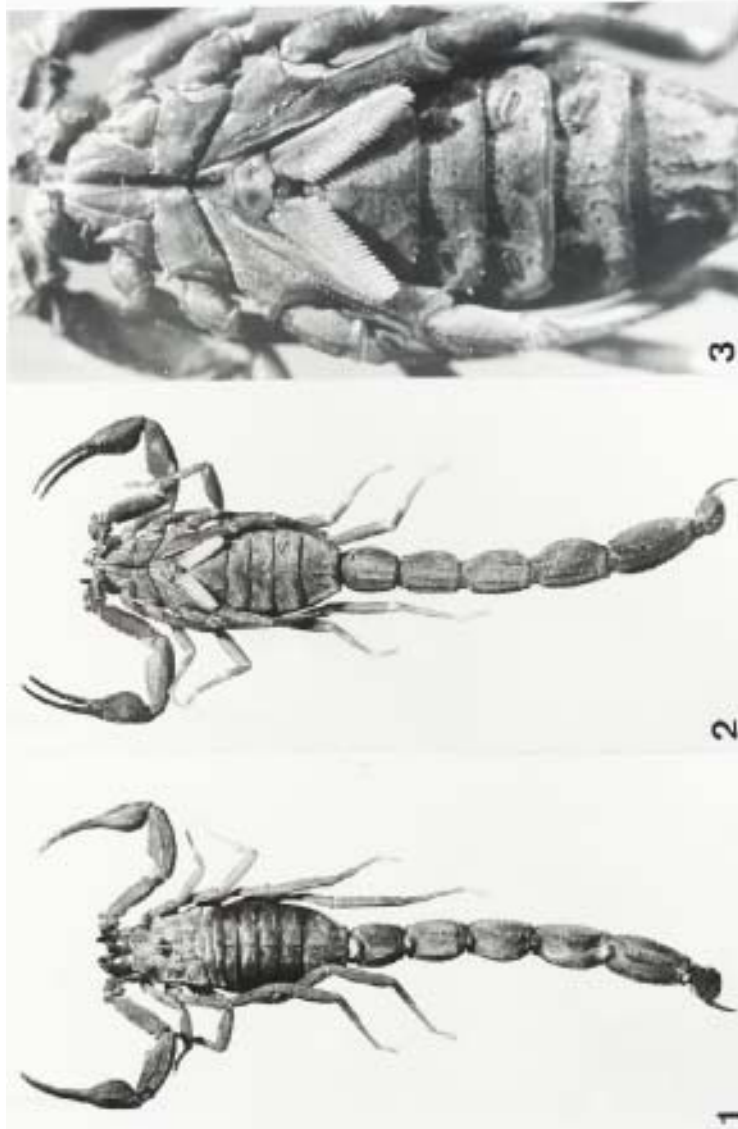
Male holotype (type. BMNH. 1898. 5. 15. 6) — Ecuador, Cavachi (purchased by Rosenberg). The specimen is fairly well preserved; only the coloration is faded in ethanol.

#### Diagnosis and redescription based on male holotype

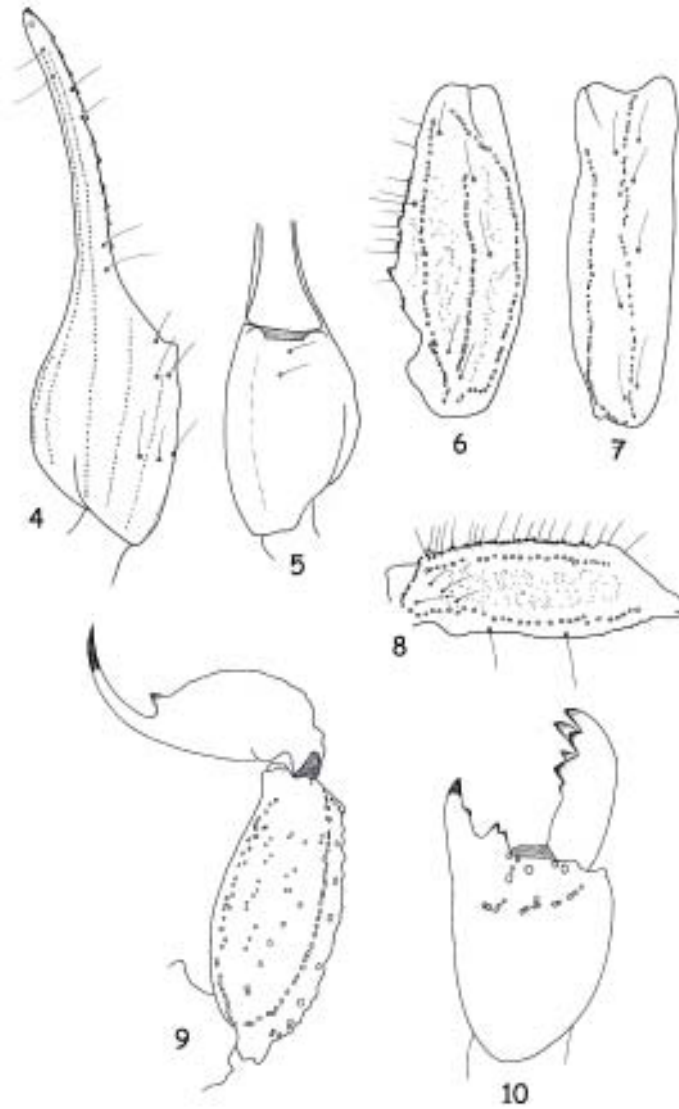
**DIAGNOSIS** — Scorpions of medium size, with 65 mm in total length. General coloration blackish-brown. Metasomal segments not enlarged posteriorly with 10-10-10-8-5 carinae; ventral carinae on segments I-IV parallel. Dentate margins of pedipalp-chela fingers composed of 12-13 oblique rows of granules; chela hand moderately to weakly enlarged; fingers with a very weak scalloping. Pectines with 21-19 teeth and the basal middle lamellae not dilated. Distribution: Only known from the type locality.

**REDESCRIPTION** — Coloration. Originally blackish-brown; holotype faded in ethanol is reddish-brown. Ocular tubercle blackish. Chelicerae reddish-yellow. Aculeus reddish-brown. Legs brownish-yellow.

**MORPHOLOGY** — Carapace moderately granular; anterior margin with a strong concavity. Anterior median and posterior median carinae moderately developed; other carinae weakly marked. Median posterior furrow deep, other furrows moderately marked. Eyes separated by a little more than one ocular diameter; three pairs of lateral eyes. Sternum triangular. Mesosoma: tergites I-VII strongly granular. Median carina



Figs. 1-3. *Tityus (Atreus) timendus*, male holotype. 1-2, habitus, dorsal and ventral aspects; 3, ventral aspect in detail. The photos were taken in 1972 (by M. Vachon), when the specimen was slightly better preserved than today.



Figs 6-10. *Tityus (Atreus) timendus*, male holotype. 4-8, trichobothrial pattern. 4-5, chela, dorso-external and ventral aspects; 6-7, patella, dorsal and external aspects; 8, femur, dorsal aspect. 9, metasomal segment V and telson, lateral aspect; 10, chelicera, dorsal aspect.

increasing backward. Tergite VII tetracarinate. Venter with genital operculum divided longitudinally, each plate semi-triangular in shape. Pectines with 21-19 pectinal teeth; basal middle lamellae of pectines not dilated. Metasoma: segments I to V with 10-10-10-8-5 carinae; lateral median (intermediary) carinae on segment III reduced to 5-6 granules on the posterior edge; ventral carinae parallel. Intercarinal spaces moderately granular in segments, I-III; strongly granular on segments IV-V. Segment V with one ventromedian carina; ventrolateral and dorsomedian carinae strongly developed; dorsomedian space weakly granular to smooth. Telson strongly granular with a long and strongly curved aculeus; subaculear tooth strong and between spinoid and rhomboid. Cheliceral dentition characteristic of the family Buthidae (VACHON, 1963); basal teeth on movable finger greatly reduced. Pedipalp femur pentacarinate; patella with seven carinae; chela with eight carinae; chela hand moderately enlarged; fixed and movable fingers with 12-13 oblique rows of granules. Trichobothriotaxy: orthobothriotaxy A-a (alpha) (VACHON, 1974, 1975). Legs: tarsus ventrally with numerous short and fine setae.

TAXONOMICAL POSITION — Within the subgenus *Atreus*, this species belongs to the 'Tityus asthenes' group of species. It appears to be associated with *Tityus pachyurus* Pocock. It can, however, be distinguished from this last species by (i) different morphometric values (see Table 1), (ii) male metasomal segments not enlarged posteriorly, (iii) male chela hand moderately to weakly enlarged, (iv) chela fingers with a very weak scalloping.

### SUMMARY

The status of the enigmatic buthid scorpion, *Tityus timendus* Pocock, 1898 is discussed. Described from Cavachi in Ecuador, the species remains known by the male holotype only. A reanalysis of the several characteristics of the holotype demonstrates that the species is valid. Previous suggestions that *T. timendus* could represent a junior synonym of *Tityus asthenes* Pocock, 1893 are due to misinterpretations, and the new analysis shows that *T. timendus* is in fact close related to *Tityus pachyurus* Pocock, 1897, known from Colombia and Panama. New diagnosis and redescription are also proposed.

KEY WORDS: taxonomy; redescription; scorpion; Ecuador.

### RESUMO

O status do enigmático escorpião Buthidae, *Tityus timendus* Pocock, 1898 é discutido. Descrita de Cavachi no Equador, esta espécie é somente conhecida a partir do holótipo macho. Uma re-análise de diversas características do holótipo demonstram que a espécie é válida.

Table 1. Morphometric values (in mm) of the male holotype of *Tityus (Atreus) timendus* and a male of *Tityus pachyurus* from Panama.

	<i>Tityus timendus</i>	<i>Tityus pachyurus</i>
Total length,	56.8	63.0
with telson	65.0	72.5
Carapace: length	7.3	7.6
- anterior width	5.5	5.8
- posterior width	8.6	8.2
Mesosoma length:	15.1	16.4
Metasomal segment I:		
- length	5.1	6.3
- width	4.7	4.7
Metasomal segment II:		
-length	6.0	7.1
Width	4.6	5.1
Metasomal segment III:		
Length	6.7	8.0
Width	4.6	5.3
Metasomal segment IV:		
Length	7.8	8.3
Width	4.6	5.6
Metasomal segment V:		
- length	8.8	9.3
- width	4.5	5.7
- depth	4.2	4.4
Telson length:	8.2	9.5
Vesicle:		
width	3.3	3.4
- depth	3.2	3.3
Pedipalp:		
- Femur length	6.9	9.3
- Femur width	2.3	2.4
- Patella length	8.1	9.4
- Patella width	3.0	3.3
- Chela length	13.8	18.1
- Chela width	3.2	4.0
- Chela depth	3.2	4.4
Movable finger:		
length	9.1	11.6

Sugestões prévias indicando que *T. timendus* seria um sinônimo de *Tityus asthenes* Pocock, 1893 são o resultado de erros de identificação, e a nova análise demonstra que *T. timendus* e de fato estreitamente relacionado com *Tityus pachyurus* Pocock, 1897, espécie conhecida da Colômbia e do Panamá. Uma nova diagnose e descrição são propostas.

PALAVRAS CHAVE: taxonomia; redescricao; escorpião; Equador.

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