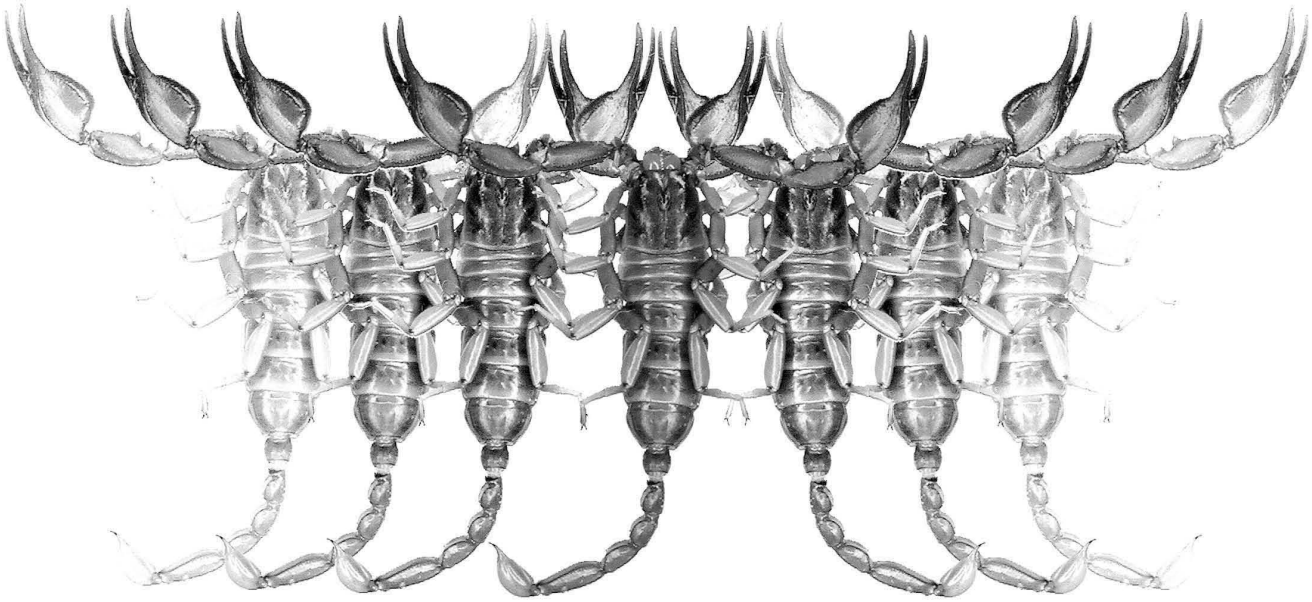
Euscorpius

Occasional Publications in Scorpiology



A New Species of *Tityus* C. L. Koch, 1836 (Scorpiones: Buthidae) from Dominican Amber

Wilson R. Lourenço

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EDITOR: **Victor Fet**, Marshall University, **'fet@marshall.edu'**
ASSOCIATE EDITOR: **Michael E. Soleglad, 'soleglad@znet.com'**

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A new species of *Tityus* C. L. Koch, 1836 (Scorpiones: Buthidae) from Dominican amber

Wilson R. Lourenço

Muséum national d'Histoire naturelle, Département Systématique et Evolution, UMR7205, CP 053, 57 rue Cuvier, 75005 Paris, France: e-mail: arachne@mnhn.fr

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Summary

Tityus azari **sp. n.**, a new species of fossil scorpion belonging to the genus *Tityus* C. L. Koch, 1836 is described based on a specimen in amber from the Dominican Republic. Although the new species can be associated with the extant fauna of the Neotropical region, it presents some particular morphological features such as the presence of sharp denticles on the edge of pedipalp fingers. Due to the incompleteness of the specimen it cannot be assigned to any precise extant subgenera. Once again, this discovery attests to a considerable degree of diversity in the Dominican amber-producing forests.

Introduction

As already commented in previous papers (Lourenço, 2009a, 2012), although scorpions can be considered rare among the arthropods fossilized in amber, many specimens were located and described in recent years.

For Dominican Republic amber, the study of fossil scorpions started in the 1970s (Schawaller, 1979, 1982; Santiago-Blay & Poinar Jr., 1988, 1993; Santiago-Blay, Schawaller & Poinar Jr., 1990). However, only few species have been correctly diagnosed and described during these last 35 years (Lourenço, 2009b). In fact, several specimens from the Caribbean island of Hispaniola, where Dominican Republic is located, remain undescribed, and most of those are deposited in non-accessible private collections (Grimaldi, 1996). Without any surprise, the amber fossils found in Hispaniola seem without exception to be related to the extant buthid scorpion taxa of the Caribbean and Neotropical regions.

In this publication, one more new species belonging to the genus *Tityus* C. L. Koch, 1836 is described, representing an additional element of the most common lineage represented in the Neotropical region. This new find attests to a considerable degree of diversity in the Dominican amber-producing forests.

Material and Methods

The specimen investigated was obtained by Dr. Jörg Wunderlich, of Hirschberg, Germany and is now deposited in his personal collection. The original piece was embedded in a clear rounded piece of yellow-reddish amber (approximately 35x25x13 mm). The piece was, however, fragmented in several zones, and had been roughly stuck together with bad quality glue. Consequently all the glue was removed and the piece was polished and laminated to be mounted between two glass plates. Both dorsal and ventral sides of the scorpion are clearly visible however. The specimen was apparently 'crushed' and most of the dorsal aspect characters are poorly observable. The schematic drawings provided are partially an interpretation of what could be observed.

Systematic Description

Family Buthidae C. L. Koch, 1837
Genus *Tityus* C. L. Koch, 1836

***Tityus azari* sp. n**. (Figs. 1-11)
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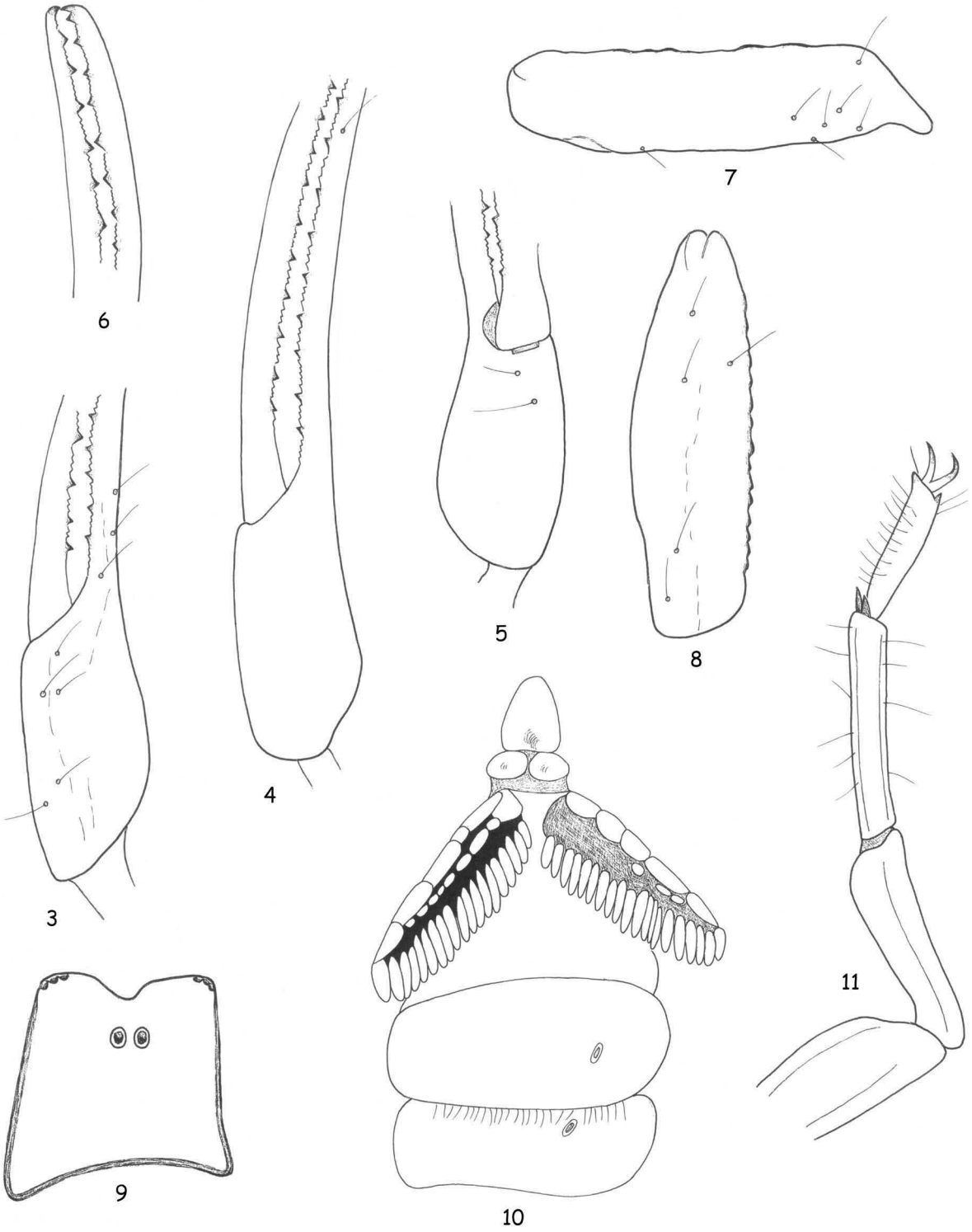
Diagnosis: Total length approximately 17 mm (this value is an estimation since metasomal segments III–V and telson are lacking). Morphology somewhat similar to that of primitive Buthidae in general, most allied to basal *Tityus* subgenera. The new species can, however, be distinguished from the other *Tityus* species, already described from Dominican amber by the combination of several distinct characters: (i) pectines with 19–20 teeth and absence of fulcra; (ii) fixed and movable fingers of chela with 14–15 almost linear rows of granules, separated by strong and sharp accessory spinoid gran-

Figures 1–2: *Tityus azari* **sp. n.** Male holotype. **1.** Dorsal aspect. **2.** Ventral aspect, showing coxapophysis, sternum, genital operculum and pectines.



Figures 3–11: *Tityus azari* **sp. n.** Male holotype. **3–8.** Trichobothrial pattern. **3–5.** Left chela, dorso-external and ventral aspects, showing also the rows of granules in the movable finger. **6.** Right chela, extremity of fingers, showing the rows of granules. **7.** Femur, dorsal aspect. **8.** Patella, dorsal aspect. **9.** Carapace, dorsal aspect. **10.** Ventral aspect, showing sternum, genital operculum, pectines, sternites and small spiracles, between slit-like and oval in shape. **11.** Leg IV, showing tarsus with thin ventral setae and pedal spurs.

ules; this character being absent or very uncommon in extant species of the genus; (iii) internal carina of pedipalp patella without any spinoid granule; (iv) trichobothrial pattern of type A-α (alpha), probably orthobothriotaxic; external trichobothria of femur largely separated from each other and placed in the extremities of the segment; trichobothrium $\mathbf{e_1}$ between $\mathbf{d_4}$ and $\mathbf{d_5}$; (v) carapace with a marked median concavity.

Holotype: Most certainly a juvenile. Considering the slender pedipalps and the morphology of the pectines, it is unquestionably a male.

Type locality and horizon: Dominican Republic. Precise amber mine not confirmed. Lower Oligocene to Upper Eocene.

Depository: The type specimen is presently in the personal collection of Dr. Jörg Wunderlich, Hirschberg, Germany. It should subsequently be deposited in the collections of the Senckenberg Museum, Frankfurt.

Derivatio nominis: The specific name honours Dr. Dany Azar of the Lebanese University, Fanar, Lebanon for his enthusiastic support to our work with amber pieces and constant technical help.

Description:

Coloration. the general colour is yellow with some dark reddish patches more or less well defined on the pedipalps, carapace and tergites. The ventral aspect of the specimen bears shaded areas associated with the zone of the book lungs.

Morphology. Carapace weakly granular; anterior margin with a marked median concavity. All carinae weak to obsolete. All furrows weak to obsolete. Median ocular tubercle distinctly anterior to the centre of the carapace. Median eyes separated by one ocular diameter. Three pairs of lateral eyes. Sternum pentagonal, longer than wide. Mesosoma: tergites weakly granular to smooth; tergites I to VI possible with one longitudinal weak carina; observation is difficult since dorsal aspect is masked by inclusions. Venter: genital operculum formed by two semi-oval plates. Pectines comprising 4–5 marginal lamellae and 7–8 small median lamellae; fulcra absent; pectinal tooth count 19–20. Sternites smooth; spiracles small, between slit-like and oval in shape. Metasoma: only segment I and part of segment II are present, with 10-8 carinae. Cheliceral dentition not observable. Pedipalps very long; femur pentacarinate; patella with vestigial carinae; internal aspect without any spinoid granule; chela with five carinae; all faces smooth. Fixed and movable fingers with approximately 14–15 linear rows of small rounded granules separated by strong and sharp accessory granules; extremities of each finger with a very sharp spinoid granule. Trichobotriotaxy: Type A-α (alpha) (Vachon, 1974, 1975) probably orthobothriotaxic; external trichobothria of femur very distant to each other and placed in the extremities of the segment. Tarsus of legs with thin ventral setae; pedal spurs moderate; tibial spurs absent

Measurements (in mm) of the holotype (some measurements could not be taken because of the position of the specimen; besides, the specimen is not complet). Total length: 17.1 (estimated value since metasomal segments III–V and telson are lacking). Carapace, length: 1.8, anterior width: 1.4, posterior width: 1.9. Mesosoma length: 3.7. Metasoma: Segment I, length: 1.5, width: 0.8. Segment II, length: 1.6, width: 0.7. Pedipalp: Femur length: 2.2, width: 0.5. Patella length: 2.4, width: 0.6. Chela length: 3.9, width: 0.6. Movable finger length: 3.1.

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