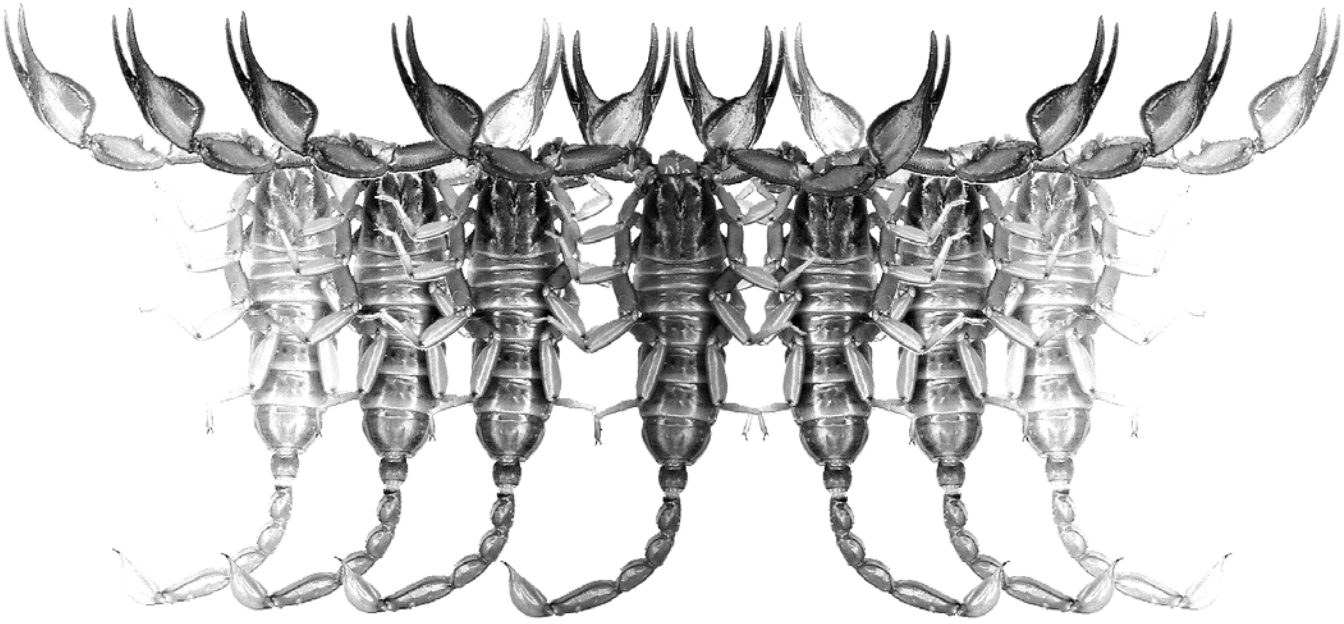
Euscorpius

Occasional Publications in Scorpiology



A New Species of *Tityus* C. L. Koch, 1836 (subgenus *Brazilotityus* Lourenço, 2006) from the Dominican Amber (Scorpiones: Buthidae)

Wilson R. Lourenço

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A new species of *Tityus* C. L. Koch, 1836 (subgenus *Brazilotityus* Lourenço, 2006) from the Dominican amber (Scorpiones: Buthidae)

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Summary

Tityus (*Brazilotiyus*) *hartkorni* **sp. n.**, a new species of fossil scorpion belonging to the genus *Tityus* C. L. Koch and to the subgenus *Brazilotityus* Lourenço, is described from a specimen in amber from the Dominican Republic. The new species is clearly associated with the extant fauna of the Neotropical region. This discovery attests to a considerable degree of diversity in the Dominican amber-producing forests.

Introduction

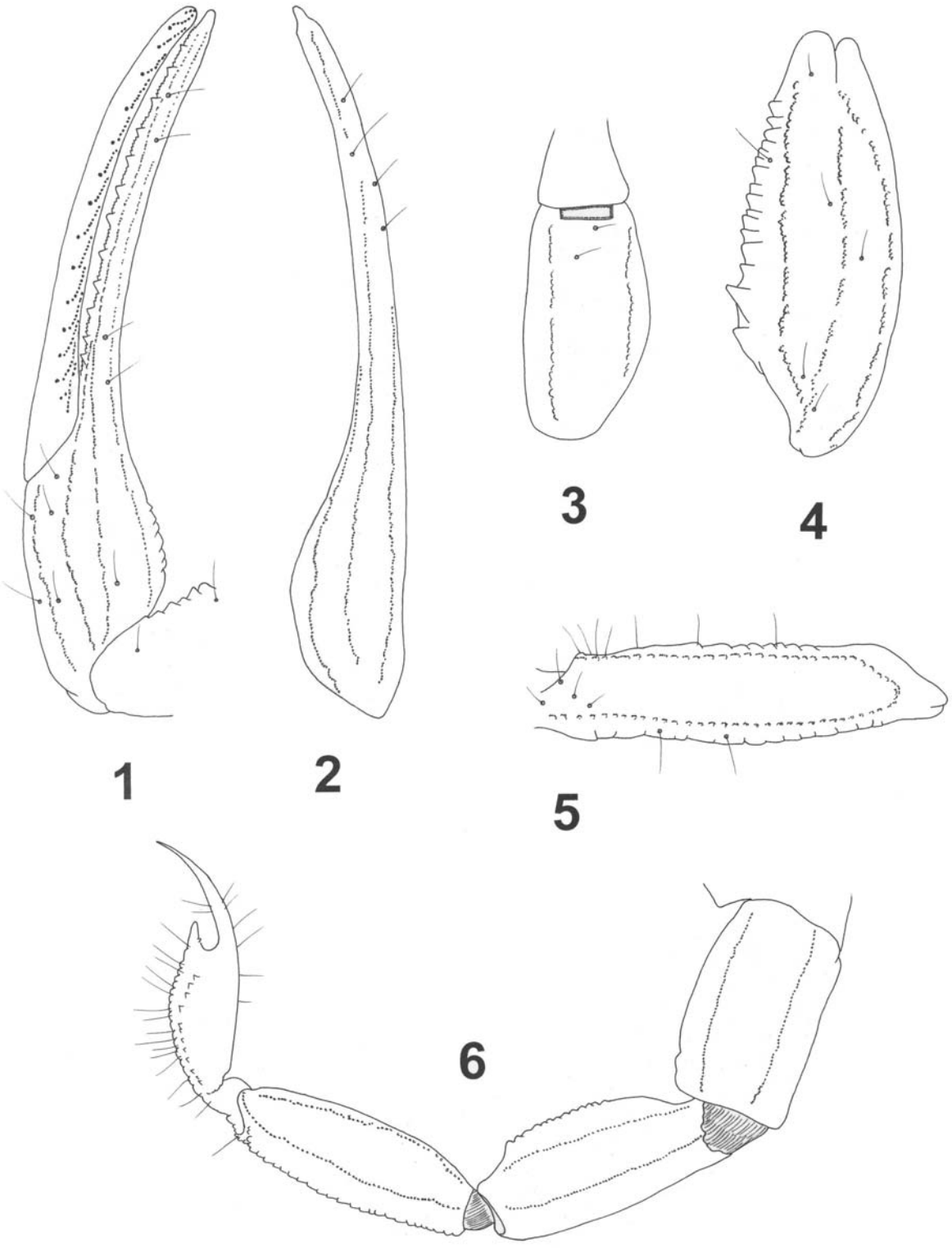
Scorpions are rare among the arthropods fossilized in amber (see e.g., Lourenço et al., 2005, for a review). The history of the discovery of the scorpions found in amber, Baltic amber in particular, has been outlined in detail by Lourenço & Weitschat (1996). The first amber scorpion species ever described was *Scorpio schweiggeri* (Holl, 1829), from Baltic amber. Both the description and the illustration of this species are so inaccurate, however, that the only conclusion that can be reached is that the scorpion belongs to the family Buthidae; its type is lost. A second species, *Tityus eogenus*, also from Baltic amber, was described by Menge (1869). Unlike *Scorpio schweiggeri,* which has been almost totally ignored, *Tityus eogenus* has attracted the attention of many authors for two main reasons: first, because of its assignment by Menge to an extant Neotropical genus; and second, because the type specimen was apparently lost soon after its description so no confirmation of its taxonomic position could ever be made. From the poor description and illustrations given by Menge (1869), it can be concluded that *Tityus eogenus* is indeed a buthid scorpion, but it could equally well be assigned to any one of several genera in this family.

In recent years, several Baltic amber fossil scorpions have been studied and described as new, extinct genera and species of Buthidae (Lourenço & Weitschat, 1996, 2000, 2001, 2005; Lourenço, 2004; Lourenço et al., 2005). In contrast, even though the study of more recent amber fossil scorpions from the Dominican Republic started in the 1970s (Schawaller, 1979, 1982; Santiago-Blay & Poinar, 1988, 1993; Santiago-Blay et al., 1990), only few species have been described during the last 30 years from the New World, either from the Dominican Republic or from Mexico. In fact, several additional specimens from these regions have not yet been described (Grimaldi, 1996). The amber fossils found in Hispaniola and Mexico seem, without exception, to be closely related to the extant buthid scorpion taxa of the Caribbean and Neotropical regions, and have been placed in extant genera *Centruroides*, *Tityus*, and *Microtityus.*

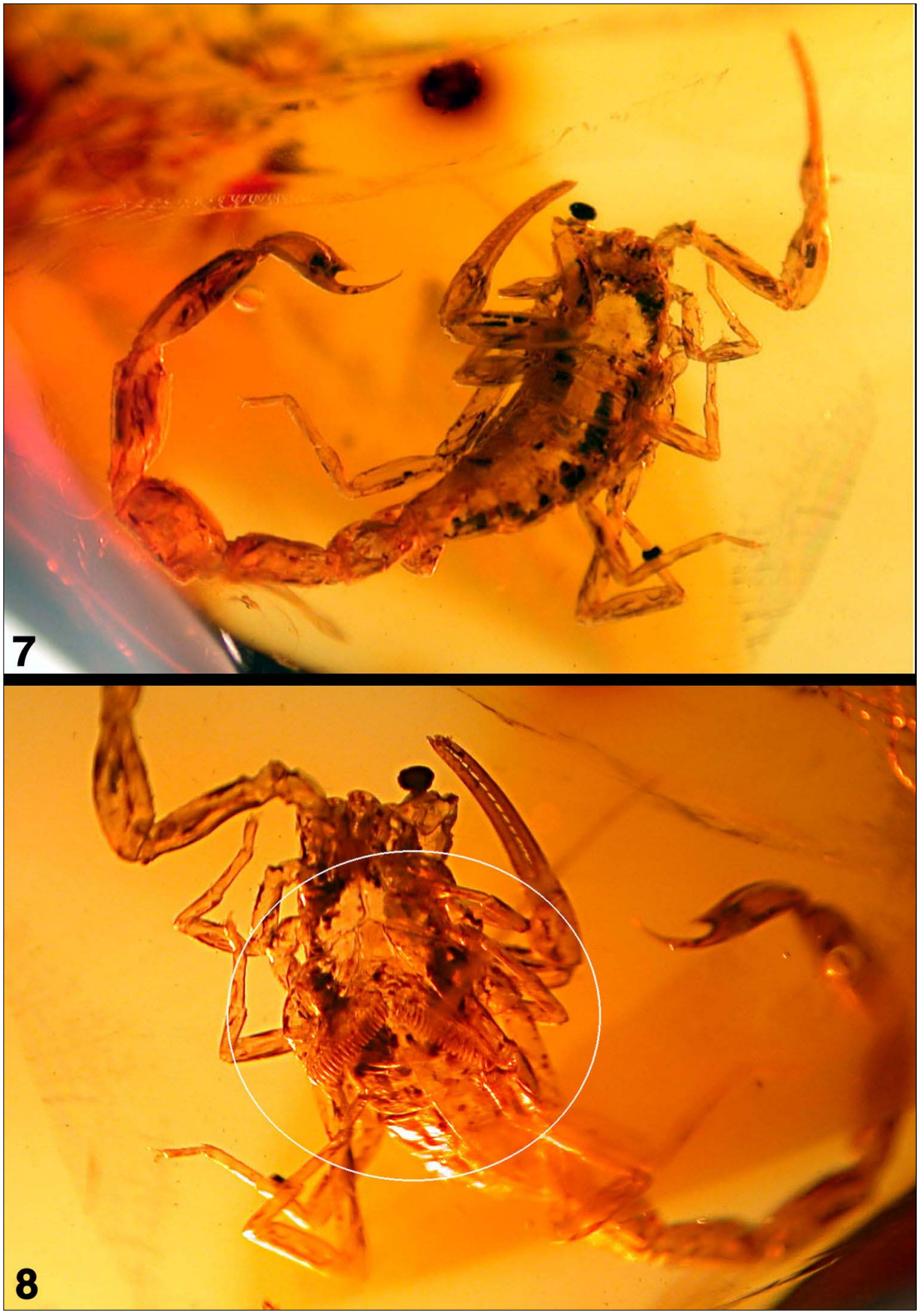
In this publication, a new species of *Tityus* (subgenus *Brazilotityus*) is described from the Dominican Republic amber. This new finding attests to a certain degree of diversity in the Hispaniola amber-producing forests.

Material and Methods

The specimen investigated was obtained by Mr. Joachim Hartkorn (Germany) from a German amber dealer, and is now deposited in his personal collection. It is embedded in a very clear rounded piece of yellow-reddish amber (35x27x11 mm). The amber shows a laminated structure, a common characteristic of amber. It is possible to see how individual layers have been formed as a result of several resin flows at regular intervals. Both dorsal and ventral sides of the scorpion are clearly visible and allow detailed investigation. The schematic drawings provided are partially an interpretation of what could be observed.



Figures 1–6: *Tityus* (*Brazilotityus*) *hartkorni*, **sp. n. 1–5.** Trichobothrial pattern. **1.** Left chela, dorso-external aspect, showing also the rows of granules in the movable finger. **2.** Right chela, dorsal aspect. **3.** Chela, ventral aspect. **4.** Patella, dorsal aspect. **5.** Femur, dorsal aspect. **6.** Metasomal segments III–V and telson, lateral aspect.



Figures 7–8: *Tityus* (*Brazilotityus*) *hartkorni*, **sp. n. 1.** Habitus, dorsal aspect. **2.** Ventral aspect, showing coxapophyses, sternum, genital operculum, and pectines.

Systematics

Family Buthidae C. L. Koch, 1837
Genus *Tityus* C. L. Koch, 1836
Subgenus *Brazilotityus* Lourenço, 2006

Tityus (*Brazilotityus*) *hartkorni*, **sp. n**.
(Figs. 1–8)

Diagnosis: Total length about 18.6 mm (including the telson). Morphology somewhat similar to that of *Tityus* species in general. The new species can, however, be distinguished from other species of *Tityus* and in particular from *Tityus geratus* Santiago-Blay et Poinar, 1988, also described from Dominican amber, by the combination of several distinct characters: (i) pectines with 19–20 teeth and vestigial to obsolete fulcra (this character leads to the inclusion of the new species in the subgenus *Brazilotityus*; see Lourenço, 2006); (ii) spiracles between oval and slit-like, but very short; (iii) fixed and movable fingers of chela with 14–15 oblique rows of granules; (iv) trichobothrial pattern of type A-α (alpha), orthobothriotaxic; external trichobothria of femur very close to each other and placed in the middle of the segment; (v) carapace and tergites almost smooth; (vi) sternum pentagonal; (vii) subaculear tooth strong and spinoid.

Holotype: Probably 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 specimen is deposited in the personal collection of Joachim Hartkorn (Germany).

Derivatio nominis: The specific name is dedicated to Mr. Joachim Hartkorn (Germany) who allowed me to study the specimen.

Description:

Coloration: the general color is yellowish with some dark reddish patches more or less well defined on the pedipalps, carapace and metasoma. 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 moderately marked median concavity. Anterior median superciliary and posterior median carinae weak; other carinae obsolete. All furrows weak to obsolete. Median ocular tubercle distinctly anterior to the centre of the carapace. Median eyes separated by one and half times their diameter. Three pairs of lateral eyes. Sternum pentagonal, longer than wide. Mesosoma: Tergites weakly granular to smooth; tergites I to VI each with one longitudinal carina, weak to moderate. Tergite VII tetracarinated. Venter: genital operculum formed by two semi-oval plates. Pectines comprising 3–4 marginal lamellae and several small median lamellae; fulcra vestigial or absent; pectinal tooth count 19–20. Sternites smooth; spiracles small, between slit-like and oval in shape. Metasoma: Segment I with 10 carinae; segments II–IV with 8 carinae; segment V with 5 carinae; dorsal carinae on segments II to IV with some slightly spinoid granules posteriorly. Telson not globular but elongated; vesicle with 5 ventral carinae; aculeus long but weakly curved; subaculear tooth strong and spinoid Cheliceral dentition typical of the family Buthidae; external distal tooth of movable finger shorter than internal distal tooth (Vachon, 1963); ventral aspect with setae. Pedipalps: Femur pentacarinate; patella with three dorsal, one internal and three ventral carinae; internal aspect with several spinoid granules; chela with nine carinae; all faces smooth. Fixed and movable fingers with 14–15 oblique rows of small rounded granules separated by accessory granules; extremities of the fingers with a small, spinoid granule. Trichobotriotaxy: Type A-α (alpha) (Vachon, 1974, 1975) orthobothriotaxic; external trichobothria of femur very close to each other and placed in the middle of the segment. Tarsus of legs with thin ventral setae; pedal spurs strong; tibial spurs absent.

Measurements (in mm) of the holotype of *Tityus* (*Brazilotityus*) *hartkorni* **sp. n.** (some measurements could not be taken because of the position of the specimen). Total length: 18.6 (including the telson). Carapace, length: 1.8, anterior width: 1.5, posterior width: 1.9. Mesosoma length: 4.4. Metasoma: Segment I, length: 1.4, depth: 0.9. Segment II, length: 1.7, depth: 0.9. Segment III, length: 2.1, depth: 1.1. Segment IV, length: 2.2, depth: 1.1. Segment V, length: 2.5, depth: 0.9. Telson length: 2.5. Vesicle, length: 1.4, depth: 0.7. Aculeus length: 1.1. Pedipalp: Femur length: 2.0, width: 0.5. Patella length: 2.5, width: 0.7. Chela length: 3.6, width: 0.6, depth 08. Movable finger length: 2.6.

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