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One more particular new species belonging to the genus *Chaerilobuthus* Lourenço & Beigel, 2011 (Scorpiones: Chaerilobuthidae)

WILSON R. LOURENÇO (1,*) & JÜRGEN VELTEN (2)

(1) Muséum national d'Histoire naturelle, Sorbonne Universités, Institut de Systématique, Evolution, Biodiversité (ISYEB), UMR7205-CNRS, MNHN, UPMC, EPHE, CP 53, 57 rue Cuvier, 75005 Paris, France.

- E-mail : wilson.lourenco@mnhn.fr

- ZooBank : <http://zoobank.org/58448BD6-79D7-46CE-AFDD-91EFF2B7D4EF> – Orcid : <https://orcid.org/0000-0002-2386-363X>

(2) Uhlandstr 9 a, 67292 Kirchheimbolanden, Germany.

- ZooBank : <http://zoobank.org/F7A6D8F4-5139-4A78-BC39-AB21BA60FE1C>

* Correspondence.

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Chaerilobuthus;
staxi;
taxonomy;
new species;
description;
fossil;
variability;
Burmite.

Abstract. – A particular new species of fossil scorpion belonging to the genus *Chaerilobuthus* Lourenço & Beigel, 2011 is described from Early Cretaceous Burmite. The description of this new species brings further evidence on the very speciose character of this group. The new species equally shows some distinct characters when compared to the previous known species, confirming therefore the existence of an important morphological variability within *Chaerilobuthus*.

Lourenço W. R. & Velten J., 2024. – One more particular new species belonging to the genus *Chaerilobuthus* Lourenço & Beigel, 2011 (Scorpiones: Chaerilobuthidae). *Faunitaxys*, 12(24): 1 – 5.

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Introduction

Descriptions of scorpions found in Early Cretaceous amber (Burmite) started only some twenty years ago (Lourenço, 2002) and continued, almost without any interruption, in a remarkable pace. Several familial and generic groups have been defined, but the majority of the new taxa concerned two families, Chaerilobuthidae Lourenço & Beigel, 2011 and Palaeoburmesebuthidae Lourenço, 2015 which represent the dominant scorpion fauna in the Cretaceous amber-producing forests of Myanmar. The increased pace of descriptions can also be a source of taxonomic problems for future identifications, since many species found in Burmese amber show similar morphologies. Consequently, when the number of taxa for a given group improves significantly the quality of the pieces authorising new descriptions will necessarily be raised (Lourenço, 2016, 2023).

In this contribution one more new species belonging to the genus *Chaerilobuthus* Lourenço & Beigel 2011 is described. The new species is remarkable by the presence of several distinct morphological when compared to previously known species of this genus. The discovery of this new species confirms the considerable degree of scorpion diversity in the Burmese amber-producing forests, but it also brings new evidence about the morphological variability found within the elements of the family Chaerilobuthidae (Lourenço & Velten, 2022). Most historical aspects concerning the knowledge on scorpions found in Burmite have been synthesized in previous contributions and will no longer be treated here. For further information refer to Lourenço (2016, 2023).

Material and methods

The specimen investigated is preserved in a very clear oval-shaped piece of yellow amber that measuring 30 x 19 mm and is about 4 mm thick. The scorpion is almost totally complete; only a few structures were damage in the ventral aspect. All the other left characters are globally visible.

The specimen is rather small with a total length of 4.81 mm; however precise examination allows the investigation of most characters, in both dorsal and ventral aspects. A number of syninclusions are also present mainly composed by insects (Orthoptera and Coleoptera); a small Schizomida seems also present. The schematic drawings provided are an interpretation of what was observable.

Illustrations and measurements were produced with the aid of a Wild M5 stereomicroscope and a Leica microscope DMLB, both equipped with a drawing tube (camera lucida) and an ocular micrometer. Measurements follow Stahnke (1970) and are given in mm.

Cheliceral notations follow Vachon (1963) and trichobothrial notations are those of Vachon (1974). Other morphological terminologies mostly follow Hjelle (1990). Trichobothria are definitely recorded when their bothria (areoles) can be observed, but the presence of other trichobothria are suggested by the observation of thin hairs. Considering the morphologies of pedipalps, pecten and telson the scorpion is most certainly a juvenile female.

Reviewer: Eric Ythier (*BYG Taxa, France*) - ZooBank: <http://zoobank.org/06FD0852-A88E-49E5-B8E6-E1494B86C4E1>



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Taxonomic treatment

Chaerilobuthidae Lourenço & Beigel, 2011

Chaerilobuthus Lourenço & Beigel, 2011

Chaerilobuthus staxi Lourenço sp. n.

(Fig. 4-11)

ZooBank: <https://zoobank.org/6858EF51-4033-41D9-90F9-98B35CD1CF8D>

Holotype. Most certainly a juvenile female. Type locality and horizon: Myanmar (Burma), Kachin; precise locality unknown; Lower Cretaceous.

Diagnosis. – General morphology shows similarities with other members of the family Chaerilobuthidae. Carapace not emarginated anteriorly; median eyes strongly reduced but represented by a macula and possible lens; two reduced lateral eyes. Pedipalps globally elongated; relationship between chela length vs chela width equal to 7.05 (Lourenço & Velten, 2022); spinoid granules absent from the internal aspect of patella. One pecten observed, not large with 5 teeth; fulcra absent; sternum pentagonal and conspicuous, slightly longer than wide; spiracles very small and rounded in shape; cheliceral dentition partially observed; movable finger with two distal teeth; distal teeth of fixed and movable fingers very long and overlapping for about one half of their length; fixed and movable fingers with one basal and one median tooth; vesicle bulbous with a moderately long aculeus. Trichobothrial pattern related to those of buthoids and chaerilobids, recalling types A and B, as defined by Vachon (1974) with at least 2 dorsal and 3-4 external trichobothria on the femur; 2 to 4 dorsal, 1 internal and 4-5 external on the patella; 2 dorsal and 2-3 external on chela hand and 4-5 on fixed finger.

Patronym. – Honours Dr Dietmar Stax (Pfungen, Switzerland) who arranged facilities for the study of the specimen.

Depository. – The type specimen is deposited in the Collection of Dr Dietmar Stax (Pfungen, Switzerland).

Description

Coloration. – The scorpion is reddish-yellow with some dark reddish zones; carapace, tergites and sternites reddish-yellow; metasomal segments dark reddish-yellow; telson reddish; pedipalps and legs reddish-yellow. Ventral aspect reddish-yellow; pecten yellow.

Morphology. – Carapace with some minute granulations anteriorly; almost smooth; anterior margin without any median concavity, close to straight. Carinae and furrows weak or absent. Median ocular tubercle partially collapsed by the process of dissection; however two reduced median eyes are more or less observable. Two lateral eyes can be observed. Sternum pentagonal and conspicuous, slightly longer than wide. Mesosomal tergites weakly granular as carapace and with inconspicuous carinae; VII with five moderately marked carinae. Pecten small with 5 teeth; fulcra absent; the zone with peg sensillae can be observed on tooth. Sternites can be observed but suffered with the dissection process; almost smooth, with rounded shaped spiracles. Metasomal segments I to IV with some well observable carinae; dorsal with spinoid granules; segment V with five carinae; ventral carinae on segments I-IV weakly marked; setation on segments I to V inconspicuous. Telson with a bulbous vesicle; weakly granular to smooth and a weak setation; aculeus long but moderately curved. Cheliceral dentition partially observed; movable finger with two distal teeth; distal teeth of fixed and movable fingers very long and overlapping for about one half of their length; fixed and movable fingers with one basal and one median tooth (Vachon, 1963). Pedipalps elongated; femur pentacarinat with 2-3 inconspicuous spinoid granules on internal face; patella with dorso-internal, ventro-internal, dorso-external, external and ventral carinae; spinoid granules on internal face inconspicuous. Chela with moderately to weakly marked carinae; all faces weakly granular to smooth; internal face without spinoid granules. Fixed and movable fingers with 6-7

longitudinal rows of small, rounded granules, separated by slightly bigger accessory granules; extremity of fingers with one stronger spinoid granule. Trichobothriotaxy: a trichobothrial pattern related to those of both buthoid and chaerilobids, types A and B can be observed (Vachon, 1974); for details see diagnosis. Leg tarsi with thin ventral setae. Pedal spurs present and moderately marked; tibial spurs absent.

Morphometric values (mm), holotype of *Chaerilobuthus staxi* Lourenço sp. n.

– **Total length** (including telson) 4.81.

– **Carapace**
length 0.87;
anterior width 0.59;
posterior width 0.67.

– **Mesosoma**: 1.32.

– **Metasomal segments**

I: length 0.24, width 0.27;
II: length 0.27, width 0.26;
III: length 0.29, width 0.28;
IV: length 0.37, width 0.27;
V: length 0.67, width 0.32.

– **Telson**: 0.78.

– **Vesicle**: width 0.28.

– **Pedipalp**

femur length 0.64, width 0.24;
patella length 0.65, width 0.21;
chela length 1.20, width 0.17;
movable finger length 0.64.

Relationships. – In account of the small size of pectines and of the conspicuous size of the sternum, the new species seems to be related to both *Chaerilobuthus complexus* Lourenço & Beigel, 2011 and *Chaerilobuthus gigantosternus* Lourenço, 2016.

The new species differs however, from these last two species by a combination of characters:

- (i) anterior margin of carapace not emarginated,
- (ii) presence of reduced median eyes,
- (iii) spiracles round,
- (iv) pedipalps globally elongated, in particular chelae; relationship between chela length vs chela width equal to 7.05; this value being only inferior to that of *Chaerilobuthus brandti* Lourenço, 2022. For details refer to Lourenço & Velten (2022).

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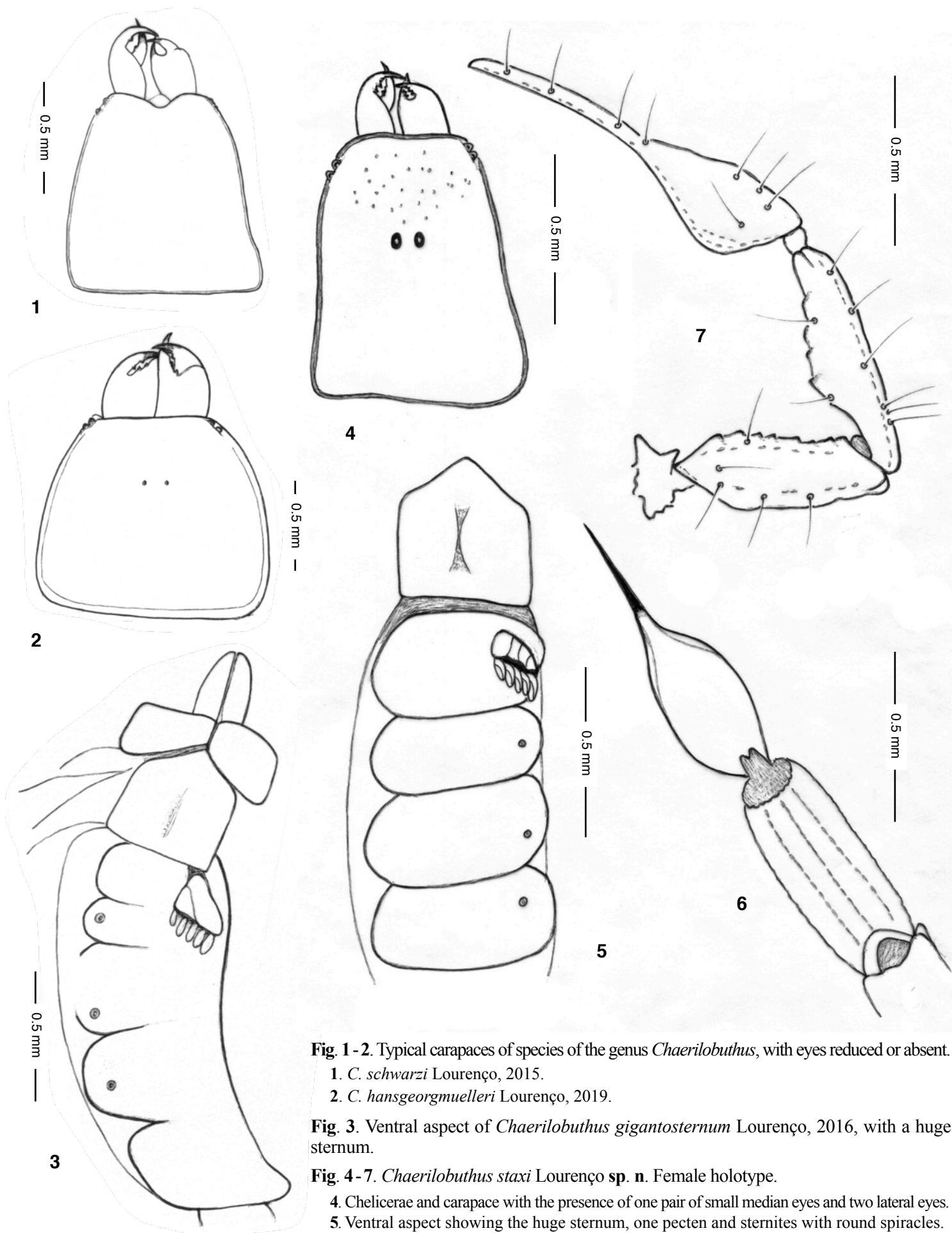


Fig. 1-2. Typical carapaces of species of the genus *Chaerilobuthus*, with eyes reduced or absent.

1. *C. schwarzi* Lourenço, 2015.

2. *C. hansgeorgmuelleri* Lourenço, 2019.

Fig. 3. Ventral aspect of *Chaerilobuthus gigantosternum* Lourenço, 2016, with a huge sternum.

Fig. 4-7. *Chaerilobuthus staxi* Lourenço **sp. n.** Female holotype.

4. Chelicerae and carapace with the presence of one pair of small median eyes and two lateral eyes.

5. Ventral aspect showing the huge sternum, one pecten and sternites with round spiracles.

6. Metasomal segment V and telson, ventral aspect.

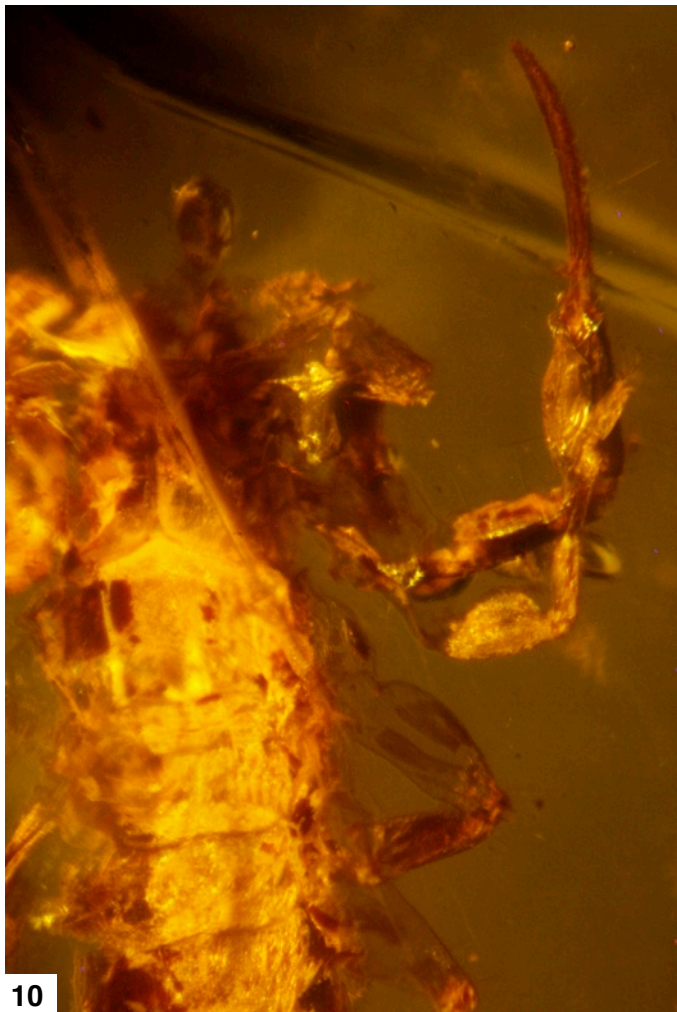
7. Right pedipalp, dorsal aspect showing trichobothrial pattern.



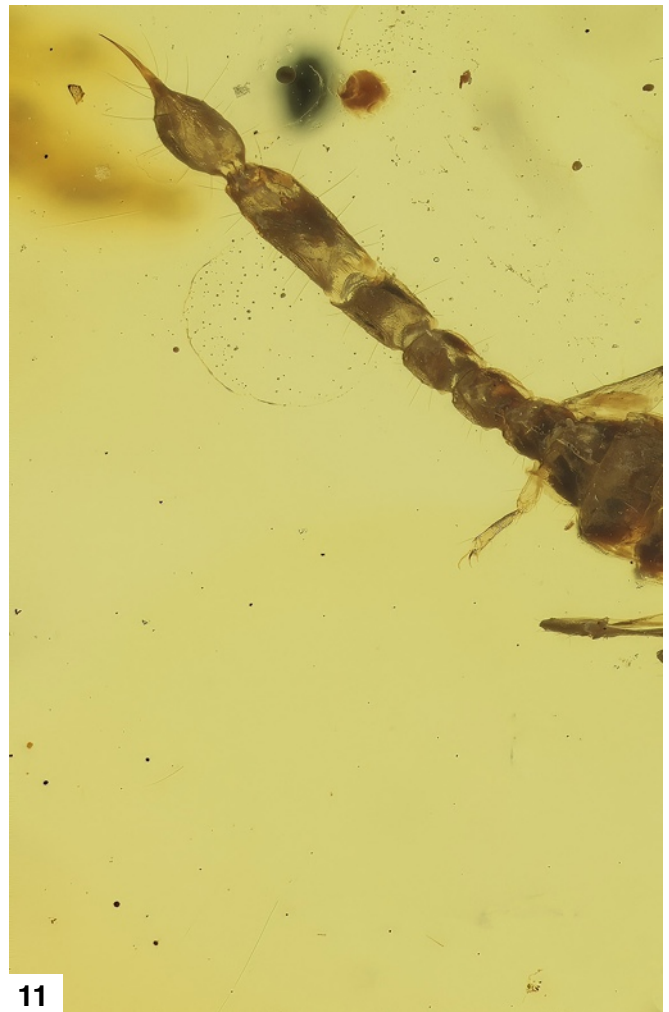
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9



10



11

Fig. 8-11. *Chaerilobuthus staxi* Lourenço **sp. n.** Female holotype.

8. Habitus, dorsal aspect. **9.** Carapace and tergites in detail; median eyes can be observed. **10.** Ventral aspect showing sternum, pecten and sternites. **11.** Metasomal segments and telson in detail, dorsal aspect.

including *Tropical diseases*: 1-15 +Addendum: Commented checklist of the known amber scorpion species: 1-9.

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Authors contribution ¹

Publisher Correspondence. – WL

Writing the article. – WL

Description. – WL

Article proofreading. – WL

Bibliographic work. – WL

Material study. – WL & JV

Author of the figures. – WL (Fig. 1-7) & JV (Fig. 10)

¹ WL = Wilson R. Lourenço – JV = Jürgen Velten

Résumé

Lourenço W. R. & Velten J., 2024. – Description d'une nouvelle espèce particulière appartenant au genre *Chaerilobuthus* Lourenço & Beigel, 2011 (Scorpiones: Chaerilobuthidae). *Faunitaxys*, 12(24): 1 – 5.

Une nouvelle espèce de scorpion fossile appartenant au genre *Chaerilobuthus* Lourenço & Beigel, 2011, est décrite de l'ambre du Crétacé inférieur du Myanmar. Cette nouvelle description vient confirmer la grande diversité existante au sein de ce groupe de scorpions. La nouvelle espèce présente également des caractères très distincts en comparaison avec les espèces préalablement connues, et confirme ainsi l'existence d'une importante variabilité morphologique au sein des espèces de *Chaerilobuthus*.

Mots-clés. – Scorpiones, Chaerilobuthidae, *Chaerilobuthus*, *staxi*, taxonomie, nouvelle espèce, description, fossile, variabilité, ambre birman.

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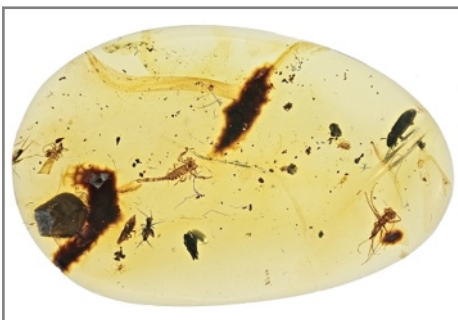


Illustration de la couverture :

Chaerilobuthus staxi Lourenço **sp. n.** in the stone (piece of amber), with several syninclusions.

Crédits:

Wilson R. Lourenço : Fig. 1-7.

Alexander Beigel : Fig. 8-9, 11 & couverture.

Jürgen Velten : Fig. 10.