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A NEW SPECIES OF *EUSCORPIOPS* VACHON, 1980 FROM DOI PHA HOM POK NATIONAL PARK IN THAILAND (SCORPIONES: SCORPIOPIDAE)

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Abstract: A new species, *Euscorpiops chiangmai* **sp. n.**, belonging to the family Scorpiopidae Kraepelin, 1905 is described based on one juvenile female collected in wet forests of the Doi Pha Hom Pok National Park in Thailand. The new species presents most of the features exhibited by scorpions of the genus *Euscorpiops*, but it is characterised by a singular trichobothrial pattern. This new scorpion taxon may represent one endemic element for the fauna of northern Thailand.
Key words: Scorpiones, Scorpiopidae, *Euscorpiops*, new species, wet forest, Thailand.

Una especie nueva de *Euscorpiops* Vachon, 1980 del Parque Nacional Doi Pha Hom, en Tailandia (Scorpiones: Scorpiopidae)
Resumen: Se describe una especie nueva, *Euscorpiops chiangmai* **sp. n.**, de la familia Scorpiopidae Kraepelin, 1905, a partir de una hembra juvenil recogida en un bosque húmedo del Parque Nacional Doi Pha Hom Pok, en Tailandia. La nueva especie presenta la mayoría de los caracteres de los escorpiones del género *Euscorpiops*, pero se caracteriza por un patrón tricobotrial distintivo. Este nuevo taxón de escorpiones puede representar un elemento endémico de la fauna del norte de Tailandia.
Palabras clave: Scorpiones, Scorpiopidae, *Euscorpiops*, especie nueva, bosque húmedo, Tailandia.

Taxonomy / Taxonomía: *Euscorpiops chiangmai* **sp. n.**

Introduction

The taxonomy of the now accepted family Scorpiopidae is rather complex, and was the subject of debate among scorpion experts. It was first proposed by Kraepelin (1905) as Scorpiopsinae, a subfamily of Vaejovidae. The correct Latinized subfamily name, derives however from the type genus *Scorpiops*, and was emended (Fet, 2000). Previously, Francke (1976) drew attention to the inconvenient classification of Kraepelin (1905) and suggested that Scorpiopsinae should no longer be incorporated in the Vaejovidae. In a non-published Doctoral thesis, Stockwell (1989) raised Scorpiopsinae to family level (as 'Scorpiopsidae'), decision confirmed by Lourenço (1998). Again, Soleglad & Sissom (2001) downgraded Scorpiopidae as a subfamily of Euscorpiidae, grouped its Asian genera into the tribe Scorpiopini, and also included in this subfamily the North American genus *Troglocormus* Francke, 1981 (tribe Troglocormini). The subfamily was than defined as a monophyletic group within Euscorpiidae, sharing no synapomorphies with North American Vaejovidae (Soleglad & Sissom, 2001). More recently the Scorpiopidae were again recognized as a separated family (Prendini, 2011; Lourenço, 2015) and presently this *status quo* remains.

The present generic composition of this family is mainly due to Vachon (1980), who revised *Scorpiops* and described three new subgenera - *Alloscorpiops*, *Euscorpiops* and *Neoscorpiops* - in addition to the nominotypical subgenus, *Scorpiops*. These four subgenera were later elevated to generic rank by Lourenço (1998), who added the monotypic genera *Parascorpiops* Banks 1928 and *Dasyscorpiops* Vachon, 1974 to the family, bringing the total number of genera to six. Only recently new taxa of the generic level were added to the family Scorpiopidae: *Laoscorpiops* Lourenço, 2013, as a subgenus of *Alloscorpiops*, *Vietscorpiops* Lourenço & Pham, 2015 as a subgenus of *Scorpiops*, subsequently rose to genus status, and the remarkable genus *Plethoscorpiops* Lourenço, 2017. In a rather rough revision of the family Scorpiopidae, Kovařík (2000) rejected the validity of the genus *Euscorpiops*, which was subsequently reestablished by Soleglad & Sissom (2001), mainly based on the position of chelal trichobothrium Eb_3 and the presence of an annular ring on the telson.

In the present note a new species belonging to the genus *Euscorpiops* is described from wet forests of the Doi Pha Hom Pok National Park in Thailand. This new scorpion taxon may be a possible endemic element in the fauna of this National Park.

Methods

Illustrations and measurements were produce 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).

Taxonomic treatment

Family **Scorpiopidae** Kraepelin, 1905

Genus *Euscorpiops* Vachon, 1980

***Euscorpiops chiangmai* sp. n.**
Fig. 1-10.

TYPE MATERIAL: Thailand, Chiang Mai Province, NW of Fang, in the area of today Doi Pha Hom Pok National Park (park created in 2000), 30/XI/1997 (S. Huber), 800-1000 m, wet-forest (cloud-forest). Juvenile female holotype should be deposited in the Museu Nacional, Rio de Janeiro, Brazil.
Note: This is a contribution to the restoration of the lost collections of the National Museum in Rio de Janeiro, destroyed by fire in 2018.

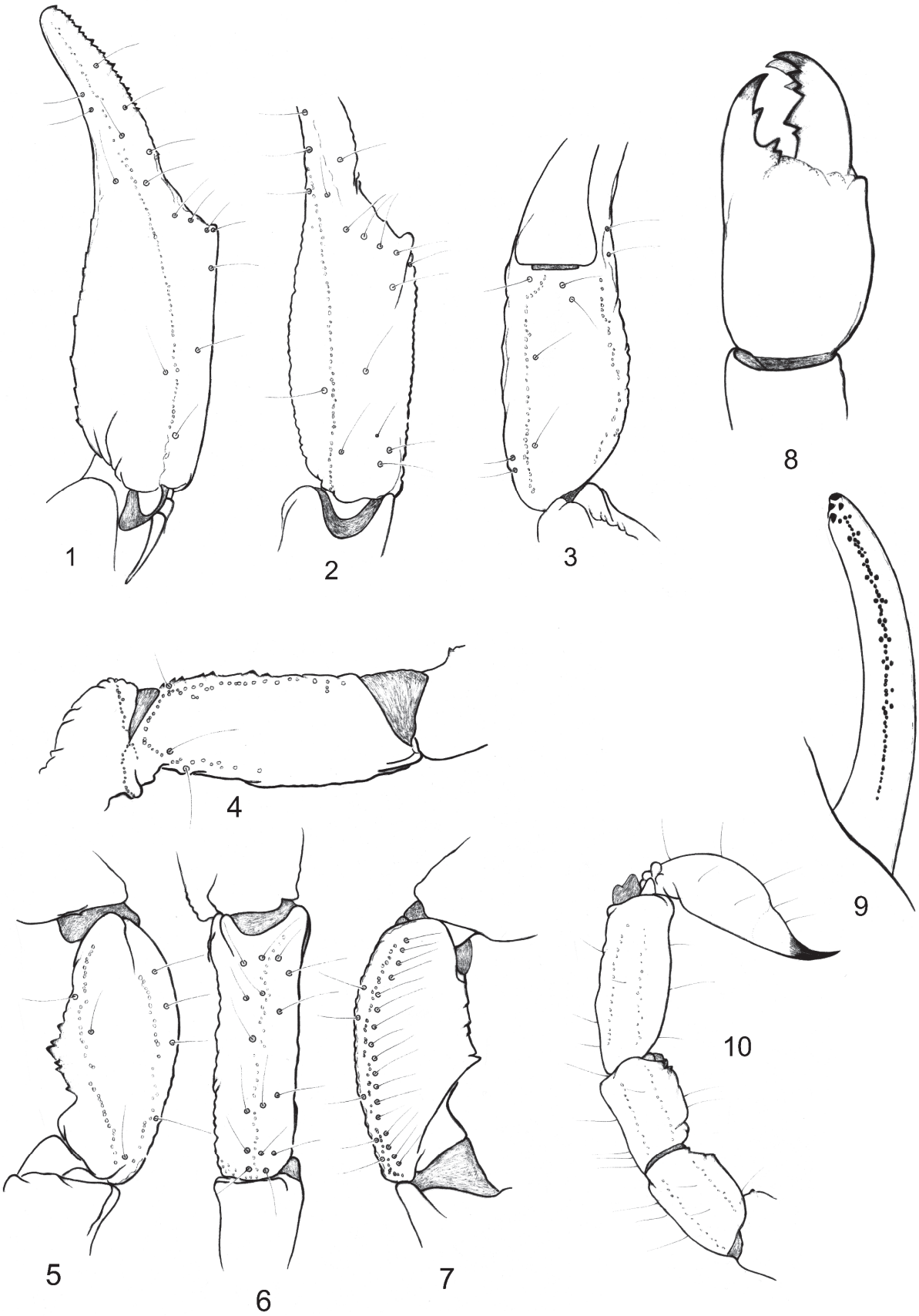


Fig. 1-10. *Euscorpiops chiangmai* sp. n. Female holotype. **1-7.** Trichobothrial pattern. Chela, dorso-external, external, ventral and internal aspects. **4**. Femur, dorsal aspect. **5-7**. Patella, dorsal, external and ventral aspects. **8**. Chelicera, dorsal aspect. **9**. Cutting edge of movable chelal finger. **10**. Metasomal segment III-V and telson, lateral aspect.



Fig. 11. Map of South-east Asia, showing the type locality of the new species in Chiang Mai Province, Thailand.

ETYMOLOGY: The specific name is a noun in apposition to the generic name and refers to the province where the new species was found.

DIAGNOSIS: The new species exhibits the general characteristics of the genus *Euscorpiops* (Vachon, 1980; Soleglad & Sissom, 2001). Since the holotype is a possible 3th instar juvenile and measures 13.6 mm in total length, it can be suggested that adults may reach between 30 and 40 mm in total length. This makes a medium to small species within the genus. General coloration yellow to brownish. Body and pedipalps moderately slender. Internal aspect of patella with two reduced spinoid tubercles of similar size. Trichobothrial pattern with three trichobothria on femur: dorsal, internal and external. Patella with 2 dorsal, 1 internal, 17 ventral and 16 external trichobothria. Chelal manus with 4 ventral, 2 dorsal (*Dt*, *Db*), 2 internal (*ib*, *it*), 1 *Est*, 5 *Et*, 1 *Esb* and 3 trichobothria in the *Eb* series. Trichobothrium Eb_3 is distal in relation to Eb_2 (Vachon, 1974, 1980).

DESCRIPTION:

Coloration yellow to brownish-yellow. Carapace brownish-yellow with paler zones on furrows. Tergites brownish-yellow. Metasomal segments brownish-yellow; telson yellow; base of aculeus blackish and tip reddish. Chelicerae dark brown with conspicuous variegated spots; fingers yellow with reddish teeth. Pedipalps reddish-brown to dark brown; fingers paler than chela manus, reddish. Legs yellow with brownish spots. Venter yellow, markedly infuscated.

Morphology. Carapace weakly granular, rather shagreened; furrows weakly deep. Median eyes anterior to the middle of carapace; three pairs of lateral eyes, the third pair only slightly smaller than the first two. Sternum pentagonal, slightly longer than wide. Tergites weakly granulated, shagreened; VII with five carinae, moderately marked. Pectines moderately large; pectinal tooth count 7-7; fulcra absent. Sternites almost smooth and punctate; sternite VII with four weakly marked carinae and some granulations. Metasomal segments I to V with 10-8-8-8-7 carinae; dorsal carinae on segments III and IV with a single posterior spinoid granule; metasomal tegument weakly granulated; ventral carina on segment V with weakly marked spinoid granules. Telson vesicle smooth, without granulations. Setation weak on metasomal segments and telson. Pedipalps: femur with dorsal internal, dorsal external, ventral internal and ventral external carinae moderately marked; tegument weakly granular. Patella with dorsal internal, dorsal external, ventral internal, ventral external and external carinae weakly marked; two moderately to weakly marked spinoid granules of similar size present on internal aspect; tegument weakly granular. Chela with dorsal marginal, external secondary, ventral internal and ventral carinae weakly marked; other carinae vestigial; tegument granulated ventrally. Chelal fingers with two longitudinal series of granules, almost fused in a single one and, a few inner and outer accessory granules. Cheliceral dentition as defined for the family (Vachon, 1963); 4-5 teeth on ventro-internal face of movable finger. Trichobothriotaxy type **C**, as shown in figures 1-7 (Vachon, 1974, 1980: see diagnosis for additional details).

Some morphometric values (in mm) of juvenile female holotype. Total length (including telson) 13.6. Carapace length: 2.2. Mesosoma length: 5.1. Metasoma length: 4.6. Telson length: 1.7. Pedipalp length: 7.9.

RELATIONSHIPS: The new species can be clearly separated from the other species described from Thailand and Myanmar by a quite distinct trichobothrial pattern, with 17 trichobothria on ventral and 16 trichobothria on external aspects of pedipalp patella (see also Kovařík et al., 2015).

ECOLOGICAL NOTES ON THE DOI PHA HOM POK NATIONAL PARK (Fig. 11).

The national park is located on the Phi Pan Nam mountain range and covers about 524 square kilometers. The mountains range from 400 to 2285 m above sea level. The highest peak, inside the park is Doi Pha Hom Pok which is the second highest mountain in Thailand and the origin for main tributaries of Maenam Fang.

The average temperature in the park is 25.4 °C. Winter season runs from November to February when temperatures can vary from 13.7 to 19 °C. Rain season lasts from May to September with an average yearly rainfall of 1183.5 mm. During April temperatures can raise up to 39 °C (Suksawang & McNeely, 2015).

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