



**HAL**  
open science

**A new species of the genus *Scorpiops* Peters, 1861,  
subgenus *Euscorpiops* Vachon, 1980 from Laos  
(Scorpiones: Scorpipidae)**

Wilson R. Lourenço, Eric Ythier

► **To cite this version:**

Wilson R. Lourenço, Eric Ythier. A new species of the genus *Scorpiops* Peters, 1861, subgenus *Euscorpiops* Vachon, 1980 from Laos (Scorpiones: Scorpipidae). *Faunitaxys*, 2022, 10 (27), pp.1-9. hal-03665740v2

**HAL Id: hal-03665740**

**<https://hal.science/hal-03665740v2>**

Submitted on 10 Jun 2022

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

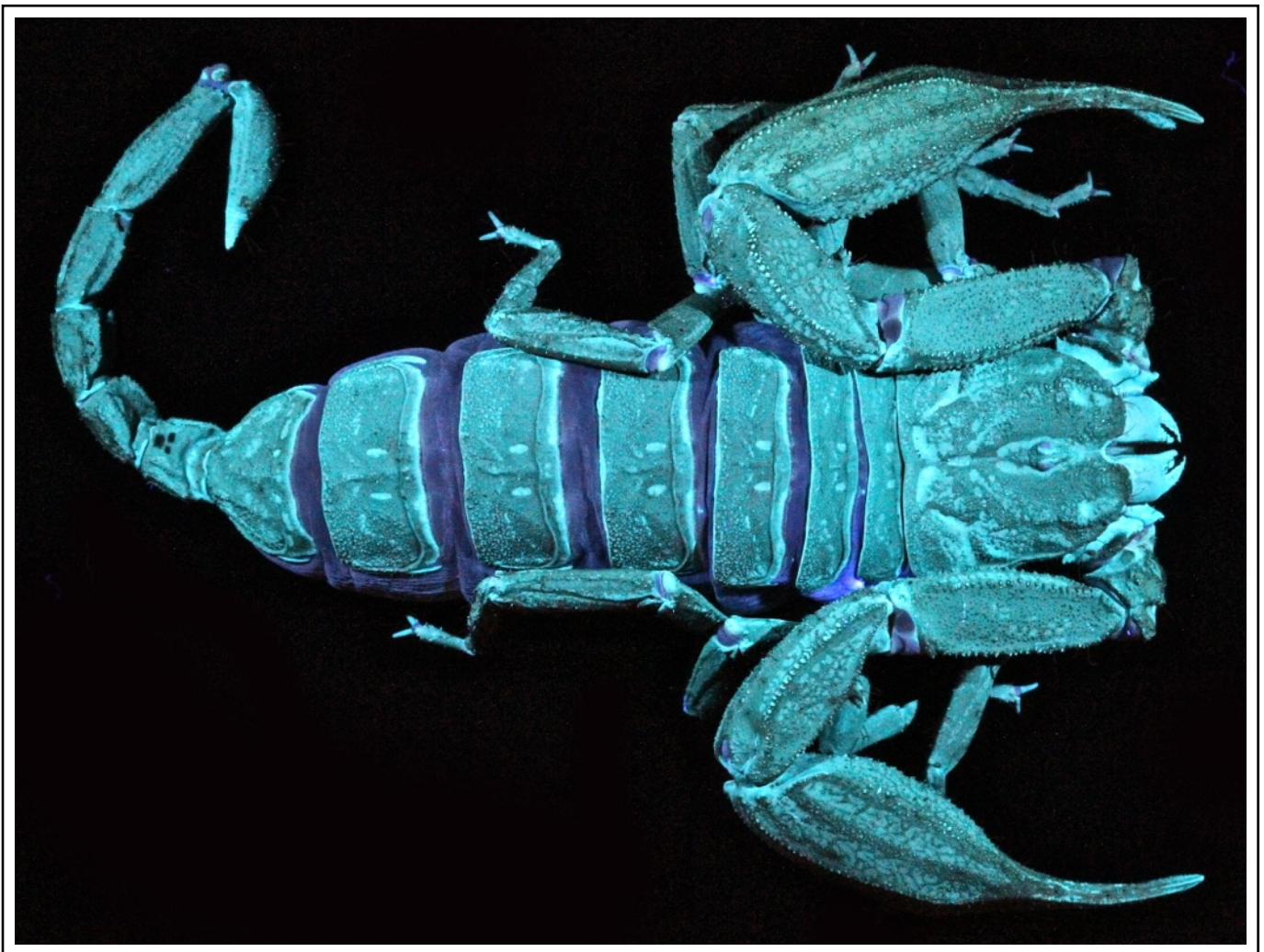
L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - NoDerivatives 4.0 International License

# Faunitaxys

*Revue de Faunistique, Taxonomie et Systématique  
morphologique et moléculaire*



Volume 10  
Numéro 27

Mai 2022

ISSN : 2269 - 6016  
Dépôt légal : Mai 2022

# Faunitaxys

*Revue de Faunistique, Taxonomie et Systématique  
morphologique et moléculaire*

ZooBank : <http://zoobank.org/79A36B2E-F645-4F9A-AE2B-ED32CE6771CC>

Directeur de la publication, rédacteur, conception graphique et PAO:

*Lionel Delaunay*

Cette revue ne peut pas être vendue

Elle est distribuée par échange aux institutions (version papier)

et sur simple demande aux particuliers (format PDF)

à l'adresse suivante:

AFCFF (Association française de Cartographie de la Faune et de la Flore)

28, rue Voltaire, F- 42100 Saint Etienne

E-mail: [lionel.delaunay@free.fr](mailto:lionel.delaunay@free.fr)

Elle est disponible librement au téléchargement à partir du site:

<http://faunitaxys.fr/>

La parution de *Faunitaxys* est apériodique

*Faunitaxys* est indexé dans / *Faunitaxys* is indexed in:

- **Zoological Record**

Articles and nomenclatural novelties are referenced by:

- **ZooBank** (<http://zoobank.org>)

Online Archives:

- **HAL** (<https://hal.archives-ouvertes.fr>)

- **Internet Archive** (<https://archive.org>)

Imprimée sur les presses de SPEED COPIE, 6, rue Tréfilerie, F- 42100 Saint-Etienne

**Imprimé le 12 mai 2022**

# A new species of the genus *Scorpiops* Peters, 1861, subgenus *Euscorpiops* Vachon, 1980 from Laos (Scorpiones: Scorpiopidae)

WILSON R. LOURENÇO (1) & ERIC YTHIER (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](mailto:wilson.lourenco@mnhn.fr)

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

(2) BYG Taxa, 382 rue des Guillates, 71570 Romanèche-Thorins, France.

– E-mail : [contact@bygtaxa.com](mailto:contact@bygtaxa.com)

– ZooBank : ZooBank: <http://zoobank.org/06FD0852-A88E-49E5-B8E6-E1494B86C4E1> – Orcid : <https://orcid.org/0000-0002-3194-5184>

\* Correspondence.

## Keywords:

Scorpiones;  
Scorpiopidae;  
*Scorpiops*;  
*Euscorpiops*;  
taxonomy;  
new species;  
description;  
morphology;  
Khammouane;  
forest cover;  
Laos.

**Abstract.** – A new species, *Scorpiops (Euscorpiops) piceus* sp. n., belonging to the family Scorpiopidae Kraepelin, 1905 is described based on one adult female and one juvenile male collected in the Province of Khammouane, Laos. The new species presents most features exhibited by scorpions of the genus *Scorpiops* subgenus *Euscorpiops*, and is characterized by a very dark pigmentation overall, a large global size and a distinct trichobothrial pattern. This new species may represent one endemic element for the fauna of Khammouane region. This new taxon represents the 100<sup>th</sup> described species among the currently recognized species for the genus *Scorpiops* and the 36<sup>th</sup> for the subgenus *Euscorpiops*. Comments are also added on the validity of the generic division of the groups included in the family Scorpiopidae and a number of these are revalidated at the subgeneric level.

Lourenço W. R. & Ythier E., 2022. – A new species of the genus *Scorpiops* Peters, 1861, subgenus *Euscorpiops* Vachon, 1980 from Laos (Scorpiones: Scorpiopidae). *Faunitaxys*, 10(27): 1 – 9.

DOI: [https://doi.org/10.57800/faunitaxys-10\(27\)](https://doi.org/10.57800/faunitaxys-10(27))

ZooBank: <http://zoobank.org/79830210-A5CD-45ED-AD7E-7293D23A7D6D>

Received: 11/04/2022 – Revised: 19/04/2022 – Accepted: 20/04/2022

## Introduction

As already discussed in several previous papers (see e.g. Lourenço, 2019), the taxonomy of the now accepted family Scorpiopidae is rather complex, and was the subject of a long debate among scorpion experts. It was originally 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 then 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 globally well accepted generic composition of this family was mainly due to Vachon (1980), who revised the genus *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 *Dasyrscorpiops* 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* and *Vietscorpiops* Lourenço & Pham, 2015 as a subgenus of *Scorpiops*, subsequently raised to genus status, and the remarkable genus *Plethoscorpiops* Lourenço, 2017 (Lourenço, 2017). In a 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*<sub>3</sub> and the presence of an annular ring on the telson. Subsequently, the validity of these generic level entities was globally accepted, but in a massive publication about the family Scorpiopidae, Kovařík et al. (2020) simply decided to place all the known and accepted genera of Scorpiopidae in the synonymy of *Scorpiops*, with the single exception of *Parascorpiops* Banks. In this same publication these authors, as usual equally placed an important number of species in synonymy, in many cases without any clear justification, but once again proposed a remarkable number of new species (15), based on their usual paradoxical approaches. In our opinion, this decision is too drastic and the division of the family Scorpiopidae, in at least subgenera, has a didactical importance.

Reviewer : Gérard Dupré (France).



This is an open access article under the terms of the Creative Commons Attribution-NonCommercial-NoDerivs License, which permits use and distribution in any medium, provided the original work is properly cited, the use is non-commercial and no modifications or adaptations are made.

Copyright 2022 The Authors. *Faunitaxys* published by Lionel Delaunay on behalf of the AFCFF (Association française de Cartographie de la Faune et de la Flore).

As already exposed by previous authors (see e.g. Bernardi, 1983), the notions of genus and subgenus in conventional and evolutionary taxonomy has a major importance. These generic divisions can be looked in both a pragmatic and didactic viewpoint and at least three categories can be retained: the genus, which is the best defined category and generally imposed; the subgenus, a less well defined category which appears more like an informative category; and finally the species-group which can be accepted as purely informal. Bernardi (1983) confirms that the notion of subgenus is often rejected by many taxonomists; however, he insists about the usefulness of retaining this category, when it is well defined, and in particular for genera containing several groups of species forming small evolutionary lineages, which is the case of *Scorpiops* within the Scorpiopidae. Nevertheless, he clearly suggests that the replacement of the notion of subgenus by species-group is not positive since both notions are far from being identical. Clearly, the definition of species-group represents an informal decision, but contrarily the creation of a subgenus with a precise name and the designation of a type-species, defines a lineage in a formal way.

In account of these argumentations, it seems useful to revalidate, at least on the subgeneric level a number of previously defined genera of Scorpiopidae. Therefore, we revalidate here, in addition to the nominotypical subgenus *Scorpiops*, the following subgenera: *Alloscorpiops* Vachon, *Euscorpiops* Vachon *Neoscorpiops* Vachon, *Dasyscorpiops* Vachon and *Plethoscorpiops* Lourenço, 2017. *Parascorpiops* Banks 1928 is maintained as a distinct genus of *Scorpiops*. The subgenera *Laoscorpiops* Lourenço and *Vietscorpiops* Lourenço & Pham, created on the basis of weak evidence, are maintained in the synonymies of genera *Alloscorpiops* and *Scorpiops*, respectively. The diagnoses for the maintained subgenera are those proposed by Vachon (1980) and Lourenço (2017).

In the present note a new species belonging to the subgenus *Euscorpiops* is described from the forests of the Khammouane Province in Laos. This new scorpion taxon may be a possible endemic element in the fauna of this region.

## Methods

Illustrations and measurements were produced using a Wild M5 stereo-microscope with a drawing tube and an ocular micrometer. Photographs were made with a Canon EOS 7D and Adobe Photoshop software. Map was made using Google Maps and Adobe Photoshop software. Measurements follow Stahnke (1970) and are given in mm. Trichobothrial notations follow Vachon (1974) and morphological terminology mostly follows Vachon (1952) and Hjelle (1990).

## Composition of the genus *Scorpiops* Peters, 1861 (in order of description)

100 species; type species *S. (Scorpiops) hardwickii* (Gervais, 1843)

Subgenus *Scorpiops* Peters, 1861

41 species

type species: *S. (Scorpiops) hardwickii* (Gervais, 1843)

- *S. (Scorpiops) hardwickii* (Gervais, 1843)  
*India, Nepal*
- *S. (Scorpiops) solidus* Karsch, 1879  
*India*
- *S. (Scorpiops) leptochirus* Pocock, 1893  
*Bangladesh, India*

- *S. (Scorpiops) petersii* Pocock, 1893  
*India*
- *S. (Scorpiops) affinis* Kraepelin, 1898  
*India, Nepal*
- *S. (Scorpiops) tibetanus* Hirst, 1911  
*China*
- *S. (Scorpiops) vonwicki* Birula, 1913  
*India*
- *S. (Scorpiops) oligotrichus* Fage, 1933  
*Laos*
- *S. (Scorpiops) rohtangensis* Mani, 1959  
*India*
- *S. (Scorpiops) lindbergi* (Vachon, 1980)  
*Afghanistan, Pakistan*
- *S. (Scorpiops) pachmarhicus* Bastawade, 1992  
*India*
- *S. (Scorpiops) farkaci* Kovařík, 1993  
*Thailand, Vietnam*
- *S. (Scorpiops) irenae* Kovařík, 1994  
*Nepal*
- *S. (Scorpiops) jendeki* Kovařík, 1994  
*China*
- *S. (Scorpiops) braunwalderi* Kovařík, 2000  
*India*
- *S. (Scorpiops) dastychi* Kovařík, 2000  
*India*
- *S. (Scorpiops) feti* Kovařík, 2000  
*India*
- *S. (Scorpiops) margerisonae* Kovařík, 2000  
*China*
- *S. (Scorpiops) demisi* Kovařík, 2005  
*India*
- *S. (Scorpiops) langxian* Qi, Zhu & Lourenço, 2005  
*China*
- *S. (Scorpiops) luridus* Qi, Zhu & Lourenço, 2005  
*China*
- *S. (Scorpiops) afghanus* Lourenço & Qi, 2006  
*Afghanistan*
- *S. (Scorpiops) lhasa* Di & Zhu, 2009  
*China*
- *S. (Scorpiops) pakistanus* Kovařík & Ahmed, 2009  
*Pakistan*
- *S. (Scorpiops) pseudomontanus* Kovařík & Ahmed, 2009  
*Pakistan*
- *S. (Scorpiops) zubairahmedi* Kovařík, 2009  
*Pakistan*
- *S. (Scorpiops) spitiensis* Zambre, Sanap & Mirza, 2014  
*India*
- *S. (Scorpiops) ingens* Yin, Zhang, Pan, Li & Di, 2015  
*China*
- *S. (Scorpiops) taxkorgan* Lourenço, 2018  
*China*
- *S. (Scorpiops) furai* Kovařík, 2020  
*India*
- *S. (Scorpiops) grosseri* Kovařík, 2020  
*India*
- *S. (Scorpiops) harmsi* Kovařík, 2020  
*Nepal*
- *S. (Scorpiops) hofereki* Kovařík, 2020  
*Pakistan*
- *S. (Scorpiops) kejvali* Kovařík, 2020  
*India*
- *S. (Scorpiops) pakseensis* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
*Laos*
- *S. (Scorpiops) songi* Di & Qiao, 2020  
*China*
- *S. (Scorpiops) thailandus* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
*Thailand*
- *S. (Scorpiops) tryznai* Kovařík, 2020  
*India*

- *S. (Scorpiops) wrzecionkoi* Kovařík, 2020  
China
- *S. (Scorpiops) yagmuri* Kovařík, 2020  
Pakistan
- *S. (Scorpiops) zubairi* Kovařík, 2020  
Pakistan

Subgenus *Dasyscorpiops* Vachon, 1974

1 species

type species: *S. (Dasyscorpiops) grandjeani* (Vachon, 1974)

- *S. (Dasyscorpiops) grandjeani* Vachon, 1974  
Malaysia, Thailand

Subgenus *Alloscorpiops* Vachon, 1980

11 species

type species: *S. (Alloscorpiops) anthracinus* Simon, 1887

- *S. (Alloscorpiops) anthracinus* Simon, 1887  
Myanmar, Thailand
- *S. (Alloscorpiops) calmonti* (Loureço, 2013)  
Laos
- *S. (Alloscorpiops) citadelle* (Kovařík, 2013)  
Thailand
- *S. (Alloscorpiops) wongpromi* (Kovařík, Soleglad & Kosulic, 2013)  
Laos, Thailand
- *S. (Alloscorpiops) troglodytes* (Loureço & Pham, 2015)  
Vietnam
- *S. (Alloscorpiops) viktoriae* (Loureço & Košulič, 2018)  
Myanmar
- *S. (Alloscorpiops) bastawadei* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Alloscorpiops) birulai* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Alloscorpiops) kautti* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Alloscorpiops) krabiensis* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Alloscorpiops) scheibeae* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand

Subgenus *Euscorpiops* Vachon, 1980

36 species

type species: *S. (Euscorpiops) asthenurus* Pocock, 1900

- *S. (Euscorpiops) montanus* (Karsch, 1879)  
India, Pakistan
- *S. (Euscorpiops) binghamii* Pocock, 1893  
Myanmar, Thailand
- *S. (Euscorpiops) longimanus* (Pocock, 1893)  
Bangladesh, India, Myanmar
- *S. (Euscorpiops) asthenurus* Pocock, 1900  
Bhutan, India
- *S. (Euscorpiops) bhutanensis* (Tikader & Bastawade, 1983)  
Bhutan
- *S. (Euscorpiops) kaftani* (Kovařík, 1993)  
Vietnam
- *S. (Euscorpiops) problematicus* (Kovařík, 2000)  
Thailand
- *S. (Euscorpiops) sejnai* (Kovařík, 2000)  
Vietnam
- *S. (Euscorpiops) kubani* (Kovařík, 2004)  
China, Laos
- *S. (Euscorpiops) beccaloniae* (Kovařík, 2005)  
Myanmar
- *S. (Euscorpiops) novaki* (Kovařík, 2005)  
China

- *S. (Euscorpiops) shidian* (Qi, Zhu & Lourenço, 2005)  
China
- *S. (Euscorpiops) vachoni* (Qi, Zhu & Lourenço, 2005)  
China
- *S. (Euscorpiops) kamengensis* (Bastawade, 2006)  
India
- *S. (Euscorpiops) yangi* (Zhu, Zhang & Lourenço, 2007)  
China
- *S. (Euscorpiops) puerensis* (Di, Wu, Cao, Xiao & Li, 2010)  
China
- *S. (Euscorpiops) xui* (Sun & Zhu, 2010)  
China
- *S. (Euscorpiops) thaomischorum* (Kovařík, 2012)  
Vietnam
- *S. (Euscorpiops) alexandreaeorum* (Loureço, 2013)  
Laos
- *S. (Euscorpiops) cavernicola* (Loureço & Pham, 2013)  
Vietnam
- *S. (Euscorpiops) neradi* (Kovařík, Pliskova & Št'áhlavský, 2013)  
Thailand
- *S. (Euscorpiops) dakrong* (Loureço & Pham, 2014)  
Vietnam
- *S. (Euscorpiops) artemisae* (Kovařík, Kosulic, Št'áhlavský, Dongkhamfu & Wongprom, 2015)  
Myanmar
- *S. (Euscorpiops) orioni* (Kovařík, Kosulic, Št'áhlavský, Dongkhamfu & Wongprom, 2015)  
Thailand
- *S. (Euscorpiops) chiangmai* (Loureço, 2019)  
Thailand
- *S. (Euscorpiops) zhangshuyuanii* (Ythier, 2019)  
China
- *S. (Euscorpiops) ciki* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Myanmar
- *S. (Euscorpiops) dii* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) dunlopi* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) lii* (Di & Qiao, 2020)  
China
- *S. (Euscorpiops) phatoensis* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) prasiti* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) schumacheri* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) sherwoodae* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Thailand
- *S. (Euscorpiops) solegladi* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020  
Vietnam
- *S. (Euscorpiops) piceus* sp. n.  
Laos

Subgenus *Neoscorpiops* Vachon, 1980

10 species

type species: *S. (Neoscorpiops) satarensis* (Pocock, 1900)

- *S. (Neoscorpiops) tenuicauda* (Pocock, 1894)  
India
- *S. (Neoscorpiops) satarensis* (Pocock, 1900)  
India
- *S. (Neoscorpiops) deccanensis* (Tikader & Bastawade, 1978)  
India
- *S. (Neoscorpiops) maharashtraensis* (Mirza, Sanap & Upadhye, 2014)  
India
- *S. (Neoscorpiops) phaltanensis* (Sulakhe, Sayyed, Deshpande, Dandekar, Padhye & Bastawade, 2020)  
India

- *S. (Neoscorpiops) telbaila* Sulakhe, Deshpande, Dandekar, Ketkar, Padhye & Bastawade, 2020

India

- *S. (Neoscorpiops) lioneli* Sulakhe, Deshpande, Dandekar, Padhye & Bastawade, 2021

India

- *S. (Neoscorpiops) nagphani* Sulakhe, Deshpande, Dandekar, Padhye & Bastawade, 2021

India

- *S. (Neoscorpiops) neera* Sulakhe, Deshpande, Dandekar, Padhye & Bastawade, 2021

India

- *S. (Neoscorpiops) vrushchik* Sulakhe, Deshpande, Dandekar, Padhye & Bastawade, 2021

India

Subgenus *Plethoscorpiops* Lourenço, 2017

1 species

type species: *S. (Plethoscorpiops) profusus* (Lourenço, 2017)

- *S. (Plethoscorpiops) profusus* (Lourenço, 2017)  
Myanmar

## Taxonomic treatment

Family **Scorpiopidae** Kraepelin, 1905

Genus **Scorpiops** Peters, 1861

Subgenus **Euscorpiops** Vachon, 1980

***Scorpiops (Euscorpiops) piceus* sp. n.**

(Fig. 1-13)

ZooBank: <http://zoobank.org/DE68FBB1-0CE8-4B82-BE5C-658C12F40944>

**Holotype**, ♀, Laos, Khammouane Province, near Tran Cave, 17°27.220'N - 105°00.225'E, original forest on cliff, II/2016 (V. Q. Luu).

**Paratype**, 1 juvenile ♂, Laos, Khammouane Province, Ban Phondon, secondary forest, 20/II/1998 (L. Deharveng & A. Bedos).

Holotype and paratype collected together with *Lychas aberlenci* Lourenço, 2013. Type material will be deposited in the Muséum national d'Histoire naturelle, Paris, France.

**Etymology**. – The specific name makes reference to the very dark, almost blackish pigmentation of the new species.

**Diagnosis**. – The new species exhibits the general characteristics of the genus *Scorpiops*, subgenus *Euscorpiops* (Vachon, 1980; Soleglad & Sissom, 2001). The female holotype measures 62.6 mm in total length, defining the new species as large in relation to other species of the genus. General coloration very dark grey to blackish, recalling *Scorpiops (Euscorpiops) alexandreanneorum* Lourenço, 2013. Body rather bulk; pedipalps very strong and elongate. Internal aspect of patella with two strong spinoid tubercles, the ventral larger than the dorsal; one supplementary conspicuous granule is observed distally. Trichobothrial pattern with three trichobothria on femur: dorsal, internal and external. Patella with 2 dorsal, 1 internal, 13(12) ventral and 18(19) external trichobothria. Chela 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*<sub>3</sub> is distal in relation to *Eb*<sub>2</sub> (Vachon, 1974, 1980).

**Description** (based on female holotype).

**Coloration**. – Basically very dark grey to blackish. Carapace blackish. Tergites equally blackish with inconspicuous reddish-brown spots. Metasomal segments blackish; telson blackish; base of aculeus slightly yellow with tip reddish. Chelicerae dark brown to brownish-yellow with conspicuous variegated spots; fingers blackish with reddish teeth. Pedipalps dark grey to blackish. Legs dark grey to blackish. Venter, coxapophysis and sternum brownish; sternites, genital operculum and pectines brownish-yellow.

**Morphology**. – Carapace strongly granular; furrows moderately deep. Median eyes anterior to the centre of the carapace; three pairs of lateral eyes, the third pair only slightly smaller than the first two. Sternum pentagonal, slightly longer than wide. Tergites moderately to strongly granular; VII with five carinae, strongly marked. Pectines rather small; pectinal tooth count 6-6 (female), 8-8 (male); 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 II to IV with a stronger posterior spinoid granule; metasomal tegument weakly granulated; ventral carina on segment V without spinoid granules. Telson vesicle smooth, without granulations; annular ring conspicuous. Setation weak on metasomal segments and telson. Pedipalps: femur with dorsal internal, dorsal external, ventral internal and ventral external carinae strongly marked; tegument moderately granular. Patella with dorsal internal, dorsal external, ventral internal, ventral external and external carinae strongly marked; two strongly marked spinoid granules present on internal aspect, ventral bigger than dorsal; tegument moderately granular. Chela with dorsal marginal, external secondary, ventral internal and ventral carinae strongly marked; other carinae moderate; tegument globally granulated. Chela fingers with two longitudinal series of granules, almost fused in a single one and with 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 Fig. 7-13 (Vachon, 1974, 1980; see diagnosis for additional details).

**Morphometric values** (mm) (femelle holotype).

– **Total length** (including the telson): 62.6.

– **Carapace**  
length 9.8;  
anterior width 6.3;  
posterior width 10.6.

– **Mesosoma**: length: 23.6.

– **Metasomal segments**  
*I*: length 3.0, width 3.4;  
*II*: length 3.2, width 2.9;  
*III*: length 3.6, width 2.6;  
*IV*: length 4.4, width 2.4;  
*V*: length, 6.9, width 2.4, depth 2.2.

– **Telson**: length 8.1;

– **Vesicle**: width 2.3, depth 2.2.

– **Pedipalp**  
femur length 11.1, width 3.8;  
patella length 10.1, width 3.9;  
chela length 21.6, width 5.2, depth 4.4.

– **Movable finger**: length 10.2.

**Relationships**. – The new species can be clearly separated from the other species of *Scorpiops (Euscorpiops)* described from Laos and Vietnam by the following main features:

- *S. (Euscorpiops) dakrong* (Lourenço & Pham, 2014) (*Vietnam*)
  - (i) much paler coloration pattern;
  - (ii) much smaller size (26-27 mm);
  - (iii) 9 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 17 external trichobothria on patella vs 18-19 in the new species;



Fig. 1-2. *Scorpiops (Euscorpiops) piceus* sp. n., ♀ holotype, habitus. 1. Dorsal aspect. 2. Ventral aspect.

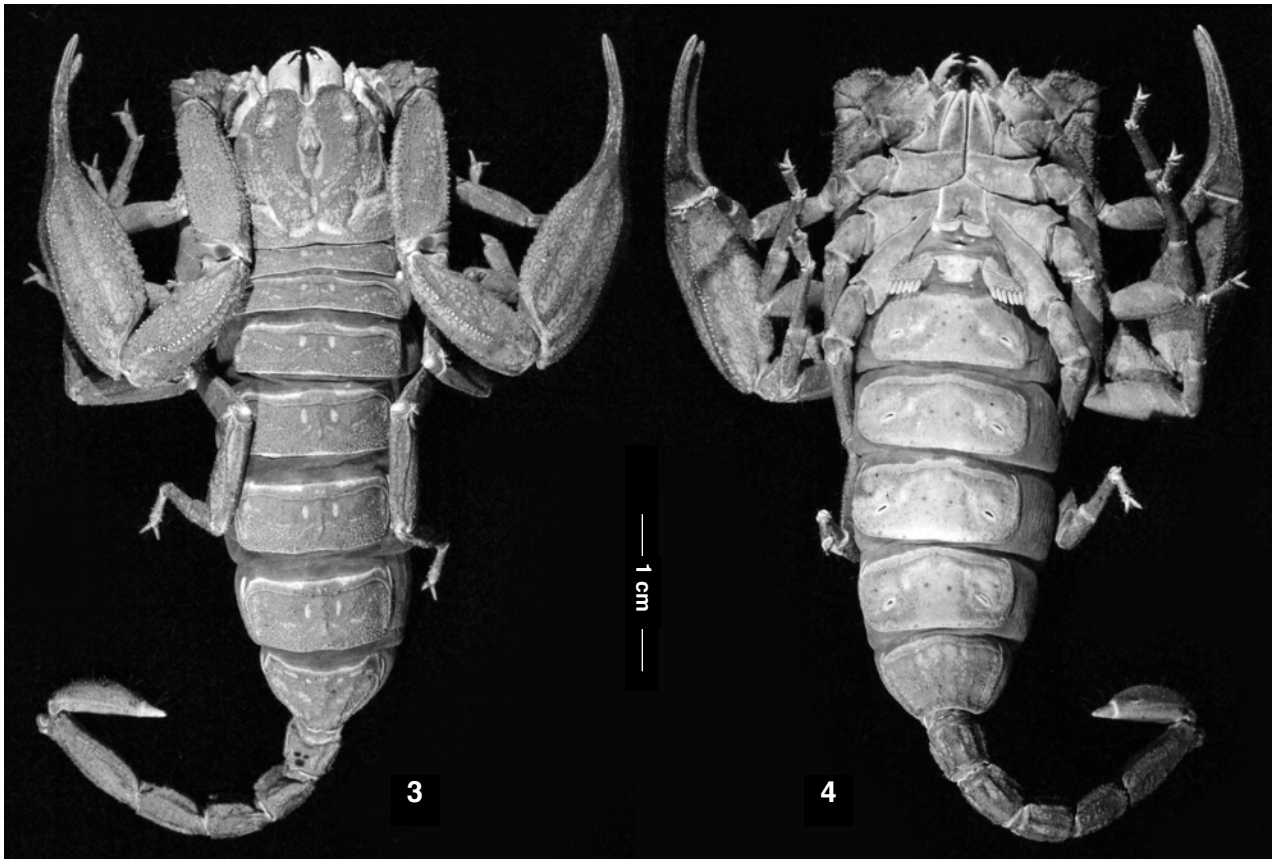
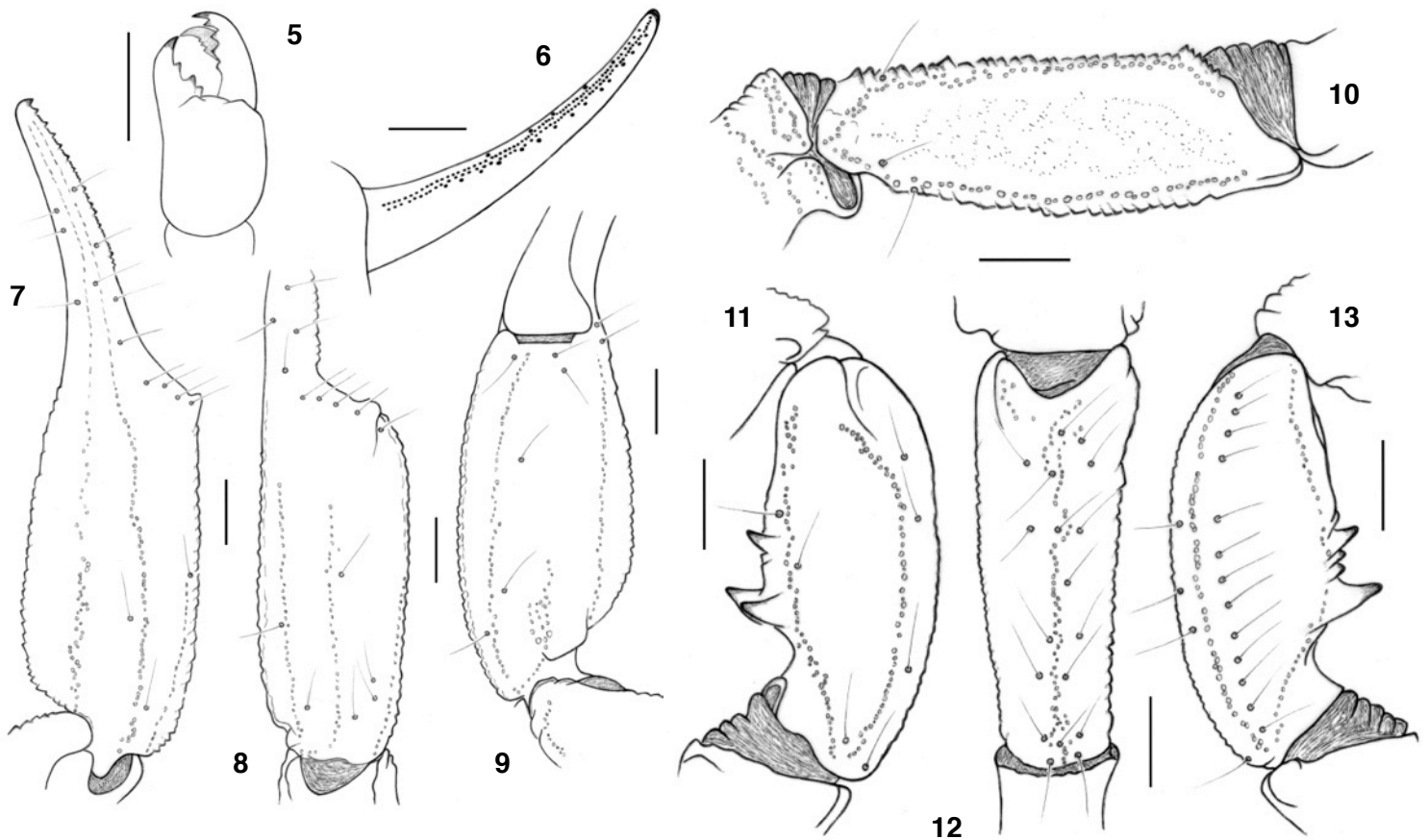


Fig. 3-4. *Scorpiops (Euscorpiops) piceus* sp. n., ♀ holotype, habitus under 365 nm UV light, showing the granulations, carinae and furrows. 3. Dorsal aspect. 4. Ventral aspect.





**Fig. 5-13.** *Scorpiops (Euscorpiops) piceus* sp. n., ♀ holotype (Scale bars = 2 mm).

**5.** Chelicera, dorsal aspect. **6.** Cutting edge of chela movable finger with rows of granules.

**7-13.** Chela trichobothrial pattern. **7-9.** Chela. **7.** Dorso-external aspect. **8.** External aspect. **9.** Ventral aspect.

**10.** Femur, dorsal aspect. **11-13.** Patella. **11.** Dorsal aspect. **12.** External aspect. **13.** Ventral aspect.

- *S. (Euscorpiops) sejnai* (Kovařík, 2000) (*Vietnam*)
  - (i) smaller size (32-43 mm);
  - (ii) granulation of carapace very fine (strongly granular in the new species);
  - (iii) 9 ventral trichobothria on patella vs 12-13 in the new species;
- *S. (Euscorpiops) kaftani* (Kovařík, 1993) (*Vietnam*)
  - (i) smaller size (31-52 mm);
  - (ii) paler coloration pattern;
  - (iii) chela movable finger with 6 inner accessory granules (4-5 in the new species);
  - (iv) different morphometric values of female telson with length/depth ratio 3.4 (3.7 in the new species);
- *S. (Euscorpiops) alexandreanneorum* Lourenço, 2013 (*Laos*)
  - (i) dark coloration pattern but more reddish;
  - (ii) smaller size (38 mm);
  - (iii) 14 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 21 external trichobothria on patella vs 18-19 in the new species;
- *S. (Euscorpiops) kubani* (Kovařík, 2004) (*Laos, China*)
  - (i) smaller size (39-50 mm);
  - (ii) 9-10 ventral trichobothria on patella vs 12-13 in the new species;
- *S. (Euscorpiops) solegladi* Kovařík, Lowe, Stockmann & Št'áhlavský, 2020 (*Vietnam*)
  - (i) paler coloration pattern;
  - (ii) much smaller size (32-35 mm);
  - (iii) 10-11 ventral trichobothria on patella vs 12-13 in the new species;

- *S. (Euscorpiops) thaomischorum* (Kovařík, 2012) (*Vietnam*)
  - (i) paler coloration pattern;
  - (ii) markedly different morphometric values of pedipalps notably female chela length/width ratio (3.3-3.5 vs 4.2 in the new species);
- *S. (Euscorpiops) cavernicola* (Lourenço & Pham, 2013) (*Vietnam*)
  - (i) much paler coloration pattern;
  - (ii) smaller size (42-43 mm);
  - (iii) fulcra reduced (absent in the new species);
  - (iv) 15-17 external trichobothria on patella vs 18-19 in the new species.

*Scorpiops (Euscorpiops) piceus* sp. n. can also be clearly separated from the other species of *Scorpiops (Scorpiops)* and *Scorpiops (Alloscorpiops)* described from Laos and Vietnam by the following main features:

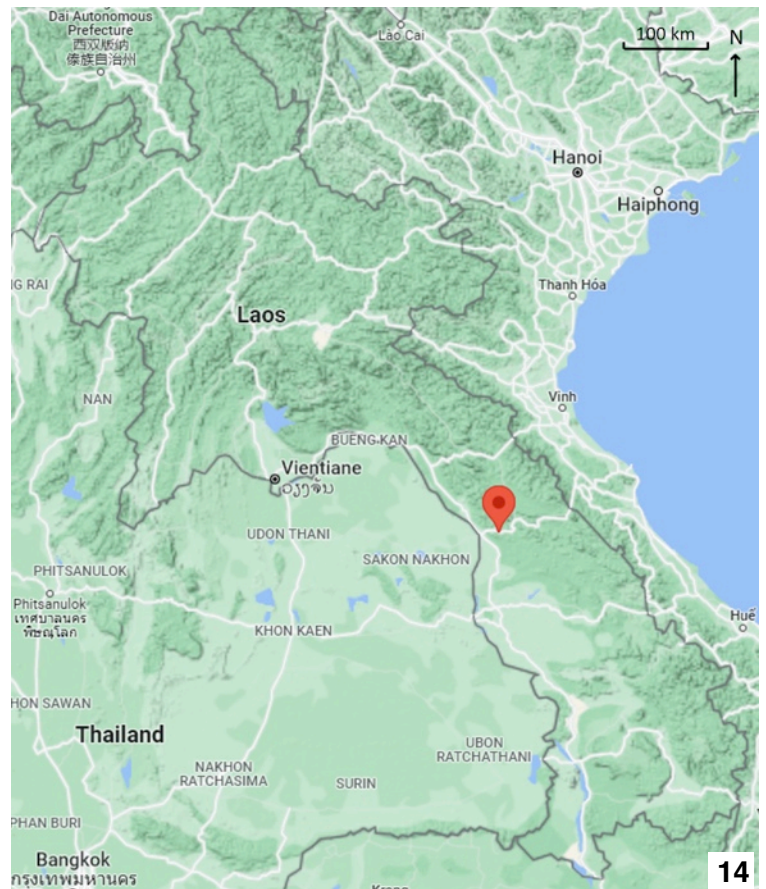
- *S. (Scorpiops) oligotrichus* Fage, 1933 (*Laos*)
  - (i) paler coloration pattern;
  - (ii) smaller size (32-50 mm);
  - (iii) 9 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 17 external trichobothria on patella vs 18-19 in the new species;
- *S. (Scorpiops) pakseensis* Kovařík, Lowe, Stockmann, Št'áhlavský, 2020 (*Laos*)
  - (i) paler coloration pattern, especially on legs and telson;
  - (ii) much smaller size (34-41 mm);
  - (iii) 9 ventral trichobothria on patella vs 12-13 in the new species;

- *S. (Scorpiops) farkaci* Kovařík, 1993 (*Vietnam, Thailand*)
  - (i) paler coloration pattern;
  - (ii) much smaller size (25-33 mm);
  - (iii) 9 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 17 external trichobothria on patella vs 18-19 in the new species;
- *S. (Alloscorpiops) wongpromi* (Kovařík, Sotgiat & Kosulic, 2013) (*Laos, Thailand*)
  - (i) fulcra reduced (absent in the new species);
  - (ii) 11-12 ventral trichobothria on chela vs 4 in the new species;
  - (iii) 21-22 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 33-41 external trichobothria on patella vs 18-19 in the new species;
- *S. (Alloscorpiops) calmonti* (Lourenço, 2013) (*Laos*)
  - (i) paler coloration pattern;
  - (ii) 13-14 ventral trichobothria on chela vs 4 in the new species;
  - (iii) 18 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 30 external trichobothria on patella vs 18-19 in the new species;
- *S. (Alloscorpiops) troglodytes* (Lourenço & Pham, 2015) (*Vietnam*)
  - (i) much paler coloration pattern;
  - (ii) 9 ventral trichobothria on chela vs 4 in the new species;
  - (iii) 14 ventral trichobothria on patella vs 12-13 in the new species;
  - (iv) 21 external trichobothria on patella vs 18-19 in the new species.

#### **Ecological notes on the Khammouane Province and region nearby Tran Cave**

The zone where most caves are located in Khammouane Province is placed in the Northern Annamite ecoregion (Mouret, 2001; Lourenço, 2007). The area exhibits a mosaic of semi-evergreen and mixed deciduous forests (Fig. 15), whilst pockets of closed canopy evergreen forest are found within the karstic zones. Further, there are areas of secondary forest, shifting cultivation and bamboo forest. Due to difficult access, much of the forest from the area is free from extensive exploitation, with the exception of areas near roads and villages. Frequently, the vegetation types are divided in upper and lower varieties; in this case the region of Tran Cave would be defined in the lower section since the location is lower than 200 m. In fact, very close to Tran Cave there is now a National Road N12

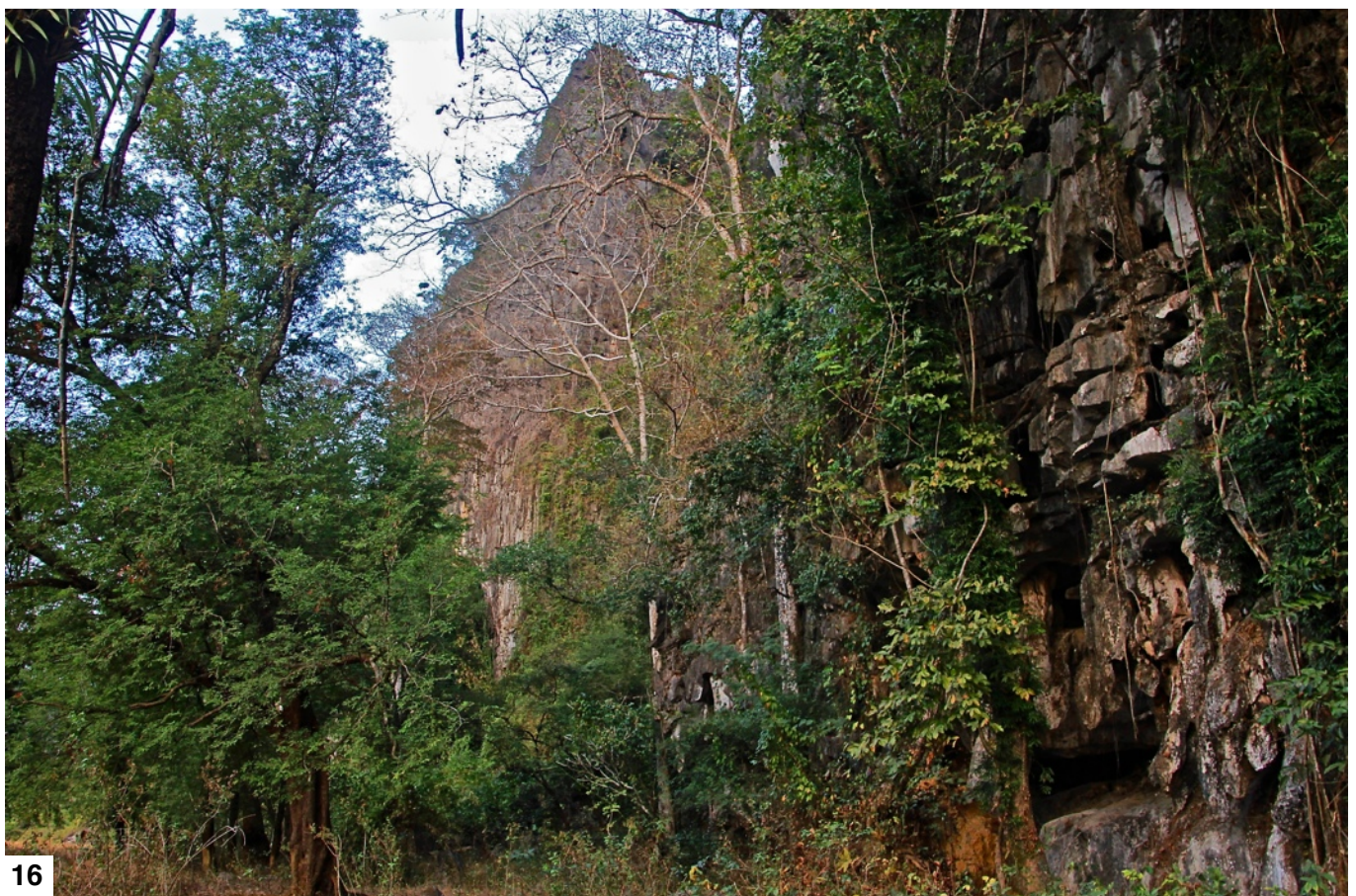
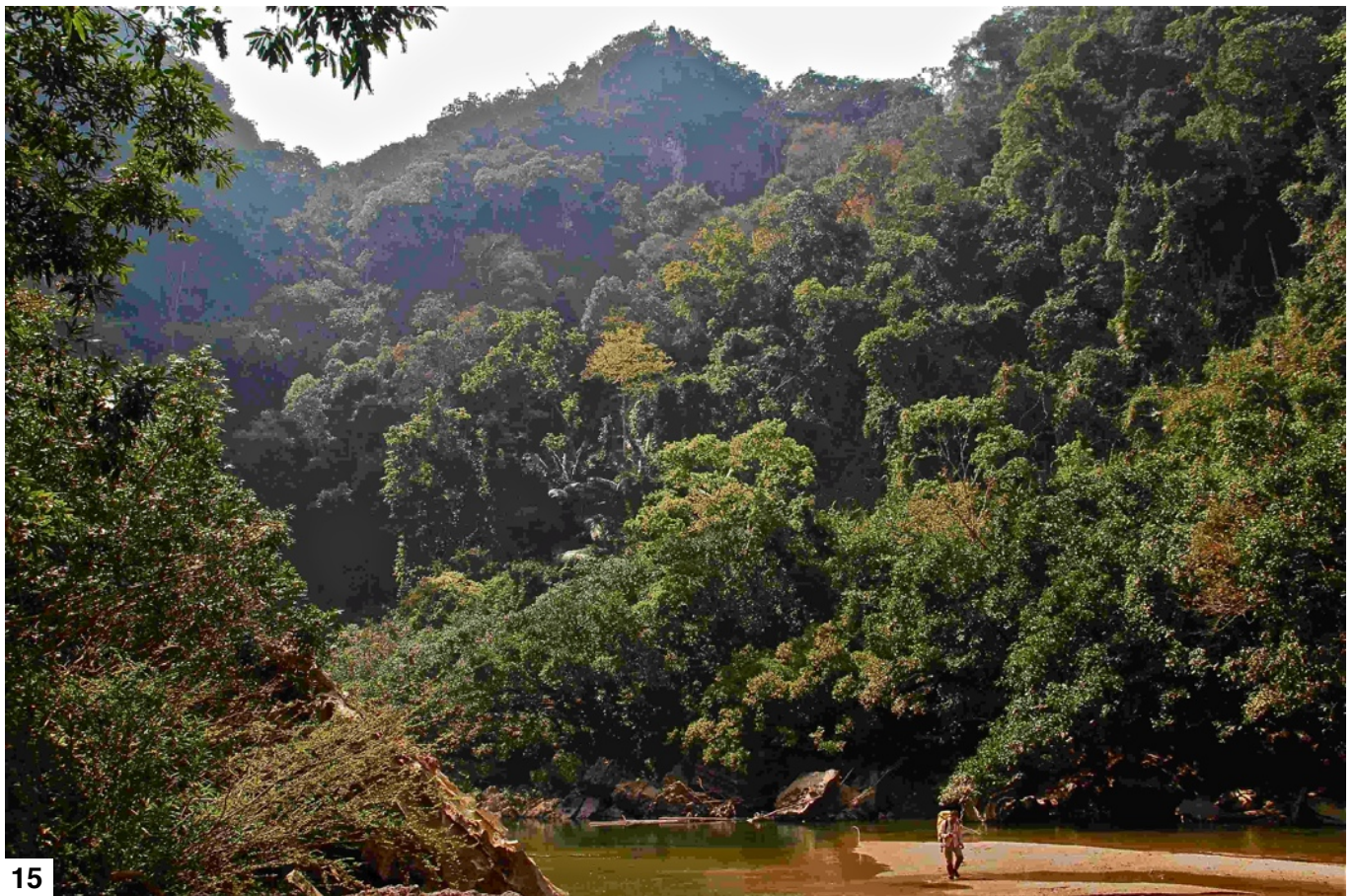
connecting Laos to Vietnam, which leaves little space for remaining primary forests. Only the karst towers and cliffs are yet covered with dark green vegetation; in fact these limestone towers have their own characteristic vegetation (Fig. 16).



**Fig. 14.** Map of Laos showing the type locality of *Scorpiops (Euscorpiops) piceus* sp. n. in Khammouane Province.



*Scorpiops (Euscorpiops) piceus* sp. n. (under natural light)



**Fig. 15-16.** Natural habitat of *Scorpiops (Euscorpiops) piceus* sp. n. in Khammouane Province.

15. Primary forest vegetation at Xe-Bangfai (photo H. Steiner).

16. Rainforest vegetation near to the entrance of Tran Cave, showing karstic formation in the back (photo V. Q. Luu).

## Acknowledgements

We are most grateful to Drs V. Q. Luu (Hanoi, Vietnam), T. Ziegler (Köln, Germany) and H. Steiner (Hanau, Germany) for sharing information on the Khammouane region of Laos and for providing photos of the natural environment.

## References

- Bernardi G., 1983. – Le genre et le sous-genre en taxonomie conventionnelle et évolutive. *Bulletin de la Société Zoologique de France*, 108 (1): 135-141.
- Fet V., 2000. – Family Scorpionidae Kraepelin, 1905. Pp. 487-502, in V. Fet, W. D. Sissom, G. Lowe & M. E. Braunwalder (eds.). *Catalog of the Scorpions of the World (1758-1998)*, New York Entomological Society.
- Francke O. F., 1976. – Redescription of *Parascorpiops montanus* Banks (Scorpionida, Vaejovidae). *Entomological News*, 87: 75-85.
- Hjelle J. T., 1990. – Anatomy and morphology. Pp. 9-63, in: G.A. Polis (Ed.), *The Biology of Scorpions*. Stanford Univ. Press.
- Kovařík F., 2000. – Revision of the family Scorpionidae (Scorpiones), with descriptions of six new species. *Acta Societatis Zoologicae Bohemoslovenicae*, 64: 153-201.
- Kovařík F., Lowe G., Stockmann M. & Šťáhlavský F., 2020. – Revision of genus-group taxa in the family Scorpionidae Kraepelin, 1905, with description of 15 new species (Arachnida: Scorpiones). *Euscorpius*, 325: 1-140.
- Kraepelin K., 1905. – Die geographische Verbreitung der Skorpione. *Zoologische Jahrbücher, Abtheilung für Systematik*, 22(3): 321-364.
- Lourenço W. R., 1998. – New rank to the scorpion subfamily Scorpionsinae Kraepelin, 1905 as family Scorpionsidae Kraepelin, 1905; its generic composition and description of a new species of *Scorpiops* from Pakistan (Scorpiones, Scorpionsidae). *Entomologische Mitteilungen aus dem Zoologischen Museum Hamburg*, 12(157): 245-254.
- Lourenço W. R., 2007. – First record of the family Pseudochactidae Gromov (Chelicerata, Scorpiones) from Laos and new biogeographic evidence of a Pangaean palaeodistribution. *Comptes Rendus Biologies*, 330: 770-777.
- Lourenço W. R., 2015. – Scorpion diversity and distribution; past and present patterns. Pp. 3-23. In: P. Gopalakrishnakone et al. (eds.). *Scorpion Venoms, Toxinology*. Springer +Business Media Dordrecht.
- Lourenço W. R., 2017. – A new genus and species of scorpion from Burma [Myanmar] (Scorpiones: Scorpionidae); implications for the taxonomy of the family. *Comptes Rendus Biologies*, 340: 349-357.
- Lourenço W. R., 2019. – A new species of *Euscorpiops* Vachon, 1980 from Doi Pha Hom Pok National Park in Thailand (Scorpiones: Scorpionidae). *Revista Ibérica de Aracnologia*, 34: 51-54.
- Mouret C., 2001. – Le karst du Khammouane au Laos central. Dix ans de recherches spéléologiques. *Speunca*, 84: 7-32.
- Prendini L., 2011. – Order Scorpiones. In *Animal Biodiversity*. *Zootaxa*, 3148: 115-117.
- Soleglad M. E. & Sissom W. D., 2001. – Phylogeny of the family Euscorpionidae Laurie, 1896 (Scorpiones): a major revision. Pp. 25-111, in: V. Fet, P.A. Selden (eds.), *Scorpions 2001*. In memoriam Gary A. Polis, Burnham Beeches, Bucks: British Arachnological Society.
- Stahnke H. L., 1970. – Scorpion nomenclature and mensuration. *Entomological News*, 81: 297-316.
- Stockwell S. A., 1989. – Revision of the Phylogeny and Higher Classification of Scorpions (Chelicerata), Ph.D. Thesis, University of Berkeley. 319 pp. (unpublished).
- Vachon M., 1952. – Etudes sur les scorpions. Publications de l'Institut Pasteur d'Algérie, Alger. 482 pp.
- Vachon M., 1963. – De l'utilité, en systématique, d'une nomenclature des dents des chélicères chez les Scorpions. *Bulletin du Muséum national d'Histoire naturelle*, Paris 2è sér., 35: 161-166.
- Vachon M., 1974. – Etude des caractères utilisés pour classer les familles et les genres de Scorpions (Arachnides). 1. La trichobothriotaxie en arachnologie. Sigles trichobothriax et types de trichobothriotaxie chez les Scorpions. *Bulletin du Muséum national d'Histoire naturelle*, Paris, 3è sér., 140: 857-958.
- Vachon M., 1980. – Essai d'une classification sous-générique des Scorpions du genre *Scorpiops* Peters, 1861 (Arachnida, Scorpionida, Vaejovidae). *Bulletin du Muséum national d'Histoire naturelle*, Paris, 4e sér., 2: 143-160.

## Résumé

Lourenço W. R. & Ythier E., 2022. – Une nouvelle espèce du genre *Scorpiops* Peters, 1861, sous-genre *Euscorpiops* Vachon, 1980 du Laos (Scorpiones: Scorpionidae). *Faunitaxys*, 10(27): 1 – 9.

Une nouvelle espèce, *Scorpiops (Euscorpiops) piceus* sp. n., appartenant à la famille des Scorpionidae Kraepelin, 1905 est décrite sur la base d'une femelle adulte et d'un mâle juvénile collectés dans la Province de Khammouane, Laos. La nouvelle espèce présente les principales caractéristiques du genre *Scorpiops* sous-genre *Euscorpiops*, et est notamment caractérisée par une coloration générale très foncée, une grande taille et une trichobothriotaxie distincte. Cette nouvelle espèce représente probablement un élément endémique de la région de Khammouane. Ce nouveau taxon représente la 100<sup>ème</sup> espèce décrite parmi les espèces actuellement reconnues pour le genre *Scorpiops* et la 36<sup>ème</sup> pour le sous-genre *Euscorpiops*. La validité de la division générique des groupes inclus dans la famille des Scorpionidae est également discutée, et une partie de ceux-ci sont revalidés au niveau sous-générique.

Mots-clés. – Scorpiones, Scorpionidae, *Scorpiops*, *Euscorpiops*, taxinomie, nouvelle espèce, description, morphologie, Khammouane, couverture forestière, Laos.

# Faunitaxys

Volume 10, Numéro 27, Mai 2022

## SOMMAIRE

Une nouvelle espèce du genre *Scorpiops* Peters, 1861, sous-genre *Euscorpiops* Vachon, 1980 du Laos (Scorpiones: Scorpionidae).

*Wilson R. Lourenço & Eric Ythier* ..... 1 – 9

## CONTENTS

A new species of the genus *Scorpiops* Peters, 1861, subgenus *Euscorpiops* Vachon, 1980 from Laos (Scorpiones: Scorpionidae).

*Wilson R. Lourenço & Eric Ythier* ..... 1 – 9

*Illustration de la couverture* : *Scorpiops (Euscorpiops) piceus* sp. n. (under UV light).

Crédits photos:

© **E. Ythier** : Fig. 1-2 & couverture.

© **H. Steiner** : Fig. 15.

© **V. Q. Luu** : Fig. 16.

Publié par l'Association Française de Cartographie de la Faune et de la Flore (AFCFF)