Entomol. Mitt. zool. Mus. Hamburg	**12** (157): 245-254	Hamburg, 1. Juni 1998 ISSN 0044-5223

Designation of the scorpion subfamily Scorpiopsinae Kraepelin, 1905 as family Scorpiopsidae Kraepelin, 1905 (stat. nov.): its generic composition and a description of a new species of *Scorpiops* from Pakistan (Scorpiones, Scorpiopsidae)

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(With 13 figures)

Abstract

A new designation is proposed for the Asian scorpion subfamily Scorpiopsinae Kraepelin, 1905 as the family Scorpiopsidae (**stat. nov.**). Three subgenera proposed by Vachon in 1980 are raised to the status of genera. These are: *Alloscorpiops* Vachon (**stat. nov.**), *Euscorpiops* Vachon (**stat. nov.**) and *Neoscorpiops* Vachon (**stat. nov.**). The family Scorpiopsidae therefore now comprises 6 genera: *Scorpiops* Peters, 1861; *Parascorpiops* Banks, 1928; *Dasyscorpiops* Vachon, 1974, as well as the three genera already cited. This decision follows a previous one by Stockwell (1989). One new species, *Scorpiops kraepelini* sp. n., from Pakistan, is also described.

Introduction

The subfamily Scorpiopsinae was proposed by Kraepelin (1905) to accomodate the scorpions of the genus *Scorpiops* Peters, 1861. For some while this subfamily was placed in the family Vaejovidae Thorell, 1876 but, partly because of important morphological differences (mainly of the trichobothrial patterns) and also because of its distinct geographical distribution, this Asian subfamily poses problems if it is placed within the American family Vaejovidae.

Francke (1976) drew attention to this problem and proposed that the Scorpiopsinae should no longer be incorporated in the Vaejovidae. More recently, Stockwell (1989) proposed a new rank for the Scorpiopsinae as a separate family, the Scorpiopsidae. This suggestion, however, has not been validated because it was presented only in his dissertation thesis, and not published. Moreover, most contemporary authors, refute the proposal claiming that the change has to be justified further. In my opinion, the suggestion of Francke (1976) and the proposal of Stockwell (1989) go in the right direction, and that the separation of the Vaejovidae and Scorpiopsidae into two distinct families represents an improvement in the higher classification of scorpions. The familial classification and subdivision of the order Scorpiones has been very conservative for a long period of time. This leads in many

cases to confused and obscure taxonomy. Many other divisions and restructures are necessary within the order, and several studies leading to new classifications are currently in preparation.

After the creation of the genus *Scorpiops*, other allied generic groups have been proposed : initially *Parascorpiops* Banks, 1928 and *Dasyscorpiops* Vachon, 1974. The complex variability of the characters presented by the species of the genus *Scorpiops*, lead Vachon (1980) to propose its division into several new subgenera, containing one or several groups of species within each such taxon. The decision to create subgenera is unsatisfactory, mainly because there are major differences in "taxonomic weight" between the existing genera and subgenera within the Scorpiopsidae. Stockwell (1989) proposed raising all the subgenera to the rank of genera, a proposal that, once again, has not been validated because it was only presented in a dissertation thesis. Furthermore, it has not been followed by most scorpion specialists. Regarding the problem of generic status, I have decided to follow Stockwell (1989) once again, and propose the nominal subgenera to be raised to the generic rank.

Taking this decisions into account, the taxonomic position of the Scorpiopsidae is now established as follow:

Scorpiopsidae Kraepelin, 1905 (**stat. nov.**)

Composition:

Genus *Scorpiops* Peters, 1861
Genus *Parascorpiops* Banks, 1928
Genus *Dasyscorpiops* Vachon, 1974
Genus *Alloscorpiops* Vachon, 1980 (**stat. nov.**)
Genus *Euscorpiops* Vachon, 1980 (**stat. nov.**)
Genus *Neoscorpiops* Vachon, 1980 (**stat. nov.**)

For detailed diagnoses and geographical distributions the reader is referred to the work of Vachon (1980) and Stockwell (1989).

Description of a new species

After study of two specimens of *Scorpiops* collected in Pakistan, I concluded that they represent a new species.

Scorpiops kraepelini sp. n.
(Figs 1 - 9)

DIAGNOSIS. In accordance with the grouping of species proposed by Vachon (1980) for the genus *Scorpiops*, the new species is to be placed within the group possessing 9 or 10 (exceptionally 8) trichobothria on the ventral surface of the tibia. Vachon included only *Scorpiops oligotrichus* Fage, 1933 in this group. It now also contains *Scorpiops pachmarhicus* Bastawade, 1992. The new species has 11 trichobothria on the ventral surface of the tibia (Fig. 8), whereas *S. oligotrichus* has 9

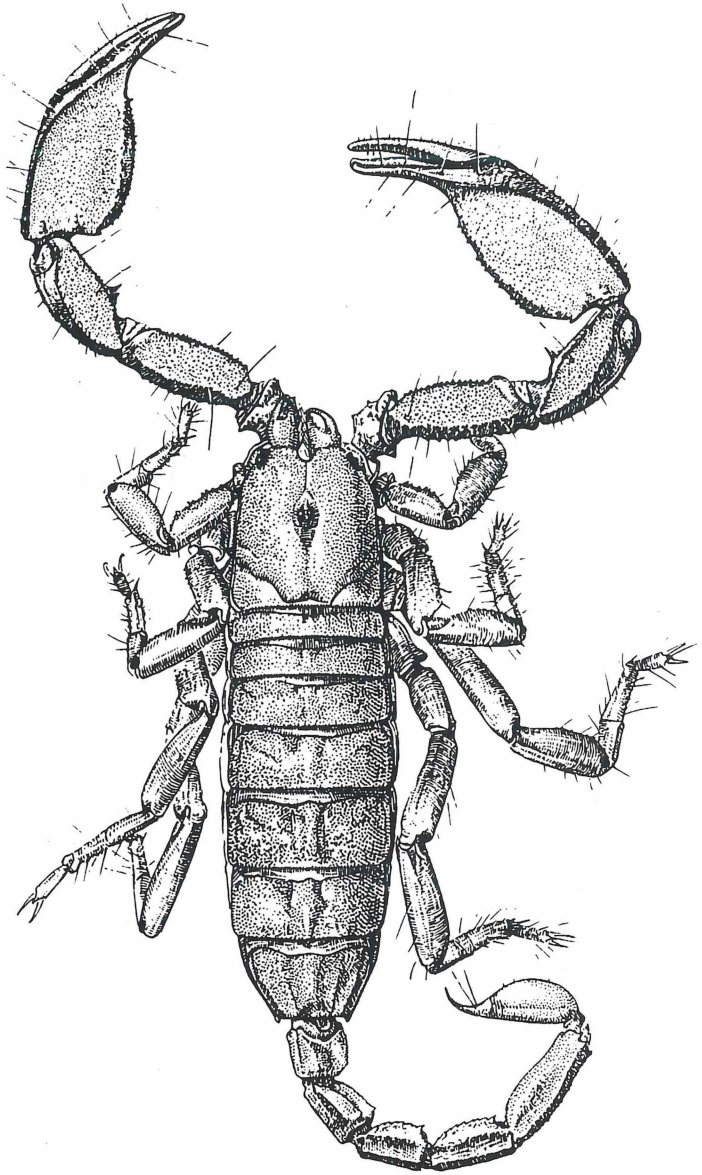
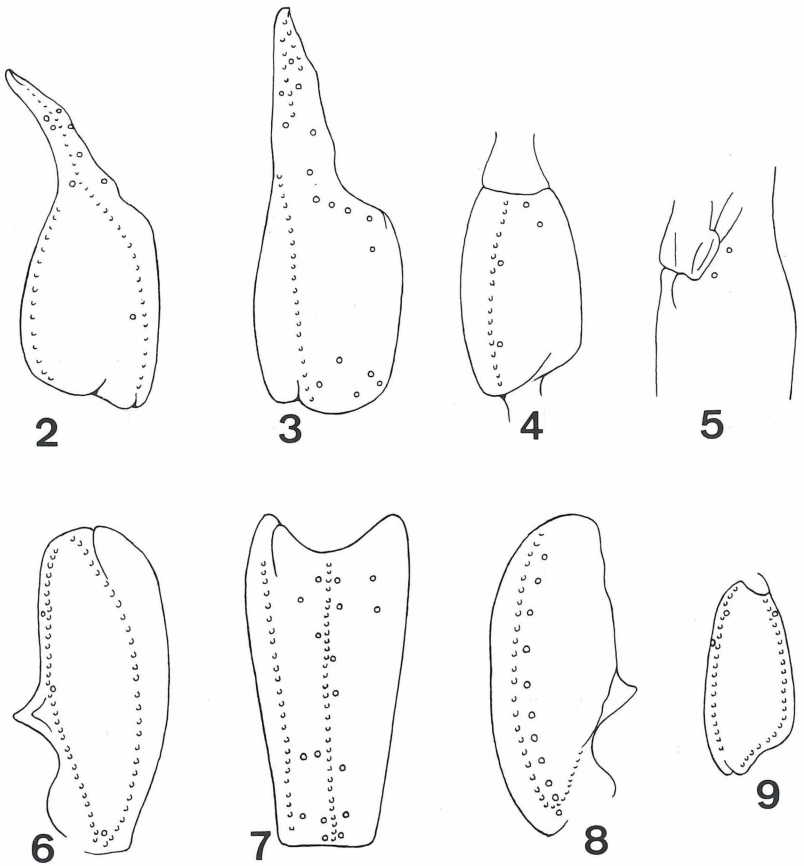


Fig. 1. *Scorpiops kraepelini* sp. n., holotype ♂, dorsal view.



Figs 2-9. *Scorpiops kraepelini* sp. n., trichobothrial pattern: 2 to 5 - chela, its dorsal, external, ventral and internal aspects; 6 to 8 - tibia, its dorsal, external and ventral aspects; 9 - femur, dorsal aspect.

and *S. pachmarhicus* 10. The new species also differs from the other members of the group, in possessing much less marked sculpture of the tegument of the prosoma and mesosoma, in being almost acarinated and with very feeble furrows (see Figs 1 and 10). Furthermore, the geographical distribution of the three species is markedly different (Fig. 13).

HOLOTYPE ♂ : Pakistan, Loralai District, 14 miles East of Ziārat. June 1961 (J. Anderson). Deposited in the Zoologisches Museum Hamburg (ZMH Reg. No. 28/98).

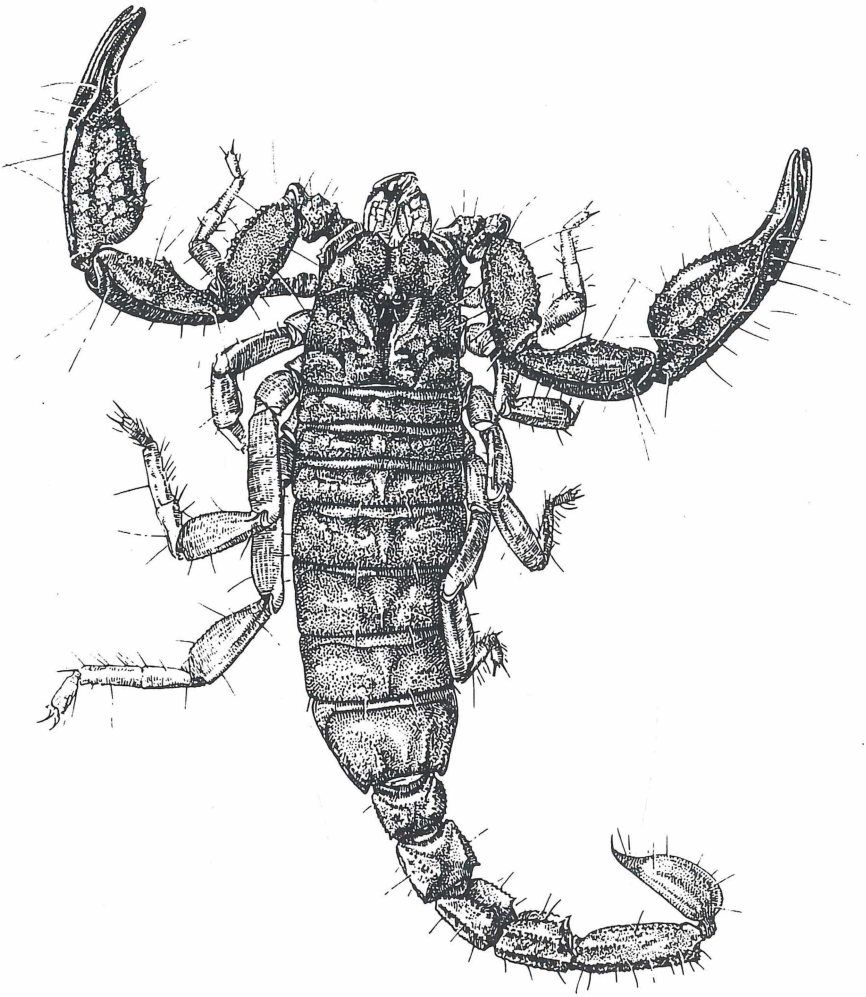


Fig. 10. *Scorpiops oligotrichus* Fage: paralectotype ♂, dorsal view (orig.).

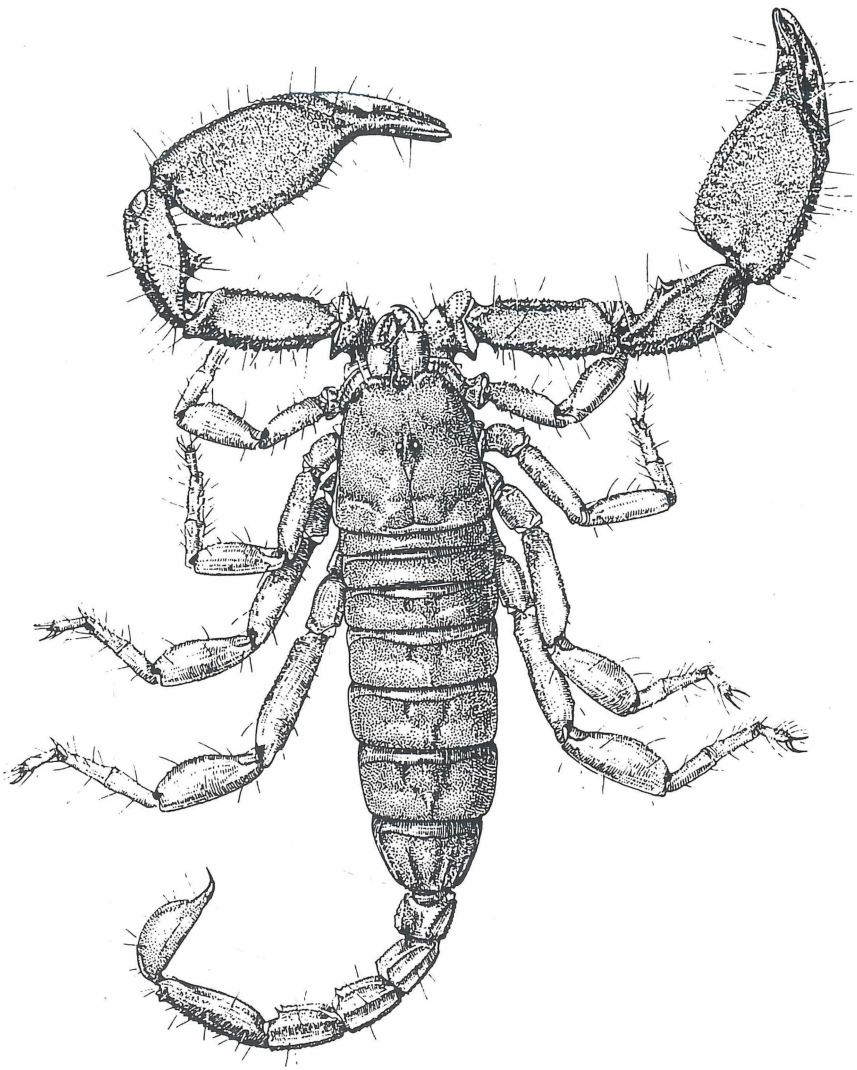


Fig. 11. *Euscorpiops lindbergi* Vachon: holotype ♂, dorsal view, showing general morphology for comparison with that of *Scorpiops* (after Vachon, 1980).

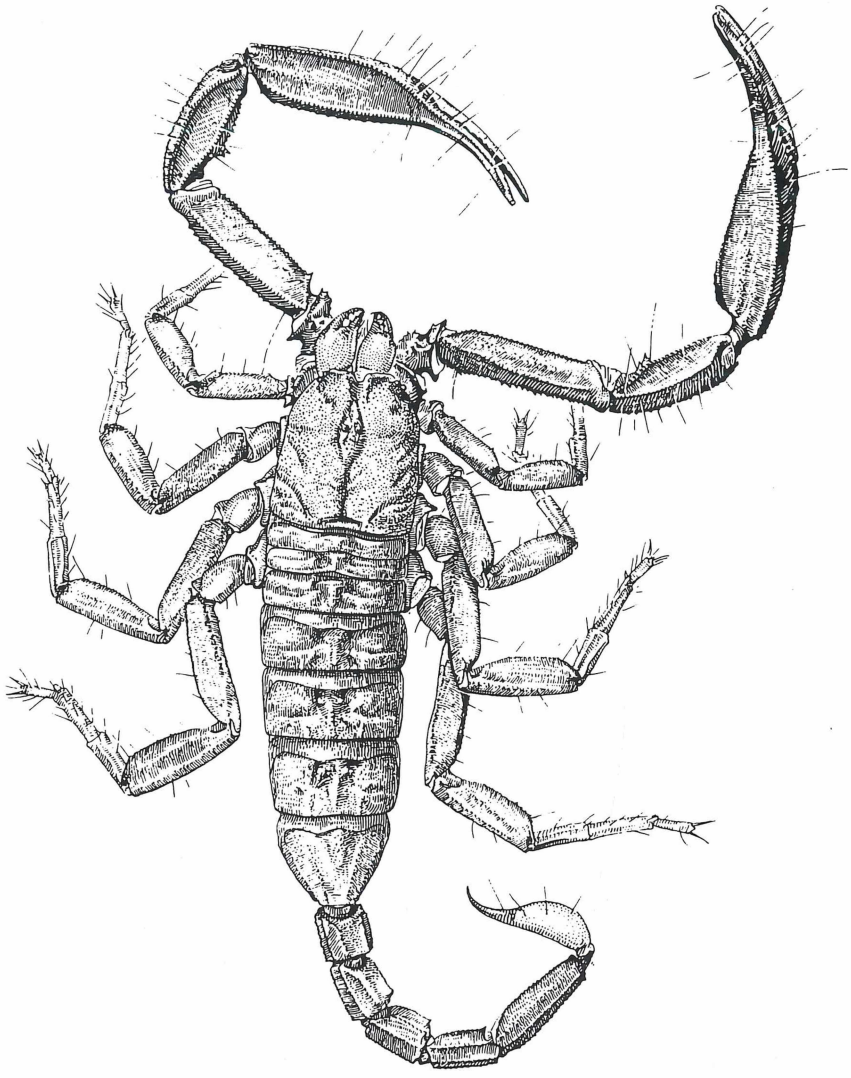


Fig. 12. *Dasyscorpiops grandjeani* Vachon: holotype ♀, dorsal view, showing general morphology for comparison with that of *Scorpiops* (orig.).

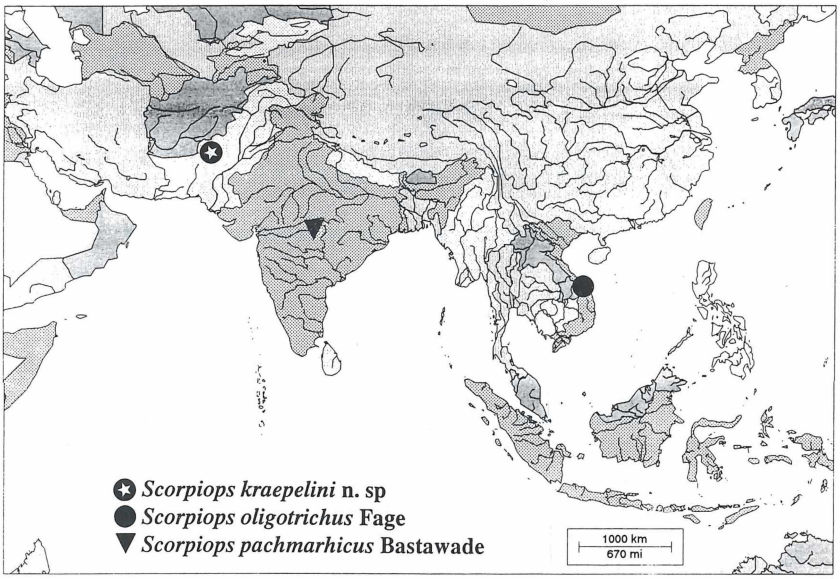


Fig. 13. The type locality of *S. kraepelini* sp. n. and the range of *S. oligotrichus* Fage and *S. pachmarhicus* Bastawade.

PARATYPE: (allotypic ♀), same data as for holotype. Deposited in ZMH (Reg. No. 29/98).

ETYMOLOGY: Patronym in honor of Prof. K. Kraepelin, who was the first director of the Zoologisches Museum Hamburg and made important contributions to the scorpion taxonomy.

Description is based on male holotype. The measurements of both specimens are given in Table I.

C o l o r a t i o n. Basically yellowish without any diffuse variegated fuscous spots. Carapace yellow. Tergites yellow, fuscous. Metasomal segments yellow, darker than tergites; vesicule yellow with the end of the aculeus dark reddish. Chelicerae yellow; fingers uniformily dark reddish. Pedipalps reddish yellow; fingers densely red. Legs yellowish. Venter and sternites yellowish.

M o r p h o l o g y. Carapace lustrous and acarinate, furrows very shallow; with moderately dense, minute punctuation. Median eyes anterior to the centre; three pairs of lateral eyes, the third being vestigial and situated behind the first two. Sternum pentagonal, longer than wide. Tergites acarinate, smooth and shiny with sparse small punctuations except for VII which has 4 keels. Pectinal tooth count 9-9. Sternites smooth and shiny, VII with four very feeble keels. Metasomal segments II to V longer than wide; 10-10-10-8-5 keels present; the dorsal keels on segments I to IV with a single spinoid posterior granule; the tegument punctuated; segment V with dense, small granulation ventrally. Vesicle smooth. Pedipalps: femur with dorsal

internal, dorsal external, ventral internal and ventral external keels strong; tegument feebly granular. Tibia with dorsal internal, ventral internal, ventral external and external keels moderate to strong; two spinoid granules present on the internal aspect, the internal-ventral one being much larger than the internal-dorsal spinoid granule; tegument punctuated. Chelae with dorsal marginal, external secondary, and ventral internal keels moderate to strong; ventral median keel strong; other keels vestigial or absent; tegument granulated dorsally and punctuated ventrally. Chelicerae characteristic of the family (Vachon, 1963). Trichobothriotaxy type *C* (Vachon, 1973). Chela with 4 ventral trichobothria; Tibia with 17 external and 11 ventral trichobothria. Measurements in Table I.

P a r a t y p e (allotypic ♀). Coloration and morphology very similar to that of the holotype male. Some of the segments are slightly bulkier (see measurements in Table I). Pectinal tooth count 7-7.

Table I. Measurements (in mm) of *Scorpiops kraepelini* sp. n.

	holotype ♂	allotype ♀
Carapace:		
lenght	5,4	5,6
anterior width	3,5	3,7
posterior width	5,4	5,8
Metasoma, segment I,		
length	1,6	1,6
width	2,2	2,1
Metasoma, segment V,		
length	4,0	3,9
width	1,5	1,5
depth	1,4	1,4
Vesicle:		
width	1,8	1,8
depth	1,6	1,6
Femur:		
length	4,7	4,8
width	2,0	2,1
Tibia:		
length	4,5	4,4
width	2,2	2,3
Chelae:		
length	10,2	10,3
width	3,6	3,7
depth	2,7	2,6
Movable finger:		
length	4,4	4,6

Acknowledgements

I am very grateful to J. Rebière et M. Gaillard, Laboratoire de Zoologie Arthropodes (Paris), for preparing several illustrations, and especially to Prof. John L. Cloudsley-Thompson, formerly of the University College, London, for reviewing the manuscript.

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