

A New Genus and Species of Scorpion from Afghanistan (Scorpiones, Buthidae)¹

Wilson R. LOURENÇO

Département de Systématique et Evolution, Section Arthropodes (Arachnologie),
Muséum national d'Histoire naturelle, Paris, France

Abstract. A new genus and species of a psammophilic buthid scorpion, *Afghanobuthus naumanni* gen. n., sp. n., are described on the basis of one female specimen collected by Professor Clas Naumann on October 1971 in Afghanistan. The specimen was collected in an extremely arid zone (400 m), at Vic Shiberghan, Dasht-e-Leili on the North range of the country.

1. INTRODUCTION

In a recent publication, FET et al. (2001) call attention to the important and interesting diversity of psammophilic scorpions, from the Palaearctic deserts of central and southern Asia. In this contribution, the authors described a new genus and species of a buthid scorpion from the Baluchistan Province of Iran. They also included a very complete table of characters for six buthid psammophilic genera, namely, *Anomalobuthus* Kraepelin, 1900, *Liobuthus* Birula, 1898, *Plesiobuthus* Pocock, 1990, *Psammobuthus* Birula, 1911, *Pectinibuthus* Fet, 1984 and *Polisius* Fet, Capes & Sissom, 2001.

During his field trips to Afghanistan on the early 1970s Professor Clas Naumann collected a few scorpions, which were subsequently sent to Prof. Max Vachon in Paris. After examination, Vachon determined two specimens as *Compsobuthus* sp. A recent study of these two specimens revealed that the one collected in the eastern region of the country, S of Kunduz (Qonduz), NE of Pul-I-Khumri (Poi-e-Khomri), on April 7, 1972 was indeed a species of *Compsobuthus*. This specimen was described as a new species, *Compsobuthus tofti* Lourenço, 2001 (LOURENÇO 2001a).

Careful examination of the second specimen revealed that it was not a *Compsobuthus*, but rather a psammophilic element. From the table of characters proposed by FET et al. (2001), it appears that the specimen from Afghanistan shares some common characters with the listed genera. It shows, however, a combination of different characters, and this leads me to describe here a new genus and species. This new scorpion was collected by Professor Clas Naumann in October 1971, on the North range of the country, at Vic Shiberghan, Dasht-e-Leili.

2. TAXONOMIC TREATMENT

Afghanobuthus gen. n.

Diagnosis. Small sized scorpions, 27.3 mm in total length. Colouration of a generally pale yellow without any spots or pigmented zones on the body and its appendages. Dentate margins on movable and fixed fingers of pedipalp chela composed of 11/12 almost linear rows of granules. Absence of inner and outer denticles on both fingers. Pectinal tooth count 24-25. Chelicerae with one basal denticle on the fixed finger flattened in its apex; basal denticles of the movable finger absent. Anal arc with 3 lateral lobes. Trichobothrial pattern A-β (Beta).

Derivatio nominis: After Afghanistan, its country of origin.

Relationships: From its general morphology, the new genus *Afghanobuthus* gen. n. appears to have some relationships with other psammophilic genera present in the Palaearctic deserts, but also in North African deserts. It shares with other genera such as *Polisius*, *Anomalobuthus* or *Plesiobuthus* an orthobothriotaxy pattern for trichobothria. It also shares with *Pectinibuthus*, *Anomalobuthus* and the Somalian genus *Sabinebuthus* Lourenço, 2001 (LOURENÇO 2001b) a very slender chela with rows of granules essentially straight. The new genus can, however, be readily distinguished from other psammophilic genera, by a combination of characters: (i) Basal denticles of chelicera movable finger absent. (ii) Absence of inner and outer accessory denticles on pedipalp chela fingers. (iii) Sternum pentagonal. (iv) Small size.

Type species *Afghanobuthus naumanni* sp. n.

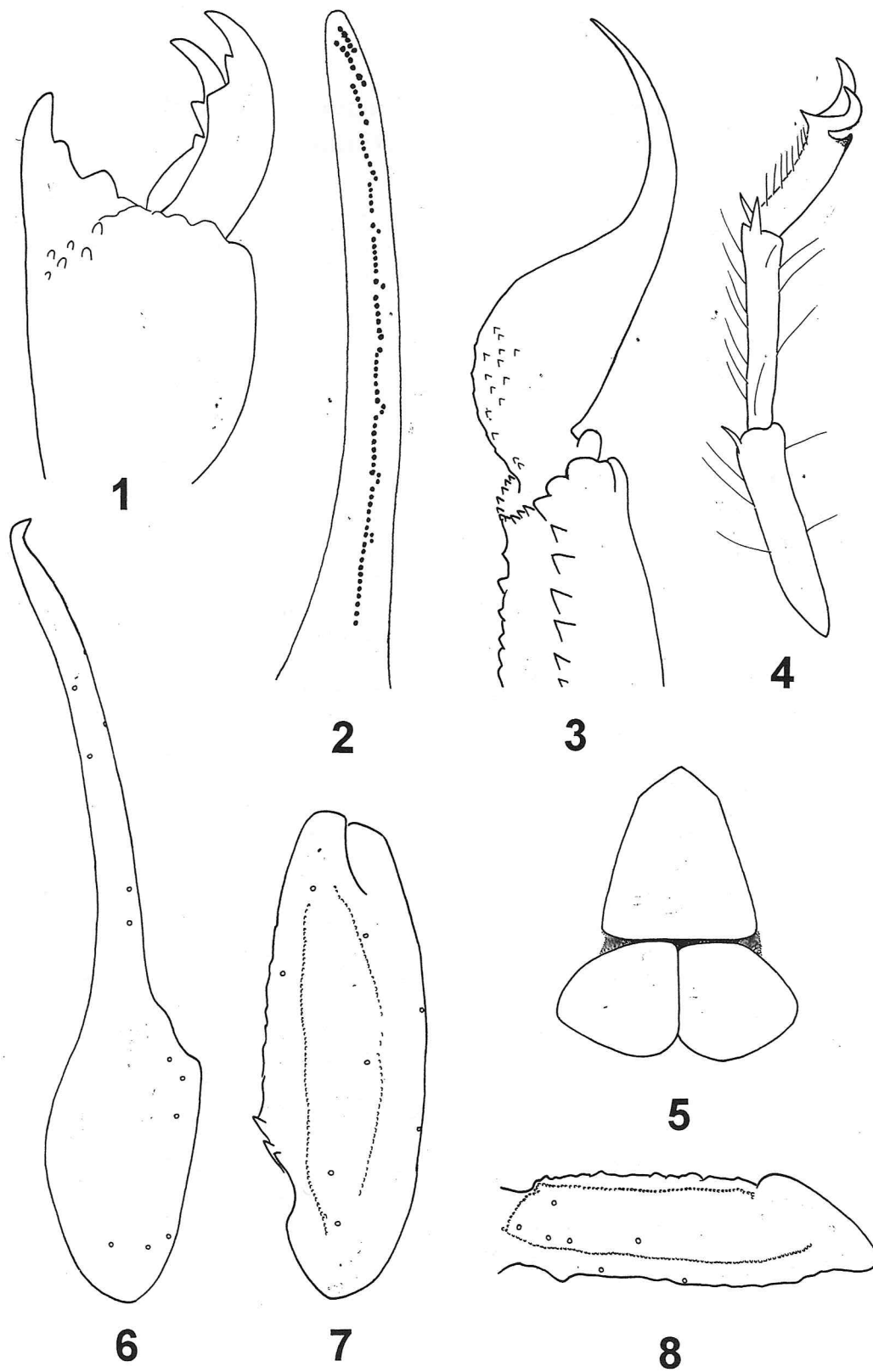
Description:

Afghanobuthus naumanni sp. n. (Figs. 1-8)

Diagnosis: as for the new genus.

Type material: 1 female holotype. Afghanistan, North range, Vic Shiberghan, Dasht-e-Leili, 400 m, X/1971

¹ In commemoration of Clas Michael Naumann zu Königsbrück (26.06.1939 – 15.02.2004)



Figs. 1-8: *Afghanobuthus naumanni* gen. n., sp. n. Female holotype. 1. Chelicera, 2. Movable finger of pedipalp chela with almost linear rows of granules. 3. Metasomal segment V and telson, lateral aspect, showing anal arc. 4. Leg IV with tibial and pedal spurs. 5. Sternum and genital operculum. 6-7. Trichobothriotaxy. 6. Chela, dorso-external aspect. 7. Patella, dorsal aspect. 8. Femur, dorsal aspect.

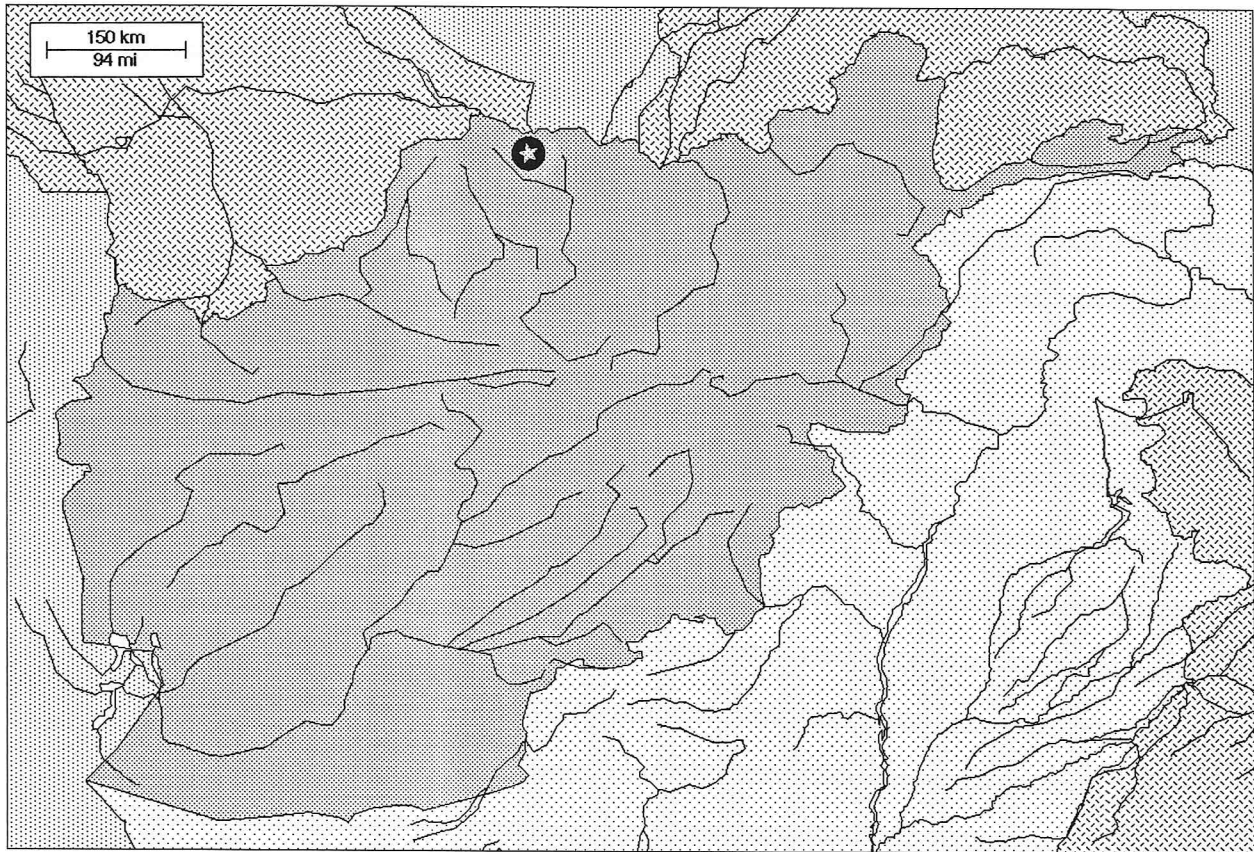


Fig. 9: Map of Afghanistan showing the type locality of the new species.

(C. Naumann leg.). Deposited in the collection of the 'Muséum national d'Histoire naturelle', Paris.

Patronym: In honour of the late Professor Clas M. Naumann, Zoologisches Forschungsinstitut und Museum Alexander Koenig (ZFMK), Bonn (Germany), who collected the specimen and contributed significantly to the scientific infrastructure of Afghanistan.

Description based on female holotype (Morphometric measurements in Table 1).

Table I: Morphometric values (in mm) of the female holotype of *Afghanobuthus naumanni* gen. n., sp. n.

Total length	27.3
Carapace:	
- length	3.5
- anterior width	2.4
- posterior width	3.7
Metasomal segment I:	
- length	2.1
- width	1.9
Metasomal segment V:	
- length	3.9
- width	1.7
- depth	1.6

Vesicle:	
- width	1.2
- depth	1.2
Pedipalp:	
- Femur length	3.1
- Femur width	0.9
- Patella length	4.1
- Patella width	1.3
- Chela length	6.4
- Chela width	1.1
- Chela depth	1.1
Movable finger:	
- length	4.6

Colouration. Generally pale yellow without any spots or pigmented zones on body and appendages. Prosoma: carapace yellowish; only eyes surrounded by black pigment. Mesosoma: yellowish. Metasoma: all segments yellowish. Vesicle yellowish; aculeus yellowish at base and light reddish at extremity. Venter pale yellow. Chelicerae yellowish; teeth light reddish. Pedipalps: yellowish overall; rows of granules on dentate margins of fingers very slightly darker. Legs yellowish.

Morphology. Prosoma: anterior margin of carapace weakly emarginate. Carapace carinae weakly to moderately developed; anterior median carinae moderate to

weak; posterior median carinae moderate; central lateral moderate to weak; central median vestigial; posterior median carinae not terminating distally in spinoid process. Intercarinal spaces somewhat moderately granular laterally; almost smooth centrally. Median ocular tubercle slightly anterior to centre of carapace; median eyes separated by 2.5 ocular diameters. Three pairs of lateral eyes. Mesosoma: Tergites I-VI tricarinate. Lateral carinae on I-VI moderate to weak, granular; each carina terminating distally in very small spinoid process that extends very slightly beyond posterior margin of tergite. Median carinae on I weak; on II-VI moderate, to weak, terminating slightly distally on each segment with spinoid process that extends very slightly beyond posterior margin of tergite. Tergite VII pentacarinate, with lateral pairs of carinae moderate to strong; median carinae present on proximal half, moderate. Intercarinal spaces weakly granular, almost smooth. Sternites: absent from sternites III-VI; Sternite VII with 4 carinae moderate to weak. Pectines moderately long; pectinal tooth count 24-25. Metasoma: Segments I-II with 10 carinae, crenulate; III-IV with 8 carinae. Dorsolateral carinae moderate, without spinoid denticles. Ventral submedian carinae moderate on segments I-IV. Segment V with 5 carinae; ventromedian carinae moderate to strong. Dorsal furrows of all segments moderately to weakly developed, smooth; intercarinal weakly granular almost smooth. Telson weakly granular, almost smooth, with only some granules ventrally; aculeus weakly curved, and slightly longer than vesicle. Subaculear tubercle absent. Chelicerae: Basal denticles of movable finger absent; basal denticles of fixed finger flattened at apex (Vachon, 1963). Pedipalps: Trichobothrial pattern orthobothriotaxic, type A (Vachon, 1974); dorsal trichobothria of femur in β (beta) configuration (Vachon, 1975). Femur pentacarinate; all carinae moderately crenulate. Patella with 8 carinae; all carinae weak; dorsointernal carinae with one slightly spinoid granule. Chelae slender, with elongated fingers; all carinae weak to vestigial. Dentate margins on movable and fixed fingers composed of 11/12 almost linear rows of granules. Legs: Ventral aspect of tarsi with one row of thin setae.

Tibial spurs present on legs III-IV but reduced; pedal spurs present on all legs, moderate to strong.

Acknowledgements. I am very grateful to J. Köhler (ZFMK, Bonn) for inviting me to participate in this publication and to B. Sinclair (ZFMK, Bonn) for reviewing the English style of preliminary drafts of the manuscript.

REFERENCES

- FET, V., CAPES, E.M. & SISSOM, W. D. (2001): A new genus and species of Psammophilic scorpion from eastern Iran (Scorpiones: Buthidae). Pp. 183-189 in: FET, V. & SELDEN, P. A. (eds.) *Scorpions 2001*, In Memoriam Gary A. Polis. British Arachnological Society, London.
- LOURENÇO, W. R. (2001a): A new species of *Compsobuthus* Vachon, 1949 from Afghanistan (Scorpiones, Buthidae). *Entomologische Mitteilungen aus dem zoologischen Museum Hamburg* **13**(164): 315-319.
- LOURENÇO, W. R. (2001b): Un nouveau genre de Buthidae, probable vicariant géographique d'*Anomalobuthus* Kraepelin (Chelicerata, Scorpiones). *Biogeographica* **77**(1): 15-20.
- 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**(2): 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 trichobothriaux et types de trichobothriotaxie chez les Scorpions. *Bulletin du Muséum National d'Histoire Naturelle Paris 3è sér., n° 140, Zool.* **104**: 857-958.
- VACHON, M. (1975): Sur l'utilisation de la trichobothriotaxie du bras des pédipalpes des Scorpions (Arachnides) dans le classement des genres de la famille des Buthidae Simon. *Compte Rendu hebdomadaire des Séances de l'Académie des Sciences Paris, sér. D* **281**: 1597-1599.

Author's address: Wilson R. LOURENÇO, Département de Systématique et Evolution, USM 0602, Section Arthropodes (Arachnologie), Muséum national d'Histoire naturelle, CP 053, 61 rue Buffon 75005 Paris, France, e-mail: arachne@mnhn.fr