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## Description of a new species of *Buthacus* Birula, 1908 (Scorpiones, Buthidae) from Afghanistan

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(With 6 figures)

### Abstract

The species of the genus *Buthacus* Birula, 1908, in particular those distributed in Middle East, are considered. One new species *Buthacus striffleri* sp. n. is described from the Northwest of Afghanistan. With this description the geographical distribution of the genus is extended further to the East. This is also the first record of *Buthacus* from Afghanistan.

**Key words:** Scorpiones, taxonomy, *Buthacus striffleri* sp. n., Afghanistan.

### Introduction

As already explained in a recent paper (Lourenço 2001), the genus *Buthacus* was erected by Birula, 1908 as a sub-genus of *Buthus* Leach, 1815 having as type species *Buthus leptochelys* (H. & E., 1829), the latter originally described from Sinai and Palestine as *Androctonus (Leirus) leptochelys*. Since its creation, *Buthacus* has been considered by different authors to be either a subgenus or a genus. It was finally defined by Vachon (1952) as a valid genus related to *Buthus*.

Vachon (1952) in his monograph on the North African scorpions discussed the very wide distribution of the genus *Buthacus*, which ranges from the Atlantic coastal region of Africa to Palestine. He also drew attention to the fact that it was impossible at that stage of his work to be sure about its precise composition. Nevertheless, he established that four species could be diagnosed precisely within the genus *Buthacus*: *B. foleyi* Vachon, 1948 and *B. villiersi* Vachon, 1949 from the South of Algeria and from Senegal, respectively, and *B. leptochelys* and *B. arenicola* (Simon, 1885) from North Africa and the Middle East. Vachon also suggested that *B. leptochelys* and *B. arenicola* might represent two complexes of forms or sub-species. In his systematic remarks about *B. arenicola*, and *B. leptochelys*, Vachon (1952) also indicated his doubts about the real status of the different sub-populations found in North and North-western Africa from Egypt to Mauritania and Morocco. He considered that several forms (or species) might well be present in the distribution of the genus in Africa. More recently, the status of several populations from North-western

and Western Africa has been clarified and three new species described: *Buthacus zieglerti* Lourenço, 2000 from Morocco, *B. huberi* Lourenço, 2001 from Mauritania and *B. clevai* Lourenço, 2000 from Senegal (Lourenço 2000, 2001).

In a study on the scorpions of Israel, Jordan and Arabia, Levy *et al.* (1973) described four new species and subspecies in the genus *Buthacus*. They also attempted to divide the genus *Buthacus* in two groups mainly on the basis of the structure of dentition of the movable finger chela. This classification was subsequently reprised in 'Fauna Palaestina' (Levy & Amitai 1980). The authors also discussed the difficulties in formulating a precise definition of several forms. They stated: "These groups could be further divided according to other characters, however, the definite position of several forms is still uncertain".

Among the described new taxa, *Buthacus yotvatensis yotvatensis* Levy *et al.*, 1973 from Israel and a subspecies, *Buthacus yotvatensis nigroaculeatus* Levy *et al.*, 1973 from Bahrain, the latter subspecies was defined on the basis of a single female specimen. Levy *et al.* (1973), however, stated as follow in relation to the subspecies *B. y. nigroaculeatus*: "*nigroaculeatus* appears to be closely related to *B. yotvatensis*.... Probably, *nigroaculeatus* represents a species of its own. Basing, however, on its being closely related to *B. yotvatensis* on the one hand, and the still incomplete knowledge of this whole group of hairy *Buthacus* forms on the other hand, it seems, for the time being, preferable to consider *nigroaculeatus* as a peculiar form of *B. yotvatensis*". Vachon (1979) in his study of the scorpions of Saudi Arabia mentioned several specimens of the subspecies *B. y. nigroaculeatus*, but did not change its status. Reanalysis of the specimens of the Paris collections now leads me to elevate *B. y. nigroaculeatus* to the species rank, i.e., species as *B. nigroaculeatus* stat. n.

A new species, *Buthacus striffleri* sp. n., is described here from the Northwest of Afghanistan. The new species was collected by the late Professor C. Naumann during his field trips in that country, in the 1970s. With the description of this new species the geographical distribution of the genus is extended to the East. It is also the first record of *Buthacus* in Afghanistan (Vachon 1958).

### Description

#### *Buthacus striffleri* sp. n. (Figs 1-5)

TYPE MATERIAL: holotype (♂) and paratype (♂). Afghanistan, SW of Meymaneh, 31 March 1972, coll. C. Naumann. Deposited in the Zoologisches Museum Hamburg, Germany [ZMH Acc. No. A34/04 (holotype); A35/04 (paratype)].

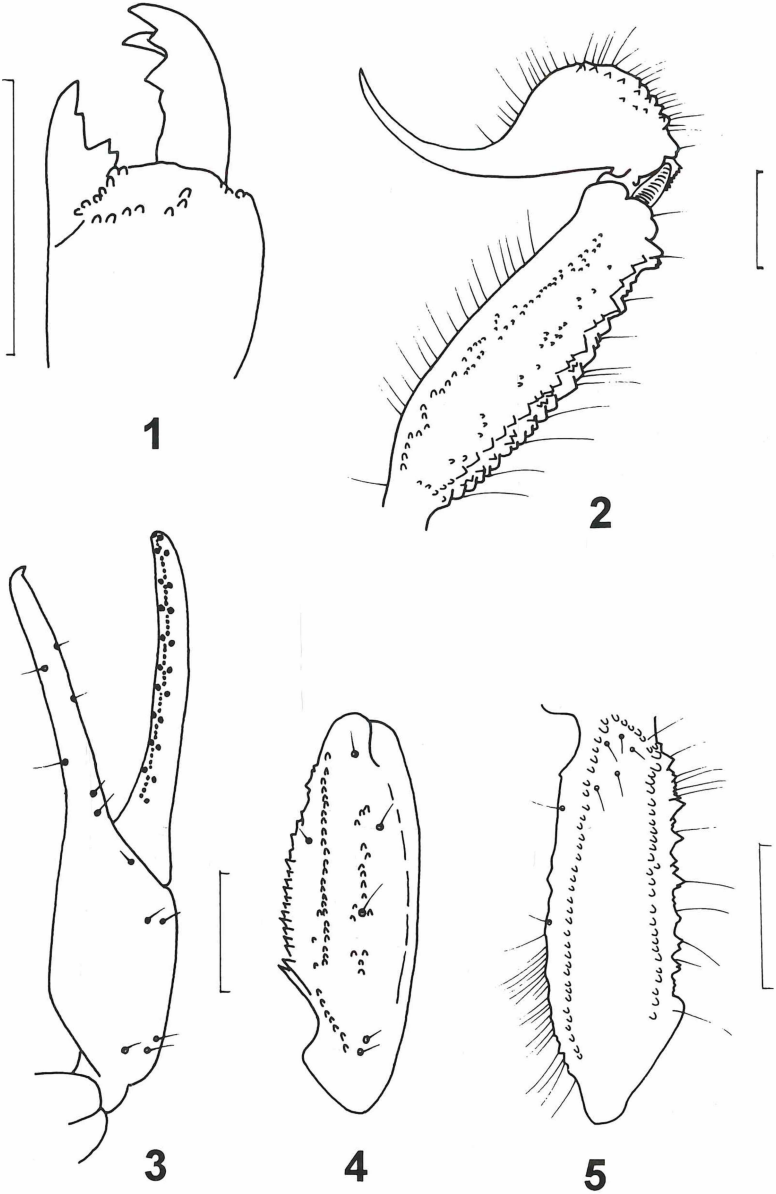
ETYMOLOGY: Patronym in honor of my student Boris Striffler, Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, for his interest and progress in the study of scorpions.

**DIAGNOSIS:** Scorpions moderate to large in size with a total length of 70 mm. General coloration pale-yellow to reddish-yellow; only the telson is darker, reddish-brown. Carapace with an intense and uniform granulation. Tergites moderately granulated. Basal internal carina of pedipalp patella with a serrulated shape. Pectines with 33 to 35 teeth. Trichobothrial pattern orthobothriotaxic, type A, with the dorsal trichobothria of femur in  $\beta$  (beta) configuration.

**Description** [based on holotype ( $\sigma$ ) and paratype ( $\sigma$ ); morphometrics are given below].

**COLORATION:** from pale-yellow to reddish-yellow. Carapace, tergites and metasomal segments I-IV yellowish; metasomal segment V reddish-yellow; telson reddish-brown; eyes surrounded by black pigment. Venter pale yellow. Chelicerae yellowish; teeth reddish. Pedipalps: yellowish overall, except for the rows of granules on the dentate margins of the fingers which are reddish. Legs yellowish.

**MORPHOLOGY.** **Prosoma:** anterior margin of carapace not emarginate, straight. Carapace carinae weakly developed; anterior median carinae represented by several granules and well marked. All furrows weak. Intercarinal spaces with an intense and uniform granulation. Median ocular tubercle only slightly anterior to the centre of the carapace; median eyes separated by more than one ocular diameter. Three pairs of very reduced lateral eyes in one line. **Mesosoma:** tergites I-VI tricarinate; all carinae weak, especially on tergites I and II. Tergite VII pentacarinate, with lateral pairs of carinae moderate to strong; median carinae present on proximal half, strong. Intercarinal spaces moderately granular on tergites I to VI; strongly granular on VII. Sternites: all carinae absent from sternites III-VI; two longitudinal furrows present. Pectines long and narrow; pectinal tooth count 34-35 on male holotype (33-34 on paratype). **Metasoma:** segments I-III with 10 carinae; lateral inframedian incomplete on segments II and III; IV with 8 carinae; ventral carinae weak to vestigial on segment I; moderate to strong on segments II to IV. Segment V with 5 carinae; ventral with spinoid granules; latero-ventral armed with several strong spinoid lobes. Dorsal furrows of all segments weakly developed, smooth; intercarinal spaces very weakly granular, almost smooth. Telson smooth on dorsal and lateral surfaces; ventral surface with several granules; aculeus very long; subaculear tubercle absent. All metasomal segments and vesicle covered with intense setation. **Chelicerae** with two reduced basal denticles on the movable finger (Vachon, 1963). **Pedipalps:** trichobothrial pattern orthobothriotaxic, type A (Vachon 1974); dorsal trichobothria of femur in  $\beta$  (beta) configuration (Vachon 1975). Femur pentacarinate; all carinae strongly crenulated; external face with intense setation. Patella with 8 carinae, crenulated; ventral internal carina with a serrulated shape. Chela with vestigial carinae only. Dentate margins on fixed and movable fingers composed of 9-9 almost linear rows of granules separated by stronger accessory granules. Legs: ventral aspect of tarsi with thin long setae. Tibial spurs present on legs III-IV, strong. Pedal spurs present, moderate to weak on all legs.



**Figs 1-5.** *Buthacus striffleri* sp. n. (holotype ♂): 1 - chelicera; 2 - metasomal segment V and telson, lateral aspect; trichobothrial pattern (Figs 3-5): 3 - chela, dorso-external aspects; 4 - patella, dorsal aspect; 5 - femur, dorsal aspect (scale bar = 2 mm).



Fig. 6. The type locality of *Buthacus striffleri* sp. n. in Afghanistan (black circle with white star).

**M e a s u r e m e n t s** (in mm: holotype ♂): Total length 70.1. Carapace: length 6.7, anterior width 4.4, posterior width 7.8. Metasomal segment I: length 6.8, width 4.4. Metasomal segment V: length 8.8, width 3.2, depth 2.9. Vesicle: width 2.4, depth 2.4. Pedipalp: femur length 5.8, femur width 1.9, patella length 6.8, patella width 2.4, chela length 9.4, chela width 1.8, chela depth 1.9. Movable finger: length 6.2.

**REMARKS:** *Buthacus striffleri* sp. n. is most closely allied to *Buthacus nigroaculeatus* Levy et al., 1973. It can, however, be distinguished from this species by the following characters: 1). The carapace of *Buthacus striffleri* sp. n. is intensely and uniformly granulated and the anterior median carina well marked. In *B. nigroaculeatus* the carapace is rather smooth and the carinae absent; 2). The carinae of pedipalp femur and patella are strongly marked in the new species, whereas in *B. nigroaculeatus* they are moderate to weak; 3). The latero-ventral and ventral carinae of metasomal segment V are strongly marked in the new species, whereas in *B. nigroaculeatus* they are moderate.

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