

A new species of *Buthacus* Birula, 1908 (Scorpiones, Buthidae) from Mali

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(with 13 figures)



Abstract

Subsequent to the recent revision of the genus *Buthacus* Birula, 1908 (Lourenço 2006), a new species has been recorded from the South of Nampala in Southwest Mali near to the border with Mauritania. This represents one more element of the genus distributed over the southern edge of the Sahara in the zone of delimitation between the desert and the Sahel.

K e y w o r d s: Scorpiones, taxonomy, *Buthacus maliensis* sp. n., Mali, Africa.

Introduction

As previously outlined and emphasised particularly in a recent revision, (Lourenço 2006), the taxonomy of the genus *Buthacus* Birula, 1908 has been the subject of controversy for over 50 years. In attempting to clarify the status of the various species in this genus, attention was focused mainly on the North African species. This major revision of the genus was followed by some detailed papers dealing with new species distributed over the southern fringe of the Sahara bordery, the Sahel savanna, and in the Middle East (Lourenço & Qi 2006a, b). However, as a consequence of the chaotic situation that still remains in the taxonomy of certain species, other new species need to be investigated and described. One of these, from Mali, is described here.

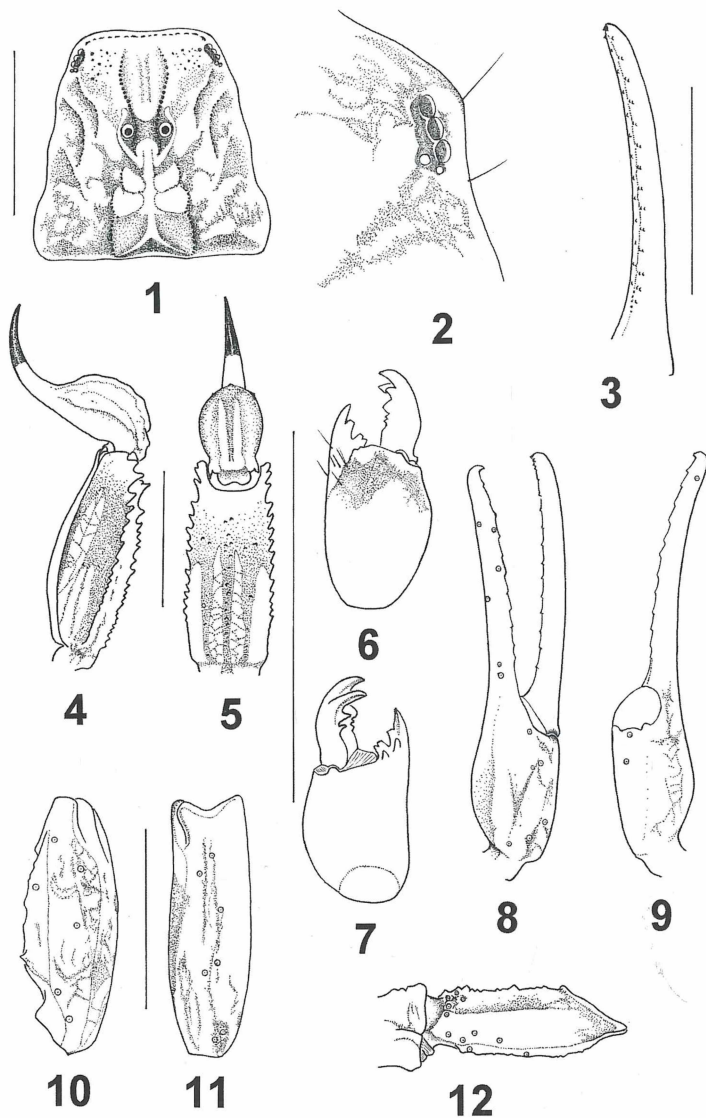
Description of a new species

Buthacus maliensis sp. n.

(Figs 1-13)

TYPE MATERIAL: H o l o t y p e (♂). Mali, S of Nampala, road to Sakolo, 10 September 1969, coll. J. Delacourt. Deposited in the Zoologisches Museum, Hamburg, Germany (ZMH Acc. No. A21/07).

ETYMOLOGY: Specific name refers to the country in which the new species was collected.



Figs 1-12. *Buthacus maliensis* sp. n., holotype (♂): 1, carapace, dorsal aspect. 2, detail of the lateral eyes; 3, disposition of granulations on the dentate margins of the pedipalp chela movable finger; 4-5, metasomal segment V and telson, lateral and ventral aspects; 6-7, chelicera, dorsal and ventral aspects; 8-12, trichobothrial pattern: 8-9, chela, dorso-external and ventro-internal aspects; 10-11, patella, dorsal and external aspects; 12, femur, dorsal aspect (scale bars = 3 mm).

DIAGNOSIS: a species of small to moderate size in relation to others in the genus; with a total length of 29.8 mm in the male. General coloration yellowish with diffused brownish spots over the carapace, metasomal segments and pedipalps; the tip of the aculeus, the granulations on the pedipalp fingers and the teeth of the chelicerae are slightly reddish. Pedipalps with 11-11/12 rows of granules on the fixed and movable fingers; external accessory granules moderate. Trichobothriotaxy A- \hat{a} (*beta*) orthobothriotaxic. Ventro-median carinae on metasomal segments II-III without any strongly marked spiniform granules; anal arc with three lobes in the male. Tibial spurs moderate on legs III and IV. Pectinal tooth count 36-36 in the male.

DESCRIPTION based on male holotype. Measurements in Table 1.

C o l o r a t i o n. Generally yellowish with brownish diffused spots and pigmented regions on the carapace, metasomal segments and pedipalps; the tip of aculeus, the granulations on the pedipalp fingers and the teeth of the chelicerae are slightly reddish; the eyes surrounded by black pigment.

MORPHOLOGY. **P r o s o m a:** Anterior margin of carapace not emarginate, straight. Carapace carinae weak to moderate; anterior median carinae weak; central median, posterior median and central lateral carinae weak. All furrows weak to obsolete. Intercarinal spaces slightly granular. Median ocular tubercle slightly anterior to the centre of the carapace; median eyes separated by two ocular diameters. Five pairs of lateral eyes; the first three disposed in one line, the fourth and fifth situated behind eye three. **M e s o s o m a:** Tergites I-VI tricarinate; all carinae weak; lateral carinae vestigial on segments I-II; tergite VII pentacarinate, with lateral pairs of carinae strong; median carinae present on proximal half, moderately marked. Intercarinal spaces weakly granular. Sternites: all carinae absent from sternites III-VI; weak to moderate on VII. Pectines long; pectinal tooth count 36-36. **M e t a s o m a:** Segments I-II with ten carinae; III-IV with eight carinae. Ventral carinae moderately marked on segment I; more strongly marked on segments II-III; dorsal and dorsolateral carinae without spinoid granules on segments I and II. Segment V with five carinae; ventrolateral armed with spinoid granules; anal arc with three sharp lobes. Dorsal furrows of all segments weakly developed, smooth; intercarinal spaces slightly granular to almost smooth. Telson with a few ventral granules; other spaces smooth. Aculeus moderately long and, not strongly curved; subaculear tubercle absent. **C h e l i c e r a e** with two reduced but not fused denticles at the base of the movable finger (Vachon 1963). **P e d i p a l p s:** Trichobothrial pattern orthobothriotaxic, type A (Vachon 1974); dorsal trichobothria of femur in \hat{a} -*beta* configuration (Vachon 1975). Femur pentacarinate; all carinae moderately crenulate. Patella with internal, dorso-internal and dorsal carinae moderately to weakly marked; chela rounded and smooth. Dentate margins on fixed and movable fingers composed of 11-11/12 almost linear rows of granules; external accessory granules moderate. **L e g s:** Ventral aspect of tarsi with

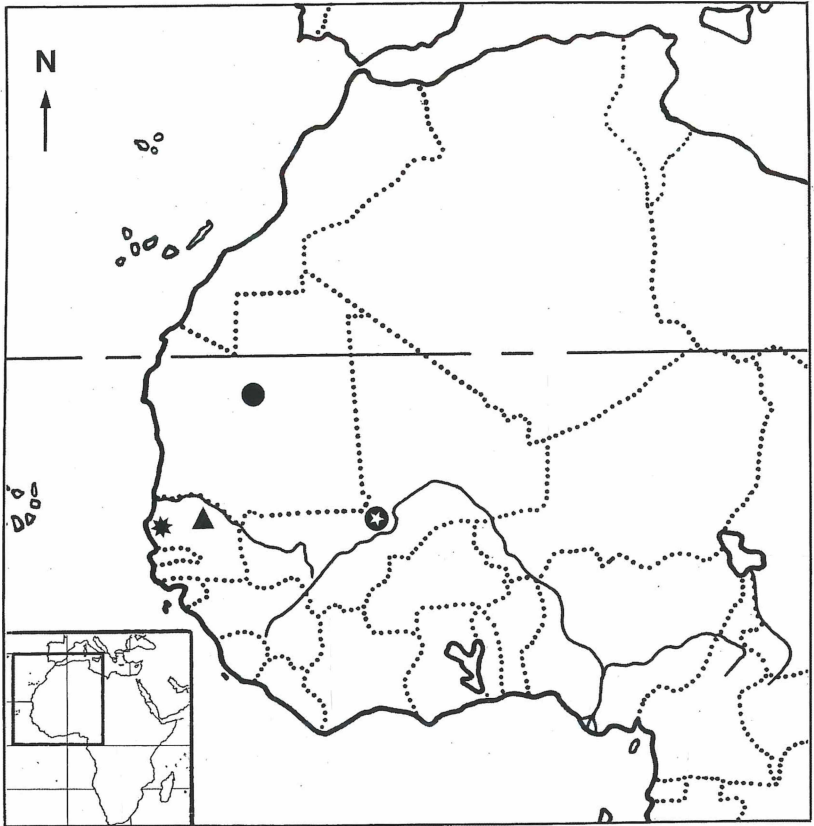


Fig. 13. The type localities of *Buthacus occidentalis* Vachon (black circle), *B. villiersi* Vachon (black star), *B. clevai* Lourenço (black triangle) and *B. maliensis* sp. n. (black circle with white star) in Northwest Africa.

numerous long thin setae. Tibial spurs moderate on legs III and IV. Pedal spurs moderate on all legs.

REMARKS: In its general morphology the new species displays associations with the '*Buthacus leptochelys*' group of species. It can be distinguished from the other species of *Buthacus*, also distributed in the Northwest part of Africa: *B. villiersi* Vachon, 1949, *B. occidentalis* Vachon, 1953, *B. huberi* Lourenço, 2001 and *B. clevai* Lourenço, 2001, by the following characters (see Lourenço 2001): (i) smaller overall size, with a total length of only 29 mm; (see also Table 1), (ii) a larger number of pectinal teeth, i.e., 36, (iii) the anal arc with three sharpened lobes in the male, (iv) a rather short aculeus when compared with the length of the vesicle.

Table 1. Morphometric values (in mm) of the *Buthacus* species considered in this study: *B. huberi*, holotype (♀); *B. clevai*, paratype (♂); *B. villiersi*, holotype (♂); *B. occidentalis*, lectotype (♂); *B. maliensis* sp. n., holotype (♂).

	<i>B. huberi</i>	<i>B. clevai</i>	<i>B. villiersi</i>	<i>B. occidentalis</i>	<i>B. maliensis</i>
Total length	41.0	30.0	28.0	48.9	29.8
Carapace:					
- length	4.4	3.9	3.4	5.6	4.2
- anterior width	2.8	2.6	2.2	3.6	2.8
- posterior width	5.2	4.7	3.5	6.5	4.3
Metasomal segment I:					
- length	3.3	2.3	2.6	5.0	2.8
- width	2.6	2.3	2.1	3.7	2.3
Metasomal segment V:					
- length	5.2	4.6	3.8	7.3	4.7
- width	2.0	1.8	1.6	2.7	2.1
- depth	1.8	1.7	1.5	2.5	1.7
Vesicle:					
- width	1.4	1.3	1.2	1.9	1.5
- depth	1.5	1.2	1.3	1.9	1.4
Pedipalp:					
- Femur length	3.5	2.6	2.3	5.3	3.8
- Femur width	1.2	1.0	1.0	1.5	1.1
- Patella length	4.6	3.6	3.2	6.2	4.5
- Patella width	1.5	1.2	1.3	2.1	1.6
- Chela length	6.6	5.2	4.8	9.6	7.2
- Chela width	1.1	1.1	1.3	2.7	1.2
- Chela depth	1.1	1.1	1.3	2.8	1.4
Movable finger:					
- length	4.2	3.2	2.8	5.5	5.0

Acknowledgements

We are very grateful to Prof. John L. Cloudsley-Thompson, London, for reviewing the manuscript.

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