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A new species of the genus *Buthacus* Birula, 1908 (Scorpiones, Buthidae) from Nigeria

WILSON R. LOURENÇO and JIAN-XIN QI

(with 14 figures)

Abstract

Following the recent revision of the genus *Buthacus* Birula, proposed by Lourenço (2006), a new species is described from North of Kaduna in Nigeria. *Buthacus nigerianus* sp. n., collected in the Sahel at the southern edge of the Sahara, has the most southerly distribution of the African species of *Buthacus*.

Key words: Scorpiones, *Buthacus*, Africa, Nigeria, new species.

Introduction

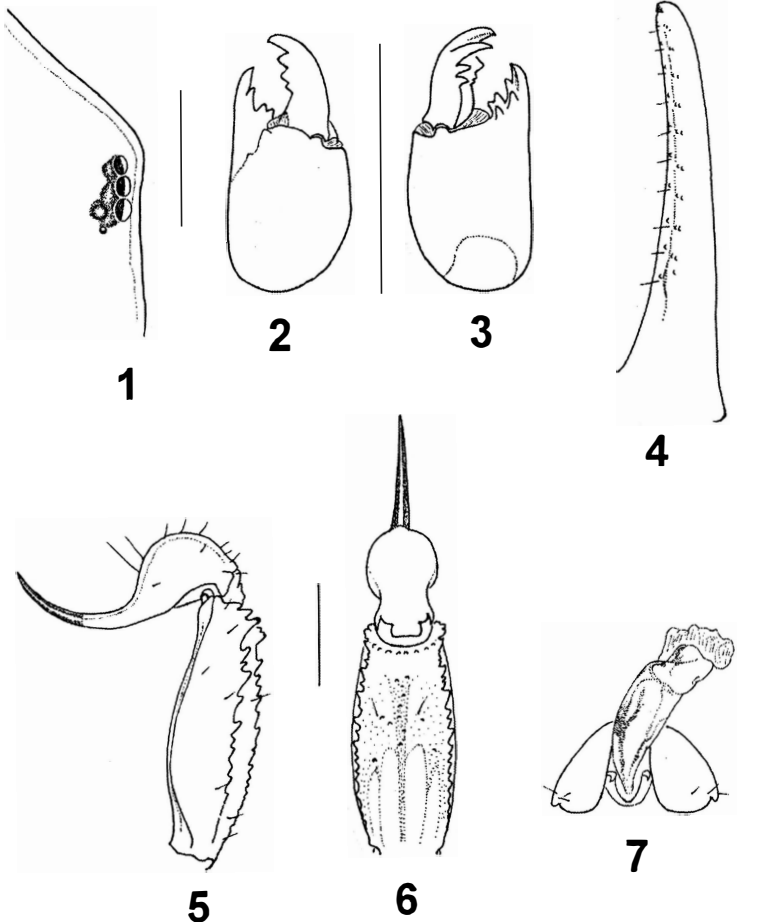
The taxonomy of the genus *Buthacus* Birula (1908) has been the subject of controversy for over 50 years (e.g. Kovařík 2005, Lourenço 2006). In his efforts to clarify the status of the species of the genus, Lourenço (*l.c.*) focused mainly on the North African species. Those distributed in the southern range of the Sahara and the Sahel were intentionally disregarded. However, the chaotic situation that still exists in the taxonomy of some species, leads us to consider the other African species in the genus. One of these, from Nigeria, is described here as a new taxon.

Description of new species

Buthacus nigerianus sp. n.

(Figs. 1-12)

TYPE MATERIAL: Holotype (σ), paratype (σ). Nigeria, N of Kaduna, road to Zaria, 2 October 1979, coll M. Thomas. Holotype deposited in the Zoologisches Museum Hamburg (ZMH Acc. No. A22/06); paratype in the Muséum National d'Histoire Naturelle, Paris.



Figs 1-7. *Buthacus nigerianus* sp. n., holotype σ : 1 – detail of the lateral eyes; 2-3 – chelicera, dorsal and ventral aspects; 4 – disposition of granulations on the dentate margins of the pedipalp chela movable finger; 5-6 – metasomal segment V and telson, ventral and lateral aspects; 7 – genital operculum, with extruded spermatophore (scale bars = 2 mm).

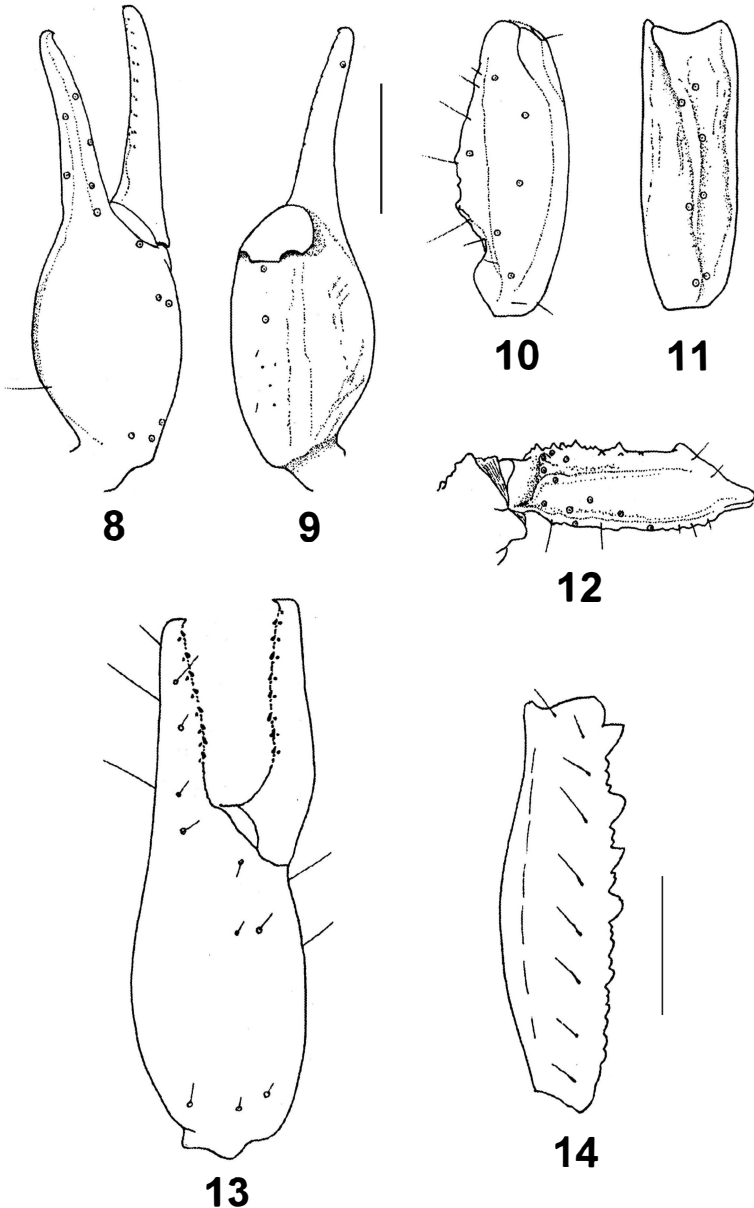
ETYMOLOGY: subspecific name refers to the country in which the new species occurs.

DIAGNOSIS: Scorpions of small size in relation to other species of the genus, with a total length of 37 to 39 mm in males. General coloration yellowish to pale yellow without any spots; only the tip of the aculeus, the granulations on the pedipalp fingers and the teeth of chelicerae are slightly reddish. Pedipalps with 8-9 rows of granules on the fixed and movable fingers; external accessory granules moderate. Trichobothriotaxy *A-â* (*beta*) orthobothriotaxic. Latero-ventral carinae on metasomal segment V with spiniform granules but no lobes; anal arc with three lobes. Tibial spurs moderate on leg IV, reduced on III. Pectinal tooth count 25/26 in males.

DESCRIPTION [based on males (holotype and paratype). Morphometric measurements in Table 1].

C o l o r a t i o n. Generally yellowish to pale yellow without any spots or pigmented zones on the body and appendages; only the tip of aculeus, the granulations on the pedipalp fingers and teeth of chelicerae are slightly reddish; eyes surrounded by black pigment.

MORPHOLOGY. P r o s o m a: Anterior margin of carapace not emarginate, straight. Carapace carinae weak; anterior median carinae obsolete; central median, posterior median and central lateral carinae weak to obsolete. All furrows weak to obsolete. Intercarinal spaces slightly granular. Median ocular tubercle slightly anterior to the centre of the carapace; median eyes separated by one and a half 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 one-half, moderately marked. Intercarinal spaces weakly granular. Sternites: all carinae absent from sternites III-VI; weak on VII. Pectines long; pectinal tooth count 25-25 in male holotype and 26-26 in male paratype. M e t a - s o m a: Segments I-II with ten carinae; III-IV with eight carinae. Ventral carinae weak on segments I-IV; dorsal and dorsolateral carinae with five carinae; ventrolateral armed with spinoid granules; absence of lobes; anal arc with three lobes. Dorsal furrows of all segments weakly developed, smooth; intercarinal spaces slightly granular to almost smooth. Telson smooth. Aculeus long; subaculear tubercle absent. Chelicerae with two reduced but not fused denticles at the base of the movable finger (Vachon 1963). Pedipalps: Trichobothrial pattern orthobothriotaxic, type A (Vachon 1974); dorsal trichobothria of femur in *â-beta* configuration (Vachon 1975). Femur pentacarinate; all carinae moderately crenulate. Patella with seven weak to vestigial carinae; chela rounded and smooth. Dentate margins on fixed and movable fingers composed of 8-9 almost linear rows of granules; external accessory granules moderate. L e g s: Ventral aspect of tarsi with numerous long thin setae. Tibial spurs moderate on leg IV, reduced on leg III. Pedal spurs moderate on all legs.



Figs 8-14. *Buthacus nigerianus* sp. n., holotype ♂ : trichobothrial pattern (Figs 8-12): **8-9** – chela, dorso-external and ventral aspects; **10-11** – patella, dorsal and ventral aspects; **12** – femur, dorsal aspect; *Buthacus foleyi* Vachon, holotype ♂ : (Figs 13-14): **13** – chela, dorso-external aspect, with curved movable finger; **14** – metasomal segment V, lateral aspect, showing two lobes on the anal arc (from Vachon 1952) (scale bars = 2 mm).

REMARKS: In its general morphology the new species shows associations with *Buthacus foleyi* Vachon 1948, from the mountain formations of South Algeria. The new species can, however, be distinguished from this by the following characters: (i) an almost totally smooth carapace and tergites, whereas moderately marked granulation is observed in *B. foleyi*, (ii) the movable finger of the pedipalp is straight in the new species, whereas in *B. foleyi* it is strongly curved, (iii) in the new species, the latero-ventral carinae of metasomal segment V shows spinoid granules, and the anal arc has three lobes, while in *B. foleyi* the latero-ventral carinae are lobe-shaped and the anal arc has two lobes.

Table 1. Morphometric values (in mm) of the male holotype of *Buthacus nigerianus* sp. n. and of the male holotype of *Buthacus foleyi* Vachon.

	<i>B. nigerianus</i> sp. n. ♂ holotype	<i>B. foleyi</i> ♂ holotype
Total length	37.6	42.9
Carapace:		
- length	4.4	4.8
- anterior width	3.0	3.2
- posterior width	4.8	5.7
Metasomal segment I:		
- length	3.4	3.8
- width	3.1	3.2
Metasomal segment V:		
- length	5.7	6.2
- width	2.2	2.5
- depth	2.0	2.2
Vesicle:		
- width	1.6	1.8
- depth	1.6	1.6
Pedipalp:		
- Femur length	3.6	4.3
- Femur width	1.2	1.6
- Patella length	4.6	5.4
- Patella width	1.8	2.2
- Chela length	7.1	8.3
- Chela width	2.1	2.6
- Chela depth	2.3	2.8
Movable finger:		
- length	3.8	4.4

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Authors' addresses:

Dr. W. 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);

J.-X. QI, MSc., Department of Biological Sciences, National University of Singapore, 14 Science Drive 4, Singapore 117543, Singapore (e-mail: free8wind@yahoo.com.cn).