

## DESCRIPTION OF A NEW SPECIES OF *HOTTENTOTTA* BIRULA 1908 (SCORPIONES, BUTHIDAE) FROM THE CAPE VERDE ISLANDS

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**Abstract:** A new species of scorpion, *Hottentotta caboverdensis* sp. n. (Buthidae), is described. The type material was collected on the island of São Tiago, Cape Verde islands. The new species is unquestionably associated with *Hottentotta hottentotta* (Fabricius) and *H. nigrocarinatus* Simon. The distribution range lies within the area defined by Vachon and Stockmann (1968) as 'western sub-equatorial'.

**Key words:** Scorpiones, Buthidae, *Hottentotta*, new species, Cape Verde.

### Descripción de una nueva especie de *Hottentotta* Birula 1908 (Scorpiones, Buthidae) de las islas de Cabo Verde

**Resumen:** Se describe una nueva especie de escorpión, *Hottentotta caboverdensis* sp. n. (Buthidae). El material tipo se recogió en la isla de São Tiago, islas de Cabo Verde. La nueva especie está claramente próxima a *Hottentotta hottentotta* (Fabricius) y *H. nigrocarinatus* Simon. Su distribución entra en la categoría definida por Vachon y Stockmann (1968) como 'subecuatorial occidental'.

**Palabras clave:** Scorpiones, Buthidae, *Hottentotta*, nueva especie, Cabo Verde.

**Taxonomy / Taxonomía:** *Hottentotta caboverdensis* sp. n.

### Introduction

As already pointed out in a previous paper (Lourenço, 2004), in the middle of the 1940s, Vachon (1952) began a series of studies on the scorpions of North of Africa. One of his main preoccupations was to define the various groups within the family Buthidae. This led to the subdivision of what was then the genus *Buthus* Leach into about 10 separate genera. One of the genera proposed by Vachon (1949) was *Buthotus*. This comprised the majority of species in the old subgenus *Hottentotta* Birula, 1908 (Vachon & Stockmann, 1968). Kraepelin (1891) had, however, been the first to distinguish a "hottentotta group" (species-group) within the genus *Buthus*. Most of the species within it were allied to *Buthus hottentotta* (Fabricius). Subsequently Birula (1908) created the subgenus *Hottentotta*, but without explaining his motive Vachon (1949) disregarded both *Hottentotta* Birula and *Dasyscorpio* Pallary and established a new name, *Buthotus*. *Hottentotta* is, however, a valid senior synonym for *Buthotus* and was re-established by Francke (1985). Other valid subgenera besides the nominotypical *Hottentotta* are *Balfourianus* which was described by Vachon (1979) to include the species *Hottentotta socotrensis* (Pocock) which is endemic to the Island of Socotra, and *Deccanobuthus* described by Lourenço (2000) for the species *Hottentotta (Deccanobuthus) geffardi* from India.

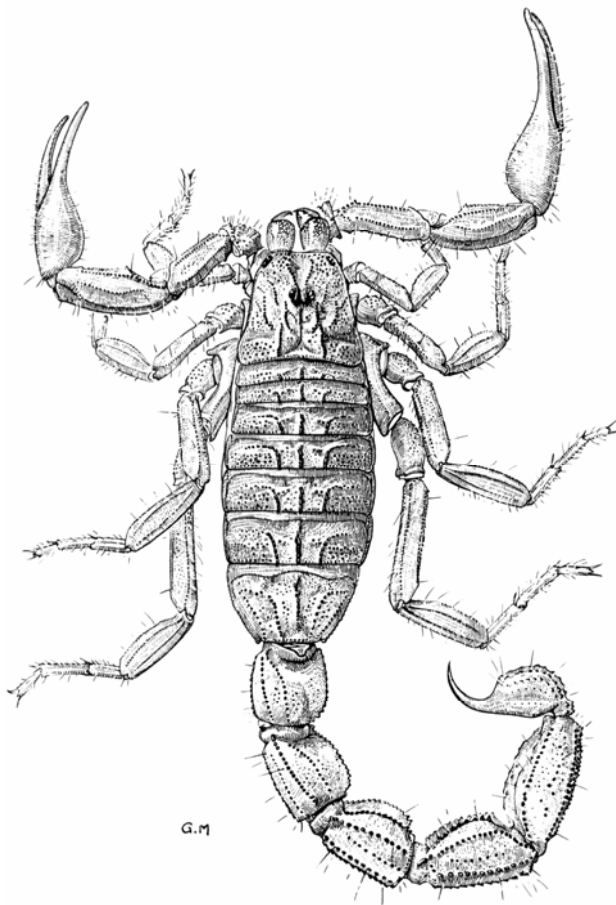
In their exhaustive study of the genus *Buthotus* (= *Hottentotta*), Vachon and Stockmann (1968) defined several lineages and sub-lineages. One of these sub-lineages, the 'Western sub-equatorial' was grouped around the species *Hottentotta hottentotta* (Fabricius) and *Hottentotta nigrocarinatus* Simon. However, they considered these two species as only subspecies.

The precise composition of the genus *Hottentotta* remains undecided and, according to Fet and Lowe (2000),

the generic status of several species within it is uncertain. For this reason African lineages are considered in the present paper only as *Hottentotta* without any subgeneric division within them. In addition, we raise *Hottentotta hottentotta nigrocarinatus* to species level as *Hottentotta nigrocarinatus* stat. n., and describe a new species from Cape Verde that belongs to this lineage.

### Scorpions from Cape Verde Islands

Several arachnological collections have been made in the Cape Verde Islands. Their contents have been described since the second half of the 19<sup>th</sup> century (e. g. by Simon, 1883, 1897; Berland, 1936). These publications concerned mainly the spider fauna of these islands (see Bacelar, 1950). No native scorpion, however, was found in or reported on any of the Cape Verde Islands. The single citation for a scorpion was that of the buthid *Isometrus maculatus* (De-Geer), collected by Leonardo Fea (see Borelli, 1911). This species is, however, well known to be a cosmopolitan element which originated in the Indian-Malayan region (possibly Sri Lanka). It is today widespread in all tropical and semi-tropical lands of the world (Vachon, 1972; Huber *et al.*, 2002). Not until a recent publication, addressed to a large audience, did Schmidt and Bauer (1997), refer to *Hottentotta hottentotta* in the Cape Verde Islands (fig. 1). We cannot be sure about the true reasons of a so late report of this scorpion for the Cape Verde Islands. (i) the original surveys were not sufficiently intense to allow the collection of this species. After all, the specimens described here were found under very heavy rocks deeply buried in the soil, (ii) the presence of this *Hottentotta* population in the islands may be very recent. We believe that the first hypothesis may



**Fig. 1.** Habitus of *Hottentotta hottentotta*, female from Mont Nimba, Guinea (from Vachon & Stockmann, 1968). Total length 72 mm.

be the more plausible, since the degree of differentiation between the *Hottentotta* specimens from Cape Verde and those from Eastern Africa is already very marked, a characteristic that made us decide to describe the former as a new species.

***Hottentotta caboverdensis* sp. n.**

Figs. 2-12. Table I.

**TYPE MATERIAL:** 1 female holotype, 2 female paratypes. Cape Verde, Island of São Tiago, region of Praia, under very heavy rocks deeply buried in the soil, II/2002, E.Ythier. Deposited in the Muséum national d'Histoire naturelle, Paris.

**ETYMOLOGY:** specific name makes reference to the Cape Verde Islands where the new species was found.

**DIAGNOSIS:**

Scorpions of moderate to large size. Females reaching 62 mm in total length. General coloration reddish-brown to dark brown with carinae and granulations blackish. Carinae and granulations strongly marked on carapace, tergites and metasomal segments. Pectinal tooth count 22 to 24 in females; mode 23. Pedipalp fixed and movable fingers with 12/13 rows of granules. Trichobothrial pattern of type A, orthobothriotaxic; dorsal trichobothria of femur arranged in  $\beta$  (beta) configuration (Vachon, 1974, 1975).

*Hottentotta caboverdensis* sp. n. is undoubtedly associated with the *Hottentotta hottentotta* (Fabricius) group of species. It can, however, be distinguished from the other species of this group: *Hottentotta hottentotta* and *Hottentotta nigrocarinatus* by the following characters: (i) smaller size; 55 to 62 mm in total length against 68 to 73 mm for *H. hottentotta*, (ii) much darker coloration than in *H. hottentotta*, (iii) more strongly marked granulations on carapace and tergites than in *H. hottentotta* and *H. nigrocarinatus*, (iv) pectinal tooth counts in the new species disclose a smaller number of teeth than are found in female specimens of *H. nigrocarinatus*; 22 to 24 against 28 to 30.

**DESCRIPTION BASED ON FEMALE HOLOTYPE.**

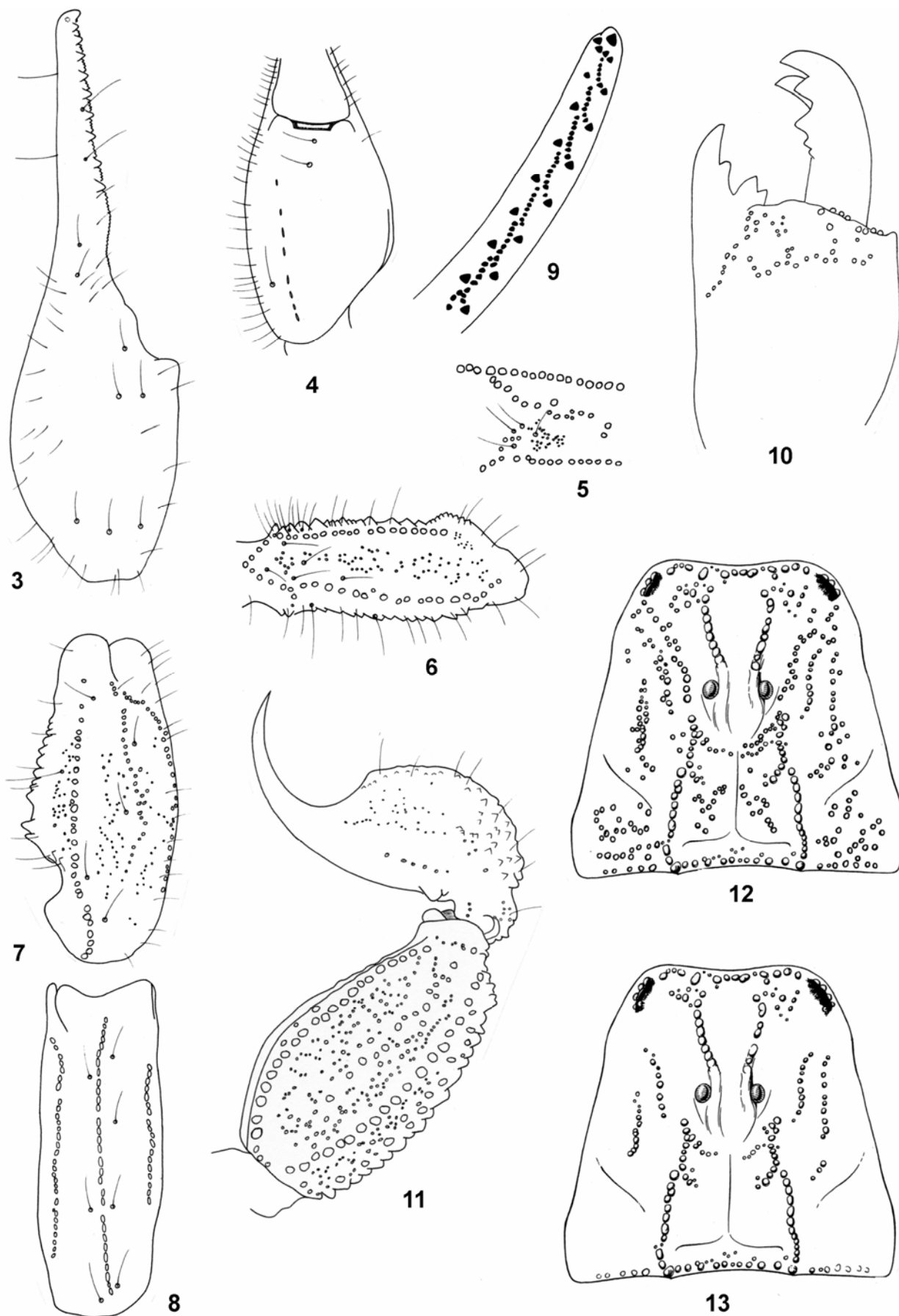
Measurements in Table I.

**Table I.** Morphometric values (in mm) of the female holotype of *Hottentotta caboverdensis* sp. n.

Total length		62.5
Carapace:	- length	8.8
	- anterior width	5.7
	- posterior width	9.9
Metasomal segment I:	- length	4.9
	- width	5.7
Metasomal segment V:	- length	8.9
	- width	5.3
	- depth	4.7
Vesicle:	- width	4.4
	- depth	3.7
Pedipalp:	- Femur length	7.1
	- Femur width	2.7
	- Patella length	7.9
	- Patella width	3.6
	- Chela length	13.5
	- Chela width	3.6
Movable finger:	- Chela depth	3.5
	- length	8.7

**Coloration.** Basically reddish-brown to dark brown with carinae and granulations blackish. Prosoma: carapace dark brown, with blackish carinae; eyes surrounded by black pigment. Mesosoma: dark brown with carinae and granulations blackish. Metasoma: segments I to V and telson reddish-brown; aculeus reddish at the base and blackish at the tip. Venter reddish to reddish-brown; carinae of sternite VII blackish. Chelicerae yellowish with moderately marked variegated spots; fingers blackish with dark reddish teeth. Pedipalps reddish to dark reddish; chela fingers with the oblique rows of granules dark. Legs reddish-yellow with diffused dark spots.

**Morphology.** Carapace strongly granular; anterior margin with a weak median concavity; carinae strong; anterior median, central median and posterior median carinae markedly granular; furrows moderate. Median ocular tubercle slightly anterior to the centre of carapace; median eyes moderate, separated by two ocular diameters; three pairs of lateral eyes. Sternum subtriangular and wide at the base; as long as wide. Mesosoma: tergites markedly granular; three longitudinal carinae strongly crenulate in all tergites; tergite VII pentacarinata. Venter: genital operculum divided longitudinally; each plate semi-triangular in shape. Pectines: pectinal tooth count 23-23 in the female holotype; middle basal lamella of the pectines not dilated. Sternites smooth with elongated spiracles; four moderate carinae on sternite VII; other sternites without carinae and with only two weak furrows. Metasoma: segments I to IV with ten crenulate



**Figs. 3-12.** *Hottentotta caboverdensis* sp. n., female holotype. 3-8. Trichobothrial pattern. 3-4. Chela, dorso-external and ventral aspects. 5-6. Femur, internal and dorsal aspects. 7-8. Patella, dorsal and external aspects. 9. Distal half of movable finger showing the rows of granules. 10. Chelicera, dorsal aspect. 11. Metasomal segment V and telson, lateral aspect. 12. Carapace. **Fig. 13.** *Idem* for *Hottentotta hottentotta*.



**Fig. 14.** Map of the Cape Verde Islands showing the location of the islands.

carinae; segment V with five crenulate carinae; lateral in-framedian carina slightly incomplete on segment IV; all segments with a smooth dorsal depression, with some isolated granules. Intercarinal spaces moderately to intensely granular. Telson smooth dorsally and granular latero-ventrally, with a moderately short and curved aculeus; subaculear tooth vestigial. Cheliceral dentition as defined by Vachon (1963) for the family Buthidae; movable finger with the external distal tooth slightly shorter than the internal distal tooth, and the basal teeth strongly reduced; ventral aspect of both finger and manus covered with setae. Pedipalps: femur pentacarinat; patella with seven moderately marked carinae; chela smooth without carinae; tegument from moderately granular to almost smooth. Fixed and movable fingers with 12-13 oblique rows of granules; internal and external accessory granules present; distal extremity of movable fingers with four granules. Legs: tarsus ventrally with two longitudinal rows of 6/8 spines. Tibial spurs present on legs III and IV; prolateral and retrolateral spurs present in all legs. Trichobothriotaxy: Trichobothrial pattern of Type A, orthobothriotaxic as defined by Vachon (1974). Dorsal trichobothria of femur arranged in  $\beta$  (beta) configuration (Vachon, 1975).

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**FURTHER CONSIDERATIONS ON THE GENUS *BUTHACUS* BIRULA, 1908  
(SCORPIONES, BUTHIDAE), WITH A DESCRIPTION OF ONE  
NEW SPECIES AND TWO NEW SUBSPECIES**

Wilson R. Lourenço

[pp. 59-70]



**Fig. 43.** *Buthacus occidentalis*. Female from Chinguetti-Atar in its natural habitat (photo P. Geniez).