

**Redescription of *Compsobuthus rugosulus* (Pocock, 1900)
(Scorpiones, Buthidae) based on specimens from Pakistan**

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Redescription of *Compsobuthus rugosulus* (Pocock, 1900) (Scorpiones, Buthidae) based on specimens from Pakistan. - A redescription of *Compsobuthus rugosulus* (Pocock, 1900) is given on the basis of 15 specimens from Pakistan (9 males and 6 females), 10 of which were collected in Hyderabad, the type locality, from where a lectotype is designated.

Key-words: Scorpiones - *Compsobuthus* - taxonomy - Pakistan.

INTRODUCTION

Compsobuthus rugosulus, was first described by POCOCK (1900), as a subspecies of *Buthus acutecarinatus* Simon, based on specimens collected both in Gwalior, India and Hyderabad, Sind, which today is in Pakistan. By the time of his publication the generic classification of Middle East and Oriental scorpions was still very poor. Consequently most of the buthid scorpions were associated to the very large and complex genus *Buthus* Leach.

In his monographic work, dealing mainly with the scorpions of North Africa, VACHON (1949) revised the relationships of several species included in the genus *Buthus*, and proposed a number of different genera, including *Compsobuthus* for the species associated with *Buthus acutecarinatus* Simon. In the following years, other species have been included in the new genus. A more detailed synthesis was proposed by VACHON (1952).

The exact composition of the genus *Compsobuthus* remains uncertain at present. SISSOM (1990) proposed 12 species to be included in the genus, with a geographic distribution ranging from northern Africa to the Middle East and India. More recently SISSOM (1994) revised the taxonomic positions of *Compsobuthus acutecarinatus* (Simon), *Compsobuthus brevimanus* (Werner), *Compsobuthus weneri weneri* (Birula), and described the new species *Compsobuthus vachoni*. He also discussed a supplementary unnamed subspecies of *Compsobuthus weneri*, thereby attesting to the problematical status of species and subspecies within this genus.

For *Compsobuthus rugosulus* the status of species is accepted by some authors, while others only regard it as a subspecies of *Compsobuthus acutecarinatus*. In our opinion *Compsobuthus rugosulus* is to be considered as a valid species, and we give in this paper a precise redescription.

Compsobuthus rugosulus (Pocock, 1900)

Figs 1 to 10

Syntypes: 4 females (the original description mentions males and females), BMNH. 1896.12.15.14-17. Gwalior (26.13 N 78.10 E), India and Hyderabad (25.22 N 68.22 E), Sind, now in Pakistan. One female syntype from Hyderabad (examined by the senior author) is here designated as **lectotype**.

Buthus acutecarinatus rugosulus Pocock, 1900: 20; TAKASHIMA 1945: 76.

Buthus acuterinatus rugulosus (sic!) Birula, 1905: 139; KRAEPELIN 1913: 127.

Buthus (*Buthus*) *acutecarinatus rugulosus* (sic!): BIRULA 1910: 173; BIRULA 1917; WERNER 1936: 204.

Compsobuthus rugulosus (sic!): VACHON 1949: 99; VACHON 1952: 219.

Compsobuthus rugulosus (sic!): VACHON 1966: 211; HABIBI 1971: 43; FARZANPAY 1988: 37.

Compsobuthus rugosulus: LEVY *et al.* 1973: 114; PÉREZ 1974: 23; LEVY & AMITAI 1980: 60.

Compsobuthus acutecarinatus rugosulus: TIKADER & BASTAWADE 1983: 169.

Material studied (deposited in the Natural History Museum, Geneva): PAKISTAN: Hyderabad (type locality), I/1962 (Anderson leg.): 6 males, 4 females. Kavahari, XII/1958 (Anderson leg.): 1 male-juvenile, 1 female. Mirpur-Sakro, south of Karachi, II/1962 (Anderson leg.): 2 males. Near Karachi, III/1962 (Anderson leg.): 1 female.

Redescription (based on male and female topotypes).

Morphometric measurements in Table I.

Coloration. Basically yellowish with some darker reddish brown areas on the tergite keels. Prosoma: carapace yellowish with reddish areas over the keels; eyes surrounded by black pigment. Mesosoma: yellowish with two longitudinal reddish areas and longitudinal reddish brown pigment over longitudinal keels. Metasoma: segments I to V yellowish. Vesicle yellowish; aculeus reddish. Venter yellowish. Chelicerae yellowish; fingers reddish. Pedipalps: globally yellowish; chela with some reddish yellow areas on the articulations. Legs yellowish.

Morphology. Carapace moderately granular; anterior margin with a feeble concavity. Anterior and posterior ocular keels strong; furrows moderate to feeble. Median ocular tubercle slightly anterior to the center; median eyes separated by one ocular diameter. Three pairs of lateral eyes. Sternum triangular. Mesosoma: tergites with moderate to strong granulations. Median keel strong in all tergites. Two latero-longitudinal keels, which arise after the posterior ocular keel of carapace, very strong in all tergites. Tergite VII pentacarinata; all keels strong. Venter: genital operculum divided longitudinally. Pectine: pectinal tooth count 19-19; basal middle lamellae of each pecten not dilated. Sternites feebly granular with moderately elongated stigmata; two feeble longitudinal keels on each sternite; VII with four keels. Metasoma: segments I to IV with 10 keels, crenulate. Segment V with 5 keels. Tegument moderate to strongly granular. Telson less granulated than segments, with a long and strongly curved aculeus. Subaculear tooth absent, with only a vestigial granule present.

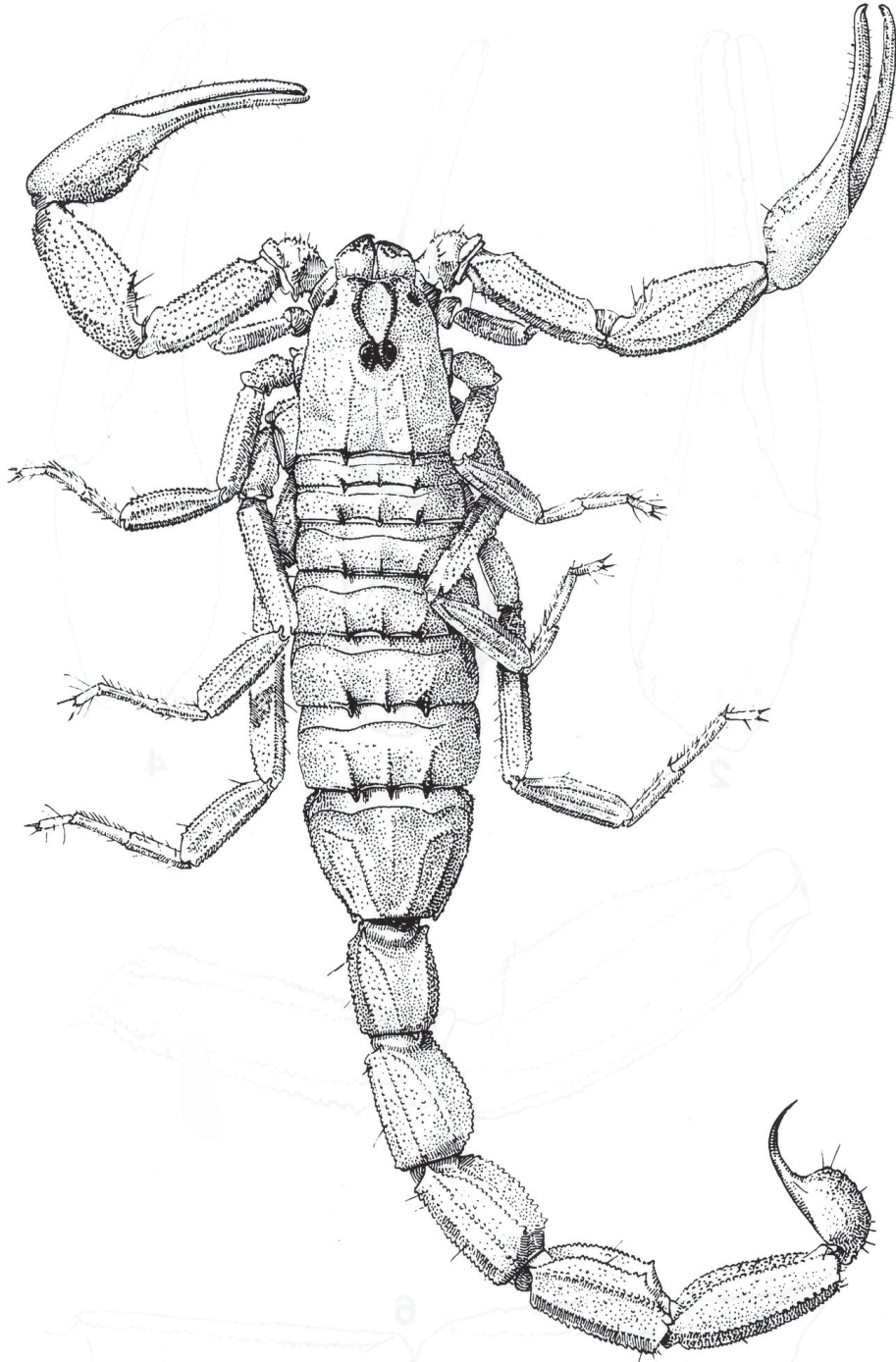
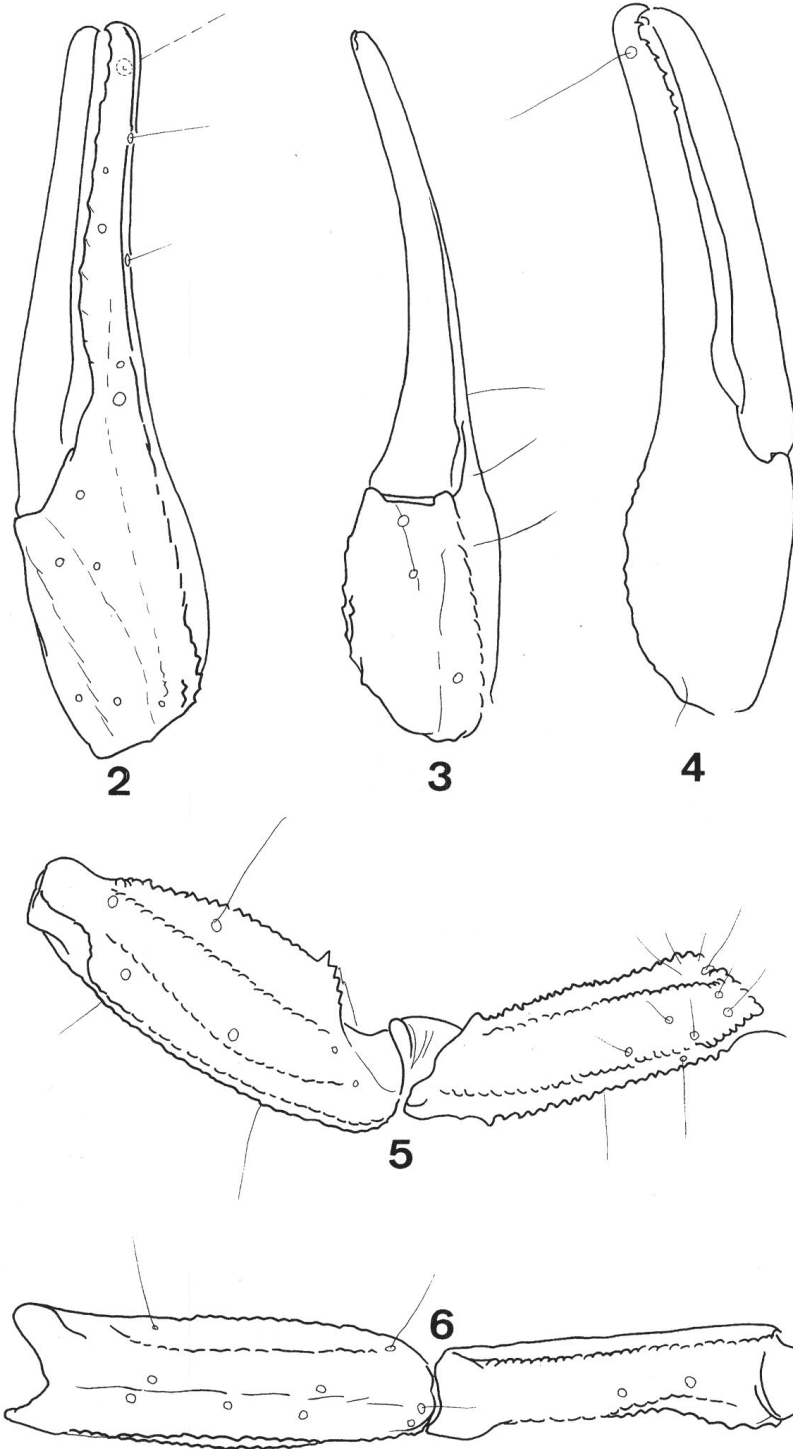
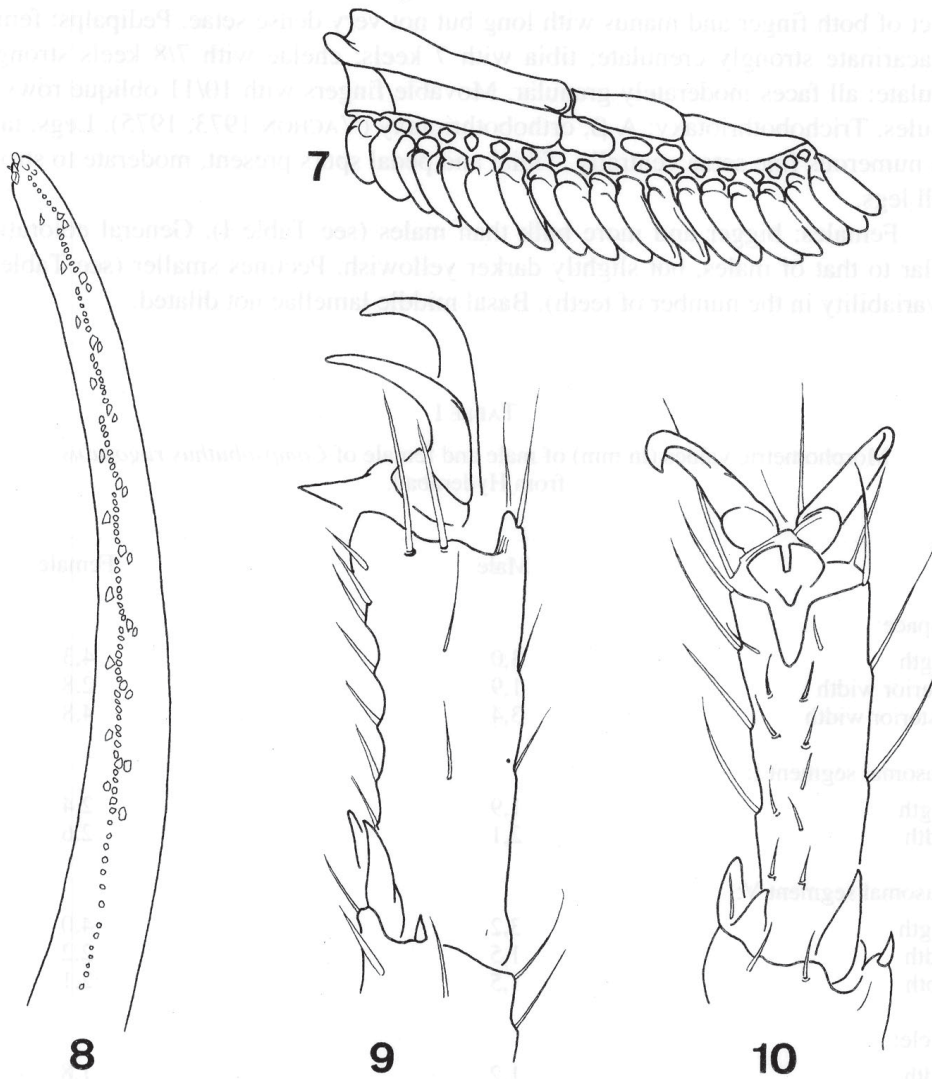


FIG. 1

Compsobuthus rugosulus, female from Hyderabad in dorsal view.





FIGS 2 to 6: *Compsobuthus rugosulus*, male from Hyderabad. 2 to 4: Trichobothrial pattern. Chela, dorso-external, ventral and internal aspects. 5 and 6: Tibia and femur, dorsal and external aspects.

FIGS 7 to 10: 7: Pectine. 8: Disposition of the granulations over the dentate margins of pedipalpal chela fingers. 9 and 10: Tarsus of leg IV, lateral and ventral aspects.

Cheliceral dentition characteristic of the family Buthidae (VACHON 1963); ventral aspect of both finger and manus with long but not very dense setae. Pedipalps: femur pentacarinata strongly crenulate; tibia with 7 keels; chelae with 7/8 keels strongly crenulate; all faces moderately granular. Movable fingers with 10/11 oblique rows of granules. Trichobothriotaxy; A- β , orthobothriotaxy (VACHON 1973, 1975). Legs: tarsi with numerous fine setae ventrally. Tibial and pedal spurs present, moderate to strong on all legs.

Females: bigger and more bulk than males (see Table I). General coloration similar to that of males, but slightly darker yellowish. Pectines smaller (see Table II for variability in the number of teeth). Basal middle lamellae not dilated.

TABLE I
Morphometric values (in mm) of male and female of *Compsobuthus rugosulus*
from Hyderabad.

	Male	Female
Carapace:		
- length	3,0	4,3
- anterior width	1,9	2,8
- posterior width	3,4	4,8
Metasomal segment I:		
- length	1,9	2,4
- width	2,1	2,6
Metasomal segment V:		
- length	3,2	4,0
- width	1,5	2,2
- depth	1,5	2,1
Vesicle:		
- width	1,2	1,8
- depth	1,1	1,5
Pedipalp:		
- Femur length	2,5	3,7
- Femur width	0,8	1,2
- Tibia length	3,2	4,1
- Tibia width	1,3	1,7
- Chelae length	5,2	7,2
- Chelae width	1,4	1,8
- Chelae depth	1,3	1,7
Movable finger:		
- length	3,6	5,2

TABLE II

Variability of the number of pectines teeth in males and females of *Compsobuthus rugosulus*

	Males	Females
Number of teeth		
14-15		1
15-15	1	3
16-16		1
16-17	1	
17-16		1
17-17	2	
17-18	1	
18-17	1	
18-18	2	
19-19	1	

ACKNOWLEDGEMENTS

We are very grateful to M. Gaillard, Laboratoire de Zoologie Arthropodes, for preparing several illustrations, and especially to Prof. John L. Cloudsley-Thompson formerly of University College London, for reviewing the manuscript. The junior author wishes to thank the "Département des affaires culturelles de la Ville de Genève" for financial support.

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