

## A new species of *Apistobuthus* Finnegan, 1932 (Chelicerata, Scorpiones, Buthidae) from Iran

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(With 14 figures)

### Abstract

A new species belonging to the enigmatic genus *Apistobuthus* Finnegan, 1932 (Scorpiones, Buthidae) is described in this paper. The description of *Apistobuthus susanae* n. sp. is based on a single adult female collected in Ahvaz, Iran. The genus *Apistobuthus* was previously monotypic, the only known species being *A. pterygocercus* Finnegan, 1932 from Arabia. With the description of *A. susanae* sp. n. the number of species is raised to two and the distribution of the genus extended from Saudi Arabia, Oman Republic and Kuwait to Iran. The two known species are very similar in their general morphology, but can be readily identified by their trichobothrial patterns. *A. pterygocercus* is orthobothriotaxic whereas *A. susanae* sp. n. is neobothriotaxic minorant.

### Introduction

The genus *Apistobuthus* was created by Finnegan (1932) on the basis of 3 specimens, 1 male and 2 females, collected in Arabia by Mr. Bertram Thomas. The localities indicated by Finnegan were Uruq Dhahiqah and Shena. With the creation of the new genus, Finnegan also described one new species *Apistobuthus pterygocercus* which was indicated as the type species of the new genus. The descriptions of both the new genus and species were extremely detailed and well illustrated. Since its description *A. pterygocercus* has attracted the attention of specialists mainly on account of the very strange morphology both of its prosomal region and of the second metasomal segment which is anormally rounded and much larger than the other four.

Although the original description was perfectly adequate, Vachon (1960) of the Natural History Museum, Paris, proposed a redescription to the species, after examination of the three type specimens and of an additional female collected at Andhur in Saudi Arabia and also deposited in the British Museum. From his studies Vachon concluded that the type specimens described by Finnegan were all immature, and in his new description he gave details about some new characters, mainly those concerning the trichobothrial pattern (not in use at the time when Finnegan was working).

Until now, *Apistobuthus* has remained a monotypic genus, and the species *A. pterygocercus* appears to be very rare. Since the redescription by Vachon (1960), only a few isolated citations are to be found in the literature (Vachon 1966, 1978, 1979, Vachon & Kinzelbach 1987).

In a list of the scorpions of Iran, Habibi (1971) of the University of Teheran, indicated that one female buthid scorpion collected during the summer of 1961 in Ahvaz, corresponded quite well to the genus *Apistobuthus* although it presented several morphological differences from *A. pterygocercus*. Habibi therefore suggested that this specimen might possibly belong to a new species. The matter was the subject of considerable correspondence between her and Vachon from the end of the 1960s until the middle of the 1970s (M. Vachon, pers. comm.). Nevertheless this possibly new species was never described. More recently, in a catalogue of the scorpions of Iran, Farzanpay (1988) (who worked with Vachon in the mid-1970s), mentioned the existence of a possibly new species in Iran belonging to the genus *Apistobuthus*. Moreover, he indicated that the Iranian *Apistobuthus* almost certainly had a different trichobothrial pattern from that of *A. pterygocercus*. Farzanpay (1988), stated as follow "... Neither Finnegan, Habibi nor Vachon have referred to trichobothriotaxies, but the specimens of *Apistobuthus* which were collected and studied in Iran by the author, were found to belong to 'néobothriotaxie minorante' (a term suggested by Vachon, 1973) of the type A. As he did not have access to the type species, it is stipulated that if his specimens have different trichobothriotaxies than those of the type-species, then they must be of a new species".

Since the work of Farzanpay was not continued, this matter remained unsolved, but it is again discussed in the "World Catalogue of Scorpions", currently in preparation by Fet *et al.*, in which it is stated that: "According to a pers. comm. of M. Vachon, 1975, to R. Farzanpay (1988: 36), the species found by T. Habibi in Iran, was *A. pterygocereus*. However, Farzanpay (1988: 36) also mentioned that another possible undescribed species of this genus was found in Iran."

I have recently been able to find and to examine the female specimen collected by T. Habibi in Ahvaz and mentioned in her list, published in 1971. The specimen is badly preserved. Nevertheless, after a detailed examination of its morphological characters, I am able to conclude that it has indeed a different trichobothrial pattern from that of *A. pterygocercus*, as suggested by Farzanpay (1988). The specimen of *Apistobuthus* from Iran presents a minorante trichobothriotaxy. In view of this, I decided to describe the Iranian specimen of *Apistobuthus* as a new species.

## Description

*Apistobuthus susanae* n. sp.  
(Figs 8-14)

DIAGNOSIS. *Apistobuthus susanae* n. sp. is very similar to *A. pterygocercus* in its general morphology, however, both species can be readily identified by the following features (see also Figs 2-13):

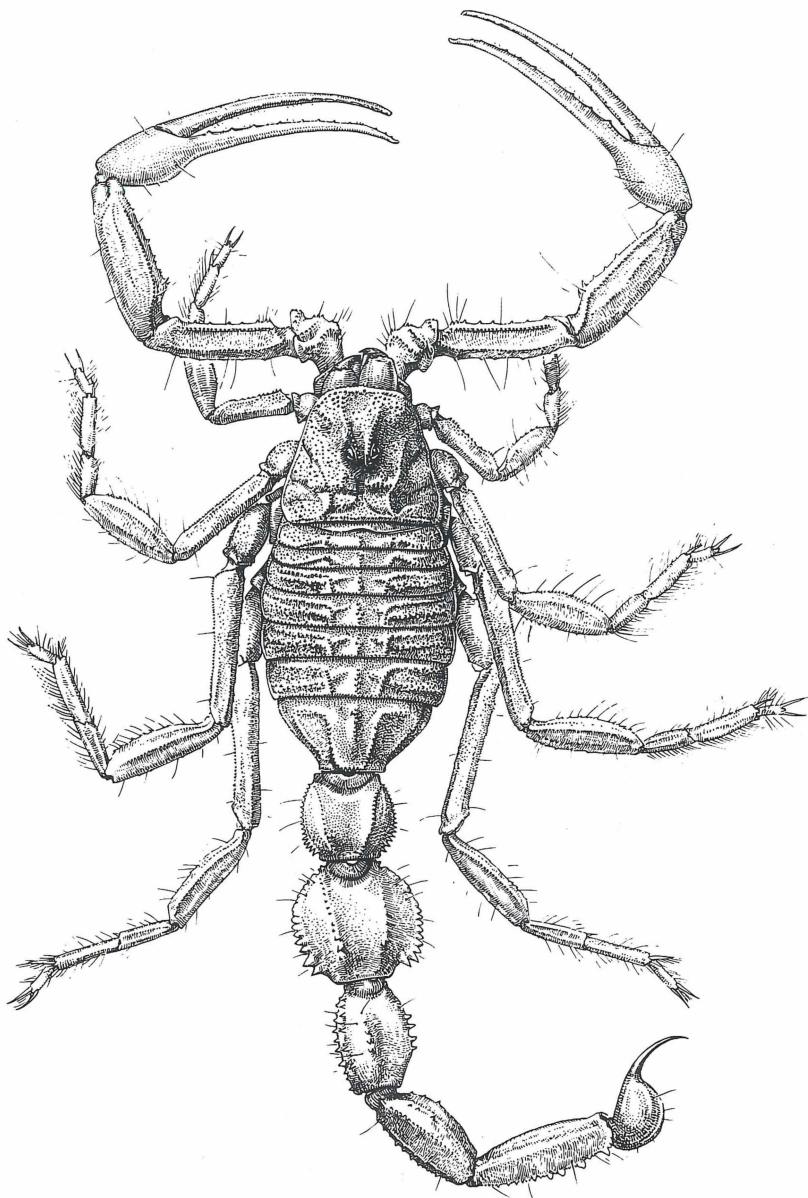
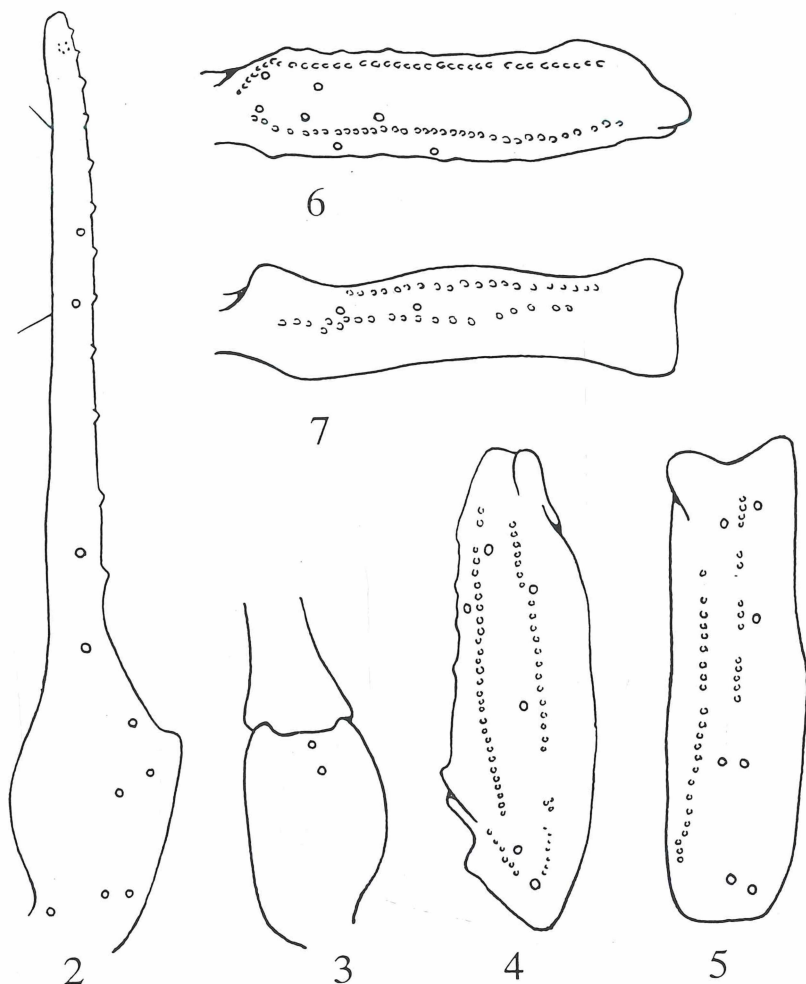
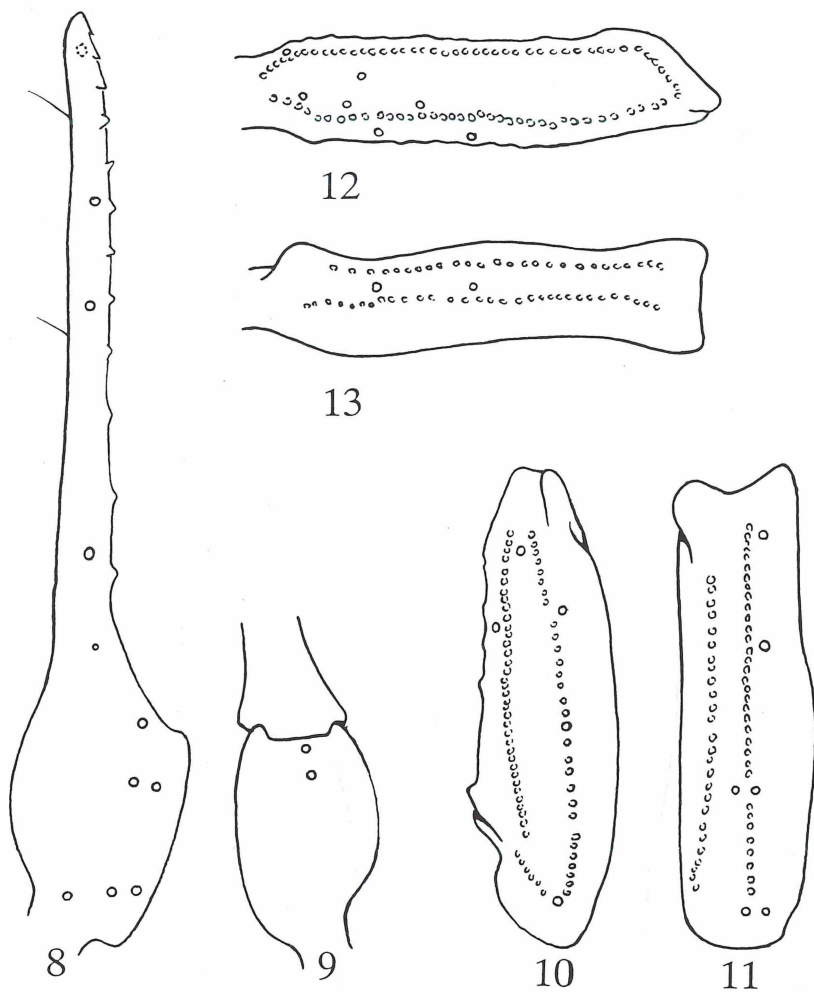


Fig. 1. Habitus of *Apistobuthus pterygocerus* Finn., adult ♀ from Andhur in Saudi Arabia, with a total length of 92 mm (from Vachon, 1960).



Figs 2-7. Trichobothrial pattern of *Apistobuthus pterygocerus* Finn. (♀ from Andhur, Saudi Arabia): 2 and 3 - chela, external and ventral aspects; 4 and 5 - tibia, dorsal and external aspects; 6 and 7 - femur, dorsal and external aspects.



Figs 8-13. Trichobothrial pattern of *Apistobuthus susanae* sp. n. (holotype ♀): 8 and 9 - chela, external and ventral aspects; 10 and 11 - tibia, dorsal and external aspects; 12 and 13 - femur, dorsal and external aspects.

Characters	<i>A. susanae</i> sp. n.	<i>A. pterygocercus</i>
Trichobothrial pattern	neobothriotaxic 37 trichobothria	orthobothriotaxic 39 trichobothria
Anal arc	10 teeth	4 teeth
Pectinial teeth	29-30 (♀)	36-38 (♀) 56 (♂)
N° series on pedipalps chela fingers	12	14

**M a t e r i a l e x a m i n e d.** Holotype female: Iran, Ahvaz, summer 1961 (T. Habibi leg.), deposited in the Zoologisches Museum Hamburg (ZMH Reg. No. A 27/98).

**ETYMOLOGY:** Patronym in honor of Dr. Susan Finnegan, who worked in the British Museum (Natural History) and was the author of the genus *Apistobuthus*.\*

Description is based on female holotype, measurements are presented below.

**C o l o r a t i o n.** Basically yellowish. Prosoma: carapace yellowish; eyes surrounded with black pigment. Mesosoma: yellowish. Metasoma: segments I to V yellowish. Vesicle of same colour as segment V; aculeus blackish. Venter yellow. Chelicerae yellow; fingers yellowish-red. Pedipalps: yellowish; fingers with the oblique rows of granules reddish. Legs yellowish without any diffuse fuscous spots.

**M o r p h o l o g y.** Carapace moderate to strongly granular with the anterior region more prominent in *A. pterygocercus*; anterior margin without any median concavity, straight. Anterior median superciliary keels strong; posterior median keels moderate; lateral keels strong. All furrows moderate to deep. Median ocular tubercle slightly anterior of centre. Eyes separated by more than one ocular diameter. Five pairs of lateral eyes; the first three of moderate size; the last two only vestigial. All lateral eyes very small when compared with the median eyes. Sternum triangular and narrow; much longer than wide. Mesosoma: tergites moderately to strongly granular. Three longitudinal keels all strongly crenulate in all tergites; the lateral keels curved. Tergite VII pentacarinat. Venter: genital operculum divided longitudinally. Pectines: pectinal tooth count 29-30; middle basal lamellae of the pectines not dilated. Sternites moderate to feebly granular, with elongated stigmata; four keels on sternites VI and VII, but only two keels on the other sternites; sternite III with two keels giving a triangular shape. Metasoma with the morphology of the segments similar to that of *A. pterygocercus*. Segment I with 10 crenulate keels; segment II round and much stronger than the others, with 10 keels, crenulate, with spinoid granules; segment III with 8 keels composed of strongly spinoid granules; the first three segments with a very smooth dorsal depression; segment IV with 8 moderate keels; segment V with only 3 keels composed of very strong spinoid granules and an anal arc composed of 10 teeth. Lateral intercarinal spaces moderate to feebly

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\* To my knowledge, Susan Finnegan is the only existing example of a lady to have erected a new genus within the order of Scorpiones

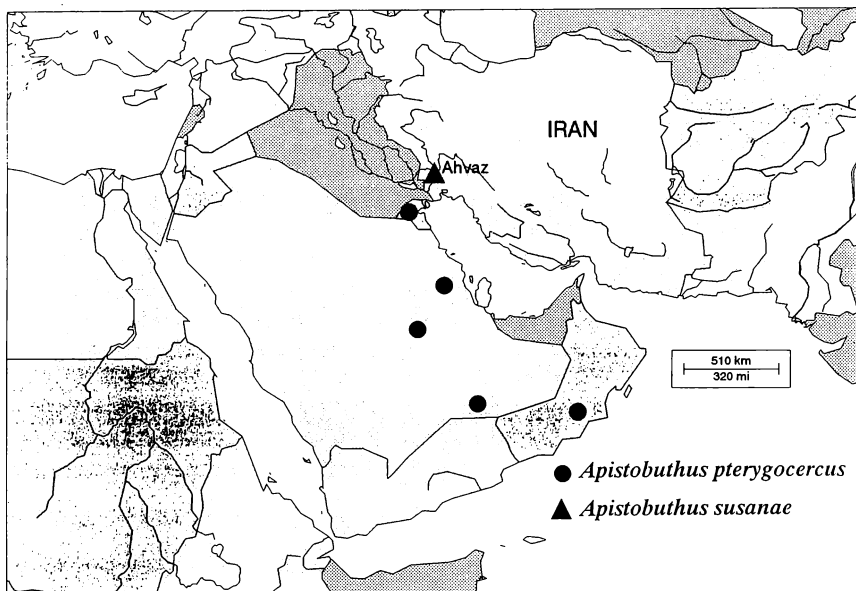


Fig. 14. Map showing the known distribution of *Apistobuthus pterygocercus* Finn. (Saudi Arabia, Oman Republic, Kuwait) and the type locality of *A. susanae* sp. n. (Iran).

granular. Telson, rather smooth with a curved aculeus; no subaculeus present. Cheliceral dentition as defined by Vachon (1963), corresponding to that of the family Buthidae; external distal and internal distal teeth the same length; ventral aspect of both fingers and manus covered with dense, long setae. Pedipalps: femur pentacarinat; tibia with 7 keels; chelae with 9 keels, moderate or vestigial; all faces moderate to feebly granular. Chela finger very long in comparison with the chela hand (see Measurements). Movable fingers with 12 oblique rows of granules. Internal and external accessory granules present. Legs: tarsus with numerous short fine setae ventrally. Presence of a small tibial spur on legs III and IV and two prolateral spurs on all four legs. Trichobothriotaxy: Trichobothrial pattern of Type A, neobothriotoxic minorant (or reduced) as defined by Vachon (1973): Femur with 4 internal, 5 dorsal and 2 external trichobothria;  $d_2$  being very small and placed almost on the internal surface. Tibia with 1 internal, 4 dorsal, and 6 external trichobothria;  $d_2$  and  $est$  are absent. Chela with 8 trichobothria in the hand and 7 on the fixed finger;  $eb$  extremely small and difficult to observe. Dorsal trichobothria of femur arranged in  $\beta$ -configuration (Vachon 1975). In the genus *Apistobuthus* this disposition is, however, somewhat atypical.

**Measurements** (in mm): Carapace: length 10.2, anterior width 8.5, posterior width 13.6; Metasomal segment I: length 7.1, width 7.9; Metasomal segment V: length 13.2, width 6.9, depth 4.3; Vesicle: width 4.5, depth 4.1; Pedipalp: femur

length 10.2, femur width 3.1, tibia length 11.5, tibia width 3.8, chelae length 23.4, chelae width 4.0, chelae depth 4.3; Movable finger: length 17.3.

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