

Study of morphometrical values of *Iranobuthus krali* (Scorpiones:Buthidae) from Fars province , Southern Iran

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ABSTRACT

Morphometrical study of *Iranobuthus krali* (Kovarik,1997) is given on the basis of 6 specimens collected from Fars province,Southern IranThe specimens was captured by forceps under UV light during field studies in this province.*Iranobuthus* is easily distinguished from *Compsobuthus* Vachon,1949 by it's size and it differs from genera *Androctonus* Hemprich & Ehremberg, 1828 ;*Hottentotta* and *Mesobuthus* Vachon,1950 in that the central median and posterior median carinae on the Carapace are joint and formation a continuous linear series of granules at the posterior margin.All the specimens are retained in the RRLS's collection.

Keywords: Morphometry, *Iranobuthus krali*, Fars province, Southern Iran

INTRODUCTION

Fars Province lies between 49° 30' to 56° 10' E and 26° 20' to 31° 45' N and covered nearly 133,100 square kilometers.It neighbours are Bushehr Province to the west, Hormozgan Province to the south,Kerman and Yazd Provinces to the east,Isfahan Province to the north and Kohgiluyeh & Boyer-Ahmad Province to the northwest. There are three distinct climatic regions in the Fars Province. First, the mountainous area of the north and northwest with moderate cold winters and mild summers. Secondly, the central regions, with relatively rainy mild winters, and hot dry summers. The third region located in the south and southeast,

has moderate winters with very hot summers. The average temperature of Shiraz the center of Fars Province is 16.8 °C, ranging between 4.7° and 29.2 °C. The geographical and climatic variations of the province causes varieties of plants, consequently, variation of wild life has been formed in the province. The latest studies showed that there are different species (almost 17 specie in this Province (Azizi 1999, Navidpour *et al* 2009, in press). The genus *Iranobuthus* was introduced by Kovarik in 1997.Its type species, *I. krali* was originally described from Sivand village of Fars Province in 1997 (Holotype, male is preserved in 70% alcohol and deposited in the Department of Invertebrate Zoology, National Museum, Praha). Vignoli *et al* 2003 also reported this scorpion from Kashan. He found several specimens inside a rudimental dry stone wall, 1 km east outside the city. We recently

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collected 6 adult specimens of *Iranobuthus krali* (5 male and one female) from Fars province during field studies in different parts of province. *Iranobuthus* is easily distinguished from *Compsobuthus* by its size and it differs from genera *Androctonus* Hemprich & Hrenberg, 1828; *Hottentotta* and *Mesobuthus* Vachon, 1950 in that the central median and posterior median carinae on the carapace joint and formation a continuous linear series of granules at the posterior margin (Farzanpay 1988, Habibi 1971). In the present paper, morphological and morphometrical characters of this Buthid scorpion are described.

MATERIALS AND METHODS

In order to study Fars scorpions, some samplings was carried out by night catch (UV light) method during September to November 2008. The specimens stored in 70% ethanol at the Department of scorpionology, Reference Laboratory of Scorpion Research (RRLS), Ahvaz, Iran. Pectinal teeth count and morphological study were performed under stereomicroscope using diagnostic keys for species typing (Farzanpay, 1988, Kovarik, 1997). Morphometric values of the scorpion were as follow: 1-Length and Measured width of carapace 2- Length and width of mesosoma, 3-Length and width of metasomal segments(I, II, III, IV and V), 4- Telson length, 5-Patella length and width, 6-Tibia length and width, 7-Moveable finger length and 8- Total length of the male and scorpions (Stahnke 1970)(Table 1).

RESULTS

SYSTEMATIC

Family Butidae C.L.Koch 1837

Iranobuthus Kovarik 1997

Type species. *Iranobuthus krali* Kovarik, 1997(Fet, 2000).

Material examined. Iran:Fars province: 1♀,5♂, Marvdasht, 29°57'59"N, 52°55'41"E, 1632.7 m, September 2008, Mashipour; Hayader; Bahrani & Habibzadeh.

Discription. The base color is yellow, with only the vicinity of the median and posterior eyes and the aculeus being black. Total length range: 73-81 mm(Figures 1 & 2). The carapace has keels and several solitary granules.Three pairs of lateral eyes are situated in a row, on the carapace margin. The pectinal teeth number is 33: 34 in both sexes (Male and Female). The third and fourth legs possess tibial and pedal spurs. The entire first and second tarsomeres are covered with long, dense hairs, whereas the tibia is hirsute only on the inner surface, and the trochanter and femure bear only several scattered hairs. The mesosoma has three median keels. The keels of individual tergites each terminate to a larger granule that overlaps the hind margin of the tergite. In addition, the hind margin bears a transverse row of granules. The metasoma bears several scattered hairs. The first and second metasomal segment possess 10 keels each, of which four keels on the first segment and six keels on the second segment are smooth and blunt. Only four dorsal keels on the second segment and four dorsal and two lateral keels on the first segment are covered with blunt granules which do not merge. The last granule is slightly larger and pointed.The third and fourth metasomal segments bear eight keels, of which the two dorsal ones are covered with minute,non-merging granules. The ventral surface of the fifth metasomal segment has one keels composed of minute granules and several scattered granules .The telson is smooth, without a subaculear tubercle and with several scattered hairs. Measurements of carapace, telson, segments of metasoma and of pedipalps are given in Table 1.

DISCUSSION

The mountainous area of Fars province has got an ecological priority for lapidicolous scorpion like *Iranobuthus krali*.

Table 1: *Iranobuthus krali*, measurements (mean) of representative adult male and female (values in mm).

Parameter	(mm)♀	(mm)♂
Total Length	80.2	77.8
Carapace		
Length	8.5	8.63
Width	6	5.52
Mesosoma		
Length	21	22.02
Width	8.5	8.69
Metasomal segs.		
Length I	6.1	6.51
Width I	4.8	4.55
Length II	6.4	7.12
Width II	4	4.4
Length III	6.6	7.65
Width III	4	4.4
Length IV	7.4	8.84
Width IV	4.1	3.96
Length V	9.5	9.88
Width V	4	3.66
Femur		
Length	8.7	8.54
Width	2	1.57
Patella		
Length	11	10.27
Width	3.4	2.4
Tibia		
Length	16.4	16.3
Width	3.6	3.7
Mov.Finger Length	11	10.87
Telson length	8	8.5

This monotypic genus was described recently (Kovarik, 1997) and the type locality is Sivand Village situated in the Fars Province. After that Vignoli *et al* 2003 also reported this scorpion from Kashan. The combination of characters differentiate genus *Iranobuthus* from all other genus in Buthidae.



Figure 1. Dorsal view of *Iranobuthus krali*, Fars Province-Iran



Figure 2. Ventral view of *Iranobuthus krali*, Fars Province-Iran.

The basic trichobothrial pattern is beta. The third and fourth legs bear tibial spurs, the pectines bear fulcra. The fixed finger of the chelicera has two ventral denticles and the movable fingers of pedipalps have cutting edges and four proximal to terminal granules (Sissom 1990, Kovarik 1997). The trichobothrium *eb* is situated on the fixed finger of pedipalps and does not reach on the manus as in genus *Kraepelinia* Vachon, 1974. The ventral surface of the metasoma lacks protuberances characteristic of the genus *Odontobutus* Vachon, 1905. The central median and posterior median carinae on carapace join to form a continuous linear series of granules at the posterior margin. The carapace lacks posterior lateral keels (Kovarik, 1997). *Iranobuthus krali* is lithophilus scorpion and captured in Rocky Mountains of central parts of Fars Province

together with another scorpions like *Compsobuthus matthiesseni* and *Mesobuthus eupeus*. There is not enough data about this monotypic genus. This Buthidae scorpion has a large size (8 cm) with big telson and its seems important in scorpionism of mauntianous area in central parts of Iran.

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