

## First record of *Mesobuthus eupeus* (C.L. Koch, 1839) from central Anatolia (Scorpiones: Buthidae)

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### Summary

*Mesobuthus eupeus* (C.L. Koch, 1839) has been collected in Kayseri, Nevşehir and Niğde provinces of Asia Minor. The species is here recorded for the first time in central Anatolia, which is the western limit of its distribution.

### Introduction

The genus *Mesobuthus* Vachon, 1950 occurs mainly in the Irano-Turanian subregion of the Palaearctic Region. In Anatolia, it is represented by three species: *M. caucasicus* (Normann, 1840), *M. eupeus* (C.L. Koch, 1839) and *M. gibbosus* (Brullé, 1832). Of these, Balkan-Anatolian species, *M. gibbosus* is common to the west of the Anatolian Diagonal, except for the shores of the Black Sea and the Sea of Marmara. However, the other two species, *M. caucasicus* and *M. eupeus*, have been so far known only from several localities in eastern and south-eastern Anatolia (Birula, 1917; Crucitti, 1993, 1999; Kinzelbach, 1984; Kovaçık, 1996; Vachon, 1951, 1966; Vachon and Kinzelbach, 1987).

*M. eupeus* is widespread in the Palaearctic Region; it ranges from eastern Anatolia to Georgia, Azerbaijan; east of the Caspian Sea it is found Turkmenistan, Uzbekistan, Tajikistan, Kazakhstan, Mongolia to China; it is also found in Iraq and southwards in to Iran, Afghanistan and Pakistan (Kinzelbach, 1975; Fet, 1989; Kovaçık, 1998).

Our purpose is to give some new distribution information for *M. eupeus* in Anatolia, including the first record for central Anatolia.

### Materials and Methods

During our 1995-2000 studies of the Turkish scorpiofauna, specimens of *M. eupeus* were

collected in three provinces (Kayseri, Nevşehir and Niğde) of central Anatolia (Fig. 1). The samples were placed in 70 % ethanol and have been deposited in the first author's collection in the scorpion section of the Zoology Department Museum, ZDEU-S, Ege University, İzmir, Turkey. All measurements were taken using callipers, to the nearest 0.1 mm.

### Result

*Specimens examined:* Total 31 specimens (14 ff, 17 m). **Kars**, near Castle of Kars, 1 m (12.IX.2000); Sarykamış district, 4 ff, 2 mm (16.IX.2000); **Kayseri:** Kocasinan, Boztepe 2 ff (ZDEU-S 1998/05-06; 30.V.1998); **Nevşehir:** Derinkuyu, Goble stream vicinity 2 mm (ZDEU-S 1997/44-45; 05.VIII.1997); **Niğde:** Kayseri road, c. 10 km, 1 f, 2 mm (1996/24-26; 2.V.1996); between Ovacık and Uluadaç villages, 1 f, 2 mm (1996/27-29; 3.V.1996); Gümüşler 1 f+1 m (1997/38-39; VI.1997); near Gümüşler Dam Lake 2 ff (1997/33-34; 07.V.1997); near Koyunlu district, 1 m (1997/49; 15.XII.1997); campus of Niğde University, 1 m (1998/44; 15.X.1998); Bor district, Yediödar vicinity, 2 ff (1995/13-14; 22.X.1995); Balçık village, 1 m (1996/102; 20.VII.1996); Pınarbaşı vicinity, 1 f, 2 mm (1996/14, 16-17; 24.III.1996); Bahçeli district, 1 m (1996/18; 23.IV.1996).

*Habitat:* All these samples were collected understones, except for one found at night by UV lamp. The localities, at the altitudes of 900-1300

Character	females					males				
	<i>n</i>	<i>x</i>	min	max.	±SD	<i>n</i>	<i>x</i>	min	max.	±SD
Total length	5	46,1	41,5	49,3	2,89	5	36,88	31,8	39,7	3,54
Metasoma length	5	28,2	27,0	29,5	1,15	5	22,42	18,5	25,0	2,66
Carapace length	5	5,6	5,2	5,9	0,26	5	4,24	3,7	4,8	0,42
Pedipalp femur length	5	4,5	4,3	4,7	0,18	5	3,28	2,7	3,6	0,36
Pedipalp femur width	5	1,6	1,4	1,7	0,13	5	1,20	1,0	1,4	0,14
Pedipalp chela length	5	9,1	9,0	9,3	0,13	5	7,26	6,0	8,1	0,78
Pedipalp chela manus width	5	2,4	2,4	2,5	0,05	5	1,88	1,2	2,3	0,43
Fixed finger length	5	4,1	3,5	4,5	0,39	5	3,40	3,0	3,8	0,29
Movable finger length	5	5,6	5,0	5,9	0,35	5	4,68	3,8	5,3	0,56
Metasomal segment III length	5	3,9	3,5	4,5	0,40	5	3,06	2,5	3,4	0,35
Metasomal segment III width	5	3,4	3,3	3,5	0,11	5	2,70	2,2	3,0	0,33
Metasomal segment V length	5	6,1	5,7	6,6	0,36	5	4,84	4,0	5,4	0,52
Metasomal segment V width	5	3,2	3,0	3,4	0,18	5	2,56	2,2	2,9	0,25

Table.1. Some measurements taken from females and males specimens of *M.eupeus*.

m, have a typical continental climate and step vegetation.

### Taxonomic comments

*M. eupeus* and *M. caucasicus* have 8 carinae on metasomal segment IV and are thus distinguished from *M. gibbosus* with 10 carinae on this segment. *M.eupeus* differs from *M. caucasicus* in the number of oblique rows of granules on the movable finger of the pedipalp (usually 12 and 13-14, respectively); and also by the total length of the adult (up to 50 mm and 60-80 mm, respectively).

Adult females of *M. eupeus* are larger than males (Table.1). Males have a higher number of pectinal teeth (21-28) than females (16-23) and therefore have longer pectines. The metasoma in males is longer and wider than in females of the same total length.

Hitherto, *M. eupeus* has been known only from eastern and south-eastern Anatolia. Braunwalder & Fet (1999) mentioned that some populations of *Mesobuthus* in central Anatolia may belong to *M. eupeus*. Here, we report *M. eupeus* for the first time in this region, and therefore confirm their suspicion. On the other hand, *M. gibbosus* is common and sympatric with *M. eupeus* in central Anatolia. Thus, central Anatolia forms the western limit of the geographic range of *M. eupeus*.

According to Birula (1917), specimens from Kars Province and its environs belong to the

nominotypical subspecies while neighbouring Iraq is inhabited by *M. e. mesopotamicus* (Penther, 1912). Kovačik (1996, 1998) considered the nominotypical form to be present in Anatolia. Comparing the central Anatolian samples with those from Kars in our collection, the former has more light yellow colour on both ventral and dorsal surfaces and darker pigmentation on the carapace and mesosoma; no other morphological differences were found.

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Fig.1. Records of *Mesobuthus eupeus* in Anatolia. 1 Kars (centre), 2 Sarýkamýþ district, 3 Kayseri, 4 Nevþehir, 5 Niðde. Triangles = new data; circles = previous records (Birula, 1917; Vachon, 1951; Kinzelbach, 1984; Crucitti, 1993;).

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