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Baloorthochirus becvari gen. et sp. n. from Pakistan, and taxonomic position of *Orthochirus luteipes* (Scorpiones: Buthidae)

František Kovařík

U Botiče 1/1389, CZ–140 00 Praha 4, Czech Republic

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Abstract. *Baloorthochirus* gen. n. with the type species *B. becvari* sp. n. is described. The new genus is related to the following genera: *Birulatus* Vachon, 1974 from which it differs in the presence of keels on metasomal segments I – IV; *Butheolus* Simon, 1882 from which it differs in telson morphology and absence of trichobothrium d2 of the pedipalp femur on dorsal surface but its presence as internal trichobothrium; *Orthochirus* Karsch, 1891 and *Paraorthochirus* Lourenco et Vachon, 1995 from which it differs in the presence of granulation on 5th metasomal segment. *Orthochirus luteipes* Roewer, 1943 is here revised and its lectotype designated.

Taxonomy, descriptions, new genus, new species, faunistics, Scorpiones, Buthidae, *Baloorthochirus becvari* sp. n., *Orthochirus luteipes*, Pakistan, India

Baloorthochirus gen. n. (Figs 1–7, Table 1)

TYPE SPECIES. *Baloorthochirus becvari* sp. n.
ETYMOLOGY. Masculinum; denotes affinity to the genus *Orthochirus* and the geographic distribution.
DESCRIPTION. A combination of characters differentiates this genus from all other genera of the family Buthidae. The basic trichobothrial pattern is beta (Fig. 3 and Sissom 1990: 70, fig. 3.3); legs III and IV have well developed tibial spurs; pectines with fulcra (Sissom 1990: 92, fig. 3.17D); dentate margin of pedipalp-chela movable finger with granules distinct, divided into rows, and spanning the length of the finger (Fig. 6); carapace, in lateral view, with a distinct downward slope from median eyes to anterior margin (Fig. 5 and Sissom 1990: 92, fig. 3.17F). This complex of characters is exhibited only by the genera *Birulatus* Vachon, 1974 from Jordan, *Butheolus* Simon, 1882 from Arabia, *Orthochirus* Karsch, 1891 from North Afrika and Arabia to India, and *Paraorthochirus* Lourenco & Vachon, 1995 from Iran. Differences from these genera are given in the key below. *Baloorthochirus* gen. n. is also characterized by the number and distribution of trichobothria on the pedipalps (Figs 3 and 6), 9 cutting edges on the movable fingers of pedipalps (Fig. 6), mesosoma with three inconspicuous keels, and other features included in the description of *Baloorthochirus becvari* sp. n. below.
AFFINITIES. *Baloorthochirus* gen. n. differs from just noted genera by features given in the key, which is integrated into the key of genera of the family Buthidae in Sissom (1990: 97):
Carapace, in lateral view, with a distinct downward slope from median eyes to anterior margin (Sissom 1990: 92, fig. 3.17F):

Metasomal segments I–IV without keels ..... *Birulatus*
Metasomal segments I–IV with keels 1
1. Metasomal segment V punctate 2
– Metasomal segment V granulate (Figs 1 and 2) 3
2. Trichobothrium d2 of pedipalp femur absent on dorsal surface but usually present as internal trichobotrium (Fig. 11) ..... *Orthochirus*
– Trichobothrium d2 of pedipalp femur present on dorsal surface (Lourenco & Vachon 1995: 302 fig. 10 and 303 fig. 16) ..... *Paraorthochirus*
3. Vesicle of telson narrow and smooth (Fig. 4). Trichobothrium d2 of pedipalp femur absent on dorsal surface but present as internal trichobotrium (Fig. 3) ..... *Baloorthochirus* gen. n.
– Vesicle of telson inflate, granulate, often with rudimental subacular tubercle (Vachon 1980: 254 planche B). Trichobothrium d2 of pedipalp femur present on dorsal surface ..... *Butheolus*

Baloorthochirus becvari sp. n. (Figs 1–7, Table 1)

TYPE MATERIAL. Holotype – male preserved dry, labelled Pakistan, SE Balochistan, Khurkhra, 38 km S Uthal, 24.IV.1993, leg. Bečvář Stanislav. Deposited in the author's collection, Type material will be lately deposited in Department of Invertebrate Zoology, National Museum, Prague.

Tab. 1. Measurements in millimeters of *Orthochirus luteipes* and *Baloorthochirus becvari* gen. et sp. n. Line denoted „pectinal teeth" contains numbers of both left and right teeth separated by a colon

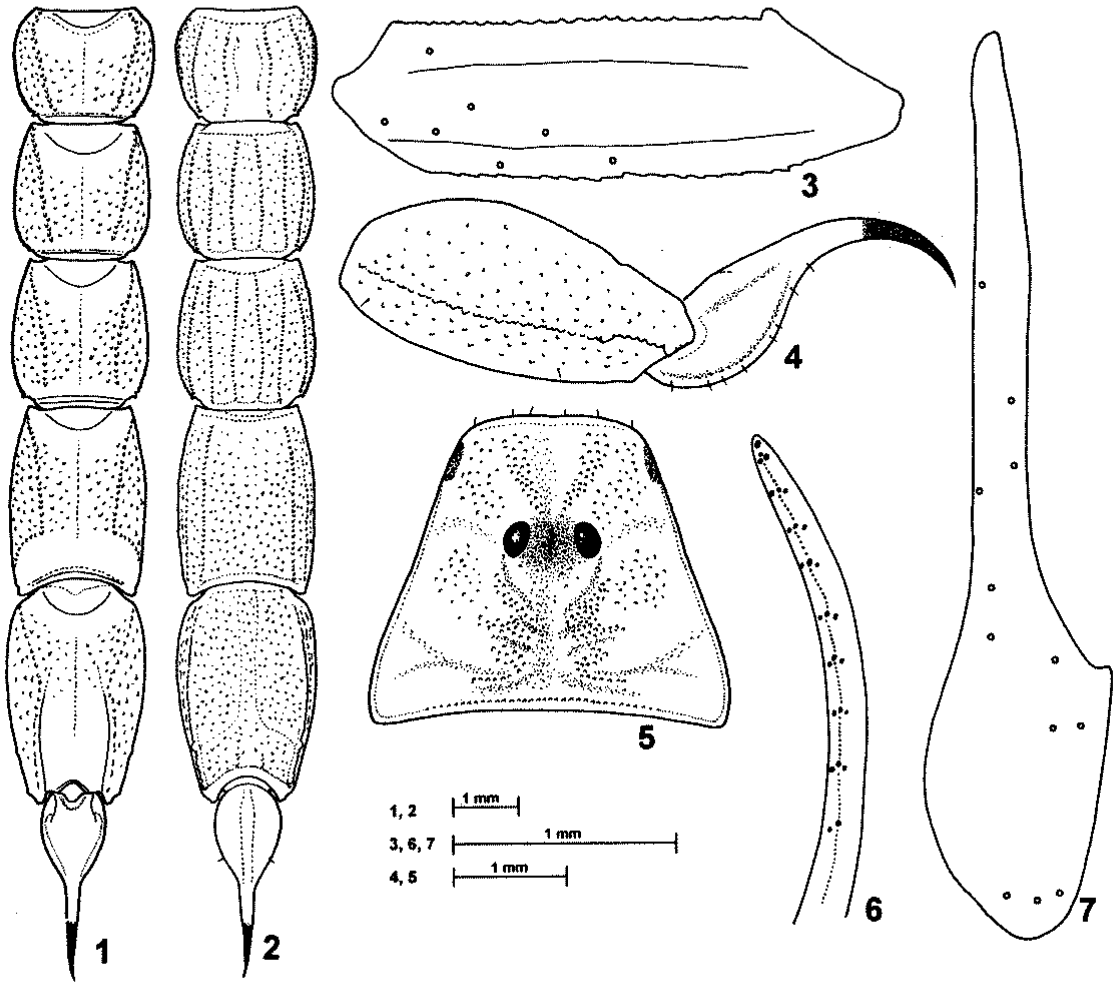
		Orthochirus luteipes lectotype male	*Orthochirus luteipes* paralectotype No. 1 female	*Baloorthochirus becvari* gen. n., sp. n., holotype
Total	length	29.6	34.5	23.4
Carapace	length	3.1	3.8	2.7
	width	3.6	4.6	3.4
Metasoma	length	19.1	18.4	15.0
segment I	length	2.1	2.2	1.7
	width	2.5	3.0	2.1
segment II	length	2.6	2.6	2.1
	width	2.3	3.1	2.0
segment III	length	2.8	2.8	2.3
	width	2.4	3.3	2.1
segment IV	length	3.4	3.6	2.9
	width	2.8	3.4	2.1
segment V	length	4.0	4.1	3.2
	width	3.3	3.5	2.2
telson	length	3.3	3.3	2.9
Pedipalp				
femur	length	2.7	2.1	2.5
	width	0.7	1.0	0.7
patella	length	3.2	3.3	2.7
	width	0.8	1.1	0.9
tibia	length	3.5	5.0	3.9
	width	0.9	1.0	0.6
finger m.	length	2.1	3.3	2.6
Pectinal teeth		20:20	17:18	19:19

TYPE LOCALITY. Pakistan, SE Balochistan, Khurkhra, 38 km S Uthal. The specimen was collected at night in semidesert-type environment.

ETYMOLOGY. Named after the collector.

DESCRIPTION. The length is 23.4 mm. The metasoma is shown in Figs 1–2 and carapace in Fig. 5. Measurements of the carapace, telson, segments of the metasoma and of the pedipalps, and numbers of pectinal teeth are given in Table 1. There are 19 pectinal teeth. For the position and distribution of trichobothria on the pedipalps see Figs 3 and 7.

Color is yellow to yellowish-brown, with a dark spot on the posterior part of the carapace behind the median eyes. Inconspicuous dark spots are present also on the underside of metasomal segments IV and V. Mesosoma has one inconspicuous medial keel and two other keels which are even less developed and can be readily traced only on the mesosomal segment VI. Metasomal segments with keels (Figs 1 and 2). The dorsal surface of segments III through V has a medial groove. The surface of all metasomal segments is densely granulated all around. The



Figs 1–7. *Baloorthochirus becvari* gen. et sp. n. (holotype). Fig. 1. Metasoma dorsal, Fig. 2. Metasoma ventral, Fig. 3. Femur dorsal, Fig. 4. 5th metasomal segment and telson, Fig. 5. Carapace, Fig. 6. Movable finger of pedipalp, 7. Tibia external.

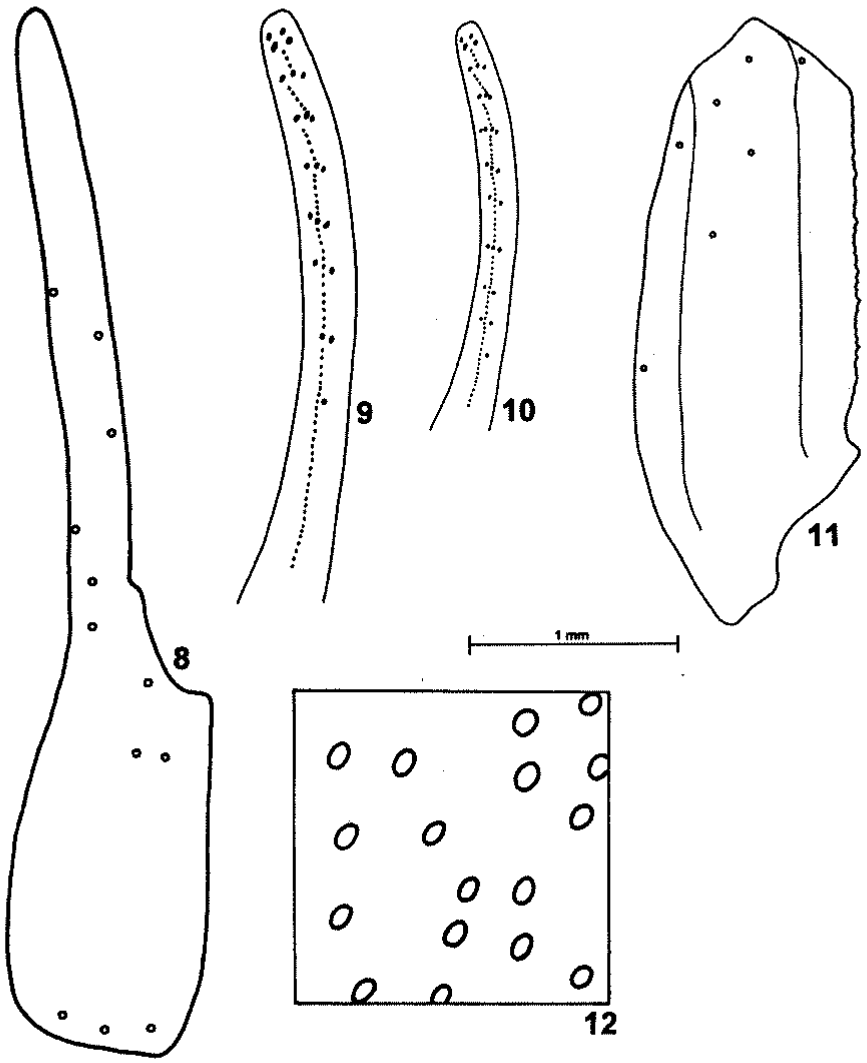
telson is not granulated; it is smooth and shiny, and on the vesicle and the frontal (yellow) part of aculeus is covered by short, dense, light-colored hairs. The telson is very similar to that in the genus *Orthochirus*.

AFFINITIES. Differential diagnosis of the new species is included in the generic diagnosis.

Orthochirus luteipes Roewer, 1943 (Figs 8–12, Table 1)

Orthochirus luteipes Roewer, 1943: 209.
Orthochirus fuscipes luteipes: Minnocci, 1974: 28.

MATERIAL. Lectotype (male) and paralectotype No. 1 (female) – by present designation – preserved in alcohol and labelled S. Dekan, Anamalei. The lectotype and paralectotype (coll. Roewer No. 2124, Scorpions No. 21) are deposited in the collection of Forschungsinstitut und Naturmuseum Senckenberg, Frankfurt am Main.



Figs 8–12. *Orthochirus luteipes*, Figs 8, 9 and 12. female (paralectotype), Figs 10–11. male (lectotype). Fig. 8. Tibia external, Figs 9. and 10. Movable fingers of pedipalp, Fig. 11. Femur dorsal, Fig. 12. 5th metasomal segment dorsal.

TYPE LOCALITY. Anamalei, South Dekan, India.

COMMENTS. The length is 29.6 mm in the lectotype (male) and 34.5 mm in the paralectotype No. 1 (female). Measurements of the carapace, telson, segments of the metasoma and segments of the pedipalps, and numbers of pectinal teeth are given in Table 1. There are 20 pectinal teeth in the male and 17–18 pectinal teeth in the female. For the position and distribution of trichobothria on the pedipalps see Figs 8 and 11.

Movable fingers have different numbers of internal and external granules in the lectotype (Fig. 10) and paralectotype (Fig. 9).

Mesosoma has three medial keels, which in the male are apparent only on the last three segments. Taxonomic position. Roewer (1943: 209) based the species on 3 males and 2 females, without designating a holotype. I have been able to examine two of the type specimens and have designated them the lectotype (male) and paralectotype No. 1 (female). The lectotype was examined in 1977 by Vachon, who numbered it VA 2182.

Orthochirus luteipes is not mentioned in recent literature. It is not included in Tikader & Bastawade's monograph Scorpions of India (Tikader & Bastawade 1983), although pages 113 through 140 cover the genus

Orthochirus in India and include a description of the new species *Orthochirus krishnai* Tikader et Bastawade, 1983.

DISCUSSION. I believe *Orthochirus leteipes* Roewer, 1943 to be a valid species, but consider a revision of the entire genus necessary for a final decision because currently some species are inadequately characterized.

Taxonomy of *Orthochirus* is difficult due to the amount of variation within species and even within individual populations, which includes characters ordinarily used to delimit genera, e. g. the number of cutting edges and external and internal granules of movable fingers of pedipalps (Figs. 9 and 10), and the number of keels on mesosomal segments. Study of 40 specimens belonging to at least two species from Afghanistan (Kovařík 1993) convinces me that also coloration contributes to the intraspecific variability in *Orthochirus*.

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