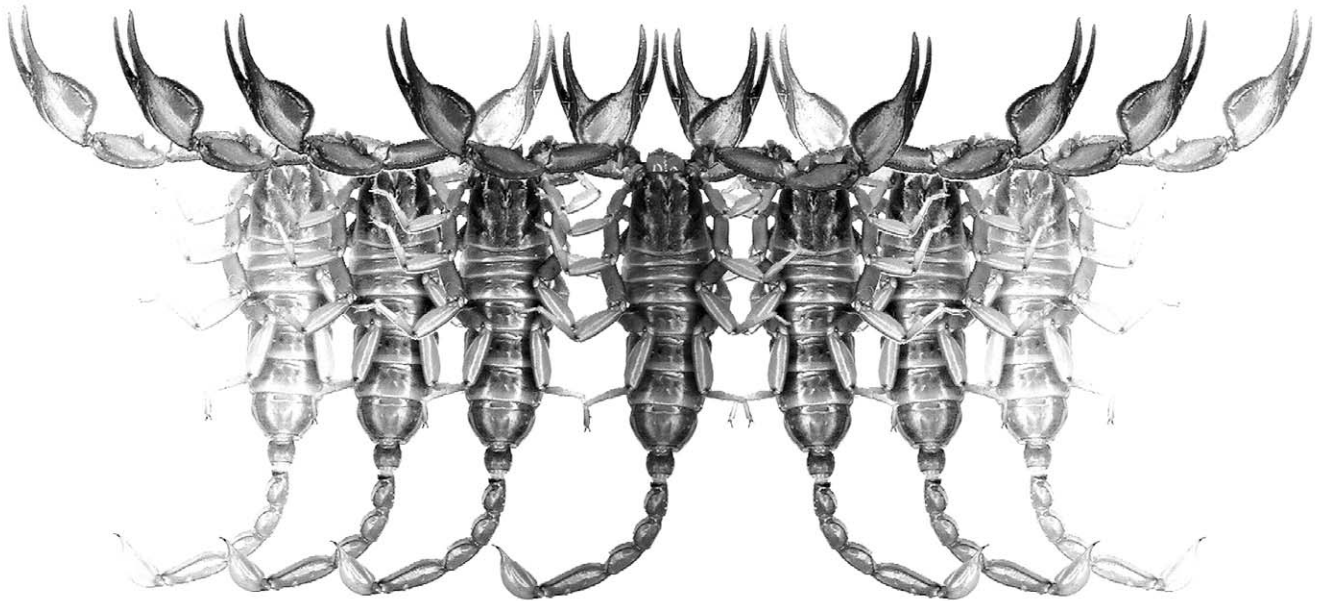


Euscorpium

Occasional Publications in Scorpiology



Butheoloides grosseri sp. n. (Scorpiones: Buthidae)
from Uganda

František Kovařík

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Butheoloides grosseri sp. n. (Scorpiones: Buthidae) from Uganda

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Summary

A new species *Butheoloides grosseri* sp. n. is described and fully complemented with color photos of female holotype, as well as its habitat. This is the first species assigned to this genus from Uganda and represents southern limits of genus *Butheoloides* distribution.

Introduction

Genus *Butheoloides* Hirst, 1925 with the type species *B. maroccanus* Hirst, 1925 is morphologically uniform and all its species were described directly in the genus except for *Anoplobuthus parvus* Caporiacco, 1932 (= *Butheoloides maroccanus* Hirst, 1925, syn. by Vachon, 1948: 206 /1952: 115/) and *Uroplectes silvestrii* Borelli, 1913 (= *Butheoloides silvestrii* (Borelli, 1913), see Kovařík & Mazuch, 2011: 8 and Chiarle et al., 2012: 19–22). Actually the genus included 20 species mainly from north and west Africa respectively from Algeria, Burkina Faso, Cameroon, Chad, Côte d' Ivoire, Ghana, Mali, Mauritania, Morocco, Nigeria, and Senegal. *Butheoloides hirsti* Lourenço, 1996 lives in Sudan and two species *B. nuer* Kovařík, 2015 and *B. polisi* Lourenço, 1996 are reported from Ethiopia (Kovařík, 2015). The *B. grosseri* sp. n. from Uganda represents the southern limits of the genus *Butheoloides* distribution in Africa.

Methods, Material & Abbreviations

Nomenclature and measurements follow Stahnke (1971), Kovařík (2009), and Kovařík & Ojanguren Affilastro (2013), except for trichobothriotaxy (Vachon, 1974), and sternum (Soleglad & Fet, 2003). *Morphometrics*: D, depth; L, length; W, width.

Systematics

Family Buthidae C. L. Koch, 1837

Genus *Butheoloides* Hirst, 1925

Butheoloides grosseri Kovařík, sp. n.

(Figures 1–24, Table 1)

<http://zoobank.org/urn:lsid:zoobank.org:act:D1B64F17-F7C4-46B4-BA26-09B056C9BDF>

TYPE LOCALITY AND HOLOTYPE REPOSITORY. Uganda, Kapchorwa District, 5 km NE Atari, 01.47633°N 034.42011°E, 1086 m a.s.l., FKCP.

TYPE MATERIAL. Uganda, Kapchorwa District, 5 km NE Atari, 01.47633°N 034.42011°E, 1086 m a.s.l., 26.I.2016, 1♀ holotype preserved in 80% ethanol, leg. W. Grosser, FKCP (František Kovařík, private collection, Prague, Czech Republic).

ETYMOLOGY. The selected epithet is a patronym honoring a Czech entomologist Walter Grosser, the collector of the holotype of the new species. He is also the author of Figure 24.

DIAGNOSIS (based on a single adult female). Adult size standard for genus (23.65 mm). Coloration almost black, only metasomal segments I–III, telson, and patella and femur of pedipalp orange to reddish brown; legs yellow with dark spot on patella; chelicerae yellow slightly reticulated in posterior part. Pedipalp movable fingers with 10 rows of granules with external and internal accessory granules and short apical row. Pectine teeth number 16. Ventral and lateral surfaces of metasomal segments sparsely punctated, lateral and dorsal surfaces also bumpy and granulated. Pedipalp chela smooth. Tarsomere I of all legs without bristlecombs.

DESCRIPTION. The female holotype is 23.65 mm long. The habitus is shown in Figs. 1–2. For position and distribution of trichobothria of pedipalps see Figs. 13–16 and 18–19. There is trichobothrium *Esb* located far from trichobothria *Et* and *Est*. The distance between trichobothria *Esb* and *Est* on the femur of pedipalp is twice longer than between *Est* and *Et* (Fig. 13). The trichobothrium *d2* is situated on the dorsal surface (Fig. 19).



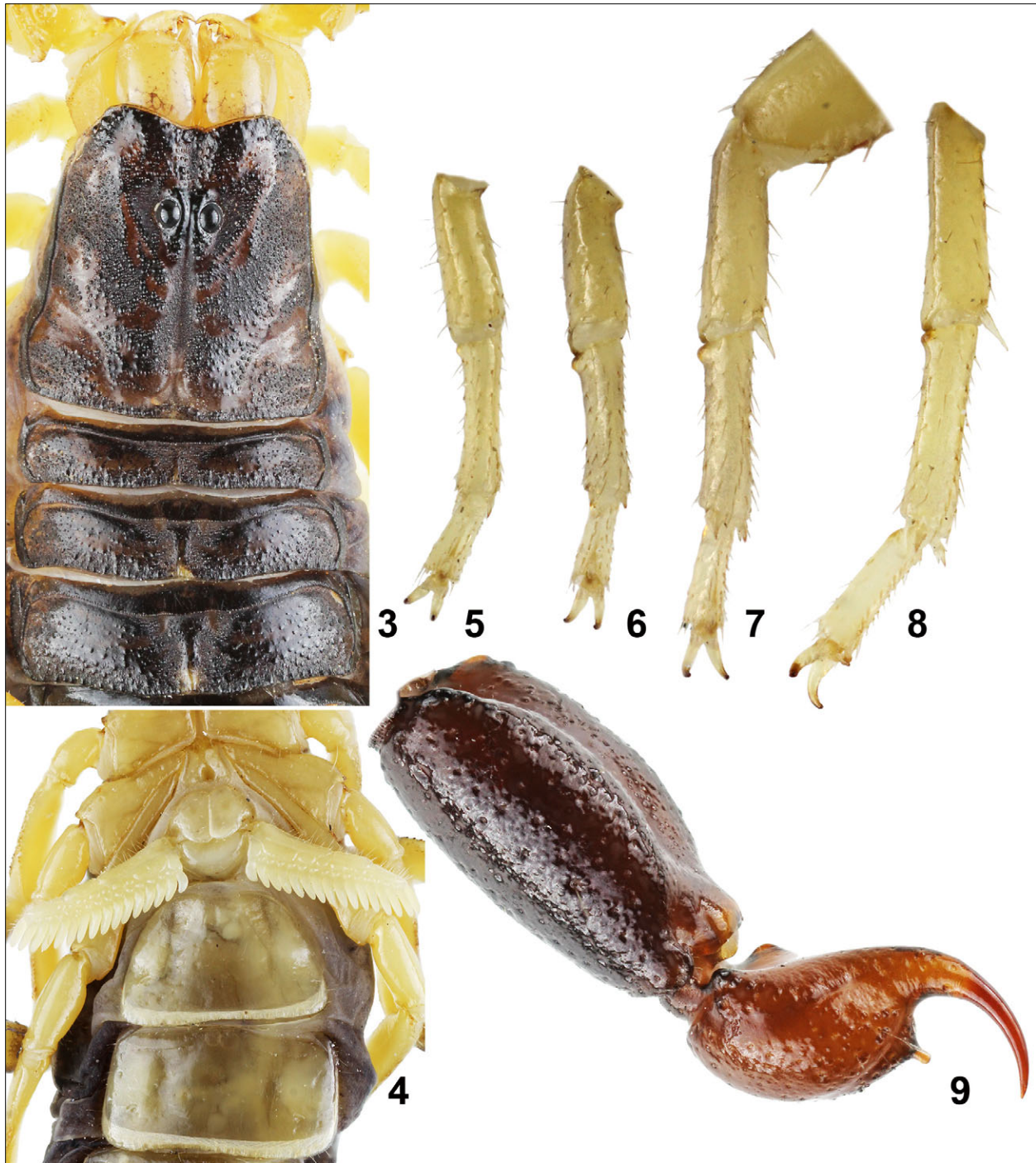
Figures 1–2: Holotype female of *Butheoloides grosseri* sp. n., dorsal (1) and ventral (2) views. Scale bar: 5 mm.

Measurements of the carapace, telson, segments of the metasoma and segments of the pedipalps are given in Table 1.

Coloration (Figs. 1–2). Almost black, only metasomal segments I–III, telson, and patella and femur of pedipalp are uniformly orange to reddish brown with a dark spot indicated on patella ventral (Fig. 17); legs are yellow with a dark spot on patella; and chelicerae yellow slightly reticulated in anterior part. The manus of chela is brown to black, reticulated, fingers are yellowish.

Chelicerae (Fig. 3). With dentition typical for the genus, teeth sharp. Tegument basally smooth and shiny, anteriorly densely granulated.

Carapace and mesosoma (Figs. 1–4). The carapace is slightly trapezoidal (narrower anteriorly) and approximately as long as wide; anterior margin strongly convex, with some short microsetae. The carapace is covered by large granules. Carinae are absent. Tergites I–VI are rudenessly granulated with conspicuous coarsely granular medial carina. Tergite VII is granulated, pen-

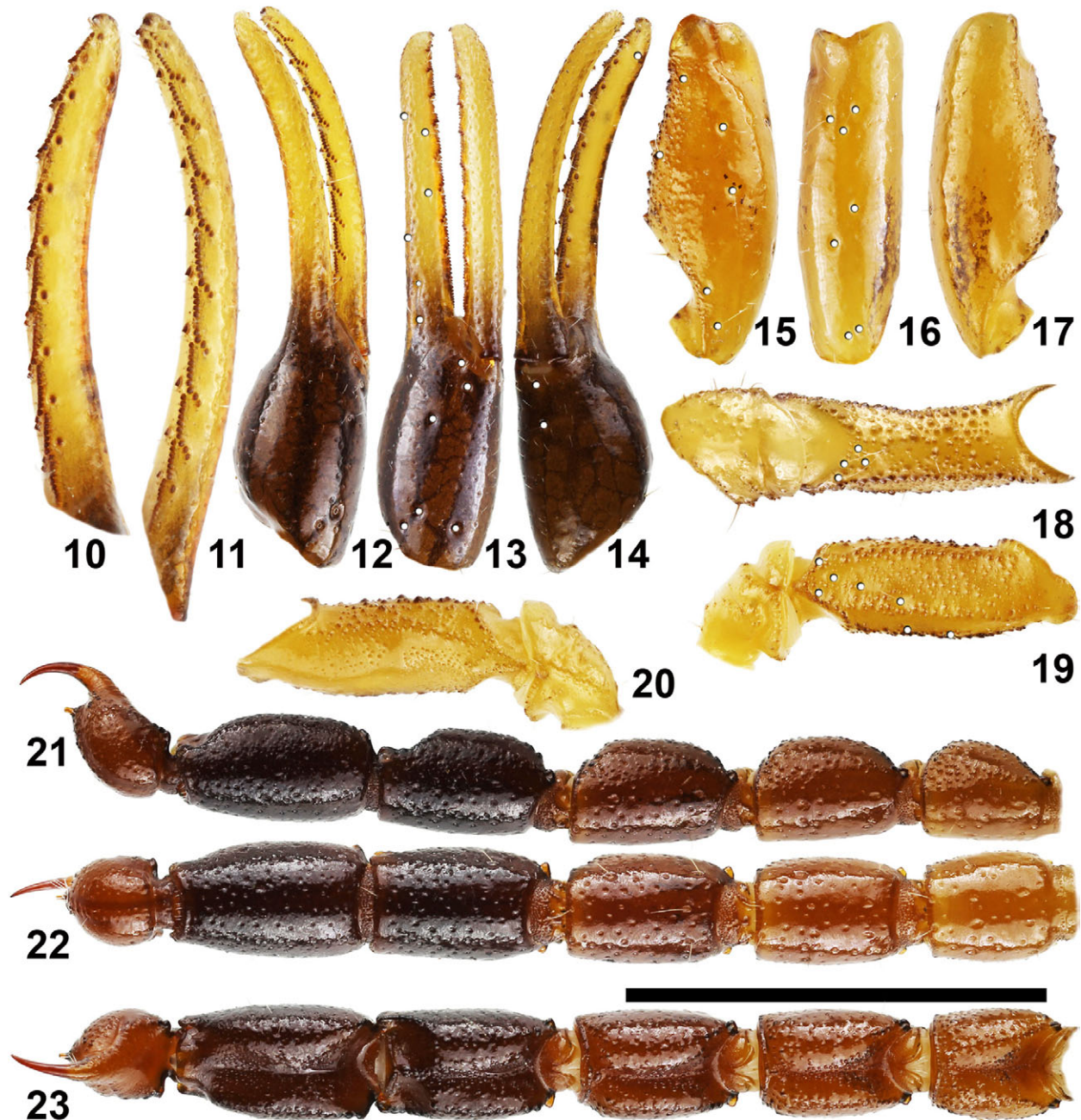


Figures 3–9: Holotype female of *Butheoloides grosseri* sp. n., chelicerae, carapace and tergites I–III (3), sternoplectoral region and sternites III–IV (4), left legs I–IV, retrolateral aspect (5–8), metasomal segment V and telson lateral (9).

tacarinated, with the carinae only indicated. The pectinal tooth count is 16 in the female holotype. The pectine marginal tips extend to end of the third sternite. The pectines have three marginal lamellae and 8 middle lamellae. The lamellae and fulcra bear numerous light setae. All sternites are smooth. Sternum standard for the

genus: type 1, relatively big, and widely pentagonal in shape. Posterior depression very large, deep, and circular.

Metasoma and telson (Figs. 9, 21–23). All segments with obsolete ventrolateral carinae. Other carinae are absent. Ventral and lateral surfaces of metasomal seg-



Figures 10–23: Holotype female of *Butheoloides grosseri* sp. n. **Figures 10–20.** Segments of right pedipalp. Fixed (10) and movable (11) fingers. Chela, dorsal (12), external (13), and ventral (14) views. Pedipalp patella, dorsal (15), external (16), and ventral (17) views. Trochanter and femur internal (18), dorsal (19) and ventral (20) views (14). Trichobothrial pattern is indicated in Figures 13–16 and 18–19. **Figures 21–23.** Metasoma and telson, lateral (21), ventral (22), and dorsal (23) views. Scale bar: 5 mm (21–23).

ments sparsely punctated, lateral and dorsal also bumpy/tuberculated and granulated. Dorsal surfaces with median furrow and coarsely granulated. The metasoma and telson are very sparsely setose, the telson is tuberculated, with a characteristic subaculear tubercle. The vesicle is bulbous, oval. The aculeus shorter than the vesicle, strongly curved.

Pedipalps (Figs. 10–20). The pedipalps are very sparsely setose. Femur densely granulated by big granules, with four developed granulate carinae. Patella almost smooth without carinae; only internal surface rudenessly granulated by big granules. Chela elongate; manus approximately as wide as patella (ratio 1.052), with carinae absent, smooth; tegument smooth and glossy; fin-

DIMENSIONS (MM)		<i>B. grosseri</i> sp. n. ♀ holotype	<i>B. nuer</i> ♂ holotype	<i>B. polisi</i> ♂ topotype	<i>B. polisi</i> ♂ topotype
Carapace	L/W	2.550 / 2.575	2.500 / 2.400	2.450 / 2.400	2.500 / 2.300
Mesosoma	L	7.850	7.800	7.700	7.100
Tergite VII	L/W	1.850 / 2.575	1.830 / 2.600	1.900 / 2.400	1.660 / 2.450
Metasoma & telson	L	13.250	15.100	14.250	14.050
Segment I	L/W/D	1.700 / 1.450 / 1.250	2.000 / 1.450 / 1.250	1.900 / 1.460 / 1.250	1.850 / 1.350 / 1.200
Segment II	L/W/D	1.975 / 1.400 / 1.325	2.300 / 1.430 / 1.350	2.200 / 1.450 / 1.350	2.200 / 1.360 / 1.250
Segment III	L/W/D	2.100 / 1.450 / 1.375	2.450 / 1.450 / 1.350	2.400 / 1.450 / 1.400	2.400 / 1.400 / 1.250
Segment IV	L/W/D	2.325 / 1.450 / 1.375	2.600 / 1.450 / 1.350	2.550 / 1.450 / 1.400	2.450 / 1.400 / 1.250
Segment V	L/W/D	2.575 / 1.512 / 1.400	2.950 / 1.500 / 1.400	2.750 / 1.550 / 1.400	2.850 / 1.420 / 1.250
Telson	L/W/D	2.275 / 1.200 / 1.037	2.800 / 1.200 / 1.050	2.450 / 1.250 / 1.050	2.300 / 1.150 / 1.000
Pedipalp	L	8.725	9.300	9.000	8.650
Femur	L/W	2.075 / 0.675	2.200 / 0.680	2.150 / 0.700	2.100 / 0.650
Patella	L/W	2.550 / 0.950	2.750 / 0.950	2.700 / 0.930	2.550 / 0.850
Chela	L/W	4.100 / 1.000	4.350 / 1.200	4.150 / 1.150	4.000 / 0.950
Movable finger	L	2.725	2.550	2.450	2.420
Total	L	23.65	25.40	24.40	23.65

Table 1: Comparative measurements of holotype female of *Butheoloides grosseri* sp. n. and males of both Ethiopian species of *Butheoloides*.



Figure 24: The type locality of *Butheoloides grosseri* sp. n.

gers long (ratio of chela length/ movable finger length is 1.5), subtly curved and both fixed and movable fingers with 10 principal rows of granules which terminate in two external granules, and each row also has one internal granule. Movable fingers bear an apical row of

four granules and two accessory terminal granules.

Legs (Figs. 5–8). The tarsomeres bear two rows of macrosetae on the ventral surface and several macrosetae on the other surfaces; bristle combs absent. Femur bears only solitary macrosetae. Femur rudenessly gran-

ulose, with carinae vestigial. Patella rather smooth, with carinae vestigial to absent. Tibial spurs present and long on the third and the fourth legs.

AFFINITIES. *B. grosseri* sp. n. could be differentiated from other species of the genus by the separate areas of distribution. It is the first species of the genus reported from Uganda. In the region, respectively in Sudan and Ethiopia, there live three other species *B. hirsti* Lourenço, 1996, *B. nuer* Kovařík, 2015 and *B. polisi* Lourenço, 1996.

B. hirsti was based on one uncolored specimen (Lourenço, 1996: 89–93, figs. 2, 5, 8, 14–18), but Lourenço differentiates *B. hirsti* from other species of the genus *Butheoloides* according to the presence of carinae on carapace which are absent in all *Butheoloides* including *B. polisi* (see fig. 6 in Kovařík, 2015: 2) described by Lourenço in the same paper as *B. hirsti*.

B. nuer can be unequivocally separated by: **1)** chelicerae slightly reticulated in posterior part in *B. grosseri* sp. n. (Fig. 3) and in anterior part in *B. nuer* (fig. 3 in Kovařík, 2015: 2); **2)** Pedipalp movable fingers with 10 principal rows of granules in *B. grosseri* sp. n. (Fig. 11) and 11 principal rows of granules in *B. nuer* (fig. 15 in Kovařík, 2015: 3); **3)** femur of all legs bears a dark spot in *B. grosseri* sp. n. (Fig. 1) but legs yellow to orange without dark spots in *B. nuer* (fig. 1 in Kovařík, 2015: 2).

B. polisi can be unequivocally separated by: **1)** coloration of mesosoma, carapace, and manus of chela much more dark in *B. grosseri* sp. n. than in *B. polisi* (Figs. 1–3 versus figs. 5–6 in Kovařík, 2015: 2); **2)** chelicerae slightly reticulated in posterior part in *B. grosseri* sp. n. (Fig. 3) and yellow without reticulation in *B. polisi* (fig. 6 in Kovařík, 2015: 2).

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