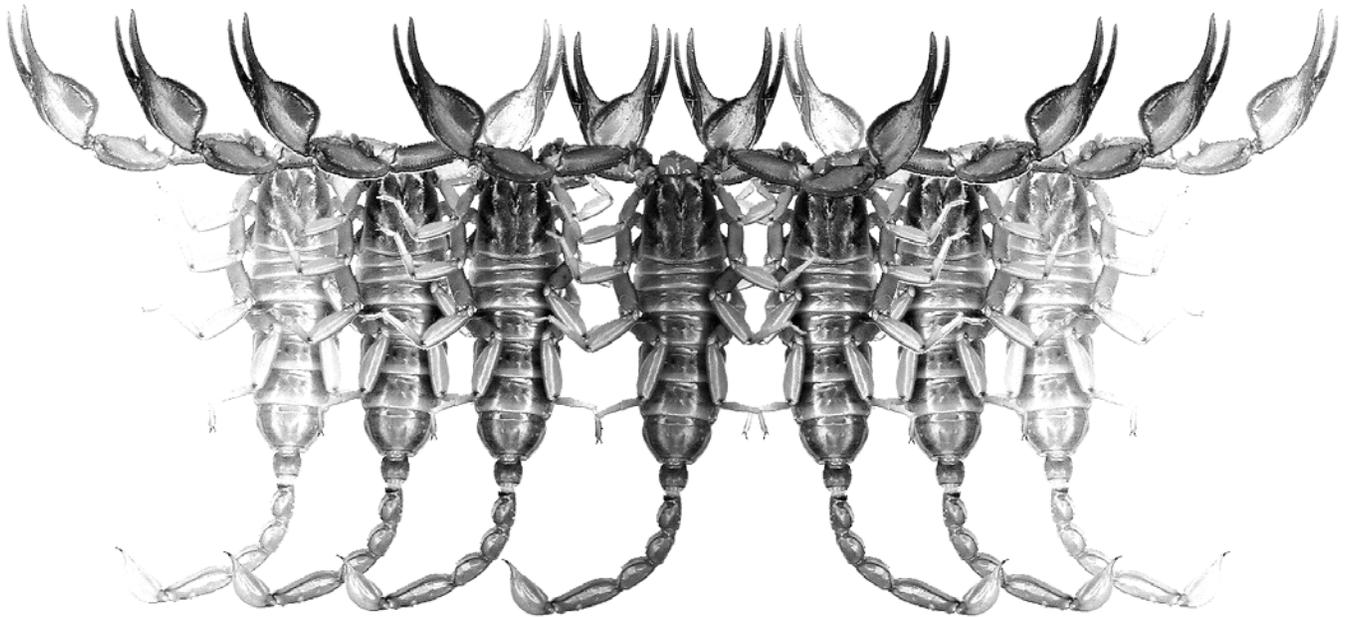


# *Euscorpilus*

Occasional Publications in Scorpiology



***Buthus awashensis* sp. n. from Ethiopia  
(Scorpiones: Buthidae)**

František Kovařík

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# *Euscorpius*

## Occasional Publications in Scorpiology

*EDITOR: Victor Fet*, Marshall University, ‘[fet@marshall.edu](mailto:fet@marshall.edu)’

*ASSOCIATE EDITOR: Michael E. Soleglad*, ‘[soleglad@la.znet.com](mailto:soleglad@la.znet.com)’

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- **NTNU**, Norwegian University of Science and Technology, Trondheim, Norway
- **OUMNH**, Oxford University Museum of Natural History, Oxford, UK
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František Kovařík

P. O. Box 27, CZ - 145 01 Praha 45, Czech Republic, [www.kovarex.com/scorpio](http://www.kovarex.com/scorpio)

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**Summary**

*Buthus awashensis* sp. n. from the Awash region of Ethiopia, is described and compared with *B. berberensis* Pocock, 1900 from Somaliland. The new species is characterized chiefly by the total length of 50–65 mm. *B. berberensis* reaches only 45–55 mm and differs in coloration, with adults having the chela of pedipalp and chelicerae entirely yellow without dark reticulations, and by morphometric characters, mainly the shape of the chela of pedipalp. Pectinal marginal tips extend to the proximal end of the fourth sternite in males of *B. awashensis* sp. n. and to proximal end of the fifth sternite in males of *B. berberensis*. Included are color photos of both sexes of dead and alive *B. awashensis* sp. n. and *B. berberensis* and of their localities.

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***Buthus awashensis* sp. n.**  
(Figs. 5–17, 23)

TYPE LOCALITY AND TYPE REPOSITORY. Ethiopia, Awash, Metahara env., 08°54'N 39°54'E, 960-1050 m. a.s.l. (Fig. 17); the author's collection (FKCP).

TYPE MATERIAL. Ethiopia, Awash, Metahara env., 08°54'N 39°54'E, 960-1050 m a.s.l. (Fig. 17 and 23), 2♂ (holotype and paratype), XI.2010, leg. T. Mazuch and P. Novák, 33♂ (paratypes) 34♀ (allotype and paratypes) 36 juveniles (paratypes), 19-22.VII.2011, leg. F. Kovařík; Dire Dawa, 09°34.647'N 41°50.33'E, 1249 m a.s.l. (Fig. 23), 1♂ (paratype), XI.2010, leg. T. Mazuch and P. Novák. All types are in the author's collection (FKCP).

ETYMOLOGY. Named after the type locality.

DIAGNOSIS. Total length 50–65 mm. Mesosoma and carapace dark (grey to black) with orange spots and median black strip. Base color of metasoma, pedipalps and legs yellow or yellowish red with dark spots, reticulations and dark carinae. Chelicerae are pale yellow with reticulated only in anterior part. Movable fingers of pedipalps bear 11–12 rows of granules with one internal and one external granule and three distal granules. Sexual dimorphism minor; chela of pedipalp narrow in both sexes, its length to width ratio 3.5–4.3 in females and 4.1–4.8 in males. Telson bulbous, with aculeus shorter than vesicle. Pectinal teeth number 23–28 in females and 30–35 in males.

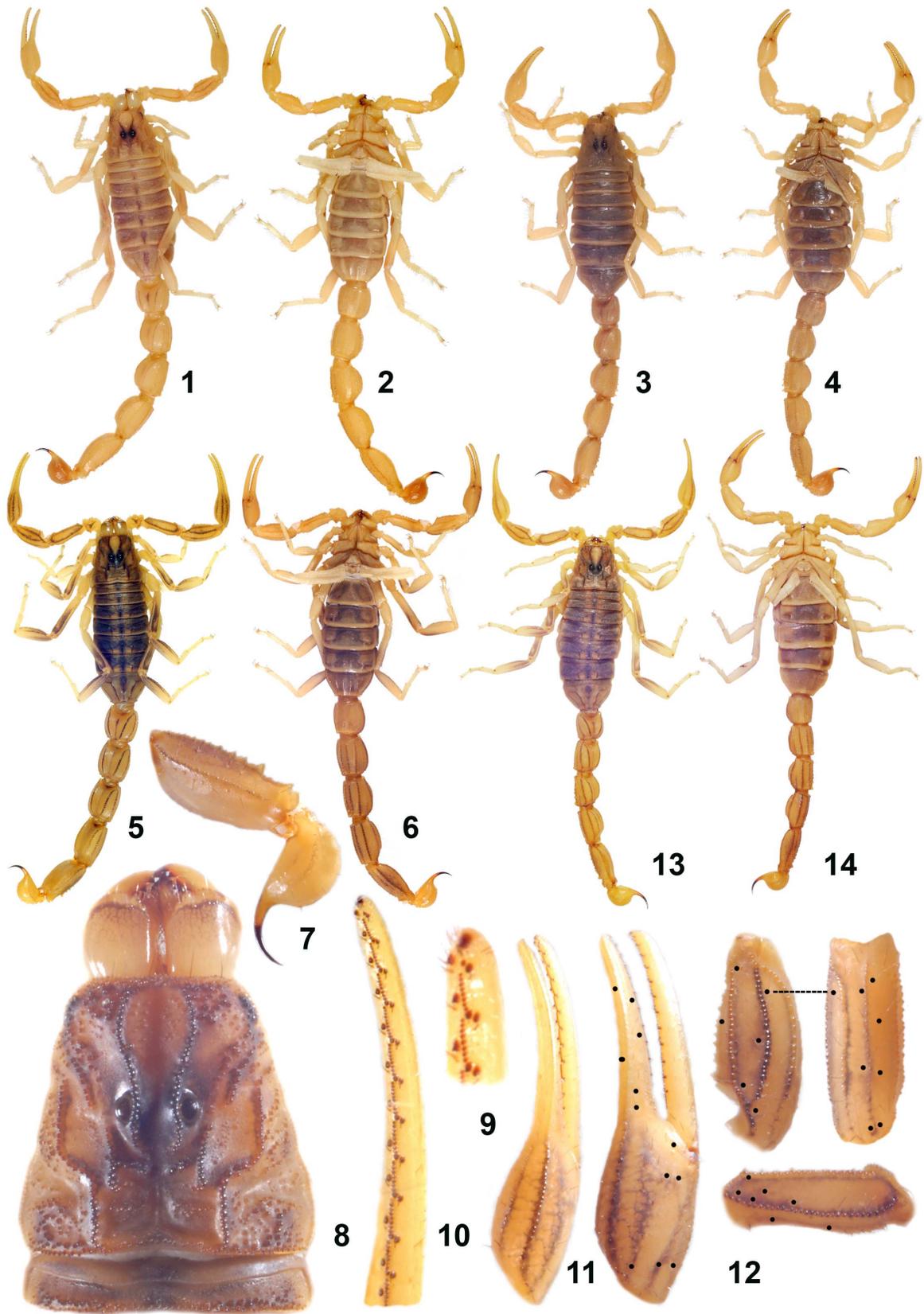
DESCRIPTION: The adults are 50–65 mm long. The habitus is shown in Figs. 5–6 (male) and 13–14 (female).

For position and distribution of trichobothria of pedipalps see Fig. 12. Sexual dimorphism is minor; the chela of pedipalp is relatively narrow in both sexes, its length to width ratio being 3.5–4.3 in females and 4.1–4.8 in males.

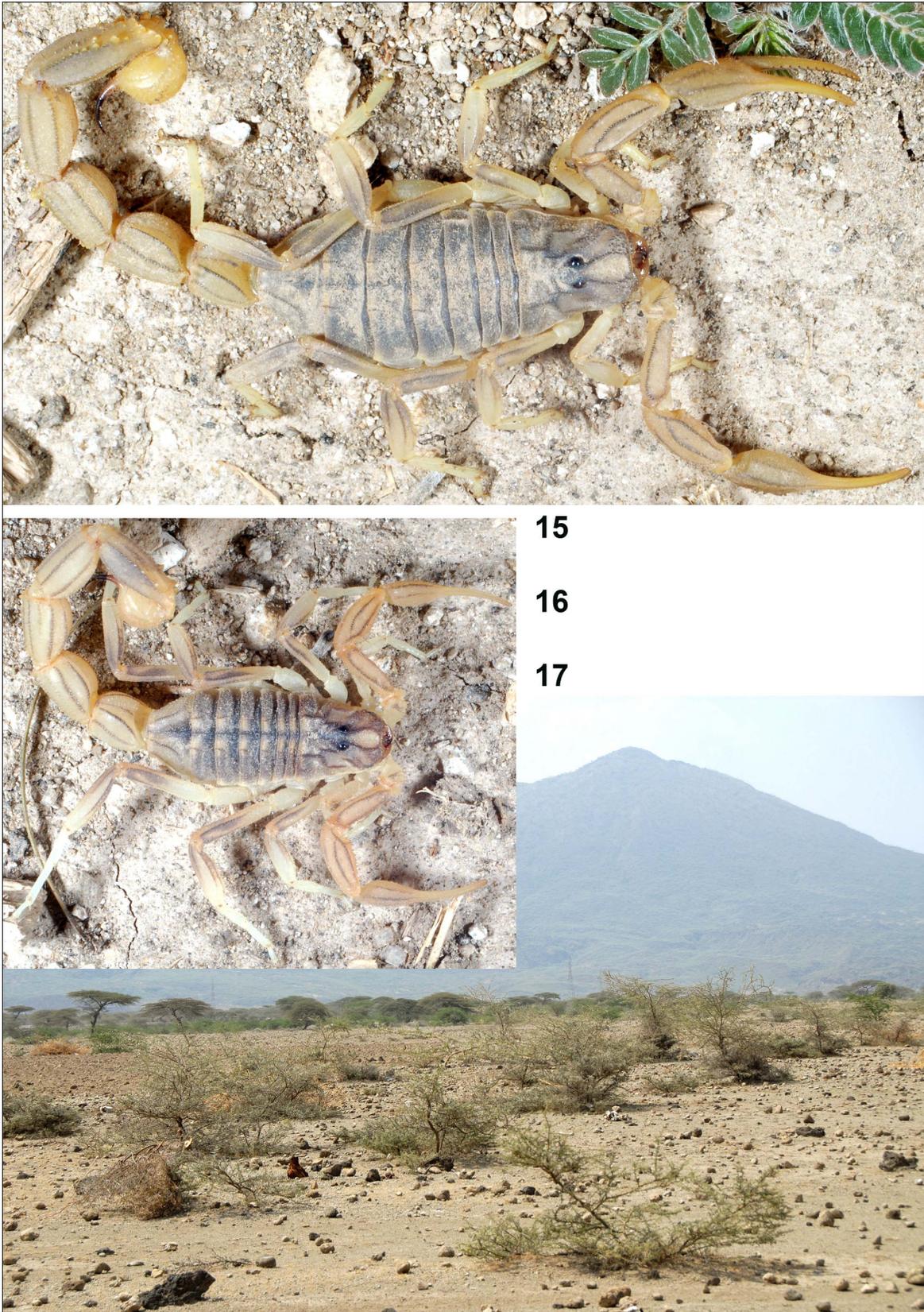
COLORATION. The mesosoma and carapace are dark (grey to black) with orange spots. The mesosoma bears a median black strip. The base color of the metasoma, pedipalps and legs is yellow or yellowish red with dark spots and reticulations on legs, pedipalps and the fifth metasomal segments (Figs. 5–14). Carina on the metasoma and pedipalps are dark. The chelicerae are pale yellow, with reticulation only in anterior part, and with reddish denticles (Fig. 8).

CARAPACE (Fig. 8). The surface is granulated with granules small along much of the midline and large anteriorly, posteriorly and laterally. The carinae are typical for genus *Buthus*, strongly developed and composed of large, round granules. The anterior margin of the carapace is straight, and bears eight long, symmetrically placed macrosetae.

MESOSOMA AND TELSON. The tergites are granulated in posterior parts and bear very strong median carinae. A pair of denticulate lateral carinae is strong on tergites II–VI. Tergite VII is pentacarinata, with all carinae strong and granulated. The pectinal tooth count is 23–28 (5x23, 13x24, 32x25, 10x26, 4x27, 2x28) in the females and 30–35 (5x30, 17x31, 32x32, 11x33, 6x34, 1x35) in the males. The pectinal marginal tips extend to the proximal end between the end of the third and the front quarter of the fourth sternite in females and to the proximal end of the fourth sternite in males. The pectines have three marginal lamellae and seven or eight middle lamellae.



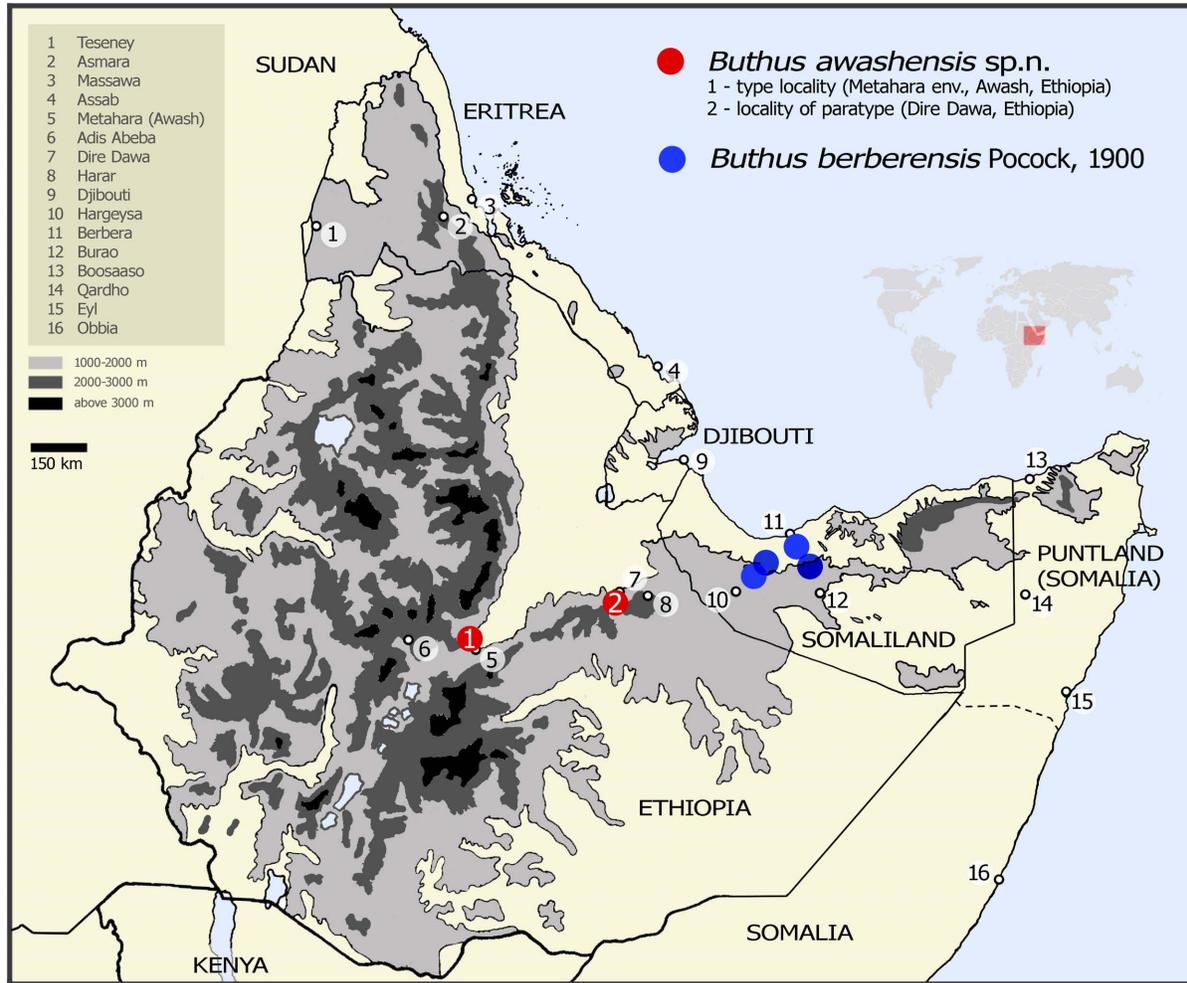
**Figures 1–14:** 1–4: *Buthus berberensis* Pocock, 1900, Somaliland, near Berbera, 10°15'30.5"N 45°06'04.2"E, 376 m a.s.l. (see Fig. 22), FKCP. **Figures 1–2:** ♂ (52 mm) in dorsal and ventral views. **3–4:** ♀ (50 mm) in dorsal and ventral views. **5–14:** *Buthus awashensis* sp. n. **5–12:** ♂ holotype of *Buthus awashensis* sp. n. in dorsal and ventral views (5–6), fifth metasomal segment and telson in lateral view (7), carapace with chelicerae (8), movable finger (9–10), chela in dorsal view (11), and trichobothrial pattern (12). **13–14:** ♀ allotype, dorsal and ventral views.



**Figures 15–17:** 15. Female paratype of *Buthus awashensis* sp. n. at the type locality. 16. Male paratype of *Buthus awashensis* sp. n. at the type locality. 17. Ethiopia, Awash, Metahara env., 08°54'N 39°54'E, 960-1050 m a.s.l. Type locality of *Buthus awashensis* sp. n. together with *Butheolus* sp. n., *Compsobuthus abyssinicus* Birula, 1903 and *Parabuthus leiosoma* (Ehrenberg, 1828).



**Figures 18–22:** 18. Somaliland, between Berbera and Sheikh,  $10^{\circ}05'49.9''\text{N}$   $45^{\circ}11'40.1''\text{E}$ , 628 m a.s.l. Collection locality of *Buthus berberensis* Pocock, 1900 together with *Hottentotta polystictus* (Pocock, 1896) and *Pandinus* (*Pandinurus*) sp. n.. 19. Male of *Buthus berberensis* Pocock, 1900 at the locality in Figure 22. 20. Female of *Buthus berberensis* Pocock, 1900 at the locality in Figure 22. 21. Juvenile of *Buthus berberensis* Pocock, 1900 at the locality in Figure 22. 22. Somaliland, near Berbera,  $10^{\circ}15'30.5''\text{N}$   $45^{\circ}06'04.2''\text{E}$ , 376 m a.s.l. Collection locality of *Buthus berberensis* Pocock, 1900 together with *Butheolus* sp. n., *Compsobuthus* sp. n. and *Parabuthus granimanus* Pocock, 1895.



**Figure 23:** Map of distributions of *Buthus awashensis* sp. n. and *Buthus berberensis* Pocock, 1900 with only those localities at which the two species have been found by the author, T. Mazuch and P. Novák.

The lamellae bear numerous dark setae, each fulcrum with three to six dark setae. All sternites are smooth. The seventh sternite bears four strongly developed ventral crenulate carinae. The other sternites bear two or four inconspicuous smooth carinae.

**METASOMA AND TELSON.** The first metasomal segment bears 10 carinae, the second through fourth segments bear eight to 10 carinae (the lateral surface of the second and third segments bears a row of granules that exceeds three-quarters of the second and one-half of the third segment length). The fourth segment bears eight carinae and the fifth segment bears five carinae. The ventrolateral carinae of the fifth segment terminate in two lobate. The ventral keels on the second and third segments posteriorly bear two to four large granules. The surface between the carinae is smooth. All segments are sparsely setose. The telson is bulbous, with aculeus shorter than the vesicle. The surface of the telson is

unevenly granulated and bears an incomplete lateral carina.

**LEGS.** Pairs III and IV bear long tibial spurs. Retrolateral and prolateral pedal spurs are present on all legs. The tarsomeres bear two rows of macrosetae on the ventral surface and numerous macrosetae on the other surfaces. Bristlecombs are present on the first to third legs. The femur bears four carinae and the patella bears four to six carinae. The femur and patella bear only solitary macrosetae.

**PEDIPALPS.** The pedipalps are smooth or finely granulated. The femur bears four to five carinae; the ventroexternal carina is incomplete, the other carinae are coarsely granular. The patella bears seven coarsely granular carinae. The chela bears five carinae, which may be weak and incomplete. The movable and fixed fingers bear 11–12 rows of granules, with external and internal granules and three distal granules.

MEASUREMENTS IN MM. Male holotype. Total length 53.6; carapace length 5.3, width 5.7; metasoma and telson length 31.6; first metasomal segment length 4.1, width 4.1; second metasomal segment length 4.6, width 3.9; third metasomal segment length 4.7, width 3.6; fourth metasomal segment length 5.6, width 3.4; fifth metasomal segment length 6.6, width 3.2; telson length 6.0; telson width 2.4; pedipalp femur length 4.5, width 1.6; pedipalp patella length 5.4, width 2.1; chela length 8.8; manus width 1.9; movable finger length 5.8.

Female allotype. Total length 63; carapace length 6.6, width 7.5; metasoma and telson length 34.6; first metasomal segment length 4.4, width 4.5; second metasomal segment length 4.9, width 4.2; third metasomal segment length 5.0, width 4.2; fourth metasomal segment length 5.9, width 4.0; fifth metasomal segment length 7.2, width 3.7; telson length 7.2; telson width 3.2; pedipalp femur length 5.2, width 1.9; pedipalp patella length 6.2, width 2.7; chela length 10.9; manus width 3.1; movable finger length 7.2.

AFFINITIES. The described features distinguish *Buthus awashensis* **sp. n.** from all other species of the genus. The new species is easily distinguished from *B. berberensis* Pocock, 1900, which is the only *Buthus* species known from this region (Fig. 23). *B. berberensis* reaches only 45–55 mm and differs in coloration, as adult have mainly the chela of pedipalp and chelicerae entirely yellow, without dark reticulations (Figs. 1–4 and 19–20).

However, immatures (Fig. 21) and males of *B. berberensis* may have slightly darker pattern mainly on the femur and patella of legs and pedipalps, which led Pocock to describing two subspecies, *Buthus occitanus berberensis* Pocock, 1900 based on an immature male 38 mm long and *Buthus occitanus zeylensis* Pocock, 1900 (= *Buthus berberensis*) based on a female 50 mm long (Figs. 19–21, Pocock, 1900: 56 and Levy & Amitai, 1980: 16). *B. berberensis* has a wider and shorter chela of pedipalps than *B. awashensis* **sp. n.** (Figs. 1–6 and 13–14). Males of *B. berberensis* are distinguishable also by length of the pectines. The pectinal marginal tips extend to the proximal end of the fourth sternite in males of *B. awashensis* **sp. n.** and to the proximal end of the fifth sternite in males of *B. berberensis*.

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