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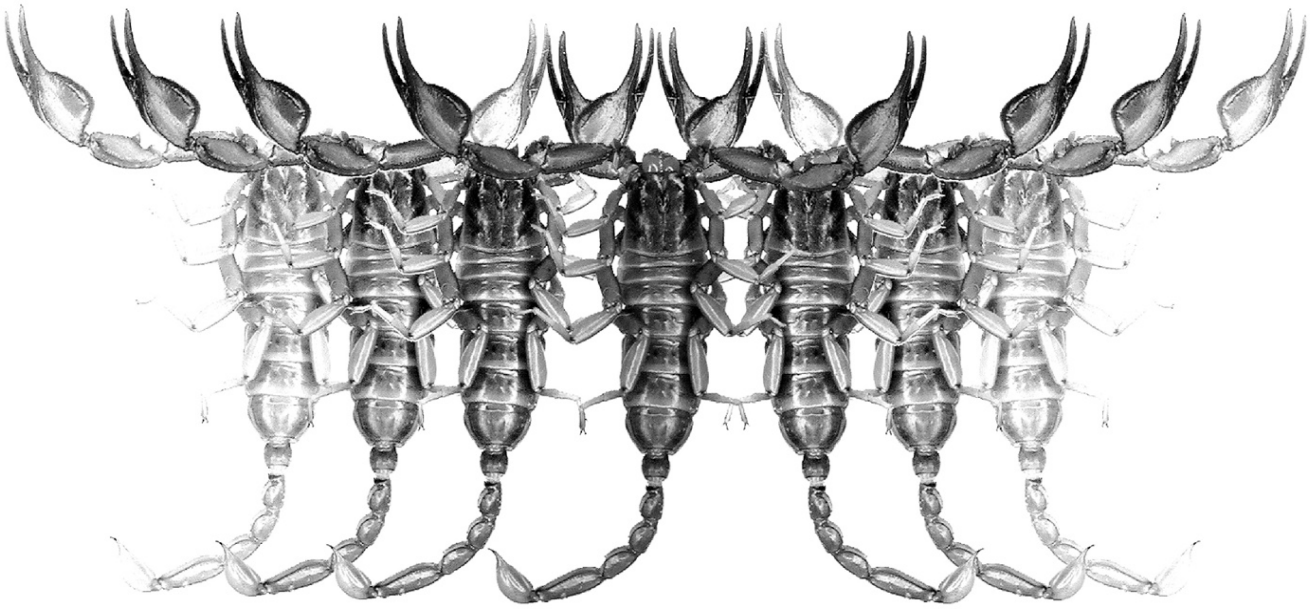

Scorpions of the Horn of Africa (Arachnida: Scorpiones). Part XXVII. *Lanzatus huluul* sp. n. from Somaliland (Buthidae)

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Euscorpius — Occasional Publications in Scorpiology. 2021, No. 344

Scorpions of the Horn of Africa (Arachnida: Scorpiones). Part XXVII. *Lanzatus huluul* sp. n. from Somaliland (Buthidae)

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Summary

The rare Horn of Africa buthid genus *Lanzatus* Kovařík, 2001 was newly collected in Somaliland in two localities. We describe a new species *Lanzatus huluul* **sp. n.** fully illustrated with color photos showing its morphology, habitus, hemispermatophore and collection areas.

Introduction

In the years 2011–2021, the first author had opportunities to participate in a number of zoological expeditions to the Horn of Africa to study scorpions at 76 localities in Somaliland and has published several articles on the scorpion fauna of that region. Knowledge about the rare genus *Lanzatus* was summarized by Kovařík et al. (2016). During recent excursions, the first author discovered two other populations of *Lanzatus*: *L. somalilandus* Kovařík, Lowe & Šťáhlavský, 2016 from the vicinity of Shanshade Village, and *L. huluul* **sp. n.** from vicinity of Huluul Village (see Fig. 55).

Methods, Material & Abbreviations

Nomenclature and measurements generally follow Stahnke (1971), Kovařík (2009), and Kovařík & Ojanguren Affilastro (2013), except for trichobothriotaxy (Vachon, 1974, 1975) and hemispermatophore (Kovařík et al., 2018).

Specimens were found by ultraviolet (UV) detection by night. All collected material was preserved in 80% ethanol and deposited in FKCP (František Kovařík, private collection, Prague, Czech Republic; will in future be merged with the collections of the National Museum of Natural History, Prague, Czech Republic).

Comparative material (FKCP).

Lanzatus somalicus Kovařík, 2001

Somalia, Lesnmma, 04º30'N 45º44'E, 268 m a. s. l., 3.VIII.1969, 1♂ (paratype, figs. 5–6, 11–12, 29, 32–34 in Kovařík et al., 2016 and Fig. 48), leg. B. Lanza under a stone in a rainy period.

Lanzatus somalilandus Kovařík et Lowe, 2016

Somaliland, between Sheikh and Laas Caanood, 09°36'40.1"N 45°29'35.7"E, 1089 m a. s. l. (Locality No. **11SL**), 10.VII.2011, 2♂ (holotype, Fig. 50 and paratype) 1♀ (paratype, Fig. 49), leg. F. Kovařík; Shanshade Vill., 08°39'35"N 45°55'49"E, 790 m a. s. l. (Locality No. **18SJ**, see figs. 60–61 in Kovařík et Lowe, 2019: 12 and figs. 163–164 in Kovařík et al., 2019: 31), 29-31.VIII.2018, 2♂ (DNA No. 1525, figs. 111–115 in Kovařík & Njoroge, 2021 and Figs. 1, 51), leg. F. Kovařík.

Systematics

Family Buthidae C. L. Koch, 1837

Lanzatus Kovařík, 2001

(Figs. 1–55, Table 1)

Lanzatus Kovařík, 2001: 41–44, figs. 1–7; Fet & Soleglad, 2005: 11; Fet et al., 2005: 3, 11–12, 20, 22–25, fig. 23–25, tab. 1; Prendini & Wheeler, 2005: 462, 481; Dupré, 2007: 7, 13, 16; Kovařík et al., 2007: 207; Kovařík, 2009: 23, 31; Kovařík et al., 2016: 2–9, figs. 1–40, 123–124, 155, tab. 1; Kovařík, 2018: 10, figs. 24–25; Kovařík & Njoroge, 2020: 3–4, figs. 111–115.

= *Sabinebuthus* Lourenço, 2001a: 16–18, figs. 1–5; Fet & Soleglad, 2005: 4, 11; Fet et al., 2005: 3, 11, 20, 22–23, fig. 23, tab. 1; Prendini & Wheeler, 2005: 462, 481; Dupré, 2007: 10, 13, 17; Kovařík, 2009: 23, 31 (syn. by Lourenço, 2001b: 174, for more details see Kovařík et al., 2016: 2; Kovařík, 2018: 10).

Type species. *Lanzatus somalicus* Kovařík, 2001.

Diagnosis. Total length 18–28 mm. Pedipalps orthobothriotaxic type A (Vachon, 1974); dorsal trichobothria of femur arranged in *β*-configuration (Vachon, 1975); femur with trichobothrium d_2 internal to dorsointernal carina, e_1 proximal to d_5; patella with d_3 internal to dorsomedian carina, Esb_2 close (slightly distal) to Esb_1; chela manus with Eb_2 proximal to Eb_1, V_2 located behind, or slightly internal to V_1; fixed finger with *db* in proximal 1/3,

Figures 1–**2**. *Lanzatus* specimens in vivo habitus. **Figure 1**. *Lanzatus somalilandus* Kovařík et Lowe, 2016, male from Somaliland, Shanshade village. **Figure 2**. *Lanzatus huluul* **sp**. **n**., female paratype. Images taken in the laboratory with different sand/background than in reality is on the original localities.

Dimensions (mm)		*Lanzatus huluul* sp. n. ♂ holotype	*Lanzatus huluul* sp. n. ♀ paratype
Carapace	L / W	2.23 / 2.29	2.41 / 2.42
Mesosoma	L	4.79	3.73
Tergite VII	L / W	1.27 / 2.16	1.03 / 2.44
Metasoma + telson	L	13.72	14.99
Segment I	L / W / D	1.63 / 1.29 / 1.13	1.74 / 1.43 / 1.21
Segment II	L / W / D	1.88 / 1.19 / 1.13	2.00 / 1.30 / 1.20
Segment III	L / W / D	2.00 / 1.14 / 1.10	2.07 / 1.23 / 1.18
Segment IV	L / W / D	2.26 / 1.01 / 0.97	2.53 / 1.11 / 1.08
Segment V	L / W / D	3.00 / 0.87 / 0.93	3.29 / 1.00 / 1.00
Telson	L / W / D	2.95 / 0.49 / 0.53	3.36 / 0.63 / 0.59
Pedipalp	L	6.18	6.41
Femur	L / W	1.59 / 0.48	1.60 / 0.54
Patella	L / W	2.02 / 0.65	2.07 / 0.77
Chela	L	2.57	2.74
Manus	W / D	0.40 / 0.53	0.48 / 0.64
Movable finger	L	1.90	1.98
Total	**L**	**20.74**	**21.13**

Table 1. Comparative measurements of types of *Lanzatus huluul* **sp**. **n**. Abbreviations: length (L), width (W, in carapace it corresponds to posterior width), depth (D).

proximal to *est*, *dt* distal to *et*, and *it* sub-distal. Pectines with fulcra. Pectine teeth number 18–24. Basal middle lamella of pectines in females not dilated. Sternum subtriangular. Tibial spurs absent on legs I–IV. Cheliceral fixed finger with one ventral denticle, margins of fingers with standard pattern of buthid dentition (Kovařík et al., 2016: 27, figs. 123–124; Vachon, 1963). Carapace subrectangular, anterior margin straight, without distinct carinae, in lateral view with entire dorsal surface horizontal, or nearly so. Median ocular tubercle large, located in posterior 2/3 of carapace. Lateral eyes number 5 pairs. Pedipalp chela dentate margins non-undulate, straight; movable finger with distinct granules, divided into 7 non-imbricated rows (including apical row), each with single mid-row internal accessory granule, without external accessory granules; all rows oblique except for proximal row. Tergites I–VI smooth to finely granulated with one indicated carina, or acarinate. Stigmata are narrow slits. Metasomal segments all elongate, smooth or finely granulate, acarinate. Telson elongate, smooth, without subaculear tubercle, aculeus shorter than vesicle. Hemispermatophore capsule short, with 3-lobed sperm hemiduct and a basal lobe; median lobe filamentous, basal lobe a broad, oblique scoop.

Lanzatus huluul sp. n.

(Figures 2–47, 52–54, Table 1)

http://zoobank.org/urn:lsid:zoobank.org:act:FF66B31D-B7A1-4C4D-8D9D-715BFFFEFB52

Type locality and type repository. **Somaliland**, Huluul Village, 09.977614°N 46.6932°E, 811 m a. s. l. (Locality No. **21SI**, Fig. 55); FKCP.

Type material. **Somaliland**, Huluul Village, 09.977614°N 46.6932°E, 811 m a. s. l. (Locality No. 21SI), 10.-11.X.2021, 1♂ (holotype, DNA No. 1998) 1♀ (paratype, DNA No. 2035), leg. F. Kovařík, FKCP.

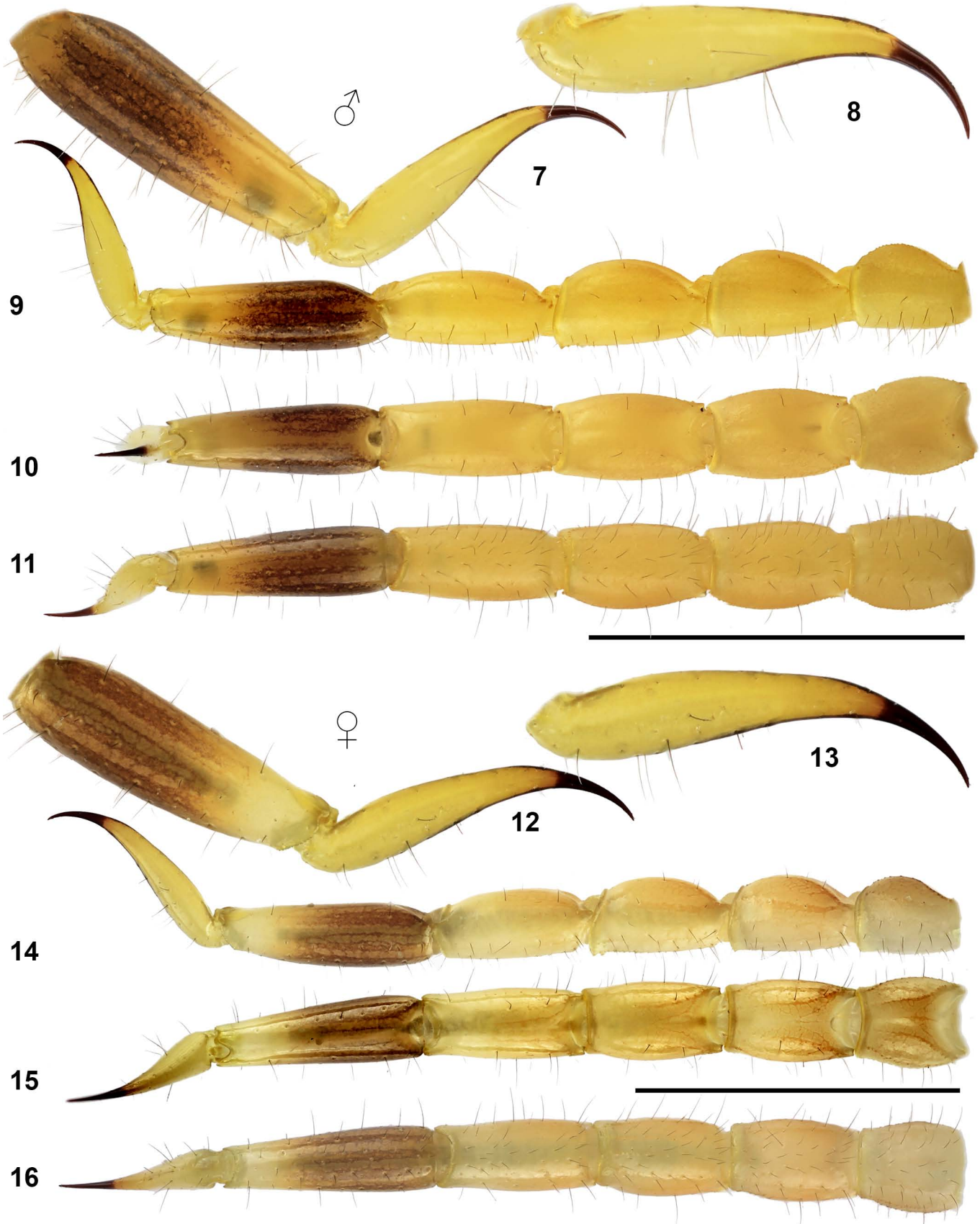
Etymology. Named after the village of occurrence.

Diagnosis. Total length 20.7 (male) – 21.1 mm (female). Base color uniformly yellowish orange with black only around the eyes. Fifth metasomal segment slightly marbled in grayish black. Pectine teeth number 21–22 in both sexes. Pedipalp chela and patella with inconspicuous smooth carinae. Pedipalp chela smooth and narrow. Sternites finely granulated, without carinae. Tergites I–VI finely granulated with one carina present or indicated. Metasomal segments smooth to finely granulated, without complete carinae, with rounded edges. Telson extremely elongated, smooth, without aculear ring. Telson length/ width ratio 6.02 in male, 5.33 in female. Aculeus weakly curved.

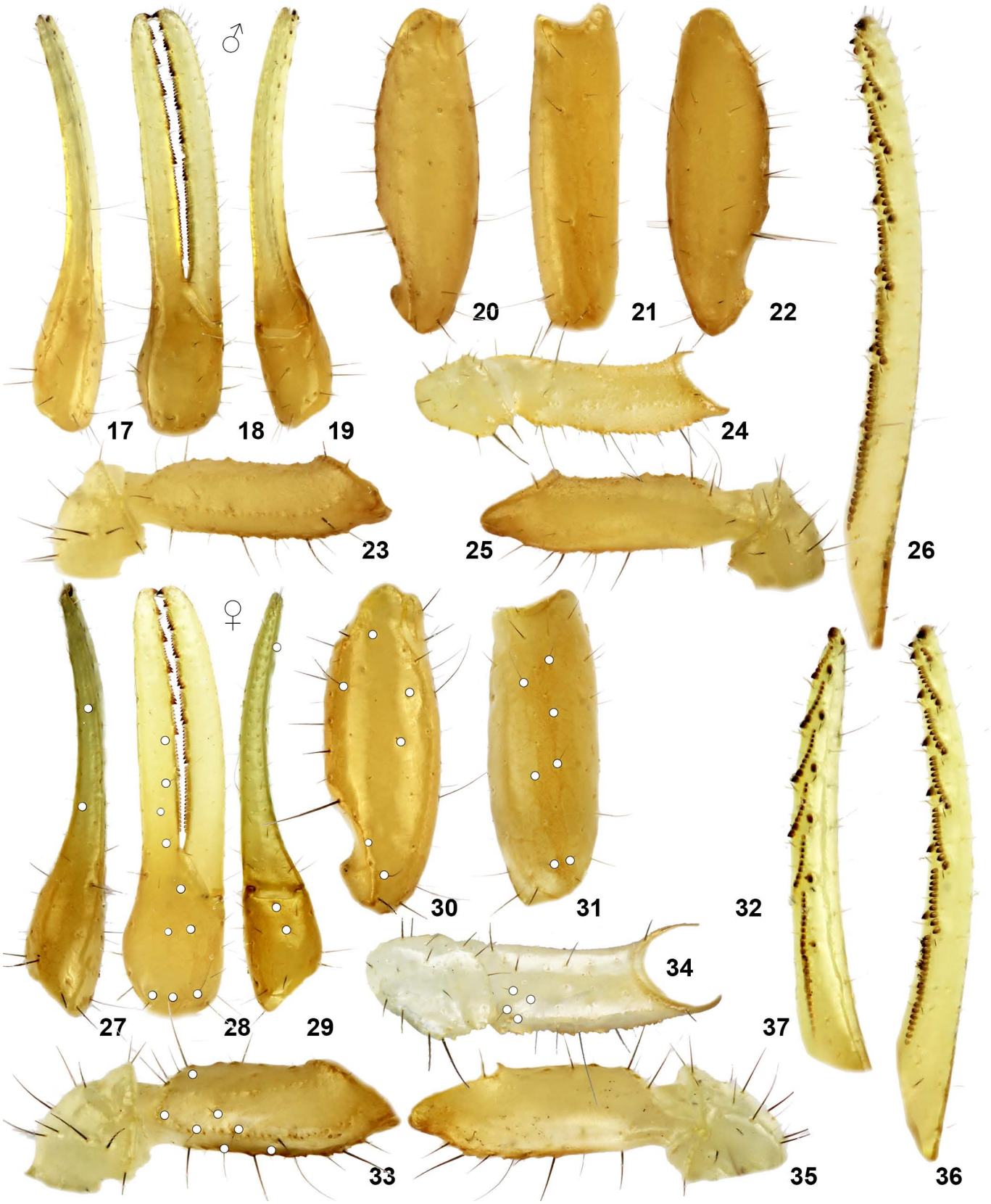
Description. The adults are 20.7 (male) – 21.1 mm (female) long. The habitus is shown in Figs. 2–6. For positions and distribution of trichobothria of pedipalps see Figs. 27–31 and 33–34. Sexual dimorphism: adult male integument matte, female glossy, pedipalp patella narrower in male (Fig. 20) than in female (Fig. 30).

Coloration (Figs. 2–6). The base color is uniformly yellowish orange with black only around the eyes, tergites darker. Tarsomeres of legs white. Fifth metasomal segment slightly marbled in grayish black on anterior 3/5. Chelicerae yellow with orange reticulation in female.

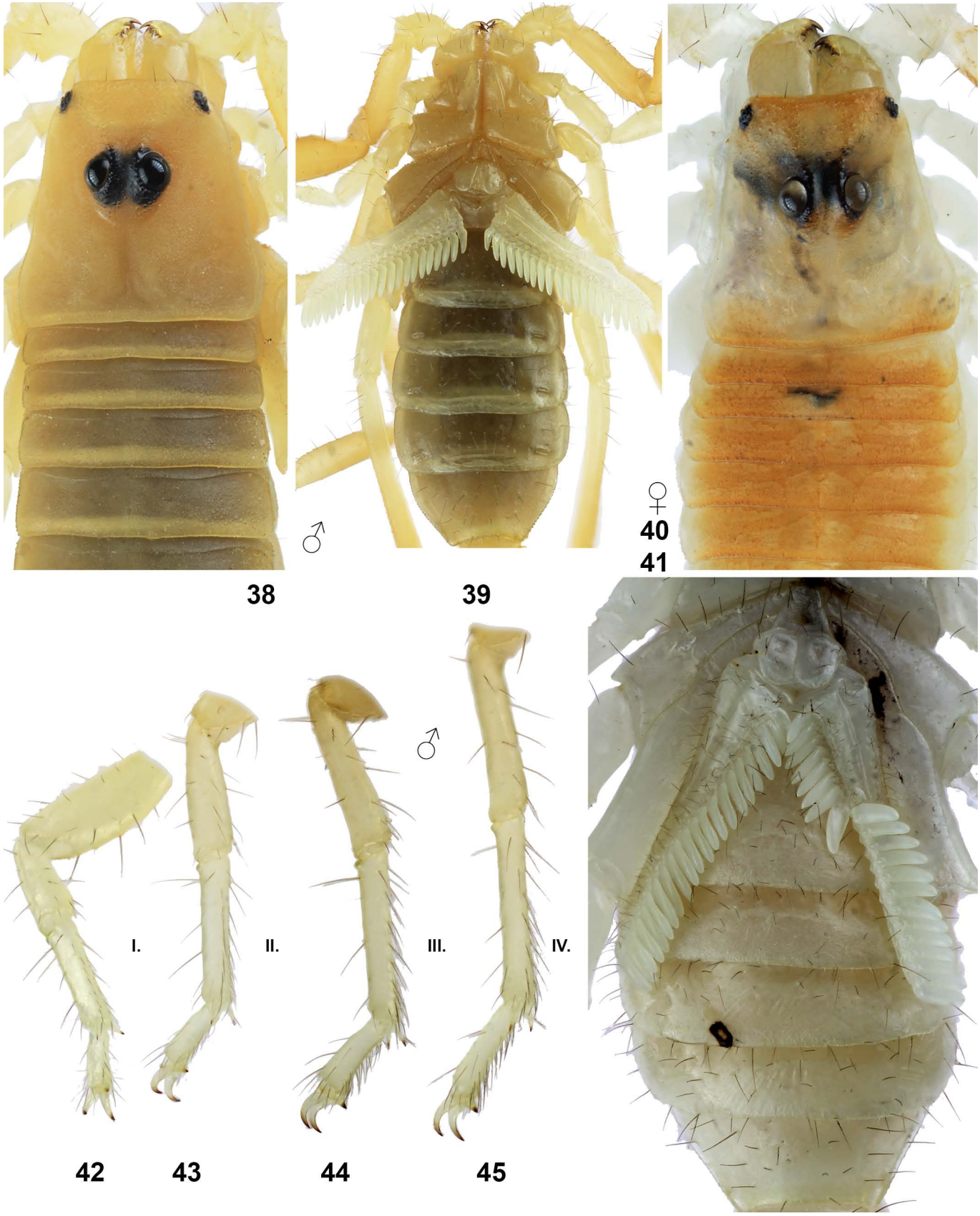
Figures 3–**6**: *Lanzatus huluul* **sp**. **n**., habitus. **Figures 3**–**4**. Male holotype in dorsal (3) and ventral (4) views. **Figures 5**–**6**. Female paratype in dorsal (5) and ventral (6) views. Scale bar: 5 mm.



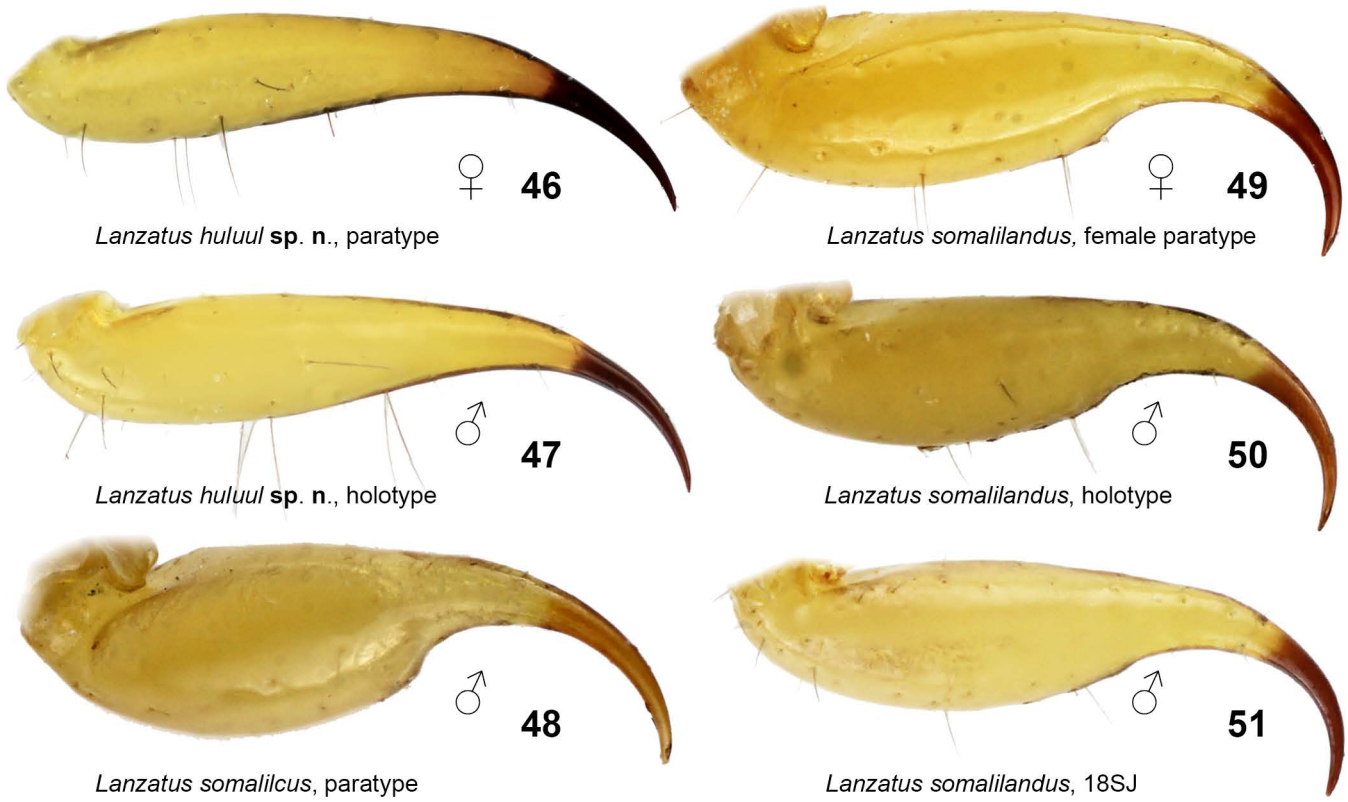
Figures 7–16: *Lanzatus huluul* **sp. n.**, metasoma and telson. **Figures 7–11**. Holotype male, metasoma V and telson (7) and telson (8) in lateral views and metasoma and telson in lateral (9), dorsal (10), and ventral (11) views. **Figures 12–16**. Paratype female, metasoma V and telson (12) and telson (13) in lateral views and metasoma and telson in lateral (14), dorsal (15), and ventral (16) views. Scale bars: 5 mm (9–11 and 14–16).



Figures 17–37: *Lanzatus huluul* **sp. n.**, right pedipalp. **Figures 17–26**. Holotype male, chela in dorsal (17), external (18) and ventral (19) views, patella in dorsal (20), external (21) and ventral (22) views, femur and trochanter in dorsal (23), internal (24) and ventral (25) views, dentate margins of movable finger (26). **Figures 27–37**. Paratype female, chela in dorsal (27), external (28) and ventral (29) views, patella in dorsal (30), external (31) and ventral (32) views, femur and trochanter in dorsal (33), internal (34) and ventral (35) views. dentate margins of movable (36) and fixed (37) fingers. Trichobothrial pattern indicated in Figures 27–31 and 33–34 by white circles.



Figures 38–45: *Lanzatus huluul* **sp. n. Figures 38–39**, **42–45**. Holotype male, carapace and tergites I–IV (38), sternopectinal area and sternites (39), and left legs I–IV, retrolateral aspect (42–45). **Figures 40–41**. Paratype female, carapace and tergites I–V (40) and sternopectinal area and sternites (41).



Figures 46–51: Comparison of telsons of *Lanzatus* species. **Figures 46–47**. *Lanzatus huluul* **sp. n.**, female paratype (46) and male holotype (47). **Figures 48**. *Lanzatus somalicus* Kovařík, 2001, male paratype. **Figures 49–51**. *Lanzatus somalilandus* Kovařík et Lowe, 2016, female paratype (49), male holotype (50) and male from Somaliland, Shanshade Village. (51).

Carapace and mesosoma (Figs. 38–41). Entire carapace finely granulated. Carinae absent. Anterior margin of carapace almost straight. Median ocular tubercle large, width 35% of carapace posterior width. Median eyes prominent, diameter 16% of carapace length. Superciliary carinae finely granulated. Tergites finely granulated, asetose, with one median carina more strongly indicated in the female. Pectinal tooth count 21 in male and 21–22 in female. Pectine marginal tips extend to half of the fifth sternite in both sexes. Pectines with 3 marginal lamellae and 8–9 middle lamellae. All lamellae and fulcra bear numerous setae. All sternites finely granulated (more so in female), setose, without carinae, posterior margins smooth.

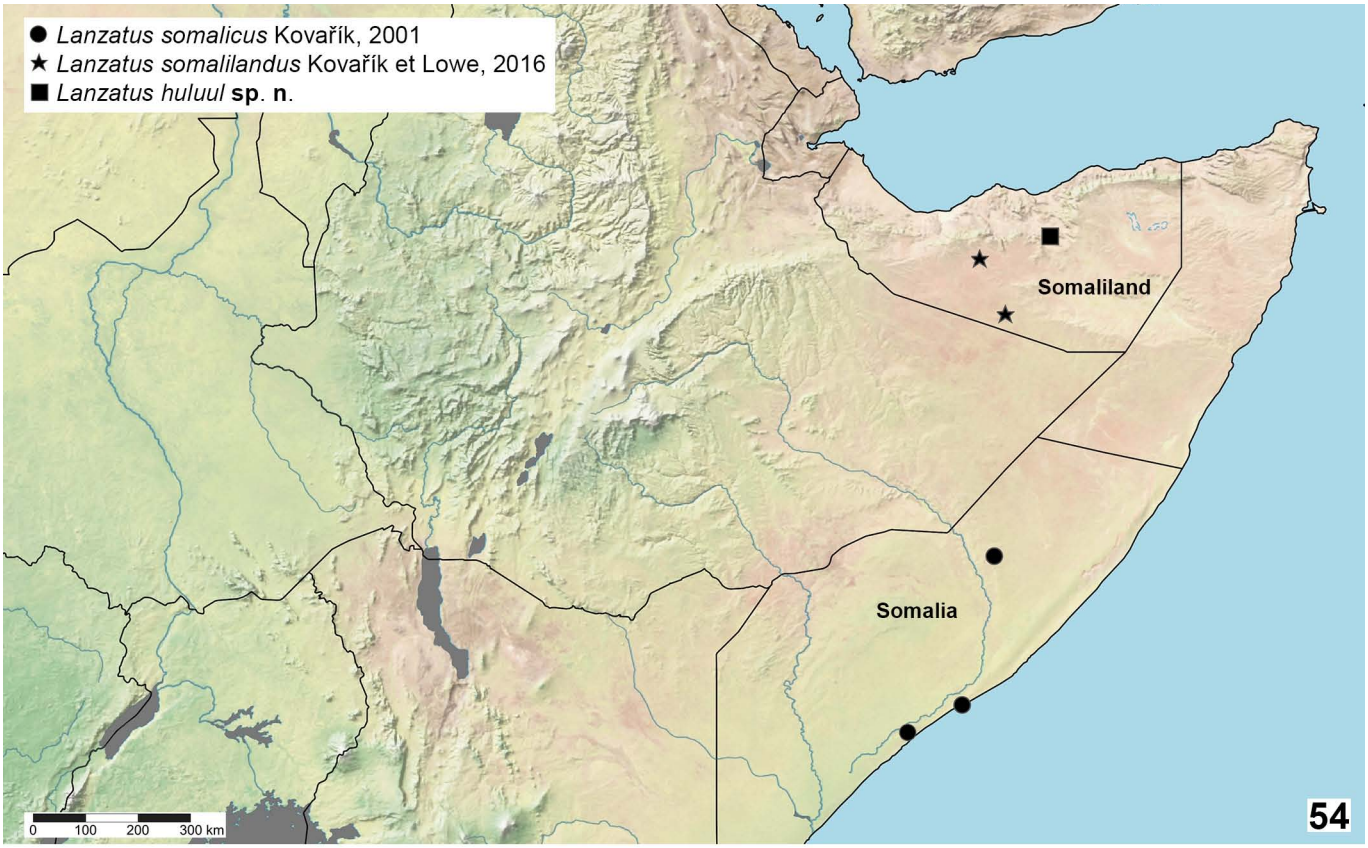
Hemispermatophore (Figs. 52–53). Flagelliform, trunk elongate, ca. 6.3 times length of capsule region; flagellum with linear pars recta and pars reflecta, separate from sperm hemiduct lobes. Proximal pars recta with narrow laminate expansion along anterior margin. Sperm hemiduct divided into 3 lobes: posterior lobe long, broad, laminate, gently tapered; median lobe small, narrow, filamentous in distal 2/3; anterior lobe tapered, acuminate. Posterior margin of median lobe slightly overlapping posterior lobe, the two partially joined along an axial suture or carina. Basal lobe a broad, curved scoop, obliquely-angled. The capsule is very similar to that of *L. somalilandus*, which has sperm hemiduct lobes of the same shape, and also bears an oblique, scoop-like basal lobe (cf. Kovařík & Njoroge, 2021:16, figs. 111–115).

Metasoma and telson (Figs. 7–16). Metasomal segments smooth and setose, bearing numerous long macrosetae, without carinae, with rounded edges. Dorsal surfaces of metasoma I–IV bearing a shallow longitudinal groove. First metasomal segment finely granulated in both sexes, metasoma II–III smooth (female) or densely and very finely granulated (males), metasoma IV–V smooth in both sexes. Posterior metasomal segments successively more narrow than anterior segments. Metasoma V non-uniform in width, tapering posteriorly. Telson extremely elongated, smooth, without aculear ring. Posterior ventral aspect of vesicle concave in lateral profile, transitioning smoothly to aculeus without a constriction. Aculeus stout, weakly curved. Telson length/width ratio 6.02 in male, 5.33 in female.

Chelicerae. Manus longer than wide, dorsal surface smooth, glossy, with strong anterior marginal and dorsointernal carinae. Fingers robust, with typical buthid dentition (Vachon, 1963). Dorsal margin of movable finger armed with 5 teeth: dorsal distal tine, subdistal, median and apparently 2 small basal teeth fused in bicusp. Ventral margin of movable finger with 3 teeth: ventral distal tine, median and basal teeth. Fixed finger margin with 4 teeth: distal tine, subdistal, median and basal teeth fused into bicusp. Ventral surface of fixed finger armed with a single tooth.

Pedipalps (Figs. 17–37). Pedipalps smooth, sparsely hirsute, with inconspicuous smooth carinae, only the femur with one (male) or two (female) dorsal carinae composed of strong

Figures 52–53: *Lanzatus huluul* **sp. n.**, left hemispermatophore. Holotype male, whole hemispermatophore (52) and capsule, compressed to separate lobes (53), convex views. Scale bars: 1 mm (52), 200 μm (53).



Figures 54–**55**: **Figure 54**. Map showing known distribution of the genus *Lanzatus*. **Figure 55**. Somaliland, vicinity of Huluul Village, type locality of *Lanzatus huluul* **sp**. **n**.

granules. Pedipalp chela narrow, chela length/ width ratio 6.4 in male, 5.71 in female. Dentate margins of chela fingers with distinct granules divided into 7 rows (including short apical row of 3 granules) on movable finger, 6 rows on fixed finger. Granule rows oblique except for long proximal row, which is parallel to finger axis. All rows flanked by a single internal accessory granule. Both fingers with enlarged terminal denticle, and 1–2 subterminal denticles.

Legs (Figs. 42–45). Legs I–IV with tibial spurs absent, retrolateral and prolateral pedal spurs present. All legs smooth, without distinct carinae. Telotarsi bear two rows of fine macrosetae on their ventral surfaces, and several additional macrosetae on other surfaces. Basitarsi of legs I–III with 4 to 7 macrosetae, not arranged in regular rows (bristle combs absent).

Measurements. See Table 1.

Affinities. *Lanzatus huluul* **sp**. **n**. is differentiated from *L. somalicus* and *L. somalilandus* mainly by the morphology of the telson (Figs. 46–51), which is extremely elongated, smooth, without an aculear ring, and with the aculeus slightly curved in *L huluul* **sp**. **n**. Telson length/ width ratio 6.02 in male, 5.33 in female in *L huluul* **sp**. **n**. In *L. somalicus* and *L. somalilandus* the aculeus is strongly curved. The telson length/ width ratio is 3.94 in the male, and 3.61 in the female of *L. somalilandus*, and 3.45 in a male paratype of *L. somalicus*. Basitarsi of legs I–III have macrosetae arranged in regular rows (bristle combs present) in *L. somalilandus*, and irregularly (bristle combs absent) in *L. huluul* **sp**. **n**.

Distribution. Known only from the type locality (Figs. 54–55).

comments on locality and life strategy. The types of *L. huluul* **sp**. **n**. were collected on a consolidated substrate that can support construction of stable burrows (Fig. 55). In contrast, the related *L. somalilandus* was found on aeolian sand in red desert (Kovařík et. al., 2016: 8–9, fig. 40). This habitat difference correlates with the presence or absence of psammophilous adaptation (bristle combs) in the two species. A similarly elongated telson and tapered metasoma V is also found in the ultrapsammophile vaejovid, *Vejovoidus longiunguis* (Williams, 1969). Williams (1969: 290) suggested that in this species "*streamlining of the metasoma and telson is perhaps an adaptation for escaping from being buried in the loose sand.*" However, this hypothesis is not supported in *Lanzatus*, for which the non-psammophilic species, *L. huluul* **sp**. **n**., possesses the more slender telson.

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