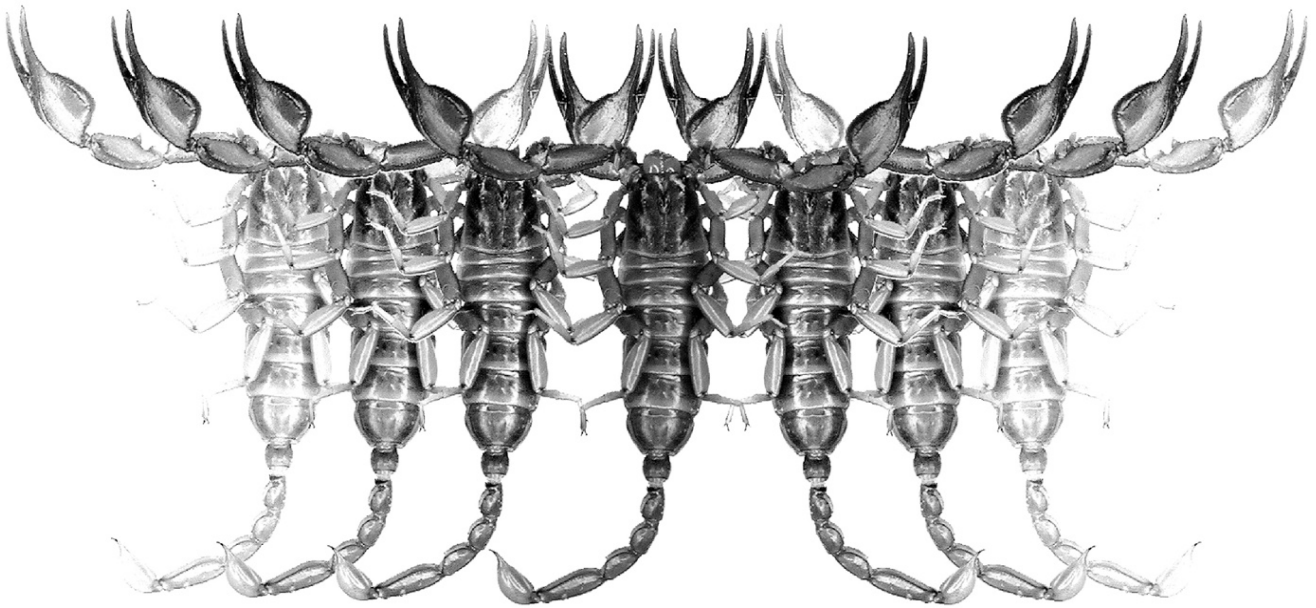


Euscorpius

Occasional Publications in Scorpiology



New records of *Mesobuthus mesopotamicus* (Penther, 1912) in Iraq and *Mesobuthus faiki* sp. n. from Turkey (Scorpiones: Buthidae)

Ersen Aydın Yağmur, František Kovařík, Victor Fet, Fenik Sherzad Hussen, Ridvan Kurt, Azhar Mohammed Al-Khazali, Hamid Saeid Kachel & Ali Abdulhamza Al-Fanharawi

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Euscorpius

Occasional Publications in Scorpiology

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<http://zoobank.org/urn:lsid:zoobank.org:pub:C3F016C8-7461-4DB5-A832-029672C152E5>

New records of *Mesobuthus mesopotamicus* (Penther, 1912) in Iraq and *Mesobuthus faiki* sp. n. from Turkey (Scorpiones: Buthidae)

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<http://zoobank.org/urn:lsid:zoobank.org:pub:C3F016C8-7461-4DB5-A832-029672C152E5>

Summary

New locality records for *Mesobuthus mesopotamicus* (Penther, 1912) are given from Iraq. The populations from southeastern Turkey, earlier identified as *M. mesopotamicus* by Kovařík et al. (2022) are examined and compared with the specimens from type locality of *M. mesopotamicus*. These populations are described as a new species, *Mesobuthus faiki* sp. n. Detailed illustrations of both species and a map are given.

Introduction

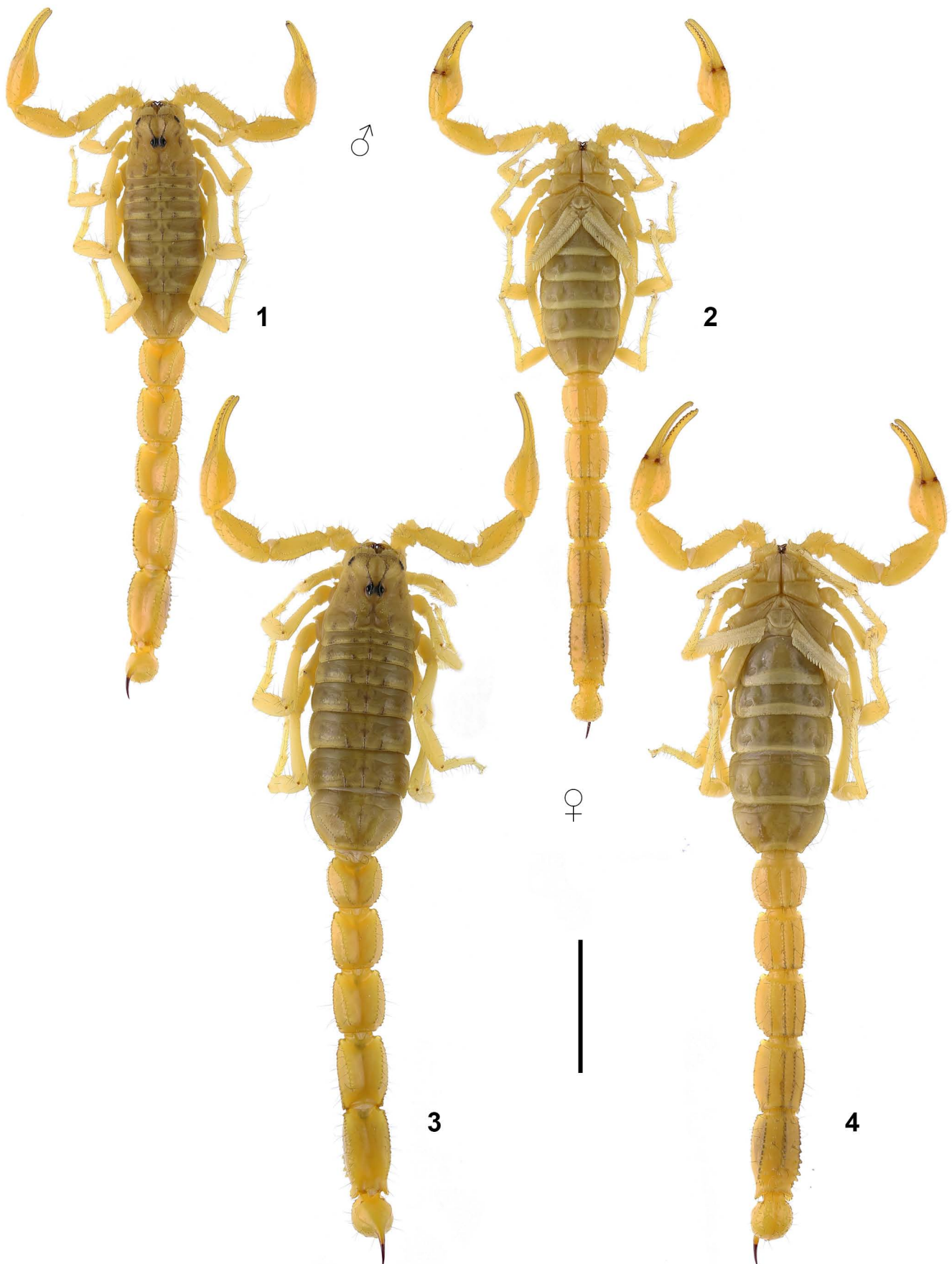
The genus *Mesobuthus* Vachon, 1950 has a very wide range in the Palearctic, from Turkey to China (Fet & Lowe, 2000; Kovařík et al., 2022). This genus was recently revised by Kovařík et al. (2022), where 15 species were accepted as valid and as many as 14 new species were described. One more species was described from Iran by Barahoei (2022).

The species *M. mesopotamicus* was described by Penther (1912) as *Buthus eupaeus mesopotamicus* from the northern Iraq. Kovařík et al. (2011) synonymized it with *Mesobuthus eupaeus phillipsii* (Pocock, 1889) which was later elevated to the species level by Mirshamsi et al. (2011). However, in their latest detailed revision, Kovařík et al. (2022) restored this taxon from synonymy at species level as *M. mesopotamicus*, and listed it for Iraq, Turkey, and Syria. The species *M. phillipsii* was limited to the southern Iran. The fauna of Turkey, according to this revision, also includes *M. eupaeus* (C. L. Koch, 1839) s.str. as well as three more species described by Kovařík et al. (2022): *M. rahsenae*, *M. turcicus*, and *M. yagmuri*.

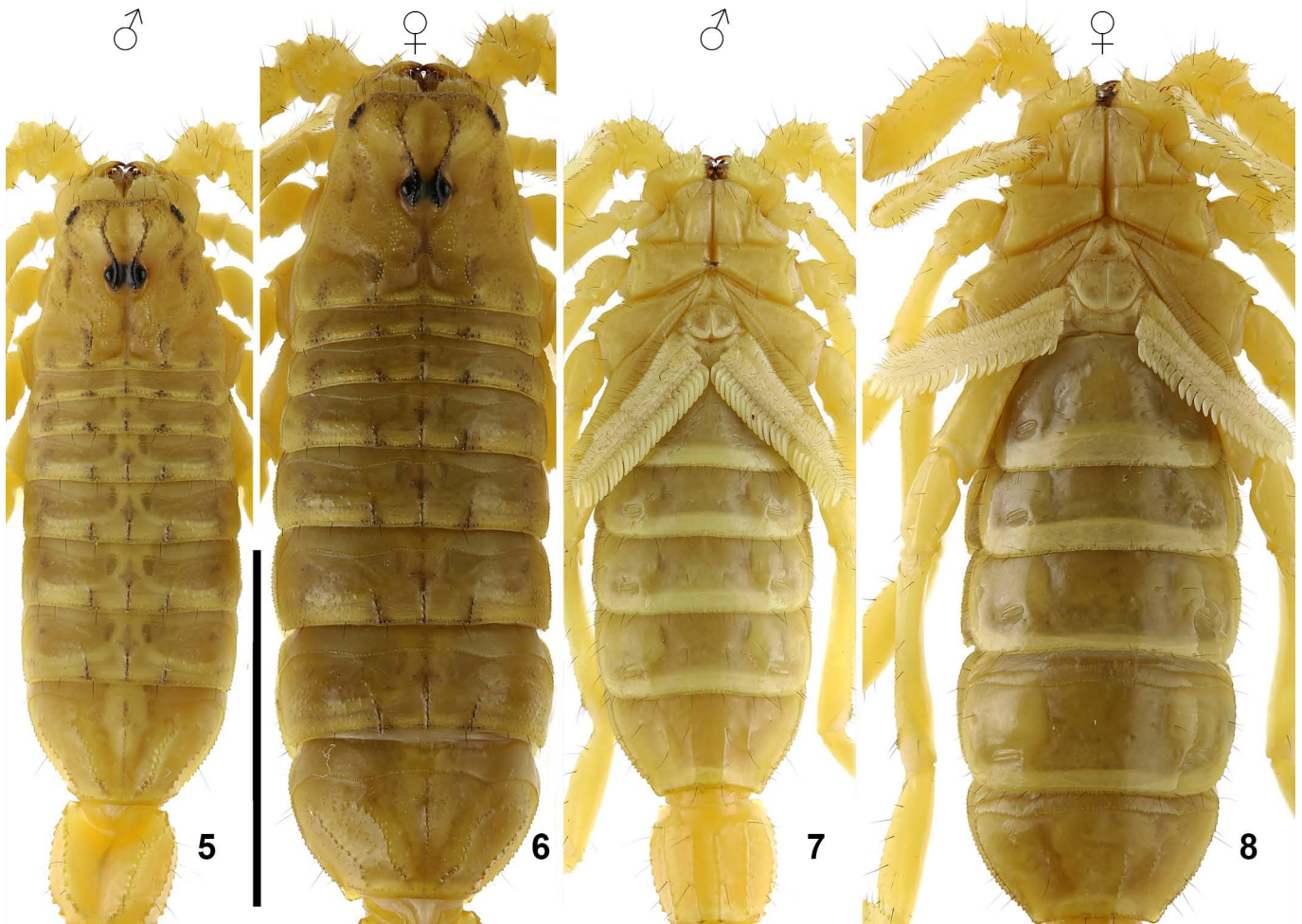
In Iraq, Penther (1912) recorded *M. mesopotamicus* from Mosul and Qal'at Shergat (Assur). The following records from Iraq, listed in literature as *M. phillipsii* or *M. eupaeus* are herein accepted as records for *M. mesopotamicus*: Baghdad, Baquba, Nasiriyah, and Hilla (Pringle, 1960); Haditha and Baghdad (Kovařík et al., 2011, 2022); Diyala and Baghdad Provinces (Al-Azawi, 2016); Basrah (Morad & Al-Abbad, 2017); Bardbr, Barzan, Chneran, and Erbil (Hussen & Ahmed, 2020); and Dhi Qar Province (Al-Khazali & Yağmur, 2019; additionally reviewed and confirmed in this study).

The *Mesobuthus* populations from southeastern Turkey (Adıyaman, Diyarbakır, Gaziantep, Kahramanmaraş, Kilis, Mardin, Şanlıurfa, and Şırnak Provinces) were reviewed by Kovařík et al. (2011) and identified as *Mesobuthus eupaeus phillipsii*. Later, those records were assigned to *M. mesopotamicus* by Kovařík et al. (2022).

In this study, we examined new *Mesobuthus* specimens collected in Iraq as well as reassessed literature records. As a result of comparison with specimens from the area close to type locality of *M. mesopotamicus*, the populations of



Figures 1–4: *Mesobuthus mesopotamicus* from Mosul Province. **Figures 1–2.** Male, dorsal (1) and ventral (2) views. **Figures 3–4.** Female, dorsal (3) and ventral (4) views. Scale bar: 10 mm.



Figures 5–8: *Mesobuthus mesopotamicus* from Mosul Province. **Figure 5–6.** Carapace and mesosoma in dorsal view, male (5) and female (6). **Figure 7–8.** Sternopectinal area and sternites, male (7) and female (8).

southeastern Turkey, earlier reported as *M. mesopotamicus*, were determined to be a new species and described herein. With this description, total number of species of the genus *Mesobuthus* reaches 31.

Material and Methods

The specimens of *Mesobuthus faiki* sp. n. were collected from southeastern Turkey (Adiyaman, Diyarbakır, Gaziantep, Kahramanmaraş, Kilis, Mardin, Siirt, Şanlıurfa and Şırnak Provinces) between 9.VI.1996 and 31.VIII.2022. A total of 795 specimens (192♂, 322♀, 281 juveniles) were examined from 89 localities in Turkey. The specimens of *M. mesopotamicus* were collected from Al Muthanna, Dhi Qar, and Mosul Provinces in Iraq between 12.VIII.2017 and 25.IX.2023. A total of 16 specimens (8♂, 8♀) were examined from 4 localities in Iraq. Identifications of specimens were done according to Kovařík et al. (2022). Photographs of specimens were taken by Canon EOS 7D. Stacking of pictures was made using Helicon Focus software. The focus stacking method is modified from Canon-Cognisys system recommended by Brecko et al. (2014).

The map showing the localities of the specimens was generated with the SimpleMappr <https://www.simplemappr.net/api> (Shorthouse, 2010).

The trichobothrial nomenclature is given after Vachon (1974) and morphological nomenclature, after Francke (1977), Stahnke (1971) and Hjelle (1990). The morphological measurements are given in millimeters (mm) according to Sissom et al. (1990).

Abbreviations: AZMM (Alaşehir Zoological Museum, Manisa Celal Bayar University, Alaşehir, Manisa, Turkey); NHMW (Naturhistorisches Museum Wien, Vienna, Austria); and NMPC (National Museum of Natural History, Prague, Czech Republic).

Systematics

Family Buthidae C. L. Koch, 1837

Mesobuthus Vachon, 1950

Mesobuthus mesopotamicus (Penther, 1912)

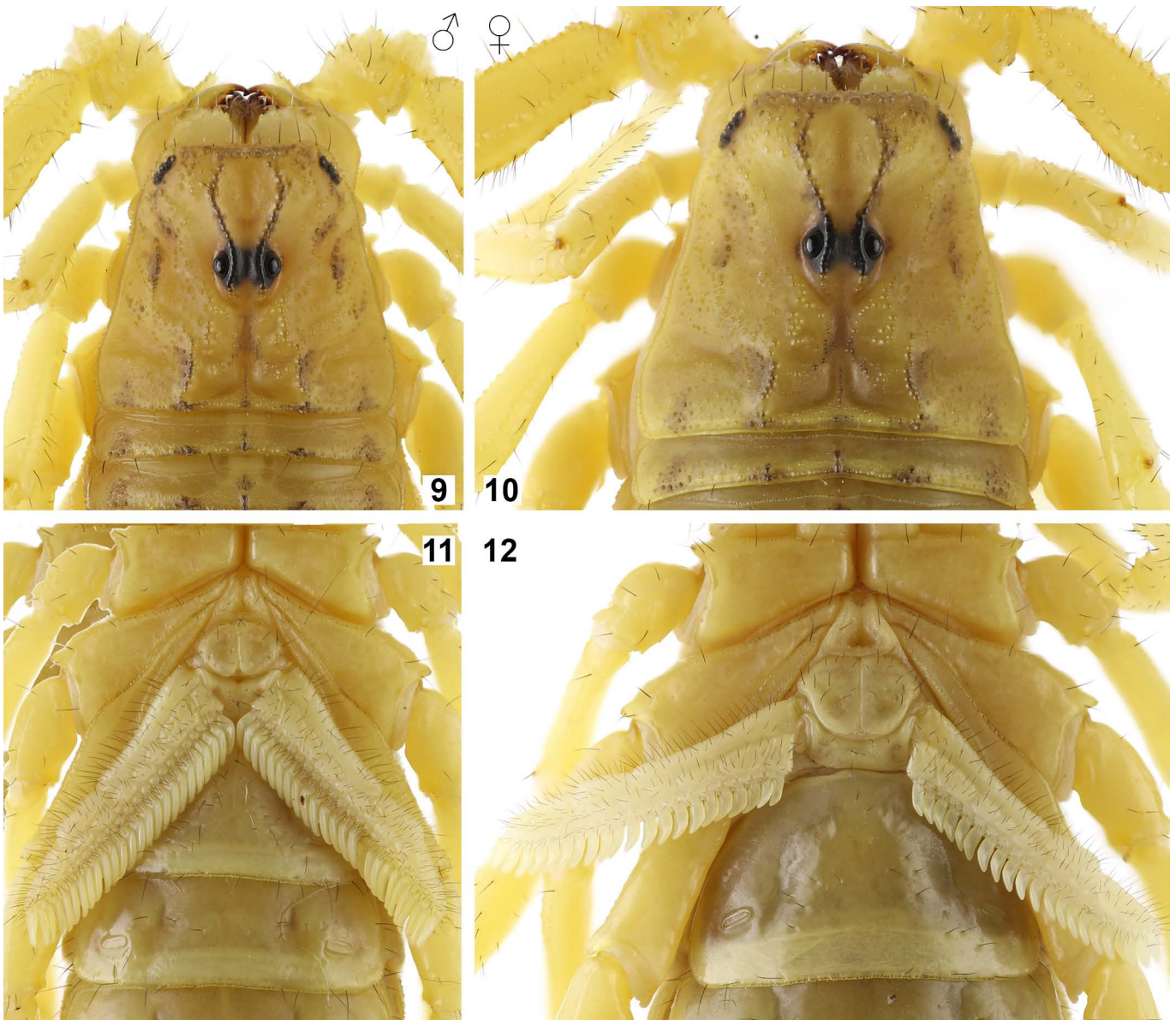
(Figures 1–37; Table 1)

<http://zoobank.org/urn:lsid:zoobank.org:act:48250000-B2C9-4358-838E-DB90549C064E>

Buthus eupaeus (incorrect spelling) *mesopotamicus* Penther, 1912: 111–112.

Buthus eupeus mesopotamicus: Birula, 1917: 39, 41, 228; Birula, 1918: 15–24, figs. 3–5.

Mesobuthus eupeus mesopotamicus: Vachon, 1959: 155; Fet, 1994: 527; Fet & Lowe, 2000: 173.



Figures 9–12: *Mesobuthus mesopotamicus* from Mosul Province. **Figure 9–10.** Carapace, male (9) and female (10). **Figure 11–12.** Sternopectinal area, male (11) and female (12).

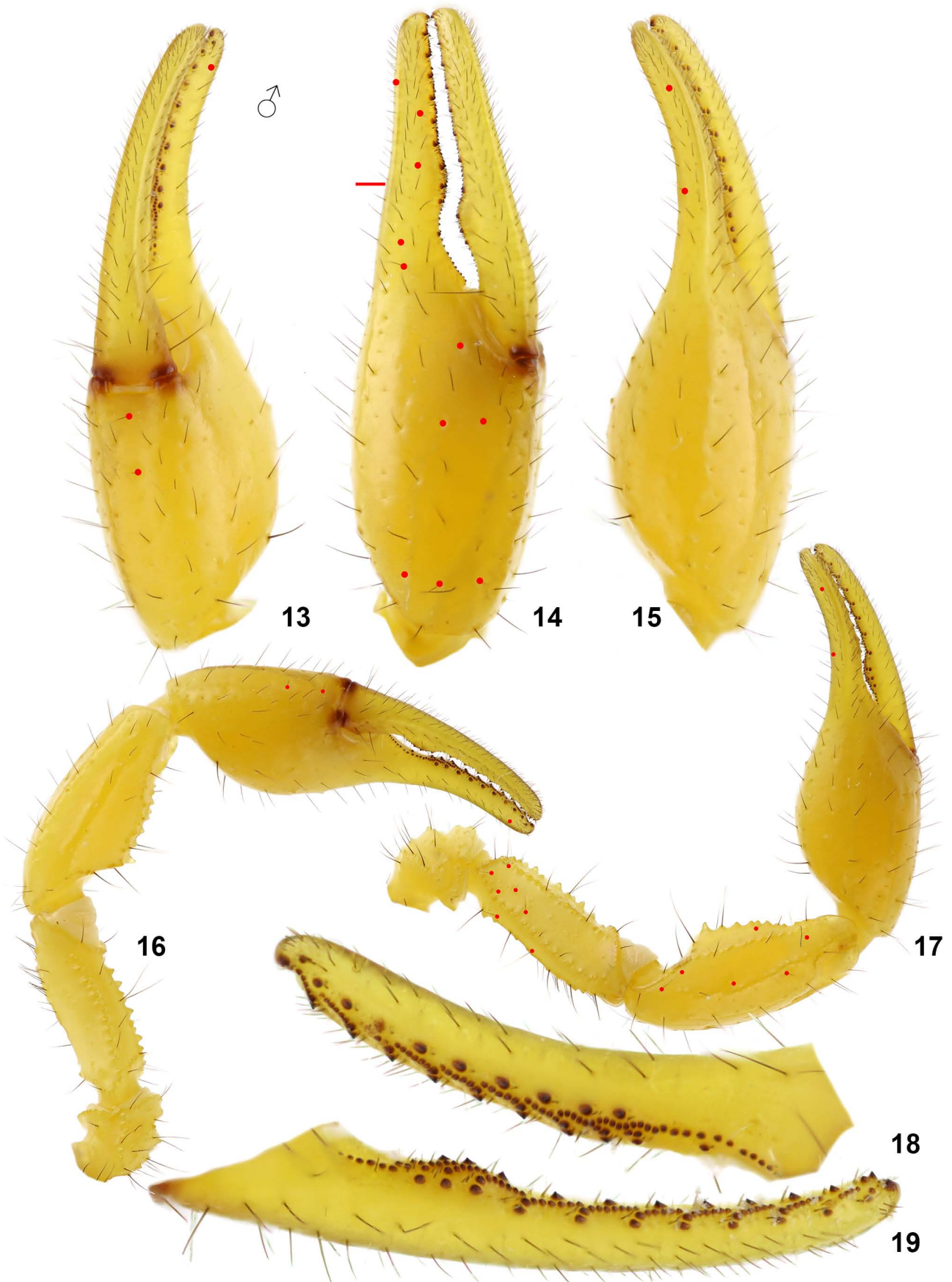
Mesobuthus eupeus phillipsii (in part; Iraq): Kovařík et al., 2011: 5.

Mesobuthus mesopotamicus (in part; Iraq): Kovařík et al., 2022: 92, figs. 610–611, 614, 616–618, 622–631, 642–643, 646–649.

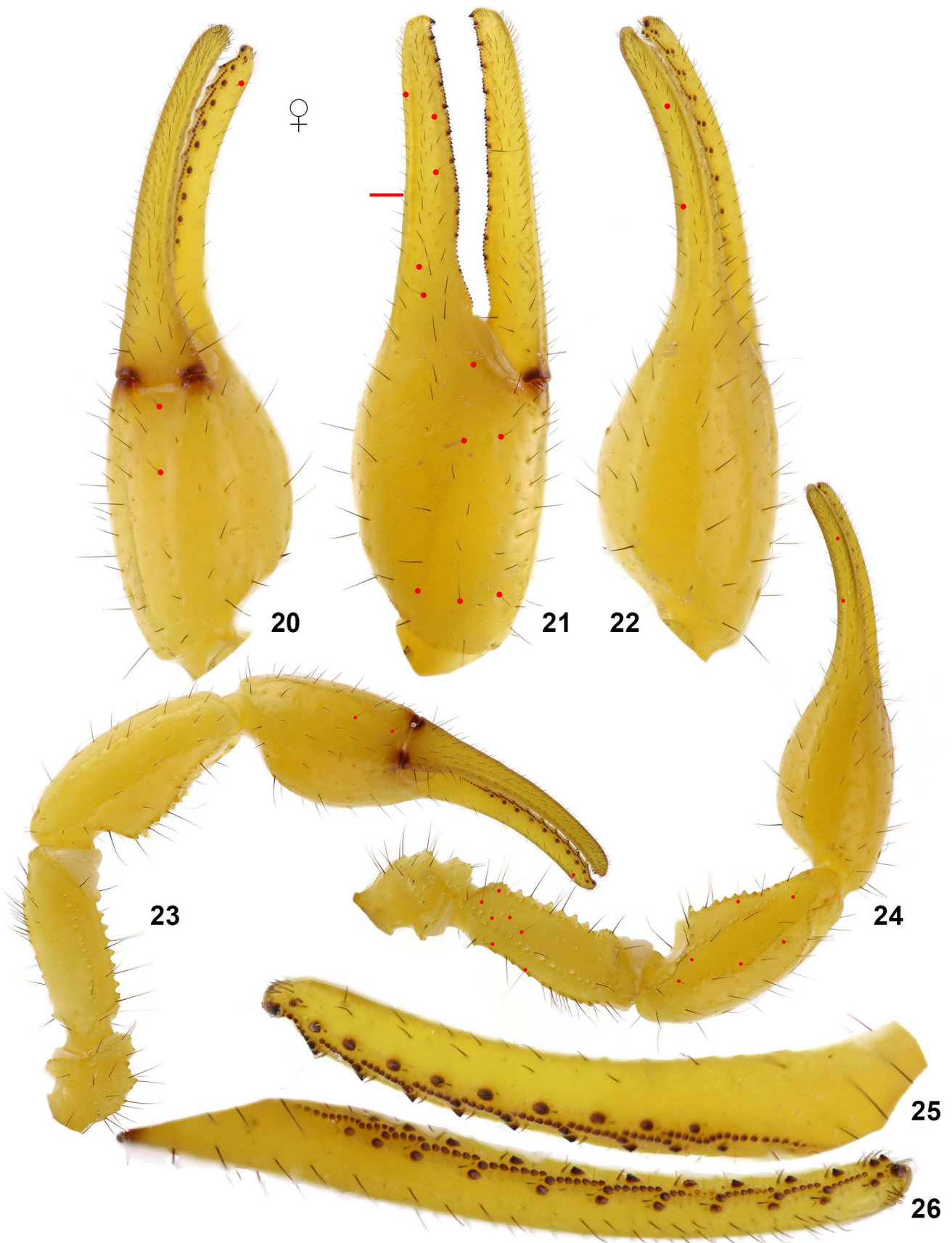
Mesobuthus phillipsii: Morad & Al-Abbad, 2017: 50; Kovařík, 2019: 17 (in part; Iraq); Hussien & Ahmed, 2020: 6717–6718, figs. 1, 6; Kachel et al., 2021: 4.

TYPE LOCALITY AND TYPE DEPOSITORY. Iraq, Mosul Province, Mosul, ♂ Lectotype designated by Kovařík et al., 2022: 92; NHMW.

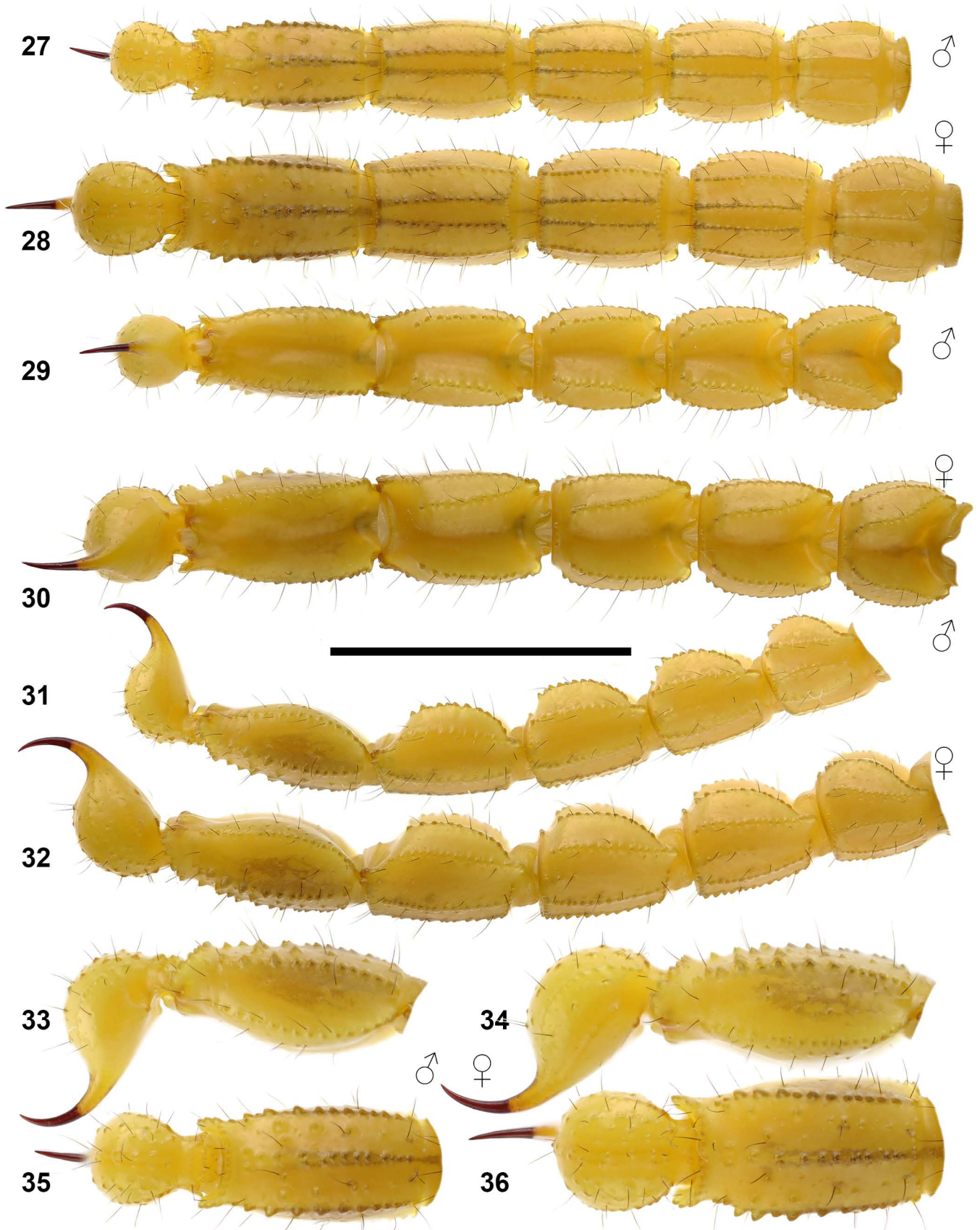
MATERIAL EXAMINED. Iraq, Al Muthanna Province, Samawah, 31°19'00"N 45°17'00"E, 16 m a. s. l., 21.IV.2021, 1♂1♀, leg. A. A. Al-Fanharawi (AZMM/Sco-2021:41-42); Dhi Qar Province, Al-Nasr Town, Al-Caar Region, 31°29'27"N 45°54'55"E, 6 m a. s. l., 12.VIII.2017, 2♂1♀, leg. A. M. Al-Khazali (AZMM/Sco-2017:9-11); Al-Shatrah District, Sayed Hamad Village, 31°27'17"N 46°13'04"E, 10 m, 19.VIII.2017, 1♀, leg. A. M. Al-Khazali (AZMM/Sco-2017:12); Mosul Province, Nineveh, Sultan Abdullah Village, 35°55'40"N 43°25'02"E, 210 m a. s. l., 25.09.2023, 5♂5♀, leg. F. S. Hussien (AZMM/Sco-2023:09-18).



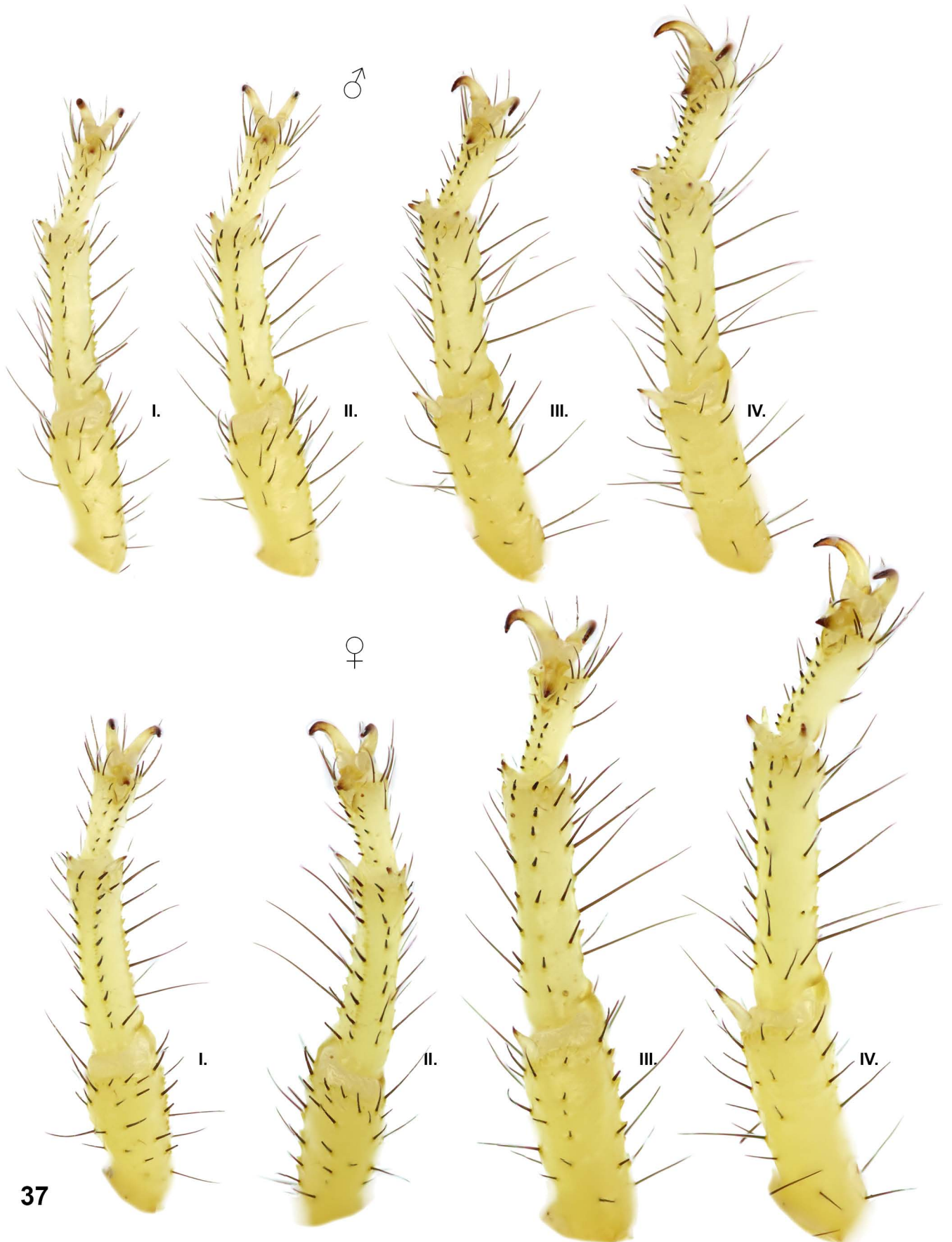
Figures 13–19. *Mesobuthus mesopotamicus*, male from Mosul Province, pedipalp segments. Chela ventral (13), external (14) and dorsal (15) views. Pedipalp ventral (16), dorsal (17). Fixed (18) and movable (19) fingers dentition. Trichobothrial pattern is indicated by red circles (13–17).



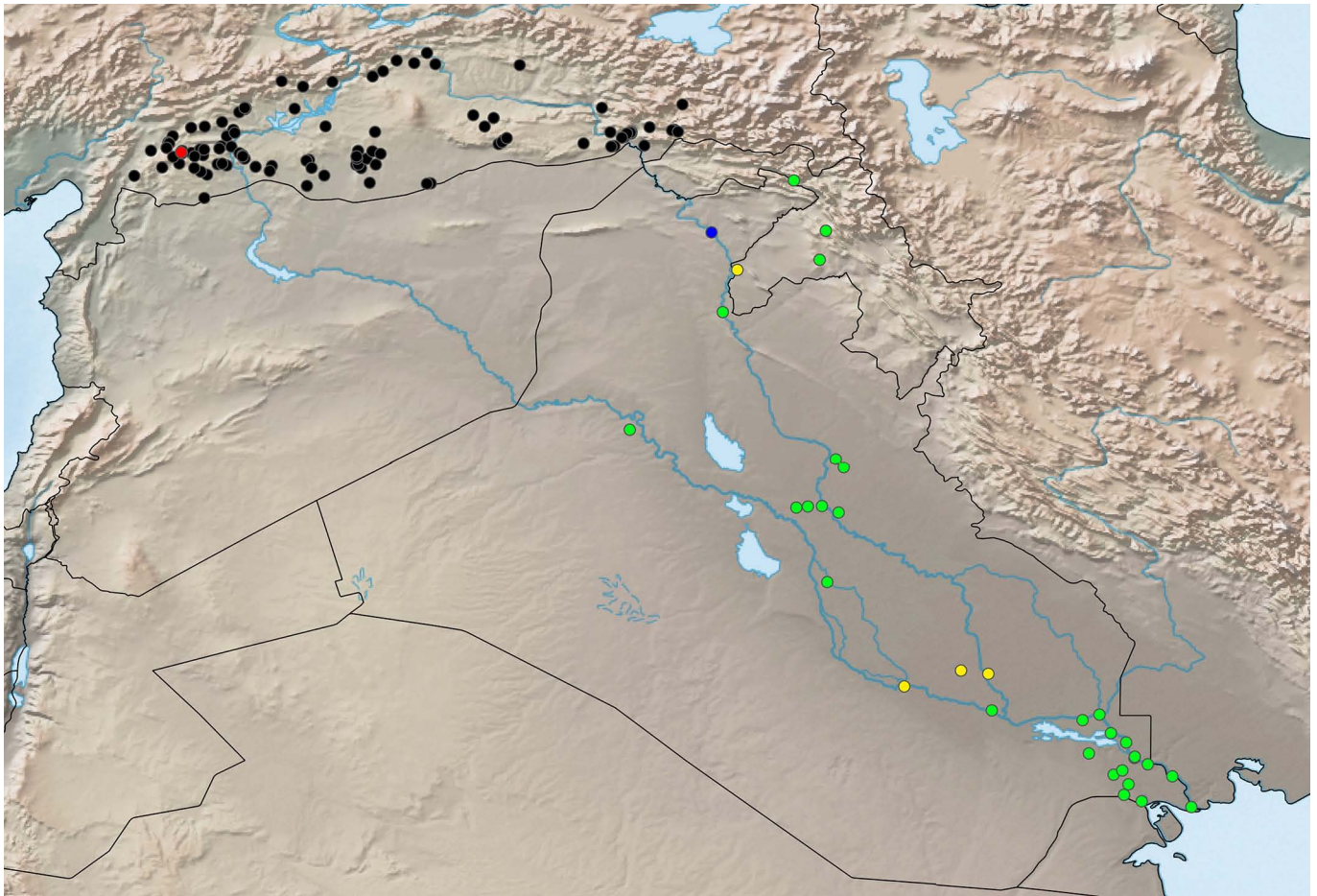
Figures 20–26. *Mesobuthus mesopotamicus*, female from Mosul Province, pedipalp segments. Chela ventral (20), external (21) and dorsal (22) views. Pedipalp ventral (23), dorsal (24). Fixed (25) and movable (26) fingers dentition. Trichobothrial pattern is indicated by red circles (20–24).



Figures 27–36: *Mesobuthus mesopotamicus* from Mosul Province, metasoma and telson. **Figures 27–28:** Ventral view, male (27) and female (28). **Figures 29–30:** Dorsal view, male (29) and female (30). **Figures 31–32:** Lateral view, male (31) and female (32). **Figures 33–34:** Lateral view of metasoma V and telson, male (33) and female (34). **Figures 35–36:** Dorsal view of metasoma V and telson, male (35) and female (36). Scale bar: 10 mm (27–32).



Figures 37. *Mesobuthus mesopotamicus* from Mosul Province, tibia, basitarsus and tarsus of right legs I–IV (Top row male, bottom row female).



Figures 38. A map of distribution of *Mesobuthus mesopotamicus* and *M. faiki* sp. n. Red circle, type locality of *M. faiki* sp. n.; black circles, localities of *Mesobuthus faiki* sp. n.; blue circle, type locality of *M. mesopotamicus*; green circles indicate literature records according to Penther (1912), Kovařík et al. (2011, 2022), Pringle (1960), Al-Azawi (2016), Morad & Al-Abbad (2017), and Hussien & Ahmed (2020); yellow circles indicate new locality records of *M. mesopotamicus*.

***Mesobuthus faiki* Yağmur, Kovařík & Fet, sp. n.**
(Figures 39–75; Table 1)

<http://zoobank.org/urn:lsid:zoobank.org:act:4B26C7CE-3EAA-482B-97A4-8748ED666ACE>

Mesobuthus eupeus: Crucitti & Ciczuzza, 2000: 287; Crucitti & Vignoli, 2002: 453; Karataş & Karataş, 2003: 1–4; Karataş & Çolak, 2005: 3–4; Yağmur et al., 2007: 97–98.
Mesobuthus eupeus phillipsii (in part; Turkey): Kovařík et al., 2011: 5–13, figs. 12–15, 17–18, 21–22, 25–27.

Mesobuthus mesopotamicus (in part; Turkey): Kovařík et al., 2022: 92, 97, 178 (two DNA sequences from Turkey, Kahramanmaraş Province, Türkoğlu, Evri Village; Mardin Province, Yesilli).

TYPE LOCALITY AND TYPE DEPOSITORY. **Turkey, Gaziantep Province:** Şehitkamil, İncesu Village, 1 km E, 37°13'16"N 37°18'05"E, 942 m a. s. l.; AZMM/SCO-2005:4.

TYPE MATERIAL EXAMINED. *Holotype* ♂, **Turkey, Gaziantep Province:** Şehitkamil, İncesu Village, 1 km E, 37°13'16"N 37°18'05"E, 942 m a. s. l., 7.V.2005, leg. E. A. Yağmur & M. Yalçın (AZMM/SCO-2005:4).

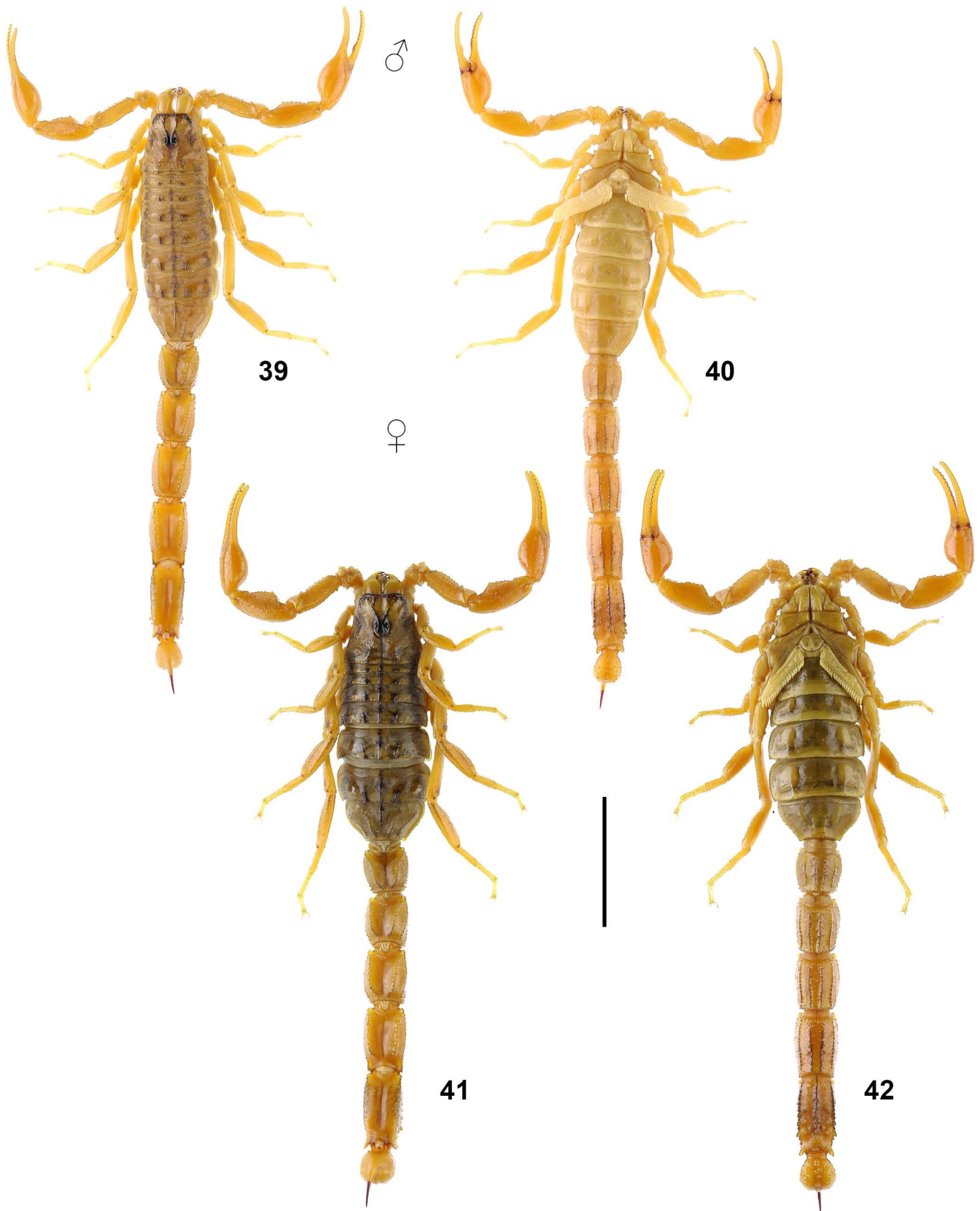
Paratypes: **Turkey, Adıyaman Province,** Besni, Atmalı Village, 37°42'21"N 38°00'44"E, 730 m a. s. l., 15.V.2004, 1♂4♀4juvs., leg. E. A. Yağmur & T. Akkaya (AZMM/SCO-2004:21-29); Besni, Atmalı Village, 2 km S, 8.VII.2006, 37°41'39"N 38°00'11"E, 763 m a. s. l., 2♂1♀, leg. E. A. Yağmur & S. Anlaş (AZMM/SCO-2006:17-19); Besni, Çakırhöyük Village fork in road, 1 km S, 37°33'09"N 37°45'12"E, 724 m a. s. l., 7.VII.2006, 2♂1♀, leg. E. A. Yağmur & S. Anlaş (AZMM/SCO-2006:20-22); Besni, Üçgöz Village, 3 km NW, 37°39'38"N 37°56'28"E, 763 m a. s. l., 8.VII.2006, 3♂, leg. E. A. Yağmur & S. Anlaş (AZMM/SCO-2006:23-25); Central, Aydınoluk Village fork in road, 1 km W, 37°42'28"N 38°00'06"E, 730 m a. s. l., 4.V.2004, 1♂2♀, leg. A. Avcı (AZMM/SCO-2004:30-32), same locality, 3♂1♀, 11.VIII.2006, leg. A. Avcı & E. A. Yağmur (AZMM/SCO-2006:26-30); Gerger, Açma Village, 2 km NE, 37°59'35"N 38°57'51"E, 595 m a. s. l., 19.IV.2008, 1♂1juv., leg. E. A. Yağmur & E. Tezcan (AZMM/SCO-2008:02-03); Kahta, Çaybaşı Village, 37°41'49"N 38°32'58"E, 597 m a. s. l., 27.V.2006, 1juv., leg. A. Avcı (AZMM/SCO-2006:31); Kahta, Eski Kahta Village, 37°56'24"N 38°38'33"E, 631 m a. s. l., 15.VII.2021, 23♂23♀, leg. E. A. Yağmur & F. Alaca (AZMM/SCO-2021:57-102); Sincik, İnlice Village, 38°00'06"N

Dimensions (mm)		<i>M. faiki</i> sp. n.	<i>M. faiki</i> sp. n.	<i>M. mesopotamicus</i>	<i>M. mesopotamicus</i>
		♂ holotype	♀ paratype	♂ Iraq, Mosul	♀ Iraq, Mosul
Carapace	L / W	4.40 / 4.84	4.86 / 5.70	4.80 / 5.20	6.01 / 6.68
Mesosoma	L	12.19	15.39	11.38	15.33
Tergite VII	L / W	3.25 / 4.77	3.51 / 5.93	3.27 / 5.33	4.18 / 6.68
Metasoma + telson	L	26.65	26.4	27.6	31.27
Segment I	L / W / D	3.28 / 3.01 / 2.77	3.03 / 3.35 / 2.81	3.38 / 3.39 / 3.00	3.73 / 4.03 / 3.49
Segment II	L / W / D	3.71 / 2.91 / 2.80	3.59 / 3.11 / 2.84	3.88 / 3.37 / 3.09	4.44 / 3.88 / 3.58
Segment III	L / W / D	3.98 / 2.90 / 2.81	3.86 / 3.10 / 3.00	4.30 / 3.40 / 3.12	4.57 / 3.85 / 3.54
Segment IV	L / W / D	4.93 / 2.88 / 2.79	4.67 / 2.91 / 2.76	5.06 / 3.28 / 2.98	5.48 / 3.71 / 3.34
Segment V	L / W / D	5.69 / 2.58 / 2.21	5.73 / 2.78 / 2.17	5.92 / 2.90 / 2.62	6.80 / 3.42 / 2.90
Telson	L / W / D	5.06 / 2.07 / 1.98	5.52 / 2.55 / 2.27	5.06 / 2.36 / 2.34	6.25 / 3.08 / 2.74
Vesicle	L	3.18	3.35	3.25	4.20
Aculeus	L	2.13	2.29	2.05	2.34
Pedipalp	L	16.05	16.24	16.68	19.17
Femur	L / W	3.77 / 1.33	3.81 / 1.47	4.01 / 1.40	4.61 / 1.72
Patella	L / W	4.69 / 1.87	4.53 / 1.96	4.89 / 2.00	5.44 / 2.24
Chela	L	7.59	7.90	7.78	9.12
Manus	L / W / D	3.52 / 2.15 / 2.08	3.58 / 1.98 / 2.03	3.70 / 2.17 / 2.47	4.20 / 2.56 / 2.83
Movable finger	L	4.91	4.77	4.62	5.40
Total	L	43.24	46.65	43.78	52.61

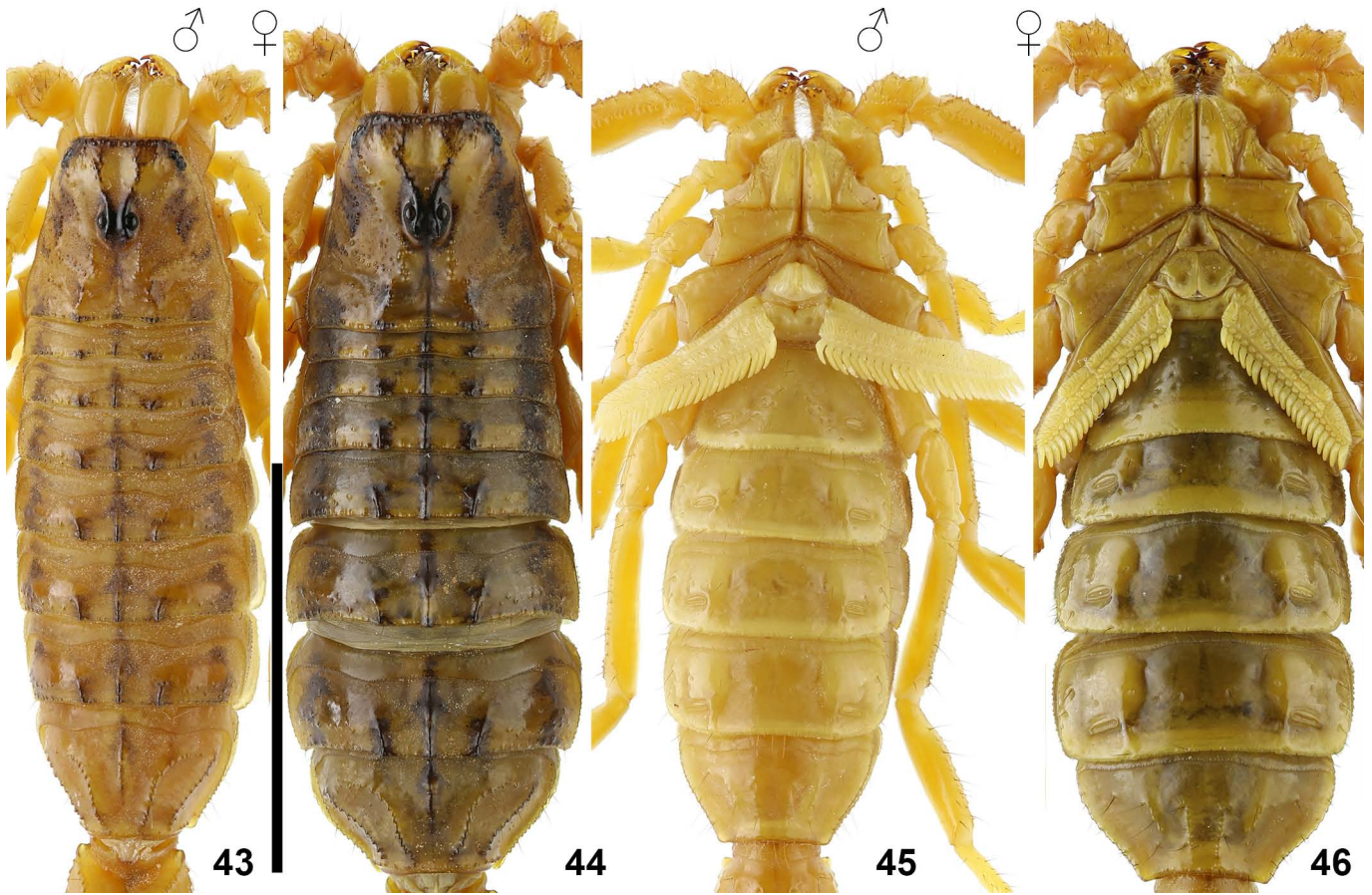
Table 1. Comparative measurements of *Mesobuthus faiki* sp. n. types and *M. mesopotamicus* from Mosul Province, Nineveh, Sultan Abdullah Village. Abbreviations: length (L), width (W, in carapace it corresponds to posterior width), depth (D).

38°24'28"E, 993 m a. s. l., 12.VII.2019, 1♀, leg. E. A. Yağmur (AZMM/Sco-2019:6); Nemrut Mountain (37.98°N 38.74°E), 9.VI.1996, 1♂, leg. M. Snížek, NMPC; Sincik, Kocahisar Village, 37°56'35"N 38°38'47"E (37.93°N 38.63°E), 625 m a. s. l., 15.VII.2020, 5♂, leg. F. Alaca; *Diyarbakır Province*, Çermik, Başarı Village, 1 km NW, 38°06'36"N 39°31'05"E, 966 m a. s. l., 12.IV.2008, 1♂1♀1juv., leg. E. A. Yağmur, G. Çalışır & M. Özkörük (AZMM/Sco-2008:04-06); Çermik, Petekkaya Village, 6 km SW, 38°03'06"N 39°24'17"E, 722 m a. s. l., 11.IV.2008, 1♀1juv., leg. E. A. Yağmur, G. Çalışır & M. Özkörük (AZMM/Sco-2008:07-08); Çınar, Aşağı Konak Village, Ayşebacı Hill, 37°37'35"N 40°29'35"E, 760 m a. s. l., 16.VIII.2007, 1♂, leg. E. A. Yağmur (AZMM/Sco-2007:10); Dicle, Kuru Village fork in road, 1 km NE, 38°18'37"N 40°00'02"E, 880 m a. s. l., 25.V.2010, 1♀, leg. İ. Özgen (AZMM/Sco-2010:2); Eğil, Kalkan Village, 3 km Kuzey, 38°11'12"N 40°05'33"E, 842 m a. s. l., 15.IV.2022, 2♀, leg. E. A. Yağmur & A. Avcı (AZMM/Sco-2022:97-98); Ergani, Salihli Village fork in road, 1 km NE, 38°13'38"N 39°40'07"E, 902 m a. s. l., 12.IV.2008, 1juv., leg. E. A. Yağmur, G. Çalışır & M. Özkörük (AZMM/Sco-2008:09); Ergani, Tevekli Village, 38°11'54"N 39°51'37"E, 823 m a. s. l., 16.VI.2007, 2♂1♀, leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2007:11-13); Silvan, Köçek Mount, 38°10'55"N 41°00'18"E, 1126 m a. s. l., 15.IV.2010, 3juvs., E. A. Yağmur & M. Özkörük (AZMM/

Sco-2010:3-5); Ergani District, Tevekli Village, 38°11'54"N 39°51'37"E (38.18°N 39.85°E), 823 m a. s. l., 16.VI.2007, 1♀, leg. E. A. Yağmur & M. Yalçın, NMPC; Çermik District, 6 km SW of Petekkaya Village, 38°03'06"N 39°24'17"E (38.05°N 39.40°E), 722 m a. s. l., 11.IV.2008, 1♀, leg. E. A. Yağmur, NMPC; *Gaziantep Province*, Araban, Başpınar Village, 2 km NE, 37°27'59"N 37°52'33"E, 675 m a. s. l., 30.IV.2005, 1♂, leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2005:5); Araban, Gözey Village, 37°23'45"N 37°48'21"E, 603 m a. s. l., 21.IV.2006, 2juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2006:32-33); Araban, Gümüşpınar Village, 1 km S, 37°25'58"N 37°53'28"E, 30.IV.2005, 2♂8♀, leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2005:6-15), same place, 21.IV.2006, 2♂2♀4juvs., leg. M. Yalçın (AZMM/Sco-2006:280-287); İslahiye, Karakaya Village, 36°57'47"N 36°47'05"E, 537 m a. s. l., 14.IV.2006, 1♀, leg. M. Yalçın (AZMM/Sco-2006:34); Nizip, Altındağ Village, 37°05'14"N 37°42'07"E, 667 m a. s. l., 19.X.2002, 2♂5♀5juvs., leg. C. Toprak & S. Kesmezoğlu (AZMM/Sco-2002:5-16); Nizip, Keklik Village, 2 km SW, 37°04'21"N 37°48'07"E, 579 m a. s. l., 30.V.2003, 1juv., leg. E. A. Yağmur & C. Toprak (AZMM/Sco-2003:5); Nizip, Kıratlı Village, 2 km NE, 37°05'34"N 37°45'10"E, 656 m a. s. l., 10.X.2004, 2juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2004:33-34); Nurdağı, G. Kışla Village, 37°14'28"N 36°58'10"E, 598 m a. s. l., 10.V.2003, 1juv., E. A.



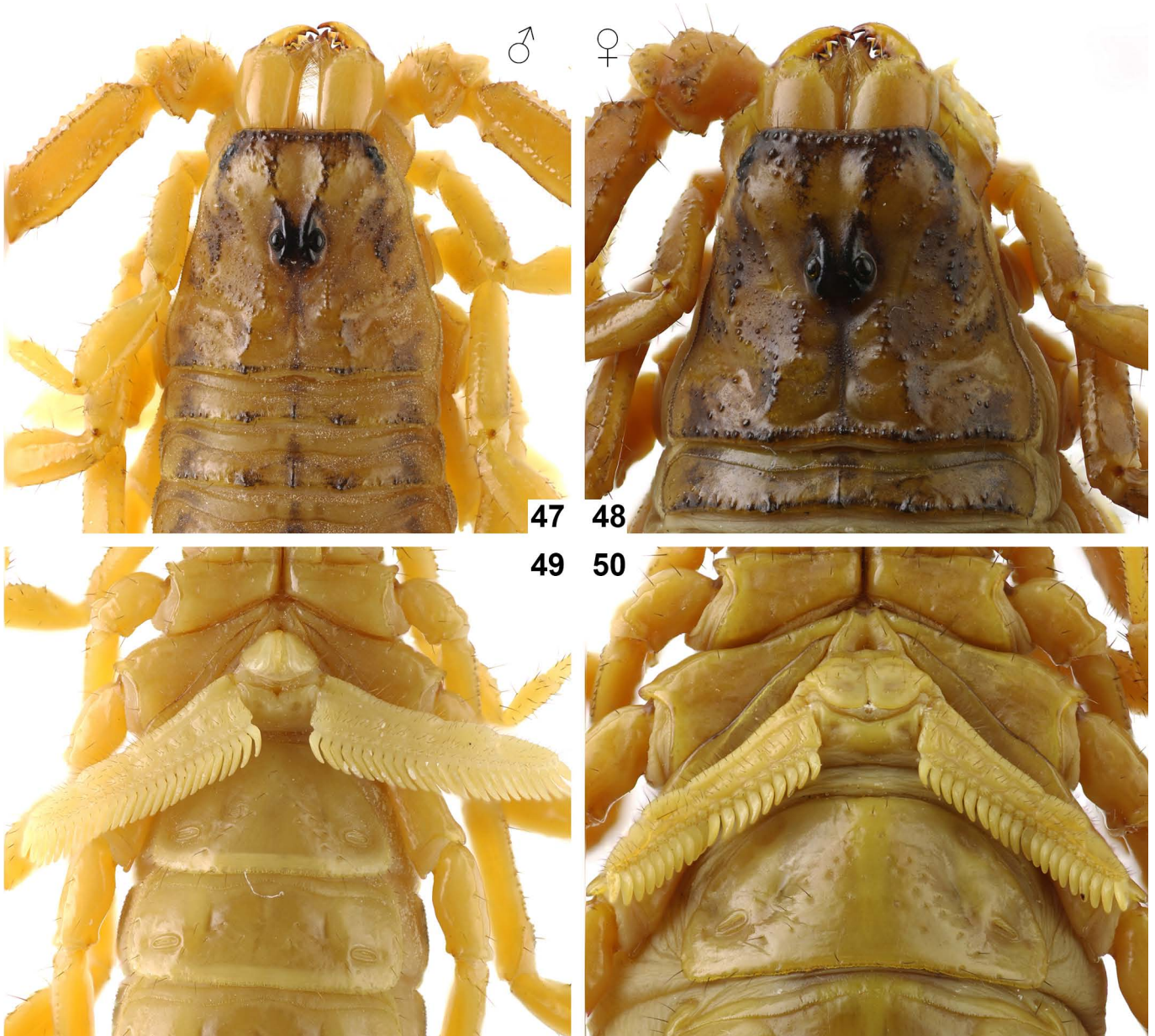
Figures 39–42: *Mesobuthus faiki* sp. n. **Figures 39–40.** Male holotype, dorsal (39) and ventral (40) views. **Figures 41–42.** Female paratype from İncesu Village, dorsal (41) and ventral (42) views. Scale bar: 10 mm.



Figures 43–46: *Mesobuthus faiki* sp. n. Figure 43–44. Carapace and mesosoma in dorsal view, male holotype (43) and female paratype (44). Figure 45–46. Sternopectinal area and sternites, male holotype (45) and female paratype from İncesu Village (46).

Yağmur (AZMM/Sco-2003:6); Şehitkamil, Akçaburç Village, 2 km SW, 37°14'09"N 37°18'47"E, 834 m a. s. l., 7.V.2005, 1♂1♀ juvs., leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2005:16-20); Şahinbey, Belenköy Village, 1 km E, 37°03'15"N 37°05'31"E, 954 m a. s. l., 5.V.2006, 4♀1juv., leg. M. Yalçın (AZMM/Sco-2006:35-39); Şahinbey, Gaziantep Town, Perilikaya Neighbourhood, 37°02'43"N 37°26'44"E, 855 m a. s. l., 10.V.2010, 3♂1♀, leg. E. A. Yağmur (AZMM/Sco-2010:11-14); Şehitkamil, Güngürge Village, 2 km SW, 37°11'43"N 37°27'27"E, 865 m a. s. l., 9.X.2004, 2♀, leg. E. A. Yağmur & C. Toprak (AZMM/Sco-2004:35-36); Şehitkamil, Güngürge Village, 1 km N, 37°13'35"N 37°28'57"E, 803 m a. s. l., 9.X.2004, 1juv., leg. E. A. Yağmur & C. Toprak (AZMM/Sco-2004:37); Şehitkamil, İncesu Village, 1 km E, 37°13'16"N 37°18'05"E, 942 m a. s. l., 7.V.2005, 3♂4♀1juv., leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2005:21-28); Şehitkamil, Övündük Village, 2 km W, 37°12'53"N 37°24'57"E, 778 m a. s. l., 8.VI.2002, 1♀, leg. C. Toprak & S. Kesmezoğlu (AZMM/Sco-2002:17); Şahinbey, Sarısalkım Village, 37°05'45"N 37°16'48"E, 1013 m a. s. l., 26.IV.2004, 1juv., leg. E. A. Yağmur (AZMM/Sco-2004:38); Şehitkamil, Taşlıca, 36°58'17"N 37°35'08"E, 770 m a. s. l., 24.VII.2007, 1♂4♀13juvs., leg. H. Koç (AZMM/Sco-2007:14-31); Şehitkamil, Bedirköy, 37°10'34"N 37°26'57"E, 852 m a. s. l., 29.VIII.2020, 7♂2♀3juvs., leg. E. A. Yağmur, E. Tezcan & M. Özkörük (AZMM/Sco-2020:12-23); Şehitkamil, Erikli, 2 km

E, 37°12'35"N 37°18'36"E, 967 m a. s. l., 16.IV.2006, 2♀, leg. M. Yalçın (AZMM/Sco-2006:40-41); Şehitkamil, Tuğlu Village, 37°11'12"N 37°32'35"E, 801 m a. s. l., 11.V.2007, 2♀4juvs., leg. H. Koç (AZMM/Sco-2007:32-37); Şehitkamil, Yeşilce Village, 37°10'12"N 37°12'50"E, 982 m a. s. l., 10.V.2004, 1♀, leg. T. Akkaya (AZMM/Sco-2004:39), same locality, 30.VI.2006, 3♀7juvs., leg. E. A. Yağmur (AZMM/Sco-2006:42-51); Oğuzeli, Çaybaşı Village, 37°00'16"N 37°31'03"E, 982 m a. s. l., 15.V.2020, 1♂, leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2020:11); Yavuzeli, Çiltoprak Village, 1 km N, 37°17'08"N 37°44'39"E, 536 m a. s. l., 23. IV.2006, 1♂3♀2juvs., leg. M. Yalçın (AZMM/Sco-2006:52-57); Yavuzeli, Örenli Village, 1 km E, 37°15'11"N 37°30'45"E, 726 m a. s. l., 9.X.2004, 5juvs., leg. E. A. Yağmur & C. Toprak (AZMM/Sco-2004:40-44); Yavuzeli, Düzce Village, 1 km S, 37°15'35"N 37°43'20"E, 533 m a. s. l., 23.IV.2006, 2♀3juvs., leg. M. Yalçın (AZMM/Sco-2006:58-62); Yavuzeli, Süleymanobası Village, 1 km N, 37°14'56"N 37°33'14"E, 837 m a. s. l., 9.X.2004, 1juv., leg. E. A. Yağmur & C. Toprak (AZMM/Sco-2004:45); Kahramanmaraş Province, Pazarcık, Hörük Village fork in road, 0.5 km N, 37°30'10"N 37°33'46"E, 795 m a. s. l., 24.VI.2007, 3juvs., leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2007:38-40); Pazarcık, Ganıdağı Village, 37°29'27"N 37°24'47"E, 967 m a. s. l., 5.IV.2008, 1♂1♀, leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2008:10-11); Pazarcık, Karabıyıklı Village, 4 km N, 37°19'33"N 37°09'40"E,



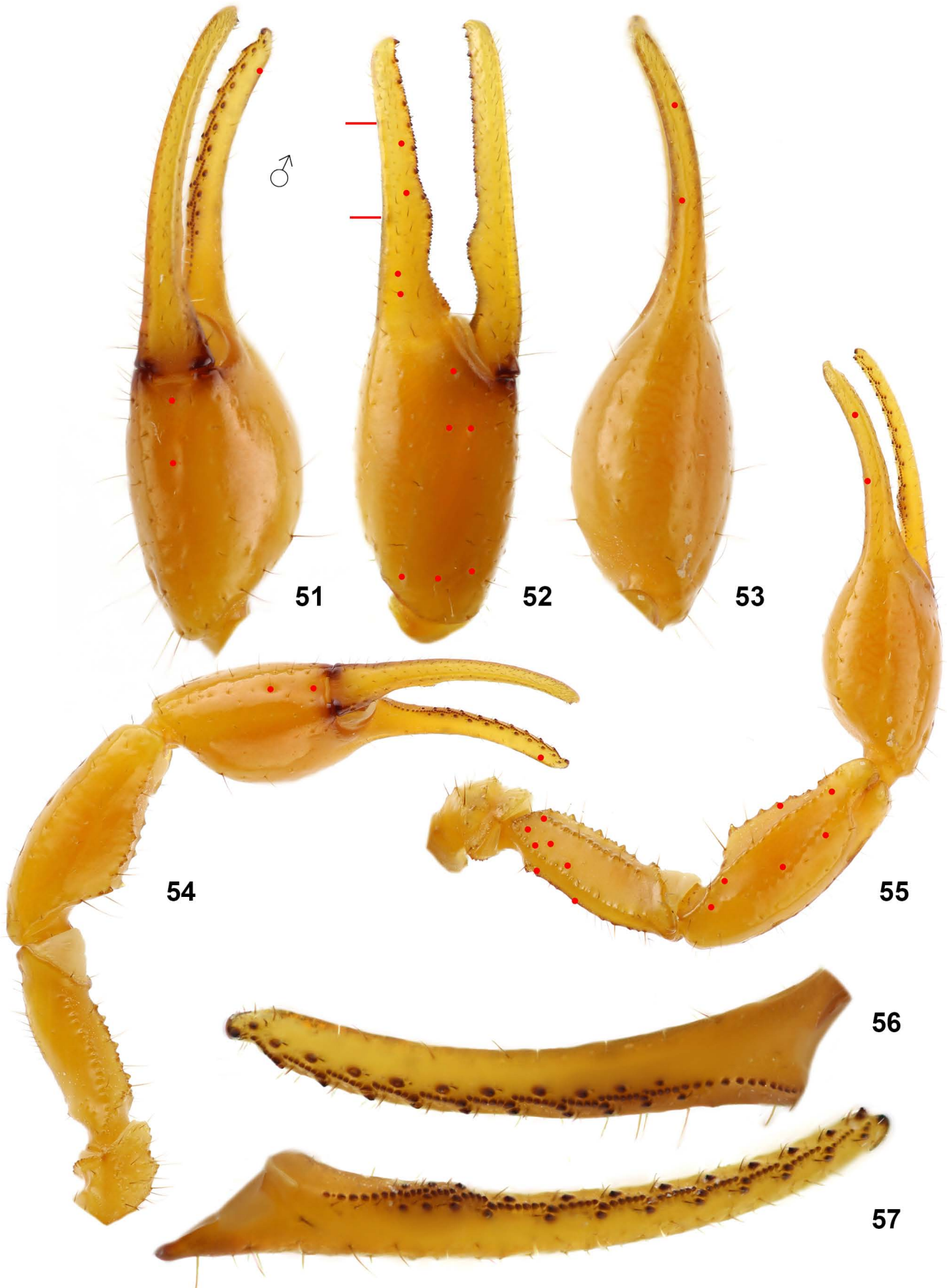
Figures 47–50: *Mesobuthus faiki* sp. n. **Figure 47–48.** Carapace, male holotype (47) and female paratype from İncesu Village (48). **Figure 49–50.** Sternoplectinal area, male holotype (49) and female from İncesu Village (50).

743 m a. s. l., 18.VI.2006, 1♂1♀, leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2006:63-64); Pazarcık, Salmanıpak Village, 37°24'01"N 37°12'38"E, 671 m a. s. l., 9.IV.2006, 4♀, leg. E. A. Yağmur, M. Yalçın & M. Özkörük (AZMM/Sco-2006:65-68); Pazarcık, Narlı, 2 km S, 37°19'50"N 37°09'48"E, 868 m a. s. l., 9.IV.2006, 1♀1juv., leg. E. A. Yağmur, M. Yalçın & M. Özkörük (AZMM/Sco-2006:69-70); Pazarcık, Narlı, 7 km S, 37°19'12"N 37°10'13"E, 7.III.2008, 9♀5juvs., leg. E. A. Yağmur, M. Yalçın & G. Çalışır (AZMM/Sco-2008:12-25), same locality, 37°19'15"N 37°10'15"E, 873 m a. s. l., 27.VII.2018-15.VII.2019, Pitfall Trap, 1♂, leg. E. A. Yağmur & K. Yılmaz (AZMM/Sco-2018:180-193); Türkoğlu, Evri Village, 37°16'13"N 37°08'33"E, 720 m a. s. l., 23.VII.2007, 7♂2♀11juvs., leg. E. A. Yağmur (AZMM/Sco-2007:146-165); Kilis Province, Elbeyli, Çangallı Village, 36°42'52"N

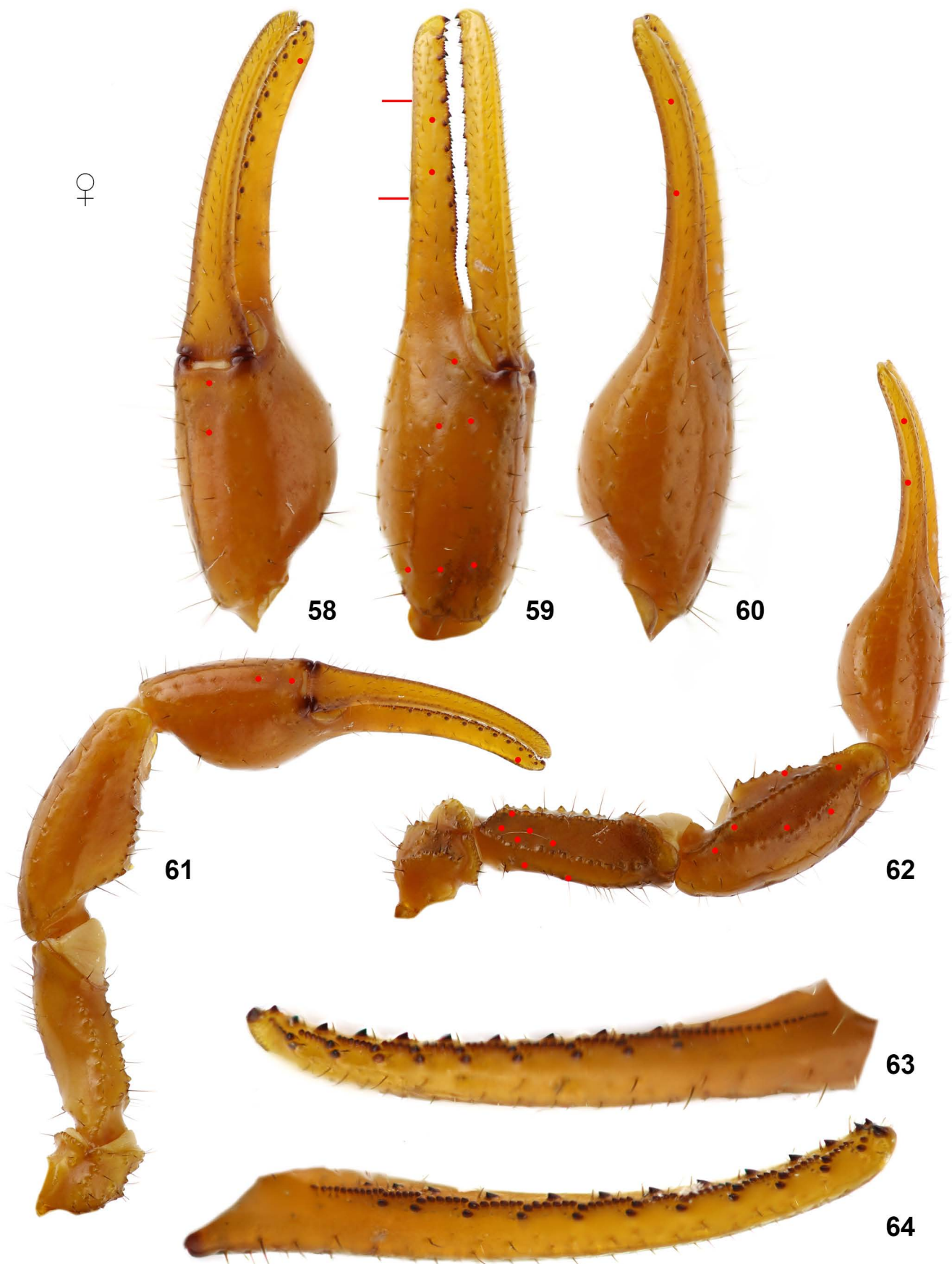
37°33'14"E, 615 m a. s. l., 20.IV.2006, 2♂2♀1juv., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2006:71-75); Mardin Province, Central, Eskikale Village, 2 km E, 37°18'23"N 40°46'28"E, 944 m a. s. l., 4.VIII.2006, 2♂2♀3juvs., leg. E. A. Yağmur & M. Yalçın (AZMM/Sco-2006:76-82), same locality, 7.IV.2007, 1♀, leg. E. A. Yağmur (AZMM/Sco-2007:41); Mazıdağı, Gürpınar Village, 2 km E, 37°30'02"N 40°37'13"E, 955 m a. s. l., 13.IV.2011, 2♀, 1juv., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2011:17-19); Savur, Sürgücü Village, 2 km N, 37°35'44"N 40°43'08"E, 802 m a. s. l., 16.IV.2010, 1♂3juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-2010:6-9); Yeşilli, Tepebaşı Village, 37°20'49"N 40°49'35"E, 946 m a. s. l., 13.V.2004, 1♂1♀, leg. E. A. Yağmur & T. Akkaya (AZMM/Sco-2004:46-47); Yeşilli, Hacı Hıdır Kasrı (Historical House), 37°19'45"N 40°48'43"E, 764 m a. s. l.,

10.IV.2006, 2♂16♀6juvs., leg. E. A. Yağmur & A. Kürşat (AZMM/SCO-2006:83-106), same locality, 6♀5juvs., 7. IV.2007, leg. E. A. Yağmur & A. Kürşat (AZMM/SCO-2007:42-52); Ömerli, Hop Pass, 37°22'20"N 40°51'51"E, 1161 m a. s. l., 18.IV.2007, 1juv., leg. E. A. Yağmur & A. Kürşat (AZMM/SCO-2007:43), same locality, 13.IV.2022, 1♂1♀, leg. E. A. Yağmur & A. Avcı (AZMM/SCO-2022:95-96); same locality, 37°22'20"N 40°51'51"E, 1161 m a. s. l., 14.IV.2010, 3♀3juvs., leg. E. A. Yağmur (AZMM/SCO-2010:15-20); Şanlıurfa Province, Akçakale, Edebey Village, 36°50'40"N 38°40'57"E, 532 m a. s. l., 22.V.2007, 5♂4♀2juvs., leg. E. A. Yağmur, H. Koç & A. V. Gromov (AZMM/SCO-2007:44-54); Birecik, Divriği Village, 3 km N, 37°03'23"N 38°07'09"E, 660 m a. s. l., 9.VI.2007, 7juvs., leg. H. Koç & A.V. Gromov (AZMM/SCO-2007:55-61); Birecik, Yukarı Habib Village, 2 km N, 37°08'51"N 37°59'57"E, 660 m a. s. l., 1.IV.2006, 1♀2juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:107-109); Ceylanpınar, Akrepli Area, 36°52'16"N 40°01'48"E, 424 m a. s. l., 5.III.2006, 5♀1juv., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:110-115); Ceylanpınar, Ceylanpınar Town, 3 km W, 36°51'59"N 39°59'59"E, 376 m a. s. l., 1.IV.2011, 4♀7juvs., leg. E. A. Yağmur (AZMM/SCO-2011:26-36); Ceylanpınar, Evren Paşa Village, 36°52'15"N 40°02'30"E, 391 m a. s. l., 5.III.2006, 3♀6juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:116-124), same locality, Emintaş Area, 1.IV.2006, 12♂44♀57juvs. (AZMM/SCO-2006:125-237); Eyyübiye, Çalışkanlar Village fork in road, 37°07'54"N 38°42'22"E, 11. IV.2006, 1♀1juv., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:238-239); Eyyübiye, Duruca Village, 1.5 km W, Tofaş Memorial Forest, 36°57'28"N 38°52'23"E, 423 m a. s. l., 7.V.2006, 3♀, leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:288-290); Eyyübiye, Küçükalanlı Village, 37°07'21"N 38°40'41"E, 724 m a. s. l., 11.V.2004, 1♀, leg. E. A. Yağmur & T. Akkaya (AZMM/SCO-2004:48); Eyyübiye, Karahisar Village, Karaca Hamlet, 37°02'22"N 39°16'38"E, 658 m a. s. l., 9.V.2006, 6♀5juvs., leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:240-250), same locality, 25.IV.2009, 3juvs., leg. E. A. Yağmur & V. Ülgezer (AZMM/SCO-2009:3-5); Eyyübiye, Kızılkuyu Village, 37°02'31"N 38°44'03"E, 523 m a. s. l., 3.X.2009, 1♂, leg. Mert Elverici (AZMM/SCO-2009:6); Halfeti, Kalkan Village fork in road, 36°50'40"N 38°40'57"E, 532 m a. s. l., 10.IV.2006, 1♂1♀2juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:251-254); Halfeti, Savaşan Village, 37°16'49"N 37°51'12"E, 444 m a. s. l., 30. III.2008, 2♂3♀, leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2008:26-30); Halfeti, Yeni Halfeti, 2 km S, 37°12'29"N 37°56'33"E, 579 m a. s. l., 11.V.2006, 1♀1juv., leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:255-256); Halfeti, Yeşilözen Village, 2 km S, 37°11'05"N 37°58'32"E, 669 m a. s. l., 1.IV.2006, 1♀, leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:257); Halfeti, Yeşilözen Village, 3.5 km N, 37°10'20"N 37°58'41"E, 704 m a. s. l., 15.IV.2011, 1♂1♀, leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-20011:20-21); Şanlıurfa, Haliliye, Açıkyazı Village, 3 km W, N of Tektek Mountains, 37°10'08"N 39°13'40"E, 555 m a. s. l., 10.VI.2007,

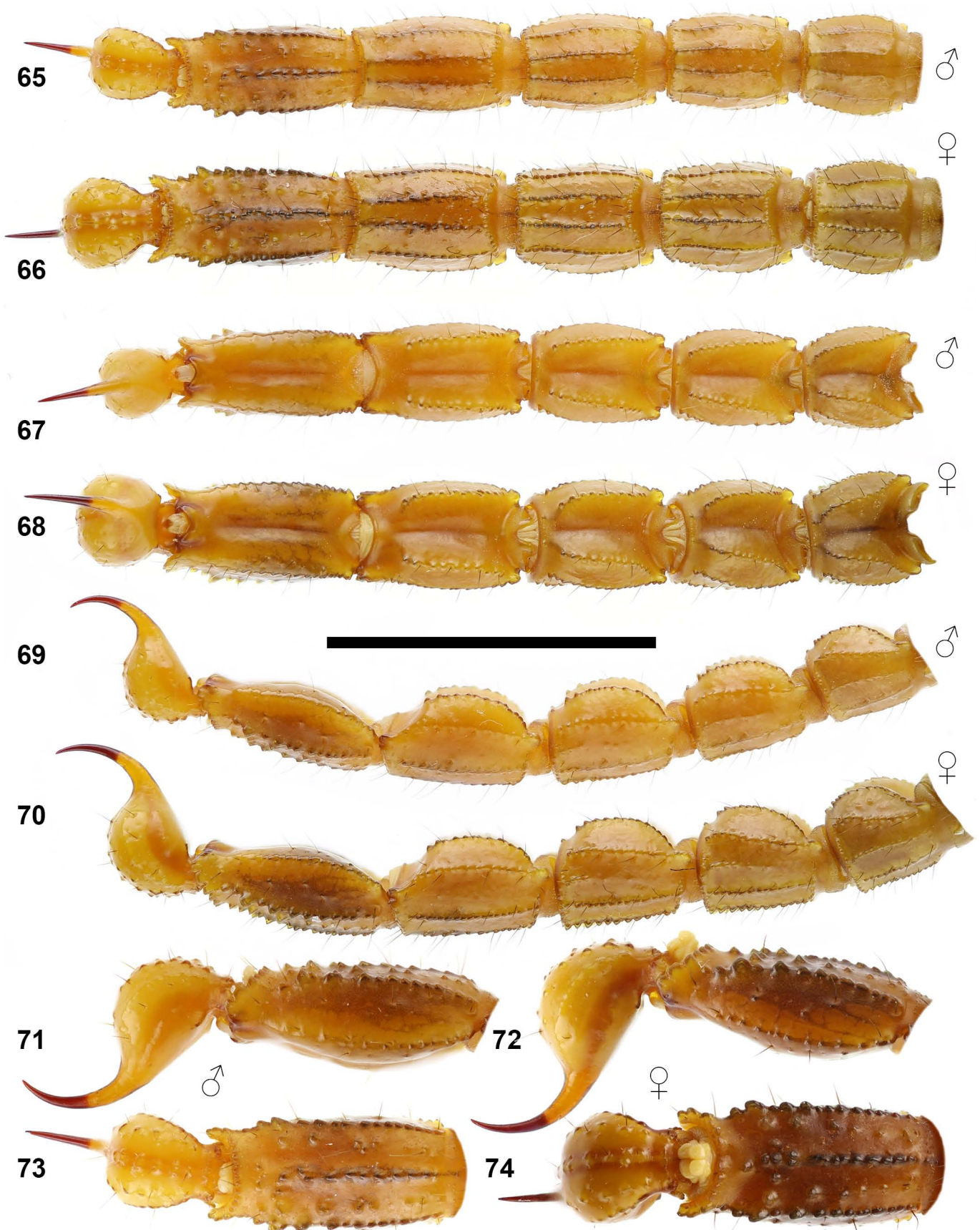
2juvs., leg. E. A. Yağmur & H. Koç (AZMM/SCO-2007:166-167); Haliliye, Asri Village, 2 km SE, 37°04'36"N 39°13'30"E, 561 m a. s. l., 9.V.2006, 2♀, leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:258-259); Haliliye, Asri Village, 4 km SE, 37°04'49"N 39°14'49"E, 598 m a. s. l., 19.VIII.2021, 2♂, leg. E. A. Yağmur, İ. Kartal & Ö. Sipahioğlu (AZMM/SCO-2021:43-44); Haliliye, Boncuk Village, 1 km S 37°08'32"N 39°20'19"E, 668 m a. s. l., 11.IV.2022, 4♀1juv., leg. E. A. Yağmur & A. Avcı (AZMM/SCO-2022:14-18); Haliliye, Büyükmirdesi Village, 37°04'40"N 39°26'19"E, 549 m a. s. l., 11.IV.2022, 2♀, leg. E. A. Yağmur & A. Avcı (AZMM/SCO-2022:19-20); Haliliye, Dağyanı Village, 5 km E, 37°13'48"N 39°14'40"E, 656 m a. s. l., 12.V.2004, 1♀, leg. E. A. Yağmur & T. Akkaya (AZMM/SCO-2004:49); Haliliye, Çiçekli Village, 1 km N, 37°13'27"N 39°24'06"E, 653 m a. s. l., 12.V.2004, 1♂1♀, leg. E. A. Yağmur & T. Akkaya (AZMM/SCO-2004:50-51); Haliliye, Tepedibi Village, 3 km E, 37°08'40"N 39°13'58"E, 548 m a. s. l., 8.V.2006, 1♂1♀, leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:260-261); Harran, Şuayipşehir Village, 2 km NE, 36°52'36"N 39°22'18"E, 506 m a. s. l., 6.V.2006, 1♀, leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:262); Hilvan, Kırbaşı Village, 0.5 km S, 37°30'03"N 38°53'17"E, 678 m a. s. l., 10.V.2006, 1♀, leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:263); Siverek, Karakeçi Village, 1 km SW, 37°26'20"N 39°25'52"E, 750 m a. s. l., 10.V.2006, 1♂5♀7juvs., E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:264-276); Suruç, Ezgil Village, 37°03'57"N 38°17'54"E, 605 m a. s. l., 30.III.2011, 3juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-20011:22-24); Suruç, Yağışlı Village, 2 km S, 37°00'35"N 38°16'27"E, 606 m a. s. l., 11.IV.2006, 1♀, leg. E. A. Yağmur & M. Özkörük (AZMM/SCO-2006:277); Viranşehir, Kocanizam Village, 1 km S, 37°11'48"N 39°29'29"E, 619 m a. s. l., 8.V.2006, 1♀1juv., leg. E. A. Yağmur & M. Z. Yıldız (AZMM/SCO-2006:278-279); Siirt Province, Pervari, Doğan köy Village, 37°45'08"N 42°47'56"E, 1620 m a. s. l., 30.VIII.2019, 3♂1♀1juv., leg. M. E. Bulut (AZMM/SCO-2019:7-11); Eruh, Bağgöze Village, 37°42'39"N 41°54'49"E, 919 m a. s. l., 25.V.2019, 2juvs., leg. Ö. Koyuncu (AZMM/SCO-2019:12-13); Birecik District, Çiçekalan Village, 36°56'74"N 38°01'37"E (36.93°N 38.02°E), 410 m a. s. l., 1.IV.2006, 1♂1♀, leg. E. A. Yağmur & M. Z. Yıldız, NMPC; Kelaynak Valley, 2 km N of Birecik District, 37°02'59"N 37°59'07"E (37.03°N 37.98°E), 388 m a. s. l., 1.IV.2006, 1♀, leg. E. A. Yağmur & M. Özkörük, NMPC; Birecik District, Çiçekalan Village, 36°56'74"N 38°01'37"E (36.93°N 38.02°E), 410 m a. s. l., 1.IV.2008, 1♀2juvs.(♀♂), leg. M. Z. Yıldız, NMPC; Şırnak Province, Central, 2 km SW, 37°29'55"N 42°26'22"E, 1036 m a. s. l., 1.VII.2014, 1♂, leg. Ş. Olğaç (AZMM/SCO-2014:1); Central, Atbaşı Village, 37°26'37"N 42°14'25"E, 545 m a. s. l., 31.VIII.2022, 6♂4♀, leg. R. Kurt (AZMM/SCO-2022:21-30); Central, Kasrik, Aşağı Dere Village, 37°23'16"N 42°09'31"E, 511 m a. s. l., 27.VII.2022, 20♂5♀3juvs., leg. R. Kurt (AZMM/SCO-2022:31-58); Central, Kasrik Town, 6 km NE, 37°25'39"N 42°14'13"E, 494 m a. s. l., 28.III.2011, 1♀, leg. S. Demirci (AZMM/SCO-20011:25); Central, Kızılsu



Figures 51–57. *Mesobuthus faiki* sp. n., pedipalp segments of male holotype. Chela ventral (51), external (52) and dorsal (53) views. Pedipalp ventral (54), dorsal (55). Fixed (56) and movable (57) fingers dentition. Trichobothrial pattern is indicated by red circles (51–55).



Figures 58–64. *Mesobuthus faiki* sp. n., pedipalp segments of female paratype from İncesu Village. Chela ventral (58), external (59) and dorsal (60) views. Pedipalp ventral (61), dorsal (62). Fixed (63) and movable (64) fingers dentition. Trichobothrial pattern is indicated by red circles (58–62).



Figures 65–70: *Mesobuthus faiki* sp. n., metasoma and telson. **Figures 65–66:** Ventral view, male holotype (65) and female from İncesu Village (66). **Figures 67–68:** Ventral view, male holotype (67) and female from İncesu Village (68). **Figures 69–70:** Lateral view, male holotype (31) and female from İncesu Village (32). **Figures 71–72:** Lateral view of metasoma V and telson, male holotype (71) and female from İncesu Village (72). **Figures 73–74:** Dorsal view of metasoma V and telson, male holotype (73) and female from İncesu Village (74). Scale bar: 10 mm (65–70).



Figure 75: *Mesobuthus faiki* sp. n., tibia, basitarsus and tarsus of left legs I-IV (top row, male, bottom row, female).

Village, 37°26'17"N 42°13'44"E, 558 m a. s. l., 25.VII.2022, 9♂4♀, leg. R. Kurt (AZMM/Sco-2022:59-71); Central, Koçbeyi Village, 37°25'39"N 42°11'28"E, 668 m a. s. l., 10.VIII.2022, 3♂, leg. R. Kurt (AZMM/Sco-2022:72-74); Cizre, Ulaş Village, 37°22'51"N 42°08'06"E, 466 m a. s. l., 22.VII.2022, 5♂3♀, leg. R. Kurt (AZMM/Sco-2022:75-82); Dicle, Yalın-tepe Village, 37°17'16"N 42°03'15"E, 599 m a. s. l., 12.V.2007, 15♀43juvs., leg. E. A. Yağmur, M. Yalçın, H. Koç & E. Ulupınar (AZMM/Sco-2007:62-116); Güçlükönak, Akdizgin Village, 37°26'28"N 42°00'27"E, 494 m a. s. l., 20.VII.2022, 2♂4♀, leg. R. Kurt (AZMM/Sco-2022:83-88); İdil, Uçarlı Village, 1.5 km N, 37°18'57"N 41°42'48"E, 828 m a. s. l., 12.IV.2011, 2♀2juvs., leg. E. A. Yağmur & M. Özkörük (AZMM/Sco-20011:37-40); İdil, Yörük Village, 37°16'57"N 42°01'07"E, 669 m a. s. l., 12.V.2007, 2♂4♀22juvs., leg. E. A. Yağmur, M. Yalçın, H. Koç & E. Ulupınar (AZMM/Sco-2007:117-144), same locality, 1.VII.2007, 1♂, leg. H. Koç & A. V. Gromov (AZMM/Sco-2007:145), same locality, 21.V.2009, 2♂8♀1juv., leg. E. A. Yağmur (AZMM/Sco-2009:7-17), same locality, 37°16'53"N 42°01'39"E, 613 m a. s. l., 13.IV.2022, 2♂2♀2juvs., leg. E. A. Yağmur & A. Avcı (AZMM/Sco-2022:89-94); Silopi, Üçağaç Village, 37°17'42"N 42°22'59"E, 515 m a. s. l., 17.IV.2010, 1♀, leg. S. Demirci (AZMM/Sco-2010:10); Şenoba, Şenoba Town, 1 km N, 37°28'13"N 42°42'50"E, 926 m a. s. l., 20.VIII.2021, 4♂2♀, leg. E. A. Yağmur, İ. Kartal & Ö. Sipahioğlu (AZMM/Sco-2021:45-50); Şenoba, Şenoba Town, 1.5 km W, 37°28'00"N 42°41'09"E, 1061 m a. s. l., 20.VIII.2021, 4♂2♀, leg. E. A. Yağmur, İ. Kartal & Ö. Sipahioğlu (AZMM/Sco-2021:51-56); Uludere, Bağlıca Village, 37°27'00"N 42°45'08"E, 931 m a. s. l., 10–15.X.2018, 8♂2♀, leg. D. Türk (NMPC/Sco-2018:194-203); İdil District, Yörük Villag, 37°16'57"N 42°01'07"E (37.27°N 42.02°E), 669 m a. s. l., 21.V.2009, 1♀1juv.♂, leg. E. A. Yağmur, NMPC.

ETYMOLOGY. The new species epithet is a patronym honoring Mehmet Faik Yağmur, father of the first author, for his help and support in his works.

DIAGNOSIS. Total length of adult males 37.77–45.85 mm (mean 41.62), females 38.01–48.75 mm (mean 45.61 averagely). Pectinal teeth number 23–27 (usually 24–26, mean 25.11) in males, 17–22 (usually 19–21, mean 19.88) in females. Carapace yellowish brown with brown pigmented patches in male; brown with dark brown patches in females. Tergites are yellowish brown with five stripes along to median and submedian carinae and lateral sites of tergites in males; dark brown with five black stripes in females. Chelicerae shiny dark yellow, without reticulation in males, brownish yellow with slight reticulation in females. Pedipalps sparsely hirsute and smooth. Femur with four spaced granulated carinae. Patella with eight carinae. The chela smooth without carinae. Movable fingers and fixed fingers of pedipalps have 11 and 10 cutting rows of denticles respectively, external, and internal accessory denticles, and five terminal denticles exist. Trichobothria *et* and *est* are

located between *db* and *dt*, trichobothrium *et* proximal to *dt* and *est* proximal to *db*. Pedipalp chela length/width ratio 3.53 in male, 3.98 in female. Movable finger length/manus length ratio 1.39 in male, 1.33 in female. Tergites I–VI with three carinae. Pretergites without granulation, posttergites with several flattened granules, intercarinal area rough and smooth in tergites I–VI. Tergite VII is pentacarinata, median carina is smooth, submedians and laterals granular and not fused. Sternites I–VI smooth and sparsely hirsute. Sternite VII smooth and sparsely hirsute with four granular carinae. All metasomal segments are sparsely hirsute. All segment longer than wide in male, first segment slightly wider than long in females. Metasomal segment I with 10 carinae, II–III with 8 carinae, IV with 8 carinae, and V with 5 carinae. Lateral inframedian carinae complete on segment I, present on the posterior 2/3 segment II, and present on the posterior 1/3 on segment III. Anal lobe divided into three parts. Length to depth ratio of metasoma III in 1.41 male and 1.28 in female, metasoma IV 1.76 in male 1.69 in female. Dorsolateral carinae rounded; ventrolateral carinae strong on segment V and gradually increase posteriorly, with partly pointed, 3 large denticles; ventromedian carina crenulate on segment V. Telson is sparsely hirsute, bulbous, and smooth. Aculeus shorter than vesicle.

DESCRIPTION (♂♀).

Coloration (Figs. 39–75). Carapace yellowish brown with brown pigmented patches, anterior area and anteriomedian carinae brown, between median eyes black in male; brown with dark brown patches, between and around median eyes black in females. Tergites are yellowish brown with five stripes along median and submedian carinae and lateral sites of tergites in male. Tergites are dark brown with five black stripes in females. Overlapping area of tergites light brown. Sternites dark yellow in males, olive brown in females. Metasoma yellowish brown fifth segment and reticular, ventral submedian carinae on segment I–IV and ventromedian carina on segment V fuscous. Telson is dark yellow. Pedipalps yellowish brown, fingers dark yellow, denticles in fingers black, condyle of movable finger reddish black in male. Dark brown with yellowish brown fingers in females. Legs are yellow in male, dark yellow in females. Chelicerae shiny dark yellow, without reticulation in male, brownish yellow with slight reticulation in females. Teeth of chelicerae reddish black.

Carapace (Figs. 43–50). Trapezoidal, slightly wider than long; anterior part shrinks, anteriomedian and posteriomedian carinae moderate and smooth, centromedian and centrolateral carinae weak and granular. Unevenly covered by varying size granules but anterior area smooth includes a few flattened granules in male. Less granular in females. Anterior margin with a row of flattened granules and several stout setae. Posterior margin with a row of rounded granules.

Pectinal teeth number is 23–27 in males, 17–22 in females. Pectines with fulcræ and three marginal lamellae, six to seven middle lamellae and densely hirsute.



Figure 76: Female paratype of *Mesobuthus faiki* sp. n. from Yukarı Habib Village in vivo habitus.

Pedipalps (Figs. 51–64). Pedipalps sparsely hirsute and smooth. Femur with four spaced granulated carinae, internal carina with strong, spaced conical granules. Patella with eight carinae, dorsomedian and dorsoexternal carinae granulose, dorsointernal and ventrointernal carinae with a few spaced large granules. The chela smooth without carinae. Movable fingers and fixed fingers of pedipalps have 11 and 10 cutting rows of denticles respectively, external, and internal accessory denticles, and five terminal denticles exist. Fingers are moderately elongated (movable finger length/manus length ratio=1.39 in male, 1.33 in female). Trichobothria *et* and *est* are located between *db* and *dt*, trichobothrium *et* proximal to *dt*, and *est* proximal to *db*.

Mesosoma (Figs. 43–46). Tergites I–VI with three granulated carinae in male, mostly smooth in females. Pretergites without granulation, posttergites with several flattened granules, intercarinal area rough and smooth in tergites I–VI. Tergite VII is pentacarinata, median carina is smooth, submedians and laterals granular and not fused. Sternites I–VI smooth and sparsely hirsute with a couple of furrows. The sternite VII smooth and sparsely hirsute with four granular carinae in male, granules on the carinae more marked in females.

Metasoma and telson (Figs. 65–74). All metasomal segments are sparsely hirsute. All segments longer than wide in male, first segment slightly wider than long in females. Dorsal

surface smooth, lateral, and ventral surfaces rough and smooth. Metasomal segment I with 10 carinae, II–III with 8 carinae, IV with 8 carinae, and V with 5 carinae. Lateral inframedian carinae complete on segment I, present on the posterior 2/3 of segment II, and present on the posterior 1/3 on segment III. Metasomal carinae granular on segments I–VI. Dorsolateral carinae strong and crenulate, the granules spinoid and rounded on I–IV. Ventrolateral carinae strong with fused granules on segments I–II and crenulate on III–IV in male, crenulate on segments I–IV in females. Ventral submedian carinae smooth on segments I and IV, crenulate on segments II–III in males, crenulate on segments I and IV with moderate conical granules on segments II–III in females. Dorsolateral carinae rounded; ventrolateral carinae strong on segment V and gradually increase posteriorly, with partly pointed, 3 large denticles; ventromedian carina crenulate on segment V. Telson is sparsely hirsute, bulbous, and smooth, vesicle with three rows of flattened granules ventrally. Aculeus shorter than vesicle. Anal lobe divided into three parts.

Legs (Figs. 75). Telotarsus I–IV with two rows of ventral short and strong spiniform spinules. All legs hirsute. Tibial spurs present and moderate on legs III and IV and absent on the other legs.

Measurements. See Table 1

COMMENTS ON LOCALITIES AND LIFE STRATEGY. *Mesobuthus faiki* sp. n. prefers dry climate areas in the plains of southeastern Anatolia. Specimens have been found in dense or sparse oak vegetation or in open, steppe areas. They are frequently found in limestone and basalt rocky areas. This species has been observed between the altitudes of 388–1620 m.

M. faiki sp. n. is distributed westward until the Kartal Mountain range, western part of which is characterized by humid Mediterranean climate. This species could be distributed until the Taurus Mountains in the north and east. The Taurus Mountain range has a high elevation and prevents penetration of many species, forming an important zoogeographic barrier. The territories lying at the north from the Taurus Mountains have a more continental climate. The border of Turkey and Iraq is formed by the Hezil River, which is also an important barrier for distribution of animal species. Some scorpion species, such as *Orthochirus mesopotamicus*, are distributed until the north of Iraq (authors' unpublished data). It appears that the Hezil River represents the southern boundary of the range of *Mesobuthus faiki* sp. n. as well as the northern distributional boundary of the allopatric *M. mesopotamicus*.

AFFINITIES. *Mesobuthus faiki* sp. n. was earlier identified as *M. mesopotamicus*; therefore, it is compared mainly with this species.

(a) General coloration is yellowish brown or dark brown with five brown or black stripes in *Mesobuthus faiki* sp. n., whereas it is light or dark yellow with five grey and slightly expressed stripes in *M. mesopotamicus*.

(b) *M. mesopotamicus* is moderately hirsute with stout and long setae whereas *Mesobuthus faiki* sp. n. is sparsely hirsute with short and indistinct setae.

(c) Ventrolateral carinae on segment V with partly pointed, with 3 large denticles in *Mesobuthus faiki* sp. n. whereas only 2 moderate, conical denticles are present in *M. mesopotamicus*.

(d) Chela fingers are relatively longer, and chela is thinner in *Mesobuthus faiki* sp. n. (movable finger length/manus length ratio 1.39 in male, 1.33 in female; chela length/width ratio 3.53 in male, 3.98 in female) than in *M. mesopotamicus* (movable finger length/manus length ratio 1.24 in male, 1.28 in female; chela length/width ratio 3.58 in male, 3.56 in female).

(e) Vesicle is slightly more bulbous, and aculeus is slightly shorter in *M. mesopotamicus* (aculeus length/vesicle length ratio 0.63 in male, in 0.55 female) than in *Mesobuthus faiki* sp. n. (aculeus length/vesicle length ratio 0.67 in male, 0.68 in female).

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References

- AL-AZAWI, Z. N. 2016. List of scorpions recorded for the first time in Iraq. *Ibn AL-Haitham Journal for Pure and Applied Science*, 29: 49–57.
- AL-KHAZALI, A. M. & E. A. YAĞMUR. 2019. First record of *Androctonus bicolor* Ehrenberg, 1828 (Arachnida: Scorpiones) with scorpion records Dhi Qar Province, Iraq. *Biharean Biologist*, 13(2): 85–88.
- BARAHOEI, H. 2022. Fauna of Sistan scorpions (Arachnida: Scorpiones), Southeast Iran. *Taxonomy and Biosystematics*, 14(3): 27–70.
- [BIRULA, A. A.] BYALYNITSKII-BIRULYA, A. A. 1917. Arachnoidea Arthrogastra Caucasia. Pars I. Scorpiones. *Zapiski Kavkazskago Muzeya (Mémoires du Musée du Caucase)*, Tiflis: Imprimerie de la Chancellerie du Comité pour la Transcaucasie, A(5), 253 pp. (in Russian; published August 1917) (in Russian). English translation: Byalynitskii-Birulya, A. A. 1964. *Arthrogastric Arachnids of Caucasia. I. Scorpions*. Jerusalem: Israel Program for Scientific Translations, 170 pp.
- BIRULA, A. A. 1918. Miscellanea scorpologica. XI. (Matériaux pour servir à la scorpiofaune de la Mésopotamie inférieure, du Kurdistan et de la Perse septentrionale). *Annuaire du Musée Zoologique de l'Académie Impériale des Sciences de Russie*, 27: 1–44 (in Russian).
- BRECKO, J., A. MATHYS, W. DEKONINCK, M. LEPONCE, D. VANDEN SPIEGEL & P. SEMAL. 2014. Focus stacking: Comparing commercial top-end set-ups with a semi-automatic low budget approach. A possible solution for mass digitization of type specimens. *ZooKeys*, 464: 1–23.
- CRUCITTI, P. & D. CICUZZA. 2001. Scorpions of Anatolia: Ecological patterns. Pp. 225–234 in Fet, V. & P. A. Selden (eds.). *Scorpions 2001. In Memoriam Gary A. Polis*. Burnham Beeches, Bucks: British Arachnological Society.

- CRUCITTI, P. & V. VIGNOLI. 2002. Gli scorpioni (Scorpiones) dell'Anatolia sud-orientale (Turchia), *Bollettino del Museo Regionale di Scienze naturali, Torino*, 19 (2): 433–480.
- FET, V. 1994. Fauna and zoogeography of scorpions (Arachnida: Scorpiones) in Turkmenistan. Pp. 525–534 in Fet, V. & K. I. Atamuradov (eds.). *Biogeography and Ecology of Turkmenistan. Monographiae Biologicae* 72. Dordrecht: Kluwer Academic Publishers.
- FET, V. & G. LOWE. 2000. Family Buthidae. Pp. 54–286 in Fet, V., W. D. Sissom, G. Lowe & M. E. Braunwalder (eds.). *Catalog of the Scorpions of the World (1758–1998)*. New York: New York Entomological Society, 690 pp.
- FRANCKE, O. F. 1977. Scorpions of the genus *Diplocentrus* from Oaxaca, Mexico (Scorpionida, Diplocentridae). *Journal of Arachnology*, 4: 145–200.
- HJELLE, J. T. 1990. Anatomy and morphology. Pp. 9–63 in: Polis, G.A. (ed.), *Biology of Scorpions*. Stanford, CA: Stanford University Press.
- HUSSEN, F. S. & S. T. AHMED. 2020. New data of scorpion fauna, include two new records with identification key of scorpion species (Arachnida: Scorpiones) in Iraq. *Plant Archives*, 20(2): 6711–6725.
- KACHEL, H. S., A. M. AL-KHAZALI, F. S. HUSSEN & E. A. YAĞMUR. 2021. Checklist and review of the scorpion fauna of Iraq (Arachnida: Scorpiones). *Arachnologische Mitteilungen*, 61(1): 1–10.
- KARATAŞ, AY. & M. ÇOLAK. 2005. Scorpions of Gaziantep Province, Turkey (Arachnida: Scorpiones). *Euscorpius*, 30: 1–7.
- KARATAŞ, A. & A. KARATAŞ. 2003. *Mesobuthus eupeus* (C. L. Koch, 1839) (Scorpiones: Buthidae) in Anatolia. *Euscorpius*, 7: 1–7.
- KOVAŘÍK, F. 2019. Taxonomic reassessment of the genera *Lychas*, *Mesobuthus*, and *Olivierus*, with descriptions of four new genera (Scorpiones: Buthidae). *Euscorpius*, 288: 1–27.
- KOVAŘÍK, F., V. FET, B. GANTENBEIN, M. R. GRAHAM, E. A. YAĞMUR, F. ŠTÁHLAVSKÝ, N. M. POVERENNYI & N. E. NOVRUZOV. 2022. A revision of the genus *Mesobuthus* Vachon, 1950, with a description of 14 new species (Scorpiones: Buthidae). *Euscorpius*, 348: 1–189.
- KOVAŘÍK, F., E. A. YAĞMUR, V. FET & S. NAVIDPOUR. 2011. On two subspecies of *Mesobuthus eupeus* (C. L. Koch, 1839) in Turkey (Scorpiones: Buthidae). *Euscorpius*, 109: 1–15.
- MIRSHAMSI, O., A. SARI, E. ELAHI & S. HOSSEINIE. 2011. *Mesobuthus eupeus* (Scorpiones: Buthidae) from Iran: A polytypic species complex. *Zootaxa*, 2929: 1–21.
- MORAD, M. S. S. & M. Y. M. AL-ABBAD. 2017. [Identification study for the scorpion *Mesobuthus phillipsii* (Pocock, 1889) (Scorpions [sic]: Buthidae) from Basrah province, southern Iraq]. *Basra Journal of Science*, 43: 50–73 (in Arabic).
- PRINGLE, G. 1960. Notes on the Scorpiones of Iraq. *Bulletin of Endemic Diseases (Baghdad)*, 3: 73–87.
- SHORTHOUSE, D. P. 2010. SimpleMappr, an online tool to produce publication-quality point maps. Available from <http://www.simplemappr.net>, accessed 24 February 2024.
- SISSOM, W. D., G. A. POLIS & D. D. WATT. 1990. Field and laboratory methods. Pp. 215–221 in: Polis, G.A. (ed.), *Biology of Scorpions*. Stanford, CA: Stanford University Press.
- STAHNKE, H. L. 1971. Scorpion nomenclature and mensuration. *Entomological News*, 81: 297–316.
- VACHON, M. 1959. Scorpionidea (Chelicerata) de l'Afghanistan. (The 3d Danish Expedition to Central Asia. Zoological Results 23). *Videnskabelige Meddelelser fra Dansk Naturhistorisk Forening i København*, 120: 121–187.
- VACHON, M. 1974. Etude des caractères utilisés pour classer les familles et les genres de Scorpions (Arachnides). 1. La trichobothriotaxie en arachnologie. Sigles trichobothriaux et types de trichobothriotaxie chez les Scorpions. *Bulletin du Muséum national d'Histoire naturelle Paris*, 140: 857–958.
- YAĞMUR, E. A., H. KOÇ, S. KESMEZOĞLU & M. YALÇIN. 2007. Scorpions of Kilis Province, Turkey. *Serket*, 10(3): 91–105.