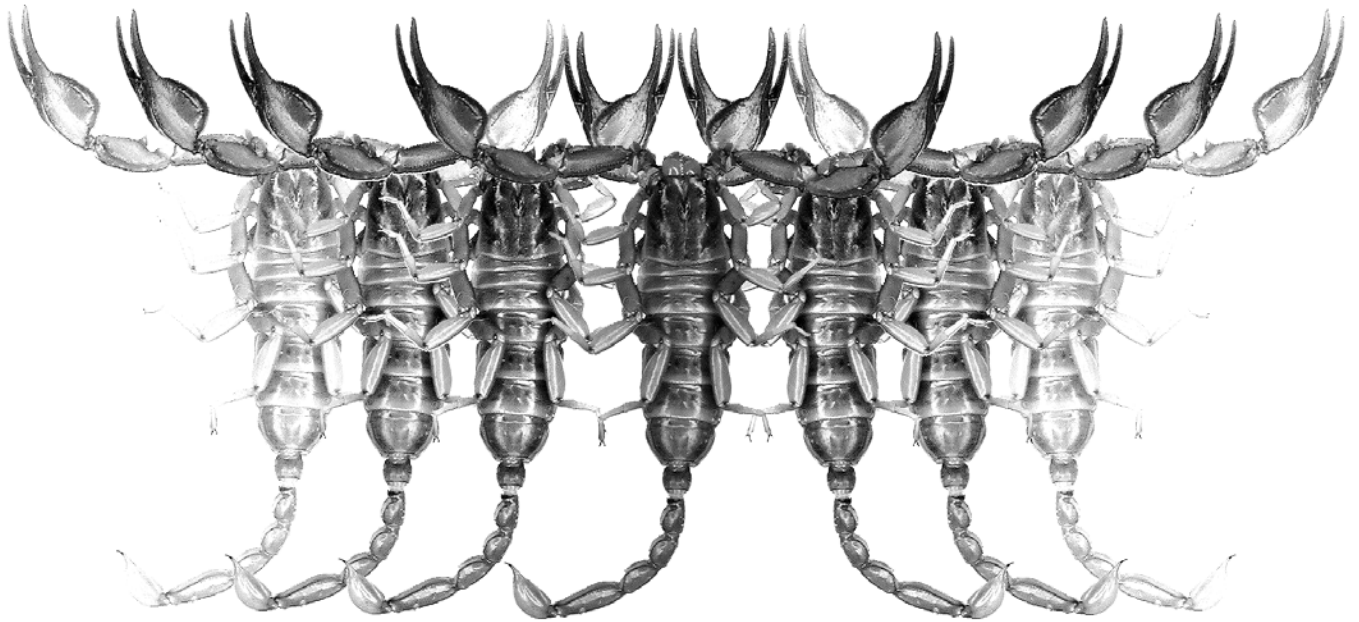


Euscorpius

Occasional Publications in Scorpiology



**Scorpions of Iran (Arachnida, Scorpiones).
Part IV. Kohgilouyeh & Boyer Ahmad Province**

Shahrokh Navidpour, František Kovařík, Michael E. Soleglad & Victor Fet

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Euscorpilus

Occasional Publications in Scorpiology

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- **MNHN**, Museum National d'Histoire Naturelle, Paris, France
- **NMW**, Naturhistorisches Museum Wien, Vienna, Austria
- **BMNH**, British Museum of Natural History, London, England, UK
- **MZUC**, Museo Zoologico "La Specola" dell'Universita de Firenze, Florence, Italy
- **ZISP**, Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia
- **WAM**, Western Australian Museum, Perth, Australia
- **NTNU**, Norwegian University of Science and Technology, Trondheim, Norway

Scorpions of Iran (Arachnida, Scorpiones). Part IV. Kohgilouyeh & Boyer Ahmad Province

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Summary

According to previous surveys, only *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Orthochirus zagrosensis* Kovařík, 2004, and *Hemiscorpius lepturus* Peters, 1861 have been recorded from Kohgilouyeh & Boyer Ahmad Province. Collections made by a team under Shahrokh Navidpour (Razi Reference Laboratory of Scorpion Research, Razi Vaccine and Serum Research Institute, Ahvaz, Khoozestan, Iran) reveal eight other species belonging to two families recorded from the province for the first time: *Androctonus crassicauda* (Olivier, 1807); *Compsobuthus matthiesseni* (Birula, 1905); *Hottentotta saulcyi* (Simon, 1880); *Hottentotta zagrosensis* Kovařík, 1997; *Odontobuthus bidentatus* Lourenço et Pézier, 2002; *Orthochirus iranus* Kovařík, 2004; *Razianus zarudnyi* (Birula, 1903); and *Scorpio maurus townsendi* (Pocock, 1900). Also presented is a key to all species of scorpions found in the province.

Introduction

Many papers deal with the scorpions of Iran to some extent, but a comprehensive study of the scorpion fauna has been lacking. We have therefore decided to survey the scorpions of Iran thoroughly, province by province. The fieldwork is conducted by the RRLS team lead by Shahrokh Navidpour and includes revisitation of previously known sites, some of them type localities, and sampling of all the encountered scorpion species. All specimens are collected by UV light at night.

The Kohgilouyeh & Boyer Ahmad Province is the fourth region surveyed by the RRLS team. This province has received little attention in the past, with the first records of scorpions from there having been published by Kovařík as recently as in 1997. Kovařík (1997: 46-48) reported *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Hemiscorpius lepturus* Peters, 1861, and *Orthochirus* sp. n.; which was subsequently (Kovařík, 2004: 22) described as *Orthochirus zagrosensis* Kovařík, 2004. The female allotype of *O. zagrosensis* thus is the only scorpion type known from the Kohgilouyeh & Boyer Ahmad Province. Collections made by a team under Shahrokh Navidpour (Razi Reference Laboratory of Scorpion Research, Razi Vaccine and Serum Research Institute, Ahvaz, Khoozestan, Iran) reveal eight other species of two families recorded from the province for the first time.

Abbreviations. The institutional abbreviations listed below and used throughout are mostly after Arnett et al. (1993).

BMNH – The Natural History Museum, London, United Kingdom;

FKCP – František Kovařík Collection, Praha, Czech Republic;

MHNG – Muséum d'Histoire naturelle, Geneva, Switzerland;

MNHN – Muséum National d'Histoire Naturelle, Paris, France;

RRLS – Razi Reference Laboratory of Scorpion Research, Razi Vaccine and Serum Research Institute, Sepah st., Hejrat sq., Ahvaz, Khoozestan, Iran;

ZISP – Zoological Institute, Russian Academy of Sciences, St. Petersburg, Russia;

ZMHB – Museum für Naturkunde der Humboldt-Universität zu Berlin, Germany;

ZMUH – Zoologisches Institut und Zoologisches Museum, Universität Hamburg, Germany.

List of Scorpions of Kohgilouyeh & Boyer Ahmad Province

Family **Buthidae** C. L. Koch, 1837

Androctonus crassicauda (Olivier, 1807) (first report)

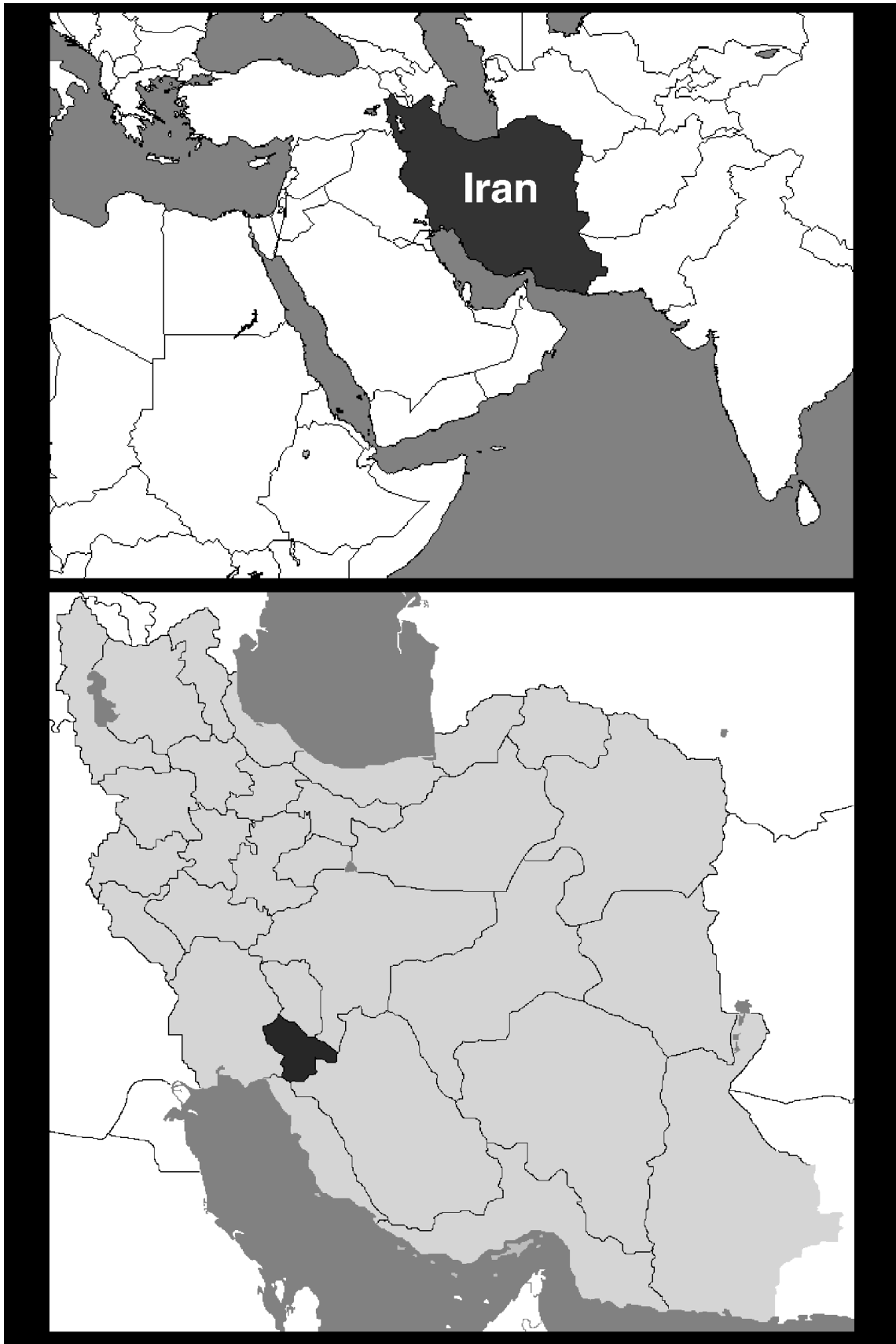


Figure 1: Map of southwestern Asia highlighting Iran (top) and closeup of Iran showing provinces, the Kohgiluyeh & Boyer Ahmad Province depicted in black (bottom).

Compsobuthus matthiesseni (Birula, 1905) (first report)

Hottentotta sauleyi (Simon, 1880) (first report)

Hottentotta zagrosensis Kovařík, 1997 (first report)

Mesobuthus eupeus phillipsii (Pocock, 1889)

Odontobuthus bidentatus Lourenço et Pézier, 2002 (first report)

Orthochirus iranensis Kovařík, 2004 (first report)

Orthochirus zagrosensis Kovařík, 2004

Razianus zarudnyi (Birula, 1903) (first report)

Family **Scorpionidae** Latreille, 1802

Scorpio maurus townsendi (Pocock, 1900) (first report)

Family **Hemiscorpiidae** Pocock, 1893

Hemiscorpius lepturus Peters, 1861

Systematics

Family **Buthidae** C. L. Koch, 1837

Androctonus crassicauda (Olivier, 1807)

Figures 4, 9, 15–18

Scorpio crassicauda Olivier, 1807: 97.

Buthus crassicauda: Simon, 1872: 247 (in part); Simon, 1879: 99; Simon, 1892: 83; Kraepelin, 1899: 16; Pocock, 1902: 373; Kraepelin, 1913: 124; Lampe, 1918: 190.

Androctonus crassicauda: Kraepelin, 1891: 175 (in part); Vachon, 1951: 343; Khalaf, 1962: 1; Khalaf, 1963: 60; Habibi, 1971: 42; Farzanpay & Pretzmann, 1974: 215; Pérez Minocci, 1974: 17; Vachon, 1974: 909; Vachon, 1979: 31; Farzanpay, 1987: 141; Farzanpay, 1988: 36; Fet, 1989: 78; Sissom, 1994: 36; Al-Safadi, 1992: 96; Amr & El-Oran, 1994: 187; Dupré et al., 1998: 59; Kovařík, 1998: 104; Crucitti, 1999: 83; Kabakibi et al., 1999: 80; Fet & Lowe, 2000: 72; Stathi & Mylonas, 2001: 288; Kovařík, 2002: 5; Crucitti & Vignoli, 2002: 439; Vignoli et al., 2003: 2; Fet & Kovařík, g: 180; Kovařík & Whitman, 2005: 105; Lourenço, 2005: 149; Hendrixson, 2006: 38; Akbari, 2007: 76; Navidpour et al., 2008a: 5; Navidpour et al., 2008b: 3; Navidpour et al., 2008c: 3.

Prionurus crassicauda: Pocock, 1895: 292; Tullgren, 1909: 2; Birula, 1904: 29; Birula, 1905a: 120; Masi, 1912: 91; Penther, 1912: 110.

Androctonus crassicauda crassicauda: Vachon, 1959: 124; Vachon, 1966: 210; Habibi, 1971: 42; Vachon, 1979: 34; Levy & Amitai, 1980: 24; Kovařík, 1997a: 49.

= *Prionurus crassicauda orientalis* Birula, 1900a: 355; Birula, 1903: 67 (syn. by Fet, 1989: 79)

Buthus (Prionurus) crassicauda orientalis: Birula, 1917: 93, 240.

Buthus crassicauda orientalis: Kraepelin, 1913: 124.

Androctonus crassicauda orientalis: Vachon, 1959: 124; Vachon, 1966: 210; Habibi, 1971: 42; Pérez Minocci, 1974: 18.

Androctonus amoreuxi baluchicus: Kovařík, 1997a: 39 (see Vignoli et al., 2003: 4).

TYPE LOCALITY AND TYPE REPOSITORY. Kashan, Persia, now Iran, Esfahan Province; MNHN.

KOHWILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Cheram, 30°44'23"N 50°44'35"E, 747 m a.s.l. (Locality No.Y-8), III.2008, 1♂1♀ RRLS, 1♂FKCP, leg. Ghafarnia, Bahrani & Habibzadeh; Dehdasht to Behbahan road, Filegah Village, 30°31'21"N 50°24'51"E, 770 m a.s.l. (Locality No.Y-9), III.2008, 1♀ RRLS, 1juv. FKCP, leg. Ghafarnia, Hayader & Bahrani.

DISTRIBUTION: Widespread in Iran, found in most provinces. Recorded also from Armenia (Kraepelin, 1899: 17), Azerbaijan (Fet, 1989: 79), Bahrain (Crucitti & Vignoli, 2002: 439), Egypt (Fet & Lowe, 2000: 72), Iraq (Kennedy, 1937: 745), Israel (Simon, 1892: 83), Jordan (Amr & El-Oran, 1994: 187), Kuwait (Kettel, 1982: 6), Lebanon (El-Hennawy, 1992: 100), Oman (Birula, 1917: 229; Hendrixson, 2006: 39), Qatar (El-Hennawy, 1992: 100), Saudi Arabia (Pocock, 1895: 292; Hendrixson, 2006: 39), Syria (Birula, 1900b: 9), Tunis (Kraepelin, 1901: 266), Turkey (Pocock, 1902: 373), United Arab Emirates (Hendrixson, 2006: 40), Yemen (Birula, 1937: 101).

Compsobuthus matthiesseni (Birula, 1905)

Figures 3, 4, 7, 9, 31–34

Buthus acutecarinatus matthiesseni Birula, 1905a: 142; Birula, 1937: 107.

Buthus (Buthus) acutecarinatus matthiesseni: Birula, 1917: 229, 240; Birula, 1918: 25.

Buthus (Hottentotta) acutecarinatus matthiesseni: Vachon, 1940b: 173.

Compsobuthus matthiesseni: Pringle, 1960: 77; Habibi, 1971: 43; Levy et al., 1973: 114; Levy & Amitai, 1980: 60; Farzanpay, 1987: 149; Farzanpay, 1988: 37; Kovařík, 1992: 183; Kovařík, 1996: 53; Kovařík, 1997a: 40, 49; Kovařík, 1997b: 179; Kovařík, 1998: 109; Sissom & Fet, 1998: 1; Crucitti, 1999: 84; Fet & Lowe, 2000: 127; Lourenço & Vachon, 2001: 180; Kovařík, 2002: 7; Crucitti & Vignoli, 2002; Kovařík, 2003: 97; Vignoli et al., 2003: 2; Vignoli, 2005: 85; Akbari, 2007: 76; Kovařík & Ahmed, 2007: 6; Navidpour et



Figures 2–3: Iran, Kohgiluyeh & Boyer Ahmad Prov. **2.** Behbahan to Gachsaran (Dogonbadan) road, 30°28'36"N 50°30'05", 498 m a.s.l. (Locality No. Y-1). Locality where *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Odontobuthus bidentatus* Lourenço et Pézier, 2002 and *Scorpio maurus townsendi* (Pocock, 1900) were documented. **3.** Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2). Locality where *Compsobuthus matthiesseni* (Birula, 1905), *Hottentotta zagrosensis* Kovařík, 1997, *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Orthochirus iranus* Kovařík, 2004, *Razianus zarudnyi* (Birula, 1903) and *Hemiscorpius lepturus* Peters, 1861 were documented.

al., 2008a: 9; Navidpour et al., 2008b: 9; Navidpour et al., 2008c: 8.

Compsobuthus acutecarinatus matthiesseni: Vachon & Kinzelbach, 1987: 101; El-Hennawy, 1992: 123.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, "Kum, Province Irak-Adschemi" now Qum (Qom); ZISP.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 5♂ FKCP, 2♀ RRLS, leg. Navidpour, Ghafarnia & Bahrani; Yasuj to Mourgah road, Jahanno Village, 30°29'20"N 51°31'38"E, 2153 m a.s.l. (Locality No. Y-4), III.2008, 2♂3♀ RRLS, leg. Navidpour, Ghafarnia & Bahrani; Yasuj to Basht road, Deh Bozorg Village, 30°19'16"N 51°13'30"E, 786 m a.s.l. (Locality No. Y-6), III.2008, 4♂ RRLS, 1juv. FKCP, leg. Ghafarnia, Bahrani & Habibzadeh; Basht to Dehdasht road, Shah Baharan Village, 30°36'51"N 50°50'46"E, 886 m a.s.l. (Locality No. Y-7) X.2007, 3♂ 5♀ RRLS, leg. Ghafarnia, Hayder & Habibzadeh; Cheram, 30°44'23"N 50°44'35"E, 747 m a.s.l. (Locality No. Y-8), III.2008, 3♂4♀ RRLS, leg. Ghafarnia, Bahrani & Habibzadeh.

DISTRIBUTION: Iran, known from provinces Kermanshah (formerly Bachtaran), Bushehr, Fars, Hamadan, Ilam, Khoozestan, Kerman, Kordestan, Lorestan, Markazi, and Qom (Sissom & Fet, 1998, Kovařík, 2003: 100, Akbari, 2007: 76), Kohgilouyeh & Boyer Ahmad (first report); Iraq (Birula, 1917: 240; Pringle, 1960: 77), Syria (Kovařík, 2002: 7), Turkey (Kovařík, 1996: 53).

Hottentotta saulcyi (Simon, 1880)

Figures 4, 7, 19–22

Buthus saulcyi Simon, 1880a: 378; Simon, 1880b: 29; Kraepelin, 1899: 18; Kraepelin, 1901: 267; Weidner, 1959: 99.

Buthus (Hottentotta) saulcyi: Birula, 1905a: 136; Birula, 1917: 214; Birula, 1918: 30; Vachon, 1940b: 255.

Buthus saulcyi: Vachon, 1949: 147 (1952: 233); Vachon, 1959: 134; Pringle, 1960: 79; Khalaf, 1962: 2; Khalaf, 1963: 64; Vachon, 1966: 210; Vachon & Stockmann, 1968: 91; Habibi, 1971: 43; Pérez Minocci, 1974: 21; Farzanpay, 1987: 148; Farzanpay, 1988: 37; El-Hennawy, 1992: 118; Kovařík, 1992: 90; Kovařík, 1992: 183; Akbari, 2007: 76; Akbari et al., 1997: 112; Dupré, Lambert & Gérard, 1998: 70.

Hottentotta saulcyi: Kovařík, 1997a: 40; Crucitti & Vignoli, 2002: 446; Vignoli et al., 2003: 4; Karatas, 2003: 315; Kovařík, 2007: 61; Navidpour et al., 2008a: 10; Navidpour et al., 2008b: 13; Navidpour et al., 2008c: 8.

Hottentotta (Hottentotta) saulcyi: Kovařík, 1998: 110; Fet & Lowe, 2000: 143.

Buthus hottentotta: Kraepelin, 1891: 185 (in part).

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, Mosul; MNHN, ZMUH.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Yasuj to Mourgah road, Jahanno Village, 30°29'20"N 51°31'38"E, 2153 m a.s.l. (Locality No. Y-4), III.2008, 2♂3im RRLS, 3juvs. FKCP, leg. Navidpour, Ghafarnia & Bahrani.

DISTRIBUTION: Iran, known from provinces Kermanshah (formerly Bachtaran), Fars, Hamadan, Hormozgan, Ilam, and Lorestan (Kovařík, 2007: 65), Bushehr and Khoozestan (Akbari, 2007: 76, Akbari et al., 1997: 112), and Kohgilouyeh & Boyer Ahmad (first report); Afghanistan (Kovařík, 1997a: 40), Iraq (Simon, 1880a: 379), Turkey (Crucitti & Vignoli, 2002: 446). Record for Syria (Kinzelbach, 1985; El-Hennawy, 1992: 118) must be considered dubious.

Hottentotta zagrosensis Kovařík, 1997

Figures 3, 4, 23–26

Hottentotta zagrosensis Kovařík, 1997a: 41; Kovařík, 1998: 111; Fet & Lowe, 2000: 144, Kovařík, 2007: 86; Navidpour et al., 2008a: 10.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Fars Province, cca 1000 m a.s.l., Zagros Mts., Abshar vill. env., 30°23'N 51°30'E; FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Fars Province, cca. 1000 m a.s.l., Zagros Mts., Abshar vill. env., 2.-3.V.1996 1♂ (holotype) 1♂(im.) and its ecdysis (paratype No. 1), leg. J. Pitulová, 1♀ (allotype, Fig. 129) 2juvs. (paratypes No. 2 and No. 3), leg. V. Šejna, 1juv. (paratype No. 4), leg. D. Král, FKCP.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 1im. FKCP, leg. Navidpour, Ghafarnia & Bahrani.

DISTRIBUTION: Iran, known from provinces Fars, West Azerbaijan, Khoozestan (see Kovařík, 2007: 86), Khoozestan (Navidpour et al., 2008a: 10), and Kohgilouyeh & Boyer Ahmad (first report).

Mesobuthus eupeus phillipsii (Pocock, 1889)

Figures 2–3, 5, 6–7, 8–9, 35–38

Buthus phillipsii Pocock, 1889: 341; Weidner, 1959: 99.

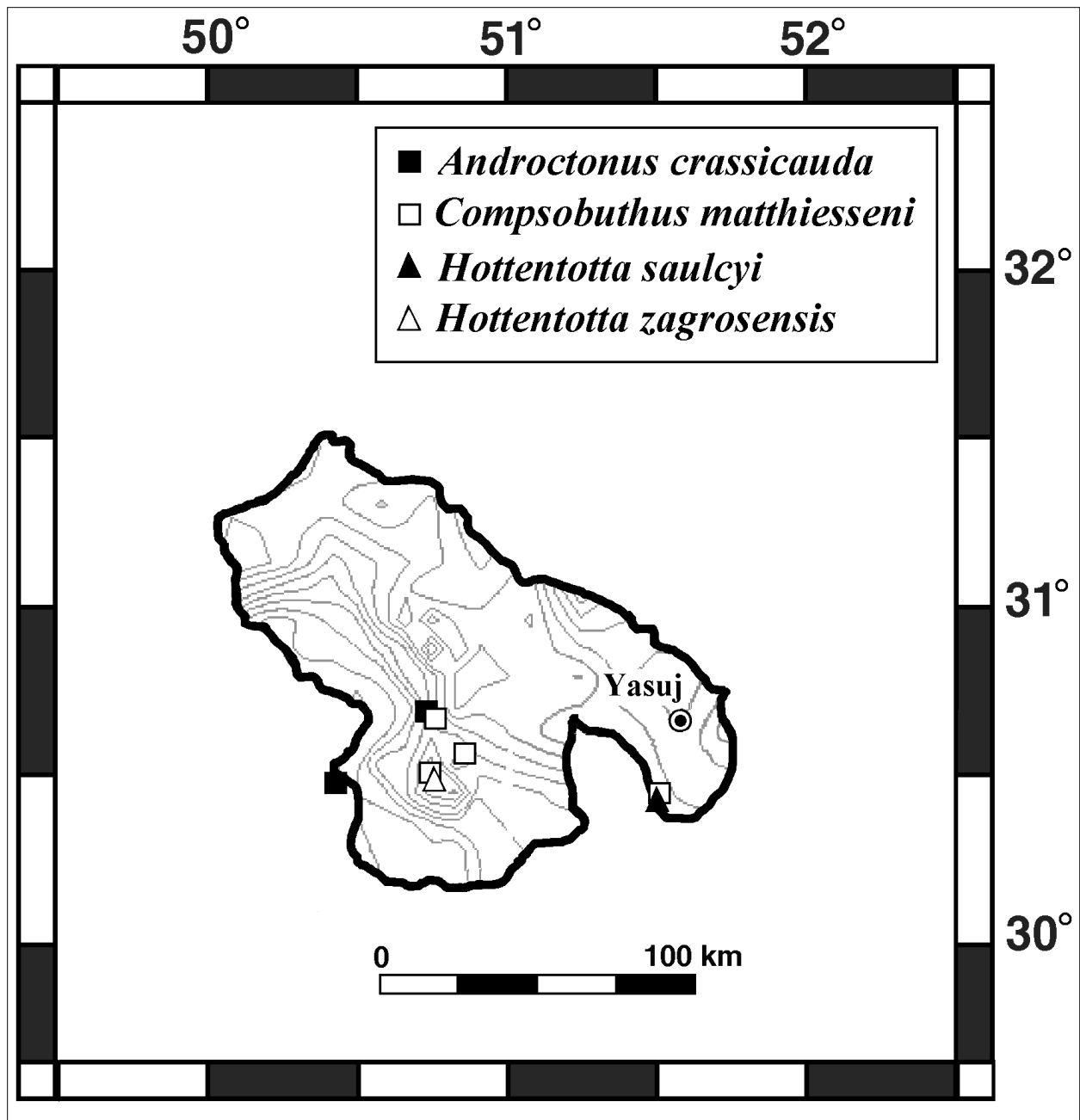


Figure 4: Map of Kohgiluyeh & Boyer Ahmad Province showing distribution of *Androctonus crassicauda*, *Compsobuthus matthiesseni*, *Hottentotta saulcyi*, and *H. zagrosensis* collected in this study.

Buthus phillipsi: Kraepelin, 1899: 24; Birula, 1905a: 131; Borelli, 1915: 460; Werner, 1916: 80; Lampe, 1918: 191.

Mesobuthus phillipsi: Vachon, 1950: 153 (1952: 325); Pérez Minocci, 1974: 25.

Buthus (Buthus) eupeus phillipsi: Birula, 1917: 228.

Mesobuthus eupeus phillipsi: Vachon, 1959: 148; Vachon, 1966: 213; Habibi, 1971: 44; Farzanpay,

1986: 334; Fet, 1994: 527; Kovařík, 1997a: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 175.

Mesobuthus eupeus phillipsii: Farzanpay, 1987: 150; Farzanpay, 1988: 38; Navidpour et al., 2008a: 11; Navidpour et al., 2008b: 13; Navidpour et al., 2008c: 11.

Mesobuthus eupeus: Akbari, 2007: 76.

Buthus hottentotta: Kraepelin, 1891: 185 (part?).

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Bushir (now Bushehr) Province; BMNH.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Zagros Mts., Kuh-e-Dinar ridge, 10 km NE of Yasuj, by road (Baba Hasan vill. env.), 1800-2500 m a.s.l., 1-2.V.1996, 1♀ Ijuv. FKCP, leg. J. Pitulová; Behbahan to Gachsaran (Dogonbadan) road, 30°28'36"N 50°30'05"E, 498 m a.s.l. (Locality No. Y-1), III.2008, 6♂1♀, RRLS, 2ims. FKCP, leg. Ghafarnia & Habibzadeh; Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 6♂12♀ RRLS, 1♂1♀2ims.(♂♀) FKCP, leg. Navidpour, Ghafarnia & Bahrani; Dena, Yasuj to Sisakht road, 30°48'15"N 51°28'54"E, 2000 m a.s.l. (Locality No. Y-3), III.2008, 3♀ RRLS, 1♂2ims. FKCP, leg. Ghafarnia, Habibzadeh & Bahrani; Yasuj to Mourgah road, Jahanno Village, 30°29'20"N 51°31'38"E, 2153 m a.s.l. (Locality No. Y-4), III.2008, 3♂2♀ RRLS, leg. Navidpour, Ghafarnia & Bahrani; Basht road, Dehno village, 30°17'41"N 51°25'08"E, 826 m a.s.l. (Locality No. Y-5), III. 2008, 1♂ RRLS, leg. Navidpour, Ghafarnia & Bahrani; Basht to Dehdasht road, Shah Baharan Village, 30°36'51"N 50°50'46"E, 886 m a.s.l. (Locality No. Y-7) X.2007, 4♂1♀ RRLS, leg. Ghafarnia, Hayder & Habibzadeh; Cheram, 30°44'23"N 50°44'35"E, 747 m a.s.l. (Locality No. Y-8), III.2008, 1♂2♀ RRLS, leg. Ghafarnia, Bahrani & Habibzadeh; Dehdasht to Behbahan road, Filegah Village, 30°31'21"N 50°24'51"E, 770 m a.s.l. (Locality No. Y-9), III.2008, 3♀ RRLS, leg. Ghafarnia, Hayader & Bahrani; Dehdasht, Safiri Village, 30° 46'37"N 50°41'18"E, 685 m a.s.l. (Locality No. Deh-1), III.2008, 3♂ RRLS, leg. Habibzadeh, Hayader & Bahrani.

DISTRIBUTION: Iran, known from provinces Bushehr (Pocock, 1889: 341), Ilam (Akbari, 2007: 76), Khoozestan (Navidpour et al., 2008a: 9), and Kohgilouyeh & Boyer Ahmad (Kovařík, 1997); Iraq (Vachon, 1966: 213; Fet & Lowe, 2000: 175).

Odontobuthus bidentatus Lourenço et Pézier, 2002
Figures 2, 5, 27–30

Odontobuthus odonturus: Habibi, 1971: 44 (in part); Farzanpay, 1987: 155; Farzanpay, 1988: 39; Kovařík, 1997a: 47; Kovařík, 1998: 115 (in part); Fet & Lowe, 2000: 188 (in part); Akbari, 2007: 76.

Odontobuthus bidentatus Lourenço & Pézier, 2002: 118; Navidpour et al., 2008a: 13; Navidpour et al., 2008b: 15; Navidpour et al., 2008c: 11.

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, 180 km north of Bagdad, Khanagin-Dyala; MHNG.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Behbahan to Gachsaran (Dogonbadan) road, 30°28'36"N 50°30'05"E, 498 m a.s.l. (Locality No. Y-1), III.2008, 3♂1♀ RRLS, 2ims. FKCP, leg. Ghafarnia & Habibzadeh; Dehdasht to Behbahan road, Filegah Village, 30°31'21"N 50°24'51"E, 770 m a.s.l. (Locality No. Y-9), III.2008, 2♀ RRLS, leg. Ghafarnia, Hayader & Bahrani.

DISTRIBUTION: Iran, known from provinces Bushehr (Lourenço & Pézier, 2002: 118), Khoozestan (Navidpour et al., 2008a: 13), Ilam (Navidpour et al., 2008c: 11), and Kohgilouyeh & Boyer Ahmad (first report); Iraq (Lourenço & Pézier, 2002: 118).

Orthochirus iranus Kovařík, 2004
Figures 3, 10, 13, 39–42

Orthochirus sp. n.?: Kovařík, 1997a: 47 (in part).

Orthochirus iranus Kovařík, 2004: 13; Kovařík & Fet, 2006: 8; Navidpour et al., 2008a: 15; Navidpour et al., 2008b: 17; Navidpour et al., 2008c: 11.

TYPE LOCALITY AND TYPE REPOSITORY. **Iran**, Bushehr Province, cca 17 km NW. Bandar-e Gonárer, 29°38' 32"N 50°26'56"E, 10 m a.s.l.; FKCP.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Yasuj, Deelaroo Village, 30°33'44"N 50°44' 44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 1♂ RRLS, 1♀ FKCP, leg. Navidpour, Ghafarnia & Bahrani.

DISTRIBUTION: Iran, known from provinces Bushehr and Khoozestan (Kovařík, 2004: 13), Lorestan and Hamadan (Navidpour et al., 2008a: 20), Ilam (Navidpour et al., 2008c: 11), and Kohgilouyeh & Boyer Ahmad (first report).

Orthochirus zagrosensis Kovařík, 2004
Figures 11–12, 13, 43–46

Orthochirus sp. n.?: Kovařík, 1997: 47 (in part).

Orthochirus zagrosensis Kovařík, 2004: 22; Kovařík & Fet, 2006: 8; Navidpour et al., 2008a: 20.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Dasht-e-Arzhan, 29°34.644'N 51°56.889'E, 2000 m a.s.l.; FKCP.

TYPE MATERIAL EXAMINED. **Iran**, Fars Prov, Dasht-e-Arzhan, 21–22.4.2000, 29°34.644'N 51°56.889'E, 2000 m a.s.l., 1♂ (holotype) FKCP, leg. J. Šobotník; Kohgilouyeh & Boyer Ahmad Province, Zagros Mts., Kuh-e-Dinar ridge, Yasuj 10 km N by road, 30°39'N,

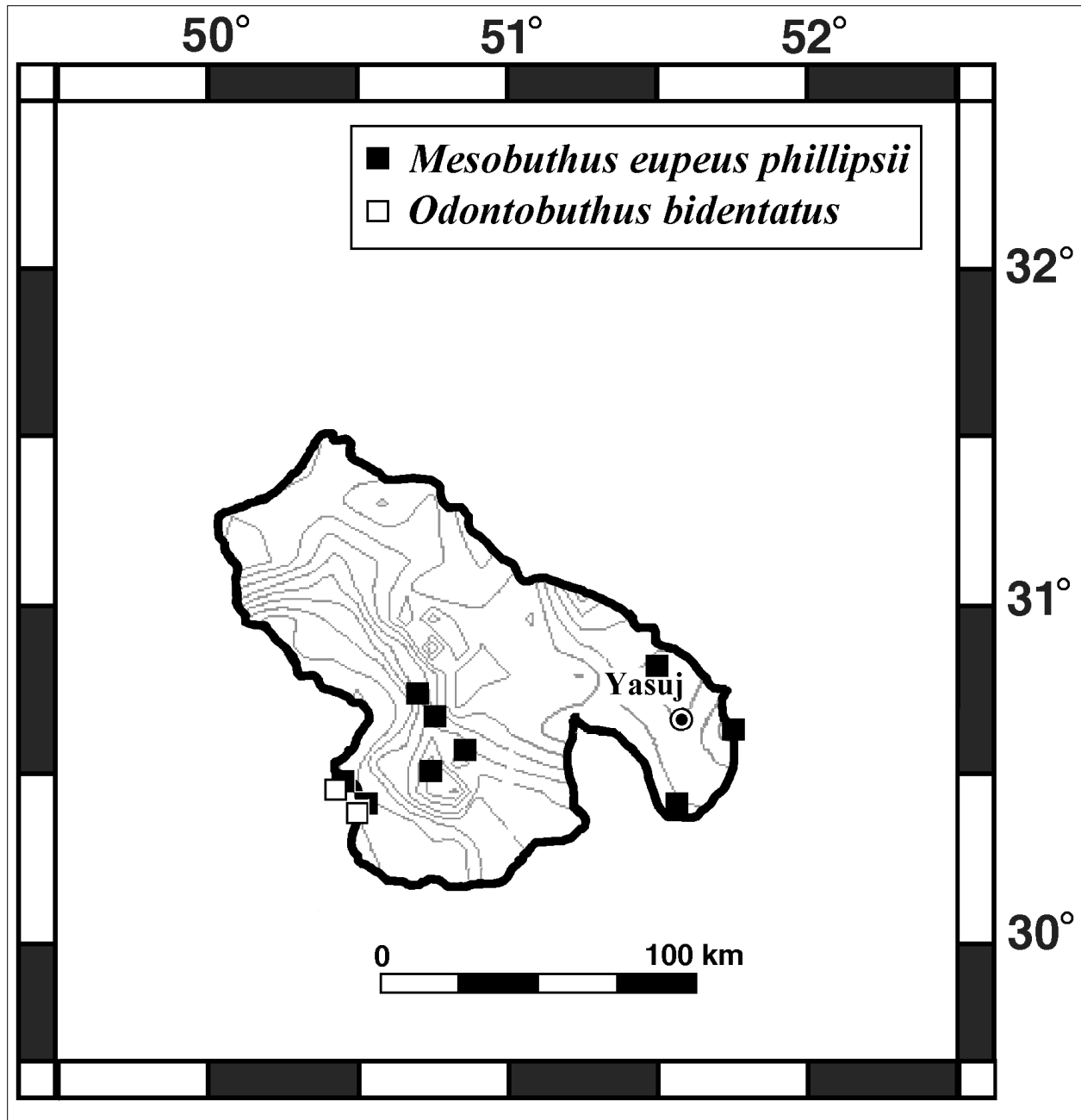
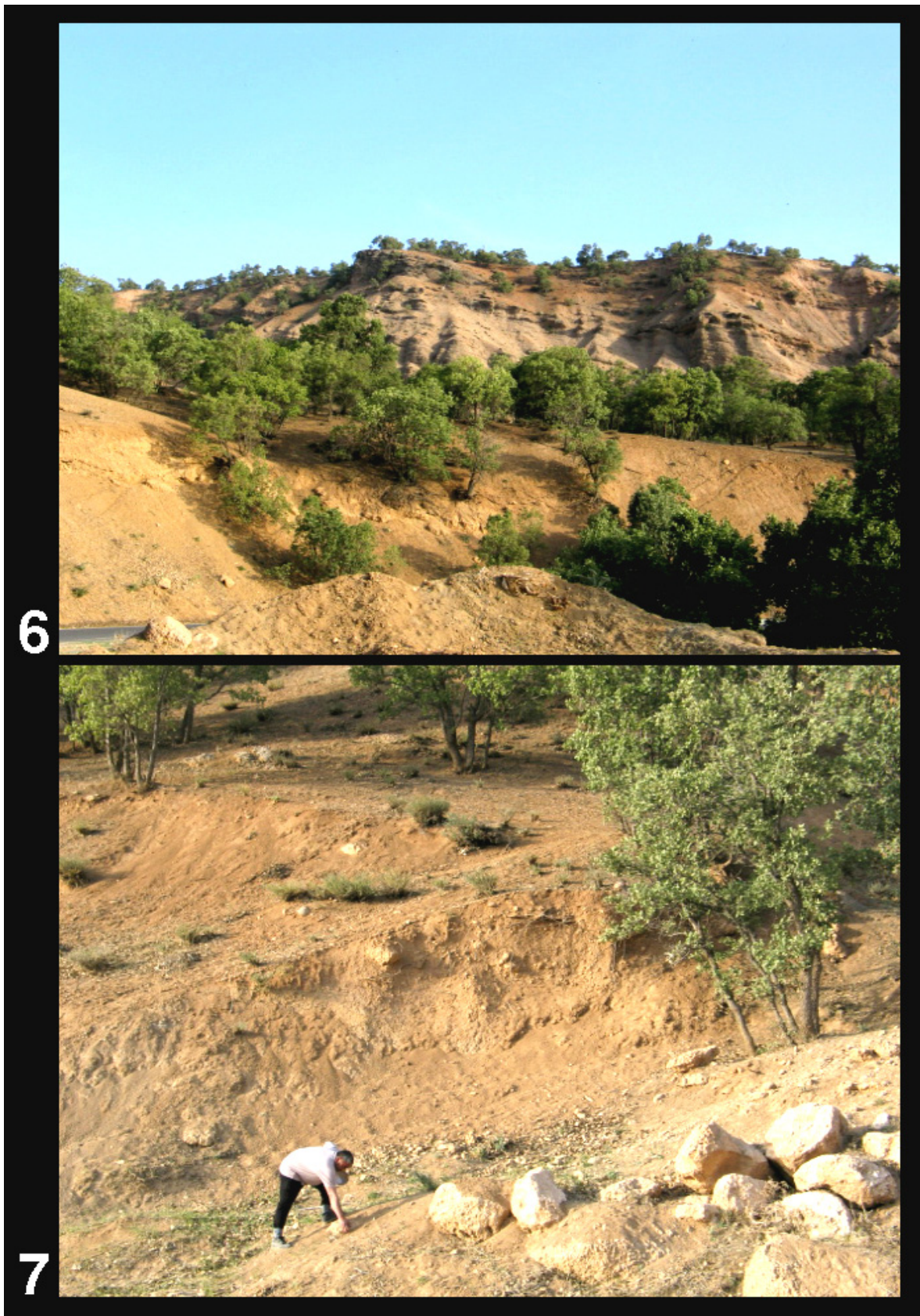


Figure 5: Map of Kohgilouyeh & Boyer Ahmad Province showing distribution of *Mesobuthus eupeus phillipsii* and *Odontobuthus bidentatus* collected in this study.

51°36'E, 1800–2500 m a.s.l., 1–2.V.1996 (Locality No. 13 in Frynta et al., 1997: 4), 1♀ (allotype) FKCP, leg. J. Pitulová; Esfahan Province, Zagros Mts., Qamishlu, 32°02'N 51°29'E, ca. 2000–2200 m a.s.l., 27–28.IV.1996, (Locality No. 5 in Frynta et al., 1997: 4), 1♀ (paratype) FKCP, leg. M. Kaftan; Yazd Province, E of Taft, 31°44'N 54°13'E, 1542 m a.s.l., 7.IV.2004, 1im. (paratype) FKCP, leg. V. Vignoli & P. Crucitti; W of Baghdadabad, Taft, 31°35'N 54°24'E, 1502 m a.s.l.,

9.IV.2004, 1♀ (paratype) FKCP, leg. V. Vignoli & P. Crucitti.

KOHGILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Zagros Mts., Kuh-e-Dinar ridge, Yasuj 10 km N by road, 30°39'N, 51°36'E, 1800–2500 m a.s.l., 1–2.V.1996 (Locality No. 13 in Frynta et al., 1997: 4), 1♀ (allotype) FKCP, leg. J. Pitulová.



Figures 6–7: Iran, Kohgilouyeh & Boyer Ahmad Prov. **6.** Dena, Yasuj to Sisakht road, $30^{\circ}48'15''\text{N}$ $51^{\circ}28'54''\text{E}$, 2000 m a.s.l. (Locality No. Y-3). Locality where *Mesobuthus eupeus phillipsii* (Pocock, 1889) and *Hemiscorpius lepturus* Peters, 1861 were documented. **7.** Yasuj to Mourgah road, Jahanno Village, $30^{\circ}29'20''\text{N}$ $51^{\circ}31'38''\text{E}$, 2153 m a.s.l. (Locality No. Y-4). Locality where *Compsobuthus matthiesseni* (Birula, 1905), *Hottentotta sauleyi* (Simon, 1880), *Mesobuthus eupeus phillipsii* (Pocock, 1889) and *Hemiscorpius lepturus* Peters, 1861 were documented.



Figures 8–9: Iran, Kohgilouyeh & Boyer Ahmad Prov. **8.** Basht road, Dehno Village, 30°17'41"N 51°25'08"E, 826 m a.s.l. (Locality No. Y-5). Locality where *Mesobuthus eupeus phillipsii* (Pocock, 1889) was documented. **9.** Cheram, 30°44'23"N 50°44'35"E, 747 m a.s.l. (Locality No.Y-8). Locality where *Androctonus crassicauda* (Olivier, 1807), *Compsobuthus matthiesseni* (Birula, 1905), *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Razianus zarudnyi* (Birula, 1903), and *Hemiscorpius lepturus* Peters, 1861 were documented.



Figures 10–12: 10. *Orthochirus iranus* Kovařík, 2004, metasoma dorsal, ♀ (38 mm), Iran, Khoozestan Province, Shadegan district, Toopjeh village, 30°39'33"N 48°36'44"E, 33 m a.s.l., FKCP. 11. *Orthochirus zagrosensis* Kovařík, 2004, metasoma dorsal, ♂ (28 mm) holotype, Iran, Fars Prov, Dasht-E-Arzhan, 29°34.644'N 51°56.889'E, 2000 m a.s.l., FKCP. 12. *Orthochirus zagrosensis* Kovařík, 2004, metasoma dorsal, ♀ (46 mm) allotype, Kohgilouyeh & Boyer Ahmad Prov., Zagros Mts., Kuh-e-Dinar ridge, Yasuj 10 km N by road, 30°39'N, 51°36'E, 1800–2500 m a.s.l., FKCP.

DISTRIBUTION: Iran, known from provinces Esfahan, Fars, Kohgilouyeh & Boyer Ahmad, and Yazd (Kovařík, 1997).

TYPE LOCALITY AND TYPE REPOSITORY. “Persia, Kalagan Province, Beludjistan, and Geh Province, Makran“, now Sistan & Baluchistan Province, Iran (Fet, 1977); ZISP.

Razianus zarudnyi (Birula, 1903)

Figures 3, 9, 13, 47–50

Hemibuthus zarudnyi Birula, 1903: 75; Roewer, 1943: 216; Vachon, 1966: 211.

Razianus zarudnyi: Farzanpay, 1987: 159; Farzanpay, 1988: 41; Fet & Lowe, 2000: 216; Akbari, 2007: 76; Navidpour et al., 2008a: 20; Navidpour et al., 2008b: 17; Navidpour et al., 2008c: 14.

= *Buthus zarudnianus* Birula, 1905a: 144; Birula, 1905b: 450; Kraepelin, 1913: 127; Vachon, 1966: 211; Habibi, 1971: 43 (syn. by Fet, 1997: 66).

= *Neohemibuthus kinzelbachi* Lourenço, 1996: 94; Kovařík, 1997a: 49 (syn. by Fet, 1997: 66).

Neohemibuthus zarudnyi: Fet, 1997: 65; Kovařík, 1998: 115.

KOHILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 3♂4♀ RRLS, 2♂ FKCP, leg. Navidpour, Ghafarnia & Bahrani; Cheram, 30°44'23"N 50°44'35"E, 747 m a.s.l. (Locality No.Y-8), III.2008, 2♀ RRLS, leg. Ghafarnia, Bahrani & Habibzadeh.

DISTRIBUTION: Iran, known from provinces Bushehr (Akbari, 2007: 76), Chahar Machal & Bakhtiyari (Fet, 1997: 67), Fars (Fet, 1997: 68), Ilam (Akbari, 2007: 76), Khoozestan (Lourenço, 1996: 94; Fet, 1997: 67–68), Kohgilouyeh & Boyer Ahmad (first report), and Sistan & Baluchistan (Fet, 1997: 66).

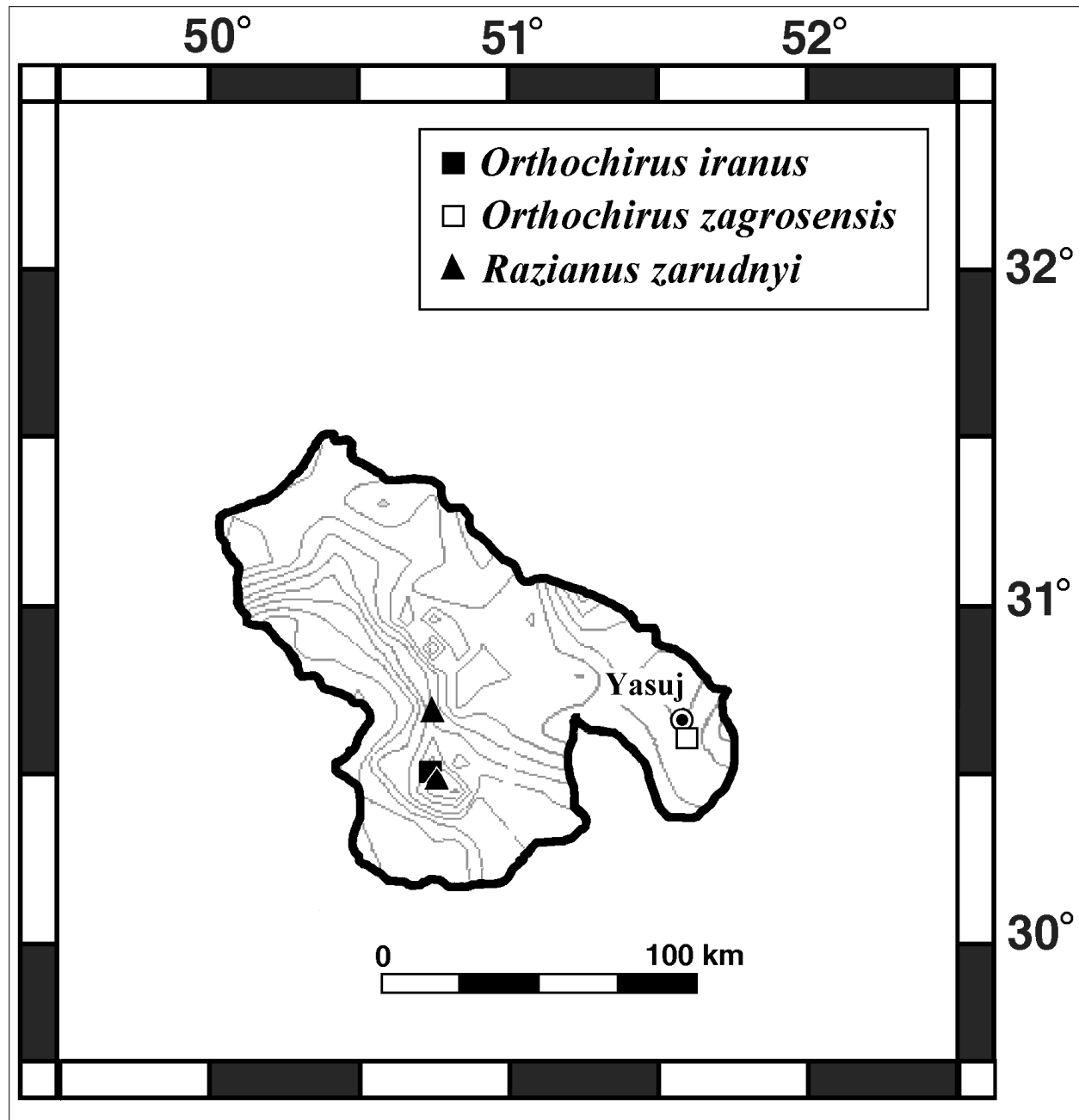


Figure 13: Map of Kohgiluyeh & Boyer Ahmad Province showing distribution of *Orthochirus iranus*, *O. zagrosensis*, and *Razianus zarudnyi* collected in this study.

Family **Scorpionidae** Latreille, 1802

Scorpio maurus townsendi (Pocock, 1900)

Figures 2, 14, 51–55

Heterometrus townsendi Pocock, 1900: 364.

? *Scorpio townsendi*: Birula, 1905a: 147 (Birula, 1910: 184).

Scorpio maurus townsendi: Birula, 1910: 184; Birula, 1917: 231; Vachon, 1950: 164 (1952: 336); Vachon, 1966: 215; Habibi, 1971: 44; Pérez Minocci, 1974: 40; Kovařík, 1997a: 50; Kovařík, 1998: 141; Fet, 2000: 479; Navidpour et al., 2008a: 26; Navidpour et al., 2008b: 20; Navidpour et al., 2008c: 14.

Scorpio maurus: Farzanpay, 1987: 165; Farzanpay, 1988: 42; Akbari, 2007: 76.

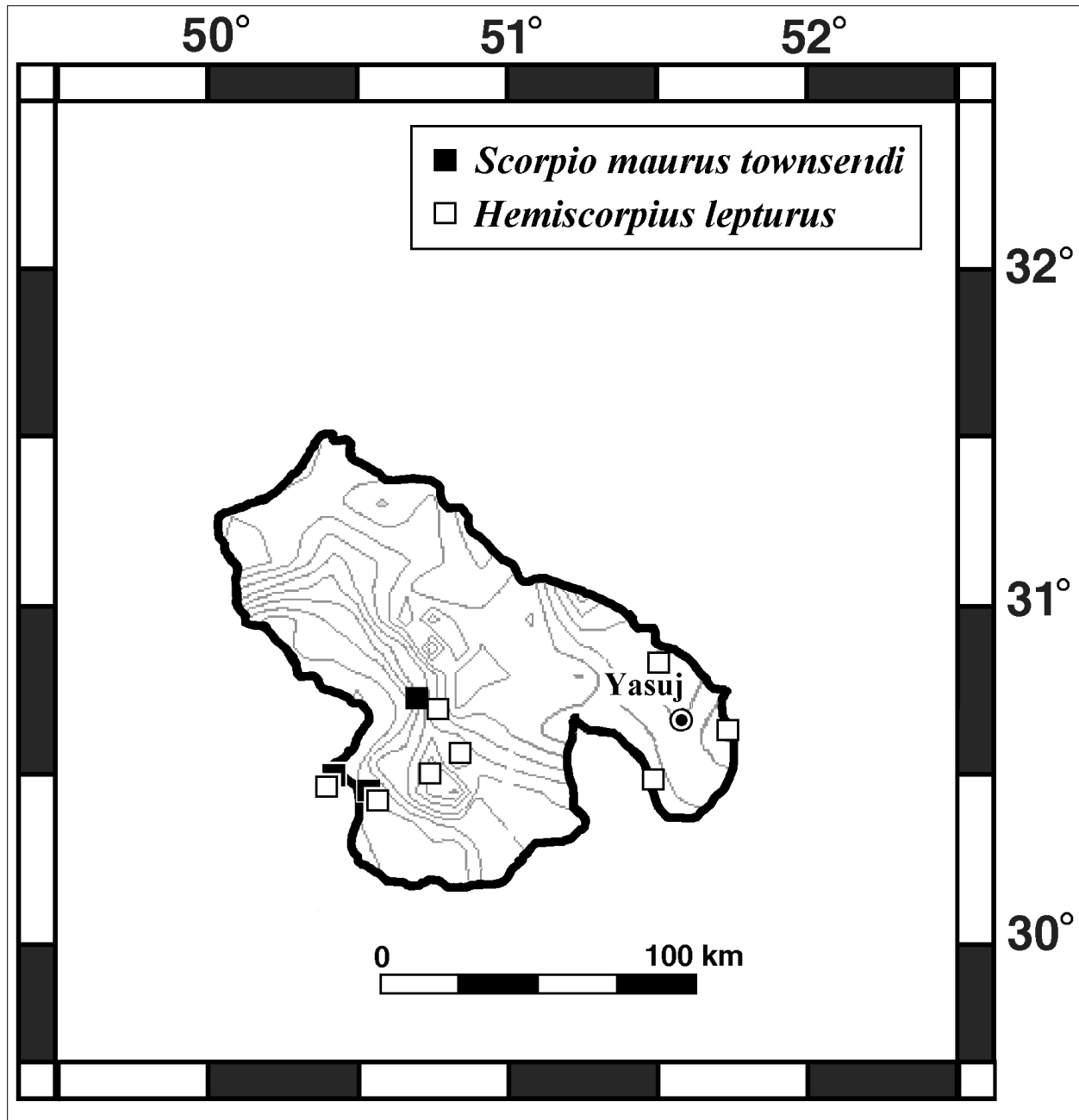


Figure 14: Map of Kohgilouyeh & Boyer Ahmad Province showing distribution of *Scorpio maurus townsendi* and *Hemiscorpius lepturus* collected in this study.

TYPE LOCALITY AND TYPE REPOSITORY. Iran, Bushehr Province, Fort Reshire near Bushire, Persian Gulf, Iran; BMNH.

TYPE MATERIAL EXAMINED. **Iran**, Bushehr Province, Fort Reshire near Bushire, Persia, 1♀ (holotype) leg. F. W. Townsend, BMNH No. 1900.5.9.1.

KOHWILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Prov-

ince, Behbahan to Gachsaran (Dogonbadan) road, 30°28'36"N 50°30' 05"E, 498 m a.s.l. (Locality No. Y-1), III.2008, 13♂1♀im. RRLS, 1♀1im. FKCP, leg. Ghafarnia & Habibzadeh; Dehdasht to Behbahan road, Filegah Village, 30°31'21"N 50°24'51"E, 770 m a.s.l. (Locality No.Y-9), III.2008, 5♂2♀ RRLS, leg. Ghafarnia, Hayader & Bahrani; Dehdasht, Safiri Village, 30° 46'37"N 50°41'18"E, 685 m a.s.l. (Locality No. Deh-1), III.2008, 1♂2♀ RRLS, leg. Habibzadeh, Hayader & Bahrani.

DISTRIBUTION: Iran, known from provinces Bushehr (Pocock, 1900: 364), Ilam (Akbari, 2007: 76), Khoozestan (Navidpour et al., 2008a: 26), and Kohgilouyeh & Boyer Ahmad (first report).

Family **Hemiscorpiidae** Pocock, 1893

Hemiscorpius lepturus Peters, 1861
Figures 3, 6–7, 9, 14, 56–59

Hemiscorpius lepturus Peters, 1861a: 426; Karsch, 1879: 15, 21; Birula, 1905a: 146; Birula, 1917: 215; Birula, 1918: 42; Weidner, 1959: 100; Pringle, 1960: 84; Khalaf, 1962: 2; Khalaf, 1963: 68; Vachon, 1966: 214; Habibi, 1971: 44; Farzanpay & Pretzmann, 1974: 217; Pérez Minocci, 1974: 36; Vachon, 1977: 213; Vachon, 1979: 59; Farzanpay, 1987: 141, 168; Farzanpay, 1988: 42; Simard & Watt, 1990: 441; Sissom, 1990: 75; El-Hennawy, 1992: 135; Kovařík, 1997a: 48; Kovařík, 1998: 136; Fet, 2000: 429; Prendini, 2000: 44; Capes & Fet, 2001: 303; Monod & Lourenço, 2005: 902; Akbari, 2007: 76; Navidpour et al., 2008a: 26; Navidpour et al., 2008b: 20; Navidpour et al., 2008c: 15.

Hemiscorpion lepturus: Peters, 1861b: 511; Ausserer, 1880: 466; Kraepelin, 1899: 142; Werner, 1934: 276; Moritz & Fischer, 1980: 317; Kovařík, 2002: 14.

Hemiscorpio lepturus: Simon, 1880b: 29.

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, “Mendeli bei Baghdad” (Mendeli near Baghdad); ZMHB.

TYPE MATERIAL EXAMINED. Iraq, Mendeli bei Baghdad, 2♂2♀ (syntypes), leg. Petermann, ZMHB 43a–d.

KOHILOUYEH & BOYER AHMAD PROVINCE MATERIAL EXAMINED. **Iran**, Kohgilouyeh & Boyer Ahmad Province, Zagros Mts., Kuh-e-Dinar ridge, 10 km NE of Yasuj, by road (Baba Hasan Village env.), 1800–2500 m a.s.l., 1.–2.V.1996, 1♀1juv. FKCP, leg. J. Pitulová; Yasuj, Deelaroo Village, 30°33'44"N 50°44'44"E, 820 m a.s.l. (Locality No. Y-2), III.2008, 1♂3♀ FKCP, leg. Navidpour, Ghafarnia & Bahrani; Dena, Yasuj to Sisakht road, 30°48'15"N 51°28'54"E, 2000 m a.s.l. (Locality No. Y-3), III.2008, 2♀1juv. RRLS, 1♀ FKCP, leg. Ghafarnia, Habibzadeh & Bahrani; Yasuj to Mourgah road, Jahanno Village, 30°29'20"N 51°31'38"E, 2153 m a.s.l. (Locality No. Y-4), III.2008, 2♂5♀ RRLS, leg. Navidpour, Ghafarnia & Bahrani; Basht to Dehdasht road, Shah Baharan Village, 30°36'51"N 50°50'46"E, 886 m a.s.l. (Locality No. Y-7) X.2007, 1♀ RRLS, leg. Ghafarnia, Hayder & Habibzadeh; Cheram, 30°44'23"N 50°44' 35"E, 747 m a.s.l. (Locality No.Y-8), III.2008, 1♂1♀im. RRLS, leg. Ghafarnia, Bahrani & Habibzadeh; Dehdasht to Behbahan road, Filegah Village, 30°31'

21"N 50°24'51"E, 770 m a.s.l. (Locality No.Y-9), III. 2008, 1♀ RRLS, leg. Ghafarnia, Hayader & Bahrani.

DISTRIBUTION: Iran: known from provinces Fars, Hormozgan, Kohgilouyeh & Boyer Ahmad, and Lorestan (Kovařík, 1997a: 48), Bushehr, Ilam, and Khoozestan (Farzanpay, 1987: 141, Monod & Lourenço, 2005: 902; Akbari, 2007: 76); Iraq (Peters, 1861a: 426).

Key of scorpions of Kohgilouyeh & Boyer Ahmad Province

1. Pedipalp patella without ventral trichobothria **Buthidae** 3
- Pedipalp patella with ventral trichobothria 2
2. Lateroapical margins of leg tarsi shaped into rounded lobes. **Scorpio maurus townsendi** (Pocock, 1900)
- Lateroapical margins of leg tarsi straight.
..... **Hemiscorpius lepturus** Peters, 1861
3. Carapace in lateral view distinctly angled downward from median eyes to anterior margin. Total length less than 50 mm. **Orthochirus** 4
- Carapace in lateral view with entire dorsal surface horizontal or nearly so (possibly with a slight anterior decline) 5
4. Dorsal surface of fifth metasomal segment mesially granulated. **Orthochirus iran** Kovařík, 2004
- Dorsal surface of fifth metasomal segment mesially smooth, without granules. **Orthochirus zagrosensis** Kovařík, 2004
5. Cheliceral fixed finger with a single ventral denticle **Razianus zarudnyi** (Birula, 1903)
- Cheliceral fixed finger with two ventral denticles 6
6. Ventral carinae of second and third metasomal segments and ventral transverse carina of fourth segment armed with very strong denticles. **Odontobuthus bidentatus** Lourenço & Pézier, 2002
- Ventral carinae of metasomal segments without very strong denticles..... 7
7. Dentate margin of pedipalp chela movable finger with 4 terminal granules (3 terminal and one basal terminal). **Androctonus crassicauda** (Olivier, 1807)
- Dentate margin of pedipalp chela movable finger with 5–7 terminal granules (4–6 terminal and one basal terminal)..... 8
8. Central median and posterior median carinae of carapace joined to form a continuous linear series of granules to posterior margin **C. matthiesseni** (Birula, 1905)

- Central median and posterior median carinae of carapace not joined to form a continuous linear series of granules to posterior margin 9
9. Trichobothrium *db* on tibia of pedipalp located usually between *est* and *dt*. Trichobothrium *db* may be on level with trichobothrium *est* or rarely between *est* and *esb*. Carinae of carapace not forming a lyre-shaped configuration. Ventrolateral carinae on the fifth metasomal segment with all granules more or less equal in size. *Hottentotta* 10
- Trichobothrium *db* on tibia of pedipalp always located between *est* and *esb*. Carinae of carapace forming a lyre-shaped configuration. Ventrolateral carinae on the fifth metasomal segment with irregular granules.....
.....*Mesobuthus eupeus phillipsii* (Pocock, 1889)
10. Color black except reddish brown chela of pedipalp. Legs may also be reddish-brown. *Hottentotta zagrosensis* Kovařík, 1997
- Color not entirely black, usually yellowish green
.....*Hottentotta saulcyi* (Simon, 1880)

Acknowledgments

We are grateful to Dr. Taheri, Mrs. Jahanifard, Mr. Masihipour, Mr. Hadiyan, Mr. Hayader, Mr. Habibzadeh, Mr. Bahrani, and Mr. Ghafarnia (Iran) for their kind support.

Figures 15–26 ➔: 15–16. *Androctonus crassicauda* (Olivier, 1807), dorsal and ventral views, ♂ (73 mm), Iran, Bushehr Province, Chahak district, 29°38'32"N 50°26'56"E, FKCP. 17–18. *Androctonus crassicauda* (Olivier, 1807), dorsal and ventral views, ♀ (85 mm), Egypt, FKCP. 19–20. *Hottentotta saulcyi* (Simon, 1880), dorsal and ventral views, ♂ (82 mm), Iran, Kermanshah Province (formerly Bachtaran), Hasrouabad, 34°10'09"N 46°21'56"E, 1300 m a.s.l., FKCP. 21–22. *Hottentotta saulcyi* (Simon, 1880), dorsal and ventral views, ♀ (94 mm), Iran, Ilam Province, 30 km NW Ilam, 33°43'N 46°41'E, FKCP. 23–24. *Hottentotta zagrosensis* Kovařík, 1997, dorsal and ventral views, ♂ (102 mm) holotype, Iran, Fars Prov., Zagros Mts., Abshar Village env., FKCP. 25–26. *Hottentotta zagrosensis* Kovařík, 1997, dorsal and ventral views, ♀ (103 mm) allotype, Iran, Fars Prov., Zagros Mts., Abshar Village env., FKCP.

Figures 27–38 ➔: 27–28. *Odontobuthus bidentatus* Lourenço et Pézier, 2002, dorsal and ventral views, □ (63 mm), Iran, Khoozestan Province, 45 km NW of Masdjedsoleyman, Lali, 31°18'33"N 49°03'39"E, 329 m a.s.l. (Locality No. La-815-2), FKCP. 29–30. *Odontobuthus bidentatus* Lourenço et Pézier, 2002, dorsal and ventral views, ♀ (68 mm), Iran, Bushehr Province, Bushehr to Dayer road, Jeirani village, 27°50'47"N 51°45'33"E (Locality No. Bu-22), FKCP. 31–32. *Compsobuthus matthiesseni* (Birula, 1905), dorsal and ventral views, ♂ (38 mm), Iran, Lorestan Province, 10 km SE Bavineh, 1100 m a.s.l., 33°36'08"N 47°11'59"E, FKCP. 33–34. *Compsobuthus matthiesseni* (Birula, 1905), dorsal and ventral views, ♀ (38 mm), Iran, Lorestan Province, same locality as in Figs. xy-xy, FKCP. 35–36. *Mesobuthus eupeus phillipsii* (Pocock, 1889), dorsal and ventral views, ♂ (52 mm), Iran, Khoozestan Province, near Choga Zanbil (zikkurat) ca. 100 m a.s.l., FKCP. 37–38. *Mesobuthus eupeus phillipsii* (Pocock, 1889), dorsal and ventral views, ♀ (53 mm), Iran, Khoozestan Province, Baghmalek District, Hore Village, 31°55'30"N 49°31'47"E, 185 m a.s.l., FKCP.

Figures 39–50 ➔: 39–40. *Orthochirus iranus* Kovařík, 2004, dorsal and ventral views, ♂ (29 mm), Iran, Bushehr Province, Delvar, 28°42'59"N 51°04'52"E, 4 m a.s.l. (Locality No. Bu-20), FKCP. 41–42. *Orthochirus iranus* Kovařík, 2004, dorsal and ventral views, ♀ (38 mm), Iran, Khoozestan Province, Shadegan district, Toopjeh village, 30°39'33"N 48°36'44"E, 33 m a.s.l., FKCP. 43–44. *Orthochirus zagrosensis* Kovařík, 2004, dorsal and ventral views, ♂ (28 mm) holotype, Iran, Fars Prov, Dasht-E-Arzhan, 29°34.644'N 51°56.889'E, 2000 m a.s.l., FKCP. 45–46. *Orthochirus zagrosensis* Kovařík, 2004, dorsal and ventral views, ♀ (46 mm) allotype, Kohgilouyeh & Boyer Ahmad Province, Zagros Mts., Kuh-e-Dinar ridge, Yasuj 10 km N by road, 30°39'N, 51°36'E, 1800–2500 m a.s.l., FKCP. 47–48. *Razianus zarudnyi* (Birula, 1903), dorsal and ventral views, ♂ (22 mm), Iran, Khoozestan Province, near Chogha Zanbil (zikkurat), 32°00'55"N 48°31'04"E, 68.5 m a.s.l. (Locality No. Ch-101), FKCP. 49–50. *Razianus zarudnyi* (Birula, 1903), dorsal and ventral views, ♀ (24 mm), Iran, Khoozestan Province, same locality as in Figs. xy-xy, FKCP.

Figures 51–59 ➔: 51–52. *Scorpio maurus townsendi* (Pocock, 1900), dorsal and ventral views, ♂ (55 mm), Iran, Khoozestan Province, Ahvaz–Omidyeh road, Chombeh village, 31°11'54"N 49°11'41"E, 44 m a.s.l., FKCP. 53–54. *Scorpio maurus townsendi* (Pocock, 1900), dorsal and ventral views, ♀ (54 mm), Iran, Khoozestan Province, Hayader and Bahrani; Ramhormoz, 31°11'54"N 49°11'41"E, 44 m a.s.l. (Locality No. A-Ra 807), FKCP. 55. *Scorpio maurus townsendi* (Pocock, 1900), dorsal view, juv. (25 mm), Iran, Bushehr Province, Tangestan, Farshanbeh, 28°52'53"N 51°18'43"E, 95 m a.s.l. (Locality No. Bu-35), FKCP. 56–57. *Hemiscorpius lepturus* Peters, 1861, dorsal and ventral views, ♂ (72 mm), Iran, Khoozestan Province, Chogha Zanbil (zikkurat), 32°00'55"N 48°31'04"E, 68.5 m a.s.l. (Locality No. Ch-102), FKCP. 58–59. *Hemiscorpius lepturus* Peters, 1861, dorsal and ventral views, ♀ (58 mm), Iran, Khoozestan Province, same locality as in Figs. xy-xy, FKCP.



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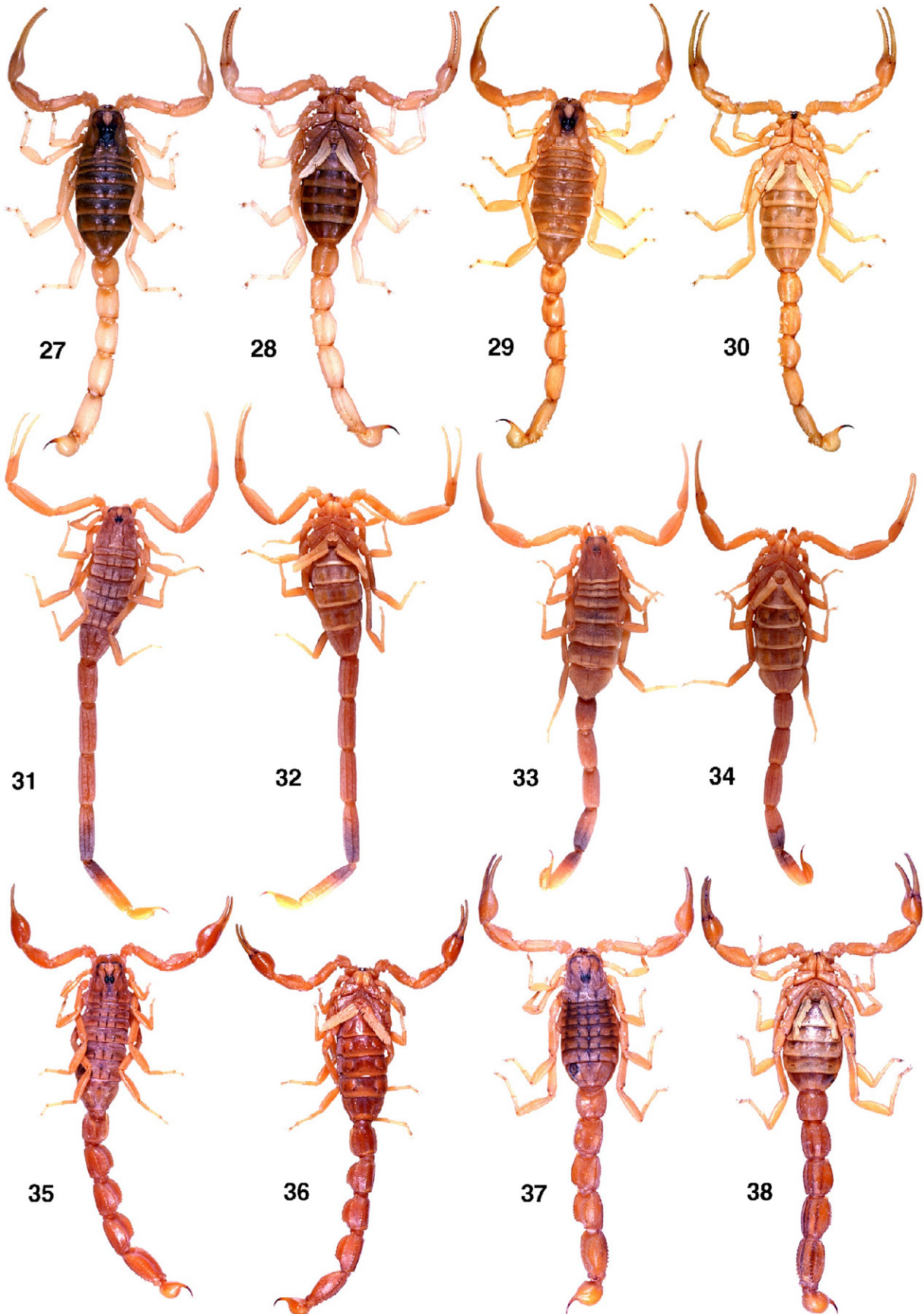
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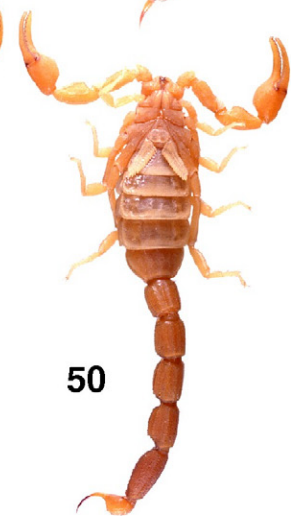
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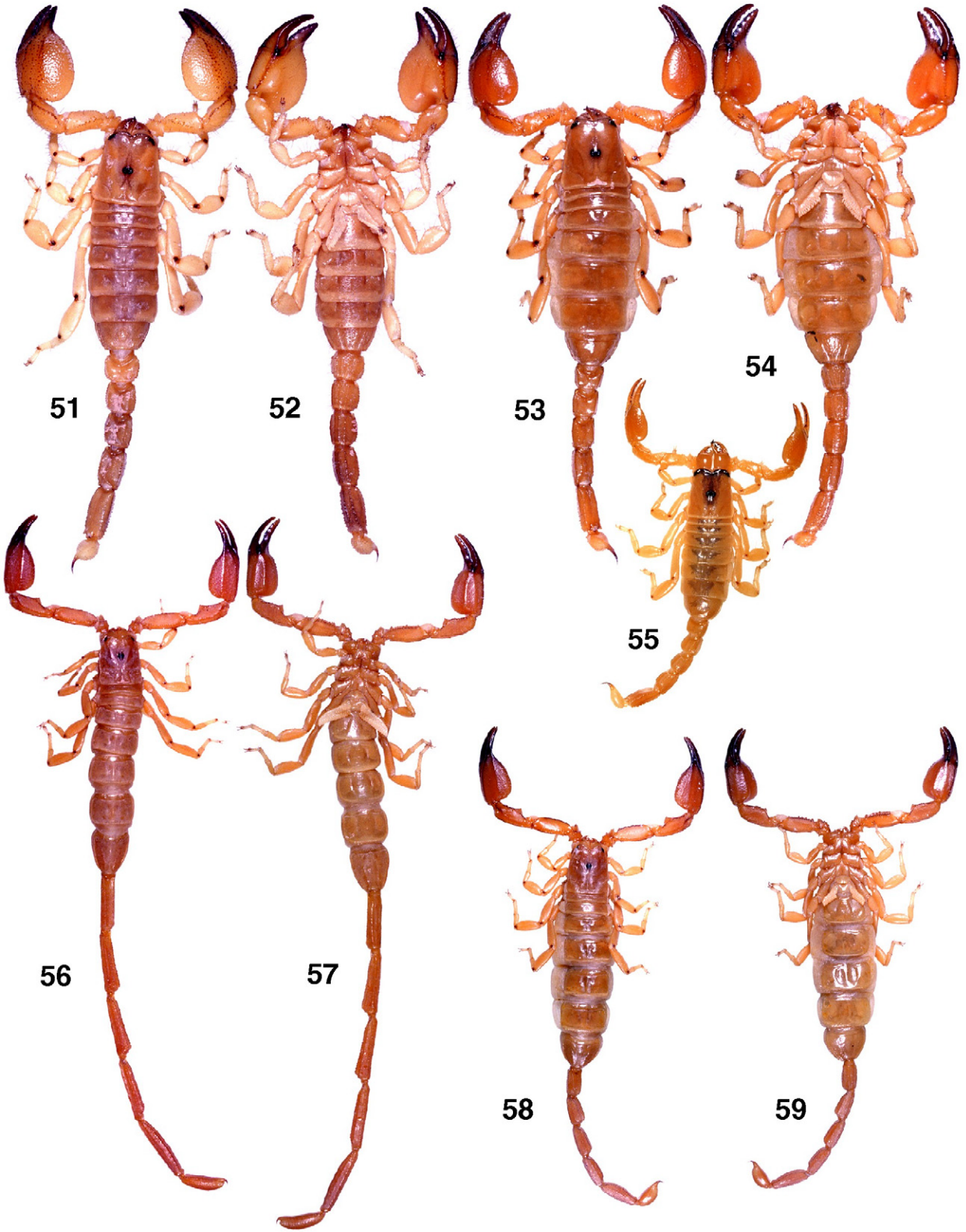
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