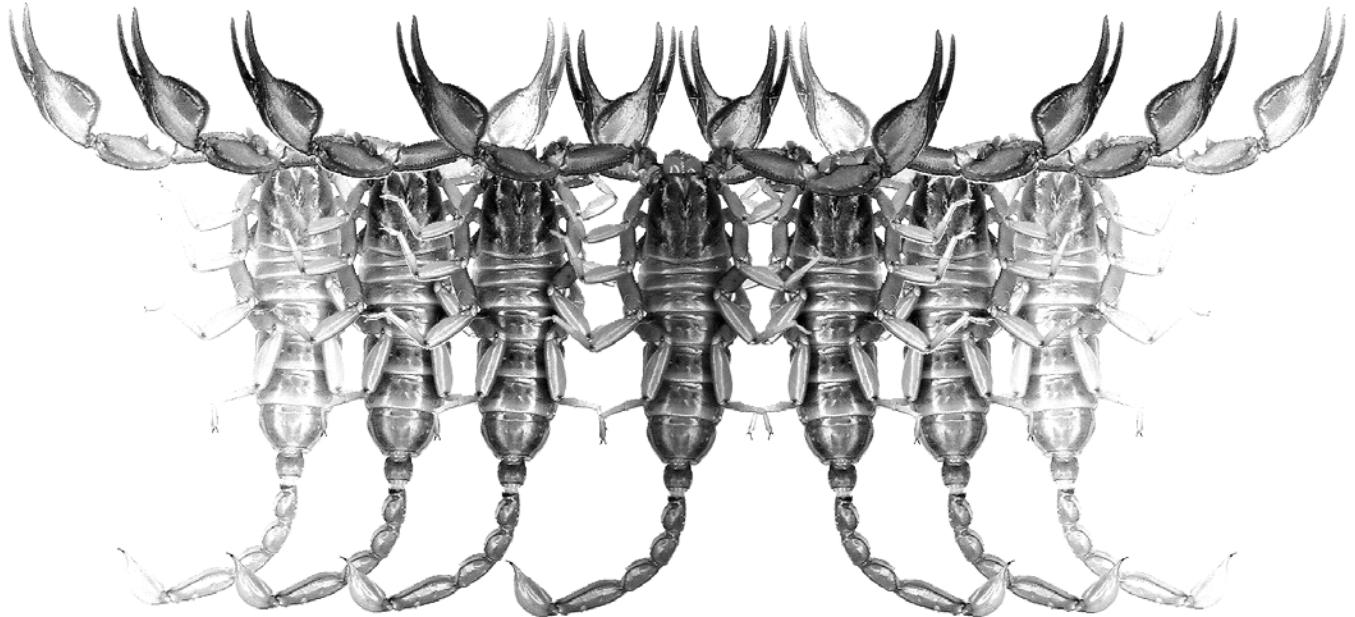


# *Euscorpius*

Occasional Publications in Scorpiology



**Scorpions of Iran (Arachnida, Scorpiones).  
Part II. Bushehr Province**

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

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# *Euscorpius*

## Occasional Publications in Scorpiology

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

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

*Euscorpius* is the first research publication completely devoted to scorpions (Arachnida: Scorpiones). *Euscorpius* takes advantage of the rapidly evolving medium of quick online publication, at the same time maintaining high research standards for the burgeoning field of scorpion science (scorpiology). *Euscorpius* is an expedient and viable medium for the publication of serious papers in scorpiology, including (but not limited to): systematics, evolution, ecology, biogeography, and general biology of scorpions. Review papers, descriptions of new taxa, faunistic surveys, lists of museum collections, and book reviews are welcome.

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The name *Euscorpius* Thorell, 1876 refers to the most common genus of scorpions in the Mediterranean region and southern Europe (family Euscorpiidae).

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- **CAS**, California Academy of Sciences, San Francisco, USA
- **FMNH**, Field Museum of Natural History, Chicago, USA
- **MCZ**, Museum of Comparative Zoology, Cambridge, Massachusetts, USA
- **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 II. Bushehr Province

Shahrokh Navidpour <sup>1</sup>, Michael E. Soleglad <sup>2</sup>, Victor Fet <sup>3</sup> & František Kovařík <sup>4</sup>

<sup>1</sup> Razi Reference Laboratory of Scorpion Research (RRLS), Razi Vaccine and Serum Research Institute, Sepah St., Hejrat Sq., Ahvaz, Khoozestan, Iran

<sup>2</sup> P.O. Box 250, Borrego Springs, CA 92004, USA

<sup>3</sup> Department of Biological Sciences, Marshall University, Huntington, WV 25755, USA

<sup>4</sup> P.O. Box 27, CZ-145 01 Praha 45, Czech Republic

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### Summary

The Bushehr Province of Iran contains the type localities of three scorpion taxa, *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Orthochirus iranus* Kovařík, 2004, and *Scorpio maurus townsendi* (Pocock, 1900). Apart from them, *Androctonus crassicauda* (Olivier, 1807), *Compsobuthus matthiesseni* (Birula, 1905), *Hottentotta saulcyi* (Simon, 1880), *Odontobuthus bidentatus* Lourenço & Pézier, 2002, *Razianus zarudnyi* (Birula, 1903), and *Hemiscorpius lepturus* Peters, 1862 have also been known to occur in the 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 four additional species recorded from the province for the first time: *Buthacus macrocentrus* (Ehrenberg, 1828), *Compsobuthus jakesi* Kovařík, 2003, *Orthochirus farzanpayi* (Vachon & Farzanpay, 1987), and *Orthochirus stockwelli* (Lourenço et Vachon, 1995). In addition, *Compsobuthus persicus* sp. n. is described as a species new to science, bringing the total species count to 14. A key to all species of scorpions found in Bushehr Province is presented.

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### Introduction

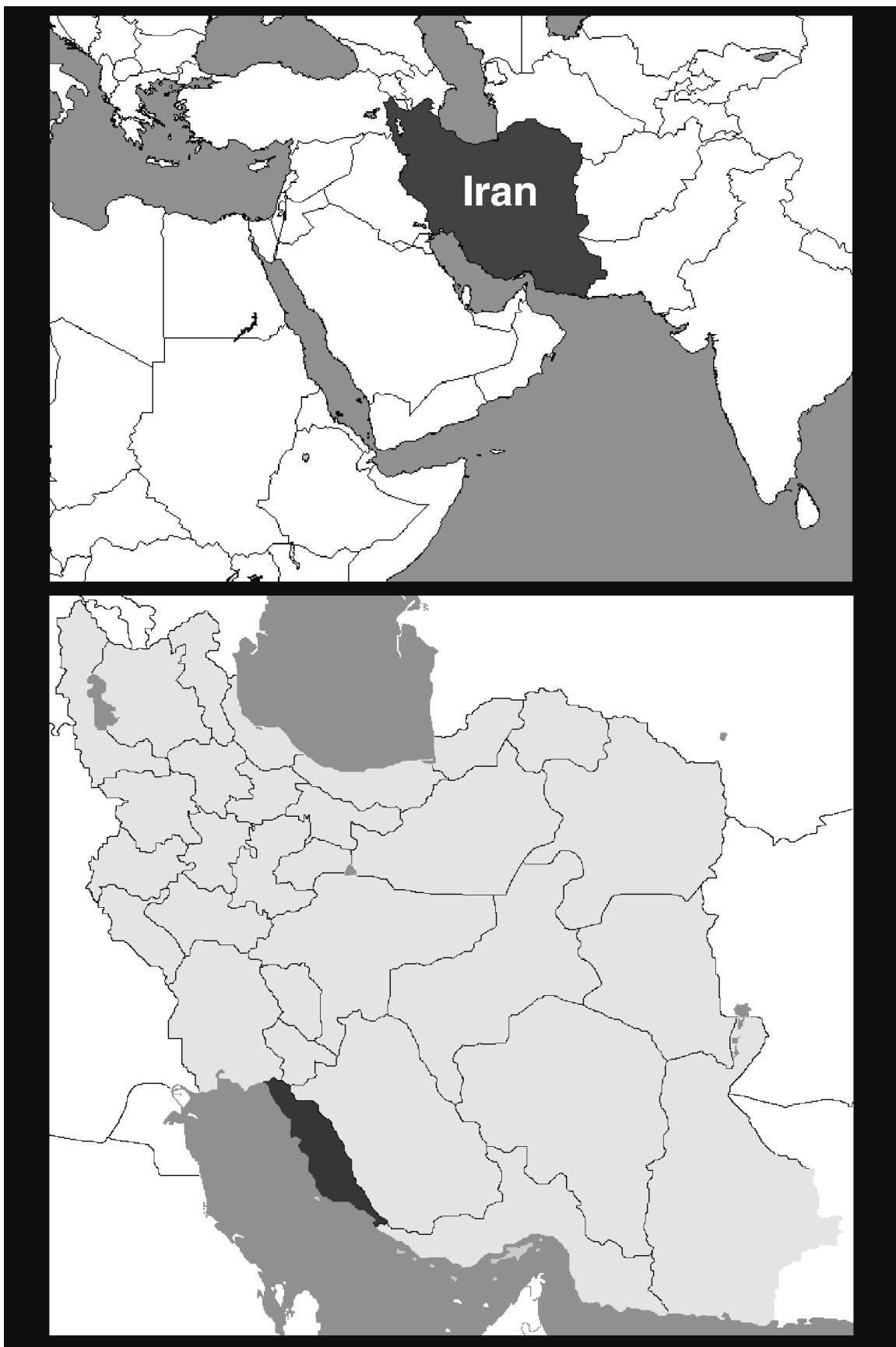
A number of papers deal with the scorpions of Iran to some extent, but a comprehensive study of the scorpion fauna has been lacking. We therefore decided to survey the scorpions of Iran thoroughly, province by province. The fieldwork was conducted by the Razi Reference Laboratory of Scorpion Research (RRLS) team under Shahrokh Navidpour and included documentation of habitat diversity, revisititation 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 first faunistic contribution of our scorpion survey of Iran has been published, and covers Khoozestan Province (Navidpour et al., 2008). The second region surveyed, the Bushehr Province, is an area for which very little is known about scorpions. The type localities of three species, *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Orthochirus iranus* Kovařík, 2004, and *Scorpio maurus townsendi* (Pocock, 1900), lie within Bushehr Province, and six additional species have been documented there in the past. New collections revealed the presence of five more species of scorpions within the Bushehr Province, one of which is new to science and is described below. Apart from the new species, all others

now known from Bushehr Province also occur in the neighboring Khoozestan Province (Navidpour et al., 2008).

The Bushehr Province is located in the southwest of Iran and is bordered by four other provinces: Khoozestan and Kohkiloye & Boyer Ahmad in the north, Fars in the east, and Hormozgan in the southwest; it is limited by the Persian Gulf in the west (see map in Fig. 1). Habitats in this province are diverse (see Figs. 2–3, 5–8, 20–21). Areas such as Dailam, Genaveh, Bushehr, and Delvar contain sandy deserts with clay hills covered by deep soils. Other areas such as Khormuj, Ahram, and Farashband are mountainous with rocky substrates. Elevations in this part of Iran change from 3–5 meters at the shores of the Persian Gulf to 220 meters in the northern parts of the province. Climate in this part of Iran is hot and humid for most of the year with temperatures ranging from 5°C in winter to 48°C in summer.

The team surveyed and collected scorpion species belonging to the families Buthidae, Scorpionidae, and Hemiscorpiidae, and recorded ecological and distribution data of the scorpion fauna. *Mesobuthus eupeus*, *Buthacus macrocentrus*, and *Odontobuthus bidentatus* were found everywhere within 15–80 m altitude, especially in soft soils of hills in the areas of Dailam,



**Figure 1:** Map of southwestern Asia highlighting Iran (top) and closeup of Iran showing provinces, the Bushehr province depicted in black (bottom).

Genaveh, Delvar, Dayer, and Borazjan. *Hemiscorpius lepturus* was found only in the montane areas of the northern and northeastern parts of the province. Our study shows high densities and frequencies of *Odontobuthus bidentatus* and *Mesobuthus eupeus phillipsii* in the Bushehr Province, while those of *Androctonus crassicauda* and *Hottentotta saulcyi* were low. We found three species of *Compsobuthus* in the province, especially in northern and central areas, including one new species. All three species inhabit mountains with rocky substrates.

**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 – Museum d'Histoire naturelle, Geneva, Switzerland;  
 MNHN – Muséum National d'Histoire Naturelle, Paris, France;  
 NHMW – Naturhistorisches Museum Wien, Vienna, Austria;  
 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 Bushehr Province

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

*Androctonus crassicauda* (Olivier, 1807)

*Buthacus macrocentrus* (Ehrenberg, 1828) (first report for Bushehr Province)

*Compsobuthus jakesi* Kovařík, 2003 (first report for Bushehr Province)

*Compsobuthus matthiesseni* (Birula, 1905)

*Compsobuthus persicus* sp. n.

*Hottentotta saulcyi* (Simon, 1880)

*Mesobuthus eupeus phillipsii* (Pocock, 1889)

*Odontobuthus bidentatus* Lourenço et Pézier, 2002

*Orthochirus farzanpayi* (Vachon et Farzanpay, 1987) (first report for Bushehr Province)

*Orthochirus iranus* Kovařík, 2004

*Orthochirus stockwelli* (Lourenço et Vachon, 1995) (first report for Bushehr Province)

*Razianus zarudnyi* (Birula, 1903)

Family **Scorpionidae** Latreille, 1802

*Scorpio maurus townsendi* (Pocock, 1900)

Family **Hemiscorpiidae** Pocock, 1893

*Hemiscorpius lepturus* Peters, 1861

### Systematics

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

*Androctonus crassicauda* (Olivier, 1807)

Figures 4, 20, 25–28

*Scorpio crassicauda* Olivier, 1807: 97.

*Buthus crassicauda*: Simon, 1872: 247 (in part); Simon, 1879: 99; 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 Minoccia, 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, 2003: 180; Kovařík & Whitman, 2005: 105; Hendrixson, 2006: 38; Akbari, 2007: 76; Navidpour et al., 2008: 5.

*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, 1900: 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 Minoccia, 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.

BUSHEHR PROVINCE MATERIAL EXAMINED. Iran, Bushehr Prov., cca 17 km NW Bandar-e Genaveh, 10 m



2



3

**Figures 2–3: Iran, Bushehr Province.** 2. Tangestan, Ahram,  $28^{\circ}51'45''N$   $51^{\circ}20'50''E$ , 123 m a.s.l. (Locality No. Bu-36). Recorded occurrence of *Compsobuthus persicus* sp. n., *Hottentotta saulcyi* (Simon, 1880), *Mesobuthus eupeus phillipsii* (Pocock, 1889), *Orthochirus farzanpayi* (Vachon et Farzanpay, 1987), *Razianus zarudnyi* (Birula, 1903), and *Hemiscorpius lepturus* Peters, 1861. 3. Dayer road, village,  $26^{\circ}28'12''N$   $51^{\circ}07'40''E$ , 405 m a.s.l. (Locality No. Bu-21). Recorded occurrence of *Mesobuthus eupeus phillipsii* (Pocock, 1889).

a.s.l., 29°38'32"N 50°26'56"E, 1♂2juvs. FKCP, 13–14.X.1998, leg. P. Kabátek; Delvar, 28°42'59"N 51°04'52"E, 4 m a.s.l. (Locality No. Bu-20), XI.2007, 1♀ RRLS, leg. Masihipour & Hayader; Bushehr to Dayer road, Dero Ahmad village, 27°53'47"N 51°35'51"E, 4 m a.s.l. (Locality No. Bu-27), XI.2007, 2♂ RRLS 1im. FKCP, leg. Masihipour, Hayader & Habibzadeh.

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 (Simon, 1872: 247), Tunisia (Kraepelin, 1901: 266), Turkey (Pocock, 1902: 373), United Arab Emirates (Hendrixson, 2006: 40), Yemen (Birula, 1937: 101).

### ***Buthacus macrocentrus* (Ehrenberg, 1828)**

Figures 4, 20, 53–56

*Androctonus (Leiurus) macrocentrus* Ehrenberg in Hemprich & Ehrenberg, 1828: pl. 1, fig. 6; Ehrenberg in Hemprich & Ehrenberg, 1829: 355 (in part); Hemprich & Ehrenberg, 1831: 5 (in part); Moritz & Fischer, 1980: 317 (in part); Braunwalder & Fet, 1998: 32 (in part).

*Buthacus macrocentrus*: Kovařík, 2005: 7; Navidpour et al., 2008: 7.

= *Buthus tadmorensis* Simon, 1892: 84; Kraepelin, 1895: 83; Birula, 1905a: 136; Habibi, 1971: 43 (syn. by Kovařík, 2005: 8).

*Buthus (Buthacus) tadmorensis*: Birula, 1910: 172; Birula, 1917: 229.

*Buthacus tadmorensis*: Simon, 1910: 76; Vachon, 1966: 210; Farzanpay, 1987: 144; Farzanpay, 1988: 36; Kovařík, 1997a: 49; Kovařík, 1998: 105; Kovařík, 2001: 80; Fet & Kovařík, 2003: 180.

= *Buthus pietschmanni* Penther, 1912: 112 (syn. by Birula, 1917: 229).

= *Buthacus yotvatensis* Levy, Amitai & Shulov, 1973: 130; Levy & Amitai, 1980: 90; Kinzelbach, 1984: 99; Vachon & Kinzelbach, 1987: 100; Fet & Lowe, 2000: 85; Crucitti & Vignoli, 2002: 439 (syn. by Kovařík, 2001: 80).

*Buthacus yotvatensis yotvatensis*: Vachon, 1979: 36; Fet & Lowe, 2000: 85.

*Buthacus tadmorensis tadmorensis*: Vachon & Kinzelbach, 1987: 101; Kovařík, 2002: 5;

*Buthacus tadmorensis yotvatensis*: Vachon & Kinzelbach, 1987: 101; Amr et al., 1988: 374; El-Hennawy, 1992: 114; Kabakibi et al., 1999: 82.

*Mesobuthus pietschmanni*: El-Hennawy, 1992: 128.

TYPE LOCALITY AND TYPE REPOSITORY. Sinai; ZMHB. Type locality "Sinai" (Ehrenberg in Hemprich & Ehrenberg, 1829: 355 and label) must be regarded as erroneous.

TYPE MATERIAL EXAMINED. Sinai (labeled as *Androctonus macrocentrus*, Sinai, No. 153), 1♀, lectotype of *Androctonus (Leiurus) macrocentrus* Ehrenberg in Hemprich & Ehrenberg, 1828, ZMHB.

BUSHEHR PROVINCE MATERIAL EXAMINED. **Iran**, Bushehr Prov., cca 17 km NW. Bandar-e Genaveh, 10 m a.s.l., 29°38'32"N 50°26'56"E, 1♂ FKCP, 13–14.X.1998, leg. P. Kabátek; Bandar-e Genaveh env., X.2000, 2♂ FKCP, leg. R. Perlík; Delvar, 28°42'59"N 51°04'52"E, 4 m a.s.l. (Locality No. Bu-20), XI.2007, 18♂22♀10juvs. RRLS 4juvs. FKCP, leg. Masihipour & Hayader; Dayer, 27°49'35"N 52°04'44"E, 4 m a.s.l. (Locality No. Bu-25), XI.2007, 1juv. RRLS, leg. Masihipour, Bahrami & Habibzadeh; Bushehr to Dayer road, Dero Ahmad village, 27°53'47"N 51°35'51"E, 4 m a.s.l. (Locality No. Bu-27), XI.2007, 3♂1♀1juv. RRLS, leg. Masihipour, Hayader & Habibzadeh; Bushehr to Dayer road, Golestan, 29°13'46"N 51°19'33"E, 3 m a.s.l. (Locality No. Bu-28), XI.2007, 15♂3♀8juvs. RRLS, 1♂2♀ FKCP, leg. Masihipour, Hayader & Bahrami; Omidiyeh to Genaveh road, 30°13'42"N 50°12'01"E, 128 m a.s.l. (Locality No. Bi 805), VI.2007, 11♂18♀22juvs. RRLS, leg. Navidpour & Masihipour; Dailam road, Khite Amareh village, 30°42'52"N 49°44'59"E, 41 m a.s.l. (Locality No. OM-801), VII.2007, 1♂2♀ RRLS, leg. Navidpour, Masihipour & Habibzadeh.

DISTRIBUTION: Iran, known from Bushehr Province (Kovařík, 2005: 8, as "Chamak Province") and Khoozestan Province (Navidpour et al., 2008: 7); Iraq (Penner, 1912: 112), Israel (Vachon, 1966: 210), Jordan (Pérez Minocci, 1974: 19), Syria (Simon, 1892: 84), Turkey (Crucitti & Vignoli, 2002: 439).

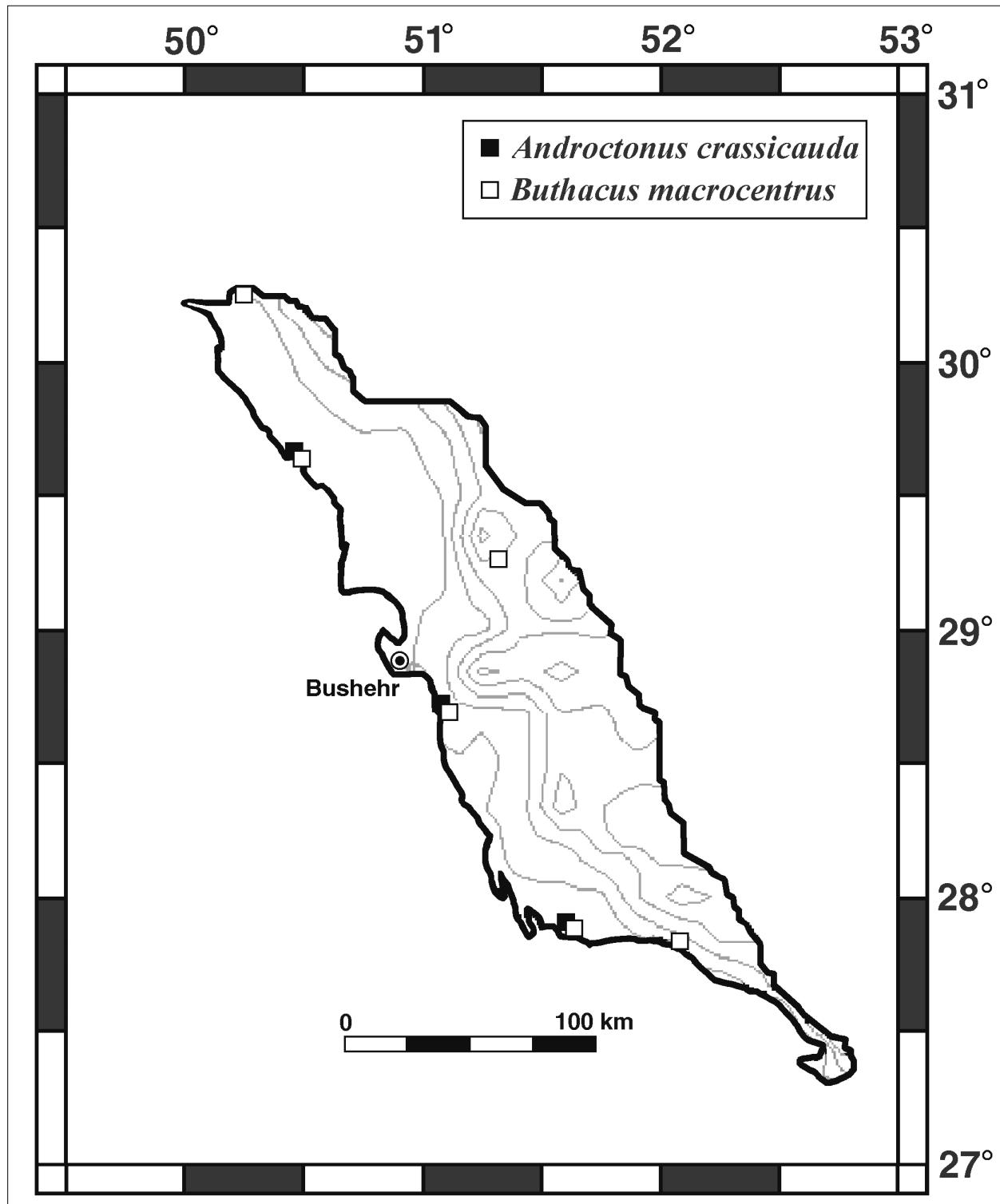
### ***Compsobuthus jakesi* Kovařík, 2003**

Figures 19, 41–44

*Compsobuthus acutecarinatus*: Kovařík, 1998: 109 (in part); Kovařík, 2001: 79 (in part).

*Compsobuthus jakesi* Kovařík, 2003: 91; Kovařík & Ahmed, 2007: 5; Navidpour et al., 2008: 9.

*Compsobuthus* sp.: Fet & Kovařík, 2003: 180.



**Figure 4:** Map of Bushehr province showing distribution of *Androctonus crassicauda* and *Buthacus macrocentrus* collected in this study.

TYPE LOCALITY AND TYPE REPOSITORY. Iraq, Najaf Province, Ash-Shabakah (Shabachah, Shabicha), Geophysics Brno base camp, 150 km SW of An-Najaf (Najaf), 262 m a.s.l., 31°06'N 43°95'E; FKCP.