

## Scorpion Fauna of Qazvin Province, Iran (Arachnida, Scorpiones)

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**Abstract:** Six species of scorpions belonging to two families are reported from the Qazvin Province of Iran. Of these, two species are recorded from the province for the first time: *Mesobuthus caucasicus* (Normann, 1840) and *Scorpio maurus kruglovi* Birula, 1910 also presented are keys to all species of scorpions found in the Qazvin province.

**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;

MCSN – Museo Civico de Storia Naturale “Giacomo Doria”, Genova, Italy;

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, Karaj, 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.

### 1. INTRODUCTION

This paper continues a comprehensive province-by-province field study of the scorpion fauna of Iran by the RRLS team under Shahrokh Navidpour. The study includes documentation of biotope diversity, revisitation of previously known sites, some of them type localities, and sampling of all the encountered scorpion species. All specimens are collected with the help of UV light (night catch). Qazvin province is one of thirty one provinces of Iran, located in North-West of the country. The province covers 15821 km<sup>2</sup> between 48–45 to 50–50 east of Greenwich Meridian of longitude and 35–37 to 36–45 north latitude of the equator. The province is bounded on the north by Mazandaran and Gilan, on the west by Hamedan and Zanjan, on the south by Markazi and on the east by Tehran Provinces. The famous mountains of the province are those of Siälän, Shäh Alborz, Khashchäl, Sefidkouh, Shojä e din, Alehtareh, Rämänd, Ägh dägh, Kharaghän, Saridagh, Soltan pür, and Siähkouh, in which Siälän with a height of 4175m and Shäh Alborz which is 4056m are the highest. All are part of the central chain of Alborz. The lowest point of the province is in Tärom e Soflä.

The climate of the province in the northern parts is cold and snowy in winters and temperate in summers. In the southern parts the climate is mild with comparatively cold winters and warm summers.

## 2. LIST OF SCORPIONS OF QAZVIN PROVINCE

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

*Androctonus crassicauda* (Olivier, 1807)

*Mesobuthus eupeus persicus* (Pocock, 1899)

*Mesobuthus caucasicus* (Normann, 1840)

*Odontobuthus doriae* (Thorell, 1876)

*Orthochirus zagrosensis* kovarik, 2004

Family **Scorpionidae** Latreille, 1802

*Scorpio maurus kruglovi* Birula, 1910 (first report)

### Systematics

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

*Androctonus crassicauda* (Olivier, 1807)

*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; Al-Safadi, 1992: 96; Amr & El-Oran, 1994: 187; Sissom, 1994: 36; Dupré et al., 1998: 59; Kovařík, 1998: 104; Crucitti, 1999: 83; Kabakibi et al., 1999: 80; Fet & Lowe, 2000: 72; Stathi & Mylonas, 2001: 288; Crucitti & Vignoli, 2002: 439; Kovařík, 2002: 5; Fet & Kovařík, 2003: 180; Vignoli et al., 2003: 2; Kovařík & Whitman, 2005: 105; Lourenço, 2005: 149; Hendrixson, 2006: 38; Akbari, 2007: 76, fig. p. 62; Navidpour et al., 2008a; Navidpour et al., 2008b: 3; Navidpour et al., 2008c: 3; Navidpour et al., 2008d: 3; Pirali-Kheirabadi et al., 2009: 3; Navidpour et al., 2010: 3; Navidpour et al., 2011: 3; Navidpour et al., 2012: 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: 23–29; Kovařík, 1997: 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 Minocci, 1974: 18.

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

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

**QAZVIN PROVINCE MATERIAL EXAMINED.** Iran, Qazvin Province, Zitak village, 36°31'32.2"N 49°44'49.6"E, 800 m a.s.l. (Locality No. Q-102), V.2015, 7♂3♀ (RRLS), leg. Nikoonam; Looshan, 36°40'19.6"N 49°24'22.3"E, 860 m a.s.l. (Locality No. Q-106), V.2015, 4♂3♀ (RRLS), leg. Nikoonam; Abyek, 36°05'68.2"N 50°53'58.6"E, 1008 m a.s.l. (Locality No. Q-107), V.2015, 1♂ (RRLS), leg. Nikoonam; Ardagh village, 36°04'07.6"N 49°45'37.3"E, 1241 m a.s.l. (Locality No. Q-109), V.2015, 2♂1♀ (RRLS), leg. Nikoonam; Booein Zahra, 35°47'39.2"N 50°02'39.6"E, 1210 m a.s.l. (Locality No. Q-112), V.2015, 1♂ (RRLS), leg. Nikoonam; Heer village, 36°59'54.6"N 50°25'52.3"E, 830 m a.s.l. (Locality No. Q-120), V.2015, 2♂ (RRLS), leg. Nikoonam.

**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), and Yemen (Birula, 1937: 101).

3. *MESOBUTHUS CAUCASICUS* (NORMANN, 1840)

**QAZVIN PROVINCE MATERIAL EXAMINED.** Iran, Qazvin Province, Zitak village, 36°31'32.2"N 49°44'49.6"E, 800 m a.s.l. (Locality No. Q-102), V.2015, 5♂1♀ (RRLS), leg. Nikoonaam.



*Mesobuthus eupeus persicus* (Pocock, 1899)

*Buthus caucasicus persicus* Pocock, 1899: 404; Pocock, 1900: 19.

*Buthus eupeus persicus*: Birula, 1905a: 119, 122, 124–126; Birula, 1918: 10–13, figs.

*Mesobuthus eupeus persicus*: Vachon, 1959: 155; Vachon, 1966: 212; Habibi, 1971: 44; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 174; Navidpour et al., 2011: 9, 6, 12, 41–44; Navidpour et al., 2012: 10.

*Mesobuthus caucasicus persicus*: Pérez Minocci, 1974: 25; Capes & Fet, 2001: 303.

= ? *Buthus eupeus kirmanensis* Birula, 1900: 364 (see Fet & Lowe, 2000: 173).

*Buthus (Buthus) eupeus kirmanensis*: Birula, 1917: 239; Birula, 1918: 14.

*Mesobuthus eupeus kirmanensis*: Vachon, 1959: 155; Vachon, 1966: 212; Habibi, 1971: 43; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 173; Mirshamsi et al., 2011: 9.

= ? *Buthus pachysoma* Birula, 1900: 370 (syn. by Navidpour et al., 2011: 9).

*Buthus eupeus pachysoma*: Birula, 1905a: 128.

*Buthus (Buthus) eupeus pachysoma*: Birula, 1917: 239.

*Mesobuthus eupeus pachysoma*: Vachon, 1959: 155; Vachon, 1966: 212; Habibi, 1971: 43; Farzanpay, 1988: 38; Fet, 1994: 527; Kovařík, 1997: 49; Kovařík, 1998: 114; Fet & Lowe, 2000: 174.

**TYPE LOCALITY AND TYPE REPOSITORY.** Persia, now Iran, East Azarbaijan, Seir, E side of Lake Urmia (Urmí); BMNH.

**TYPE MATERIAL EXAMINED.** Iran, East Azarbaijan Province, Seir, Lake Urmí, 1♀ lectotype, BMNH No. 1900.1,15.

**QAZVIN PROVINCE MATERIAL EXAMINED.** Iran, Qazvin Province, Takestan, 36°53'47.2"N 49°38'52.6"E, 1265 m a.s.l. (Locality No. Q-101), V.2015, 22♂13♀ (RRLS), leg. Nikoonaam; Zitak village, 36°31'32.2"N 49°44'49.6"E, 800 m a.s.l. (Locality No. Q-102), V.2015, 7♂3♀ (RRLS), leg. Nikoonaam; Bon Alamoot, 36°39'57.2"N 50°57'52.6"E, 1265 m a.s.l. (Locality No. Q-103), V.2015, 11♂13♀ (RRLS), leg. Nikoonaam; Maheen, 36°57'23.6"N 49°50'29.3"E, 1800 m a.s.l. (Locality No. Q-104), V.2015, 24♂8♀ (RRLS), leg. Nikoonaam; Siyahpoosh, 36°56'44.2"N 49°34'43.6"E, 1050 m a.s.l. (Locality No. Q-105), V.2015, 31♂11♀ (RRLS), leg. Nikoonaam; Avaj village, 35°54'48.6"N 49°17'13.3"E, 1153 m a.s.l. (Locality No. Q-108), V.2015, 7♂1♀ (RRLS), leg. Nikoonaam; Ardagh village, 36°04'07.6"N 49°45'37.3"E, 1241 m a.s.l. (Locality No. Q-109), V.2015, 12♂6♀ (RRLS), leg. Nikoonaam; Esferorian, 35°24'07.6"N 49°57'58.3"E, 1256 m a.s.l. (Locality No. Q-110), V.2015, 11♂8♀ (RRLS), leg. Nikoonaam; Eghbaliyeh, 36°22'56.6"N 49°55'57.3"E, 1256 m a.s.l. (Locality

No. Q-109), V.2015, 2♂25♀ (RRLS), leg. Nikoonam; Booein Zahra, 35°47'39.2"N 50°02'39.6"E, 1210 m a.s.l. (Locality No. Q-112), V.2015, 18♂6♀ (RRLS), leg. Nikoonam; Heer village, 36°59'54.6"N 50°25'52.3"E, 830 m a.s.l. (Locality No. Q-120), V.2015, 19♂4♀ (RRLS), leg. Nikoonam; Roodbar Alamoot, 36°57'39.2"N 50°06'59.6"E, 910 m a.s.l. (Locality No. Q-121), V.2015, 4♂1♀ (RRLS), leg. Nikoonam; Changoor village, 36°23'56.6"N 49°48'34.3"E, 810 m a.s.l. (Locality No. Q-122), V.2015, 9♂10♀ (RRLS), leg. Nikoonam.

**DISTRIBUTION:** Iran, East Azarbaijan (Pocock, 1899: 404), Fars (Navidpour et al., 2012: 11), Kerman, Sistan & Baluchistan (Birula, 1900: 364; Fet & Lowe, 2000: 173), Hormozgan (first report), and Yazd (Mirshamsi et al., 2011: 9) Provinces; Pakistan (Pocock, 1900: 20).

#### 4. *ODONTOBUTHUS DORIAE* (THORELL, 1876)

*Buthus doriae* Thorell, 1876: 107; Kraepelin, 1891: 57–58, pl. I; Kraepelin, 1899: 27.

***Odontobuthus doriae*:** Pringle, 1960: 83; Khalaf, 1963: 66; Vachon, 1966: 213; Habibi, 1971: 44; Pérez Minocci, 1974: 28; Farzanpay, 1988: 39; Kovařík, 1997: 47; Kovařík, 1998: 115; Fet & Lowe, 2000: 187; Kovařík, 2002: 9; Lourenço & Pézier, 2002: 116; Vignoli et al., 2003: 4; Pirali-Kheirabadi et al., 2009: 9; Navidpour et al., 2011: 13; Karatas et al., 2012: 116; Navidpour et al., 2012: 14.

**TYPE LOCALITY AND TYPE REPOSITORY.** Iran, Teheran; MCSN.

**QAZVIN PROVINCE MATERIAL EXAMINED.** Iran, Qazvin Province, Zitak village, 36°31'32.2"N 49°44'49.6"E, 800 m a.s.l. (Locality No. Q-102), V.2015, 2♂1♀ (RRLS), leg. Nikoonam; Siyahpoosh, 36°56'44.2"N 49°34'43.6"E, 1050 m a.s.l. (Locality No. Q-105), V.2015, 16♂10♀ (RRLS), leg. Nikoonam; Abyek, 36°05'68.2"N 50°53'58.6"E, 1008 m a.s.l. (Locality No. Q-107), V.2015, 9♂12♀ (RRLS), leg. Nikoonam; Avaj village, 35°54'48.6"N 49°17'13.3"E, 1153 m a.s.l. (Locality No. Q-108), V.2015, 6♂2♀ (RRLS), leg. Nikoonam; Ardagh village, 36°04'07.6"N 49°45'37.3"E, 1241 m a.s.l. (Locality No. Q-109), V.2015, 1♂2♀ (RRLS), leg. Nikoonam.

**DISTRIBUTION:** Iran, Esfahan, Fars, Hamadan, Kerman, Kermanshah, Mazandaran, Markazi, Teheran, West Azarbaijan, Yazd (Kovařík, 1997: 47, Lourenço & Pézier, 2002: 116, 117, 124), Chahar Machal & Bakhtiyari (Pirali-Kheirabadi et al., 2009: 10), Tehran, and Sistan & Baluchistan (Pirali-Kheirabadi et al., 2009: 14) Provinces.

#### 5. *Orthochirus Zagrosensis* Kovařík, 2004

*Simonoides farzanpayi* Vachon & Farzanpay in Farzanpay, 1987: 162; Farzanpay, 1988: 41; Fet & Lowe, 2000: 223.

*Orthochirus farzanpayi* Kovařík & Fet, 2006a: 1; Navidpour et al., 2008a: 14; Navidpour et al., 2008b; Navidpour et al., 2011: 15; Navidpour et al., 2012: 16.

= *Orthochirus sobotniki* Kovařík, 2004: 20 (syn. by Kovařík & Fet, 2006a: 1).

= *Paraorthochirus goyffoni* Lourenço & Vachon, 1995: 301; Fet & Lowe, 2000: 212. **Syn. n.**

**TYPE LOCALITY AND TYPE REPOSITORY.** Iran, 215 km N of Bandar-e-Abbas; NHMW.

**TYPE MATERIAL EXAMINED.** Iran, 215 km N of Bandar-e-Abbas, 22.III.1972, 1♀ (lectotype) 1♂1♀ (paralectotypes) (NHMW Nos. 68–70, rev. Max Vachon in 1977, No. VA 1910); 5 km SE of Posht Chenar, 19–20 April 2000, 29°12.941'N 53°20.014'E, 1692 m a.s.l., 1♂1♀ 1im. ♂ (holotype, allotype, and paratype of *Orthochirus sobotniki*) (FKCP), leg. J. Šobotník.

**TYPE LOCALITY AND TYPE REPOSITORY.** Iran, Dasht-E-Arzhan, 29°34'644"N 51°56'889"E, alt. 2000 m; FKCP.

**QAZVIN PROVINCE MATERIAL EXAMINED.** Iran, Qazvin Province, Zitak village, 36°31'32.2"N 49°44'49.6"E, 800 m a.s.l. (Locality No. Q-102), V.2015, 7♂1♀ (RRLS), leg. Nikoonam.

**DISTRIBUTION:** Iran, Hormozgan, Fars (Kovařík & Fet, 2006a: 1–3), Khoozestan (Navidpour et al., 2008a: 15), Bushehr (Navidpour et al., 2008b: 15), Tehran (first report) and Kerman (Navidpour et al. 2011: 15) Province



Family **Scorpionidae** Latreille, 1802

*Scorpio maurus kruglovi* Birula, 1910

*Heterometrus townsendi* Pocock, 1900: 364.

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

*Scorpio maurus townsendi*: Birula, 1910: 184.

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

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

QAZVIN PROVINCE MATERIAL EXAMINED. **Iran**, Qazvin Province, Takestan, 36°53'47.2"N 49°38'52.6"E, 1265 m a.s.l. (Locality No. Q-101), V.2015, 10♂8♀ (RRLS), leg. Nikoonam; Looshan, 36°40'19.6"N 49°24'22.3"E, 860 m a.s.l. (Locality No. Q-106), V.2015, 6♂12♀ (RRLS), leg. Nikoonam.

DISTRIBUTION: DISTRIBUTION: Iraq, Jordan, Kuwait, Qatar, Saudi Arabia, Syria (Kinzelbach, 1985; Pringle, 1960: 86; Vachon, 1979: 57), Iran (Hamadan, Khormanshah, North Khorasan, Mazendran, Qazvin, Semnan, Tehran (Karatas et al., 2012), Alborz and Markazi provinces and Qazvin Province (first report).



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