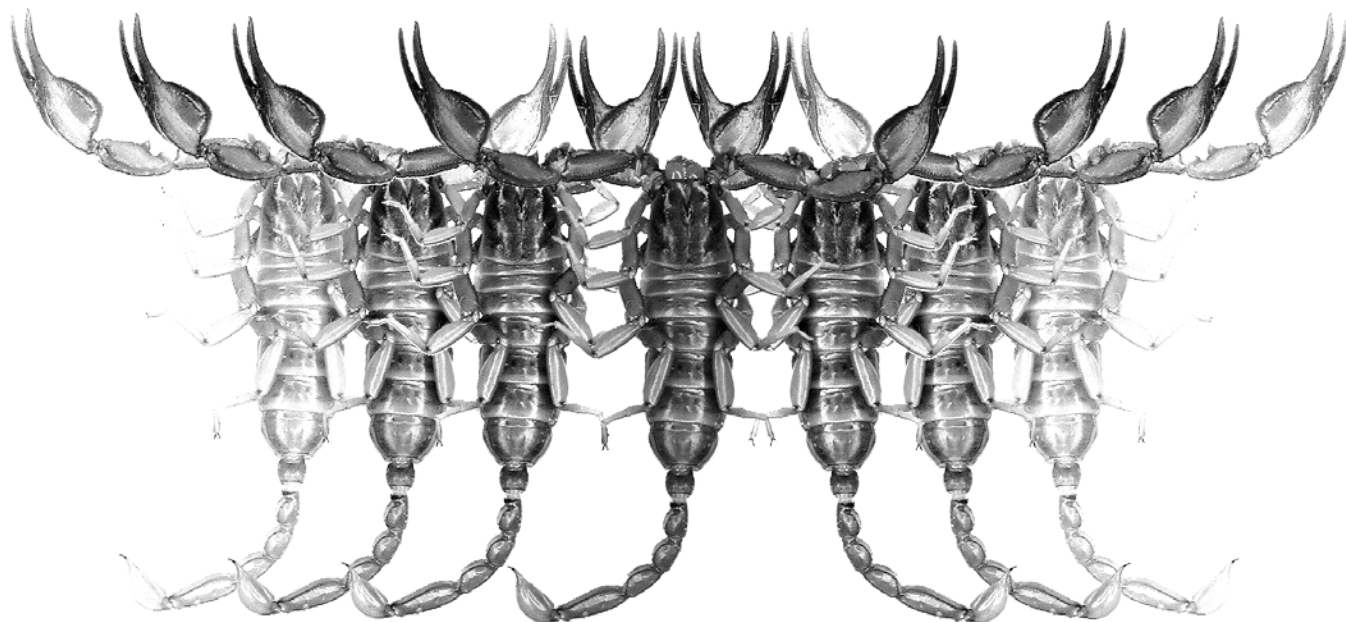


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Occasional Publications in Scorpiology



Scorpions of Gaziantep Province, Turkey (Arachnida: Scorpiones)

Ayşegül Karataş and Mehmet Çolak

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Scorpions of Gaziantep Province, Turkey (Arachnida: Scorpiones)

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Summary

This study includes the results of the field studies in Gaziantep Province, which is located in the south-southeastern Anatolia, Turkey. In 1998–2005, 112 scorpion specimens were collected in this area. They belong to five species of the family Buthidae (*Androctonus crassicauda*, *Compsobuthus matthiesseni*, *Leiurus quinquestriatus*, *Mesobuthus eupeus*, *M. nigrocinctus*), one species of Iuridae (*Calchas nordmanni*), and one species of Scorpionidae (*Scorpio maurus fuscus*). Information about these species is provided; ecological notes are included.

Introduction

Gaziantep Province is situated in the south-southeastern Turkey within altitudes ca. 400–600 m asl. In the south, this province is limited by a small portion of the Turkish-Syrian border (Fig. 1). In the west of the province, the Nur Mountains, and in the north, the Taurus Mountains are located. Generally Submediterranean and continental climate prevails in the area but near the Syrian border (and especially near the Euphrates River) the eremial faunal components are present. Pistachio gardens extend between Gaziantep and Şanlı Urfa Plateaus. Well-developed reddish pine stands occur on the Gaziantep Plateau (Atalay, 2002).

The goal of this study was to establish the composition of scorpion species of Gaziantep Province and to contribute to the further knowledge of Turkish fauna.

Material and Methods

Field studies were conducted between 2001 and 2005 (only one specimen was collected in 1998). In total, 112 specimens were collected. All specimens were collected under the stones during the day time or by using UV lamp at night between 08:00 pm and 11:00 pm. All specimens are preserved in 70% ethyl alcohol and deposited in the scorpion collection at the Zoology Department of Niğde University (ZDNU). Species were identified using a stereomicroscope Olympus SZX9.

Results

Seven species, belonging to the family Buthidae (five), Iuridae (one), and Scorpionidae (one), were collected as listed below.

Family Buthidae

Androctonus crassicauda (Olivier, 1807)

Specimens examined: Gaziantep: Nizip, 01.VIII.1998: 1 ♀ (ZDNU 1998/262), 20 km north of Gaziantep-Nizip road, 07.VIII.2003: 1 ♂ (ZDNU 2003/566), old road from Şehitkâmil to Nizip (5th km), 23.VII.2003: 2 ♀♀ (ZDNU 2003/469, 536), Şehitkâmil, 2 km west of old Nizip road, 23.VII.2003: 1 ♀ (ZDNU 2003/479), road from Gaziantep to Nizip (20th km), 22.VIII.2003: 1 ♀ (ZDNU 2003/567), Şahinbey, south of Kızılhisar Village, 10.VII.2003: 1 ♂ (ZDNU 2003/477), new road from Şehitkâmil to Nizip (c. 15th km), 25.VIII.2003: 1 ♂ (ZDNU 2003/478), Şehitkâmil, Y. Beylerbeyi (Serkenez) Village, 18.VII.2003: 1 ♂, 1 ♀ (ZDNU 2003/480, 537), Karkamış, Kızılpınar Village, 15.VIII.2004: 1 ♀ (ZDNU 2004/752), Nizip, 25.VI.2003: 1 ♀ (ZDNU 2003/554), Nizip, Mağaracık Village, artificial caves (ruins) (480 m a.s.l.), 27.IX.2002: 2 ♀♀ (ZDNU 2002/346, 347).

Comments: This species is known from the Sinai Peninsula (Egypt) across the entire Middle East (Israel, Jordan, Syria, Turkey (southeastern Anatolia), Iraq), the

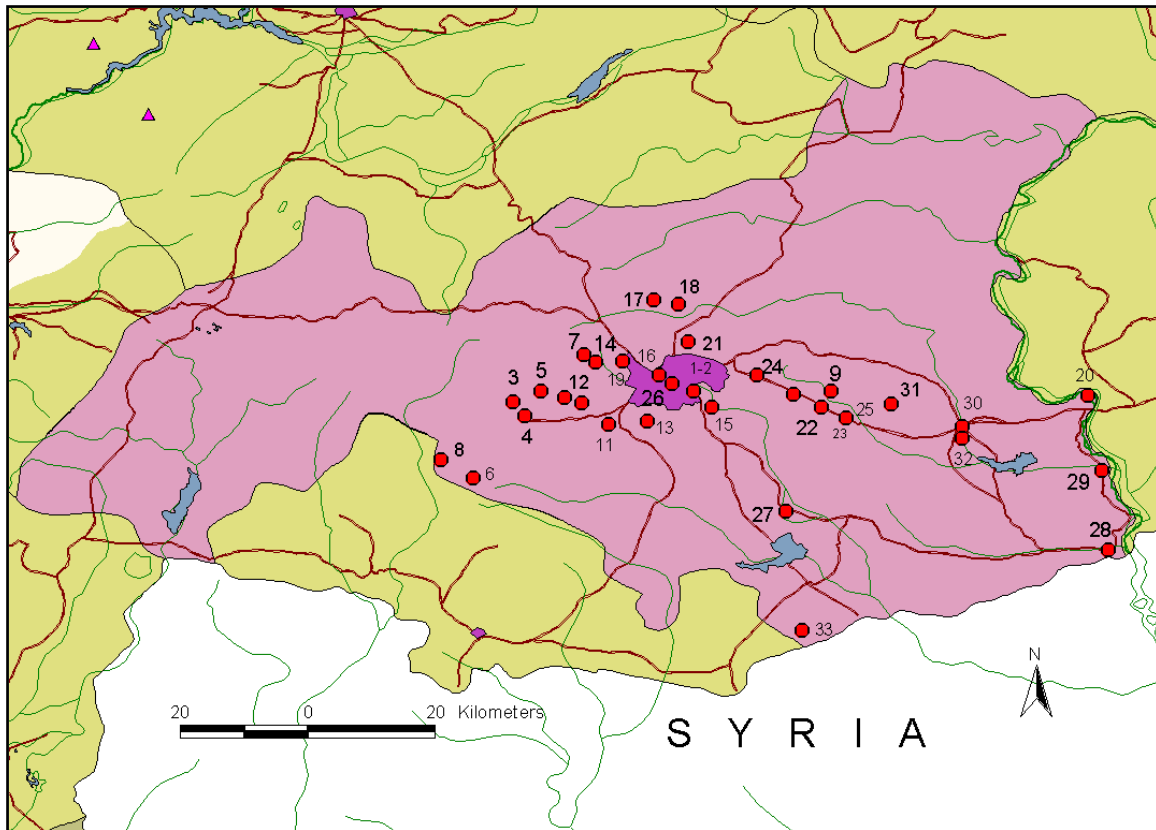


Figure 1: Gaziantep Province and sampling localities: 1. Gaziantep University, 2. Şahinbey, 3. Akpınar, 4. Burç, 5. Budak, 6. Cevizli, 7. Sarıbaşak (Ispatırın), 8. Güllüce and Ellezi Mountain, 9. Günbulur, 10. Karataş, 11. Kızılisar, 12. Mahraman, 13. Mazmakor, 14. Sarısalkım, 15. Yeşilkent, 16. Şehitkâmil, 17. Dülük, 18. Karahöyük, 19. İbrahimli, 20. Saray, 21. Y. Beylerbeyi (Serkez), 22. Sinan, 23. Türkyurdu, 24–25. Gaziantep (Şehitkâmil)–Nizip road, 26. Gaziantep–Şehitkâmil road, 27. Karataş, 28. Karkamış, 29. Kızılpınar, 30. Nizip, 31. Kocatepe, 32. Mağaracık, 33. Üçkubbe.

Arabian Peninsula, Armenia, Azerbaijan, and Iran (Fet & Lowe, 2000). Vachon (1951) reported *A. crassicauda* from Elazığ, Malatya, Mardin, and Şanlı Urfa provinces. We found this species commonly in southeastern Anatolia, but it has not been known from Gaziantep. However, Crucitti & Vignoli (2002) recorded it probably from Gaziantep (?). This xerophilic species is common in Gaziantep, especially in the lowland in the southern half of this province. The specimens were collected by turning rocks, under stones near pistachio gardens and farmland in the lowland, or in the mountainous area with scarce vegetation, and also in crevices in two artificial caves far away from human settlements. Two specimens were found in the walls inside inhabited houses made of sun-dried bricks.

***Compsobuthus matthiesseni* (Birula, 1905)**

Specimens examined: Road from Gaziantep to Şehitkâmil (between 10th and 20th km), 25.VIII.2003: 1 ♂ (ZDNU 2003/470), road from Gaziantep to Nizip, 22.VIII.2003: 1 ♀ (ZDNU 2003/568), new road from

Şehitkâmil to Nizip (c. 15th km), 25.VIII.2003: 2 ♀♀ (ZDNU 2003/474/1-2); ibid (c. 20th km), 07.VIII.2003: 1 ♂ (ZDNU 2003/520/1), 1 ♀ (ZDNU 2003/520/2), Şehitkâmil, Saray Village, 29.VII.2003: 1 ♂ (ZDNU 2003/483).

Comments: *C. matthiesseni* is known from central Iran (Kashan), southeastern Turkey and eastern Iraq, all in the Tigris–Euphrates drainage (Sissom & Fet, 1998; Fet & Lowe, 2000; Vignoli et al., 2003). Its first record from Turkey was given from Ergani (Diyarbakir) by Kovařík (1996). Later, Crucitti & Vignoli (2002) found this scorpion in Adıyaman. Specimens are uniformly light yellow as the lectotype described by Sissom & Fet (1998). Extreme sexual dimorphism is present. Males with slender bodies have highly elongated metasomal segments and pedipalps as compared to females. Scorpions were found under stones among steppe vegetation near farmlands. One specimen of *C. matthiesseni* was collected by excavating a mouse burrow under a stone. A couple coded as 520-1 (♂) and 520-2 (♀) were taken from under the same stone. The time of their collection (August) could indicate mating season for this species.



Figure 2: An abnormal structure on telson of *L. quinquestratus* (scale: 1 cm).

Leiurus quinquestratus (Ehrenberg, 1828)

Specimens examined: near campus of Gaziantep Univ., 02.VII.2003: 1 ♂ (ZDNU 2003/525), Şehitkâmil, west of Sinanköyü Village, 25.VIII.2003: 1 ♂ (ZDNU 2003/472), 1 ♀ (ZDNU 2003/471), road from Nizip to Sinan Village (Şehitkâmil) (15th km), 25.VII.2003: 2 ♀♀ (ZDNU 2003/528/1-2), road from Gaziantep to Nizip (10th km), 25.VIII.2003: 2 ♀♀ (ZDNU 2003/526/1-2), 1 ♂ (ZDNU 2003/527/2), ibid (10th-20th km), 25.VIII.2003: ♀ (ZDNU 2003/560), ibid (15th km), 22.VIII.2003: 2 ♂♂ (ZDNU 2003/562/1, 562/3), 4 ♀♀ (ZDNU 2003/562/2, 4-6), ibid (20th km), 25.VIII.2003: ♀ (ZDNU 2003/527/1), ibid (25th km), 22.VIII.2003: ♂ (ZDNU 2003/541), road from Gaziantep to Nizip, near Police Station, 22.VIII.2003: 1 ♀ (ZDNU 2003/570), old road from Gaziantep to Nizip (5th km), 23.VII.2003: 3 ♂♂ (ZDNU 2003/462, 533/1-2), 2 ♀♀ (ZDNU 2003/612/1-2), Şahinbey, between Burç Town and Akpınar Village, 13.VIII.2003: ♀ (ZDNU 2003/463), Şahinbey, Cevizli, Kıraçbağ, 29.VI.2003: 2 ♂♂ (ZDNU 2003/464, 518), Şahinbey, Günbulur Village, 21.VIII.2003: ♀ (ZDNU 2003/569), Şahinbey, Mahraman Village, 25.VI.2003: 1 ♂ (skin), (ZDNU 2003/579), 02.VII.2003: 2 ♂♂ (ZDNU 2003/540/1, 577), 1 ♀ (ZDNU 2003/540/2), ibid, environs of Burç Forest, 02.VII.2003: 3 ♀♀ (ZDNU 2003/561, 574/1-2), Şahinbey, south of Kızıllhisar Village, 10.VII.2003: ♂ (ZDNU 2003/473), Şahinbey, east of Sarıbaşak (Ispatırın) Vil-

lage, 02.VII.2003: 1 ♀ (ZDNU 2003/467), Şahinbey, Sarısalkım Village, 23.VIII.2003: ♀ (ZDNU 2003/529), 1 ♂ (ZDNU 2003/575), Şehitkâmil, near the Military Brigade, 23.VIII.2003: 3 ♂♂ (ZDNU 2003/523, 564/1, 3), 1 ♀ (ZDNU 2003/564/2), Şehitkâmil, Military Brigade Forest, 23.VIII.2003: 1 ♂ (ZDNU 2003/578), Şehitkâmil, near the Celâl Doğan Spore Foundation, 03.VII.2003: 1 ♂ (ZDNU 2003/519), 23.VIII.2003: 1 ♂ (ZDNU 2003/576), Şehitkâmil, north of Industry Forest, 23.VI.2003: 1 ♂ (ZDNU 2003/532), old road from Şehitkâmil to Nizip (between 3rd and 7th km), 23.VII.2003: 2 ♀♀ (ZDNU 2003/468/1-2), 1 ♂ (ZDNU 2003/468/3), Şehitkâmil, between Dülük and Karahöyük villages, 19.VII.2003: 1 ♀ (ZDNU 2003/539), Şehitkâmil, İbrahimli Village, 23.VIII.2003: 1 ♂ (ZDNU 2003/572/2), 2 ♀♀ (ZDNU 2003/572/1, 3), Nizip, Kocatepe Village, 21.VIII.2003: ♀ (ZDNU 2003/571).

Comments: *L. quinquestratus* was first reported from Turkey in Adıyaman by Tulga (1960). The scorpion has been known from Hatay, Kilis, and Mardin (Kinzelbach, 1984; Crucitti & Vignoli, 2002). Our record is the first from Gaziantep. *L. quinquestratus* is usually found under stones in steppe vegetation, sometimes near almond (*Amygdalus*) gardens and reddish pine plantations. The specimens were found either on the surface under the stones or sometimes in burrow under the stones with depth 5–10 cm. An adult specimen labelled as 2003/540/2 ♀ had an abnormal structure on its telson (Fig. 2), which could have been a result of regeneration of the scorpion aculeus or of an abnormal embryonic development.

Mesobuthus eupeus (C. L. Koch, 1839)

Specimens examined: Şahinbey, west of modern graveyard, 21.VII.2003: 1 ♀ (ZDNU2003/482), Şahinbey, Karataş district, 28.VI.2003: 1 ♀ (ZDNU 2003/521); 10.IV.2005: 1 ♂ (ZDNU 2005/15), Şahinbey, Mazmakor Village, 28.VI.2003: 2 ♀♀ (ZDNU 2003/475, 531), Şahinbey, Yeşilkent, 21.VII.2003: 1 ♀ (ZDNU 2003/481); Karataş district, 15.III.2003; Şehitkâmil, east of Türkyurdu, 10.V.2005: 1 ♀, 2 ♂♂ (ZDNU 2005/11/1, 3); Karkamış, 09.V.2005: 1 ♀, 1 ♂ (ZDNU 2005/12/1, 2); Oğuzeli, Üçkubbe Village, 18.V.2005: 5 ♀♀, 1 ♂ (ZDNU 2005/10/1, 6).

Comments: Distribution of this buthid scorpion in Anatolia was given by Karataş & Karataş (2003). It mainly ranges east of Anatolian diagonal and in central Anatolia (Aksaray, Nevşehir, Niğde, and Konya Provinces). There is also a disjunct record from Manisa Province in western Anatolia (Teruel, 2002). The present study gives the first record of *M. eupeus* in the Gaziantep Province. The specimens were found under stones in steppe areas or near almond gardens on lower slopes of mountains. Only this species was found near

the human settlements. One of those specimens was found near the city graveyard and another, on a balcony of an apartment.

Mesobuthus nigrocinctus (Ehrenberg, 1828)

Specimens examined: Şahinbey, Budak Town, 13.VII.2003: 1 ♀ (ZDNU2003/466), Güllüce Village, lower slopes of Ellezi Mountain, 29.VI.2003: 1 ♀ (ZDNU2003/522), 1 ♂ (ZDNU2003/535), Nizip, Mağaracık Village (460 m asl), 27.IX. 2002: 1 ♀ (ZDNU2002/357), road from Gaziantep to Nizip, 12.VIII. 2001: 2 ♂♂, 2 ♀♀ (ZDNU2001/292/1-4).

Comments: *M. nigrocinctus* was described from Lebanon, and recorded from Israel and Syria (Fet et al., 2000). Later, Crucitti & Vignoli (2002) reported it from Turkey (Adiyaman). The specimens were found under stones in steppe areas or on stony ground covered with bushes. Two specimens were obtained from higher plateaus of Ellezi Mountains. Fet et al. (2000) noted that this species was found sympatrically with *Scorpio maurus*. Similarly, *M. nigrocinctus* was found syntopically with *S. maurus* and *Calchas nordmanni* on Ellezi Mountain. The slopes of this Mountain have nut, almond, and fig gardens, and vineyards while the upper parts have stony soil with bush vegetation. While *C. nordmanni* was found on the lower slopes of the mountain ca. 800 m asl, *M. nigrocinctus* and *S. maurus* were taken from higher plateaus near the top of the mountain, ca. 1200 m asl.

Family Iuridae

Calchas nordmanni Birula, 1899

Specimens examined: Şahinbey, Güllüce Village, lower slopes of Ellezi Mountain, 13.IX.2003: 1 ♂, 1 ♀ (ZDNU 2003/524/1-2); Şahinbey, Güllüce Village, 21.IX.2003: 1 ♂ (ZDNU 2003/573/1), 1 ♀ (ZDNU 2003/573/2).

Comments: This species of Iuridae is a relatively small scorpion with a length of ca. 45 mm. Its color is brownish or light brownish. It was first described from Çoruh Valley (Artvin) by Birula (1899). Later, it was found also in Siirt, Antalya (Kinzelbach, 1980, 1982); Birecik (Vachon & Kinzelbach, 1987), and Diyarbakir (Kovařík, 1996). This is the rarest scorpion species in Gaziantep, with only four specimens found. It is known only from Anatolia (Antalya, Artvin, Bilecik, Erzurum, Kars, and Malatya Provinces) and Megisti (Meis) and Samos (Sisam) Islands (Vachon, 1971; Kinzelbach, 1980; Sissom, 1987; Kovařík, 1996; Fet & Braunwalder, 2000). Of our specimens, two were collected from under stones, at the entrance of a small cave with its opening facing east with a length of ca. 2 m. The locality is surrounded by oak (*Quercus coccif-*

era) forest. The other two specimens were collected under stones on the slopes of Ellezi Mountain at nearly 800 m asl, close to nut, almond, and fig gardens, and vineyards.

Family Scorpionidae

Scorpio maurus Linnaeus, 1758

S. m. fuscus (Ehrenberg, 1829)

Specimens examined: Şahinbey, east of Mahraman Village, 02.VII.2003: 1 ♂ (ZDNU 2003/565), Şahinbey, Güllüce Village, lower slopes of Ellezi Mountain, 29.VI.2003: 1 ♂ (ZDNU 2003/476), Şahinbey, Karataş district, 28.VI.2003: 1 ♀ (ZDNU 2003/530), Şahinbey, south of Kızılhisar Village, 19.VII.2003: 1 ♀ (ZDNU 2003/538), Şehitkâmil, Sarısalıkm Village, 23.VIII.2003: 1 ♂ (ZDNU 2003/563), Nizip, Mağaracık Village (450 m asl), 27.IX.2002: 1 ♀, 1 sex ? (ZDNU 2002/345/1, 2), Oğuzeli, Üçkubbe Village, 18.V.2005: 1 ♂ (ZDNU 2005/10-7).

Comments: The range of the species extends from North Africa to the Middle East and the Arabian Peninsula. There are 19 described subspecies of *S. maurus*. Of those, *S. m. fuscus* (Ehrenberg, 1829) is found in Turkey, Iraq, Israel, Jordan, Lebanon, Syria, and Saudi Arabia (Fet et al., 2000). For Turkey, this species is known from Elazığ to Mersin and to the Nur Mountains (Levy & Amitai, 1980). Crucitti & Malori (1998) recorded this species from İçel, Mersin; and Crucitti & Vignoli (2002), from Adiyaman, Ş.Urfa, and Mardin. This species is fossorial. It lives in the sloped burrows which it digs with its pedipalps and walking legs. The burrows form a nearly 30° angle and are 20–30 cm in length. Specimens of this species were collected under stones; sometimes there was a small hole under the stone in which scorpion was sitting. The soil surface under the stones was generally smooth and clean. In some cases, after the stones were lifted, openings of the burrows were excavated, and scorpions were collected from 10–15 cm distance inside the burrow.

Discussion

The Gaziantep material includes 112 specimens that belong to seven species: *L. quinquestriatus* (54 specimens), *A. crassicauda* (14), *S. maurus* (8), *C. matthiesseni* (7), *M. nigrocinctus* (8), *M. eupeus* (17), and *C. nordmanni* (4). The Gaziantep Province thus appears to be quite rich in scorpion fauna, which includes seven (43.75%) out of a total of 16 species of Turkish scorpions.

L. quinquestriatus is the most common species with 54 specimens (48.21%); its prevalence in Gaziantep is important considering danger to humans; this species is highly toxic, with LD₅₀ = 0.25 (Simard & Watt, 1990).

Considering distributional affinities of the genera, while genus *Mesobuthus* has Central Asian-Balkan range and genus *Calchas* has Aegean-Anatolian range, the genera *Androctonus*, *Compsobuthus*, *Leiurus*, and *Scorpio* have Saharo-Sindian distribution. Since Gaziantep is situated in the Southeastern Anatolian transitional region, the scorpions of this area is a mixture of the species with different zoogeographical origin.

Many taxonomic studies on Turkish scorpions have been published (Birula, 1898, 1899, 1917; Kulczyński, 1903; Vachon, 1947a, 1947b, 1951; Tolunay, 1959; Tulga, 1960; Kinzelbach, 1975, 1982; Bonacina, 1980; Fet, 1986; Lacroix, 1995; Kovařík, 1996; Crucitti, 1998, 1999, 2000; Crucitti & Malori, 1998; Fet & Braunwalder, 2000; Crucitti & Vignoli, 2002; Fet et al., 2003, 2005; Karataş, 2003, 2005; Karataş & Karataş, 2003; Karataş et al., 2005). However, the faunistic research on Turkish scorpions is still in progress. Only *Scorpio maurus* was recorded from Gaziantep by Crucitti (1998). The other six species are reported in this study as new geographical records for Gaziantep Province.

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