Description of a new Zodarion Walckenaer, 1826 from Turkey (Zodariidae; Araneae)

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Abstract: A new species of Zodarion Walckenaer, 1826 is described based on material collected in the Marmara region of Turkey. Morphological and diagnostic characters and illustrations of the genitalia of both sexes are presented, and the differences with the closely related Zodarion turcicum Wunderlich, 1980 are pointed out.

Key words: Ant-eating spiders, Central Anatolia, Marmara region, new species, Zodariidae

The spider genus Zodarion Walckenaer, 1826 includes 138 species, which are distributed throughout the Mediterranean basin (Platnick, 2013) but have limited distribution areas. Zodarion species can be distinguished from other zodariids by having a number of combined characters: 3 tarsal claws, 8 eyes, spineless legs, the anterior spinnerets on a common base, and the shape of the genital organs. They can be found in all types of habitats including arid regions. They are specialised ant-eaters and construct igloo-shaped retreats (Jocqué, 1991).

The first Zodarion species was reported from Turkey by Nosek (1905), who described the new species Z. thoni Nosek, 1905. Several other new spider species from Barut Mountain (Lifos), in the Erciyes Mountains (Kayseri Province), were published in that paper. Thirty years later, Caporiacco (1935) cited Z. graecum (C.L. Koch, 1843) from Turkey; 34 years after that, Karol (1969) reported Z. morosum Denis, 1935 from Ankara. Wunderlich (1980) described 3 new species from Bolu-Abant: Z. abantense Wunderlich, 1980; Z. korgei Wunderlich, 1980; and Z. turcicum Wunderlich, 1980. Another addition to the Turkish fauna was given by Bosmans (1997), reporting Z. frenatum Simon, 1884 as a new species from İzmir. Bosmans (2009) added 3 more species in a regional revision of the genus, describing Z. delshevi Bosmans, 2009 and Z. van Bosmans, 2009 as new species from Turkey and reporting the first Asian record of Z. granulatum Kulczyński, 1908 from Van.

The spider checklist for Turkey also includes Zodarion gallicum (Simon, 1873), Z. germanicum (C.L. Koch, 1837), and Z. rubidum Simon, 1914. These species were first cited by Bayram (2002) and later included in catalogues of the spiders of Turkey (Topçu et al., 2005; Bayram et al., 2013). According to Bosmans (1997, 2009), however, the distribution ranges of these species do not reach Turkey. When these species were cited from Turkey in the past, the taxonomy of the Mediterranean Zodarion species was poorly known and many misidentifications occurred (Bosmans 1997, 2009). Zodarion gallicum, Z. germanicum, and Z. rubidum appear to have much smaller distribution areas than previously thought and appear to be limited to West and Central Europe. Until evidence is presented, these species have to be deleted from the Turkish spider list. Consequently, 10 species of Zodarion are actually known to occur in Turkey. However, this is probably an underestimation when the diversity of Zodarion species in neighbouring countries is considered: 11 species in Bulgaria, 35 in Greece, 2 in Armenia, 2 in Georgia, and 6 in Azerbaijan (Otto and Tramp, 2011; van Helsdingen, 2012).

The purpose of this study is to describe and illustrate a new Zodarion species on the basis of both male and female sexual characters.

The specimens were collected from the Marmara and Central Anatolia regions of Turkey by means of pitfall traps and preserved in 70% ethanol. All measurements are in mm. Measurements of the eyes are as in Bosmans (2009). The following abbreviations are used in the text: AL, anterior lateral eyes; AM, anterior median eyes; PL, posterior lateral eyes; PM, posterior median eyes; a, b, c,
Taxonomy

Zodarion bigaense sp. nov. (Figures 1A–D)

Type material: Holotype: ♂ (AUZM) Turkey, Çanakkale Province, Biga District, Karabiga town (40°22′38.58″N, 27°18′14.99″E), 03 May 2009–03 October 2009, S.V. Varlı leg. Paratypes: 5 ♂♂, 3 ♀♀ (4 ♂♂, 2 ♀♀ in AUZM, 1 ♂, 1 ♀ in CRB), same data as holotype; 1 ♀ (AUZM), Bursa Province, Nilüfer District, Ayvaköy (40°7′27.96″N, 28°42′6.30″E), 02 July 2009, K.B. Kunt leg.; 3 ♂♂, 4 ♀♀ (AUZM), Eskişehir Province, Meşelik Area (39°43′31.05″N, 30°29′43.17″E), 26 September 2010–02 November 2010, R.S. Özkütük leg.; 1 ♂, 2 ♀♀ (AUZM), Ankara Province, Yenimahalle District, Türkkonut, Dodurga village (39°49′16.20″N, 32°40′5.90″E), 08 July 2011–06 September 2011, K.B. Kunt leg.

Etymology: The specific epithet is an adjective referring to the type locality of the new species.

Diagnosis: Zodarion bigaense sp. nov. is a member of the germanicum group and is closely related to Z. turcicum Wunderlich, 1980. Males differ from the latter species by having a more pointed tibial apophysis, a larger tegular apophysis, and 3 large teeth on the median apophysis (Figures 1A and 1B); in Z. turcicum, only 2 large teeth and some smaller teeth are present (Figures 1E and 1F). Females differ from those of Z. turcicum by the more anterior position of the anteromedian depression and the relatively larger and closer-set spermathecae (Figures 1C and 1D, Z. bigaense sp. nov.; Figures 1G and 1H, Z. turcicum).

Figure 1. Zodarion bigaense sp. nov. A) Male palp, ventral view; B) Male palp, retrolateral view; C) Epigyne; D) Vulva – Z. turcicum Wunderlich, 1980; E) Male palp, ventral view; F) Male palp, retrolateral view; G) Epigyne; H) Vulva. Scale bars: 0.5 mm.
Description

Measurements: Male: total length 3.5–4.4; carapace 1.70–2.42 long, 1.20–1.71 wide. Female: total length 4.3–5.0; carapace 1.92–2.11 long, 0.82–1.42 wide.

Colour: Male: Prosoma dark brown, thoracic region paler with darkened anastomosing striae; chelicerae, endites, and sternum brown to dark brown; legs: coxae and tarsi yellowish white, Fe dark brown, basal part of Fe III–IV often yellowish brown, tibae and metatarsi yellowish brown; abdomen dorsally dark sepia, small posterodorsal spot, oblique lateral incision and venter whitish. Female: generally as male, but somewhat paler and with less-contracting leg segments.

Eyes (male): AM = 1 (0.1); AL = 0.9; PM = 0.45; PL = 0.8; a = 0.8; b = 0.55; c = 2.35; d = 0.7; MOQ: AW = 0.82 PW; L = 0.88 PW.

Palp (Figures 1A and 1B): Tibial apophysis elongated, twice as long as the tibial diameter, with a deep longitudinal groove and a blunt tip; tegulum with large tegular apophysis, situated in the anteromedian part of the bulb, strongly protruding in an anterolateral direction; median apophysis (retinaculum) located just behind the tegular apophysis, ending with 3 large, black teeth; embolus with a rounded knob at its base, gradually narrowing and terminally pointed.

Epigyne: With large anteromedian depression, only anterior and lateral margins chitinised; posterior margin of epigyne slightly incised (Figure 1C). Spermathecae rounded, separated by 2.5 times their diameter (Figure 1D).

The Turkish Zodarion species belong predominantly to the germanicum species group, with 4 species (Bosmans, 2009). Numerically, the germanicum group is followed by the lutipes and thoni groups, each with 2 Turkish species. The description of Z. bigaense sp. nov. raises the number of Turkish Zodarion species from 11 to 12. As most species of the genus have relatively small distribution ranges, the future discovery in Turkey of additional previously described or new species is to be expected.

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References