

A New Species of *Zodarion* Walckenaer, 1826 (Araneae: Zodariidae) from Turkey

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A NEW SPECIES OF *ZODARION* WALCKENAER, 1826 (ARANEAE: ZODARIIDAE) FROM TURKEY¹

Tarık Danişman² and Gonzalo D. Rubio³

ABSTRACT: A new species, *Zodarion tireboluensis* sp. nov. is described and illustrated based on material collected in the Giresun Province of Turkey. Differences between the new species and the closely related *Zodarion aurorae* Weiss, 1982 are discussed. An updated dichotomous key to the known species of the “*germanicum*” group is provided.

KEY WORDS: Ant-eating spiders, *Zodarion*, new species, Turkey

INTRODUCTION

Zodariidae is a medium-sized ecibellate family of spiders distinguished by their long anterior lateral spinnerets (Jocqué and Dippenaar-Schoeman 2006). This family includes more than 1123 species in 84 genera, with a worldwide distribution, but is most abundant in tropical and subtropical regions (World Spider Catalog, 2017).

Zodarion Walckenaer, 1826 is a large genus of ant-eating spiders of the subfamily Zodariinae, including 157 previously described species from Eurasian, North African and Mediterranean countries (World Spider Catalog, 2017). Members of this genus are characterized by having eight eyes, three tarsal claws, chelicerae fused at base, small body size, and the presence of long anterior spinnerets on a common base (Jocqué 1991).

In Turkey, 18 species of *Zodarion* (*Z. abantense*, *Z. bigaense*, *Z. confusum*, *Z. deltshevi*, *Z. frenatum*, *Z. gallicum*, *Z. germanicum*, *Z. graecum*, *Z. granulatum*, *Z. korgei*, *Z. kossamos*, *Z. morosum*, *Z. rubidum*, *Z. ruffoi*, *Z. sungar*, *Z. thoni*, *Z. turcicum*, *Z. van*) were recorded until now (Bayram et al., 2017).

The Turkish *Zodarion* species belong mainly to the *germanicum* group, with five species (Bosmans et al., 2014). The purpose of this study is to describe and illustrate a new *Zodarion* species from the *germanicum* group on the basis of both male and female sexual characters. Additionally, an updated dichotomous key (Bosmans 2009) to the known European species of the *germanicum* group is given here for comparative purposes.

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METHODS

The specimens were collected by hand aspirator and pitfall traps. Pictures were taken using a Leica S8APO microscope by means of the Leica DC 160 camera. Photographs were taken in dishes of different sizes with paraffin on the bottom. Different size holes were made in the bottom to keep specimens in the right position. Female genitalia were photographed in the natural and the cleared state (after immersion in a 10% KOH solution for 12-48 hours at room temperature).

Images have been montaged using 'Combine ZM' image stacking software and 'Photoshop CS5' image editing software. For scanning electron microscopy (SEM) observations, one male specimen was dissected and dehydrated in a graded ethanol series (80-100%), critical point dried, and gold coated. SEM micrographs were taken under high vacuum with a JEOL JSM-5600. Specimens were deposited in the collection of the Arachnological Museum of Kırıkkale University (KUAM). All measurements are expressed in millimeters.

RESULTS AND DISCUSSION

Zodarion tireboluensis sp. nov.

Material examined

Holotype, 1♂ *Zodarion tireboluensis* sp. nov. specimen was determined from Tirebolu, Giresun, Turkey, (40°55'07"N, 38°50'43"E), 26.04.2013. Paratypes, together with the holotype, 13♂, 18♀, Giresun Province, Tirebolu district, Aslancık Village (40°55'07"N, 38°50'43"E) 26.04.2013-28.06.2013. (leg. T. Danişman).

Etymology

The specific name is an adjective referring to the type locality of the new species.

Diagnosis: *Zodarion tireboluensis* sp. nov. is a member of the *germanicum* group and is closely related to *Z. aurorae*. Males differ from those of other species by having a tegular apophysis that is terminally pointed and protruding in an antero-lateral direction. Females differ from those of *Z. aurorae* by the relatively smaller and triangular anteromedian depression and larger and farther-set spermathecae.

Description of male: Total length 2.5-3.9 mm, Carapace length 1.54-2.3 mm, width 1.14-1.47 mm; Prosoma brown, thoracic region darker. Walking legs light brown or yellowish white, only femora dark brown. Abdomen dorsally gray, with small white spot and oblique lateral incision (Fig. 1). Palpal tibial apophysis without lateral grooves. Median apophysis distinctive and its distal part one-

toothed. Tegular apophysis protruding in antero-lateral direction, terminally pointed (Figs. 2 and 3).

Description of female: Total length 3.4-4.3 mm, Carapace length 1.64-2.4, width 1.21-1.64. Coloration and textures similar to that of male; but prosoma darker brown, likewise abdomen dark sepia or black (Fig. 1). Epigyne with small, triangular anteromedian depression that is similar to the shape of the letter "A", only anterior and lateral margins chitinised; posterior margin of epigyne slightly sculptured. Spermathecae rounded, separated from each other by 3 times their diameter (Fig. 4).

The fauna of Turkey now contains nineteen species of genus *Zodarion*. It is quite likely that the inventory is still not complete in Zadariinae. According to the palp and epigyne conformation, this species clearly belongs to the genus *Zodarion* Walckenaer, 1826. *Zodarion tireboluensis* sp. nov. is located in the *germanicum* group and is similar to the *Z. aurorae*.

Key to the *Zodarion* species of *germanicum* group (males only)
(Updated from Bosmans 2009)

1. Male palpal tibial apophysis with lateral grooves.....2
 - Tibial apophysis without lateral grooves.....4
2. Tibial apophysis with blunt tip, nearly rectangular, terminally not pointed.....
 -*Z. turcicum*
 - Tibial apophysis terminally pointed3
3. Tibial apophysis slightly pointed, median apophysis with a single tooth
 -*Z. musarum*
 - Tibial apophysis more pointed, median apophysis with three teeth
 -*Z. bigaense*
4. Tegular apophysis protruding in anterior direction, with rounded tip, terminally not pointed.....*Z. germanicum*
 - Tegular apophysis protruding not in anterior direction.....5
5. Tegular apophysis protruding in antero-lateral direction, terminally pointed .
 -*Z. tireboluensis* **sp. nov.**
 - Tegular apophysis terminally not pointed6
6. Tegular apophysis protruding in ventral direction*Z. aurorae*
 - Tegular apophysis protruding not in ventral direction7
7. Distal part of median apophysis tongue-shaped*Z. abantense*
 - Distal part of median apophysis toothed, not tongue-shaped8
8. Distal part of median apophysis with one tooth*Z. korgei*
 - Distal part of median apophysis with two teeth.....*Z. pirini*

Nomenclatural Acts: This work and the nomenclatural acts it contains have been registered in Zoobank. Zoobank Life Science Identifier (LSID) for this publication is: <http://zoobank.org/urn:lsid:zoobank.org:pub:A29B2047-057F-4365-B030-EB5A46C4C956>

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Fig. 1. *Zodarion tireboluensis* sp. nov., Habitus and dorsal pattern of male (left) and female (right). Scale bars 1 mm.

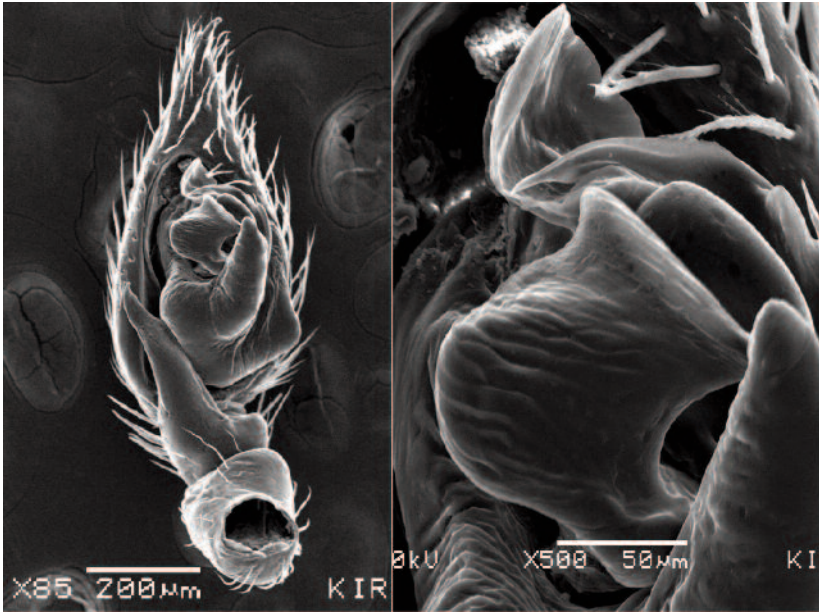


Fig. 2. *Z. tireboluensis* sp. nov., SEM microphotographs of male palp, ventral view (left) and median apophysis (right).



Fig. 3.
Z. tireboluensis sp. nov.,
male palp drawing,
ventral view,
scale bar: 0.5 mm.

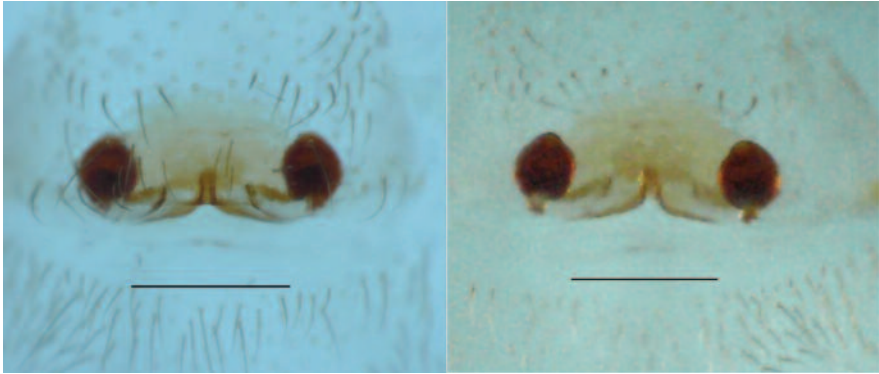


Fig. 4. *Z. tireboluensis* sp. nov, female genitalia, epigyne (left), and vulva (right) after maceration in KOH. Scale bars: 0.5 mm.