



Redescription of *Zodariellum sungar* (Araneae: Zodariidae) with the First Description of the Female

Author: Danişman, Tarik

Source: Florida Entomologist, 96(2) : 332-337

Published By: Florida Entomological Society

URL: <https://doi.org/10.1653/024.096.0252>

The BioOne Digital Library (<https://bioone.org/>) provides worldwide distribution for more than 580 journals and eBooks from BioOne's community of over 150 nonprofit societies, research institutions, and university presses in the biological, ecological, and environmental sciences. The BioOne Digital Library encompasses the flagship aggregation BioOne Complete (<https://bioone.org/subscribe>), the BioOne Complete Archive (<https://bioone.org/archive>), and the BioOne eBooks program offerings ESA eBook Collection (<https://bioone.org/esa-ebooks>) and CSIRO Publishing BioSelect Collection (<https://bioone.org/csiro-ebooks>).

Your use of this PDF, the BioOne Digital Library, and all posted and associated content indicates your acceptance of BioOne's Terms of Use, available at www.bioone.org/terms-of-use.

Usage of BioOne Digital Library content is strictly limited to personal, educational, and non-commercial use. Commercial inquiries or rights and permissions requests should be directed to the individual publisher as copyright holder.

BioOne is an innovative nonprofit that sees sustainable scholarly publishing as an inherently collaborative enterprise connecting authors, nonprofit publishers, academic institutions, research libraries, and research funders in the common goal of maximizing access to critical research.

REDESCRIPTION OF *ZODARIELLUM SUNGAR* (ARANEAE: ZODARIIDAE) WITH THE FIRST DESCRIPTION OF THE FEMALE

TARIK DANIŞMAN

University of Kırıkkale, Faculty of Sciences and Arts, Department of Biology, TR-71451 Kırıkkale, Turkey

E-mail: tarikdanisman@hotmail.com

ABSTRACT

The redescription of *Zodariellum sungar* (Jocqué, 1991), on the basis of newly collected material is provided. The female of this species, previously unknown, is described here for the first time. In addition, one new combination is established, *Zodarion sungar* (Jocqué, 1991) **comb. n.**, ex *Zodariellum*. According to the palp and epigyne structure, the new combination clearly belongs to the *lutipes* group of genus *Zodarion* Walckenaer, 1826 and is distinguished from the other members of *lutipes* group by the brush hook shaped median apophysis on the male palp and by the 6 coils of the female spermathecae.

Key Words: Araneae, Redescription, *Zodariellum*, *Zodarion*, new combination, Zodariidae, Turkey

RESUMEN

Se provee una redescipción de *Zodariellum sungar* (Jocque, 1991), basada sobre material recién recolectado. La hembra de esta especie, anteriormente desconocida, se describe aquí por primera vez. Además, se establece una nueva combinación, *Zodarion sungar* (Jocque, 1991) **comb. nov.**, ex *Zodariellum*. De acuerdo con la estructura del palpó y del epigino, la nueva combinación claramente pertenece al grupo *lutipes* de género *Zodarion* Walckenaer, 1826 y se distingue de los otros miembros del grupo *lutipes* por el cepillo del apófisis mediano del palpó del macho que tiene la forma de un gancho y por las 6 espirales de la espermateca de la hembra.

Palabras Clave: Araneae, Redescipción, *Zodariellum*, *Zodarion*, nueva combinación, Zodariidae, Turquía

Zodariidae is a medium-sized family of spiders distinguished by their long anterior spinnerets on a common base, and other reduced spinnerets. This family includes more than 970 species in 76 genera, with a worldwide distribution, but is most abundant in tropical and subtropical regions. *Zodariellum* Andreeva & Tyschchenko 1968 is a small genus of ant-eating spiders of the subfamily Zodariinae, including 22 previously described species from Asia and Africa (Platnick 2013). The ant eating spider *Zodariellum sungar* (Jocqué, 1991) is only known by the male and the description was never provided in any other taxonomical publication (Platnick 2013). The present paper is devoted to the first description of the female and the redescription of the male of *Z. sungar* (Jocqué, 1991) and the new combination of the species to the genus *Zodarion* Walckenaer, 1826.

Pictures were taken, using a Leica S8APO microscope by means of a Leica DC 160 camera, in dishes of different sizes with paraffin on the bottom. Different size holes were made in the paraffin to keep specimens in the right position. Images were montaged using "Combine-ZM" image stacking software and "Photoshop CS5" image editing software. SEM microphotographs were made with a JEOL JSM-5600 at the University of Kırıkkale. All the specimens are preserved in 70% ethanol. Measurements are given in millimeters. Epigynes were drawn in the natural and the cleared state (after immersion in 10% KOH for 12-48 hours at room temperature). Leg measurements are shown as: total length (femur, patella, tibia, metatarsus, tarsus); measurements of leg segments were taken from the dorsal side.

MATERIALS AND METHODS

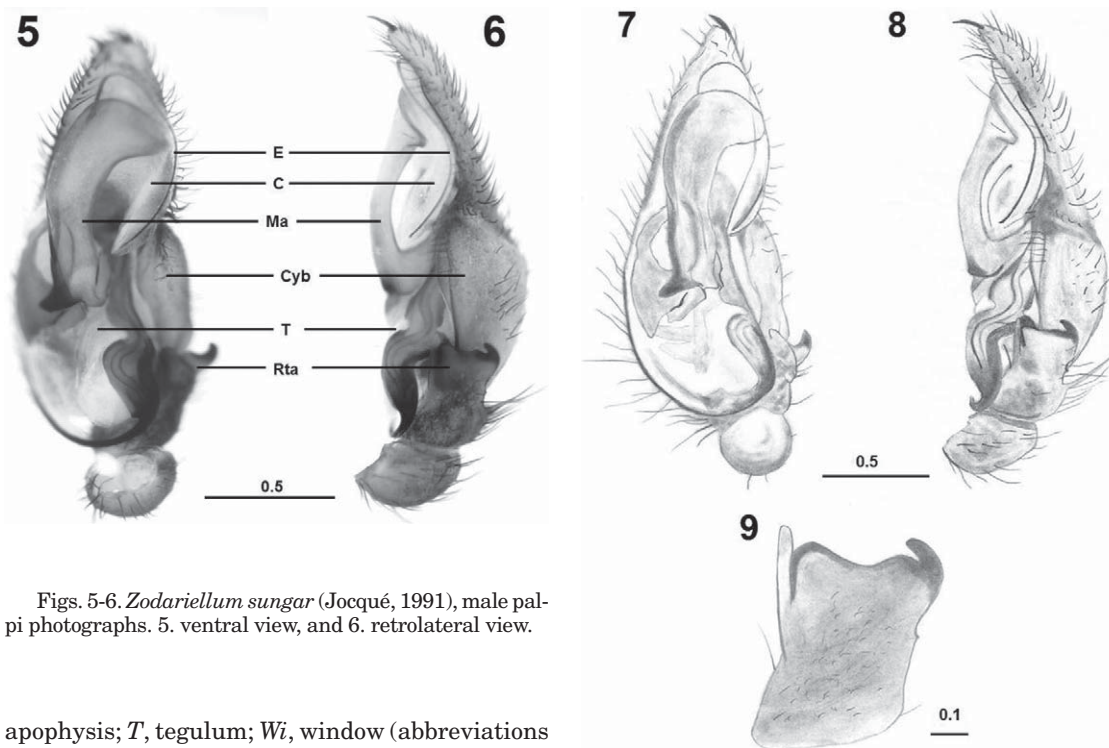
Specimens were collected during the day by hand aspirator from under stones and are deposited in the collection of the Arachnological Museum of Kırıkkale University (KUAM).

Morphological Terms

Cyb, cymbium; *E*, embolus; *Fd*, fertilization duct; *Id*, insemination duct; *Ma*, median apophysis; *Mp*, median plate; *Se*, septum; *Rs*, receptaculum (spermatheca); *Rta*, Retrolateral tibial



Figs. 1-4. *Zodariellum sungar* (Jocqué, 1991), 1-2 habitus dorsal view, 3-4 ventral view of male and female, respectively.



Figs. 5-6. *Zodariellum sungar* (Jocqué, 1991), male palpi photographs. 5. ventral view, and 6. retrolateral view.

apophysis; *T*, tegulum; *Wi*, window (abbreviations adapted from Kovblyuk, 2003 and Marusik & Fet 2009).

Material Examined

Zodariellum sungar (Jocqué, 1991) (Figs. 1-4)

1♂, 1♀, Gaziantep Province, Sinanköy Village, N 37° 2' 16" E 37° 35' 58", elev. 965 m, 4-V-2012; 1♂, Gaziantep Province, Karkamış District, Gürçay Village, N 37° 2' 16" E 37° 35' 58", elev. 380 m, 5-V-2012; 2♂, 1♀, Şanlıurfa Province, Suruç District, N 37° 2' 49" E 38° 28' 15" E, Elev. 610 m; 5-V-2012.

Description

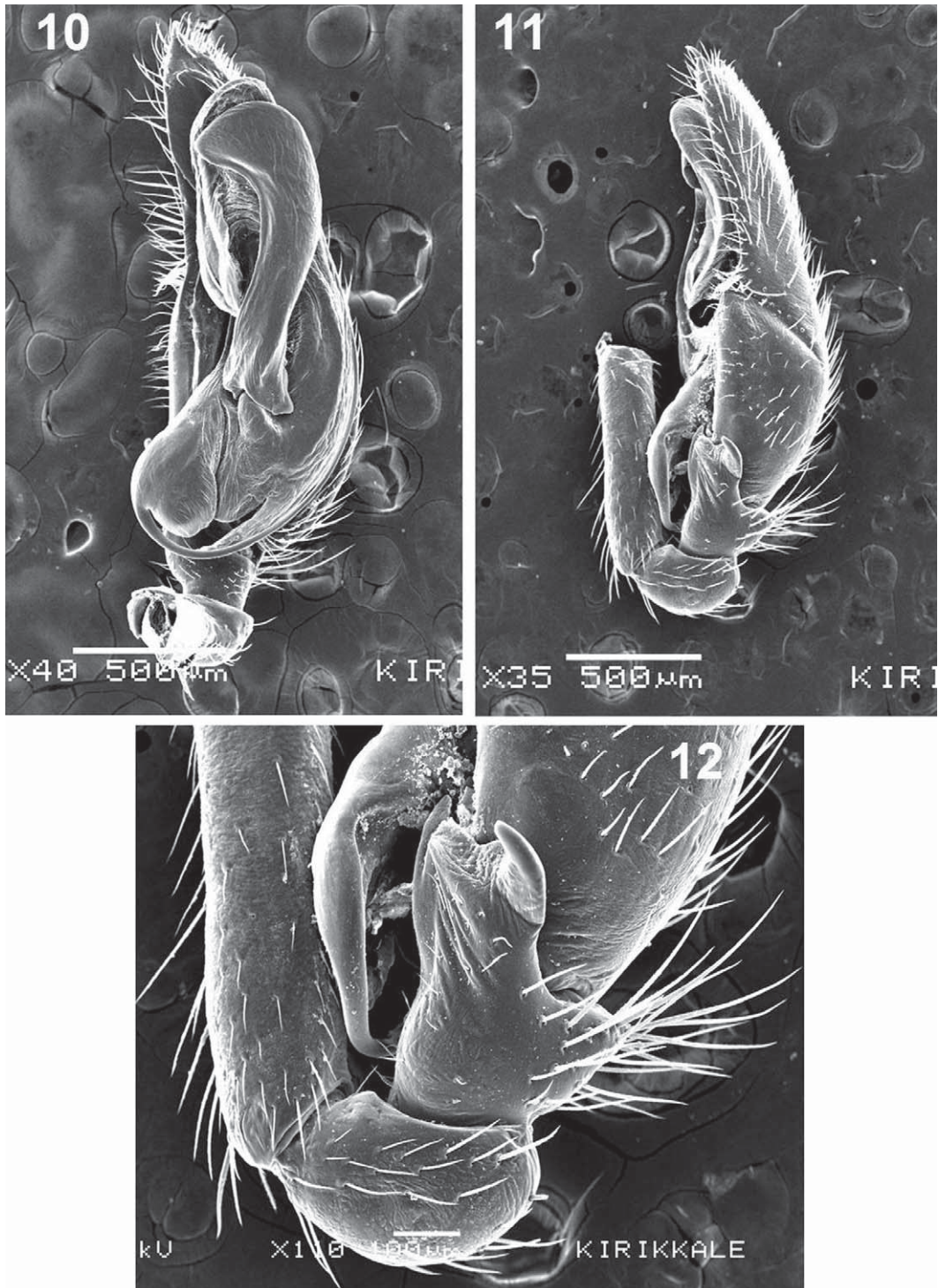
Male. Total length 4.7, Carapace 2.4 long – 1.9 wide, Abdomen 2.3 long – 1.6 wide. Pattern distinct, carapace dark brown, without band or stripe. Abdomen blackish gray, with u-shaped vertical stripes from sides. Legs dark yellow, except for femur. Leg formula IV, I, II, III. Leg measurements ($n = 4$): I 10.7 (2.7, 0.7, 2.6, 3.1, 1.6), II 9.9 (2.6, 0.6, 2.2, 3, 1.5), III 9.7 (2.7, 0.7, 2.1, 3, 1.2), IV 11.9 (3.4, 0.7, 3, 3.9, 0.9). Median apophysis large, brush hook shaped, denticulated at bottom, upper part strongly developed. Cymbium with retrolateral crest. Tibial apophysis short, with three protruding apophysis. Embolus very long, originating at baso-lateral side of tegulum. Palp as in Figs. 5-6, 7-9 and 10-12.

Figs. 7-9. *Zodariellum sungar* (Jocqué, 1991), drawings of male palp, 7. ventral view; 8. retrolateral view, and 9. retrolateral tibial apophysis.

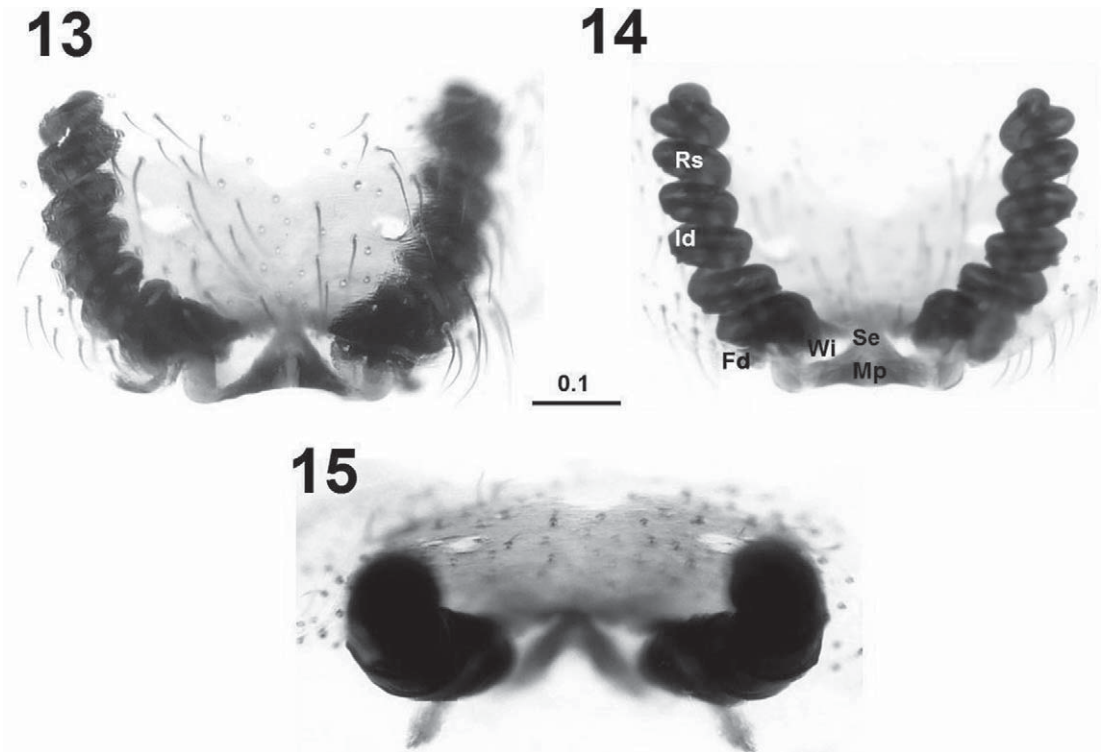
Female. Total length 4.9, Carapace 2.1 long – 1.6 wide, Abdomen 2.8 long – 1.9 wide. Pattern distinct, almost same as male. Legs dark yellow, except for femur. Femur dark brown. Leg formula IV, I, II, III. Leg measurements ($n = 2$): I 6.4 (1.7, 0.5, 1.4, 1.8, 1), II 5.7 (1.3, 0.5, 1.2, 1.7, 1), III 5.2 (1.7, 0.5, 0.8, 1.3, 0.9), IV 7.9 (2.2, 0.7, 1.9, 2.3, 0.8). Epigyne as in Figs. 13-15 and 16-17, with distinct window, median plate slightly protruding, mid part of epigyne with ^-shaped sclerotisation, receptacula tubule shaped, diameter equal to that of half of window. Septum thin, insemination duct very long, making 6 coils around receptacula. Fertilization duct small, digitiform.

DISCUSSION

With this paper, *Zodariellum sungar* (Jocqué, 1991) is reported from Turkey for the first time (Bayram et al. 2012). According to the palp and epigyne conformation, this species clearly belongs to the genus *Zodariion* Walckenaer, 1826. *Zodariion sungar* (Jocqué, 1991) **comb. nov.** belongs to the *lutipes* group because of the very long embolus originating at baso-lateral side of the tegulum and strongly coiled spermathecae. The



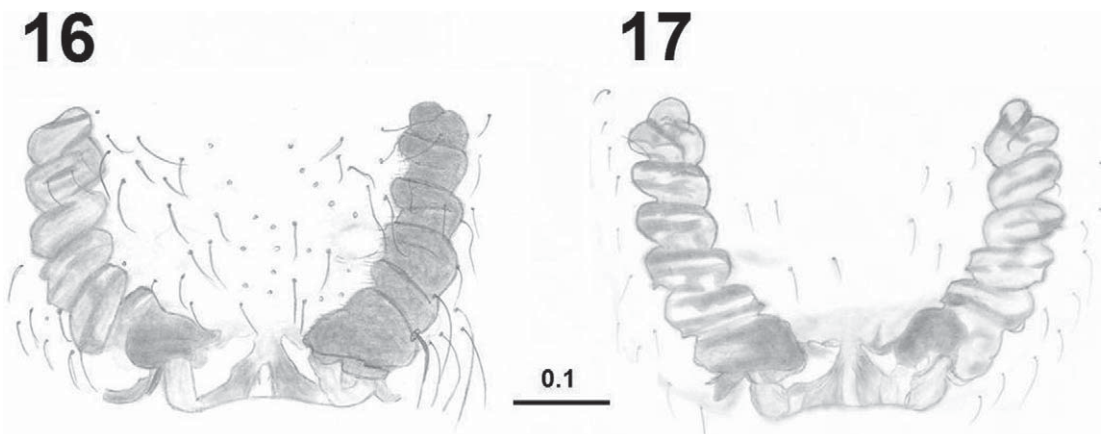
Figs. 10-12. SEM micrographs of male palp of *Zodariellum sungar* (Jocqué, 1991), 10. ventral view; 11. retrolateral view, and 12. retrolateral tibial apophysis.



Figs. 13-15. Epigyne of *Zodariellum sungar* (Jocqué, 1991) photographs. 13. ventral view; 14. dorsal view, and 15. top view, after maceration in KOH.

lutipes group contains *Z. christae* Bosmans, 2009, *Z. deltshevi* Bosmans, 2009, *Z. frenatum* Simon, 1884, *Z. lutipes* (O. P.-Cambridge, 1872) and *Z. samos* Bosmans, 2009 (Bosmans, 2009). The new combination is clearly distinguished from all other members of the *lutipes* group by the very large and brush hook shaped median apophysis

on the male palp and by the 6 coils of the female spermathecae. *Z. sungar* **comb. nov.** resembles *Z. luctuosum* (O. P.-Cambridge, 1872) and *Z. niti-dum* (Audouin, 1826), but can be distinguished by the shape of the median and tibial apophysis of the male pedipalp and by the form of the epigyne and spermathecae.



Figs. 16-17. *Zodariellum sungar* (Jocqué, 1991), drawings of epigyne. 16. ventral view, and 17. dorsal view after maceration in KOH.

ACKNOWLEDGMENTS

I am very grateful to Stano Pekár (Czech Republic) and Robert Bosmans (Belgium) for their valuable contributions. Furthermore, I wish to thank Kırıkkale University Scientific and Technological Research Laboratories (KUBTAL) for use of the SEM. Last but not least, I want to thank reviewers for their valuable comments.

REFERENCES CITED

- BAYRAM, A., KUNT, K. B., AND DANISMAN, T. 2012. The Checklist of the Spiders of Turkey.- Version 2012.1 Available from: <http://www.spidersofturkey.com>
- KOVBLYUK, M. M. 2003. Spiders of the genus *Zodarion* (Aranei: Zodariidae) in the fauna of the Crimea. *Eurasian Entomol. J.* 1: 177-183.
- MARUSIK, Y. M., AND FET, V. 2009. A survey of east Palearctic *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae), with a description of three new genera. *ZooKeys* 16: 75-114.
- PLATNICK, N. 2013. The World Spider Catalog, Version 13.5 American Museum of Natural History Available from: <http://research.amnh.org/entomology/spiders/catalog/.html>