

A new species of *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae) from Turkey

Yuri M. Marusik^{1,†}, Kadir Boğaç Kunt^{2,‡}, Ersen Aydın Yağmur^{3,§}

1 Institute for Biological Problems of the North RAS, Portovaya Str. 18, Magadan, Russia **2** Turkish Arachnological Society, Eserköy Sitesi 9/A Blok No:7 TR-06530 Ümitköy, Ankara, Turkey **3** Ege University, Science Faculty, Biology Department, Zoology Section, TR-35100 İzmir, Turkey

† [urn:lsid:zoobank.org:author:F215BA2C-5072-4CBF-BA1A-5CCBE1626B08](https://zoobank.org/F215BA2C-5072-4CBF-BA1A-5CCBE1626B08)

‡ [urn:lsid:zoobank.org:author:13EEAB4A-F696-41D7-A323-2333410BF5D7](https://zoobank.org/13EEAB4A-F696-41D7-A323-2333410BF5D7)

§ [urn:lsid:zoobank.org:author:8DB0B243-5B2F-4428-B457-035A8274500C](https://zoobank.org/8DB0B243-5B2F-4428-B457-035A8274500C)

Corresponding author: Yuri M. Marusik (yurmar@mail.ru)

Academic editor: Dmitry Logunov | Received 24 January 2010 | Accepted 10 February 2010 | Published 25 February 2010

[urn:lsid:zoobank.org:pub:E7F65C7F-05D3-4E62-B3C7-79307864B9BC](https://zoobank.org/pub/E7F65C7F-05D3-4E62-B3C7-79307864B9BC)

Citation: Marusik YM, Kunt KB, Yağmur EA (2010) A new species of *Hersiliola* Thorell, 1870 (Araneae, Hersiliidae) from Turkey. ZooKeys 37: 27–34. doi: 10.3897/zookeys.37.398

Abstract

A new species *Hersiliola turcica* sp. n. is described on the basis of both sexes from Southeast Turkey. Males of the new species have an extraordinarily long embolus and females have very long insemination ducts.

Keywords

Hersiliidae, *Hersiliola*, new species, Turkey

Introduction

Hersiliidae is a rather small, globally distributed entelegyne spider family that currently includes 167 species belonging to 15 genera (Platnick 2010). The majority of hersiliid species are found in tropical and subtropical regions. The family was the subject of several revisions for the Australian, Oriental, Neotropical, and Afrotropical faunas (Baehr and Baehr 1987, 1993, 1998; Rheims and Brescovit 2004a–b; Rheims et al. 2004;

Foord and Dippenaar-Schoeman 2005a-b, 2006). Recently, the most speciose genus in the Palearctic, *Hersiliola* Thorell, 1870, was revised by Marusik and Fet (2009). It was shown that the genus is distributed from western Africa to Xinjiang, NW China and in Asia was reported from Afghanistan, Israel, Iran, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan and Yemen. Currently *Hersiliola* contains 9 species (Marusik and Fet 2009). In Turkey, *Hersiliola macullulata* (Dufour, 1831) was recently reported from southernmost Hatay Province (Yağmur et al. 2008).

When the revision of the genus (Marusik and Fet, 2009) was published, it became clear that the specimens from Turkey belonged to an undescribed species with a very peculiar male palp. The aim of this paper is the description of the new species of *Hersiliola*.

Material and methods

A total of 15 specimens of *Hersiliola turcica* sp. n. (6 ♂♂, 7 ♀♀ and 2 juveniles) were collected between 2004 and 2008 from Gaziantep, Hatay, Kahramanmaraş, Kilis and Şanlıurfa Provinces which are located in the southeastern part of Turkey. The specimens were collected from irregular webs under stones by means of a hand aspirator.

Specimens were photographed using an Olympus Camedia E-520 camera attached to an Olympus SZX12 stereomicroscope. The images were montaged using “CombineZM” image stacking software. Specimens were photographed in dishes of different sizes with paraffin wax in the bottom. Holes were made in the paraffin wax to keep the specimens in the right position. All measurements are given in mm.

Material treated herein is deposited in the Senckenberg Museum (SMF, Frankfurt am Main, Germany), the Museum of Turkish Arachnological Society (MTAS, Ankara, Turkey) and in the Zoological Museum of the Moscow State University (ZMMU, Moscow, Russia).

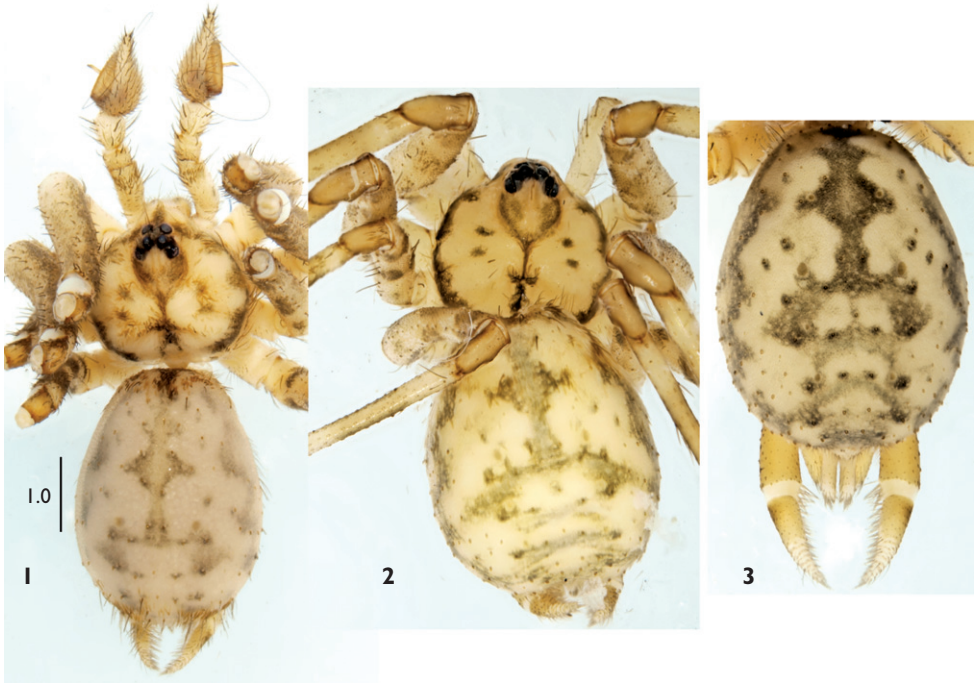
Taxonomy

Hersiliola turcica sp. n.

urn:lsid:zoobank.org:act:005B2FD9-F68C-4EDF-BF44-CAB9F973B76F

H. macullulata: Yağmur et al., 2008: 63, f. 2a–b (figures belong to *H. macullulata*).

Material: Holotype ♂ (SMF) **Kahramanmaraş Province**, Nurhak District, Yeşilkent (Kullar) Town [37°58'54.39"N; 37°30'56.01"E], 9.07.2006 (E.A. Yağmur & S. Anlaş). Paratypes: 1♀ 1juv. (SMF), **Kahramanmaraş Province**, Türkoğlu District [37°30'10.51"N; 36°51'07.60"E], 4.06.2006 (E.A. Yağmur & M. Özkörük);



Figures 1–3. Habitus and pattern of *Hersiliola turcica* sp. n. **1** holotype male, dorsal **2** female from Nizip District **3** female abdomen from Harran Town.

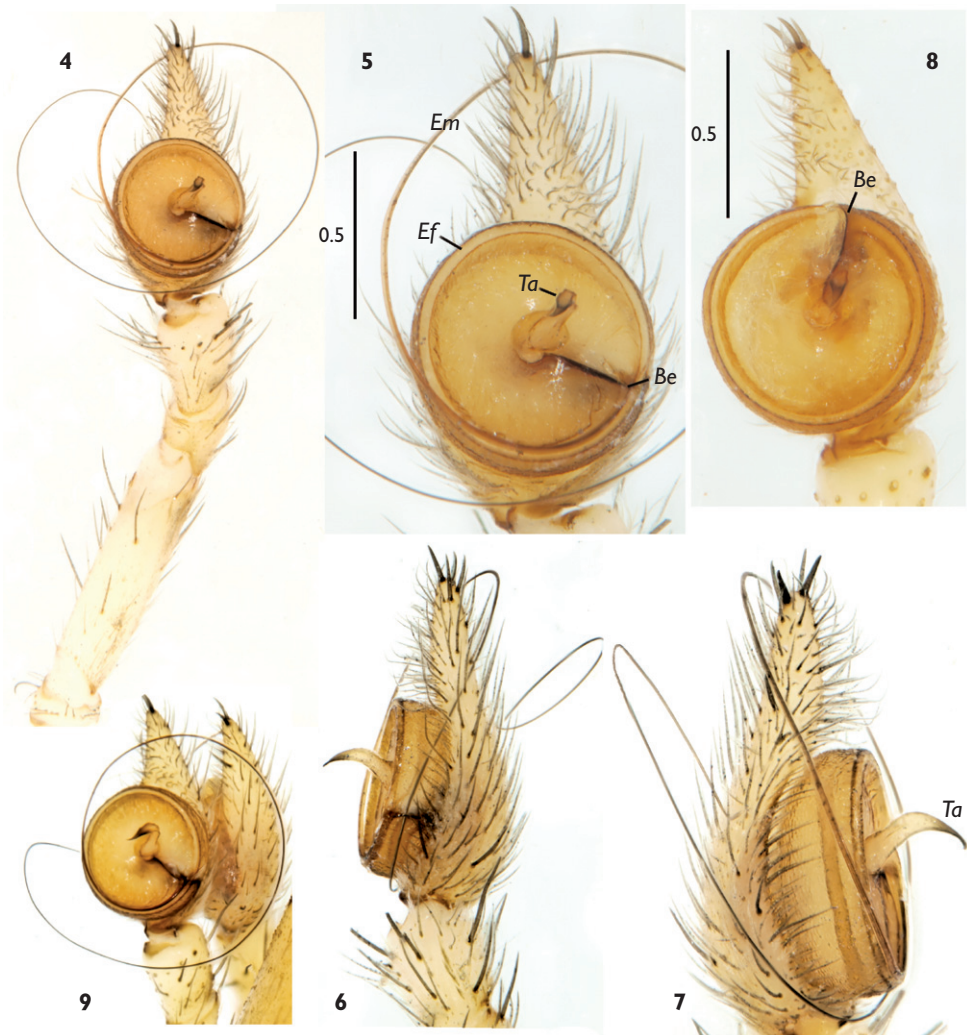
1♀ 1juv. (SMF), **Kahramanmaraş Province**, Elbistan District, Taşburun Village [38°10'03.68"N; 37°12'06.07"E], 17.06.2006 (E.A. Yağmur & M. Yalçın); 1♀ (ZMMU), **Gaziantep Province**, Nizip District, Türkyurdu Village [37°00'05.21"N; 37°38'44.54"E], 20.01.2008 (E.A. Yağmur & Gökhan Katırcı); 1♂ (ZMMU), **Şanlıurfa Province**, Birecik District, Birecik (Kelaynak) Valley [37°02'49.72"N; 37°59'28.88"E], 5.06.2004 (E.A. Yağmur & A. Akkaya); 1♂ (without embolus) (ZMMU), Şanlıurfa Province, Birecik District, Birecik (Kelaynak) Valley [37°02'49.72"N; 37°59'28.88"E], 5.06.2004 (E.A. Yağmur & A. Akkaya); 1♀ (ZMMU), **Şanlıurfa Province**, Harran Town [36°51'51.62"N; 39°01'54.54"E], 6.04.2006 (E.A. Yağmur & M.Z. Yıldız); 1♀ (ZMMU), **Kilis Province**, Musabeyli District, Kürtüncü Village [36°55'37.83"N; 36°58'41.30"E], 17.05.2006 (E.A. Yağmur & M. Özkörük); 3♂♂ 2♀♀ (MTAS), **Hatay Province**, Yayladağı District, Güveççi Village [(35°53'36.63"N, 36°09'38.10"E), 29.04.2007 (E.A. Yağmur & H.Koç).

Etymology. The specific name refers to the area of distribution.

Diagnosis. Males of the new species differ from all other congeners by the extremely long embolus with 3.5 coils, the position of embolic base, and the long tegular apophysis. Females of *H. turcica* sp. n. are similar to those of *H. macullulata*, *H. afghanica* and *H. sternbergi* in the shape of epigynal plate, but can be distinguished by its proportions (height/width ratio). The vulva of new species is similar to that in *H. afghanica* in having numerous coils, but the two species can be easily separated by

the shape of the epigynal plate (which has no transverse part in *H. afghanica*) and the smaller receptacula in the new species.

Description. *Male* (holotype). Total length 5.65. Carapace 2.13 long, 2.25 wide, femur I 4.8, femur I/carapace length ratio 2.25. Pattern distinct, carapace with dark marginal bands, four pairs of dots and thin median stripe, cephalic area dark. Abdomen with rhomboidal cardiac spot and four pairs of transverse bands. The upper transverse band originates from the cardiac spot. Sides of abdomen with dark band. Legs with wide annulations.



Figures 4–9. Male palp of *Hersiliola turcica* sp. n. **4–5, 8–9** ventral **6** retrolateral **7** prolateral. **4–7** holotype **8–9** from Birecik. **8** palp with broken embolus. Abbreviations: **Be** base of embolus **Ef** tegular furrow for embolus **Em** embolus **Ta** tegular apophysis.

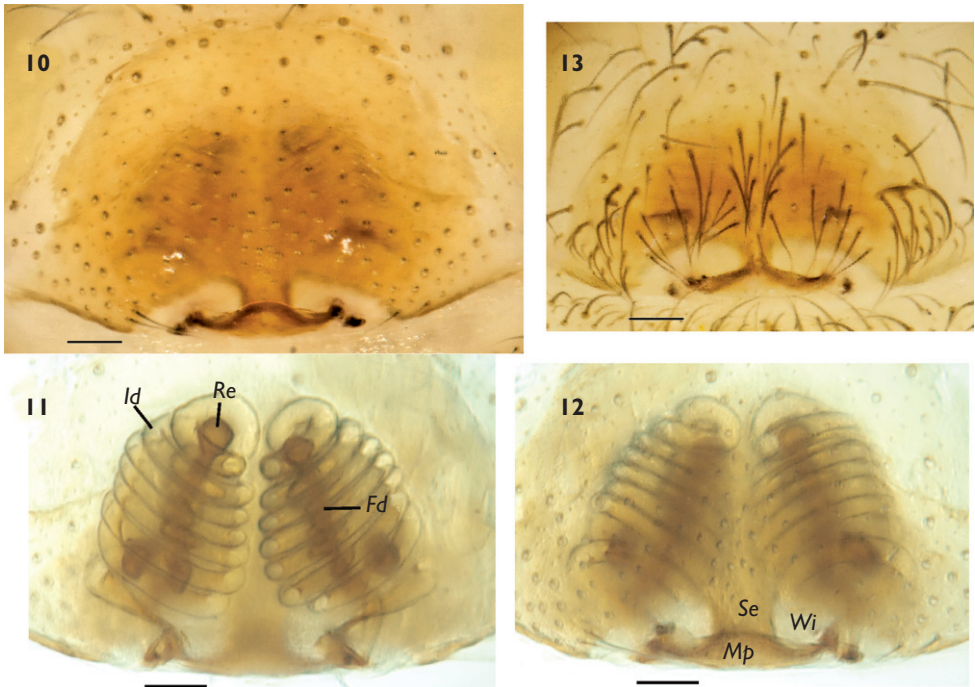
Palp as in Figs 4–9. Cymbium 1.43 long; tegulum round, its diameter 0.74; tegular apophysis (*Ta*) long, claw like, its length almost equal to tegular radius; base of embolus (*Be*) located at 4 o'clock, embolus (*Em*) very long and thin, with approximately 3.5 coils, in resting position located in furrow (*Ef*) running around edge of tegulum. Number of coils is unclear because in all specimens examined, embolus either broken or removed from the tegular furrow.

Female. Total length 5.75–6.75. Carapace 2.25–2.38 long, 2.18–2.43 wide, femur I 30.8–3.75, femur I/carapace length ratio 1.37–1.58. Coloration variable from light to dark. Dark specimens with indistinct abdominal pattern.

Epigyne as in Figs 10–13, size slightly variable; with a distinct median plate (*Mp*) and windows, proportions of median plate and atria slightly variable; septum (*Se*) as wide as height of epigynal plate, insemination duct (*Id*) very long, with seven coils around fertilization duct (*Fd*); receptacula (*Re*) small and round, diameter equal to that of insemination duct.

Note. One male from Birecik District has totally broken embolus (Fig. 8) and a rotated tegulum that caused translocation of the position of embolic base.

Distribution. The specimens were collected from several provinces in South-eastern Turkey (Gaziantep, Hatay, Kahramanmaraş, Kilis and Şanlıurfa) (Fig.14).



Figures 10–13. Epigyne of *Hersiliola turcica* sp. n. **10, 12–13** ventral **11** dorsal. **11, 12** after maceration in lactic acid. **10–12** from Kahramanmaraş Province **13** from Nizip District. Scale = 0.1 mm. Abbreviations: **Fd** fertilisation duct **Id** insemination duct **Mp** median plate **Re** receptaculum **Se** septum **Wi** window.



Figure 14. Distribution of *Hersiliola turcica* sp. n. Numbers correspond to localities on the map: 1 Kahramanmaraş Province, Nurhak District 2 Kahramanmaraş Province, Türkoğlu District 3 Kahramanmaraş Province 4 Gaziantep Province 5 Şanlıurfa Province, Birecik District 6 Şanlıurfa Province, Harran Town 7 Kilis Province 8 Hatay Province.

During the field trips, we observed that the new species was common between the west of the Fırat (=Euphrates) River and the Mediterranean region. However, the new species was also collected from the east side of the Fırat River. This suggests that the distribution range of the new species extends to eastern Turkey which has a Mediterranean climate.

Discussion

With the new species described here, *Hersiliola* now contains 10 valid species occurring in West and North Africa and the western half of the Palearctic region. It includes *H. afghanica* Roewer, 1960 (Afghanistan); *H. turcica* sp. n. (Turkey), *H. esyunini* Marusik & Fet, 2009 (Uzbekistan); *H. foordi* Marusik & Fet, 2009 (southern Iran), *H. lindbergi* Marusik & Fet, 2009 (Afghanistan); *H. macullulata* (Dufour, 1831) (from Spain to Yemen); *H. simoni* (O.P.-Cambridge, 1872) (from Morocco to Israel); *H. sternbergi* Marusik & Fet, 2009 (Turkmenistan, Uzbekistan); *H. versicolor* (Blackwall, 1865) (Cape Verde); and *H. xinjiangensis* (Liang & Wang, 1989) (Xinjiang, China). Although *H. macullulata* was reported from Turkey (Yağmur et al. 2008), this record refers to *H. turcica* sp. n., and correspondingly only one species of *Hersiliola* is documented from the country.

Key to the *Hersiliola* species

1. Male 2
- Female 7
2. Embolus very long, with about 3.5 coils, embolic base at about 4 o'clock, tegular apophysis sharply pointed *H. turcica* sp. n.
- Embolus shorter, embolic base at different position..... 3
3. Embolic base at about 12–12:30 o'clock 4
- Embolic base at different position 5
4. Embolus makes less than one coil, tegular apophysis blunt, tip of cymbium is about one radius of the tegulum *H. esyunini*
- Embolus makes almost one coil, tegular apophysis not blunt, tip of cymbium is about one diameter of the tegulum *H. sternbergi*
5. Tegular apophysis blunt *H. xinjiangensis*
- Tegular apophysis not blunt 6
6. Embolic base at about 11 o'clock *H. simoni*
- Embolic base at about 5:30 o'clock *H. macullulata*
7. Epigyne without distinct windows and/or without distinct median plate 8
- Epigyne with distinct windows and plate 9
8. Median plate absent, receptacula round, insemination duct makes at least 7 coils *H. lindbergi*
- Median plate present, receptacula oval, insemination duct makes only 1 coil...
..... *H. foordi*
9. Insemination duct with 5 or more coils..... 10
- Insemination duct with less than 5 coils..... 11
10. Insemination duct with 7 coils..... *H. turcica* sp. n.
- Insemination duct with 5–6 coils *H. macullulata*
11. Septum thinner than median plate height part of the median plate rounded
..... *H. esyunini*
- Septum wider than median plate height..... 12
12. Size > 5.5 mm..... *H. xinjiangensis*
- Size < 5.5 mm..... 13
13. Median plate triangle shaped *H. versicolor*
- Median plate transversal..... 14
14. Receptaculum droplet shaped 15
- Receptaculum with conical terminal outgrowth *H. simoni*
15. Receptaculum thinner than window *H. sternbergi*
- Receptaculum wider than window *H. afghanica*

Acknowledgements

We thank Mehmet Özkörük, Mehmet Yalçın, Gökhan Çalışır, the late Gökhan Katırcı, Abdulmuttalip Akkaya, Volkan Ülgezer, Ekber Ulupınar (Gaziantep; Turkey) and Dr. Sinan Anlaş (İzmir; Turkey) for help during field trips. The English of the final draft was kindly checked by A. Russell-Smith and J. Gerlach. This work was supported in part by the RFFI grants # 09-04-01365-a, 10-04-91225-CT_a and 10-04-01424-a.

References

- Baehr B, Baehr M (1987) The Australian Hersiliidae (Arachnida: Araneae): Taxonomy, phylogeny, zoogeography. *Invertebrate Taxonomy* 1: 351–437.
- Baehr M, Baehr B (1993) The Hersiliidae of the Oriental Region including New Guinea. Taxonomy, phylogeny, zoogeography (Arachnida, Araneae). *Spixiana Supplement* 19: 1–96.
- Baehr B, Baehr M (1998) New species and new records of Hersiliidae from Australia (Arachnida: Araneae: Hersiliidae). Sixth supplement to the revision of the Australian Hersiliidae. *The Records of the Western Australian Museum* 19: 13–28.
- Foord SH, Dippenaar-Schoeman AS (2005a) A revision of the Afrotropical species of *Hersiliola* Thorell and *Tama* Simon with the description of a new genus *Tyrotama* (Araneae: Hersiliidae). *African Entomology* 13: 255–279.
- Foord SH, Dippenaar-Schoeman AS (2005b) First records of the genus *Neotama* Baehr & Baehr (Araneae: Hersiliidae) from the Afrotropical region. *African Invertebrates* 46: 125–132.
- Foord SH, Dippenaar-Schoeman AS (2006) A revision of the Afrotropical species of *Hersilia* Audouin (Araneae: Hersiliidae). *Zootaxa* 1347: 1–92.
- Marusik YM, 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 NI (2010) The world spider catalog, Version 10.5. New York: American Museum of Natural History. <http://research.amnh.org/iz/spiders/catalog/HERSILIIDAE.html> [accessed 24.01.2010]
- Rheims CA, Brescovit AD (2004a) Revision and cladistic analysis of the spider family Hersiliidae (Arachnida, Araneae) with emphasis on Neotropical and Nearctic species. *Insect Systematics and Evolution* 35: 189–239.
- Rheims CA, Brescovit AD (2004b) Description of four new species of Hersiliidae (Arachnida, Araneae) from Kimabalu National Park, Sabah, Borneo, Malaysia. *Journal of Natural History* 38: 2851–2861.
- Yağmur EA, Kunt KB, Yalçın M (2008) The first record of family Hersiliidae from Turkey. *Serket* 11: 62–64.