

## **A new mygalomorph spider species from Turkey (Araneae: Mygalomorphae: Macrothelidae)**

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### **Abstract**

A new spider species of genus *Macrothele* Ausserer, 1871 is described, based on a single female specimen collected from Taurus Mountains, Turkey. The new species, *Macrothele drolshageni* sp. n. differs from representatives of the genus from Europe by both somatic traits and the shape of vulvae. The new species is described in detail and habitus and vulvae pictures are presented.

**Keywords:** Araneae, Macrothelidae, biodiversity, primitive spiders, Anatolia, Turkey.

### **Introduction**

*Macrothele* Ausserer, 1871 is a spider genus represented by 31 species with Palaearctic, Oriental, and west-Central African distribution (World Spider Catalog, 2019). There were two species known from the west Palaearctic region until this paper.

We have encountered representatives of this genus during our field studies aiming to document the spider fauna of Turkey. The first specimen was a sub-adult female collected from Antalya province, the Taurus mountain range, Turkey in June 2010 (Kunt

*et al.*, 2012). Continued sampling efforts later on led us to find an adult female, which was collected from the soil at the same locality approximately one year later.

It was easy to tell that the female was not *Macrothele calpeiana* (Walckenaer, 1805) by comparing the shape of vulvae. The second species from the Mediterranean was a Cretan one, *M. cretica* Kulczyński, 1903, but neither the female of *M. cretica* had known before, nor we had males in our possession to make comparisons. Therefore, the only way for a reasonable solution for the identification problem appeared to us as obtaining males from the Antalya population. Since 2011, we have been sparing substantial amount of effort in hope of collecting additional specimens by using alternative approaches such as pitfall trapping and continuous sampling at different seasons; but despite of these efforts, we could not find any male, nor any further female.

There have been two advancements undergone recently related to our specimen during its long waiting period in the museum. Firstly, genus *Macrothele* was transferred from Hexathelidae to family Macrothelidae by Hedin *et al.* (2018). Secondly, Chatzaki & Komnenov (2019) published a re-description for *M. cretica* and described the unknown female based on new specimens collected from the island of Crete. Especially this second paper was of the utmost importance to us, as we noticed that vulvae characteristics reported for *M. cretica* by these authors were not compatible with our specimen.

Therefore, the aim of this study is to describe a new species of *Macrothele* based on the single female collected from Taurus Mountains in Turkey.

## Material and Methods

A specimen was collected from Turkey by hand collection, preserved in 70% ethanol and deposited in the Zoology Museum of Eskişehir Technical University. Digital images of the copulatory organs and habitus characteristics were obtained using a Leica DFC295 digital camera attached to a Leica S8AP0 stereomicroscope. Five to 15 photographs were taken in different focal planes and combined using “CombineZP” image stacking software. All measurements are given in millimetres. Terminology for measurements and copulatory organs was adapted mostly from Snazel & Allison (1989) and Decae & Huber (2017).

Abbreviations used: ALE = anterior lateral eye, AME = anterior median eye, AR = anterior eye row, BL = total body length, Ca = caput length, CL = carapace length, CW = carapace width, d = dorsal, EL = length of eye group, Ext = external distance between receptacles, Int = internal distance between receptacles, LL = labium length, LW = labium width, ML = maxillae length, MW = maxillae width, p = prolateral, pd = prodorsal, PLE = posterior lateral eye, PLS = posterior lateral spinnerets, PME = posterior median eye, PMS = posterior median spinnerets, PR = posterior eye row, pv = proventral, r = retrolateral, rd = retrodorsal, rv = retroventral, SL = sternum length, SW = sternum width; v = ventral.

## Taxonomy

Family **Macrothelidae** Simon, 1892

Genus ***Macrothele*** Ausserer, 1871

***Macrothele drolshageni*** sp. n. (Figs. 1-2)

**Material examined:** Holotype 1♀, Turkey, Antalya Province, Alanya District, Taşatan Plateau (36°40'14.08"N, 32°10'16.18"E), 14 July 2011, 1170 m a.s.l., leg. R.S. Özkütük.

**Derivatio nominis:** The new species was named in honour of the Mygalomorphae spider specialist Bastian Drolshagen, who gave us valuable insights about the identity of the first specimen collected.



Fig. 1. *Macrothele drolshageni* sp. n., ♀ holotype. A. Prosoma, dorsal view. B. Eyes, dorsal view. C. Maxillae, labium, sternum, ventral view. D. Spinnerets, ventral view.

**Diagnosis:** *Macrothele drolshageni* sp. n. can be identified from the other two species of the genus known from west Palaearctic by the presence or absence of certain somatic characters and differences on the traits of vulva, which could be expressed as follows:

1. Lyra is lacking in *M. drolshageni* sp. n., which is present in *M. calpeiana*.
2. Maxillar cuspule count is less in *M. drolshageni* sp. n. than both *M. calpeiana* and *M. cretica*.
3. Tarsal claws are pectinate inferiorly with varying number of teeth between legs on the female holotype of *M. drolshageni* sp. n., whereas pectinisation was not reported for females of *M. calpeiana* or *M. cretica*.

4. Spermathecae cylindrical and sharply bent posteriorly in *M. drolshageni* sp. n., whereas long and coil shaped in *M. calpeiana* and simple and sinuous in *M. cretica*.

**Description of the female holotype. Measurements:** BL 14.50, CL 4.50, CW 3.20, Ca 2.50, AR 0.85, PR 0.80, EL 0.45, ALE 0.28, PLE 0.10, ALE-AME 0.03, ALE-PLE 0.025, PLE-PME touching, AME-AME 0.10, PME-PME 0.23, SL 2.00, SW 1.72, LL 0.88, LW 0.60, ML 1.44, MW 0.88, Int 0.32, Ext 0.48.

Carapace brown. AMEs procurved. PLEs recurved. AMEs on a black tubercle. Carapace with tiny, black, sparse hair. Fovea distinct, as a horizontally linear pit. Chelicerae dark brown, without rastellum; with tiny, dense hair anteriorly. Cheliceral hair longer and thicker anteriorly. Chelicera with 12 teeth promarginally on cheliceral groove, with 10 small, irregularly aligned denticles retromarginally.

Maxillae, labium, and sternum light brown. Maxillae rectangular, with 59+60 added cuspule. Maxilla anteriolaterally sclerotized, with tiny serrulae. Labium tetragonal, with 30 cuspules. Labial furrow distinct. Sternum with 9 edges, with three distinct sternal sigillae at left and right margins. Sternal sigillae circular, enlarged in size front to back.

Maxillae, labium, sternum, and coxae with blackish setae. Palps and legs brown, covered with black hair at variable lengths. Palpal tarsus with single claw with 9 denticles; also with 10 trichobothria on a single row dorsally. Palpal tibia with two rows of trichobothria at prodorsal and retrodorsal sides with 6 trichobothria on each row.

Table 1. Palp and legs measurements of *Macrothele drolshageni* sp. n. (Leg I absent).

Holotype ♀	Palp	Leg I	Leg II	Leg III	Leg IV
Femur	2.10	-	2.60	2.35	3.00
Patella	1.10	-	1.50	1.40	1.70
Tibia	1.50	-	1.70	1.50	2.50
Metatarsus	-	-	1.70	1.50	3.00
Tarsus	1.60	-	1.10	1.10	1.50
Total	<b>6.30</b>	-	<b>8.60</b>	<b>7.85</b>	<b>11.70</b>

Leg tarsi with 9-12 trichobothria on a single row, metatarsi with 10 trichobothria on each of two rows of trichobothria. Superior tarsal claws in pairs. 2<sup>nd</sup> and 3<sup>rd</sup> tarsal claws with sigmoidally aligned 10, 4<sup>th</sup> tarsal claws with 9 teeth. Inferior claws on 2<sup>nd</sup> and 3<sup>rd</sup> legs with 3, 4<sup>th</sup> leg with 4 teeth. See Table (1) for palp and leg measurements. See below for palp and leg spination.

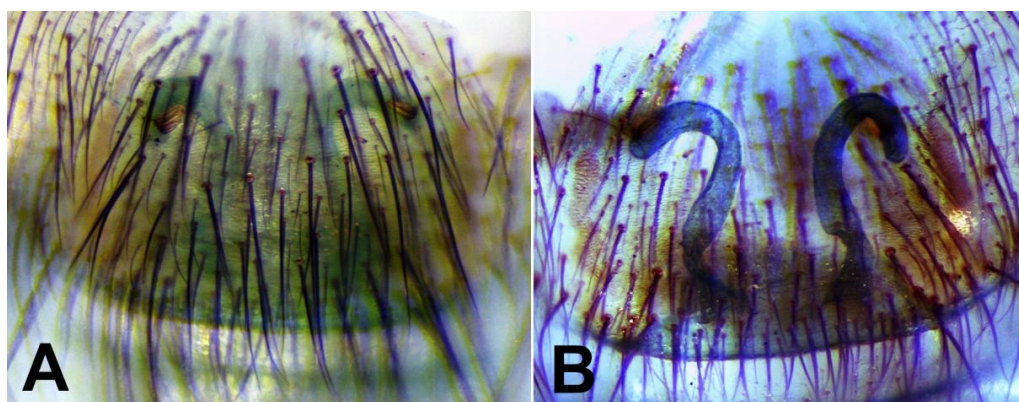


Fig. 2. *Macrothele drolshageni* sp. n., vulvae. A. ventral view. B. dorsal view.



**Spination. Palp:** femur 0; patella 0; tibia p1–1; tarsus pv1–1–1, rv1–1–1–1, v1. **Leg II:** femur pd1; patella pd1; tibia pd1, pv1, rv1, v1–1; metatarsus pd1, v9; tarsus pv1–1–1, rv1–1–1. **Leg III:** femur 0; patella pd1, rd1–1; tibia p1–1, rd1–1, d1, v2–3; metatarsus pd1–1–1, r1–1–1, d1, v2–1–2; tarsus pv1–1–1, r1, rv1–1–1. **Leg IV:** femur 0; patella p1, rd1; tibia p1–1, r1–1, rv1, v2–2; metatarsus pd1–1–1, r1–1, v9; tarsus pv4, r2, rd1.

Abdomen greyish, covered with blackish tiny hair. Spinnerets lightly coloured compared to abdomen. PMS club-shaped and single segmented. PLS digitiform, three-segmented. PLS diameter: 0.28, basal: 1.68, medial: 0.83, apical: 1.05. Abdomen with slit sensillae ventrally at the anterior of epigastric furrow.

Spermatecae basally wide and divergently oriented, but approaching each other after a sudden bend towards the medial and sharply oriented to posterior at distal end.

**Male.** Unknown

**Distribution.** Known only from type locality.

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***Macrothele drolshageni* Özkütük, Elverici, Yağmur & Kunt, 2019**  
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