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A NEW SPIDER SPECIES OF THE GENUS *HARPACTEA* (ARANEAE, DYSDERIDAE) FROM TÜRKİYE

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A New Spider Species of the Genus *Harpactea* (Araneae, Dysderidae) from Türkiye. Kunt, K. B., Özkütük, R. S., Yağmur, E. A. — *Harpactea ulgen* sp. n. is described based on both sexes from Türkiye. The new species belongs to the rubicunda species group as defined by Deeleman-Reinhold in 1993 and is closely related to the Turkish endemic *H. ballarini* Kunt, Özkütük & Elverici, 2013.

Key words: Anatolia, endemic, fauna, harpacteinae, Mediterranean.

Introduction

During our field and laboratory studies to identify the spider species belonging to the family Dysderidae of Turkey, we found a new tiny harpactein spider collected from the region, which is also the distribution area of endemic dysderids such as *Kut troglophilus* (Brignoli, 1978), *Hygrocrates lycaoniae* (Brignoli, 1978), *Harpactea sanctaeinsulae* Brignoli, 1978 etc. described in the past.

This species is also distributed in Dedegöl Mountain, neighbouring the Geyik Mountains, the type locality of the recently published *Harpactea umay*. We thought it appropriate to describe the species to draw attention to the species richness and diversity of the region.

This paper aims to describe a new species of *Harpactea* for science, a significant discovery that will expand our understanding of the spider biodiversity of Türkiye. The description will be based on male and female individuals, and photographs of the copulatory organs will accompany it.

Material and Methods

The specimens from the Isparta province of Türkiye were collected using pitfall traps and preserved in 96% alcohol. Descriptions of the samples were made from the alcohol-preserved specimens caught in the pitfall traps. Digital images of the pedipalp were captured using a Leica DFC295 digital camera attached to a Leica S8AP0 stereomicroscope. 5 to 15 photographs were taken in different focal planes and then combined. Additionally, SEM micrographs were produced from dried organs coated with gold using a Zeiss Ultra Plus SEM device at Eskişehir Technical University in Türkiye.

All measurements are in mm. Although there was more than one sample in each sex, complete measurements could only be made on one sample. This is because the specimens were kept in the trap preservation solution for a long time and started to decompose due to environmental factors.

Terminology for body measurements is based on Chatzaki & Arnedo (2006), while the terminology for copulatory organs is adapted from Platania et al. (2020).

The following abbreviations are used in the text and figures:

Carapace and abdomen: AL, abdominal length; CL, carapace length; Clh, clypeus height; CWmax, maximum carapace width; CWmin, minimum carapace width; TL, Total length. Chelicera: ChF, length of cheliceral fang; ChG, length of cheliceral groove; ChL, total length of chelicera (lateral external view). Eyes: AE, anterior eyes; iAE, interdistance of anterior eyes; PLE, posterior lateral eyes; PME, posterior median eyes; AEd, diameter of anterior eyes; PLEd, diameter of posterior lateral eyes; PMEd, diameter of posterior median eyes. Legs: Ta, tarsus; Me, metatarsus; Ti, tibia; Pa, patella; Fe, femur; Cx, coxa; d, dorsal; pl, prolateral; rl, retrolateral; v, ventral. Bulb: E, embolus; T, tegulum. Vulva: AA, Anterior margin of the anterior arch; AC, anterior arc; S, spermatheca; SK, spermathecal keel; TB, transversal bar. Depository: AZM, Alaşehir Zoological Museum, Manisa, Türkiye.

Results

Family **Dysderidae** C. L. Koch, 1837
Subfamily **Harpacteinae** Cooke, 1965
Genus ***Harpactea Bristowe,*** 1939
Bristowe, 1939: 5. Type species *H. hombergi* (Scopoli, 1763)

Harpactea ulgen sp. n. (Figs 1–9)

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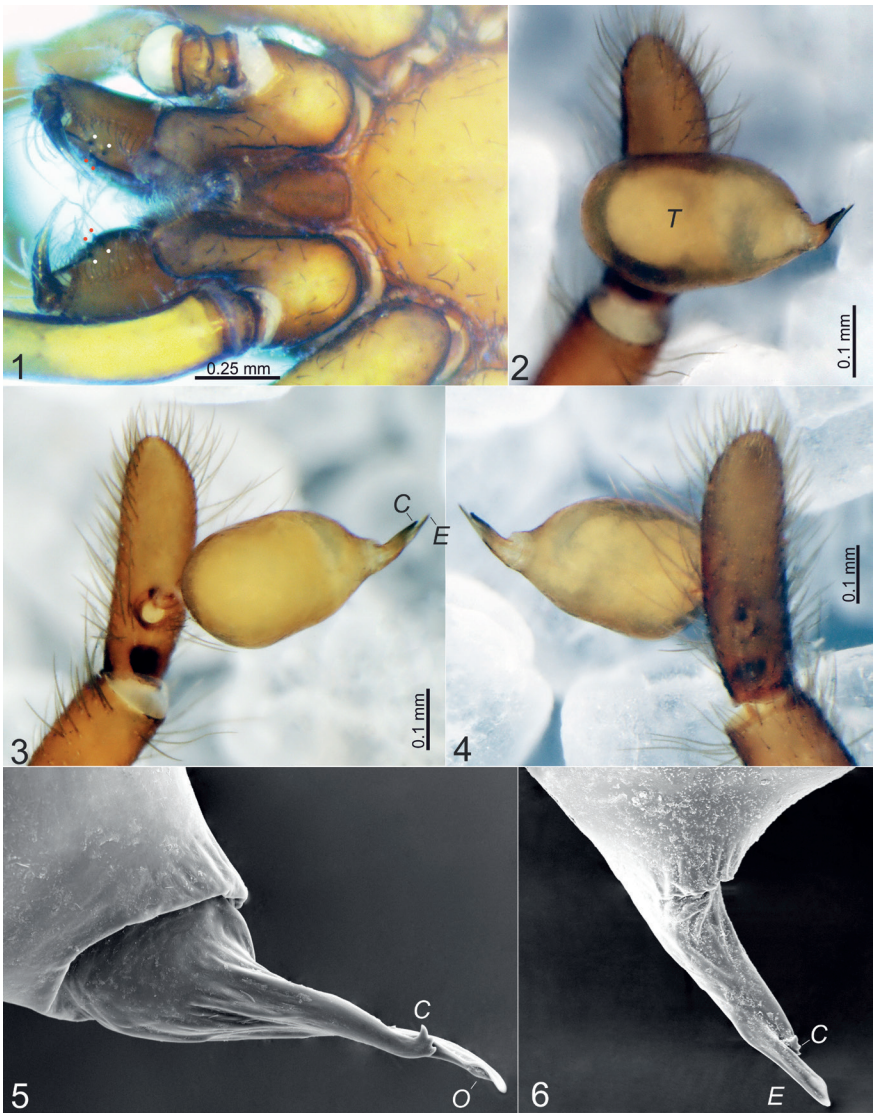
Material examined. Holotype ♂: Türkiye, Isparta, Aksu, Çayır Plateau, 37°49'04" N 31°07'12" E, a. s. l. c. 1302 m, pitfall traps, 14.10.2017 ↔ 06.07.2018 (E. A. Yağmur & G. Aydın) (AZM) — Paratypes 5 ♂, 2 ♀, same data as holotype.



Figs 1–6. *Harpactea ulgen* sp. n.: 1 — chelicerae, ventral view (red dots indicate promarginal; white dots indicate retromarginal teeth); 2 — male palp, right, prolateral view; 3 — ditto, nearly prolateral view; 4 — ditto, retrolateral view; 5 — embolar division, prolateral view; 6 — ditto, retrolateral view

Etymology. Ülgen is the god of goodness in Turkic and Altai mythology.

Diagnosis. *H. ulgen* sp. n. resembles another endemic of Türkiye, *H. ballarini* Kunt, Özkütük & Elverici, 2013, regarding the general structure of the male and female copulatory organs. However, the two species are clearly distinguished for the following reasons. In *H. ballarini*, the tegulum is more spherical than in *H. ulgen* sp. n. (Kunt et al., 2013: 239, Figs 1b–g), whereas that of *H. ulgen* sp. n. is elliptical to ovoid (Figs 2–4). In addition, in *H. ballarini*, the embolus and conductor are longer than in *H. ulgen* sp. n., and they are also distinctly angularly separated from each other (Kunt et al., 2013: 239, Fig. 1g). The vulva of the species is similar in females because the anterior half of the spermatheca is ribbon-shaped, and the tip of the

spermathecal keel is straight (Figs 8, 9). However, in *H. ballarini*, the central part of the spermatheca is broader and more oval than in *H. ulgen* sp. n. (Kunt et al., 2013: 239, figs 2a–e).

Measurements. [Holotype ♂ — Paratype ♀]: TL 3.99–4.85; AL 2.10–2.91; CL 1.89–1.94; CWmax 1.51–1.57; CWmin 0.67–0.77; Clh 0.06–0.05; AEd 0.11–0.11; iAE 0.06–0.06; PLEd 0.09–0.11; PMEd 0.07–0.08; ChF 0.36–0.37; ChG 0.18–0.18; ChL 0.86–0.88.

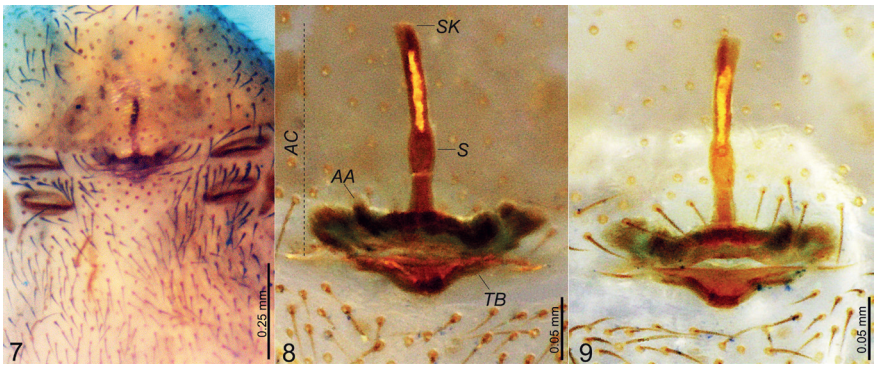
Description of holotype male. Small-sized harpactein spider. Carapace reddish brown with smooth surface. Eyes region darker than thoracic region. Fovea distinct, short, blackish. Six eyes arranged annulary and separated from each other. AE > PLE > PME. There is a distance of 0.02 between AA and PLE, 0.03 between PLE and PME, and 0.01 between PME and PME. Longest distance 0.06 between AA.

Table 1. **Leg spination of *Harpactea ulgen* sp. n. (Holotype ♂ — Paratype ♀)**

Legs	I	II	III	IV
			♂	
Cx	0	0	1 pl	1 pl
Fe	2 pl	1, 1 pl	1 pd 1 d 2 rd	1 pd 1 d
Pa	0	0	1 d 1rl	0
Ti	0	0	2 pd 1 d 1, 1, 2 v 3 rd	3pd 2 d 2, 1, 2 v 3 rd
Me	0	0	3 rd 2 v 2 rd	2 rd 1, 1, 2 v 3 rd
			♀	
Cx	0	0	2 pl	1 pl
Fe	2 pl	1, 1 pl	1 pd 1 d 2 rd	1 pd 1 d
Pa	0	0	1 d 2 rl	0
Ti	0	0	2 pd 1 d 1, 1, 2 v 3 rd	3 pd 2 d 1, 1, 2 v 3 rd
Me	0	0	3 rd 2 v 3 rd	3 rd 1, 1, 2 v 3 rd

Table 2. **Leg measurements of *Harpactea ulgen* sp. n. (Holotype ♂ — Paratype ♀)**

Legs	I	II	III	IV
			♂	
Fe	1.54	1.33	1.13	1.73
Pa	0.91	0.80	0.65	0.90
Ti	1.21	1.14	0.89	1.33
Me	0.87	1.00	0.96	1.42
Ta	0.36	0.36	0.35	0.36
Total	4.89	4.63	3.98	5.74
			♀	
Fe	1.87	1.59	1.37	2.08
Pa	1.11	0.96	0.74	1.09
Ti	1.48	1.32	1.08	1.54
Me	1.00	1.21	1.16	1.63
Ta	0.40	0.39	0.38	0.41
Total	5.86	5.47	4.73	6.75



Figs 7–9. *Harpactea ulgen* sp. n.: 7 — gastral area, ventral view; 8 — vulva, dorsal view; 9 — ditto, ventral view

Sternum yellowish light brown; length 1.27, width 1.08. Centre glabrous and shiny, with dense blackish setae on margins. Labium and gnathocoxae brown. Labium length 0.41, width 0.22.

Chelicerae brown. Cheliceral groove with four teeth. Of promarginal teeth, one at base of cheliceral groove larger than one in centre. Middle tooth approximately same size as retromarginal teeth. Retromarginal teeth same size and distance between them approximately twice distance between promarginal teeth (fig. 1). Abdomen grayish. Legs yellowish brown. Spines on 1st and 2nd femora and 3rd and 4th coxae prolaterally. Leg formula: VI, I, II, III. Detailed leg spination and measurements are given in tables 1 and 2, respectively.

Tarsi with three claws. Paired claws toothed. 1st and 2nd paired claws with 9 teeth, 3rd and 4th with 6 teeth. 1st and 2nd tarsi and metatarsi without scopulae; 3rd and 4th tarsi and metatarsi with weak scopulae.

Palp (figs 2–6). Palpal tarsus cylindrical, length 0.52 (Fig. 2). Palpal tibia shorter than tarsus, length 0.30. Ratio Ti/Ta 0.57. Tegulum (T) yellowish brown and same colour as palpal segments, swollen and elliptical; length 0.52, width 0.32 (Figs 2–4). Conductor (C) shorter and strongly sclerotised than embolus. Embolus (E) length 0.17, conductor 0.07. Both originated from a joint peduncle orientated at 5 o'clock from the axis of the tegulum (figs 2–4). Tip of conductor trident-shaped and slightly directed backwards, while that of embolus gradually narrows, flattens, and inclines towards top of sperm outlet (o) (Fig. 5).

Description of paratype female. There is no significant difference between males and females except for differences in measurements between body parts. AE > PLE > PME. There is a distance of 0.03 between AA and PLE, 0.03 between PLE and PME, and 0.02 between PME and PME. Longest distance 0.06 between AA. Sternum length 1.39, width 1.05. Labium length 0.48, width 0.29. Palpal tarsus length 0.55. Palpal tibia shorter than tarsus, length 0.32. Ratio Ti/Ta 0.58.

Vulva (Figs 7–9). Width of anterior arc (AC) approximately same as length (Fig. 7). Spermathecae (S) longer than anterior margin of the anterior arch (Fig. 8). Spermatheca ribbon-shaped and slightly swollen in the centre, but this swelling does not disturb the overall appearance of the ribbon (Figs 7, 8). There is a marked thickening along the midline of the anterior half of spermatheca. Anterior margin of the

anterior arch (AA) strongly sclerotised on all surfaces. It's almost the same size as the transversal bar (TB). Centre slightly convex, and margins orientated at 11 o'clock (Figs 7, 8). Centre of transversal bar widened and prolapsed posteriorly, with margins straight. Between anterior margin of the anterior arch and transversal bar, there is a sclerotised plate wider than both (Figs 7, 8).

Remarks. *H. ulgen* sp. n. belongs to the *rubicunda* species group as defined by Deeleman-Reinhold (1993) because the embolus and conductor are spiniform and complicated, and patellae 3 and coxae 4 with spines. The only aspect of the new species that contradicts this definition is the absence of a membranous posterior diverticulum in the female copulatory organ. However, this was probably because we damaged the sensitive posterior diverticulum during dissection.

The new species is currently known only from the type locality. As the type locality is relatively far from the authors' residence, the pitfall traps remained in the field for an extended period, and it was not possible to check the traps during this period. Therefore, we have no data on the ecology and natural history of the new species.

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