

Orijinal araştırma (Original article)

A new species of *Arrenurus* Dugès 1834 (Acari: Hydrachnellae) from Turkey¹

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Summary

In a taxonomic and faunistic study on water mites of Antalya carried out between 2008 and 2010, a new species of *Arrenurus* was found. In the present paper, a new species *Arrenurus antalyensis* sp.n. is described.

Keywords: Water mite, *Arrenurus*, Acari, new species, Turkey

Ahahtar sözcükler: Su kenesi, *Arrenurus*, Acari, yeni tür, Türkiye

Introduction

Although some are distributed in ground waters, springs, streams, rivers, temporary ponds and swamps, most species of *Arrenurus* Duges, 1834 prefer stagnant waters and lakes in all continent except Antarctica. In general, they swim freely and can be found among algae, detritus and sediment. Larvae are parasitic on adults of aquatic insects, extended distribution of many *Arrenurus* species can be explained with their parasitism on odonates. Adults are free-living. They feed on small crustaceans. They are considered important for biological control (Cook, 1974).

The genus *Arrenurus* is the most specious genus of all water mites. To date, more than 800 species in the world are known (Smit, 2010).

Consequently, this study contributes to the knowledge on the Turkish fauna as well as presenting useful data on faunal distribution.

Turkey is recognizable with its water mite fauna, which increased considerably recently with the detailed taxonomical studies. One of the genera

¹ The study was supported by Süleyman Demirel University Scientific Research Projects Coordination Unit (Project no: 1656-D-08).

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Alınış (Received): 25.03.2011

Kabul edilmiş (Accepted): 16.05.2011

among most focused on is *Arrenurus* Dugès 1834, known so far by 49 species from Turkey (Erman et al., 2010).

Material and Methods

Water mites were collected, preserved and prepared according to the methods described in the literature (Viets, 1936; Cook, 1974; Gerecke, 2003). All samples were examined under a trinocular microscope (Olympus CX41) with a drawing attachment. The abbreviations used in the text are CPG—Private collection of Yunus Ömer Boyacı in Süleyman Demirel University, Eğirdir Fisheries Faculty (Isparta, Turkey). Terminology about body parts: L-length, P-palp segment (numbered 1 to 5), W-width. All measurements are given in µm.

Results

Family: Arrenuridae Thor, 1900

Genus: *Arrenurus* Duges, 1834

***Arrenurus (Arrenurus) antalyensis* sp.n.**

Differential diagnosis. Posterior to the chitinous collar in the caudal area, two humps with a hair on each. Between these and the chitin collar, body extension present. Chitin collar trapezoid shaped, fairly concave posterior margin. Petiole heart shaped, enlarging after the median region, with spatula shaped process exceeding beyond distal end. Collar hair exceeding petiole, unfurcated hairs on caudal humps.

Description. Holotype-Male. Body slightly enlarged laterally and L/W 987/697. Distance between the eyes 327. Palp L: 33-93-78-115-57=376, height: 42-78-81-75-15'dir. Palp segments length/height ratios: P-1 0.78, P-2 1.19, P-3 0.96, P-4 1.53, P-5 3.80. Relative ratio of palp segments to total length: P-1 8.77, P-2 24.7, P-3 20.7, P-4 30.5, P-5 15.1 (Fig. 1D). Epimer L 102-108-132-198 (Fig. 1B). Distance between dorsal furrow to anterior margin 216. Length of the plate bordered by furrow 432. On the dorsal plate medially two bumps, projected towards lateral and with a hair on the tip of each. Leg segments L: leg I 61-70-115-146-139-203=734, leg II 62-85-32-172-175-216=742, leg III 77-112-132-246-115-147=829, leg IV 136-185-196-208-112-141=978. Caudal lobes short and without any protrusion. Posterior to the chitinous collar in the caudal area, two humps with a hair on each. Between these and the chitin collar, body extension is present (Fig. 1A). Chitin collar medium-sized and trapezoid in shape. Collar hair exceeding petiole. Petiole L/W: 129/ 92. Petiole heart shaped, enlarging after the median region, with spatula shaped process exceeding beyond distal end (Fig. 1C). Distance of excretory pore to genital field 145, diameter 29.

Paratype-Male. All features are identical to that of the male holotype. L/W 912/623. Length of palp segments: 27-85-72-108-56=348, height of palp segments: 36-76-75-69-13. Palp segments length/height ratios: P-1 0.75, P-2 1.11, P-3 0.96, P-4 1.44, P-5 4.30. Epimer L 96-110-128-205. Distance between dorsal furrow to anterior margin 220. Leg segments L: leg I 70-76-117-153-145-203=764, leg II 68-86-42-176-179-224=775, leg III 73-117-130-248-121-152=841, leg IV 143-191-194-209-127-152=1016. Petiole L/W: 125/ 89. Distance of excretory pore to genital field 139, diameter 27.

Material examined. Holotype: adult male, two meters deep marshland with dense macrophytic vegetation, Yaman Saz, Antalya, 36° 52,529' N, 30° 5,966' E, 18.07.2009, leg. Pınar Gülle (CPG); Paratype: 1 adult male, same data as holotype (CPG).

Taxonomic remarks. The new species shares the long caudal region character with *Arrenurus* (s.str.) *afyonensis* Erman & Özkan, 1997, *A.* (s.str.) *bicuspidator* Berlese, 1885, *A.* (s.str.) *cuspidator* Piersig, 1896, *A.* (s.str.) *maculator* (Müller, 1776), *A.* (s.str.) *affinis* Koenike, 1887, *A.* (s.str.) *batillifer* Koenike, 1896 and *A.* (s.str.) *tricuspidator* (Müller, 1776); the closely arranged dorsal bumps with *A. afyonensis*, *A.* (s.str.) *bicuspidator*, *A.* (s.str.) *maculator* and *A.* (s.str.) *cuspidifer* (Piersig, 1896). But, unlike the latter, the dorsal bumps in *A.* (s. str.) *antalyensis* sp.n. are fused. *A. maculator* further resembles in petiole shape, differing in having a much shorter spatula shaped process. Also it differs from *A.* (s. str.) *antalyensis* sp.n. having a trapezoid shaped chitin collar with fairly concave posterior margin, by a more wide-angled trapezoid chitin collar with nearly straight margin. The chitin collar of *A. cuspidator* is similar in shape with that of *A.* (s. str.) *antalyensis* sp.n., but its edges are sharper in comparison (Besseling, 1964; Szalay, 1964; Boyacı et al., 2010). *A. afyonensis*, recently described from a small swamp in Afyonkarahisar province, is the closest species due to presence of a space between caudal region and petiole, along with long caudal region, basally extended and mamillate caudal humps leaned towards anterior and the palp morphology. The new species is distinguished from it by unfurcated hairs on caudal humps, presence of a trapezoid chitin collar, petiole shape and by narrower genital plate (Erman & Özkan, 1997).

In the same locality, *Limnochares* (s. str.) *aquatica* (Linne, 1758), *Georgella helvetica* (Haller, 1882), *Atractides distans* (K. Viets, 1914), *Oxus longisetus* (Berlese, 1885), *Tiphys* (s.str.) *torris* (Müller, 1776), *Arrenurus* (s. str.) *claviger* Koenike, 1882 were found as accompanying species.

Etymology. Named after the province of the type locality.

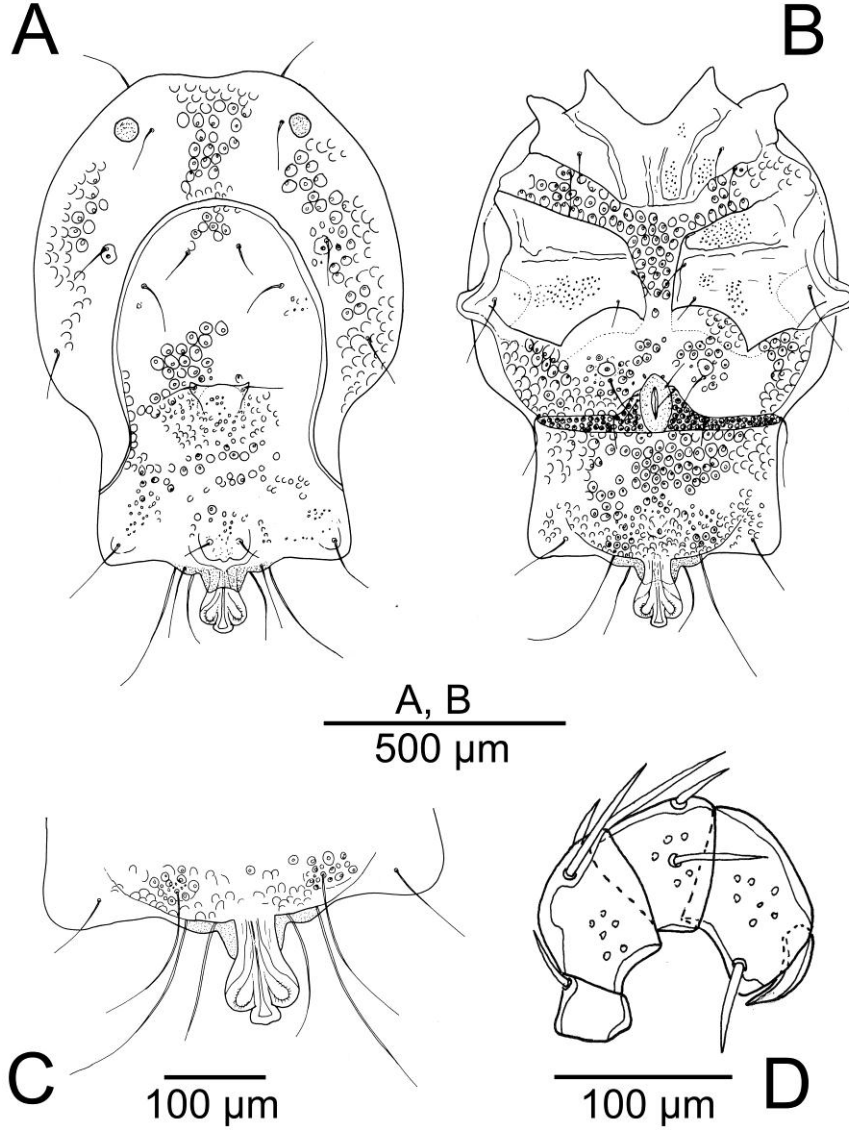


Figure 1. *Arrenurus antalyensis* sp. n. male: A) idiosoma dorsal, B) idiosoma ventral, C) cauda, D) palp (Original).

Özet

Türkiye'den yeni bir *Arrenurus* Dugès 1834 (Acari: Hydrachnellae) türü

2008-2010 yılları arasında Antalya'nın su keneleri üzerine yürütülen taksonomik ve faunistik bir çalışma esnasında yeni bir *Arrenurus* türüne rastlanmıştır. Bu çalışmada yeni bir tür, *Arrenurus antalyensis* sp. n. tanımlanmıştır.

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