

**WATER MITES OF THE GENUS *Unionicola* HALDEMAN 1842
(ACARI, HYDRACHNIDIA, UNIONICOLIDAE)
AND A NEW SPECIES FOR TURKEY**

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Abstract. The paper contains the list of species of the genus *Unionicola* HALDEMAN 1842 known in Turkey. A new species, *Unionicola (Unionicola) gracilipalpis* (VIETS 1908), for the fauna of Turkey and 6 new localities from 4 provinces for two previously recorded species, *Unionicola (Unionicola) crassipes* (MÜLLER 1776) and *Unionicola (Unionicola) minor* (SOAR 1900) are given. In total, up to the present, 5 species of the genus *Unionicola* are known for Turkey.

Keywords: water mites, Acari, *Unionicola*, a new species for Turkey.

Rezumat. Acarieni de apă din genul *Unionicola* HALDEMAN 1842 (Acari, Hydrachnidia, Unionicolidae) și o specie nouă pentru fauna Turciei. Este prezentată lista speciilor ce aparțin genului *Unionicola* HALDEMAN 1842 cunoscute în Turcia. S-a înregistrat o nouă specie pentru fauna de acarieni de apă din Turcia, *Unionicola (Unionicola) gracilipalpis* (VIETS 1908), și șase locații noi, în patru provincii diferite, pentru alte două specii identificate anterior. În total, până în prezent, în Turcia, sunt cunoscute cinci specii ce aparțin genului *Unionicola*.

Cuvinte cheie: acarieni de apă, Acari, *Unionicola*, specie nouă pentru Turcia.

INTRODUCTION

The subfamily Unionicolinae OUDEMANS 1909 includes a single genus, *Unionicola* HALDEMAN 1842. Within the cosmopolitan genus *Unionicola*, distributed in fresh water habitats in all continents except Antarctica, 56 subgenera and more than 200 species are present (SMIT, 2008). Diverse relationships with other freshwater organisms are shown. Although many free living species are known, more than half of all species are parasitic on freshwater mollusks (especially inside mantle cavities of Unionidae species) (VIDRINE 1992; EDWARDS & VIDRINE, 2006).

There are 4 species of the genus *Unionicola* recorded so far in Turkey. These are: *U. (Majumderatax) hankoi* (SZALAY 1927), *U. (Pentatax) bonzi* (CLAPAREDE 1869), *U. (Unionicola) crassipes* (MÜLLER 1776) and *U. (Unionicola) minor* (SOAR, 1900) (ÖZKAN, 1982; ÖZKAN et al., 1996; ESEN et al., 2010).

With the new record of the species *U. gracilipalpis* Çapalı Lake from Afyonkarahisar Province, the species of the genus now reaches 5 in the fauna of Turkey. Description, zoogeographical distributions, drawings and measurements of certain organs of *U. gracilipalpis* and new localities to previously recorded species are given in the present paper.

MATERIALS AND METHODS

Water mites were collected by hand netting and sorted on the spot from the living material, preserved in Koenike's fluid (50% glycerine, 20% acetic acid, 30% aqua dest.). The composition of the material is given as males/females. All measurements are given in μm . The following abbreviations are used: L = length, H = height, W = width, Cx-I = first coxae, P-1 = palp segment 1.

RESULTS

Family Unionicolidae OUDEMANS 1909

Genus *Unionicola* HALDEMAN 1842

1. *Unionicola (Majumderatax) hankoi* (SZALAY 1927)

Records in Turkey: Bingöl province (ESEN et al., 2010).

Habitat: Pools and ponds in running waters.

Distribution: Hungary, Italy, Iberian Peninsula, Poland, Iran, Turkey (VIETS, 1956, ESEN et al., 2010).

2. *Unionicola (Pentatax) bonzi* (CLAPARÈDE 1909)

Records in Turkey: Erzurum and Muş provinces (ÖZKAN, 1982).

Habitat: Parasitic on freshwater mussels.

Distribution: Europe, Japan and Turkey (VIETS, 1956; ÖZKAN, 1982).

3. *Unionicola (Unionicola) crassipes* (MÜLLER 1776)

New records: Afyonkarahisar Province: 38°04' N, 30°16' E, 21.04.2008, 10/3; 23.05.2008, 9/13; 26.06.2008, 8/9; 22.07.2008, 8/3; 23.08.2008, 5/0; 30.09.2008, 0/7; 28.10.2009, 2/0, 1–2 m deep lake area covered by aquatic plants,

Çapalı Lake. **Isparta Province:** 37°45' N, 31°02' E, 04.06.2008, 3/3, Bağlılı reservoir channel, Bağlılı, Eğirdir. **Burdur Province:** 37°04' N, 29°30' E, 12.06.2008, 7/5, Evciler pond, Gölhisar. **Konya Province:** 38°23' N, 31°53' E, 14.06.2008, 0/2, Ilgın lake, Ilgın, collected by Y. Ö. BOYACI.

Records in Turkey: Kayseri Province (ÖZKAN et al., 1995, 1996); Afyonkarahisar Province (ÖZKAN et al., 2003; BOYACI & ÖZKAN, 2003, 2004; AŞCI et al., 2006–2007).

Habitat: All types of stagnant waters, mainly larger water bodies like lakes and channels.

Distribution: The species is among the most widespread and tolerant species in the Holarctic Region. Especially common in Europe, also known in Turkey, Palestine, Iran, Turkestan, Yakutia, Mongolia, India and China in Asia, Kapland in Africa, USA (including Alaska), Canada and Guatemala in America (VIETS, 1956; ÖZKAN et al., 1996).

4. *Unionicola (Unionicola) minor* (SOAR 1900)

New records: **Afyonkarahisar Province:** 38°04' N, 30°16' E, 21.04.2008, 7/3; 23.05.2008, 6/10; 26.06.2008, 5/8; 22.07.2008, 8/3; 23.08.2008, 2/0; 30.09.2008, 0/4, 28.10.2009, 2/0, 1–2 m deep lake area covered by aquatic plants, Çapalı lake. **Isparta Province:** 37°45' N, 31°02' E, 04.06.2008, 5/3, Eğirdir. **Burdur Province:** 37°25' N, 29°49' E, 02.02.2008, 2/3, Stream feeding dam lake, collected by Y. Ö. BOYACI.

Records in Turkey: Adana Province (SMIT, 1995); Kayseri Province (ÖZKAN et al., 1995, 1996); Afyonkarahisar Province (ÖZKAN et al., 2003; BOYACI & ÖZKAN 2003, 2004; AŞCI et al., 2006–2007).

Habitat: All types of stagnant waters.

Distribution: Common in Europe. Also known from Japan and Turkey in Asia (VIETS, 1956; ÖZKAN et al., 1996).

5. *Unionicola (Unionicola) gracilipalpis* (VIETS 1908)

Male. Idiosoma L/W 856/64. Capitulum short nosed, L 120. Chelicerae 206, claw 62. P–2 slender, ventrally concave and almost equal in size with P–4. Ventral of P–4 with typical projections, at distal end also a narrow and truncated third projection without seta. P–5 longer than ½ of P–4. Forward projected second group coxae forming pointed tips at anteriointerior edges, posterior margin smooth, anterior margin concave. Lengths of palp segments: 15–143–70–160–128=516, heights; 38–51–40–30–28 (Fig. 1a). Cx– I–IV, 257, 232, 341, 254. L/W of genital field 205/86. Lunar shaped genital flaps narrowed anteriorly and enlarged posteriorly (Fig. 1a). 12 acetabulum grouped into two pairs of triplets are present; the first pair is concentrated more to anterior section and posterior triplets are shifted medially.

Habitats of studied material: 38°04' N, 30°16' E, 21.04.2009, 3/0; 23.08.2009, 2/0; 28.10.2009, 4/0, 1–2 m deep lake area covered by aquatic plants, Çapalı Lake, Afyonkarahisar.

Distribution: Common in Europe (VIETS, 1956).

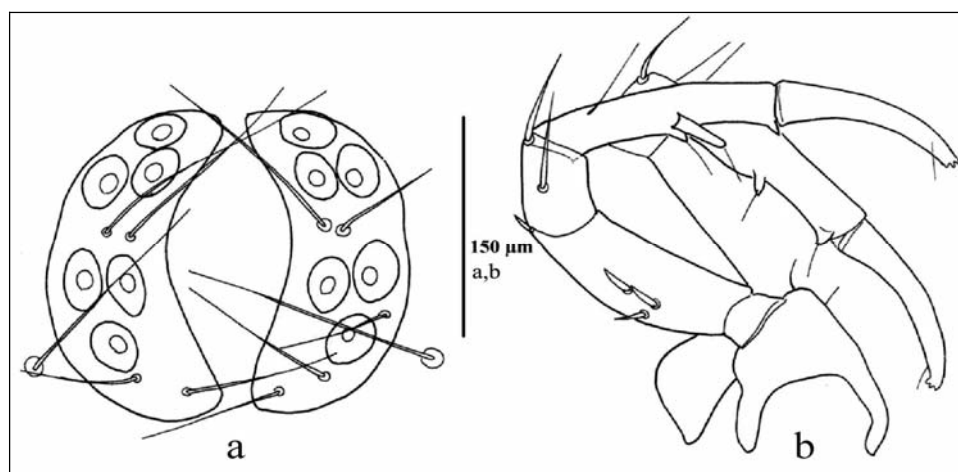


Figure 1. *U. gracilipalpis* Male, a) genital field; b) gnathosoma.

DISCUSSIONS

The species of the genus *Unionicola* have been recorded from stagnant and slow flowing waters like ponds, pools and deep channels. *U. gracilipalpis*, on the other hand, is considered an indicator of clean and clear waters rich in aquatic vegetation (SMIT & HAMMEN, 2000). Although, this species is generally common throughout Europe, the number of collected individuals is low in general (ERMAN et al, 2010). From *U. (Unionicola) crassipes* it is identified by relatively long and concave P–2, shorter projections on P–4 and much longer P–5 being longer than ½ P–4.

Four species of the genus *Unionicola* are recorded in Turkey (ERMAN et al, 2010). With the *U. gracilipalpis* this number reaches 5. Together with *U. gracilipalpis* (VIETS 1908), the following species were found as accompanying species at the locality: *Hydrachna piersigi* (KOENIKE 1897), *H. skorikowi* (PIERSIG 1900), *H. globosa* (GEER 1778), *Eylais megalostoma* KOENIKE 1897, *E. hamata* KOENIKE 1897, *E. degenerata* KOENIKE 1897, *E. extendens* (MÜLLER 1776), *E. setosa* (KOENIKE

1897), *Hydrodroma despiciens* (MÜLLER 1776), *Hydryphantes crassipalpis* KOENIKE 1914, *Georgella fimbriata* WALTER 1925, *Limnesia undulata* (MÜLLER 1776), *Tiphys ornatus* (KOCH 1836), *Piona variabilis* (KOCH 1836), *P. alpicola* (PIERSIG 1896), *P. carnea* (KOCH 1836), *Hydrochoreutes krameri* PIERSIG 1896, *Hygrobates quanaticola* SCHWOERBEL VE SEPASGOZARIAN 1976, *U. minor* (SOAR 1900), *Neumania deltoides* PIERSIG 1894, *Oxus longisetus* (BERLESE 1885), *Arrenurus affinis* KOENIKE 1887, *A. afyonensis* ERMAN & ÖZKAN 1997, *A. furcillatus* VIETS 1930, *A. batillifer* KOENIKE 1894, *A. claviger* KOENIKE 1882, *A. rodrigensis* LUNDBLAD 1954, *A. truncatellus* (MÜLLER 1776), *A. globator* (MÜLLER 1776), *A. fimbriatus* KOENIKE 1885, *A. walconoffi* VIETS 1926 and *A. novus* (GEORGE 1884).

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