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Thalassomya frauenfeldi Schiner, 1856 (Chironomidae: Telmatogetoninae) A New Record for the Turkish Fauna

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ABSTRACT

The subfamily Telmatogetoninae and *Thalassomya frauenfeldi* Schiner, 1856 are reported for the first time from Turkey. The material was sampled as a result of evaluating three benthic samples. The samples were taken within the framework of an environmental impact assessment project conducted in İzmir Bay, western Turkey, in April 2009. As a consequence, the number of subfamilies of Chironomidae known from Turkey has increased to 7.

Key words: Chironomidae, Telmatogetoninae, *Thalassomya frauenfeldi*, new records, Turkey.

INTRODUCTION

Species of Chironomidae adapted to life in the intertidal zone have been recorded from coasts all over the world. Taxonomically they are diverse, including representatives of three subfamilies (Telmatogetoninae, Orthocladiinae and Chironominae). Telmatogetoninae is primarily an intertidal subfamily although members of the genus *Telmatogeton* Schiner are found in freshwater streams on Hawaii (Armitage *et al*., 1995). The subfamily is placed as the primitive sister group to all remaining subfamilies of Chironomidae, based on considerations of the structure of female genitalia (Ferrington, 2008). Preliminary molecular evidence presented by Cranston *et al*., (2000) appeared to support a basal placement of the subfamily.

The Telmatogetoninae is the sixth largest subfamily in terms of described species and now contains only two valid genera, *Telmatogeton* and *Thalassomya,* both of which have a worldwide distribution (Ashe *et al*., 1987).

The subfamily Telmatogetoninae comprises 40 species, of which 27 belong to the genus *Telmatogeton* and 13 belong to the genus *Thalassomya* (http://www.catalogueoflife.org/annual-checklist/2011/search.php, Sæther 2009)

Subfamily Telmatogetoninae is a species poor with only three species described from the Palaearctic region. All three species live in marine environments (Raunio *et al*., 2009).

In this study, the subfamily Telmatogetoninae and *Thalassomya frauenfeldi* are reported for the first time from Turkey.

MATERIAL AND METHODS

Sampling was performed on 23.04.2009 by means of a quadrate sampler covering an area of 400 cm^2, at a station represented with Mediterranean mussel (*Mytilus galloprovincialis* Lamarck, 1819) facies at 0.5 m depth on the rocky bottom. The sampling point (38º24'44" N - 27º03'05" E) (Fig. 1) located at the entrance of Çakalburnu Lagoon, which is in the İzmir Bay (Anatolia, Turkey), where the green algae known as Sea Lettuce (*Ulva lactuca* Linnaeus, 1753) is commonly present.

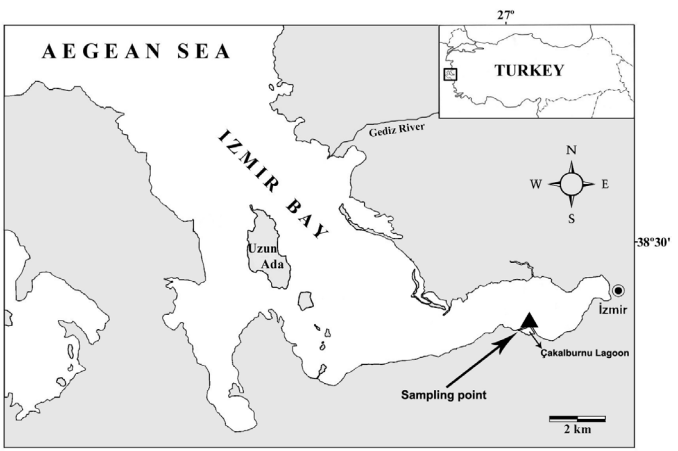


Fig. 1. Map of the studied area with sampling station.

Three samples were taken and sieved through a 0.5 mm mesh sized sieve, fixed with 10% formalin, and transferred to the laboratory for further process. Later they were preserved in 70 % alcohol until identification to species level. After preparation in Euparal, two larvae of *Thalassomya frauenfeldi* were identified using a stereomicroscope and a binocular microscope. The photographs of the species were taken by a digital camera (Olympus, Camedia, C-7070) attached to stereo and compound microscopes.

The specimens are deposited in the Museum of the Faculty of Fisheries, Ege University (ESFM) as a whole permanent mount.

The following papers were followed for the species identification: Wiederholm (1983), Cranston (1982) and Klink and Moller Pillot (2003).

RESULTS AND DISCUSSION

As a result of the identification of 2 chironomid specimens collected from Çakalburnu Lagoon in İzmir, western Anatolia, subfamily Telmatogetoninae and *Thalassomya frauenfeldi* Schiner, 1856 are reported for the first time in Turkey. The fits description of the larvae in all details was made by Wirth (1947). The detailed figures of the material examined are illustrated in Fig. 2-4.

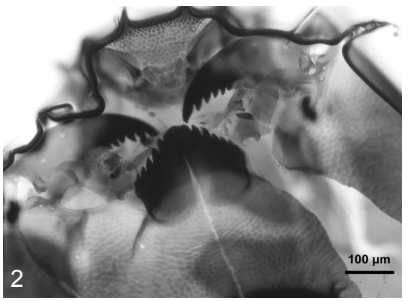
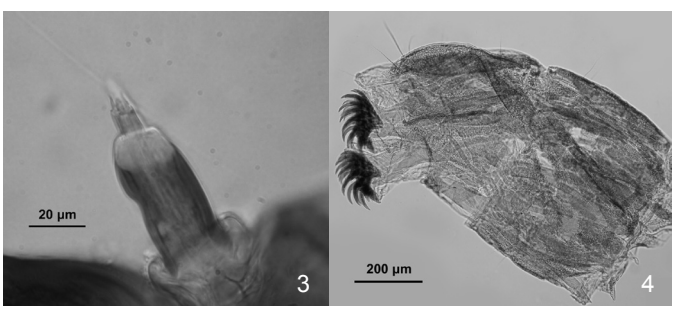


Fig. 2. Ventral view of whole head capsule.



Figs. 3-4. *Thalassomya frauenfeldi;* 3) antenna, 4) anal segment.

Distribution: *Thalassomya frauenfeldi* is distributed throughout the Mediterranean and central north Atlantic coasts, including the islands of the Azores, Canaries and Madeira (Cranston and Armitage, 1988). Britain Isles, Bulgaria, Corsica, Croatia, France, Germany, Ireland, Italy, Romania, Russia Central, Russia South, Spain, Ukraine, Yugoslavia (Sæther and Spies, 2011).

Ecology: All species of *Thalassomya* live in the inter-tidal marine zone and Wirth (1949) reported a preference for waters of reduced salinity around harbours and river mouths (Wiederholm, 1983). Larvae are almost invariably associated with algae growing attached to rocks (Epler, 1995).

The subfamily Telmatogetoninae is known throughout the world's coasts (Delettre *et al*., 2003).

The world distribution of the subfamily Telmatogetoninae is as follows: USA, Hawai, Pacific coast, Alaska to Mexico, Brazil, Chile, South Africa, New Zealand, Australia, Asia: Japan, Europe, West Indies, China, Kenya (http://www.catalogueoflife.org/).

Subfamily Telmatogetoninae is a species poor with only four species described from the Palaearctic region. All four species live in marine environments (Raunio *et al*., 2009, Sæther 2009).

Telmatogetoninae primarily is an intertidal subfamily although, according to Cranston (1989), some species are associated with coastal freshwater seepages, especially of sewage polluted waters, or with harbour or river mouths where there is reduced salinity (Armitage *et al*., 1995).

The subfamily is almost exclusively marine and the immature stages of the marine species are found in the intertidal zone on rocky coasts where the larvae feed on algae and algal detritus. Larvae of the marine species construct tubes in various algae including *Enteromorpha, Monostroma, Porphyra* and *Viva* (Ashe *et al*., 1987).

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