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Clunio Haliday, 1855: A New Chironomid Genus for Turkey (Diptera, Chironomidae)

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ABSTRACT

As a result of samples made in Antalya Bay and Kekova, southern Anatolia, Turkey, in 2005, *Clunio mediterraneus* Neumann 1966 is reported as new to the Turkish fauna.

Key words: Chironomidae, *Clunio mediterraneus*, Mediterranean Sea, Turkey, Fauna.

INTRODUCTION

Species of Chironomidae adapted to live in the intertidal zone have been recorded from coasts all over the world. Among the Orthocladiinae, *Clunio* Haliday*, Thalassosmittia* Strenzke & Remmert*, Semiocladius* Sublette & Wirth and the monospecific genus *Tethymyia* Wirth appear to be exclusively intertidal (Armitage *et al*. 1995).

Clunio has a worldwide distribution along temperate and tropical sea coasts (Schärer & Epler 2007).

Clunio is one of the rare kinds of marine chironomids which settles in the lower midlittoral range of the intertidal zone, and in some locations even further down to a depth of 20 m in the sublittoral. There are several populations on the coast of the European Atlantic and the North Sea with a larval habitat in the lower midlittoral (Heimbach, 1978).

Four species have been reported from Europe, *Clunio mediterraneus* Neumann (Europe), *Clunio balticus* Heimbach (Europe), *Clunio ponticus* Michailova (Europe), and *Clunio marinus* Haliday (Europe, North Africa, Egypt) (Sæther & Spies 2009).

In this paper, we report *Clunio mediterraneus* Neumann as new to the Turkish fauna.

MATERIAL AND METHODS

A cruise to the Turkish Mediterranean coast was undertaken in September 2005 in order to collect benthic samples from different depths and habitats. The present study deals with samples taken from the southern part of the Turkish Mediterranean coast (Fig. 1).

Fig. 1. Map of the studied area with sampling stations.In the stations, various substrates (i.e., stones, sand, algae, phanerogams) were sampled, using a quadrant of 20x20 cm.

The samples were fixed in 4 % formaldehyde solution in the field. Later they were preserved in 70 % alcohol until identification to species level after washing in the laboratory. After the permanent preparation of sorted chironomid specimens with Euparal, larvae were identified using a stereomicroscope and a binocular microscope. The reference materials are being kept in the collection of the author as permanent whole mount.

In order to get data concerning the ecological requirements of *Clunio mediterraneus*, some physico-chemical measurements (pH, dissolved oxygen saturation, temperature and salinity) were made in situ by using a Orion 420 A type pH meter, YSI 55 type Oxygen meter and YSI 30 type salinity meter.

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

The photographs of the chironomids were taken by a digital camera (Olympus, Camedia, CX31) attached to stereo and compound microscopes.

RESULTS AND DISCUSSION

Morphometric, biological and ecological characteristics and distribution of Chironomidae species, specified as a new record for the inland water fauna of Turkey, is as follows (5 specimens collected at two stations; Kekova (Antalya) and Antalya Bay). Measurements of specimen are given here in parentheses.

Clunio mediterraneus Neumann, 1966

Distribution: Balearic Is., Croatia, France, Italy, Spain (Sæther & Spies, 2009).

Material examined: 24.09.2005, Antalya Bay (36º19'16" N - 32º14'07" E), 0,1 m, 3 specimens; 03.10.2005, Kekova (Antalya) (36º11'26"N - 29º50'51" E), 0-4 m, 2 specimens.

Biotop: Marine littoral, frequently in Ostrea and Mytilus beds. There are no records from fresh water or from inland saline waters (Cranston, 1982).

As a result of the physico-chemical measurements made in situ, the following parameters were obtained: Antalya Bay: Temperature 26.9°C, pH 8.09, dissolved oxygen: 4.89 mg/l, salinity: 39.3 ‰. Kekova (Antalya): Temperature 24.7°C, pH 8.06, dissolved oxygen 5.65 mg/l, salinity 37.7 ‰.

Body: Medium-sized larvae, 3 mm long. Body setae absent. The two posterior parapods bear rows of claws. Posterior parapods separate. Procercus and the anal tubules are absent, single strong supra-anal seta (5-7) present (Fig. 2).

Head

Antenna. The antenna consists of five segments. The first segment about as high (13 -15 µ) as wide (13-15µ), the second segment subequal in height (13-15µ) to first but narrower (6-7 µ). The fourth segment (width: 4-5 µ;high: 5-6 µ) subequal to or longer than the third (width: 3-5 µ; high: 4- 6 µ). Lauterborn organs weak **(**Fig. 3).

Mentum. The mentum has one median tooth and 4 pairs of lateral teeth. Median tooth (17-19 µ) two times wider than first lateral teeth (8-9 µ). The ventromental plates are weak (Fig. 4).

Labrum. The pecten epipharyngis consists of three basally fused scales. SI setae (10-12) and SII setae (6-7) are plumose. SIII setae bifid (Fig. 5). Premandible with blunt apical tooth and broad, blunt inner tooth; brush absent.

Mandible. The mandible with an apical tooth (18- 22 µ)shorter than combined width of 4 inner teeth (31-34 µ). The seta interna has plumose branches (5 branches) (Fig. 6).

REMARKS

Of the marine Orthocladiinae (*Clunio*, *Halocladius*) only *Clunio* has a plumose SI seta. Of all Orthocladiinae the combination of one median mentum tooth, 4 pairs of lateral teeth. Anal segment and 5 segmented antenna are distinctive for *Clunio*.

C. mediterraneus is not described suffiently morphologically as a larva. However, Neumann *et al*. (1997) regard all Mediterranean populations of *Clunio* as belonging to *C. mediterraneus*.

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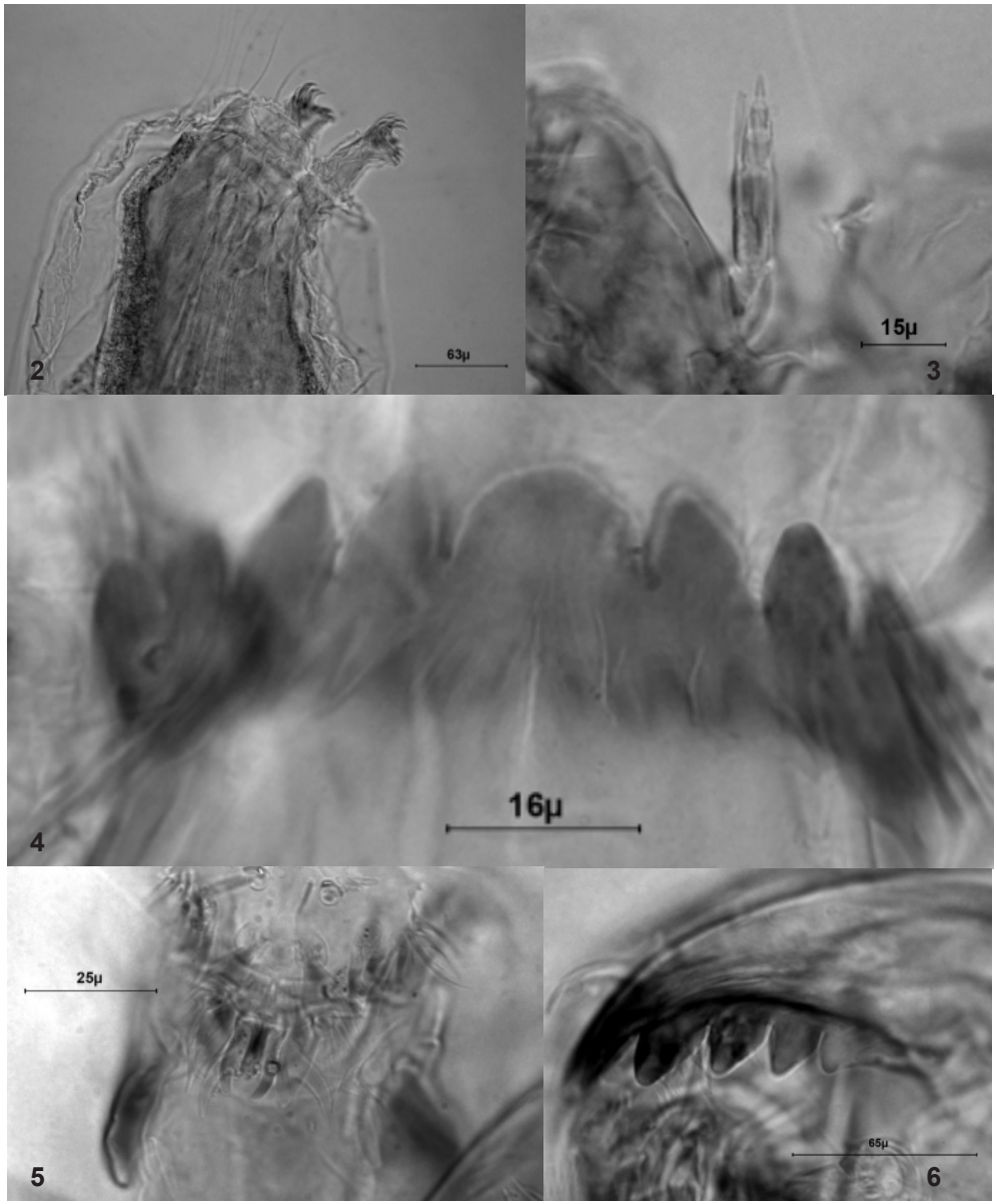

Figs. 2-6. *Clunio mediterraneus. 2.* Anal segment, 3. Antenna, 4. Mentum, 5. Labrum (SI, SII ve SIII seta), 6. Mandible.

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