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First Record of *Clathrocorys teuscheri* Haeckel [Protozoa: Radiolaria: Polycystina] in the Aegean Sea

Ege Denizi'nden *Clathrocorys teuscheri* Haeckel [Protozoa: Radiolaria: Polycystina]'nin İlk Kayıdı

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Abstract

Clathrocorys teuscheri is one of the Polycystine radiolarins. It is reported for the first time in the north-eastern Aegean Sea by this study. As this species was previously reported from the sapropel as microfossils in the eastern Mediterranean, it is also fi*rst record for Mediterranean recent plankton. The specimen was collected in November 2000 from subsurface (0.5 m) coastal waters with a depth of 30 m, near Bozcaada Island in the Aegean Sea. Primary hydrographic conditions such as salinity (36.0 psu), temperature (16.7 ºC) and dissolved oxygen (9.49 mg l^{-1}) were recorded at the sampling station.

Keywords *Clathrocorys teuscheri*, Radiolaria, Aegean Sea.

Introduction

Radiolaria are protozoa distinguished by their siliceous skeletons of the large majority of species. They are single-celled, eucaryotic organisms that are exclusively marine and, almost exclusively oceanic in their distributions (Dennet *et al*., 2002). Radiolarian studies in the Mediterranean Sea are

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scarce. Generally, they were studied in the sediment trap samples. The research in the nearest region to the Aegean Sea was carried out by Danelian and Frydas (1998). They found this species in the sapropel from the eastern Mediterranean. Moreover, Boltovskoy and Uliana (1996) found this species from the sediment trap samples in the northeastern tropical Atlantic.

Silicaeus Polycystine radiolarians are subdivided into two major groups: the basically spherical-shelled Spumellaria, and the basically conical Nassellaria. *Clathrocorys teuscheri* Haeckel belongs to the order of Nasselleria (Boltovskoy, 1999).

The Aegean Sea is connected with the Sea of Marmara through the Dardanelles and the Sea of Marmara is connected to the Black Sea through the Bosporus. It has a complex topographical structure, with irregular bathymetry, a multifarious coastline and hundreds of small and large islands (Poulos *et al*., 1997). In this area, the relatively warm and highly saline waters from Levantine and south-central Aegean Sea are diluted by the less saline water inflow from the Dardanelles and by freshwater outflows from various rivers discharging along the Greek and Turkish coastlines (Michelakaki and Kitsiou, 2005). The salinity of these waters ranges between 26 and 35 psu (Yüce, 1995).

This paper reports the new record species *Clathrocorys teuscheri* for the first time in the Aegean Sea.

Materials and Methods

This study was carried out in coastal waters 2.5 km from the east coast of Bozcaada Island (long. 25º57´48"E-26º05´00"E, lat. 39º47´18"N-39º50´54"N) in the north-east Aegean Sea on November 2000. This species was obtained from horizontal tows from subsurface depths of about 0.5 m at the sampling station. A plankton net with a 55µm mesh size was used and the samples were preserved in a 4% neutral formaldehyde solution. Observations were made through an inverted phase contrast microscope equipped with a microphoto system at a magnification of 400X.

Results

The hydrographical parameters at the sampling site were: 16.7 ºC, 36.0 psu, dissolved oxygen 9.49 mg l^{-1}. The reason of high salinity value at the date of sampling is vertical mixing of the water colum and the surface waters have

been affected by deep waters originating from the Mediterranean proper, due to seasonal factors.

Family: Plagoniidae Haeckel, 1881

Genus: Clathrocorys Haeckel, 1881

***Clathrocorys teuscheri* Haeckel**

Description: Cephalis helmet-shaped, unequal pored, basic structure of cephalis includes apical bar, collar pores and ribs in the cephalic wall. Thorax not fully developed in most tests and small-pored lattice. In each keel are two large gates. Its apical horn and basal feet are developed. Basal feet are thin and long. Overall shell height 200 μm and length of apical horn 50 μm (Fig. 1).

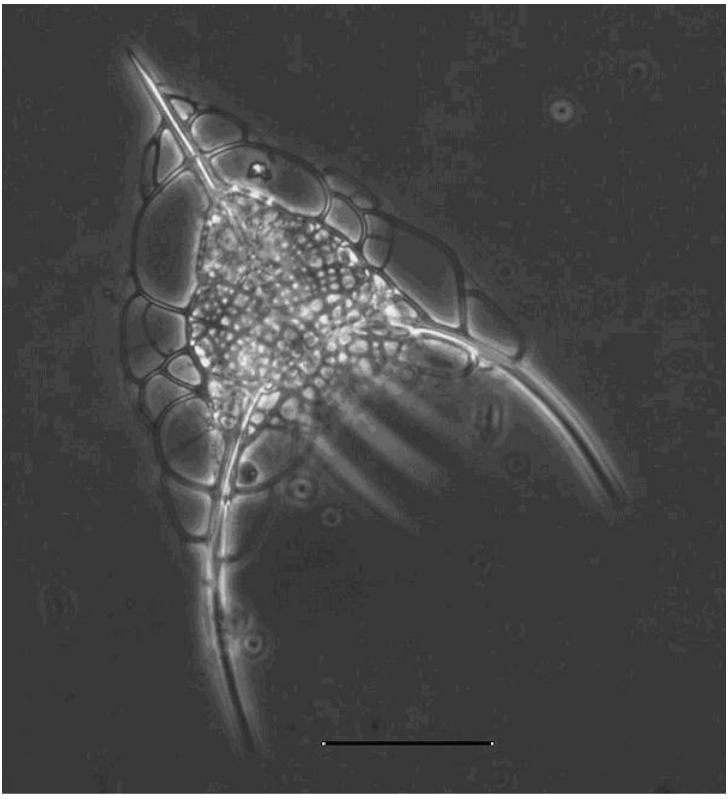

Figure 1. *Clathrocorys teuscheri* Haeckel, from the Aegean Sea. Scale bar: 50 μm.

Haeckel (1887) reported this species from the Pacific Ocean, Popofsky (1913) from the western tropical part of the Indian Ocean, Benson (1966) from the Gulf of California, Petruhevskaya (1971) from the Indian Ocean and Yukatan Strait, Takahashi (1991) from the Pacific and Atlantic Ocean, Danelian and Frydas (1998) from the sapropel as microfossils in the eastern Mediterranean and Boltovskoy (1999) from the south Atlantic. According to Benson (1966), its absence at high latitudes indicates that it is a tropical species. The subtropical Mediterranean including Aegean Sea takes an intermediate position between the temperate and the tropical systems (Froese *et al*., 2005).

Discussion

Only one specimen of *Clathrocorys teuscheri* was found in the surface waters of the Aegean Sea. The occurrence of this species for the first time in this study may be related to lack of adequate studies in this region. It is possible that these species may have recently been transported to the area by current systems and ballast waters may have caused the transportation of marine organisms from one site to another.

As a result, *Clathrocorys teuscheri* has been reported for the first time from the Aegean Sea and added to the regional check-list of the plankton species of Turkish seas with this study. Moreover, this species was not previously recorded from the previously plankton studies in the Mediterranean. Since Danelian and Frydas (1998) found this species from the sapropel as microfossils in the eastern Mediterranean, it is also first record for Mediterranean recent plankton.

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Özet

Bir radyoler olan *Clathrocorys teuscheri*, bu çalışmayla ilk kez Ege Denizi'nden rapor edilmektedir. Bu tür, Doğu Akdeniz'de daha önce yapılan sapropel çalışmalarından mikrofosil olarak kayıt edildiğinden, aynı zamanda Akdeniz'in güncel planktonu için de ilk kayıttır. *Clathrocorys teuscheri*, 2000 yılının Kasım ayında Bozcaada'nın 30 m derinliği olan kıyısal sularından, 0.5 m derinlikten elde edilmiştir. Tuzluluk (36.0 psu), sıcaklık (16.7 ºC) ve çözünmüş oksijen (9.49 mg l^{-1}) gibi ortamın temel ekolojik şartları da örnekleme istasyonunda belirlenmiştir.

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