First record of *Planktoniella sol* (Wallich) Schütt, 1893 from Turkish coasts

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Abstract

Planktoniella sol is reported for the first time from Turkish coasts. The specimen was collected on 6 June 2001 with a 55 µm plankton net from subsurface (0.5 m) neritic waters with a depth of 30 m, off Bozcaada Island in the Aegean Sea. The primary hydrographic parameters, temperature, salinity and dissolved oxygen were 18.5 ºC, 35.2 psu and 8.54 mg l^{-1}, respectively. A brief diagnosis based on morphological characters are described in detail and information about its ecological distribution is given.

Keywords: First record, *Planktoniella sol*, Aegean Sea.

Introduction

Planktoniella sol (Wallich) Schütt, 1893 is an oceanic species common in tropical and subtropical waters (Hendey 1964) and it may have a greater temperature tolerance than most tropical species (Round 1973).

The important work on phytoplanktonic species from Turkish coastal waters was done by Koray (2001). So far, a total of 7 Procaryote and 498 Eucaryote taxa have been reported from the Turkish coastal waters (Koray 2001; Bargu et al. 2002; Polat 2004, 2007; Balkıs 2005; Deniz et al. 2006; Taş and Okuş 2006). The migration of Red Sea and even indopacific species into the Mediterranean Sea through the Suez Canal by current systems and ballast waters contributes to the increased plankton diversity in the Turkish seas.

This study was carried out in coastal waters 2.5 km from the north coast of Bozcaada Island (Fig. 1). Bozcaada Island has an area of 42 km^2 and is located between 25°57′48″ E - 26°05′00″ E and 39°47′18″ N-39°50′54″ N in the north-eastern Aegean Sea. The Aegean Sea constitutes the northeasterly part of the eastern Mediterranean Sea and it is connected with the Sea of Marmara through the Dardanelles and to the Black Sea through the Bosphorus (Poulos et al. 1997). The northern surface waters of the Aegean Sea are influenced by Black Sea waters, and can be characterized as brackish (~17.6 psu). This is the main factor affecting the structure of the water column in the area (Zervakis et al. 2000). Furthermore, Poulos et al. (1997) reported that the sea surface salinity values vary seasonally, ranging from less than 31.0 psu to more than 39.0 psu.

Material and Mathods

Plankton samples were collected on 6 June 2001 as horizontal tows from subsurface depths of about 0.5 m. A plankton net with a 55 µm 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 400 X.

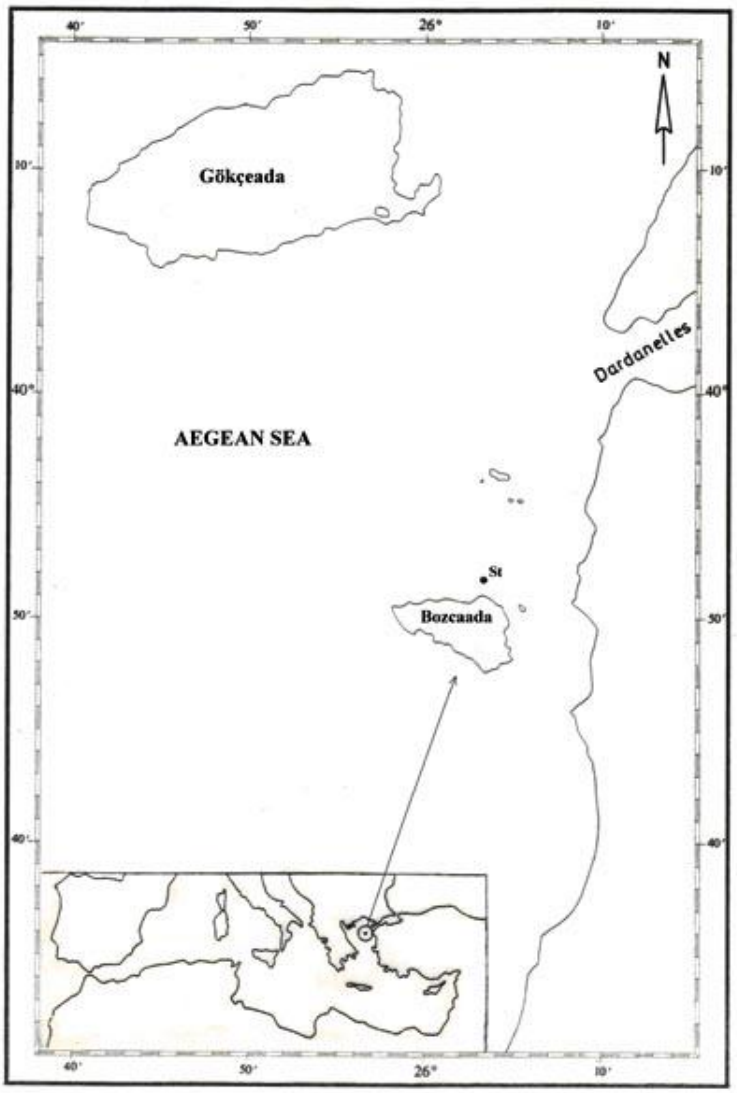

Figure 1. Study site off Bozcaada Island.

Results and Discussion

The hydrographical parameters at the sampling site were 18.5 ºC, 35.2 psu, dissolved oxygen 8.54 mg l^{-1}.

Family: Thalassiosiraceae Lebour 1930
Genus: *Planktoniella* Schütt 1893
Planktoniella sol (Wallich) Schütt 1893
Planktoniella sol: Lebour 1930: 50, Pl. I, Fig. 5; Hendey 1964: 82; Cupp 1943: 63, Fig. 27; Ricard 1987: 48, Fig. 124-128; Rampi and Bernhard 1978: 57, Pl. 22; Delgado and Fortuno 1991: 12, Lam. XLIV a, Fig. 10 e; Round et al. 1990: 134; Hasle and Syvertsen 1997: 38, 39, Pl. 2, Tab. 4.
Planktoniella Sol: Van-Heurck 1896: 534, Fig. 279.
Planctoniella sol: Tregouboff and Rose 1957: 48, Pl. 7, Fig. 10.

Description

Cells solitary, disc-shaped, with a peripheral wing-like expansion all round, consisting of

extra-cellular chambers strengthened by radially arranged ribs. Valve surface flat or weakly convex. The chambers may be turgid or flaccid. Chromatophores are restricted to the valvar portion of the organisms. Diameter of entire cell is 90 µm and of central is 45 µm (Fig. 2).

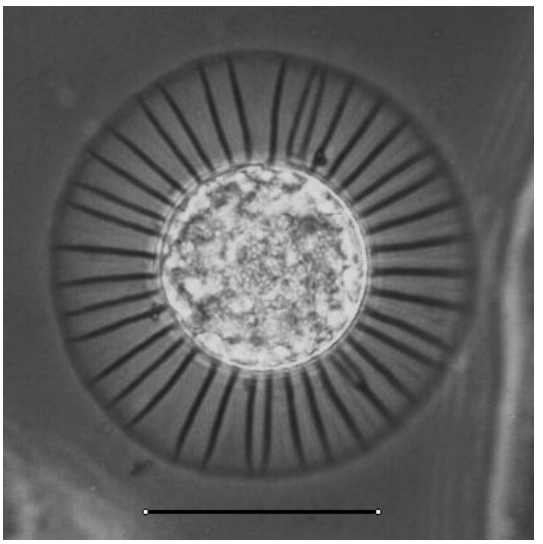

Figure 2. *Planktoniella sol* (Wallich) Schütt, 1893 from the Aegean Sea. Scale bar: 50 µm.

Distribution

It has been recorded in Atlantic waters, Pacific Ocean, Adriatic Sea, Mediterranean, Indian waters and Red Sea (Lebour 1930; Cupp 1943; Halim 1969; Travers 1975; Delgado 1990; Hasle and Syvertsen 1997; Redekar and Wagh 2000; Viličić et al. 2002; Olguin et al. 2006; Richardson et al. 2006; Gomez et al. 2007; O'Boyle and Raine 2007).

Planktoniella sol is a widely distributed species, but, the present paper reports it for the first time from Turkish coasts. The occurrence of the species for the first time in this study might be related to the lack of adequate studies in this region. It is possible that the species has recently been transported to the area by current systems and ballast waters have caused the transportation of marine organisms from one site to another.

As a result, *Planktoniella sol* was added to the regional check-list of the plankton species of Turkish seas with this study.

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