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Some new desmids records for the freshwater algal flora of Turkey

Abstract

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Actinotaenium cruciferum, *Cosmarium variolatum*, *Euastrum binale* var. *gutwinskii*, *E. luetkemueLLeri* var. *carniolicum*, *E. luetkemueLLeri* var. *floridanum* and *E. obesum* have been recorded for the first time in Turkey.

Introduction

The studies carried out on the desmids of Turkey revealed that *Euastrum* is represented by three species which are *Euastrum insulare*, *E. oblongum* and *E. verrucosum* var. *rhomboidum* Lund, while *Actinotaenium* has been recorded for the first time in Turkey (Gönülol & al. 1996 Şahin 1998). It was also pointed out that *Actinotaenium cruciferum*, *Cosmarium variolatum* Lundell, *Euastrum binale* var. *gutwinskii*, *E. luetkemueLLeri* var. *carniolicum*, *E. luetkemueLLeri* var. *floridanum* Scott & Groenblad and *E. obesum* Joshua, have not been reported in Turkey until now (Gönülol & al. 1996).

These taxa are described in this paper.

Material and methods

Dağbaşı lake is a glacier lake, situated at 2721 m a. s. l. and located at 40°37'30" altitude, 40°45'00" longitude in Rize in the East Blacksea region of Turkey. The lake has an area of 3.125 km² and a maximum depth of 10 m (Fig. 1).

Collections were made during the snow and ice-free period (June to September) in 1998. The samples were collected and analysed as outlined in Round (1953).

For determination Bourrelly (1982, 1986), Dillard (1991, 1993), Gontcharov (1998), Huber-Pestalozzi (1982), Krieger (1933-37, 1962-69) and Ruzicka (1981) were used. The specimens were photographed with an Olympus BH-2 microscope.

The collections are deposited in the Biology Laboratory, Karadeniz Technical

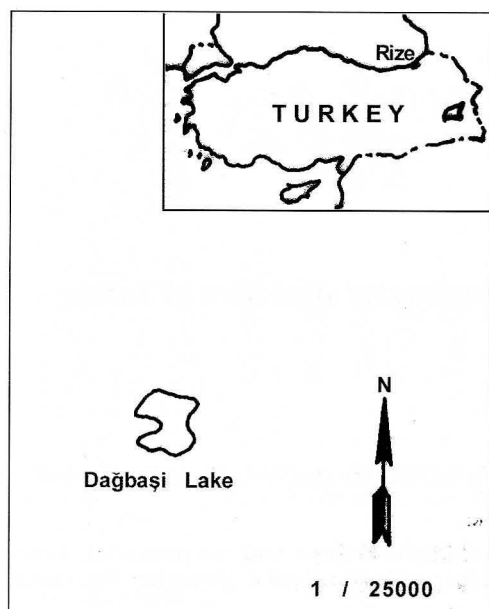


Fig. 1. Map of the Dağbaşı Lake.

University, Trabzon, preserved in 4 % formaldehyde.

Systematic descriptions

The genera are listed in the order adopted by Dillard (1991, 1993) while the taxa belonging to each genus are described alphabetically.

Actinotaenium cruciferum (De Bary)

Teiling [= *Cosmarium cruciferum* De Bary] (Fig. 2)

Bourrelly (1986: p.102, pl. 5, fig. 13)

Dillard (1991: 14, pl. 1, fig. 1)

Cell 21 μ L, 10 μ W and 2 times longer than wide. Sinus shallow, lateral margins convex and apices rounded. Rize; Dağbaşı lake, epipellic, 12 July, 1998, Şahin, 59.

Distribution: N. America, S. America, Asia, Africa, Europa, New Zealand.

Cosmarium variolatum Lundell (Fig. 3)

Dillard (1991: p. 143, pl. 13, Fig. 8)

Huber-Pestalozzi (1982: p. 290, pl. 22, fig. 13)

Cell 1.4 times longer than wide, 27 μ L, 19 μ W and 5 μ at isthmus. Sinus closed. Semicells semielliptic, basal angles slightly rounded, lateral margins evenly convex, apex narrow and truncate. Rize: Dağbaşı lake, epipellic, 15 August, 1998, Şahin, 60.

Distribution: America, Asia, Europa.

Euastrum binale var. *gutwinskii* (Schmidle) Homfeld (Fig. 4)

[= *E. binale* forma *gutwinskii* Schmidle]

Dillard (1993: p. 25, pl. 10, fig. 13)

Huber-Pestalozzi (1982: p. 314, pl. 39, figs.13-14)

Cell 20 μ L, 14 μ W and 4.7 μ at isthmus. Outline is quadrangular. There is a marginal undulation between the basal lobes and the polar lobe. The apical margin biconvex with a slight median invagination. Sinus narrow and closed. Rize: Dağbaşı lake, epipellic, 15 August, 1998, Şahin, 60.

Distribution: N. America, S. America, Africa, Europa.

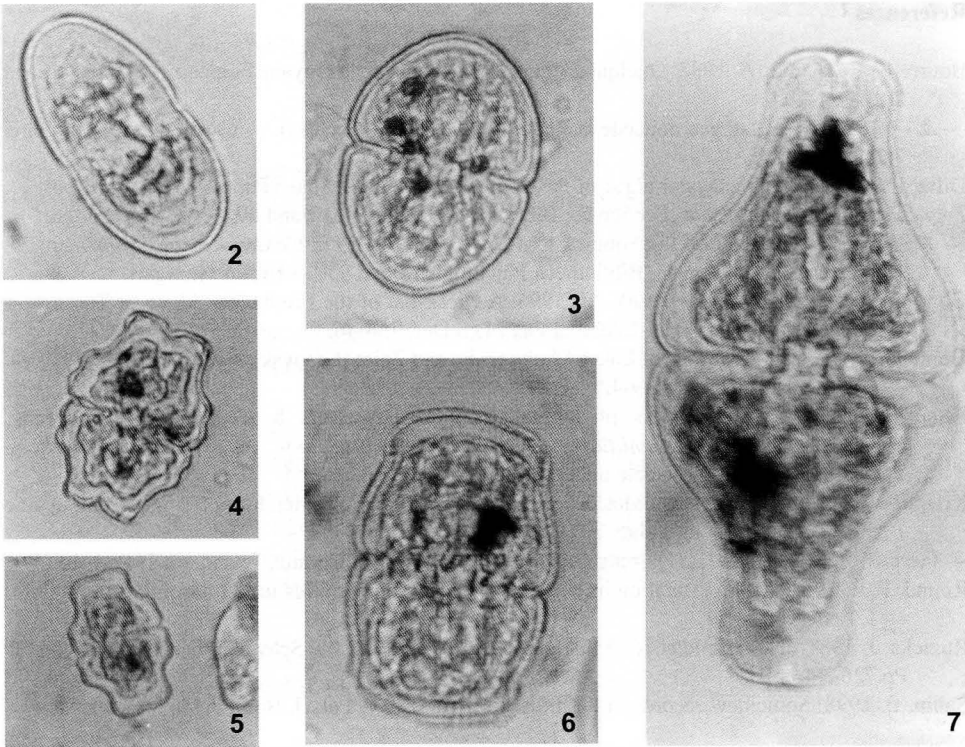
E. luetkemuellerei var. *carniolicum* (Luetkemuellerei) Krieger (Fig. 5)

Bourrelly (1982: p. 240, pl. 10, fig. 7)

Dillard (1993: p. 52, pl. 9, fig. 20)

Huber-Pestalozzi (1982: p. 332, pl. 40, fig. 8)

Cell 31.6 μ L, 21.6 μ W and 3.3 μ at isthmus. Polar lobe short with subparallel margins



and there is a median incision of the polar lobe. Semicell margins above the basal angles slightly undulate. Rize: Dağbaşı lake, epipellic, 20 September, 1998, Şahin, 65.
Distribution: America and Europa.

E. luetkemuellerei* var. *floridanum Scott & Groenblad (Fig.6)

Dillard (1993: p. 53, pl. 9, fig. 21)

Cell 32-35.6 μ L, 20.5-23.5 μ W and 4.5-6 μ at isthmus; apical margin is convex and there is no median incision. The mucilage pore evident toward the apical margin, the semicells nearly round and without median protrusion. Rize: Dağbaşı lake, epipellic, 15 August, 1998, Şahin, 60.

Distribution: America.

E. obesum Joshua (Fig. 7)

Dillard (1993: p. 53, pl. 7, fig. 14)

Gontcharov (1998: p. 20, pl. 3, fig. 1)

Cell 63.5 μ L, 31.7 μ W and 10.5 μ at isthmus. Cell broadly truncate-oval in outline. Semicells pyramidal, basal lobes broadly rounded and vertically wide, the apex rather narrow with 2 lobules formed by a shallow, narrow median incision. Cell wall smooth, sinus shallow, closed at the apex but widely open outwardly. Rize: Dağbaşı lake, epipellic, 15 August, 1998, Şahin, 60.

Distribution: America, Asia, Africa, Europa, Russia.

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