

NEW RECORDS OF EUGLENOPHYCEAE FROM SYLHET DIVISION, BANGLADESH

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Abstract

A total of 8 species of Euglenophyceae where 5 species of *Euglena* namely, *Euglena lucens* Günther, *E. paludosa* Mainx., *E. gaumei* Allorge & Lefèvre, *E. heimii* Lef., *E. mangini* Lefèvre, and 3 species of *Lepocinclis* namely, *Lepocinclis ovum* var. *deflandriana* (Ehrenberg) Lemmermann, *L. ovum* var. *globulus* (Perty) Lemmermann and *L. steinii* Lemmermann from Sylhet Division which are all new records for Bangladesh.

Introduction

Studies on the members of Euglenophyceae have been made from different fresh water of habitats of Sylhet Division of Bangladesh. So far, there are large number of taxonomic studied of different species of Euglenophycean members were reported (Alfasane and Khondker, 2007; Alfasane *et al.* 2010; Gani *et al.* 2012. Khondker and Alfasane, 2005; Islam and Alfasane 2002, 2003, 2004; Islam and Muniruzzaman, 1981). The members of Euglenophyceae are commonly found to grow in different wetland habitats as well as polluted waters and at times they produce blooms of different colors, mostly in shallow, stagnant waters of various sizes. The literatures cited above showed that the members of the Euglenophyceae have not been studied from Sylhet Division of Bangladesh. Therefore, the present research was undertaken to study this group of organisms from different fresh water habitats of Sylhet Division of Bangladesh. The samples were collected from different parts of Shari Goyain River, Piyain River and Madhabpur Lake of Sylhet Division of Bangladesh. The present paper deals with 5 species of *Euglena* and 3 species of *Lepocinclis* of which all are new records for Bangladesh. The descriptions of the organisms are given below.

Materials and Methods

For the description of the studied water bodies and physicochemical data of the study area see Alfasane *et al.* 2020. The samples were collected from May 2017 to February 2020 of the studied water bodies. The water bodies were predominantly fresh and non-polluted. The samples were collected with plankton net of mesh size 20 µm and preserved in 5% formalin.

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Taxonomy

Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;
Genus: *Euglena* Ehrenberg

1. ***Euglena lucens* Günther** (Fig. 1)

(Huber-Pestalozzi 1955, 31, 34, 57, Pl. 5, Fig. 31; Wołowski 1998, 40, Pl. 9, Fig. 1,2)

Cells 81.0–99.0 µm long, 12.5 µm wide, oblong cylindrical, each cell slightly narrowed at the anterior end, with short tail at the posterior end. Forehead strongly tapered and slightly rounded. Pellicle slightly striated; chloroplasts large, oval; numerous paramylon grains; nucleus located in the centre of the cell.

It is a new record for Bangladesh. Collection no. S-9(1), 05.05.2017, Shari Goyain River.

2. ***Euglena paludosa* Mainx.** (Fig. 2)

(Huber-Pestalozzi 1955, 30, 53, Pl. 4, Fig. 26)

Cell length 99-114 µm, breadth 34-36 µm, broadly ovate shaped with very short stumped end appendages and elongated.

It is a new record for Bangladesh. Collection no. S-1(3), 11.11.2017, Madhabpur Lake.

3. ***Euglena gaumei* Allorge & Lefèvre** (Fig. 3)

(Huber-Pestalozzi 1955, 31, 57, Pl. 5, Fig. 30)

Cell length 55-62 µm, breadth 11-13 µm, end tip 5 µm, regularly spindle shaped. Periplast shows an extremely fine left-turning streak. Chromatophore approximately numerous in number, parietal, disc shaped with one pyrenoid and paramylon envelop.

It is a new record for Bangladesh. Collection no. S-2(2), 05.08.2017, Shari Goyain River.

4. ***Euglena heimii* Lefèvre** (Fig. 4)

(Huber-Pestalozzi 1955, 34, 74, Pl. 10, Fig. 52c,e)

Cell length 145-170 µm, long, cylindrical often a bit bent, head slightly widened at the front and pulled very weakly at the apex. Paramylon exists in two forms.

It is a new record for Bangladesh. Collection no. S-7(2), 05.08.2017, Shari Goyain River.

5. ***Euglena mangini* Lefèvre** (Fig. 5)

(Dillard 2000, 10, 28, Pl. 2, Fig. 9)

Cell length 90-110 µm, breadth 18-20 µm, fusiform, posterior end abruptly tapered into a fine, straight, rigid but not sharply pointed tail. Flagellum is of two-thirds cell length. Pellicular striations are delicate but distinct and widely spaced.

It is a new record for Bangladesh. Collection no. S-7(2), 05.08.2018, Shari Goyain River.

Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;
Genus: *Lepocinclis* Petry

6. ***Lepocinclis ovum* var. *deflandriana* (Ehrenberg) Lemmermann** (Figs 6-7)

(Huber-Pestalozzi 1955, 149, Pl. 29, Fig. 144; Wołowski *et al.* 2013, 670, Fig. 31)

Cell length 17-33 µm, breadth 13-25 µm. Obovoid, anterior margin broadly rounded and ended with short blunt projection; lateral arches slightly arched, chloroplasts small; two large paramylon bodies, ring shaped.

It is a new record for Bangladesh. Collection no. M-3(2), 06.08.2017, Madhabpur Lake.

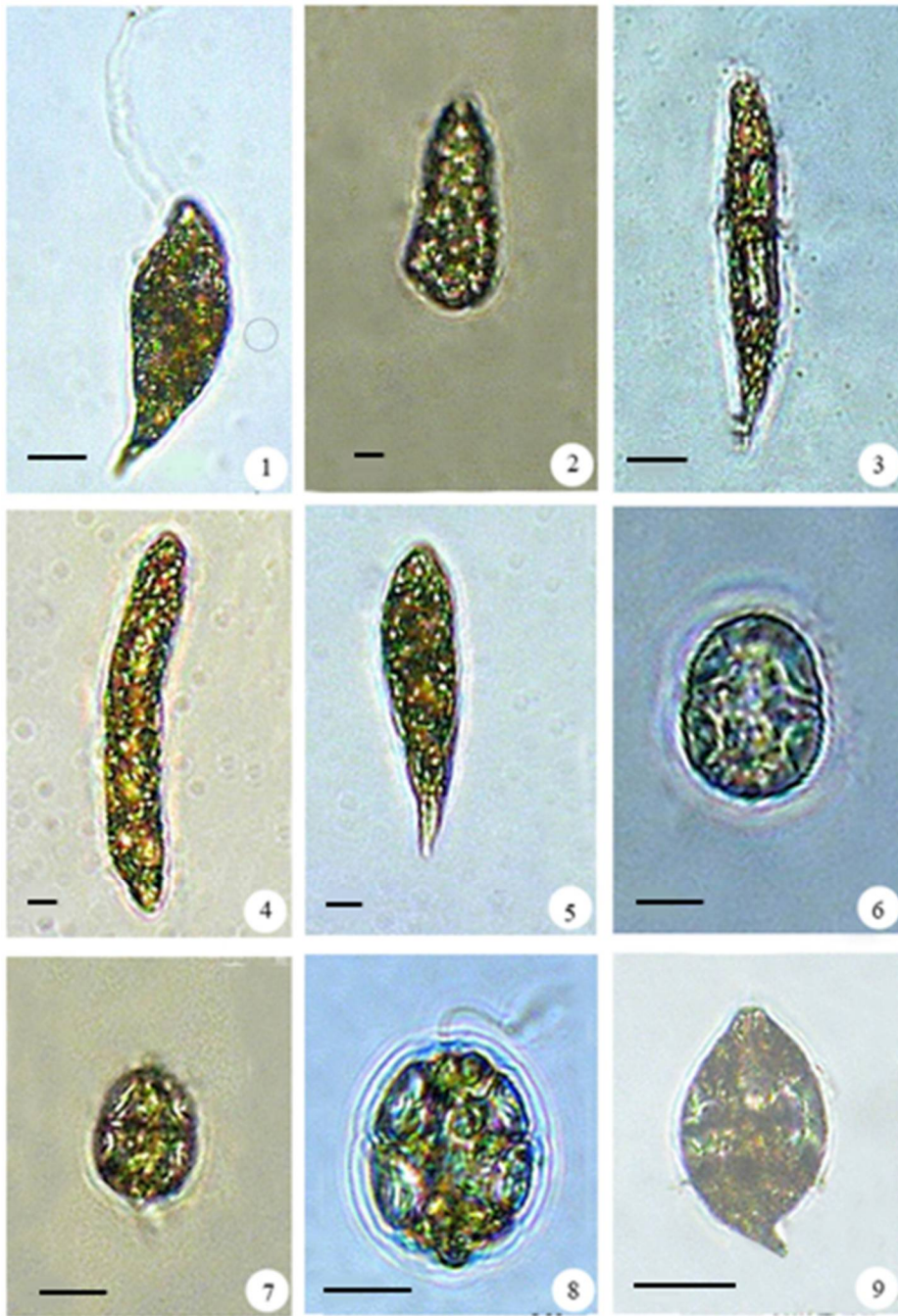


Fig. 1-11: 1. *Euglena lucens* Günther, 2. *E. paludosa* Mainx., 3. *E. gaumei* Allorge & Lefèvre, 4. *E. heimii* Lefèvre, 5. *E. mangini* Lefèvre, 6-7. *Lepocinclis ovum* var. *deflandriana* (Ehrenberg) Lemmermann, 8. *Lepocinclis ovum* var. *globulus* (Perty) Lemmermann, 9. *L. steinii* Lemmerm. (Scale = 10 μ m)

7. **Lepocinclis ovum** var. **globulus** (Perty) Lemmermann (Fig. 8)

(Huber-Pestalozzi 1955, 152, Pl. 30 Fig. 158; Wołowski *et al.*, 2013, 670, Fig. 81; Philipose 1984, 511, Fig. 4h)

Cell length 20-35 µm, breadth 15-20 µm; obovoid, ended with short blunt projection; chloroplasts small; paramylon occur in coarse in the middle of which there are usually 6 discs.

It is a new record for Bangladesh. Collection no. S-2(1), 05.02.2020, Shari Goyain River.

8. **Lepocinclis steinii** Lemmermann. (Fig. 9)

(Huber-Pestalozzi 1955, 137, 141, Pl. 26, Fig. 122; Dillard, 2000, 40, 41, 44, Pl. 7, Fig. 12; Wołowski *et al.* 2013, 670, Fig. 35a,b, 105; Wołowski 1998, 68, Figs 215, 216)

Cell length 19-32 µm, breadth 9-16 µm, end extension upto 4 µm, spindle shaped to ellipsoidal, ratio varying from long to broad, usually slightly pulled forward and truncated; anterior end nearly entire or drawn out into a beak with the very end indented or flattened; with a short conical tail; membrane usually deeply coloured and with longitudinal parallel striae which are uniform or alternate ones thicker; chromatophores numerous, small and polygonal to round or discoid; paramylum 1-3 ringlets or small ovoid granules; eye-spot fairly large.

It is a new record for Bangladesh. Collection no. S-11(4), 03.02.2018, Shari Goyain River.

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