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NEW RECORDS OF EUGLENOPHYCEAE FOR BANGLADESH

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Abstract

Eight newly recorded species of Euglenophyceae from Bangladesh have been illustrated and described in the present paper. The species are *Euglena fundoversata* L.P. Johnson, *E. korshikovii* Gojdics, *E. minuta* Prescott, *E. sacculiformis* Schiller, *Lepocinclis truncata* Da Cunha, *Phacus pusillus* Lemn., *P. strongylus* Pochm. and *P. wettsteini* Drez.

Introduction

A series of papers on the members of Euglenophyceae have been published where 256 taxa have been described and illustrated (Islam and Aziz, 1979; Islam and Khondker, 1981; Islam *et al*., 1991; Islam and Alfasane, 2002, 2003; Khondker and Alfasane, 2005; Alfasane and Khondker, 2007; Khondker *et al*., 2008a, b, 2009; Ahmed *et al*., 2009; Begum, 2009; Begum and Khanam, 2009; Alfasane *et al*., 2010). During a recent study on planktonic algae of Pagla Sewage Treatment Plant (PSTP) in Narayanganj, Bangladesh, some taxa of the order Euglenales were found to occur, which were not recorded earlier from Bangladesh. In this paper, eight of these taxa are described and illustrated as new records for Bangladesh.

Materials and Methods

Two lagoons of PSTP at Narayanganj, Dhaka were selected for the present study, namely Lagoon 4 (L-1) and Lagoon 10 (L-2). Detail description of these lagoons of PSTP has been furnished by Gani *et al*. (2011). A total of 34 phytoplankton samples were collected from October 2009 to July 2010 at fortnight intervals. The samples were collected between 8:00 am and 9:30 am. After collection, the phytoplankton samples were brought to the Phycology, Limnology and Hydrobiology Laboratory of the Department of Botany, University of Dhaka for analysis. Samples were obtained by sieving 100 L of sub-surface water through a plankton net having a mesh aperture of 20 µm. The concentrated plankton sample in the bucket of the plankton net were taken in a screw caped glass vial and fixed with Lugol's solution (Gani *et al*., 2011). A random checking of the sedimented planktonic material was carried out under light microscope with high magnification for identification up to species level. Organisms were photomicrographed with the help of a Nikon Optiphot, UFX-11A microscope fixed with a Nikon FX-35WA camera, Japan.

Taxonomic enumeration

A total of eight freshwater species of Euglenophyceae have been identified as new reports from Bangladesh. The illustrated taxonomic descriptions of these taxa are given below.

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

1. **Euglena fundoversata** L.P. Johnson (**Fig. 1**)
(Huber-Pestalozzi 1955, 55, Pl. V, f. 28A; Gojdics 1953, Pl. 2, f. 3a)

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Cell 75 µm long, 22 µm broad. Cells are relatively large, broad spindle-shaped, end is tapered with a blunt end tip. Body slightly curved. Flagellum about twice as long as body length, flagellum tip is circle. Chromatophores and paramylon numerous.

Collection no. 2 (L-1), 9 Nov 2009.

2. **E. korshikovii** Gojdics (**Fig. 2**)

(Gojdics 1953, 52, pl. 19, f. 2a; Syn. *E. torta* Korshikov)

Cell 33 µm long, 19 µm broad. Cell undulated, broadly fusiform, tapered. Flagellum equal to body length. Anterior end short, posterior caudus slightly curved. Paramylon numerous, round.

Collection no. 6 (L-1), 15 Jan 2010.

3. **E. minuta** Prescott (**Fig**. **3**)

(Huber-Pestalozzi 1955, 118, Pl. XXII, f. 106C; Dillard 2000, Pl.1, f.13)

Cell 14 µm long, 5 µm broad. Cell small, curved like structure, fusiform to almost pyriform, end tapered short, blunt. Paramylon egg-shaped.

Collection no. 5 (L-2), 30 Dec 2009.

4. **E. sacculiformis** Schiller (**Fig. 4**)

(Huber-Pestalozzi 1955, 114, Pl. XXI, f. 99)

Cell 52 µm long, 15 µm broad. Cell metabolic, slightly convex to nearly parallel, ends broadly rounded, with short, spine-like apex. Paramylon numerous, small. Huber-Pestalozzi (1955) noted the size of *E. sacculiformis* as 38 µm ×10 µm.

Collection no. 6 (L-1), 15 Jan 2010.

Genus: **Lepocinclis** Perty

5. **Lepocinclis truncata** Da Cunha (**Fig. 5**)

(Huber-Pestalozzi 1955, 146, Pl. XXVIII, f. 138)

Cell 40 µm long, 35 µm broad. Flagellum half of the body length. Cell pentagonal, anterior end broadly flattened and convex body nature. Two large paramylons.

Collection no. 13 (L-2), 15 May 2010.

Genus: **Phacus** Dujardin

6. **Phacus pusillus** Lemn. (**Fig. 6**)

(Huber-Pestalozzi 1955, 183, Pl. XXXIV, f. 199, Syn. *P. alatus* Klebs Partim)

Cell 21 µm long, 8 µm broad. Cell elongate, median furrow longitudinally arranged. Anterior end slightly blunt, posterior end pointed. Paramylon round.

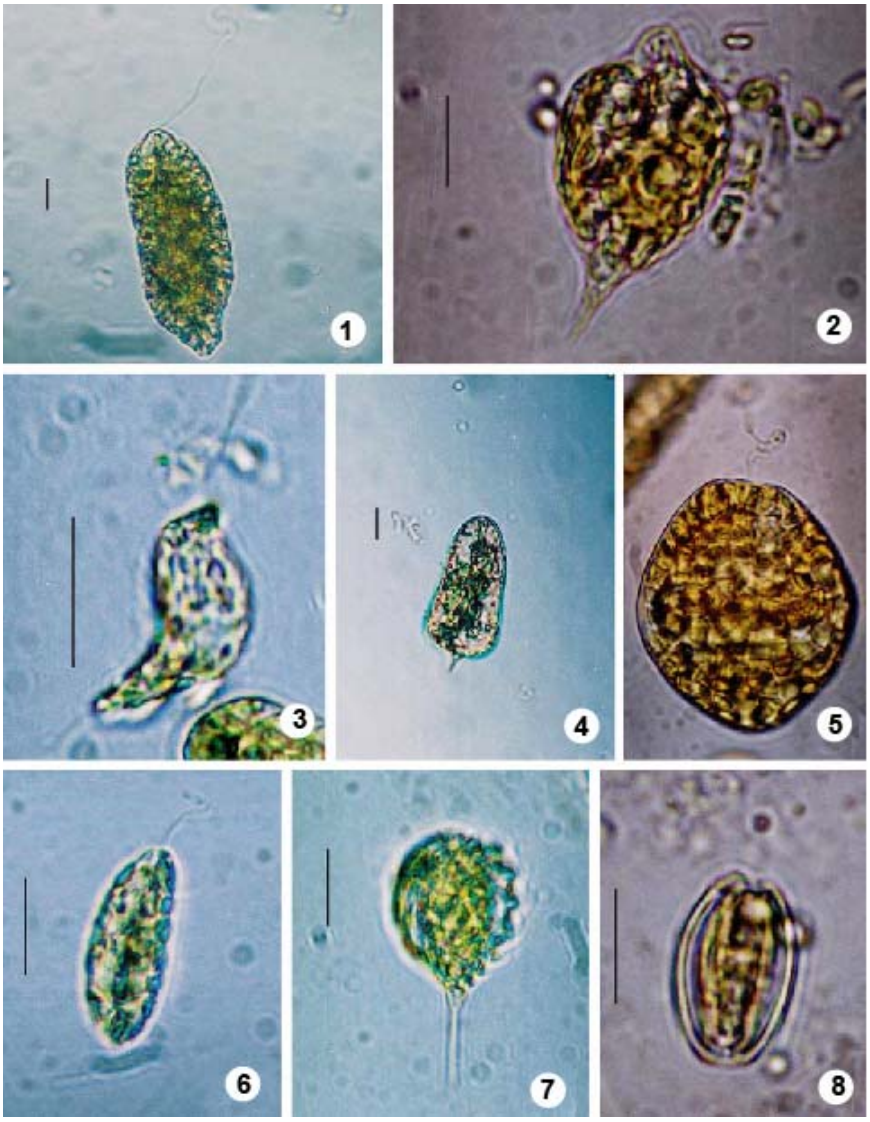
Collection no. 13 (L-2), 15 May 2010.

7. **P. strongylus** Pochm. (**Fig. 7**)

(Huber-Pestalozzi 1955, 234, Pl. LIV, f. 331; Syn. *P. setosa* France´ Drez.; *P. setosa* var. *polonica* Skv. bei Skvortzow; *P. setosa* var. *crenata* Skv. bei Skvortzow)

Cell 33 µm long, 18 µm broad. Cell compressed, straight or slightly curved, dentate in one side view, spiral striation, median furrow dividing into two halves. Caudus long, paramylon numerous.

Collection no. 10 (L-2), 25 Mar 2010.



Figs 1-8. 1. *Euglena fundoversata* L.P. Johnson, 2. *E. korshikovii* Gojdics, 3. *E. minuta* Prescott, 4. *E. sacculiformis* Schiller, 5. *Lepocinclis truncata* Da Cunha, 6. *Phacus pusillus* Lemn., 7. *P. strongylus* Pochm. 8. *P. wettsteini* Drez. Bar = 10 µm.

8. **P. wettsteini** Drez. (**Fig. 8**)

(Huber-Pestalozzi 1955, 183, Pl. XXXIV, f. 198a)

Cell 15 µm long, 7 µm broad. Cell ellipsoid to ovoid, anterior front more or less narrows, slightly spreading, with small opening. Posterior end blunt or rounded with bright translucent longitudinal groove, longitudinal striation arranged spirally. Paramylon round.

Collection no. 6 (L-2), 15 Jan 2010.

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