

NEW RECORDS OF SOME EUGLENOID ALGAE FROM BANGLADESH

MD. ALMUJADDADE ALFASANE*, ASHIKA AKHTAR, MALIHA MEHNAZ,
MST. AYESHA, Z.N. TAHMIDA BEGUM AND MAHMOUD MOUSTAFA^{1,2}

Department of Botany, University of Dhaka, Dhaka-1000, Bangladesh

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Abstract

The following taxa belong to eight species under five genera of euglenoid algae, namely, *Euglena anabaena* Mainx., *Phacus glaber* Pochmann (Defl.) Posch, *Phacus indicus* Skvortzov, *Protaspis obovata* Skuja, *Strombomonas lanceolata* (Playfair) Deflandre, *Trachelomonas hexangulata* (Swir) Playf., *T. obovata* var. *klebsiana* Defl. and *T. pseudocaudata* Defl. are described here for the first time for Bangladesh.

Introduction

So far, A large number of euglenoid algae have been reported from the different habitats of Bangladesh (Alfasane and Khondker, 2007; Alfasane *et al.*, 2010, 2021; Gani *et al.*, 2012. Khondker and Alfasane, 2005; Islam and Alfasane 2002, 2003, 2004; Islam and Muniruzzaman, 1981). Recently a large number of collections of the euglenoid algae from different fresh water of habitats of Sylhet Division of Bangladesh have been made. The euglenoid species are described here, could not be recorded earlier from the areas selected or any other parts of Bangladesh. So these could be considered as new records for Bangladesh. The recorded species belonged to the genera *Euglena*, *Phacus*, *Protaspis*, *Strombomonas* and *Trachelomonas*. The samples were collected from different stations of Shari Goyain River, Piyain River and Madhabpur Lake of Sylhet Division of Bangladesh. The descriptions of the organisms are given below.

Materials and Methods

Samples for the present paper were collected from Shari Goyain River and Piyain River of Sylhet District and Madhabpur Lake of Moulvibazar District of Sylhet Division between May 2017 and April 2020. Samples were collected by sieving 100 L of sub-surface water through a plankton net having a mesh size 20 µm and preserved with Lugol's solution. Organisms were photomicrographed with the help of a Nikon Optiphot, UFX-11A microscope with a Nikon FX-35WA camera, Japan.

Taxonomy

Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;

Genus: *Euglena* Ehrenberg

1. *Euglena anabaena* Mainx. (Fig. 1)
(Dillard 2000, 17; Pl 6, Fig. 8, Pringsheim, 1956, 71, Fig. A)

Cell length 55-95 µm, breadth 18-23 µm, bluntly spindle shaped to near cylindrical, anterior end rounded, each cell slightly narrowing at posterior end and attenuated. Posterior end tapering rather abruptly to a tail, pellicular striations fine, spirally disposed. Chloroplasts 8-14 irregularly lobed discs with pyrenoid, pyrenoid body sometimes elongated.

It is a new record for Bangladesh. Collection no. P-3(1), 05.05.2017, Piyain River.

*Corresponding author, E-mail: mujaddade@yahoo.com

¹Department of Biology, College of Science, King Khalid University, 9004, Abha, Kingdom of Saudi Arabia

²Department of Botany, Faculty of Science, South Valley University, Qena, Egypt

Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;**Genus: *Phacus* Dujardin**2. *Phacus glaber* (Defl.) Poch. (Fig. 3)

(Huber-Pestalozzi 1955, 238, Pl. 55, Fig. 340; Dillard 2000, 57, Pl. 8, Fig. 10; Philipose 1988, 542, Fig. 44)

Syn. *Phacus hispidulus* (Eich.) Lemm. fa. *glabrus* Defl.

Cells broadly oval in cross section and elliptic in lateral ribs, anterior end broadly rounded with a median papilla, posterior end abruptly narrowed into a long, awl-like caudus, pellicle with rows of fine punctae, much longer plexiform, end-sting and by the wart less periplast. Cell wall smooth; paramylum two lateral pads; chromatophores small, numerous and discoid; cell (including caudus) 26.5 x 14.5 µm; caudus alone 7 µm.

It is a new record for Bangladesh. Collection no. M-4(2), 06.08.2017, Madhabpur Lake, S-8(3), 10.11.2017, Shari Goyain River.

3. *Phacus indicus* Skvor. (Fig. 4)

(Huber-Pestalozzi 1955, 174, 199, Pl. 40, Fig. 248c; Wołowski and Walne 2007, 74, Fig. 255, 256)

Syn. *Phacus caudata* var. *undulata* Skv., *P. caudata* var. *volicensis* Drez.

Cell length 27-43 µm, breadth 17-22 µm, asymmetric, ovoid front slightly tapered at the center with 1-2 deep notches, each cell oval in outline with few deep incisions at the rim, caudus straight and sharp at the posterior end.

It is a new record for Bangladesh. Collection no. S-5(1), 05.05.2017, Shari Goyain River.

Class: Euglenophyceae; Order: Desmomastigales; Family: Protaspidae;**Genus: *Protaspis* Skuja**4. *Protaspis obovata* Skuja (Fig. 2)

(Huber-Pestalozzi 1955, 544, Pl. 140, Fig. 1114c)

Cell length 26-40 µm, breadth 17-25 µm, reversed ovate to oblong pear shaped, dorsiventral, very little or no flattened more in the posterior part. Front rounded, towards the back cells are slightly narrowed.

The genus is a new record for Bangladesh. Collection no. M-3(1), 07.05.2017, Madhabpur Lake.

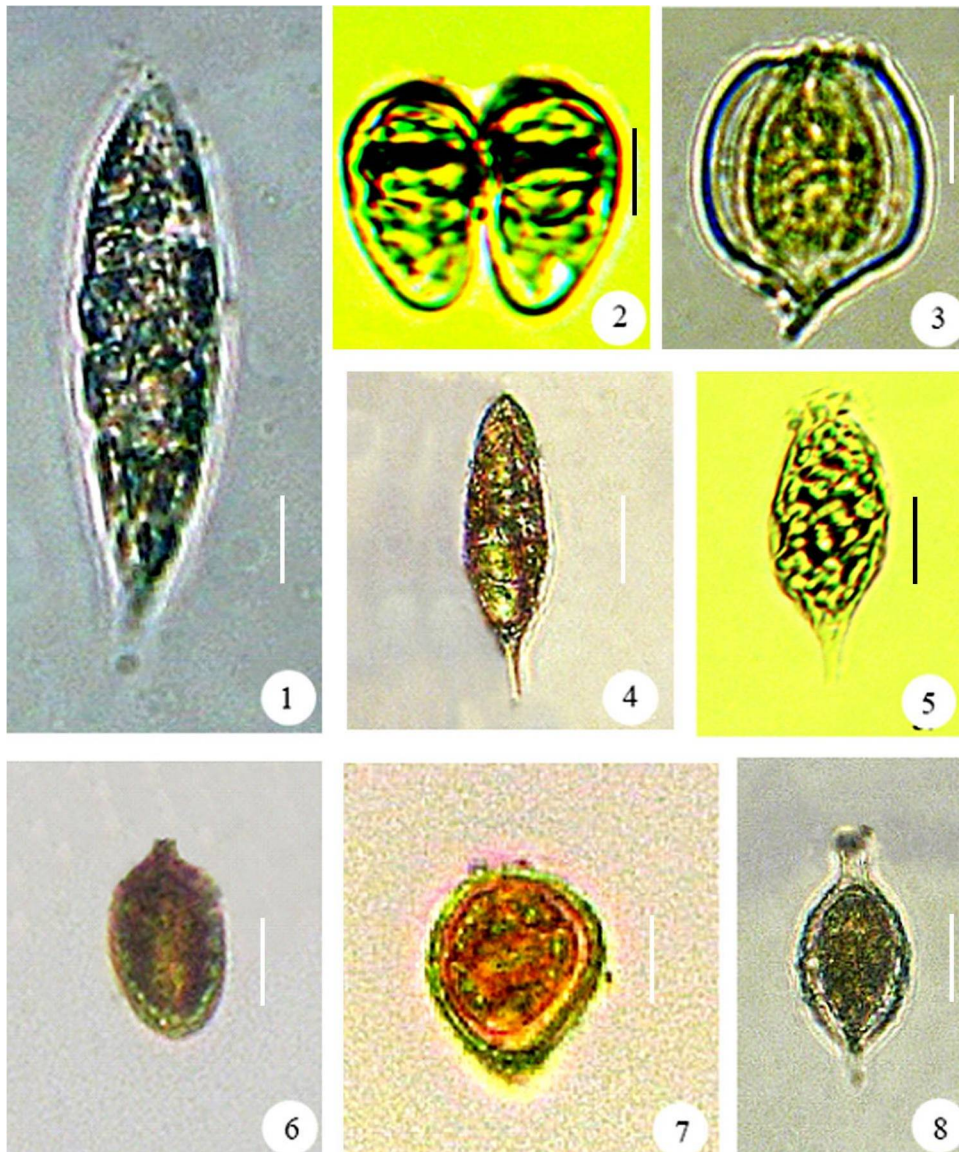
Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;**Genus: *Strombomonas* Deflandre**5. *Strombomonas lanceolata* (Play.) Defl. (Fig. 5)

(Huber-Pestalozzi 1955, 380, Pl. 79, Fig. 820; Alves-da-Silva and Bridi, 2004)

Syn. *Trachelomonas lanceolata* Playfair, *T. fluviatilis* Swir, bei Deflan., *T. dangeardi* Skv., *T. curta* Skv. var. *pascheri* (Drez.) Skv., *T. fluviatilis* var. *pascheri* Drez.

Cell length 23-31 µm, breadth 12-14 µm. Body oblong ellipsoidal, leading forward into a short, obliquely truncated and smooth-edged collar, ending behind with a short, strong, pointed caudal spine. Cell wall smooth, yellowish-green wall; discoid chloroplasts, pyrenoids present.

It is a new record for Bangladesh. Collection no. M-1(2), 06.08.2017, Madhabpur Lake.



Figs 1-8. 1. *Euglena anabaena* Mainx., 2. *Protaspis obovata* Skuja, 3. *Phacus glaber* Pochmann (Defl.) Posch, 4. *Phacus indicus* Skvortzov, 5. *Strombomonas lanceolata* (Playfair) Deflandre, 6. *Trachelomonas hexangulata* (Swir) Playf. 7. *T. obovata* var. *klebsiana* Defl. 8. *T. pseudocaudata* Defl. (Scale=10 μ m).

Class: Euglenophyceae; Order: Euglenales; Family: Euglenaceae;

Genus: *Trachelomonas* Ehrenberg

6. *Trachelomonas hexangulata* (Swir) Playf.

(Fig. 6)

(Huber-Pestalozzi 1955, 335, Pl. 72, Fig. 702, Dillard, 2000, 82, Pl. 20, Fig. 1; Philipose 1988, 362, Pl. 10, Figs 2-6)

Syn. *T. ampullula* Playf.

Cell length 24-30 μm , breadth 10-16 μm . Cell in frontal view approximately hexagonal, with rounded corners, sides in the middle part almost parallel. Cell collar height 2-5 μm , front and hind ends conical; hind pole more or less truncate or sometimes broadly rounded; collar cylindrical, straight or sometimes with a membrane cone joining the collar wall with the upper margin of the lorica; membrane smooth and light yellowish.

It is a new record for Bangladesh. Collection no. P-7(4), 03.02.2018, Piyain River, S-7(2), 04.08.2017, Shari Goyain River.

7. *T. obovata* var. *klebsiana* Defl. (Fig. 7)

(Huber-Pestalozzi 1955, 316, Pl. 69, Fig. 618; Dillard, 2000, 95, Pl. 15, Fig. 9)

Syn. *T. reticulata* Klebs fa. Defl..

Cell length 23-31 μm , breadth 17-19 μm , broadly or narrowly ovoid, without chromatophores, with or without paramylon, shell narrow or wide egg shaped.

It is a new record for Bangladesh. Collection no. S-2(3), 10.11.2017, Shari Goyain River.

8. *T. pseudocaudata* Defl. (Fig. 8)

(Huber-Pestalozzi 1955, 351, Pl. 75, Fig. 755)

Cell length 40-42 μm , breadth 21-23 μm , collar 5-6 μm in height, breadth at the base 5-5.5 μm , end extension 3.5-6.5 μm . Shell regularly ellipsoidal, densely covered with stalk-shaped blunt spines. Pore surrounded by an annular thickening and a distinct cylindrical (5-5.5 μm) collar which may be denticulated or not, posterior end with a short tail (3-4 μm long), sometimes truncated.

It is a new record for Bangladesh. Collection no. S-7(2), 05.02.2020, Shari Goyain River.

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