

NEW RECORDS OF PHYTOPLANKTON FOR BANGLADESH: DIVISION - CRYPTOPHYTA

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Abstract

The paper records 6 species of freshwater phytoplankton from the algal Division Cryptophyta. The species are *Cryptomonas pyrenoidifera* Geitler, *C. caudata* Schiller, *C. tetrapyrenoidosa* Skuja, *Chroomonas breviciliata* Nygaard, *C. reflexa* Kiss. and *Cyathomonas truncata* (Fres.) Fisch HP. These are newly recorded species from Sylhet Division of Bangladesh.

Introduction

The algal division Cryptophyta contains a small group of biflagellate organisms which are dorsiventrally flattened, asymmetric and free swimming (Bold and Wynne 1985). Most of them are planktonic and commonly called cryptomonad algae. In Bangladesh, a number of studies were carried out on this phytoplankton (Islam and Khondoker, 1997; Khondoker *et al.*, 2007; Alfasane *et al.*, 2010; Gani *et al.*, 2014). So far, a total of 9 genera and 19 species were reported (Ahmed *et al.*, 2009).

The present authors while studying some samples of plankton collected from few oligo- to meso-eutrophic aquatic habitats of Sylhet and Moulvibazar districts recognized the occurrence of cryptomonads phytoplankton. Further detailed taxonomic study on the samples, 6 species were found belonging to the division Cryptophyta and hitherto reported as new to the list of cryptomonads from Bangladesh.

Materials and Methods

The samples for the present study were collected from different parts of Shari Goyain River and Piyain River of Sylhet district and Madhabpur Lake of Moulvibazar district. Some water quality characteristics of the studied habitats ranged: water temperature from 17.7-30.7°C, 17.1-31.3°C and 24.0-32.9°C, respectively and pH from 6.8-8.9, 6.9-9.4 and 6.7-7.7, respectively. The samples of plankton were collected by hauling a plankton net of 20 µm mesh size. After collection those were preserved in 5% formalin. The microscopic study was performed with a Carl Zeiss Microscopy GmbH, Germany, Model: Axio Lab A1.

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Taxonomy

**Class: Cryptophyceae; Order: Cryptomonadales; Family: Cryptomonadaceae;
Genus: *Cryptomonas* Ehrenberg**

1. *Cryptomonas pyrenoidifera* Geitler (Fig. 1)
(Huber-Pestalozzi, 1968, 45, 64, Pl. 8, Fig. 47; Ling and Tyler, 2000, 57, Pl. 20, Fig. 8)

Cell length 18-20 μm , breadth 7-8 μm , in lateral elevation elliptic to approximately obovate, basal part broadly rounded. Cells are seen oblong elliptic to almost cylindrical towards the ends from the back.

Collection no. S-3(2), 04.08.2017, Shari Goyain River, Sylhet.

2. *C. caudata* Schiller (Fig.2)
(Huber-Pestalozzi, 1968, 43, 54, Pl. 6, Fig. 30A)

Cell length 15-17 μm , breadth 8 μm , ovate in ventral view narrowing to the rear and suddenly into a small pointed flat appendages starting from the edge is visible. In the cross section almost circular, left lateral contour is stronger than the right curved.

Collection no. S-8(2), 05.08.2017, Shari Goyain River, Sylhet

3. *C. tetrapyrenoidosa* Skuja (Fig. 3)
(Huber-Pestalozzi, 1968, 45, 62, Pl. 7, Fig. 45; Bourrelly, 1970, Pl. 1, Figs. 8-9)

Cell length 30-47 μm , breadth 17-26 μm , thickness 5-17 μm , cells relatively large, oval, on one side convex than on the other, pressed together. Each chromatophore is usually provided with 2 pyrenoides on top of each other, sometimes ventral chromatophore lacks, the upper pyrenoid or pyrenoids are greatly reduced.

Collection no. P-9(3), 11.11.2017, Piyain River, Sylhet

**Class: Cryptophyceae; Order: Pyrenomonadales; Family: Chroomonadaceae;
Genus: *Chroomonas* Hansgirg**

4. *Chroomonas breviciliata* Nygaard (Fig. 4)
(Huber-Pestalozzi, 1968, 27, 35, Fig. 22A)

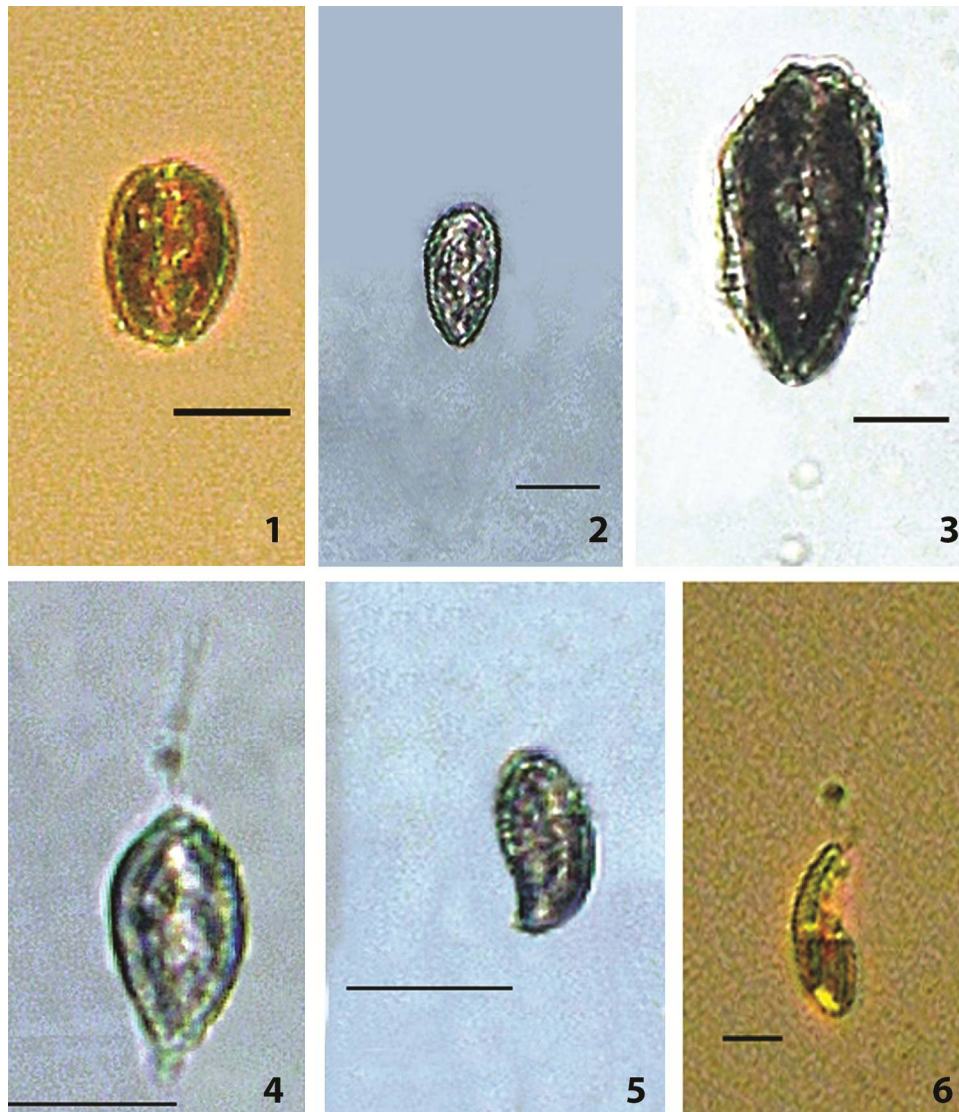
Cell length 15-17 μm , breadth 4-6 μm , pear shaped, rounded front, pointed back and slightly pulled out to the side. Pyrenoid 2, equally long. Flagella very short. In the apical part furrow and granula lack a contractile vacuole.

Collection no. M-5(3), 12.11.2018, Madhabpur Lake, Moulvibazar, S-3(2), 04.08.2017, Shari Goyain River, Sylhet.

5. *C. reflexa* Kiss. (Figs 5)
(Huber-Pestalozzi, 1968, 27, 32, 34, Pl. 3, Fig. 21)

Cell length 26-31 μm , breadth 15-16 μm , ovate with sharpened and background basal end, slope in front end.

Collection no. S-3(3), 10.11.2017, Shari Goyain River, Sylhet



Figs 1-6. 1. *Cryptomonas pyrenoidifera* Geitler, 2. *C. caudata* Schiller, 3. *C. tetrapyrenoidosa* Skuja, 4. *Chroomonas breviciliata* Nygaard, 5. *C. reflexa* Kiss, 6. *Cyathomonas truncata* (Fres.) Fisch HP.

**Class: Cryptophyceae; Order: Pyrenomonadales; Family: Cyathomonadaceae;
Genus: Cyathomonas Fromental**

6. *Cyathomonas truncata* (Fres.) Fisch HP.
(Huber-Pestalozzi, 1968, 15, 73, Pl. 10, Fig. 58a)
Syn. *Goniomonas truncata* (Fresenius) F. Stein 1878

(Fig. 6)

Cell length 15-30 μm , cell a little less wide belly and back line in front and almost parallel in the middle. The contractile vacuole contracts in 3-4 times.

Collection no. S-3(2), 04.08.2017, Shari Goyain River, Sylhet.

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