



### EUGLENOPHYCEAE AND CYANOPHYCEAE FROM BORI DAM, NALDURG, OSMANABAD DISTRICT, MAHARASHTRA.



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#### **ABSTRACT:**

A preliminary survey of algae from the water body at Bori dam, Naldurg (M.S.) was undertaken during June 2015 to May 2016. Number of fresh water Euglenophyta, and Cyanophyta algae has been recorded. *Euglena* from Euglenophyta and majority of the planktonic blue-green consists members of filamentous family Oscillatoriaceae, Nostocaceae and Rivulariaceae.

**KEY WORDS:** *Algae, Euglenophyta, Cyanophyta, Filamentous algae, Bori Dam.*

#### **INTRODUCTION:**

Euglenophyta is a small group of algae that is almost totally fresh water in distribution. A majority of the planktonic algae belong to the orders Euglenales e.g *Euglena acus*, and *E. gracilis*, Blue green algae, Cyanophyta members are adapted to all types of fresh water environment. These occur

in unicellular, filamentous and colonial forms and most are enclosed in mucilaginous sheaths either individually or in colonies.

Bori water project is constructed on Bori River at Naldurg in Osmanabad district of Maharashtra. It is having large capacity of storage of water and catchment area of the project is 125 sq. km. The maximum water depth is 18.46 meter while mean water depth is 50 feet. The large number of algae and some other aquatic plants are also present in the water body. Therefore, the study of aquatic flora at the Bori water reservoir is essential. So far algal studies in Indian dams were studied by the several workers. The algal flora of Chilika Lake was studied by Rath and Adhikari (2005). Gonzalves and Joshi (1943) studied the algal flora of temporary water pools around Bombay. Pingle (2005) have investigated the diversity of algae at Pashan Lakes of western ghat area of Maharashtra. Study of the algal flora of water reservoir was undertaken from June 2015 to May 2016. The algal samples were collected from four different localities of the water reservoir. The members of Euglenophyceae and Cyanophyceae algae observed during the present investigation are described in this paper.

#### **MATERIALS AND METHODS:**

Algal samples were collected once in a month from water body during June 2015 to May 2016. The sample collection was carried out in morning between 7.00 am to 10.00 am. The algal samples were collected in 100 ml plastic bottles and then brought to the laboratory. These samples were preserved in 35 ml capacity plastic bottles in 4% formalin for further studies. In the laboratory, they were preserved in 1000 ml capacity wide mouth glass bottles. The phytoplanktons were collected by using Plankton net, as per the method adopted by Narkhede (2006). The morphological studies of specimens were done by using Research Microscope and the photographs were taken using digital camera. The algal taxa were described along with their location of occurrence. The identification was done with the help of available literature such as floras, monographs and research articles.

#### **RESULTS AND DISCUSSIONS:**

During the period of present investigation following members of Euglenophyta and members of cyanophyta were observed at three different localities of Bori Dam. Two species with one genera of Euglenophyta and 13 species of 09 genera of cyanophyta were recorded.

Div.- Euglenophyta  
Class.-Euglenophyceae

##### **1) *Euglena acus* Ehr.**

Cells very slightly metabolic, elongate spindle-shaped, produced posteriorly into a long, fine tapering point, narrowed and truncate at the anterior end; membrane indistinctly spirally striated; chloroplasts numerous, disc-like; paramylum bodies 2 to several, long rods.

##### **2) *Euglena gracilis* Klebs**

Cells metabolic, short-fusiform to ovoid; chloroplasts many, disc shaped bodies evenly distributed throughout the cell, with pyrenoids; paramylum bodies not observed

Div.- Cyanophyta  
Class- Cyanophyceae

##### **1) *Anabaena gelatinicola* Ghose**

Thallus thick, gelatinous; trichomes mostly solitary, spirals densely arranged and straight; cells

subspherical, apex acute; heterocysts spherical; spores in series, away from the heterocyst, spherical.

**2) *Anabaena subcylindrica* Borge**

Trichomes straight; solitary or forming a thin layer; adherent on submerged aquatics and entangled among other algae. Cells short-cylindric; Heterocyst cylindrical. Gonidia cylindrical.

**3) *Chroococcus cohaerens* (Breb) Nag.**

Thallus slimy or gelatinous, blue or dark green; cells single or up to 2-8 in groups, without envelope 2-5(-7)  $\mu$  dim., and with sheath 2.5-7  $\mu$  dim, colony 7-15  $\mu$ ; sheath thin, colorless, unlamellated

**4) *Chroococcus limneticus* Lemm.**

Cells spherical, free floating in a gelatinous layer, sheath colorless, colonial mucilage broad, cell contents gray, olive green Cells 7.5  $\mu$  in diameter.

**5) *Cladophora* sp.**

Thallus long branched threads attached to the submerged rocks in shallow water body. Occurs in the form of bush like appearances. Individual cells are large, multinucleate, cylindrical and placed end to end. A branch arises as a later outgrowth of the parent cell near its upper end. Branches generally arise from the cell near the apex. Cells are cylindrical much longer than broad

**6) *Gloeocapsa kuetzingiana* Nag.**

Thallus thin, soft, brownish or blackish; cell densely arranged in colony, 125  $\mu$  diam.; cells without sheath 5  $\mu$  diam., with sheath 7.5  $\mu$  diam., blue green; sheath yellow to brown, not lamellated.

**7) *Gloeotheca wittrockiana* Lag.**

One to four spherical cells in a mucilaginous sheath. The long, slender gelatinous hairs make this species easy of identification. Cells in clumps, attached to filaments algae. Either a single colourless cell or a group of 2-4 such individuals endophytised by ovate, blue-green protoplasts which form acute shaped body within the host cell; Gelatinous sheath about 20 times the diameter of cell in length.

**8) *Microcystis flos Aquae* (Wittr.) Kirchner**

Colonies roughly spherical, ellipsoidal or somewhat elongate or often squarish in optical section, not clathrate, with indistinct colonial mucilage; cell 5  $\mu$  in diameter.

**9) *Microcystis aeruginosa* Kutz**

Colonies when young rounded or slightly longer than broad, solid, when old and becoming clathrate, with distinct hyaline colonial mucilage; cells 3-7  $\mu$  in diam., spherical, generally with gas-vacuoles.

**10) *Nostoc punctiforme* v. *Populorum***

Thallus sub-globose attached. Filaments flexuous densely entangled; sheath delicate, hyaline. Trichome cells short barrel-shaped, blue green; heterocyst's broad; spores sub-spherical. Epispore thick and smooth.

**11) *Oscillatoria annae* Van Goor**

Trichome straight, dull blue green, slightly constricted at the cross walls, 7.5-8  $\mu$  broad; attenuated at the ends, up to 7  $\mu$  broad and bent, 1.5-3 sometimes up to 4  $\mu$  long, not granulated at the cross-walls; end-cell rounded, calyptra absent.

**12) *Oscillatoria princeps* Vaucher ex. Gomont**

Trichomes blue green, brownish or violet, mostly forming a thallus, straight, 16-60  $\mu$  broad, blue green to dirty green, attenuated at the apices and bent; cells 1/11-1/4 as long as broad, 3.5-7  $\mu$  long; end cells flatly rounded, slightly capitate without or with slightly thickened membrane.

**13) *Spirulina laxa*. G.M. Smith**

Trichomes loosely spiraled, forming a dark blue-green mass, distance between spirales 15-20 m

;cell contents blue green.

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