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## Some BGA at Jayakwadi Bird Sanctuary, Paithan – Maharashtra

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### Abstract

Algae represent a highly diverse consortium of photosynthetic thallophytes, without an organized thallus and vascular system, comprising different evolutionary lineages of photo-autotrophic organisms. Blue-green algae (BGA) are primitive, microscopic aquatic plants which live in fresh water, such as ponds and lakes. These are widely-occurring throughout environments like from oceans to freshwater to bare rock to soil, ranging in size from unicellular forms to large colonial algae such as *Microcystis* and *Anabaena*. Large colonies of these forms can be readily seen with the naked eye; some are able to fix the atmospheric nitrogen. Some blue green algae (BGA) from Jayakwadi Bird Sanctuary (Nathsagar water reservoir), Paithan, were investigated from 2008 to 2011. Total 5 genera viz. *Gloeocapsa*, *Chroococcus*, *Microcystis*, *Aphanocapsa*, *Merismopedia*, and 9 species of genera were described in present paper.

**Keywords:** BGA, Jayakwadi, Sanctuary, Paithan.

### Introduction

Jayakwadi project is constructed on River Godavari at Paithan which is about 50 kms away from Aurangabad. The water body of the dam is known as “Nathsagar”, which is about 55 kms in length and 27 kms in width. The water body has large number of algae, aquatic angiosperms, fishes and other aquatic animals. During winter season, every year a large number of migratory birds from world of different types visit the water body. Considering this fact, the Government of Maharashtra has declared the Nathsagar water reservoir as “Jayakwadi Bird Sanctuary”. The blue green algae comprise large number of total algae at water reservoir. Taking this fact in consideration the studies on the BGA were selected for the study at Jayakwadi Bird Sanctuary. The taxa observed during the investigation are described in this paper.

### Materials and Methods

A survey of the algae was carried out at four locations viz Dahiphal (75°15'650" E longitude and 19°26'221" N latitude), Pravarasangam (75°00'801" E longitude and 19°36'281" N latitudes), Ramdoh (75°01'148" E longitude and 19°35'549" N latitudes) and Sonewadi (75°20'750" E longitude and 19°26'431" N latitudes); situated on southern side of the water reservoir were selected. Random sampling technique has been used for collection of algal samples. Sample collections were made during this period for 3 consecutive years (2008-2011). The algal samples were preserved in 4% formalin. Identification of taxa carried out by using Desikachary, (1959) Prasad and Srivastava, (1992) Prescott, (1951) Jadhavar and Papdiwal, (2010), Rai *et.,al* (2010) and other relevant literature.

## Results and Discussion

### 1) *Gloeocapsa kuetzingiana* Nag.

Desikachary, 1959, p118, pl 23, f 4  
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.

Locality : Dahiphal; Pravara Sangam; Ramdoh  
Coll.No.and Date: JD-79 (01/03/09); JPS-129 (21/06/09); JR -123 (20/06/09)

### 2) *Chroococcus limneticus* Lemm.

Rai , S.K. , Rai, R.K. and S. Jha, (2010), p 337.  
Cells spherical, free floating in a gelatinous layer, sheath colorless, colonial mucilage broad, cell contents gray, olive green. Cells 7.5  $\mu$  in diameter.  
Locality: Pravara Sangam; Ramdoh  
Coll.No.and Date: JPS-234 (31/01/10); JR-339 (16/05/10)

### 3) *Microcystis flos-aquae* (Wittr.) Kirchner

Desikachary, 1959, p 94, pl 17, f 11  
Colonies roughly spherical, ellipsoidal or somewhat elongate or often squarish in optical section, not clathrate, with indistinct colonial mucilage; cell 5  $\mu$  in diameter.  
Locality : Pravara Sangam; Ramdoh  
Coll.No.and Date: JPS -65 (15/02/09); JR-310 (18/04/10)

### 4) *Aphanocapsa biformis* A.Br.

Desikachary, 1959, p 134, pl 21, f 3  
Thallus olive green, gelatinous, often expanding; cells 5  $\mu$  diam, spherical, mostly with a special envelope; loosely arranged, 2-4 together in a common mucilaginous envelope, nannocytes about 2  $\mu$  diam.  
Locality: Dahiphal; Pravara Sangam; Ramdoh  
Coll.No.and Date: JD-56 (10/02/09); JPS-161 (08/11/09); JR-28 (14/12/09)

### 5) *A. grevillei* (Hass.) Rabenh.

Prasad and Srivastava, 1992, p 36, pl 5, f 2  
Thallus light blue green, spherical densely arranged and embedded in gelatinous matrix; cells spherical, 2.5  $\mu$  in diameter, closely arranged, individual envelope not distinct; cell contents blue green, homogenous without gas vacuoles; cell wall thin and smooth.

Locality : Dahiphal; Ramdoh; Sonewadi

Coll.No.and Date: JD-299 (09/04/10); JR-248 (14/02/10); JS-180 (29/11/09)

### 6) *Merismopedia elegans* A.Br.

Prescott, 1951, p 459, pl 101, f 1  
Colony irregularly quadrangular, composed of 16 or more compactly arranged, ovate cells, with the row of cells, becoming distorted in older and longer colonies; cells 5  $\mu$  in diameter, 7.5  $\mu$  long; contents bright blue green.  
Locality : Pravara Sangam; Ramdoh  
Coll.No.and Date: JPS-161 (08/11/09); JR-311 (18/04/10)

### 7) *M. glauca* (Ehr.) Nag.

Desikachary, 1959, p 155, pl 29, f 5  
Colonies planktonic, mostly small with 64 cells, rarely more, 137.5  $\mu$ m in diameter, cells oval, closely arranged, 5 $\mu$  broad, pale blue green.

Locality : Dahiphal, Pravara Sangam, Ramdoh, Sonewadi Coll. No. and Date : JD- 42 (04/01/09); JPS-69 (15/02/09); JR-28 (14/12/08); JS- 01 (02/11/08)

### 8) *M. minima* Beck

Desikachary, 1959, p 154, pl 29, f 11  
Cells pale blue green, 4 to many in small colonies, 0.5  $\mu$  broad, free swimming, groups of four cells 2.5  $\mu$ .  
Locality : Dahiphal; Ramdoh; Sonewadi  
Coll.No.and Date: JD-80 (01/03/09); JR-252 (14/02/10); JS-04 (02/12/08)

### 9) *M. punctata* Meyen

Prescott, 1951, p 459, pl 102, f 10  
A rectangular plate of 64 ovate cells, usually loosely arranged, sometimes in compact groups of 4-8 individuals, the groups are widely separated within a broad gelatinous envelope, cells 2.5  $\mu$ .  
Locality: Dahiphal; Pravara Sangam; Sonewadi  
Coll.No.and Date: JD- 216 (11/01/10); JPS- 129 (21/06/09); JS- 254 (21/02/10)

During the present investigation 5 genera and 9 species of blue green algae were observed which are described as under.

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