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SOME CHLOROCOCCALEAN ALGAE FROM JAYAKWADI BIRD SANCTUARY OF MAHARASHTRA

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Twenty two taxa of fresh water algae belonging to Class Chlorophyceae (order- Chlorococcales) have been described from four different locations of Jayakwadi Bird Sanctuary at Paithan, Maharashtra State. These taxa belong to 6 genera *viz Oocystis, Selenastrum, Ankistrodesmus, Actinastrum, Coelastrum* and *Scenedesmus.* All these taxa are being reported for the first time from the Sanctuary.

Key words: Algae, Chlorophyceae, Chlorococcales, Jayakwadi Bird Sanctuary, Maharashtra.

About 50 kms away from Aurangabad (Maharashtra), at Paithan is a dam, known as Jayakwadi project. The water body known as 'Nathsagar' has been declared by Govt. of Maharashtra as 'Bird Sanctuary' in 1986. The water body is about 55kms in length and 27 kms in width with 25-28% area is shallow, depth is less than one meter. This region of water body is biologically active, having large number of flora and fauna. Several angiospermic plants and large number of unexplored algae were observed in this area. Therefore, the study of vegetation of the water body was undertaken during years 2005-2008.

MATERIALS AND METHODS

Random sampling technique has been applied for algal collection. Four locations of the Nathsagar water body *viz.* Kaigaon, Bramhgavan, Dhakephal and Nathsagar North were selected. Sample collections were made during 3 consecutive years (2005-2008), from November to March. The algal samples were preserved in 4% formalin and slides were prepared by staining with iodine and mounted in glycerine.

Systematic descriptions

Identification of taxa carried out using Philipose (1967) and other relevant literature.

Order - Chlorococcales
Family- Oocystaceae
Subfamily- Oocystoideae

1) ***Oocystis borgei*** Snow

Cells 9-13µ broad, 9-18µ long. Usually in 2-8 celled colonies. (Pl. 1, Fig. 1) **Collection Number and Date:** JK-48/3 (15-12-07), JNN-7/2 (25-12-05) **Locality**-Kaigaon, Nathsagar North.

2) ***O. solitaria*** Wittrock

Cells 15.7-17.6 in size. (Pl. 1, Fig. 2) **Collection Number and Date:** JD-32/3 (10-03-07) **Locality**- Dhakephal

Family: Selenastraceae

3) ***Selenastrum bibraianum*** Reinsch

Cells 5-8µ broad, 16-38 µ long. Colonies of 2-4-8-16 or more cells. (Pl. 1, Fig. 3) **Collection Number and Date:** JB-16/3 (04-12-05) **Locality**- Bramhgavan

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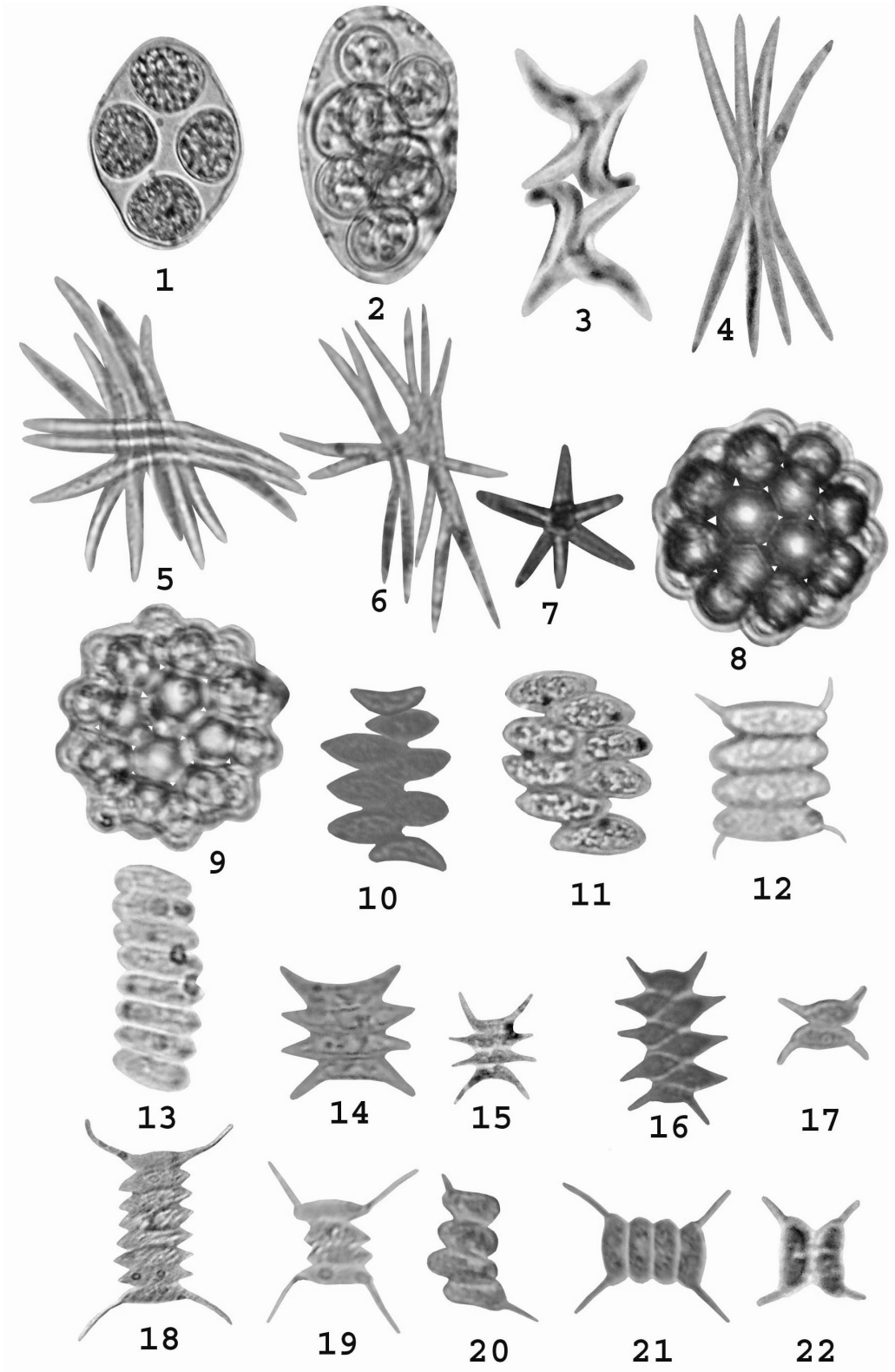

Plate 1: Figure 1. *Oocystis borgei* 2. *O.solitaria* 3. *Selenastrum bibraianum* 4. *Ankistrodesmus falcatus* 5. *A. falcatus* v. *radiatus* 6. *A. spiralis* v.*fasciculatus* 7. *Actinastrum hantzschii* 8. *Coelastrum cambricum* v. *intermedium* 9. *C. microporum* 10. *Scenedesmus arcuatus* 11. *S. arcuatus* v. *capitatus* 12. *S. armatus* v. *major* 13. *S. bijugatus* f. *parvus* 14. *S. diamorphus* 15. *S. diamorphus* f. *tortus* 16. *S. falcatus* v. *maior* 17. *S. opoliensis* 18. *S. opoliensis* v. *mononensis* 19. *S. protuberans* f. *minor* 20. *S. quadricauda* v. *bicaudatus* 21. *S. quadricauda* v. *longispina* 22. *S. quadricauda* v. *quadrispina*

4) ***Ankistrodesmus falcatus*** (Corda) Ralfs.

Cells 6.3 µ broad, 113.4µ long. Colony of 4 cells. (Pl.1, Fig. 4) **Collection Number and Date:** JB-184/5 (02-03-08), JK-4/2 (20-11-05) **Locality:** Bramhgavan, Kaigaon

5) ***A. falcatus*** (Corda) Ralfs v**.** ***radiatus*** (Chod.) Lemmermann

Colonies of 8 cells, 2.5 µ broad and 94 µ long. (Pl.1, Fig.5) **Collection Number and Date:** JB-14/4 (04-12-05) **Locality**- Bramhgavan

6) ***A. spiralis*** (Turner) Lemmerman v. ***fasciculatus*** G. M. Smith

Colonies of 8 cells, Cells 6 µ broad, 65 µ long, and colonies 140 µ in diameter. (Pl.1, Fig.6) **Collection Number and Date:** JD-5/2 (13-01-08) **Locality**- Dhakephal

7) ***Actinastrum hantzschii*** Lagerheim

Cells 3-5µ broad, 5-25µ long, colonies up to 45 µ in diameter. (Pl.1, Fig. 7) **Collection Number and Date:** JB-5/4 (06-11-05), JNN-22/5 (26-03-06) **Locality**- Bramhgavan, Nathsagar North

Family: Coelastraceae

8) ***Coelastrum cambricum*** Archer v. ***intermedium*** (Bohlin) West

Cells 20 µ and colonies upto 100 µ in diameter. Colonies coenobial, free floating, with 32 globose cells. (Pl.1, Fig.8) **Collection Number and Date:** JB-276/5 (3-2-08), JD-18/5 (12-3-06) **Locality**- Bramhgavan, Dhakephal

9) ***C. microporum*** Naegeli

Cells 6-20 µ and colonies 30-90 µ in diameter. Colonies of 8-32 cells. (Pl.1, Fig. 9) **Collection Number and Date:** JK-5 (20-11-05), **Locality**- Kaigaon

10) ***Scenedesmus arcuatus*** (Lemm.) Lemmermann

Cells 3.8µ broad, 8.8 µ long, Colonies of 8-celled. (Pl.1, Fig.10) **Collection Number and Date:** JB- 11 (06-11-05), **Locality**- Bramhgavan

11) ***S. arcuatus*** v. ***capitatus*** G.M. Smith

Cells 9.4µ broad, 15µ long. Colonies curved 8-celled (Pl.1, Fig.11) **Collection Number and Date:** JB- 50 (06-01-07), **Locality**- Bramhgavan

12) ***S. armatus*** v. ***major*** G.M. Smith

Cells 8.1µ broad, 25.2µ long, spines 17.6µ long, Colonies 4-celled. (Pl.1, Fig. 12) **Collection Number and Date:** JB-57/2 (03-02-07), **Locality**-Bramhgavan

13) ***S. bijugatus*** (Turp.) f. ***parvus*** (G.M.Smith) Philipose.

Cells 3.4µ broad, 7.5µ long. Colonies 8 celled. (Pl.1, Fig. 13) **Collection Number and Date:** JD-2/3 (13-11-05) **Locality**- Dhakephal

14) ***S. diamorphus*** (Turp.) Kuetz.

Cells 9.4µ broad, 31.5µ long. Colonies 4-celled. (Pl.1, Fig. 14) **Collection Number and Date:** JD-49/2 (10-02-08) **Locality**- Dhakephal

15) ***S. diamorphus*** f. ***tortus*** G.M.Smith

Cells 6.3µ broad, 25.6µ long. Colonies 4-celled. (Pl.1, Fig. 15) **Collection Number and Date:** JK-22/2(19-03-06) **Locality**- Kaigaon

16) ***S. falcatus*** Chodat v. ***maior*** Kamat

Colony composed of 8 cells. Cells 8µ in diameter, 32µ long. (Pl.1, Fig. 16) **Collection Number and Date:** JD-49/3 (10-02-08) **Locality**- Dhakephal

17) ***S. opoliensis*** P. Richter

Cells 5.2 µ broad, 19.3 µ long, and spines 14.6 µ long, Colonies 2-celled. (Pl.1, Fig. 17) **Collection Number and Date:** JD-49/4 (10-02-08) **Locality**- Kaigaon

18) ***S. opoliensis*** v**.** ***mononensis*** Chodat

Cells 5 µ broad, 22 µ long. Spines of terminal cells 18.9µ long. Colony 8 celled. (Pl.1, Fig. 18) **Collection Number and Date**: JK-34/3 (20-01-

07), **Locality**- Kaigaon

19) *S. protuberans* Fritsch et. Rich f. ***minor*** Ley

Cells 5µ broad, 18.9µ long. Colonies usually 4-celled. (Pl.1, Fig. 19) **Collection Number and Date:** JK-62/4 (17-02-08), **Locality**- Kaigaon

20) *S. quadricauda* v**. *bicaudatus*** Hansg.

Cells 4-5 µ broad, 8-12 µ long. Colonies 4-celled. (Pl.1, Fig. 20) **Collection Number and Date:** JNN-38/1(27-01-07), **Locality**- Nathsagar North

21) *S. quadricauda* v. ***longispina*** (Chodat.) G.M. Smith

Cells 3.7µ broad, 12.6µ long. Colonies usually 4-celled, rarely 8-celled. (Pl.1, Fig. 21) **Collection Number and Date**: JNN-92/1 (24-02-08), **Locality**- Nathsagar North

22) *S. quadricauda* v. ***quadrispina*** (Chodat.) G.M. Smith

Cells 7.5 µ broad, 22 µ long, and spine 7 µ long. Colonies 2-celled, (Pl.1, Fig. 22) **Collection Number and Date**: JNN-95/4 (23-03-08), **Locality**- Nathsagar North

DISCUSSION

From Marathwada area studies on algae were carried out earlier by Kamat (1973, 1974), Sarode and Kamat (1979, 1980 and 1983) and Ashtekar (1980). However, the algal flora of Jayakwadi Bird Sanctuary has not been studied so far and this is the first report. Earlier the authors (2008) have described 16 species of *Pediastrum* belonging to Chlorococcacales from this water body.

In the present study, twenty two taxa, represented by 6 genera of Chlorococcacales have been reported from this water body. Genus *Oocystis***,** *Ankistrodesmus*, *Actinastrum***,** *Coelastrum* and *Scenedesmus* have been recorded from two different locations of study, while genus *Selenastrum* is recorded from one location only. Genus *Scenedesmus* is represented by 8 species, 7 varieties and 3 forms. Oocystis, *Ankistrodesmus* and *Coelastrum* are represented by 2 genera each. Genus *Ankistrodesmus* is represented by 2 varieties, while *Coelastrum* is represented by 1 variety. *Actinastrum* and *Selenastrum* are represented by 1 species each. All these taxa are being reported for the first time from this area.

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