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Algal flora of Navegaon bandh, Gondia district. (Maharashtra).

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Abstract:
Navegaon bandh is a National park, located in the Gondia district of Maharashtra state, India. Phytoplankton constitutes the different basis of nutrient cycle of an aquatic ecosystem. They play a crucial role in maintaining proper equilibrium between biotic and abiotic components of an aquatic ecosystem. Algal samples were collected at monthly intervals from Jan-2014 to Dec-2014. Floating, planktonic, submerged and attached epiphytic algal samples were collected. The algal taxa were identified with the help of standard literatures. In the present study 57 species under 27 genera have been identified and recorded. They belonged to Chlorophyceae, Charophyceae, Bacillariophyceae, Cyanophyceae and Euglenophyceae. In all 57 species were found growing luxuriantly in different seasons. Out of these 8 genera were belonged to Chlorophyceae, 1 genera belonged to Charophyceae, 3 genera belonged to Bacillariophyceae, 13 genera belonged to Cyanophyceae and 2 belonged to Euglenophyceae. Since this reservoir is rich in various fresh water micro-organisms, it should be protected as a natural wealth. These variations in environmental condition have helped this region to be rich in the phytoplankton biodiversity.
Keywords: Biodiversity, fresh water algae, Navegaon bandh.

Introduction

Water is a critical issue for the survival of all living organisms. The Quality of water determines its Biological components. Biodiversity of micro-flora should be protected from further environmental degradation. Biological assessment is a useful alternative for assessing the ecological quality of aquatic water bodies since biological communities integrate the environmental effects of water chemistry, in addition to the physical and geomorphologic characteristics of Rivers and lake (Stevenson and Pan, 1999). Algal community encountered in the water body reflects the average ecological condition and therefore they may be used as indicator of water quality (Bhatt, *et.al.* 1999; Saha *et.al.* 2000). Cherian and Shahare, (2011) reported 18 forms of algae out of which 9 belongs to Cyanophyceae, 3 to Chlorophyceae and 6 to Bacillariophyceae were observed from Chulband River, Gondia district.

Materials and Methods

For qualitative study of algal diversity, samples were collected at monthly intervals during Jan-2014 to Dec-2014 of Navegaon bandh (Fig.I.). The different forms such as epiphytic, epilethic & floating forms of phytoplankton were collected in acid washed bottles & they were preserved in 4% formalin for further study of investigation. The algal taxa were identified with the help of relevant monographs & standard literature (Desikachary, 1959). All identified taxa were arranged taxonomically in table-1.

Fig.I Navegaon bandh

Result and Discussion:

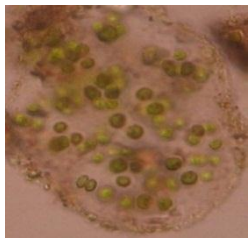
In the present study 57 species under 27 genera have been identified and recorded. In all 57 species were found growing luxuriantly in different seasons. Out of these 8 genera were belonged to Chlorophyceae, 1 genera belonged to Charophyceae, 3 genera belonged to Bacillariophyceae, 13 genera belonged to Cyanophyceae and 2 belonged to Euglenophyceae.

Conclusion:

In the present investigation 24 species of Cyanophyceae, 21 species of Chlorophyceae, 7 species of Bacillariophyceae, 4 species of Euglenophyceae and alone chara sp. could be identified from Navegaon band in different season. They belong to 27 genera. Navegaon band shows a variety of Cyanophycean forms growing luxuriantly. Periodic changes in the abundance of different forms in different seasons. 39 species were dominant in rainy season. 21 species were dominant in winter season and 34 species were dominant in summer season. Some species like *Microcystis, Phormidium, Anabaena, Navicula, Euglena* etc. indicate privileged degree of pollution. These variations in environmental condition have helped this region to be rich in the phytoplankton biodiversity.

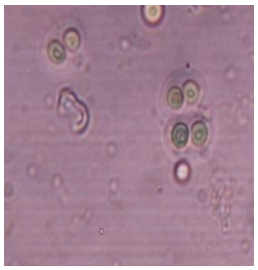
Sr. No.	Name of Algae	R	W	S
	Cyanophyceae			
1	***Microcystis flos-aquae*** (Wittr.)Kirchn.	-	+	+
2	***Microcystis marginata*** (Menegh.) Kutz.	-	-	+
3	***Chroococcus minutus*** (Kutz.) Nag. (after Skuja)	-	+	-
4	***Chroococcus montanus*** forma Rao, C. B.	-	-	+
5	***Chroococcus tenax*** (Kirchn.) Hieron	-	+	-
6	***Gloeocapsa nigrescens*** Nag.	-	-	+
7	***Aphanocapsa fonticola*** Hansgirg	-	-	+
8	***Aphanocapsa grevillei*** (Hass.) Rabenh.	-	+	-
9	***Merismopedia glauca*** forma (Rao, C. S.)	-	+	+
10	***Merismopedia punctata*** Meyen.	-	-	+
11	***Spirulina gigantea*** Schmidle	+	+	-
12	***Oscillatoria chalybea*** v. ***insularis*** Gardner	-	+	+
13	***Oscillatoria proboscidea*** Gom. (after Gomont)	+	+	+
14	***Oscillatoria subbrevis*** Schmidle	-	+	-
15	***Phormidium tenue*** (Menegh.) Gom. (after Fremy).	-	-	+
16	***Lyngbya digueti*** Gomont.	-	-	+
17	***Lyngbya hieronmusii*** Lemm.	-	+	+
18	***Lyngbya majuscula*** Havery ex. Gomont.	-	-	+
19	***Nostoc calcicola*** Breb. (after Fremy)	-	+	-
20	***Nostoc piscinale*** Kutz. (after Fremy)	-	-	+
21	***Anabaena circunalis*** Rabenhorst ex Born. et. Flah.	+	+	+
22	***Aulosira fertilissima*** Ghose var. ***tenuis*** Rao, C. B.	-	+	-
23	***Scytonema cincinnatum*** Thuret (after Fremy)	-	+	+
24	***Scytonema javanicum*** (Kutz.) Bornet	-	+	+
	Chlorophyceae			
25	***Chlorococcum humicola*** (Naegeli) Rabenhorst	-	-	+
26	***Pediastrum duplex*** Meyen var. ***asperum***	+	+	+
27	***Pediastrum simplex*** v. ***duodenarium*** (Bail.)	-	+	-
28	***Pediastrum tetras*** (Ehr.) Ralfs.	+	+	+
29	***Tetraedron trigonum*** (Naeg.)	-	+	-
30	***Scenedesmus arcuatus*** Lemm	+	-	-
31	***Scenedesmus dimorphus***. (Turpin)	+	+	-
32	***Scenedesmus obliquus*** (Turp.) Kuetz.	-	+	+
33	***Scenedesmus quadricauda*** v. ***longispina***	-	+	-
34	***Oedogonium globosum*** Nordstedt ex Hirn.	-	+	-
35	***Spirogyra ellipsospora*** Transeau 1914.	+	-	+
36	***Spirogyra hyalina*** Cleve (Transeau f)	+	-	+
37	***Spirogyra mirabilis*** (Hassall) Kuetzing	-	+	-
38	***Closterium cyanthia*** DeNot.	+	+	-
39	***Closterium didymotocum*** Corda.	+	+	
40	***Closterium ehrenbergii*** Menegh.	-	+	+
41	***Closterium moniliferum*** (Bory) Ehr.	+	-	+
42	***Cosmarium contractum*** Kirchner.	+	+	-
43	***Cosmarium impressulum*** Elfv.	+	-	+
44	***Cosmarium mononazum*** (Lund.)	+	-	+
45	***Cosmarium subspecioum*** Nordst.	-	+	+
	Bacillariophyceae			
46	***Gyrosigma baikalensis*** Skv.	+	-	-
47	***Gyrosigma maharashtrensis*** sp. Nov.	+	+	-
48	***Navicula halophila*** (Grun.) Cleve f. ***robusta***	-	+	-
49	***Navicula microcephala*** Grun.	-	+	+
50	***Navicula sacrophagus*** sp. nov. Gandhi	-	-	+
51	***Nitzschia irremissa*** Cholnoky	+	+	-
52	***Nitzschia obtusa*** W. Smith v. ***scalpelliformis*** Grun.	+	+	-
	Charophyceae			
53	Chara sp.	+	+	+
	Euglenophyceae			
54	***Euglena acus*** Ehrenberg (Gojdics f)	-	+	+
55	***Euglena mutabilis*** Schmitz. (Gojdics)	-	+	+
56	***Phacus acuminatus*** Stokes. Hueb.	-	+	+
57	***Phacus longicaudus*** (Her.) Duj.	+	+	-
		21	**39**	**34**

Table No. 1. Algal flora of Navegaon bandh, Gondia district.
*R-Rainy, W-Winter, S-Summer.

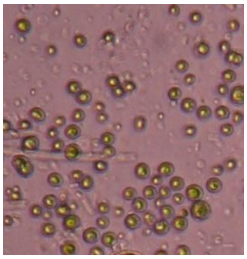


Microcystis marginata

Chroococcus tenax



Gloeocapsa nigrescens



Aphanocapsa grevillei

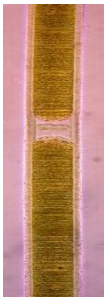
Merismopedia glauca

Spirulina gigantea

Scytonema javanicum

Oscillatoria chalybea v. *insularis*

Phormidium tenue



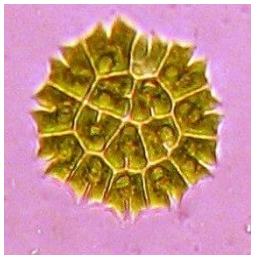
Lyngbya majuscula

Aulosira fertilissima

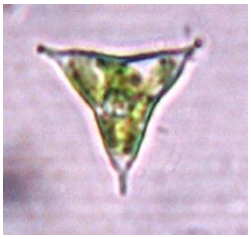
Nostoc calcicola

Anabaena circunalis

Chlorococcum humicola



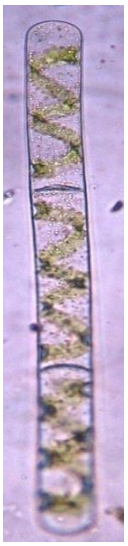
Pediastrum Tetras



Tetraedron trigonum

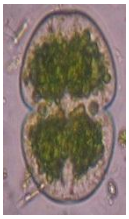
Closterium cyanthia

Oedogonium globosum



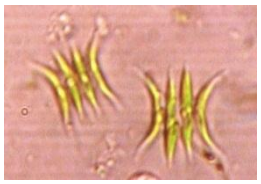
Spirogyra mirabilis

Gyrosigma baikalensis



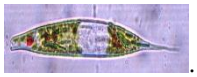
Cosmarium contractum

Chara. sps



Scenedesmus dimorphus

Navicula halophila



Euglena mutabilis

Phacus longicaudus

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