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SOME SPECIES OF *NAVICULA* BORY (BACILLARIOPHYCEAE) FROM PADMALAYA DAM

Kumavat M. R., Shital Pawar
P.G. Department of Botany, S.S.V.P. Sanstha's L.K. Dr. P.R. Ghogre Science College, Dhule - - 425005, Maharashtra, India
mrk7869@gmail.com

ABSTRACT:
Biological diversity is made up of all species of Plants and animals, their genetic materials and ecosystem of which they are present. The diatoms are well defined group characterizes by the presence of silicified walls, and a structure composed of two valves, one overlapping the other. While studying the biodiversity of Diatoms of Padmalaya Dam , Erandol District Jalgaon Maharashtra, the 22 taxa of genus *Navicula* Bory were recorded in present investigation during August 2006 August 2007. The present paper deals with the systematic account of following 22 taxa of genus *Navicula* Bory. *N. bacillum* Ehr., *N. bacillum* Ehr.f. *minor* V.H., *N. cari* Ehr. F. *indica* f.nov, *N. cuspidata* kuetz. V. *ambigua* (Ehr.) cleve, *N.cuspidata* kuetz. V. *ambigua* (Ehr.) cleve f.*diminuta* Acl., *N. feuerborni* (feuerb.) Hustedt, *N.gracilis* Ehr., *N. grimii* krasske, *N. halophita* (Grun.) Cleve f.*subcapitata* Ostrup, *N. laterostrata* Hustedt, *N. lvcidula* Grun., *N. minuta* (Cleve) Acl., *N.mutica* kuetz., *N. mutica* kuetz.v.*producta* Grun., *N. pygmaea* kuetz.v. *indica* skv., *N. radiosa* kuetz.v. *tenella* (Breb.exkuetz.) Grun., *N.similis* krasske, *N.subdapali -formis* Gandhi, *N. subtenelloids* cholnoky, *N. subrhynchocephala* Hustedt, *N. vividula* kuetz., *N. zanoni* Hustedt.

Keywords : *Biodiversity, Diatom, Navicula Bory Padmalaya Dam*

INTRODUCTION:

Padmalaya dam is 10 Km away from Erandol, District Jalgaon. Padmalaya is holley place famous for Ganesha Temple. To Full fill the lacuna in the taxonomic study of diatom of dam in North Maharashtra Present investigation were carried out. Diatoms are being Used as indicators of environmental changes, including studies of post Climatic changes (Smol & Cumming 2000) In India the pioneer work Was done by venkatraman (1939 and 1956) on systematic account of South Indian diatoms. Gonzalves (1947) was the first record to diatom from Maharashtra Gonzalves and Gandhi (1953) Published the systematic account of the diatoms of Bombay. Gandhi (1955, 1956, 1960) made contribution to fresh water diatoms of India. Sarode and Kamat (1984) studied fresh water diatoms of Maharashtra Barhate and Tarar (1983) reported 31 taxa of Diatomaceae belonging to 15 genera from Khandesh Region of Maharashtra More and Nandan (2000) reported diatoms *Nitzschia, Navicula, Synedro, Gomphonema, Gyclotella, Fragilaria, Surirella, Cymbella, Pinuularia, Cocconeis* and *Stauroneis* as Pollution tolerant genera from Panzara river District Dhule. Nandan and Mahajan (2007) Describe the diatom flora from Suki river and Suki dam at Maharashtra

In Present study the genus *Navicula* Bory is dominant in Padmalaya dam.

MATERIALS AND METHODS

Algal samples were collected from six sampling stations at monthly interval during August 2006 to July 2007. Collected sample were preserved in 4 % formalin. For isolation & identification of diatoms the sample is just boiling it, with equal quantity of concentrated Sulphuric acid

To remove carbonates and then a pinch of potassium dichromate was added to remove organic material. The material is repeatelly washed with distilled water allowing the diatoms to settle before decanting. The clean material was preserved in 75 % alcohol. The permanent slides

were prepared by taking a small amount of the treated material on a cover glass, dived & mounted in canada balsam. Identification of the taxa is based upon the monographs by F. Hustedt (1930) Sarode & Kamat (1984) and relevant research papers

RESULT & DISCUSSION:

Systematic Enumeration Of Genus *Navicula* Bory.

1) *N. bacillum Ehr* (Pl.. I F.1)

Hustedt 1930, p.280, f 465 a-c

Sarode & Kamat , p. 103, pl – II, f . 243 valves 33 μ long, 7.1 μ broad, linear with straight or slightly convex margins and broadly rovnted ends. raphe thin and straight, axial area wite central area large, rounted striae 21-22 in 10 μ slightly istantly placed in the middle Locality – S – I

2) *N. bacillum Ehr* f. *minor* V.H. (Pl.. I F.2)

Van Heurck 1896, p. 224, pl.5, f. 223,

Valves 17.4 μ long, 4.3 μ broad, linera elliptic with almost parallel margins and broadly rounted ends, axial area narrow, central area slightly widened, roundish, striae 18-20 in 10μ, slightly radial.

3) *N. cari* Ehr. f. *indica* f. Nov. (Pl. I F.3)

Sarode and Kamat, p. 103, p. II ,f 244

Sarode and kamat , p. 104, pl, 11 , f. 246 Valves 40 μ long, 8.77 μ board, narrowly lanceolate, tapering towards the ends with some what produced and broadly rounted ends. raphe tuin and straight, axial area narrow Central area large. Striae 12 in 10 μ strongly radialy in the middle And convergent towords the ends, middle striae shorter.

4) *N. cuspidata* kuetz. V. *ambigua* (Ehr.) Cleve (Pl.. I F.4)

Hustedt 1930, p. 268, f. 434,

Sarode & Kamat, p. 108, pI. 12, f.261 Values 88.8 μ long, 19.1 μ broad, narrowly rhombic lanceolate with constricted produced, capitate ends; craticular plates some time present ; Raphe thin and straight with central pores hook like ; axial area very narrow, linear ; central area very small ; transverse striae 18-20 μ longitudinal striae 20-22 in 10 μ fine.

5) *N. cuspidata* kuetz. V. *ambigua* (Ehr.) Cleve *liminuta A.cl* (Pl.. I F.5)

Cleve- Euler 1952, p. 18, f. 1353 f.

Sarode and Kamat, p. 108, pI. 12, f. 262 Values 78.3 μ long, 17.4 μ broad, broadly lanceolate with constricted, rounted ends; raphe thin and straight with unilaterally bent central pores ; axial area narrow; central area slightly widened ; transverse striae 14-15 in 10 μ longitudinal striae 20-22 in 10 μ fine.

6) *N. feuerborni* (Feuerb.) Hustedt (Pl.. I F.6)

Cholnoky 1955, p. 19, f. 24

Sarode and Kamat , p III, pI. 13, f. 271 Values 36.1 μ long, 5.22 μ broad, linear lanceolate with broadly rounted ends; raphe thin and straight inclosed in siliceovs ribs, central proes unilaterally bent axial area very narrow; ventral area small unilateral; striae 14 in 10 μ strong and strongly radial, slightly distantly in he middle, convergent at the ends.

7) *N. gracili Her* (Pl. I F.7)

Hustedt 1930, p. 299, f. 514,

Sarode & Kamat, p. 108, pl. 113, f.281 Values 26.1 μ long, 8.7 μ broad, elliptic lanceolate broadly

rounted and more or less capitate ends; raphe thin and straight; axial area very narrow; central area large rhombic to rounted ; striae 14.16 in 10 μ in the middle and up to 20 in 10 μ at the ends, delicate and radial

8) *N. grimii* Krasske (Pl.. I F.8)

Hustedt 1930, p. 274, f. 448,

Sarode & Kamat, p. 112, pl. 13, f.276 Values 22.6 μ long, 8.7 μ broad, elliptic lanceolate with constricted capitate ends; raphe thin and straight; axial area narrow; central area large, striae 14-15 in 10 μ radial

9) *N. halophila (Grun)* Clave f. *subcapitata* Ostrup (Pl. I F.9)

Venkataraman 1939, p. 327, f. 91,

Sarode & Kamat, p. 113, pl. 13, f.278 Values 43.8 μ long, 6.9 μ broad, lanceolate with slightly produced and capitate ends, axial area narrow, linear central area slightly wideded in the middle; striae 15-16 in 10 μ perpendicular to the middle line.

10) *N. laterostrata* Hustedt (Pl. I F.10)

Hustedt 1930, p. 301, f. 521,

Sarode & Kamat, p. 113, pl. 13, f.281 Values 26.1 μ long, 8.7 μ broad, elliptic lanceolate broadly rounded and more less capitate ends; raphe thin and straight; axial area very narrow; central area large rhombic to rounted;

Striae 14-16 in 10 μ in the middle and up to 20 in 10 μ at the ends, delicate and radial.

11) *N. lucidula* Grun. (Pl. II F.11)

Cleve – Euler 1953, p. 164, f. 832

Sarode and Kamat , p. 114, pl.13, f.282 valves 19.1 μ long, 8.7 μ broad, elliptical with broadly rounded ends; raphe thin and straight; axial area very small; striae transverse and longitudinal about 16-18 in 10 μ very fine

and faint .

12) *N. minuta* (Clave) A.cl. (Pl. II F.12)

Cleve – Euler 1953, p. 142, f. 791a (*N. minuta* V. *genuina* A.C.)

Sarode and Kamat , p. 114, pl.13, f.285 valves 20.8 μ long, 6.9 μ broad, broadly lanceolate with constricted , shortly capitate ends; raphe thin and straight ; axial area very narrow; central area small roundish, striae about 24 in 10 μ strongly, radial and fine.

13) *N. mutica* Kuetz (Pl. II F.13)

Hustedt 1930, p. 274, f. 453 a,

Sarode & Kamat, p. 115, pl. 13, f.286 Values 13.9 μ long, 6.1 μ broad, elliptic lanceolate with very slightly constricted broadly rounted ends ; raphe thin, and straight; axial area narrow; central area large rectanguler , with isolated puncta on one side ; strriae 20-24 in 10 μ radial clearly punctate and some what closer at the ends.

14) *N. mutica* Kuetz. V. *producta* Grun. (Pl. II F.14)

Cleve – Euler 1953, p. 193, f. 907 f

Sarode and Kamat , p. 116, pl 13, F.291 valves 20.8 μ long, 8.7 μ broad, elliptic, lanceolate with suddenly constricted ,produced, broadly, rounded ends; raphe thin and straight; axial area narrow ; central area large rectanguler widening towards the margins with an isolated Puncta, striae 15-16 in 10 μ in the middle and up to 19 in 10 μ at the ends, radial, punctate, punctate dash like

15) *N. pygmaea* Kuetz. v. *indica* Skv. (Pl. II F.15)

Skvortzow 1953, p. 182, f. 791a

Sarode and Kamat , p. 114, pl 13, f.285 valves 20.8 µ long, 6.9 µ broad, elliptical with obtuse, broadly rounted ends, raphe thin and straight with pores closely set, axial area very narrow, central area small striae 24-26 in 10 µ radial, interrupted by H shaped hyaline area, hyaline area constricted in the middle.

16) *N. radiosa Kuetz. v. tenalla Breb.ex. Kuetz. Grun*. (Pl. II F.16)

Cleve – Euler 1953, p. 156, f.816 d, e

Sarode and Kamat , p. 120, pl.14, f.306 valves 33 µ long, 5.22 µ broad, narrowly lanceolate and gradually tapering to some what actely rounded ends, raphe and straight axial area narrow central area large, rounded striae 14-16 in 10 µ radial in the middle and convergent at the ends.

17) *N. simillis* Krasske (Pl. II F.17)

Hustedt 1930, p. 303, f. 528

Values 13.9 µ long, 6.9 µ broad , elliptic with capitate ends; raphe thin and straight; axial area narrow, in the middle slightly dilated, central area moderate, striae 16-17 in 10 µ slightly radial,

18) *N. subdapaliformis* Gandhi (Pl. II F.18)

Gandhi 1970, p. 780, f. 71,88

Sarode & Kamat, p. 124, pl. 14, f.318 Values 46.9 µ long 10.4 µ broad, narrowly elliptical lanceolate with broad, truncately rounded ends, raphe thin and straight central pores slightly unilaterally bent fissures large, semicircular and curved, axial area narrow, linear, central area large striae 15-16 in 10 µ radial and curved through out, some what closer towards ends distinctly punctate.

19) *N. subtenelloids* Cholnoky (Pl. II F.19)

Cholnoky 1958 , p. 123, f. 111

Sarode & Kamat, p. 124, pl. 14, f.321 Values 20.8 µ long 3.48 µ broad, very narrowly lanceolate with slightly constricted, produced, rounded ends, raphe thin and straight axial area narrow, linear central area small striae 21-23 in 10 µ almost parallel, slightly closer towards the end.

20) *N. subrhynchocephala* Hustedt (Pl. II F.20)

Foged 1976, p. 37, pl. 14, f. 14

Sarode & Kamat, p. 124, pl. 14, f.320 Values 36.20 µ long 8.7 µ broad, lanceolate with produced capitate ends; raphe thin and straight ; axial area narrow, linear; central area large, rounded; striae 12-14 in 10 µ slightly radial in the middle and slightly convergent at the ends

21) *N. viridula* kuetz. (Pl. II F.21)

Hustedt 1930, p. 297, f. 503

Sarode & Kamat, p. 126, pl. 14, f.327 Values 67.8 µ long 12.1 µ broad linear lanceolate with produced and rostrate rounded ends; raphe thin enclosed in siliceous ribs, central pores unilaterally bent, terminal fissures distinct; axial area narrow; central area white and sub orbicular, striae 7-8 in 10 µ in the middle and up to 10 in 10 µ at the ends, thick, radial in the middle convergent at the ends.

22) *N. zanoni* Hustedt (Pl. II F.22)

REFERANCE:

Sarode & Kamat, p. 128, pl. 15, f.335 Values 31.3 µ long 6.9 µ broad, narrowly lanceolate with slightly produced rounded ends; raphe thin and straight axial area very narrow; central area small rounded striae 14-16 µ curved, radial in the middle and convergent at the ends.

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PLATE - II

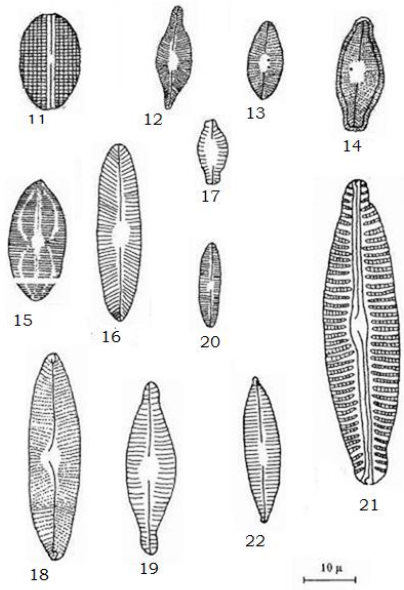

PLATE - I