



SOME DESMIDS FROM NATHSAGAR WATER RESERVOIR PAITHAN – MAHARASHTRA

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Algae present at Jayakwadi Bird Sanctuary (Nathsagar water reservoir), Paithan, were collected during the years 2008 to 2011. Samples were collected from 4 different locations on southern side of the water body. Different species of desmids belonging to family Desmidiaceae were observed during the survey. The present paper reports 15 species of desmids belonging to genera *Micrasterias* and *Euastrum*, from the water reservoir.

Key words: Desmids, *Euastrum*, *Micrasterias*, Nathsagar

Jayakwadi project constructed on River Godavari at Paithan is about 50 kms away from Aurangabad. The water reservoir of the dam known as “Nathsagar”, 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. In winter season, large number of migratory birds of different types visits the water body every year. Taking this fact into consideration, the Government of Maharashtra has declared the Nathsagar water reservoir as “Jayakwadi Bird Sanctuary”.

A survey of the algae of Nathsagar water reservoir was carried out at four locations, during the years 2008-2011. Earlier the authors (2011) have reported 16 species of desmids from Nathsagar. In present paper species belonging to *Micrasterias* and *Euastrum* are being reported.

MATERIALS AND METHODS

Random sampling technique has been employed for the collection of algal samples. Four locations of the Nathsagar water body viz Dahiphal, Pravarasangam, Ramdoh and Sonewadi; situated on southern side of the reservoir were selected. Sample collections were made during 3 consecutive years (2008-2011), from November to March. The algal

samples were preserved in 4% formalin. Identification of taxa was carried out by using Prasad and Misra (1992) and other relevant literature.

OBSERVATIONS

During the present investigation, 2 genera and 15 species of desmids were observed and are described here under.

Class: Chlorophyceae

Family: Desmidiaceae

Genus: *Micrasterias* C. A. Agardh

1) *Micrasterias foliacea* Bail.

(Pl.1 Fig.1)

Prasad and Misra, 1992, p 141, pl 20, f 6

Cells rectangular, deeply constricted; semicells five lobed, polar lobe exserted; cell wall smooth. Long. cell 57.5 μm , lat. cell 72.5 μm , lat. isthmus 15 μm .

Locality : Pravara Sangam; Sonewadi

Coll.No. and Date: JPS-93 (15/03/09); JS-328 (21/02/10)

2) *M. mahabuleshwarensis* Hobson

(Pl.1 Fig.2)

Prasad and Misra, 1992, p 142, pl 20, f 7

Cells of medium size, 1-5 times longer than broad, constriction deep; semicells three lobed, polar lobe large with subquadrate lower half

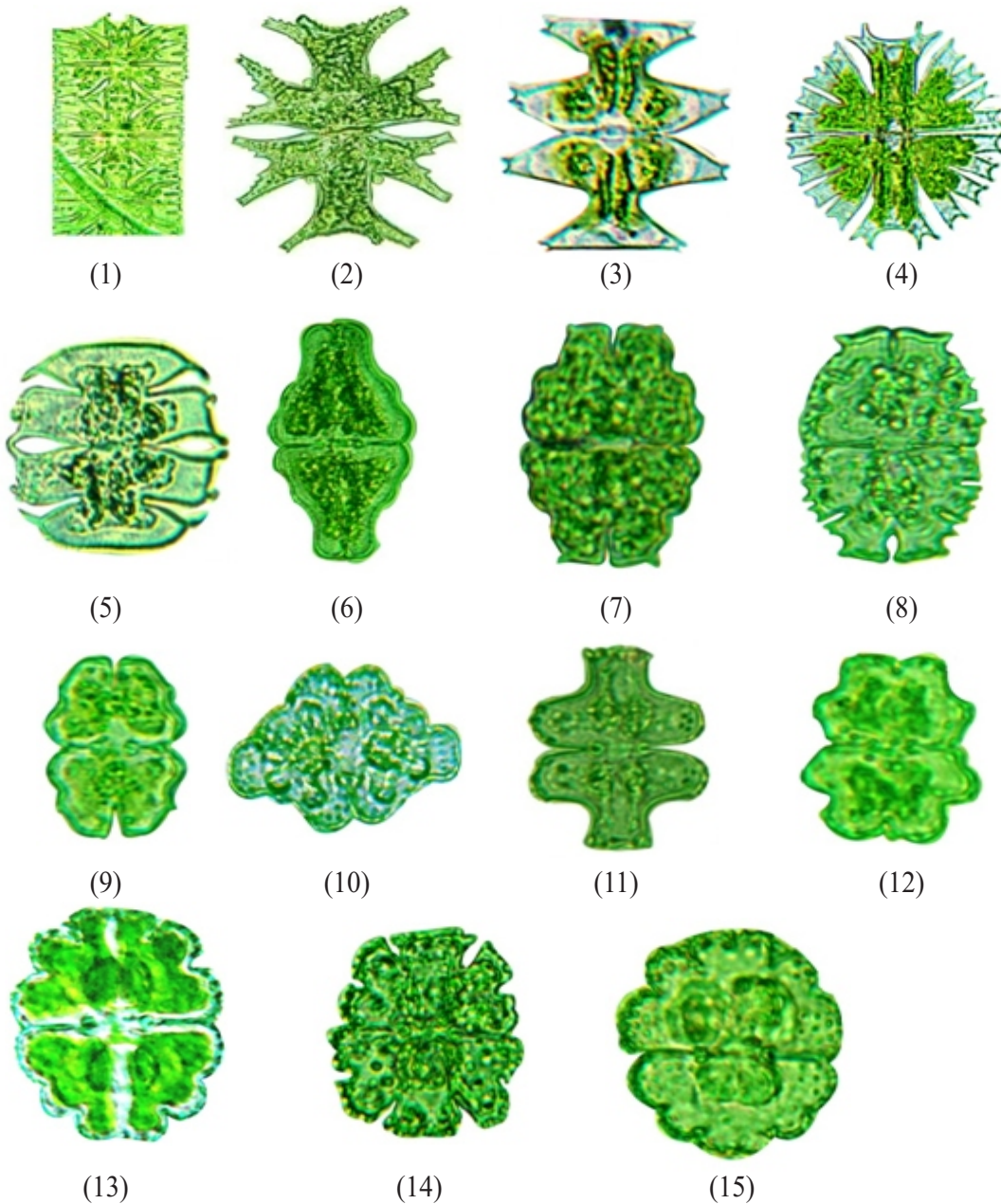


Plate-1

Figures 1-15 : 1) *Micrasterias foliacea* 2) *M. mahabuleshwariensis* 3) *M. pinnatifida* 4) *M. radians* 5) *M. zeylanica* 6) *Euastrum ansatum* var. *pyxidatum* 7) *E. bidentatum* 8) *E. coralloides* var. *trigibberum* 9) *E. elegans* 10) *E. irregulare* 11) *E. platycerum* 12) *E. pseudotuddalense* 13) *E. spinulosum* 14) *E. spinulosum* var. *inermius* 15) *E. spinulosum* var. *burmense*

and dilated upper half producing prominent diverging, denticulate processes, margin with small and acute spines, Long. cell 122.5 μm , lat. cell 90 μm , lat. isthmus 22.5 μm .

Locality : Dahiphal; Pravara Sangam; Sonewadi

Coll.No.and Date: JD-188 (13/12/09); JPS-186 (06/12/09); JS-327 (30/04/10)

3) *M. pinnatifida* (Kuetz.) Ralfs.

(Pl.1 Fig.3)

Prasad and Misra, 1992, p 143, pl 20, f 4

Cells small, slightly broader than long, deeply constricted; semicells 3 lobed, polar lobe with basal portion subrectangular and apical portion with extremities like lateral lobes but relatively shorter in length; cell wall minutely punctuate. Long. cell 45 μm , lat. cell 55 μm , lat. isthmus 12.5 μm .

Locality : Dahiphal; Pravara Sangam; Ramdoh

Coll.No. and Date: JD-192 (13/12/09); JPS-89(15/03/09); JR-45 (11/01/09)

4) *M. radians* Turner

(Pl.1 Fig.4)

Prasad and Misra, 1992, p 144, pl 20, f 2

Cells of medium size, subcircular, very deeply constricted; semicells 5 lobed with deep, radial and widely open polar lobe with subparallel sides showing retusely emarginate and somewhat expanded apex with furcate acuminate extremity; cell wall smooth. Long. cell 107.5 μm , lat. cell 97.5 μm , lat. isthmus 15 μm .

Locality: Dahiphal; Sonewadi

Coll.No. and Date: JD-214 (11/01/10); JS-231 (24/01/10)

5) *M. zeylanica* Frisch

(Pl.1 Fig.5)

Prasad and Misra, 1992, p 147, pl 20, f 5

Cells almost as long as broad, deeply constricted; semicells scarcely 5 lobed, polar lobe broadly cuneate with faintly retuse outer margin, polar and lateral angles somewhat acuminate, each furnished with a small, inclined and subacute spine; cell wall smooth. Long. cell 50 μm , lat. cell 52 μm , lat. isthmus 10 μm .

Locality : Dahiphal; Pravara Sangam; Ramdoh

Coll.No. and Date: JD-219 (11/01/10); JPS-

207 (03/01/10); JR-27 (14/12/08)

Genus: *Euastrum* Ehrenberg**6) *Euastrum ansatum*** Ralfs var. *pyxidatum* Delp.

(Pl.1 Fig.6)

Prasad and Misra, 1992, p 134, pl 19, f 1

Cells small, twice as long as broad, deeply constricted; semicells with large undulations above the basal angles; cell wall with punctations arranged in distinct vertical series, apices subquadrate with rounded angles. Long. cell 70 μm , lat. cell 37.5 μm , lat. isthmus 7.5 μm .

Locality : Dahiphal; Sonewadi

Coll.No. and Date: JD-335 (08/05/10); JS-254 (30/05/10)

7) *E. bidentatum* Nag.

(Pl.1 Fig.7)

Rai and Misra, 2008, p 49, pl 2, f 4

Cells 45 μm long, 30 μm broad, deeply constricted; semicells three lobed, polar lobe with deep median incision, semicells with 5 protuberances, one large just above the isthmus, one on each lateral lobe and one on each side of apical notch in the polar lobe. Cell wall smooth. Long. cell 48 μm , lat. cell 18 μm , lat. isthmus 10 μm .

Locality : Dahiphal; Sonewadi

Coll.No. and Date: JD-263 (07/03/10); JS-276 (21/03/10)

8) *E. coralloides* Josh. var. *trigibberum* Lagerh.

(Pl.1 Fig.8)

Prasad and Misra, 1992, p134, pl 19, f 4

Cells small with deep constriction; semicells three lobed, polar lobe short and broad with deep median incision, outer margin furnished with short spines. Long. cell 37.5 μm , lat. cell 25 μm , lat. isthmus 5 μm .

Locality : Dahiphal; Pravara Sangam; Ramdoh

Coll.No. and Date: JD-297 (09/04/10); JPS-143 (30/06/09); JR-197 (20/12/09)

9) *E. elegans* (Breb) Kutz.

(Pl.1 Fig.9)

Rai *et al*, 2008 p 60, pl 1, f3

Cells very small, longer than broad, deeply constricted; semicells ovate-pyramidate, basal angles subrectangular, retuse emarginate; semicells with a triverrucose or a granulate protuberance in the centre above the isthmus, the rest of the cell-wall generally smooth. Long. cell 35 μm , lat. cell 15 μm , lat. isthmus 5 μm .

Locality : Pravara Sangam; Ramdoh

Coll.No. and Date: JPS-161 (08/11/09); JR-226 (17/01/10)

10) *E. irregulare* Gonzalves *et. Gangla*

(Pl.1 Fig.10)

Ashtekar, 1980, p 110, pl 36, f213

Cells usually 1½ times larger than broad, semicells pyramidate, 5 lobed, polar lobe rounded at apex with no median incision, cell wall irregularly granulate, Long. cell 60 μm , lat. cell 40 μm , lat. isthmus 15 μm .

Locality : Dahiphal; Ramdoh; Sonewadi

Coll.No. and Date: JD-298 (09/04/10); JR-198 (20/12/09); JS-01 (02/11/08)

11) *E. platycerum* Reinsch

(Pl.1 Fig.11)

Rai and Misra, 2008, p 50, pl 2, f7

Cells small, deeply constricted; semicells three lobed; polar lobes truncate without median constriction, cell wall smooth. Long. cell 42 μm , lat. cell 35 μm , lat. isthmus 10 μm .

Locality : Dahiphal; Pravara Sangam; Ramdoh

Coll.No. and Date: JD-264 (07/03/10); JPS-239 (03/01/10); JR-270 (14/03/10)

12) *E. pseudotuddalense* Messik

(Pl.1 Fig.12)

Sahin and Akar, 2007, p 1829, Fig.3.11

Cells are longer than wide, semicells trapezoid with three lobes, cell wall smooth. Apical incision obtuse angled with granules on each side. Long. cell 20 μm , lat. cell 15 μm , lat. isthmus 5 μm .

Locality : Pravara Sangam; Ramdoh

Coll.No. and Date: JPS-348 (23/05/10); JR-340 (16/05/10)

13) *E. spinulosum* Delp.

(Pl.1 Fig.13)

Prasad and Misra, 1992, p136, pl 19, f 10

Cell rather small, slightly longer than broad, deeply constricted, semi cells 5 lobed; cell wall granulate within the polar and lateral lobes. Long. cell 60 μm , lat. cell 45 μm , lat. isthmus 10 μm .

Locality : Dahiphal; Ramdoh; Sonewadi

Coll.No. and Date: JD-24 (07/12/08); JR-251 (14/02/10); JS-254 (21/02/10)

14) *E. spinulosum* Delp. var. *inermius* Nordstedt.

(Pl.1 Fig.14)

Prasad and Misra, 1992, p137, pl 19, f 11

This variety differs from species in broadly rounded to flattened lateral lobes and somewhat trapezoid polar lobe; cell wall with relatively bigger granules, arranged in more or less circular fashion. Long. cell 60 μm , lat. cell 52.5 μm , lat. isthmus 12.5 μm .

Locality: Dahiphal; Pravara Sangam; Sonewadi

Coll.No. and Date: JD-24 (07/12/08); JPS-350 (23/05/10); JS-357 (30/05/10)

15) *E. spinulosum* Delp. var. *burmense* (West *et west*) Krieger

(Pl.1 Fig.15)

Prasad and Misra, 1992, p 137, pl 19, f8

Cells small, a little longer than broad, constriction deep; each semicell 5 lobed with

rounded angles; cell wall with short spines. Long. cell 52.2 µm, lat. cell 45 µm, lat. isthmus 12.5 µm.

Locality : Dahiphal; Sonewadi

Coll.No.and Date: JD-08 (09/11/08); JS-254 (21/02/10)

DISCUSSION

Eleven taxa belonging to genera *Micrasterias* and *Euastrum* are being reported for the first time from the Nathsagar water reservoir. In the absence of earlier reports in literature (Kamat, 1973, 1974; Ashtekar and Kamat, 1978, 1979 - a & b, 1980; Kamble, 2008; Talekar; 2009 and Yadav, 2010), 11 desmids viz *Micrasterias foliacea*, *M. mahabuleshwariensis*, *M. pinnatifida*, *M. radians*, *M. zeylanica*, *Euastrum ansatum* var. *pyxidatum*, *E. bidentatum*, *E. coralloides* var. *trigibberum*, *E. elegans*, *E. platycerum* and *E. pseudotuddalense* appear to be the first record for Marathwada region of Maharashtra.

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