SOME OF DESMIDIAL ALGAE AT NATHSAGAR WATER BODY, PAITHAN- MAHARASHTRA

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INTRODUCTION
A survey of algal diversity was carried out at different locations of Nathsagar water reservoir, during the years 2011-2013. Amongst algae, Desmids form a characteristic group, which are generally unicellular and are divided into two compartments separated by a narrow bridge or isthmus; which can be recognized by their symmetry. There are also desmids that form long filaments. Desmids are found mostly but not exclusively in fresh water. There, they may live as phytoplankton, on the bottom as benthic dwellers, or on the submerged portions of plants. They may also be found in saline waters, or in snow or ice. Desmids show a wide variety of body shapes and many species are ornamented with all kinds of knobs and spines. There are circular, rotund, elongated, star-shaped and even moon-shaped species. Desmids are excellent indicators of water quality (Peter and Koos, 2007). The desmids of different fresh water bodies of India have been investigated by several researchers (Prasad and Misra, 1992, Sen and Naskar, 2003; Rath and Adhikari, 2005). As a part of investigation of plant diversity at Nathsagar, the present study on desmids was carried out. The desmids observed during the present investigation are described in this paper.

MATERIALS AND METHODS

Study area
On river Godavari, an earthen dam “Jayakwadi Project” is constructed near town Paithan, which about 50 Kms away from Aurangabad. The water body is named as Nathsagar. The length of the dam is 10,280 M and towards borders, the water level is shallow and in this region aquatic flora and fauna is observed. Among the aquatic flora, different types of algae, Pteridophytes and angiosperms are reported. (Jadhavar and Papdiwal 2011 a, b; 2012). Thousands of birds; including herbivorous, carnivorous, omnivorous birds, visit this water body every year during winter. Considering this fact, the State Government has declared the water reservoir as Jayakwadi Bird Sanctuary.

Algal samples were collected manually from 7 locations of the water body, viz. Esarwadi, Kaygaon, Lamgaon, North Colony, Ramdoh, Sonewadi and Toka; in the morning. Random sampling technique has been used for collection of algal samples. Collected samples were brought to the laboratory and preserved in 4% formalin for further study. Identification was done by using Prasad and Misra (1992), Rai and Misra (2008) and other relevant literature.

RESULTS AND DISCUSSION
The present paper reports 12 species of Desmidal algae belonging to, 04 genera of Chlorophyceae, which were observed during this investigation. They are described here under.

Micrasterias pinnatifida (Kuetz.) Ralfs (Pl.1 F.1)
Prasad and Misra, 1992, p143, Pl 20, f. 4
Cells small, slightly broader than long, deeply constricted, sinus linear but slightly open outwards; semicells 3 lobed, interlobular incision deep and broadly rounded, lateral lobes horizontal, semi-fusiform with minutely bifid, apices exhibiting acuminate ends, polar lobe with basal portion sub-rectangular and apical portion with extremities like lateral lobes but relatively shorter in length; cell minutely punctuate. Long cell
Cells small, twice as long as broad, deeply constricted, sinus narrowly linear, semicells with large undulations above the basal angles; cell wall with punctuations arranged in distinct vertical series, apices sub-quadrate with rounded angles. Long cell 70µm, lat. cell 37.5 µm, lat. isthmus 7.5µm.

**Localities:**
- North Colony, Coll. No. and Date - N-17 (13-3-2011)
- Sonewadi, Coll. No. and Date - S-25 (13-3-2011)

**Cosmarium angulosum** Breb. var. **concinnum** (Rab.) W. et G.S. West (Pl.1 F.4)

Cells small, slightly longer than broad, sub-rhomboid to elliptic, deeply constricted, sinus linear with a dilated extremity; lateral lobes broadly rounded with marginal spines; semi cells with a rounded central protuberance, just above the isthmus.

**Localities:**
- North Colony, Coll. No. and Date - N-154 (24-4-2011)
- North Colony, Coll. No. and Date - S-28 (13-3-2011)

**Cosmarium angulosum** Breb. var. **pyxidatum** Delp. (Pl.1 F.2)

Cells small, twice as long as broad, deeply constricted, sinus narrowly linear, semicells with large undulations above the basal angles; cell wall with punctuations arranged in distinct vertical series, apices sub-quadrate with rounded angles. Long cell 45 µm, lat. cell 55µm, lat. isthmus 12.5 µm.

**Localities:**
- North Colony, Coll. No. and Date - N-52 (20-3-2011)
- Sonewadi, Coll. No. and Date - S-28 (13-3-2011)

**Cosmarium angulosum** Breb. var. **crenulatum** (Rab.) W. et G.S. West (Pl.1 F.2)

Cells small, constriction not deep, sinus open outwards with rounded apex; semicells sub-elliptical, sides 5, undulating with sharp and pointed ridges, apex narrow and straight; cell wall with punctuations arranged in transverse series. Long cell 45 µm lat. cell 47.5 µm, lat. isthmus 22.5µm.

**Localities:**
- North Colony, Coll. No. and Date - N-17 (13-3-2011)
- Ramdoh, Coll. No. and Date - R-154 (24-4-2011)
Cells very small, a little longer than broad, deeply constricted, sinus narrow with slightly dilated extremity; semicells sub-hexagonal, basal angles more or less sub-rectangular, sides parallel, upper broad and oblique, apex truncate and straight; cell wall smooth; each semicell with an axile chloroplast and one pyrenoid. Long cell 12.5 µm, lat. cell 12 µm, lat. isthmus 2.5 µm.

Locality: - Toka, Coll. No. and Date- T-163 (24-1-2012)

**Staurastrum gracile** Ralfs forma Iyengar et. Vimala Bai (Pl.1 F.12)

Prasad and Misra, 1992, p 197, pl 25, f. 14, 18

Cells small, about 2.7 times longer than broad with slight constricted in the form of an acute notch; semicell slightly broadening towards the faintly convex apex, upper angles produced into more or less horizontally disposed long processes tipped with 3 minute spines and showing many concentric series of denticulations; top view triangular; chloroplast axile with one pyrenoid in each semicell. Long cell 17.5 µ; lat. cell 12.5 µ, isthmus 5 µ.

Locality: - Toka, Coll. No. and Date- T-163 (24-1-2012)

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