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Research Article

**SCENEDESMACEAE MEMBERS AT NATHSAGAR PAITHAN  
– MAHARASHTRA**

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**Abstract:**

*During the present investigation author collects some species of Scenedesmus belonging to the family Scenedesmaceae of order Chlorococcales from the Nathsagar water reservoir Paithan Maharashtra. These are viz. Scenedesmus acutiformis Schroeder, S. arcuatus (Lammermann) Lammermann, S. armatus (Chodat) G.M. Smith var. major G.M. Smith, S. armatus (Chodat) G.M. Smith var. bicaudatus (Guglielmetti) Chodat S. dimorphus (Turpin.) Kuetzing forma tortus G.M. Smith, S. indicus Philipose, S. obliquus (Turpin) Kuetzing and S. quadricauda (Turpin) Brebisson var. quadrispina (Chodat) G.M. Smith.*

**Key Words:** Scenedesmus, Nathsagar, Paithan

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**INTRODUCTION:**

Several researchers have studied the fresh water bodies from India. The algal flora of temporary water pools around Bombay has been reported by Gonzalves and Joshi (1943). N.D. Kamat has surveyed various regions of Maharashtra State and reported algae from different locations. (1963); (1973) (1974) Patil (2013), Reddy and Chaturvedi (2015), Jena and Adhikari (2007). Among algae *Scenedesmus* is very common genus in the water bodies from the Maharashtra. Jayakwadi project is constructed on Godavari River at Paithan. It is about 50 km's away from Aurangabad. The water reservoir of the dam is known as "Nathsagar". It is about 55 km's in length and 27 km's in width. The water body has large number of algae, aquatic angiosperms, fishes and other aquatic animals. Present communication gives the detailed account of genus *Scenedesmus* from the Nathsagar water reservoir Paithan Maharashtra. Species of the genus *Scenedesmus* were identified and described in the present paper.

**MATERIALS AND METHODS:**

A survey of the algae was carried out at four locations viz Dahiphal (75°15'650" E longitude and 19°26'221" N latitude), Pravarasangam (75°00'801" E longitude and 19°36'281" N latitudes), Ramdoh (75°01'148" E longitude and 19°35'549" N latitudes) and Sonewadi (75°20'750" E longitude and 19°26'431" N latitudes); situated on southern side of the water reservoir. Random sampling technique has been used for collection of algal samples. Sample collections were made during this period for 3 consecutive years (2008-2011). The algal samples were preserved in 4% formalin. The morphological studies of specimens were done by using Olympus Research Microscope and the photographs were taken using Sony Cybershot digital camera. The algal taxa are described along with their location of occurrence. Identification of taxa carried out by using Prescott, (1951) Philipose (1967), Prasad and Misra (1992) and Dhande (2013) and other relevant literature.

**RESULTS AND DISCUSSION:**

Species of *Scenedesmus* observed during the investigation with respect to their morphotaxonomic study are described here under. The present paper reports 08 species of genera *Scenedesmus*, from the water reservoir.

**Family: Scenedesmaceae**

**Sub Family: Scenedesmoideae**

**Genus: Scenedesmus** Meyen

Colony flat (rarely curved) plate of usually 2 to 8 (rarely 16 to 32) cells which are always in multiples

of two. Cells acicular, ellipsoid, ovoid or cylindrical, arranged in one or two rows and in lateral contact. Cell wall smooth or granulate, with or without lateral ridges, lateral teeth or spines. Chloroplast single and parietal and often filling the cell, and with a single pyrenoid.

**1) *Scenedesmus acutiformis*** Schroeder

Philipose, 1967, p 260, f 169 (a)

Colony 4 celled. Cells cylindrical fusiform and arranged in a single linear series. Cell wall smooth. Median cells with a lateral longitudinal ridge extending from pole to pole on each side. Terminal cells with two or four ridges. Poles of cells acute and without teeth or spines, but sometimes with a minute papilla. Cells 7.5  $\mu$  broad, 15  $\mu$  long.

Locality : Pravara Sangam

Coll.No.and Date: JPS-285 (28/03/10)

**2) *S. arcuatus*** (Lammermann) Lammermann

Philipose, 1967, p 256, f 166 (d)

Colonies 8 celled, curved and with small intercellular spaces. Cells in eight celled colonies in two series, oblong avoid, sometimes slightly angular at the base due to mutual pressure. Cell wall smooth, without teeth or spines. Cells 7.5  $\mu$  broad, 17.5  $\mu$  long.

Locality : Ramdoh; Sonewadi

Coll.No.and Date: JR-222 (17/01/10); JS-150 (16/ 07/09)

**3) *S. armatus*** (Chodat) G.M.Smith var. *major* G.M.Smith

Philipose, 1967, p 266, f 171 (k)

Colonies Four celled. Cells oblong, ellipsoid and arranged in linear series. Terminal cells with a single long spine from each pole. All cells with a median lateral longitudinal rib which is sometimes indistinct. Four celled colony 10  $\mu$  broad, 20  $\mu$  long. Cells 7.5  $\mu$  broad, 25  $\mu$  long.

Locality : Dahiphal; Ramdoh

Coll.No.and Date : JD-170 (15/11/09); JR-225 (17/01/10)

**4) *S. armatus*** (Chodat) G.M.Smith var. *bicaudatus* (Guglielmetti) Chodat

Philipose, 1967, p 262, f 171 (e)

Colony 2 celled. Differs from the type in having a long spine from one of the poles of the terminal cell only, the spines of the two terminal cells alternating with each other. Cells 5  $\mu$  broad, 12.5  $\mu$  long, and spine 7.5  $\mu$  long.

Locality : Dahiphal; Ramdoh

Coll.No.and Date: JD-303 (09/04/10); JR-171 (22/11/09)

**5) *S. dimorphus*** (Turpin.) Kuetzing forma *tortus* G.M.Smith

Philipose, 1967, p 251, f 160 (d)

Colony 4 celled with the cells arranged in linear series. Outer cells of colony being more lunate and the apices of the cells being attenuated. Central cells of the colony being at an angle to the axes of the terminal cells. Cell 2.5  $\mu$  broad, 20  $\mu$  long.

Locality : Dahiphal; Pravara Sangam

Coll.No.and Date: JD-304 (09/04/10); JPS-209 (03/01/10)

**6) *S. indicus*** Philipose

Philipose, 1967, p 258, f 167

Colony 4 celled. Cells curved with capped ends and swollen middle and arranged in a sub-alternating series with the outer ends of internal cells in a contact with the middle of the nearest terminal cell, the inner ends remaining free. Internal cells also in contact with each other at the median region. Cells 5  $\mu$  broad, 12.5  $\mu$  long.

Locality : Dahiphal; Sonewadi

Coll.No.and Date: JD-191 (13/12/09); JS-142 (25/06/09)

**7) *S. obliquus*** (Turpin) Kuetzing

Philipose, 1967, p 248, f 159 (a)

Colony composed of 4 cells arranged in linear series. Cells fusiform with acute or slightly rounded cells and usually with straight sides. Outer side of terminal cell concave or slightly convex. Cell wall smooth and without terminal teeth or spines. Cells 5  $\mu$  broad, 12.5  $\mu$  long.

Locality : Dahiphal; Sonewadi

Coll.No.and Date: JD-244 (07/02/10); JS-245 (07/02/10)

**8) *S. quadricauda*** (Turpin) Brebisson var. *quadrispina* (Chodat) G.M. Smith

Philipose, 1967, p 285, f 187 (d)

Colonies two celled, cells broadly ovoid and about twice as long as broad. Cell wall smooth. Poles of

terminal cells with a single short recurved spines. Cells 7.8  $\mu$  broad, 15  $\mu$  long and spine 5  $\mu$  Long.

Locality : Dahiphal; Ramdoh; Sonewadi

Coll.No.and Date: JD-243(07/02/10); JR-225 (17/01/10); JS-203(27/12/09)

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