



BIODIVERSITY OF GENUS *SCENEDESMUS* FROM LENTIC WATER BODY OF DHULE DISTRICT OF MAHARASHTRA

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Abstract:

While studying the biodiversity of algae from lentic water body of Dhule district, of Maharashtra. Geographically Sonvad Project dam is located at North latitude $21^{\circ}41'$ and longitude $74^{\circ}50'$ East. The Devbhane dam is situated at Devbhane of Taluka and Dist. Dhule. It lies at $21^{\circ}21'$ North latitude and $74^{\circ}48'$ East longitude. Dhule are rich in lentic water systems supporting a rich algal flora. Attempt have been undertaken to analyze and bring out the algal floristic of this region. The present contribution is to study the biodiversity of *Scenedesmus*. Author collected 11 taxa and have been described in present communication. Line drawings were made by Camera Lucida. Taxa were identified with the help of standard monograph and recent literature. All taxa are being reported for the first time from this area. The present work enriches our knowledge of algal flora of this state.

Keywords: Biodiversity, *Scenedesmus*, Lentic, Maharashtra.

Introduction

Taxonomy of Algae from different aquatic habitats was studied extensively in India. But very few workers have paid attention on Biodiversity of *Scenedesmus*. in India. In present study Biodiversity of *Scenedesmus*. was carried out in Sonvad project dam and Devbhane dam of Dhule. 11 species of *Scenedesmus*. was identified with help of Monographs and recent literature (Gunnar Nygaard 1972, Take toshi Hinode 1962, Shashikant 1998, Smith.G.M. 1920, Sengar et al 1985, Nandan, & R.J. Patel 1984a, 1985a, Hazarika, A.K. and A.C. Datta. 1994, Shashikant, and P. Gupta. 1998, Patel, R.J. and Daniel, J.K. 1990, Philipose, M. T. 1967, Shingh, Rashmi. 1999, Tarar, J.L. and Seema Bodkhe. 1998 Scott and Prescott. G.W. 1961, West. W and West G.S. 1907, Bodas 1991). The present investigation have been undertaken to see the Biodiversity of the algal forms in Sonvad project dam. Such studies have not been conducted previously.

Material and Methods

The Sonvad project dam is situated near village Dongargaon of taluka Shindkheda of Dist. Dhule. It lies at North latitude $21^{\circ}41'$ and longitude $74^{\circ}50'$ East. Three stations viz. SD-I, SD-II & SD-III, Devbhane dam is lies at $21^{\circ}21'$ North Latitude and $74^{\circ}48'$ East Longitude. From this dam three stations were selected viz. DD-I, DD-II, DD-III. Monthly collections of algal samples made for two years. The algal samples were collected in Sunpet Jar about 150 ml capacity. The algal materials preserved immediately in 4% formalin for taxonomic investigation.. Line drawing of different forms of *Scenedesmus* was made by

camera Lucida. Identification was done with the aid of relevant monographs and recent literature. Standard monographs by Philipose, M.T. 1967, and other relevant research publications identified the taxa of *Scenedesmus*...

SYSTEMATIC ENUMERATION OF

***SCENEDESMUS*:**

1. *Scenedesmus bijugatus* (Turpin) Kuetzing (Pl.1, F.1)

F.T. Kuetzing, 1833, P.607

Colonies flat or slightly curved, of 2-4-8 cells arranged in a single linear series. Cells oblong-ellipsoid to ovoid with the ends broadly rounded. Cells $3.5-7\mu$ broad $7-23\mu$ long.

Habitat: Sonvad dam station, SD-II, October, 2012; SD-III, July, 2012.

Devbhane dam station, DD-II, November, 2012.

2. *Scenedesmus bijugatus* (Turpin) Kuetzing. *V. minor* (Hansgirg) G.M. Smith (Pl.1, F.2)

Smith, 1926, P.447

Cells 6.1μ long, 3.8μ broad, 4 celled colony 13.3μ long and 3.8μ broad.

Habitat: Devbhane dam station, DD-I, September, 2012.

3. *Scenedesmus caudato-aculeolatus* Chodat (Pl.1, F.3)

R. Chodat, 1926, P.240, F.144

Colony four-celled with the cells loosely connected in a linear series. Cells more or less oblong with rounded poles. Terminal cells slightly curved and with a long recurved spine from each pole. Two to three short spines also present on the poles of terminal as well as internal cells.

Habitat: Devbhane dam station, DD-II, November, 2012.

4. *Scenedesmus dimorphus* (Turpin) Kuetzing (Pl.1, F.4)

F.T.Kuetzing, 1833, P.608

Colonies 4-8 celled with the cells arranged in a linear or subalternating series, colony being more or less lunate and the apices of the cells being attenuated. Cells 2-8 μ broad, 14-35 μ long.

Habitat: Sonvad dam station, SD-I, June, 2012; SD-II, December, 2012.

5. *Scenedesmus dimorphus* (Turpin) Kuetz. *F.tortus* G.M.Smith (Pl.1, F.5)

G.M.Smith, 1926, P.188, Pl.16, F.5-8.

Differs from the type in the central cells of the colony being at an angle to the axes of the terminal cells instead of being parallel to them. Cells 2.5-6.5 μ broad, 20-34.3 μ long.

Habitat: Sonvad dam station, SD-II, July, 2012; SD-III, November, 2012.

Devbhane dam station, DD-III, May, 2012.

6. *Scenedesmus longus* Meyen *V.dispar* (Breb.) G.M.Smith (Pl.1, F.6)

G.M.Smith, 1916, P.472, Pl.27, F.41

Colonies four-celled. Cells oblong fusiform with acute ends and arranged in a subalternating series, usually in two planes, two cells above and two cells below. Terminal cells with spine from each pole. Cell wall usually smooth; cells 3-7.2 μ broad, 8.2-17.3 μ long. Spines 1.8-3.5 μ long, colony 8.2-14.2 μ broad, 13.6-21 μ long.

Habitat: Sonvad dam station, SD-II, July, 2012; SD-III, November, 2012.

7. *Scenedesmus longus* Meyen. *V.naegelii* (Breb) G.M.Smith (Pl.1, F.7)

G.M.Smith, 1920, P.156, Pl.40, F.1-2.

Colonies 2-4-8 celled. Cells more or less oblong to cylindrical to subpyriform with rounded ends, terminal cells with a long recurved spine from one pole and a long or short, straight, or slightly curved spine from the other pole. Cells 5.3-11 μ broad, 10.6-33 μ long.

Habitat: Sonvad dam station, SD-III, November, 2012.

Devbhane dam station, DD-II, July, 2012; DD-III, May, 2012.

8. *Scenedesmus protuberans* Fritsch et Rich *F.minor* Ley (Pl.1, F.8)

S.H.Ley, 1947, P.279, F.1g

Differs from the type in having smaller cells. Terminal cells 4.4-5.3 μ broad, 23-25 μ long. Inner cells 4.4-5.7 μ broad, 18-22 μ long. Spines of terminal cells 19-27 μ long.

Habitat: Sonvad dam station, SD-I, July, 2012.

9. *Scenedesmus quadricauda* (Turpin) Breb. *V.longispina* (Chodat) G.M.Smith (Pl.1, F.9)

G.M.Smith, 1916, P.480, Pl.27, F.42

Colonies usually 2-4 celled, rarely 8-celled. Cells ovoid to cylindrical with the cells narrower than in the type and the spines proportionately longer, compared to the length of the cells. Cells 2.5-5 μ broad, 8-15.3 μ long. Spines 7.5-15 μ long.

Habitat: Sonvad dam station, SD-III, November, 2012.

Devbhane dam station, DD-I, May, 2012; DD-III, May, 2012.

10. *Scenedesmus quadricauda* (Turpin) Breb. *V.quadrispina* (Chodat) G.M.Smith (Pl.1, F.10)

G.M.Smith, 1916, PP.479-80, Pl.27, F.43

Colonies usually 2-4 celled. Cells broadly ovoid and about twice as long as broad. Poles of terminal cells with a single short recurved spine. Cells 3.5-8.5 μ broad, 8.5-15-19 μ long. Spines 2.5-5.5 μ long.

Habitat: Sonvad dam station, SD-II, November, 2012; SD-III, December, 2012.

11. *Scenedesmus quadricauda* (Turpin) Breb. *V.uestii* G.M.Smith (Pl.1, F.11)

G.M.Smith, 1916, PP.480-81, Pl.32, F.177-80

Colonies usually four to eight celled. Cells 4.5-9-13 μ broad, 10-22-29 μ long. Spines 10.6-16.7 μ long.

Habitat: Sonvad dam station, SD-III, February, 2013.

Result and Discussions

In present study 11 species of *Scenedesmus* was identified from study area. (Plate-1) One species of *Scenedesmus caudato-aculeolatus* and one species of *Scenedesmus protuberans* was reported first time. *Scenedesmus quadricauda* was dominant in present study.

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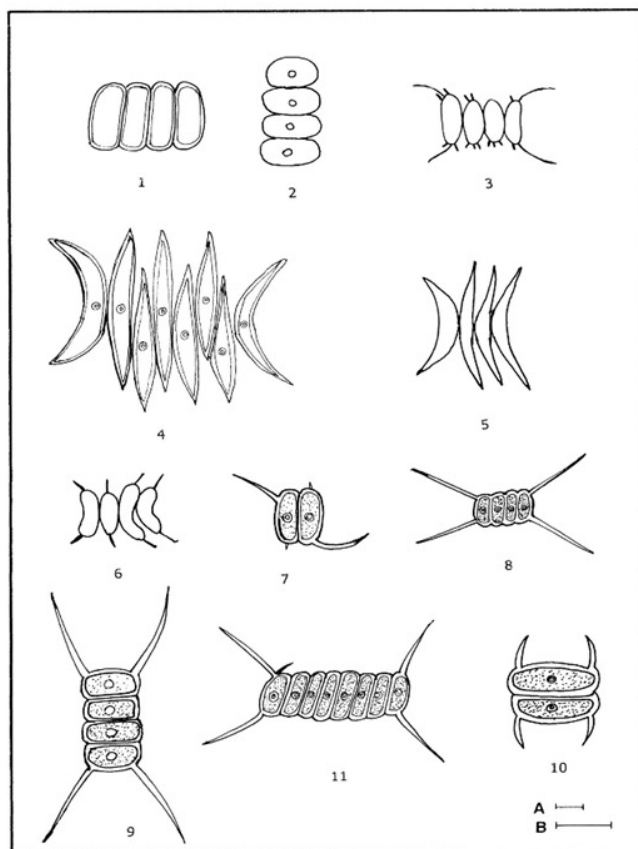


PLATE - 1

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