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SPECIES DIVERSITY OF GENUS *SCENEDESMUS* MEYEN.FROM RIVER PANZARA OF DHULE CITY MAHARASHTRA (INDIA)

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ABSTRACT:
Green algae are diverse and ubiquitous in aquatic habitat. Chlorococcales is an order of green algae in the classChlorophyceae .The members were unicellular, coenocyticor colonial the predominant phase in the life-history is a non-motile one. The genus *Scenedesmus* Meyen are free living planktonic mostly in a shallow confined water. While studying the algal flora of Panzara river authors came across several members of order Chlorococcales. The present paper deals with the systematic account of 13 taxa of genus *Scenedesmus*Meyen.*S. muzzanensis* Huber-Pestalozzi, *S. perforates* Lemmermiann Var. *major* (Turner) Comb. Nov., *Scenedesmus perforates* Lemmermiann, *S. armatus* (Chodat) G.M.Smith Var. *longlariensis* Hortob f. *biaudatus* Hortob, *S. armatus* (Chodat) G.M.Smith Var. *longlariensis* Hortob f. *biaudatus* Hortob, *S. quadricauda* (Turpin) Brebisson Var. quadrispina (Chodat) G. M. Smith, *S. bijugatus*(Turpin) Kuetzing forma *parvus* (G.M.Smith)comb. Nov., *S. obliquvs* (Turpin)Kuetzing F.T., *S. incrassatulus* Bholm, *Scenedesmus* b*ijugatus* (Turpin) Kuetzing Var. *bicellularis* (Chodat) Comb. Kov., *S.*b*ijugatus*(Turpin) Kuetzing f. *irregularis* Wille.,*S.*b*ijugatus*(Turpin) Kuetzing Var. *gravenitizii* (Bernard) Comb. Nov., *S. acutiformis* SchroederResult of present work indicates richness of species diversity of genus *Scenedesmus* Meyen The algal flora of Panzara river in Dhule city have not been studied earlier. This is first ever attempt to explore, enumerate the algal components of the Panzara river andto prepare a algal data base of Panzara river.

Keywords : *Chlorococcales, Spices diversity, Scenedesmus, Panzara River, Algal data base .*

INTRODUCTION:

Chlorococcales is an order of green algae in the class Chlorophyceae. Individual specimens are sometimes found in soil, but mostly in fresh and marine waters. Dhule city is located in northern side of Maharashtra state spread between Latitude 20 38' to 21 61'N and Longitude 73 50' to 75 11' E. The river Panzara flow in Dhule city and support the algal diversity. The present work were record species richness of genus *Scenedesmus* from Order Chlorococcales in Panzara river. Identification of the algal taxa is done with the help of relevant research paper and monograph by Philipose, 1967.

MATERIALS AND METHODS

The study area has been divided into different sites from upstream to downstream in to various spots in Dhule city The algal samples were collected from June 2016 to May 2017 by using plankton net during morning period between 7.00 to 10.00 a.m. The samples were studied fresh as far as possible and were preserved in 4% formalin for further study.

Systematic Account

***Scenedesmus muzzanensis* Huber-Pestalozzi (Pl.-I, Fig.- 1)**

G. Huber- Pestalozzi,1929, p420 f 5-6, Philipose , 1967, p 247 -248, f -158c

Colony 4 celled few 8 celled appeared to belong to the same species. The colonies were flat and enclosed within a thin striated mucilaginous envelope. Poles of terminal cells with a long recurved spine. The cells were 6.2-8.8 µm broad and 17.6 – 26.4 µm long. In present material the cells are bigger than that observer by Huber – Pestalozzi which were 18.4 – 27.6 µm long.

***Scenedesmus perforates* Lemmermiann Var. *major* (Turner) Comb.Nov. (Pl.-I, Fig.-2)**

Philipose , 1967, p 280-282, f -186f

Colonies 4-8 celled, Pyrenoids 1- 3 - in each cell. Cells 10 – 17 µm broad 18- 22 µm oblong spines 8- 12µm long.

***Scenedesmus perforates* Lemmermiann (Pl.-I, Fig.- 3)**

Philipose , 1967, p 280-281, f -186a

Colonies usually 4 - 8 celled Cells with capitate ends. Outer face of external cells slightly convex, inner face concave; poles curved outwards with long recurved spine. Internal cells with concave sides and with linear to lenticular perforation between adjacent cells.Cell membrane smooth. Cells 4-11µm broad11 – 29 µm long, spine 10.6 – 24 µm long.

***Scenedesmus armatus* (Chodat) G.M.Smith Var.*longlariensis* Hortob f. *biaudatus* Hortob(Pl.-I, Fig.- 4)**

Philipose , 1967, p 261-263, f -171g

Colonies usually 2 – 4 – 8 celled. Cells oblong ellipsoid with acute spices and arranged in a liner series.Terminal cells with a single long spine from each pole. All cells with a median lateral longitudinal rib which is distinct or indistinct. Cells 2,5 – 5 µm Broad, 8.5 – 18 µm long, spines 4 - 8 µm long.

***Scenedesmus armatus* (Chodat) G.M.Smith Var.*longlariensis* Hortob f.*biaudatus* Hortob (Pl.-I, Fig.- 5)**

Philipose , 1967, p 261-263, f -171j; Jawale A. K., 2005 p 46- 48, f. 5

Colonies 4 celled, 11.2 - 14.7 µm long; cells 8.4 - 10.2 µm long, 3.1-3.7 µm broad. Cells oblong acute spices. Terminal cell with a single long spine from each pole.

***Scenedesmus quadricauda* (Turpin) Brebisson Var. *quadrispina* (Chodat) G. M. Smith (Pl.-I, Fig.- 6)**

Philipose ,1967, p 283-285, f -187 j; Jawale A. K.,2005 p 47-48 f. 20, Jain D. S. 2016, p 95-96 f. 9

Colonies 4 celled, Cells ovoid, oblong cylindrical with rounded ends, arranged in linear series,as without ridge, . 9.7-11.9 µm long; cells 3.4 -7.8 µm broad , spine 3.1- 6.7 µm long.

***Scenedesmus bijugatus* (Turpin) Kuetzing f.*parvus* (G.M.Smith) comb. (Pl.-I, Fig.- 7)**

Philipose , 1967, p 252 -256, f -164 j; G. M. Smith1916, p448, pl 30, f 106-108

Colonies flat or slightly curved of 2 - 4 - 8 cells arranged in a single linear series. Cells oblong ellipsoid to void with the ends broadly rounded. Cells 8 - 12 µm broad 9 - 14 µm long.This form is bigger than that describe Philipose, 1967.

***Scenedesmus obliquvs* (Turpin) Kuetzing F.T. (Pl.-I, Fig.- 8)**

Philipose , 1967, p 248-250, f -159 c

colonies usually of 2 - 4 – 8 erect cells arranged in linear sublinear series. Cells fusiform with acute or slightly rounded ends and usually with straight sides. Cells 3.6 -9 µm broad 16 -23µm long.

***Scenedesmus incrassatulus* Bholm (Pl.-I, Fig.- 9)**

Philipose , 1967, p 252-25, f -163 Jawale A. K, 2005, p 46 f- 7.

Cells single or in colonies of 2 - 4 cells in a linear or subalternating series, fusiform, curved with the outer side convex and the inner side more or less straight or slightly concave. Cells 5 – 10 µm broad 12 – 28 µm long.

***Scenedesmus bijugatus* (Turpin) Kuetzing Var. *bicellularis* (Chodat) Comb. Kov.(Pl.-I, Fig.- 10, 14)**

Philipose , 1967, p 253 - 255, f -164 d, Jawale A. K, 2005, p 46 f- 7.

Colonies 2-4 celled, solitary ellipsoid cylindrical. Cells 2.6 –6 µmbroad, 6 - 12 µm long.

***Scenedesmus bijugatus*(Turpin) Kuetzing f. *irregularis* Wille .(Pl.-I, Fig.- 11)**

Philipose , 1967, p 253, f. 164 i, m., Jawale A. K, 2005, p 46 f - 8

Differ From *S.* b*ijugatus* cells arranged in an irregular sub alternating in series. Colony 4 – 8 celled 5 – 6 µm broad, 6.5 – 15 µm long.

***Scenedesmus bijugatus*(Turpin) Kuetzing Var. *gravenitizii* (Bernard) Comb. Nov. .(Pl.-I, Fig.-12)**

Philipose , 1967, p 254, f. 164 b

Colonies 4 – 8 celled Cells fusiform, ellipsoid, to void with obtuse pole arranged in alternating series with adjacent cells in contact. Cells 5.5 – 8.5 µm broad and 10 – 17.7 µm long.

***Scenedesmus acutiformis* Schroeder (Pl.-I, Fig.-13)**

Philipose , 1967, p 260, f. 169 a.

Colonies 4 celled,cells cylindrical fusiform and arranged in a single linear series. Lateral longitudinal ridge extending from pole to pole, Cells 4 – 9 µm broad, 12 -25 µm long.

RESULT & DISCUSSION:

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