

Additions of Tetraedron (Kuetzing, 1845) to the Marathwada Region of Maharashtra

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ABSTRACT

During extensive studies on algal taxonomy of Ahmadpur tehsil in the Latur district in the Marathwada region of Maharashtra, the author came across several interesting members of Chlorococcales. The present paper deals with the systematic account of 15 species of genus Tetraedron (Kuetzing, 1845).

Key words: Additions, Tetraedron, Chlorococcales, Marathwada

1 INTRODUCTION:

The pioneer work on chlorococcales was done by Philipose, M.T. (1967). He gave a systematic account of Indian chlorococcales. Chaddha (1977), Ashtekar (1979), Jawale (2005) gave a systematic account of chlorococcales, but from the Marathwada region of Maharashtra very few reports. Kamat (1974), Talekar (2009) very rare attention has been paid towards chlorococcales although the climatic conditions are most suitable to grow algae luxuriantly and in diverse form, therefore to fulfil this lacuna present work was carried out.

MATERIALS AND METHODS:

The algal samples were collected for the period of three years from January 2016 to December 2017. The algal collections were made regularly from various habitats of Ahmadpur tehsil. Acid washed collection bottles were used for the collection of algal samples. On return to the laboratory from field, the collections were carefully observed under the microscope and important points were noted. All collections were preserved in 4 % commercial formalin added with 5% glycerine. Identification of algal taxa was performed by referring to the standard literature on algae. Smith (1951, 1955), Prescott (1951), Randhawa (1959), Tiffany and Britton (1952), Scott and Prescott (1961), Philipose (1967).

SYSTEMATIC ENUMERATION: *TETRAEDRON* Kuetzing, 1845

Tetraedron bifurcatum (Wille) Lagerheim f. *submamillata*

Cells pyramidal, with the sides somewhat concave or convex or straight ends, rounded, with a short, often curved spines from each angle of the cell end, spines being submamillate, cell membrane is punctate; cells 27-32.5µ in diameter, without spines, spines 1.5-2µ long.

Tetraedron caudatum (Corda) Hansgirg

Cells small, flat, five sided, with four sides concave, fifth in the form of a notch of varying depth, angles rounded and produced into a short, straight spines; cells 6.5-9.5µ in diameter; spines upto 2.5µ in diameter.

Tetraedron hemisphaericum Skuja

Cells triangular in vertical view, concave and depressed in the form of a hemisphere in lateral view; angles broadly rounded and without spines; cell wall hyaline, densely punctate; chloroplast parietal, with a pyrenoid; cells 9-16µ in diameter.

***Tetraedron limneticum* Borge v. gracile Prescott**

Cells tetragonal, with the angles produced into processes, having one to two dichotomous brachings, processes narrower, which almost adjoin at the base, there being scarcely any cell body; cells 30-32 μ in diameter, base of processes 3.5-5 μ in diameter.

***Tetraedron minimum* (Braun) Hansgirg**

Cells small, flat, tetragonal, angles rounded without spines or processes, lobes sometimes cruciately arranged; margins of the cells concave, with one frequently incised; cells 7.5-11 μ in diameter.

***Tetraedron muticum* (A. Braun) Hansgirg**

Cells small, flat, triangular, sides slightly concave, angles broadly rounded; cell wall smooth; cells 10-12.5 μ in diameter.

***Tetraedron pentaedricum* West et. West**

Cells irregularly 5 lobed, with one lobe extended in a different plane from the others; angles sharply rounded, the apex of the each lobe furnished with a sharp spines; cells 17.5-30 μ in diameter, with spines; spines upto 4.5 μ long.

***Tetraedron proteiforme* (Turner) Brunnthaler**

Cells 3-cornered, angles drown out and ending in a long spines; sides, wavy; three angled; cells 32.5-35 μ in diameter without spines, 7.5-10 μ long.

***Tetraedron quadratum* (Reinsch) Hansgirg**

Cells quadrangular in front view, the lateral margins straight or slightly convex; each angle with a short spine, membrane two layered; cells 22.5-28 μ in diameter.

***Tetraedron regulare* Kuetzing**

Cells tetragonal, pyramidal, with the sides concave, straight or slightly convex; angles with a blunt, stout spines, cells 8.5-12.5 μ in diameter without spines, spines 2.5-5 μ long.

***Tetraedron regulare* Kuetzing v. *granulata* Prescott.**

Cells tetragonal, with convex or slightly concave sides, angles broadly rounded, with stout spines; cell wall granular; cells 30-40 μ in diameter without spines, spines 15-18 μ long.

***Tetraedron regulare* Kuetzing var. *torsum* (Turner) Brunnthaler**

Cells tetragonal, with two halves twisted in a cruciate manner, sides of arms slightly convex, angles with a short spines; cells 14.5-18 μ in diameter, spines upto 2.5 μ long.

***Tetraedron trigonum* (Naegeli) Hansgirg.**

Cells flat, three angled, the angles tapering to sharply rounded, spines, stipped apices; margins convex; sides of the cells concave or straight; cells 20-23 μ in diameter with the spines; spines 3-5 μ long.

***Tetraedron trigonum* (Naeg.)Hansgirg v. *tetragonum* (Naegeli) Rabenh.**

Cells small, flat, four sided; sides concave with a prominent depression; angles with a spine; cells 12-14.5 μ in diameter, without spines; spines 2.5-3 μ long.

***Tetraedron tumidulum* (Reinsch) Hansgirg**

Cells pyramidal, the margins straight, concave or convex; the angles bluntly rounded or sometimes with knob like projections; cells 12-15 μ in diameter.

CONCLUSION:

A total of 15 species of genus *Tetraedron* has been reported during present investigation and as far as seasonal variation concern the species of *Tetraedron* were found dominantly in the winter season and followed by summer, the results are agreed with Ashtekar (1979), Hegde (1983) and Talekar (2009), Yadav (2010).

REFERENCES:

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- Allen, W.E. (1920). A quantitative and statistical study of the plankton of the Son Joaquin River and tributaries in and near Stockton, California in 1913. *Publi 2001.22*: 1-297.
- Anand, V.K. (1975). A check list of planktonic algae from Mansar Lake, Jammu. *Phykos* **14(1 & 2)**: 77-79.
- Andhale S.B. (2008). Studies on the flora of Jayakwadi Bird Sanctuary. Ph.D. Thesis, Dr. B.A.M.U. Aurangabad.
- Ashtekar, P.V. and Kamat, N.D. (1979b). Chroococcales of Aurangabad district, Maharashtra. *Marathwada Univ. J. Sic.* **18(11)**: 47-52.
- Dixit, S.C. (1937). The Chlorophyceae of the Bombay Presidency, India-I. *Ibid.* **5(1)**: 16-25.
- Hegde G.R. and Bharati, S.G. (1983). Freshwater algae of Bijapur district, Karnataka state, India. *Phykos*. **22**: 167-170.

- Jawale, A.K. and Kumawat, D.A. (2005). Some *Ankistrodesmus* (Chlorococcales) from fish ponds, Maharashtra. *J. Aqua Bio.* Vol. **18 (2)**: 17-19.
- Jose, L. and Patel, R.J. (1992). A systematic account of Chlorococcales new to Kerala. *Phykos*.**31 (1 & 2)**: 95-102.
- Kamat, N.D. (1974). Algae of Marathwada, Maharashtra. *Phykos***13**: 22-32.
- Kamat, N.D. and Frietas, J.F. (1976). A Check list of Chlorophyceae of Nagpur, Maharashtra. *Phykos*.**15**: 121-125.
- Phillipose, M.T.(1967).Chlorococcales.*ICAR*.Monograph,NewDelhi. P. 365.
- Prescott G.W. (1951). Algae of the Western great lakes area. Granbrook Institute of Science, Michigan.
- Sabri, K. (1998): A study in the seasonal variation of phytoplankton in Hafik Lake (Sivas Turkey). *Turkish J. of Bot.***22(1)**:35-4.
- Smith, G. M. (1950).The fresh water algae of the United States. McGraw Hill Book Co., New York. P: 719.
- Smith, G.M. (1918). A. Second list of algae found in Wisconsin Lakes. *Trans. Wisc. Acad. Sci. Arts. Lett.* **19**: 614-654, 6 Plts.
- Talekar Santosh and Jadhav Milind (2009). Biodiversity of chlorococcales in Manjara River in Maharashtra. *The Ecotech***1(2)**: 104-105.
- Whitton, B.A. (1969). Seasonal changes in the phytoplankton of St. James park lake, London. *London Nat.***48**: 14-39.
- Yadav, S.G. (2010). Studies on Taxonomy of algae of Beed district .Ph.D. Thesis, Dr.Babasaheb Ambedkar Marathwada University Aurangabad.