

Additions to algal flora of Marathwada, Chlorococcales of Bhopani Reservoir

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ABSTRACT

While working on algal taxonomy of Bhopani Reservoir, 8 km away from Udgir of Latur District in the Marathwada region of Maharashtra during January 2019 to December 2019, the author came across a total of 86 taxa under 19 genera of Chlorococcales, of these 13 taxa of genus *Pediastrum* described in the present paper.

Key-words:Chlorococcales,Systematicaccount,Bhopani reservoir,*Pediastrum*

INTRODUCTION:

India has rich and diversified algal flora. In present century great advances have been made in the investigation of fresh water algae, marinealgae, atmospheric micro-algae and soil algae in many parts of the world and particular attention has been paid to their taxonomy, ecology and applied aspects. In Marathwada region of Maharashtra (Kamat 1962, Ashtekar, 1979, Talekar, 2009,Yadav 2010) very rare attention has been paid towards algal taxonomyin the Marathwada region of Maharashtra, although the climatic conditions of Marathwada region are most suitable to grow algae luxuriantly and in diverse form, therefore to fulfill this lacuna the present investigation was carried out.

MATERIALS AND METHODS:

The algal samples were collected during January 2019 to December 2019. The algal collections were made regularly from selected sampling stations of reservoir. Acid washed collection bottles were used for the collection of algal samples. Field note book was maintained in which the color of the algae, habit, habitat and dates of collection were noted, the pH of the water of the collection spots was recorded by studying at least three samples of water from three different places of the collection spots.

LABORATORY WORK:

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. Generally 5 to 10 random temporary mounts were made from each collection for microscopic observations. Identification of algal taxa was performed by referring to the standard

literature on algae and monographs the systems of classification followed here is substantially that Prescott (1951), Philipose (1967).

TAXONOMIC DESCRIPTION:

1) *Pediastrum boryanum* (Turp.) Meneghini

Brunnthaler 1915, P. 100, F. 61 a; Smith 1920, P. 169, Pl. 46, F. 2-7; Collins 1928, P. 97, F. 63; Prescott 1951, P. 222, Pl. 47, F. 9, Pl. 48, F. 1, 3; Tiffany and Britton 1952, P. 112, Pl. 30, F. 295, 296; Philipose 1967, P. 118, F 40 a.

Colonies entire; cells 5-6 sided with granular walls; peripheral cells with outer margins extended into 2 blunt-tipped processes; cells 4.5-9 μ in diameter; processes 3-5 μ long; 32-36 celled colonies 50-55 μ in diameter.

2) *Pediastrum braunii* Wartmann Prescott 1951, P. 223, Pl. 48, F. 5. Colony circular, nearly entire, with interstices, cells quadrate or 5 sided; peripheral cells with 3-4 short, sharp projections, unevenly spaced; interior cells 4-5 sided, cells 4.5-8 μ in diameter, 16-celled colonies up to 37 μ in diameter.

3) *Pediastrum duplex* Meyen v. *clathratum* (A. Braun) Lagerheim

Prescott 1951, P. 223, Pl. 48, F. 6.

Colonies 16 celled cells with more deeply emarginate sides with large intercellular spaces; cells 5-8.5 μ in diameter; colonies up to 43 μ in diameter.

4) *Pediastrum duplex* Meyen var. *cohaerens* Bohlin Prescott 1951, P. 224, Pl. 48, F. 11.

Colonies 32 celled, inner cells quadrate to angular, with large intercellular spaces, inner side of marginal cells concave, outer side produced into two short, tapering blunt-tipped processes; cells 6.5-10 μ in diameter, colonies upto 45-53 μ in diameter.

5) *Pediastrum duplex* Meyen v. *gracilimum* W. et G. S. West Prescott 1951, P. 224, Pl. 48, F. 12.

Colonies 15 celled, with very large intercellular spaces, cells narrow, as broad or narrower than the processes, marginal cells curved outwards and with two long processes with emarginate apices, inner cell similar to marginal cell but with shorter processes; cells 5-8 μ in diameter. 7-10 μ long; 16 celled colonies 30-38 μ in diameter.

6) *Pediastrum duplex* Meyen v. *reticulatum* Lagerheim

Prescott 1951, P. 224, Pl. 49, F. 1; Philipose 1967, P. 124, F. 43 g.

Colonies consisting of 32 cells; cells more or less H shaped, with sides of processes of marginal cells nearly parallel; intercellular spaces large and oval; cells 6-9.5 μ in diameter, 8-12 μ long; colonies 37-48 μ in diameter,

7) *Pediastrum integrum* Naegeli

Prescott 1951, P. 225, Pl. 48, F. 9, 10; Philipose 1967. P.112.

Colonies entire, consisting of 16 cells; peripheral cells 5-sided, outer margins with two short, much reduced processes, and granular walls, emarginate between the processes; inner cells 6-sided, central cell 5-sided; cells 4-10 μ in diameter; colonies upto 32 μ in diameter.

8) *Pediastrum integrum* Naegeli var. *scutum* Raciborski Prescott 1951, P. 225, Pl. 49, F. 2.

Colonies entire, 16 celled, walls thick; interior cells 5 or 6 sided; peripheral cells 5-sided, rhomboidal, the outer wall convex, without processes, surface of walls and free outer margins furnished with numerous, sharp granules, cells 4-11 μ in diameter; colonies upto 25-35 μ in diameter.

9) *Pediastrum obtusum* Lucks Prescott 1951, P. 226, Pl. 49, F. 6, 7.

Colonies entire, oblong, rarely subcircular, with minute interstices formed by retuse margins of some cells; cells have a deep narrow sinus forming 2 major lobes, the lobes incised to form bluntly rounded lobules, the two central lobules in contact or nearly so, closing the sinus outwardly, the two lateral lobules in contact with the lateral lobules of the adjoining cells; cells 7-15 μ in diameter; 8 celled colony upto 32.5 μ in diameter

10) *Pediastrum simplex* (Meyen) Lemmermann

Brunnthaler 1915, P. 93, F. 55 a; Collins 1928, P. 97; Prescott 1951, P. 227, Pl. 50, F. 2; Tiffany and Britton 1952, P. 110, Pl. 30, F. 290, 291; Philipose 1967, P. 113, F. 36 a, c.

Colonies entire, circular, consisting of 8-16 cells; inner cells 5 or 6 sided; outer sides of peripheral cells extended to form a single tapering horn-like process with concave margins; cells usually without intercellular spaces; cell wall smooth; cells 5-11 μ in diameter, 16-19.5 μ long; 8 celled colonies 40-46 μ in diameter.

11) *Pediastrum simplex* Meyen v. *doudenarium* (Bailey) Rabenhorst

Prescott 1951, P. 227, P. 50, F. 4, 5; Tiffany and Britton 1952, P. 110, Pl. 30, F. 292; Philipose 1967, P. 115, F. 36 e, g, h.

Colonies perforate, consisting of 8-16 cells, having large intercellular spaces to a single central space with the cells arranged in a ring at the periphery, cells with their inner margins concave, the outer face prolonged into a single tapering process; cells 6-10 μ in diameter, 8-12 μ long; 16 celled colonies 40 μ in diameter

12) *Pediastrum tetras* (Ehrenb.) Ralfs Prescott 1951, P. 227, Pl. 50, F. 3,6.

Colonies entire, 4 celled; cells with 4 straight sides, but with outer margin deeply incised, their lateral margins adjoined along 2/3 of their length; cells 6-10 μ in diameter; colonies upto 16 μ in diameter.

13) *Pediastrum tetras* (Ehrenb.) Ralfs v. *tetradon* (Corda) Hansgirg

Prescott 1951, P. 227, Pl. 50, F. 7; Tiffany and Britton 1952, P. 112, Pl. 30, F. 294; Philipose 1967, P. 129, F. 45 d.

Colonies consisting of 8 cells; incision of cells deep with the lobes adjacent to the incision of the marginal cells very pronounced; cells 4-11 μ in diameter; 8 celled colonies up to 22 μ in diameter.

DISCUSSION:The present paper deals with the description of genus *Pediastrum* with its 13 species. As per seasonal variation the species of *Pediastrum* were found dominantly in winter season and the results are agreed with Ashtekar (1979), Barhate, (1983), Jha (1985), Lakshminarayan (1962), Sharan (2003), Nandan (2007).

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