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Rice Field Blue-green Algae of Bongaigaon District, Assam

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The present study deals with the blue-green algae (BGA) from the rice fields of Bongaigaon district, Assam.

Literature reveals that the algal flora of Assam has been studied by Bruhl and Biswas (1922), Parukutty (1939) and Bordoloi (1974). Hazarika (1988) has studied the BGA of Golaghat Sub-division and reported a total 81 species belonging to 21 genera from the rice-field as well as other habitats including hot spring of Nambar. Deka and Bordoloi (1991) have identified a total 82 species BGA, out of which 47 were non-heterocystous. Saikia and Bordoloi (1994) have recorded 28 species of BGA belonging to 12 genera from the rice-fields of Barpeta, Nalbari and Kamrup. Blue-green algae of Bongaigaon district, Assam has not been studied before.

The study was conducted for a year from May, 2005 to April, 2006. Soil and water samples were collected from different localities of the study area. The aquatic algal samples were collected from the experimental sites by lifting the algal biomass floating in and around water and kept in plastic bottles or tubes with the help of plankton sampler. The epipelic algae were collected by scrapping out along with surface on which they grow to give them enough moisture support. The samples were kept in cellophane bag or wrapped up in wax paper in order to avoid evaporation of moisture. As soon as the algal specimens were brought to the laboratory, important morphological characters were noted from the materials and then fixed in 4% formalin. In order to isolate blue-green algae from soil, soil samples were also collected where no visible algal growth was seen. Soil samples each of 10 g were scooped out from the surface, up to a depth of 5 cm. For the study of entire algal component of the soil, Fogg's liquid inorganic medium (Fogg, 1949) containing combined nitrogen was used and for culturing nitrogen fixing blue-green algae, Fogg's medium fortified with Fe-EDTA was used. The media was dispended in culture tubes and conical flasks respectively. Then these were

sterilized in an autoclave at 15 lb/in^2 pressure for 15 minutes. Algal forms were identified with the help of standard literatures and monographs (Desikachary, 1959; Geitler, 1932; Fritsch, 1936; Prescott, 1984).

In the present study 23 species of blue-green algae belongs to 12 genera has been enumerated. Maximum species were found under the genus *Nostoc* (4), *Anabaena* (4), which is followed by *Scytonema* (3) *Aphanocapsa* (2), *Aphanothece* (2) and *Phormedium* (2). Single species was represented by the genera *Microcystis*, *Chroococcus*, *Merismopedia*, *Oscillatoria*, *Aulosira* and *Calothrix*. Among them 7 species are unicellular and other 16 species are filamentous. The unicellular species are *Microcystis marginata* (Menegh.) Kütz., *Chroococcus turgidus* (Kütz.) Näg., *Aphanocapsa banaresensis* Bharadwaja, *Aphanocapsa montana* Cramer, *Aphanothece microscopica* Näg., *Aphanothece saxicola* Näg., *Merismopedia elegans* A. Br. Among the filamentous forms, unbranched non-differentiated species are *Oscillatoria acuminata* Gomont., *Phormedium tenue* (Menegh.) Gomont., *Phormidium uncinatum* (Ag.) Gomont. The unbranched heterocystous forms are *Nostoc commune* Vaucher ex Born et Flah., *Nostoc linckia* var. *arvense* Rao, C.B., *Nostoc paludosum* Kütz. ex Born et Flah., *Nostoc punctiforme* (Kütz.) Hariot., *Anabaena azollae* Strasburger, *Anabaena orientalis* Dixit, *Anabaena oryzae* Fritsch., *Anabaena variabilis* Kützing. et Flah., *Aulosira fertilissima* Ghose, *Scytonema bohneri* Schmidle, *Scytonema hofmanni* Ag ex. Born. et Flah., *Scytonema simplex* Bharadwaja, *Calothrix marchica* Lemmermann. The list of BGA is as follows.

1. *Microcystis marginata* (Menegh) Kütz.
2. *Chroococcus turgidus* (Kütz.) Näg.
3. *Aphanocapsa banaresensis* Bharadwaja
4. *Aphanocapsa Montana* Cramer
5. *Aphanothece microscopica* Näg.
6. *Aphanothece saxicola* Näg.
7. *Merismopedia elegans* A. Br.
8. *Oscillatoria acuminata* Gomont.
9. *Phormedium tenue* (Menegh.) Gomont.
10. *Phormidium uncinatum* (Ag.) Gomont.
11. *Nostoc commune* Vaucher ex Born et Flah.
12. *Nostoc linckia* var. *arvense* Rao, C.B.
13. *Nostoc paludosum* Kütz. ex Born et Flah.
14. *Nostoc punctiforme* (Kütz.) Hariot.
15. *Anabaena azollae* Strasburger
16. *Anabaena orientalis* Dixit
17. *Anabaena oryzae* Fritsch.
18. *Anabaena variabilis* Kutzing. et Flah.
19. *Aulosira fertilissima* Ghose
20. *Scytonema bohneri* Schmidle
21. *Scytonema hofmanni* Ag ex. Born. et Flah.
22. *Scytonema simplex* Bharadwaja
23. *Calothrix marchica* Lemmermann

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Fern and Fern-Allies of Eastern Terai, Nepal

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The eastern Terai covers 620369 hectare area in the southern part of Mechi, Koshi and Sagarmatha zone which comprises 5 districts *viz*. Jhapa, Sunsari, Morang, Saptari and Siraha. The soil is alluvial, dark grayish to brown in colour with sandy loam to sandy silt in texture. The climate is tropical and sub-tropical and vegetation is predominated by broad leaved, wet monsoonic deciduous forest.

Nepal consists of more than 500 species of ferns and fern-allies. Ferns are generally known as "Unyu/Oony" in Nepali. There are some medicinal ferns, which are regularly exploited both for ayurvedic formulations and traditional healing