D-05 Species composition and distribution patterns of the phytoplankton community in the Kotmale reservoir

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A Survey was carried out in the Kotmale reservoir (7°03'-7°05 N and 80° 36'80o 41'E) from April 1994 to April 1996 with a view to studying the species composition, seasonal, spatial and diurnal distribution patterns of the phytoplankton community of the water-body.

Phytoplankton samples were collected once a month by using a closing type net (mesh size, 30ìm). Three diurnal investigations were carried out at 6h intervals, to determine the diurnal migration patterns of the plankton. Types and population densities of phytoplankton were determined by observing the samples under a light microscope using a Sedwich-Rafter cell.

Taxonomic composition of the phytoplankton community in the reservoir is made up of 4 major groups: Chlorophyceae, Cyanophyceae, Bacillariophyceae and Dinophyceae. The Chlorophyceae dominates the phytoplankton of the reservoir with *Staurastrum* sp forming the most prominent component.

The results indicate that there seems to be a relationship between seasonal variation in the major phytoplankton types of the reservoir and the fluctuations in the water level.

During the wet months, *Staurastrum* sp dominates the phytoplankton community of the reservoir while during the drought (April to June) the Cyanophyte *Microcystis* sp becomes prominent phytoplankton especially in the upstream region of the reservoir. Periodic occurrence of *Microcystis* blooms has taken place in the reservoir. Although the filamentous diatom *Melosira* sp and the dinoflagellate, *Peridinium cinctum* form an important part of the plankton community, they do not show a contrast periodicity like the *Microcystis* sp.

A clear vertical and diurnal migration pattern was observed in the major phytoplankton types. *Microcystis* sp showed a downward movement during noon while *Peridinium cinctum* was a prominent surface dweller early morning.