AN INVESTIGATION OF SOME LIMNOLOGICAL FACTORS GOVERNING ALGAL GROWTH IN TWO INDUSTRIAL EFFLUENT OUTLETS

(A) Diya Ella Oya in Veyangoda (January 1980 to June 1980)

(B) Natha Ella in Kelaniya (September 1980 to December 1980)

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The National Textile Corporation, Veyangoda, and the Ceylon Tyre Corporation, Kelaniya, permit some of their industrial waste to enter the Diya Ella Oya at the Weelagoda anicut and the Natha Ella respectively. The effects of pollution on the physico-chemical characteristics of the waterways and also on the growth of algae, were studied.

Sampling sites in both waterways included, sites upstream from effluent (control), in the effluent, points of discharge and downstream from effluent.

The sites upstream from effluent (control) in both waterways were eutrophic, exhibiting algal periodicity recorded for semi-tropics and tropics. The algal periodicity at points of discharge and downstream from effluents, did not compare well with that of the controls since a reduction in algal numbers and species diversity is caused by waste loading.

Rainfall, rate of flow and algal incidence, affected nitrate and phosphate levels. At Veyangoda a build up of nitrates and high alkalinity values were recorded in the section of the Oya affected by the effluent, indicating loading of nitrates and alkaline substances. At Kelaniya an unusual build up of phosphates was observed following algal peaks, zooplankton excretion, domestic sewage and detergents, together with effluent discharge and land drainage being the contributory factors .

All sites recorded, Chlorophycean, Euglenophycean, Bacillariophycean and Myxophycean members whilst *Scenedesmus* sp and *Merismopedia* sp indicators of thermal pollution and *Navicula* sp and *Oscillatoria* sp, indicators of organic pollution were recorded in the effluent and sections of waterways affected by the effluent.