PRELIMINARY INVESTIGATIONS OF THE ALGAL FLORA IN AN INDUSTRIAL EFFLUENT OUT-LET AT KELANIYA FROM SEPTEMBER 1976 - MARCH 1977

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The effluent from the Kelaniya Tyre Corporation is discharged into a stream by the side of the factory, and this investigation was conducted with the aim of studying the effects of the effluent on the chemical and physical characteristics of the water in the stream and also on the growth of algae.

High algal counts of $930 \times 10^3 - 2000 \times 10^3$ cells / 1 were recorded during December 1976 – February 1977, which was followed by a decrease in numbers by late March. This was correlated with depleted nutrient levels of 0.068 - 0.035 μg of P/1 and 2.052 - 1. 053 μg of N/1. These data agree with previous observations of Zafar (1967) and Boney (1975) for the tropics and the semi-tropics, the productive months are the November - February.

Heavy rains caused fluctuations in the algal numbers in the and the nutrient levels indicating that the former was affected by the stream flow and the latter by turbulence, mixing processes and and land drainage.

The results also indicated, that firstly high levels of organic substances (from the effluent or from agricultural land via land drainage), interfered with spectrophotometric estimations of nitrate. and secondly, water temperatures of 25 – 35° C were recorded indicating some degree of thermal pollution.

In these waters algae such as *Scenedesmus spp* (an indicator of thermal pollution Zafar, 1967), *Navicula spp* and *Desmids* were found to be dominant, whilst the blue green algae were late comers, probably favouring low nutrient levels as they were atmospheric nitrogen fixers (Horne and Fogg, 1970).

References:

1. Boney, A. D. (1975). Phytoplankton, A. D. Boney (ed) (1975) Chapter 4; 52 — Edward Arnold Publishers Ltd.
2. Horne, A. J. and Fogg, G. E. (1970) Proc. R. Soc. B. (1970) 175; 351 - 366.
3. Zafar, A. R. (1967). Hydrobiologia (1967) 30; 96.