

**AN INVESTIGATION OF PHYSICO-CHEMICAL FACTORS  
GOVERNING PHYTOPLANKTON GROWTH AT USWETAKEIYAWA AND  
IN THE COLOMBO PORT (JANUARY 1981 - JUNE 1981)**

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Physico-chemical factors and their effects on phytoplankton growth were studied during a period of 7 months. Sites chosen were the Queen Elizabeth Quay and Guide Pier in the Port of Colombo (subjected to man's interference) and Uswetakeiyawa (a natural habitat).

Algal periodicity and physico-chemical factors were found to follow patterns similar to those recorded in Indian coastal waters. Salinity was high within the Port, since it was more sheltered when compared to Uswetakeiyawa and varied with the movement of ships and rainfall.

## SECTION D

The water within the Port was highly alkaline when phytoplankton were a maximum, indicating high eutrophic conditions. Furthermore the period of incidence varied from that recorded at Uswetakeiyawa. Following monsoonal showers, the waters were productive during January-February 1981 at both sites, with a second incidence (which was more significant) being recorded during March-May 1981 within the Port.

A depletion of nutrient levels, (especially silicates) were found to cause a cessation of algal numbers. Values ranged from 9.4 - 10.5  $\mu$  g at Si/l limited growth, whilst the phosphate and nitrate levels fluctuated dependent on prevailing weather conditions and plankton incidence. The zooplankton incidence too had a bearing on algal numbers, since Copepods and Naupli were significant following algal blooms. This indicated grazing effects.

A succession of species was observed with *Ceratium* sp, *Peridinium* sp, *Skeletonema costatum* and *Nitzschia* sp being dominants. *Coscinodiscus* sp, *Asterionella japonica*, *Leptocylindrus danicus*, *Rhizosolenia* sp, and *Prorocentrum micans* were sub-dominants. The dinoflagellates and *Skeletonema costatum* dominated the warmer months, when temperatures and salinity ranged from 29.2° - 31.5°C and 28 - 35°C/005, respectively.