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A STUDY ON THE SILICOFLAGELLATES ALONG THE NORTHERN COAST OF TAIWAN[1]

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ABSTRACT

Eight species and varieties of silicoflagellate are found from the waters of northern Taiwan. They are mainly composed of *Dictyocha fibula* Ehrenberg and *Distephanus octonarius* var. *octonarius* Glezer, and uniformly distribute in the water column down to 50 m.

Considerably high cell counts are obtained in the winter and spring when the temperature is lower than 25°C (17.64-24.91°C) and the salinity is around 34‰ (33.63-34.84‰).

INTRODUCTION

The silicoflagellate is a marine chrysophyte with many small, yellowish brown or greenish brown chromatophores scattered in the cytoplasm and a single flagellum located near the radial spine. This planktonic silica-secreting organism widely distributes in the world, but their number in water is quite small in comparison with other planktonic algae. Except a few species living in the present-day seawater, most of them appear in fossil state and their morphology and quantitative distribution are greatly influenced by temperature and salinity of water (Glezer, 1966). Because of their negligible cell number and production in the sea silicoflagellates are not so well known as diatoms or blue-green algae by marine biologists.

Although there are several reports (Huang, *et al.*, 1974; Su, *et al.*, 1975; 1976; 1977) dealing with the phytoplankton collected from the waters around Taiwan and its offshore islands, none of them had mentioned about the taxonomy and distribution of silicoflagellates. Therefore, the present study on silicoflagellate in the waters of northern Taiwan can be of interest for further research on marine phytoplankton of Taiwan.

MATERIALS AND METHODS

The material was collected from the waters of northern Taiwan (Fig. 1) at the depths of 0, 3, 10, 25, and 50 m. during the cruises of R/V Chiu-Lien from July, 1975 through October, 1978. Water samples were fixed with formalin solution, and then concentrated with 0.45 μ millipore filter membranes. Since the cytoplasm of silicoflagellate is easily destroyed in formalin solution, the form of endoskeleton can be examined clearly under a microscope by adding two drops of immersion oil on the membrane (McNabb, 1960; Moore, 1963). The number of skeletons was counted in each litre seawater sample. For better observation for identification and photography the samples collected from the membranes were treated with hydrogen peroxide, and then washed and mounted with Styrax medium. The systematic study is mainly followed the Glezer's work (1966).

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