

THE BENTHIC ALGAE OF SILUT BAY (LILOAN, CEBU, PHILIPPINES)  
AND SOME PHYSICO-CHEMICAL FACTORS AFFECTING THEIR  
DISTRIBUTION AND ABUNDANCE

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A Thesis

Presented to

the Faculty of the Graduate School

University of San Carlos

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Biology

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by

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June 1972

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The Thesis attached hereto, entitled: "The Benthic Algae of Silut Bay (Liloan, Cebu, Philippines) and Some Physico-Chemical Factors Affecting their Distribution and Abundance," has been prepared and submitted by Mrs. Josephine C. Zarsuelo in partial fulfillment for the degree of Master of Science in Biology is hereby accepted.

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## ABSTRACT

The seasonal occurrence and relative abundance of the benthic algae of Silut Bay was studied from May, 1969 to May, 1970. Collection and identification showed the presence of 32 species of 22 genera belonging to 17 families and 11 orders representing four divisions. A single genus, Lyngbya, represented Division Cyanophyta. Division Chlorophyta was represented by the genera, Avrainvillea, Boergesenia, Bryopsis, Caulerpa, Halimeda and Ulva. Division Phaeophyta was represented by the genera Cystoseira, Dictyota, Padina, Sargassum and Turbinaria. Division Rhodophyta was represented by the genera Amphiroa, Callophyllis, Callymenia, Delesseria, Galaxaura, Gelidium, Gigartina, Gracillaria, Halymenia and Laurencia. A field key and description of the species was made. Of the genera found, Caulerpa, Halymenia, Gelidium, Gigartina and Gracillaria are economically and commercially important. The green algae was most abundant during the month of November, the brown reached its peak during the month of May and the reds during the month of March.

A four-month study of the physico-chemical factors like light, substratum, rainfall, temperature, current velocity, bound CO<sub>2</sub>, pH, dissolved O<sub>2</sub> content and salinity were also included.

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## INTRODUCTION

Seaweeds<sup>1</sup> have always been used by man as a source of food, as animal food, as fertilizer for his crops, and even for his recreational needs. Dakin (1952) wrote that in Botany Bay, Sydney, Australia, fishermen use Enteromorpha intestinalis as bait for vegetarian fishes. Extracts useful to industry and food technology like agar, algin, carrageenan and other important phycocolloids are obtained from seaweeds.

Seaweeds aside from being important economically and commercially also play a vital role in the marine ecosystem where they are important links in the food chain and in the cycle of the different elements in the cycle of nature.

There are many varied kinds of seaweeds in the different geographical regions of the world and their occurrence varies with the different ecological factors surrounding them. Some of these seaweeds are well-known in commerce and industry for their uses while others may play an indirect role like the free-floating species of *Sargassum* which serve as nurseries for young fish (Boney, 1965).

In the Philippines, studies of the marine benthic algae are meager. In 1936 De Leon et al., studied the

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<sup>1</sup>Restricted to mean here the macroscopic, attached algae found at eulittoral habitats.