MONTHLY FLUCTUATIONS IN THE POPULATION DENSITY AND VERTICAL DISTRIBUTION OF AN INTERTIDAL MEIOFAUNA COMMUNITY IN A TROPICAL MUDDY SUBSTRATE

A Thesis

Presented to

the Faculty of the Graduate School

University of San Carlos

In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Biology

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by

Helen Jamboy Vicente

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This thesis entitled "MONTHLY FLUCTUATIONS IN THE POPULATION DENSITY AND VERTICAL DISTRIBUTION OF AN INTERTIDAL MEIOFAUNA COMMUNITY IN A TROPICAL MUDDY SUBSTRATE" prepared and submitted by Helen Jamboy Vicente in partial fulfillment of the requirements for the degree of M.S. in Biology
has been examined and is recommended for acceptance and approval for ORAL EXAMINATION.

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ABSTRACT

A tropical meiofauna community was studied over a 6-month period on a muddy substrate in Silut Bay, Liloan, Cebu. The sediment consists mainly of silty-clay with a median diameter of less than 50 μm. The most numerous taxonomic groups were the nematodes, polychaetes, copepods, and turbellarians. Decapod larvae, kinorhynchs, ostracods, bivalve larvae and other unidentified meiofauna occurred in smaller numbers. Total meiofauna individuals averaged from 1818 to 3221 10 cm^{-2} and the corresponding biomass from 1716.77 to 3674.14 μg DW 10 cm^{-2}. The nematode was the most abundant of all the meiofauna groups which made up 70% of the mean total meiofauna population. The other taxa mentioned comprised the remaining 30%. Highest significant peak in abundance ($P < 0.05$) of the total meiofauna was observed in July and the lowest in August. Nematodes comprising the most important group, attained significant peaks in abundance in July and October ($P < 0.05$). Monthly fluctuations in the total meiofauna mean densities as well as the various meiofauna groups, except the turbellarians, are highly significant ($P << 0.05$). Vertical distribution of the meiofauna varies with depth, with 96.31% of the total fauna concentrated in the upper 4 cm of the sediment. Of the parameters studied, benthic diatom standing stock, organic carbon content and interstitial water content appeared to be the chief factors influencing meiofauna density and vertical distribution. Possible prey-predator relationships exist among some meiofauna groups as well as partial competitive interactions.

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