

A Short Review on the Progress of Meiofauna Research in Sarawak

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Abstract

Past researches on meiofauna in Sarawak from the years 1999 – 2005 have focused on its zonation pattern, their roles as food for higher trophic levels, and responses to perturbations. Recently, research on meiofauna has focused on the ecology, taxonomy and experimental study on marine nematode. Seasonal studies showed that the distribution pattern of marine nematode in Muara Tebas, Kuching, Sarawak were influenced by the seasonal rainfall. Higher nematode densities were observed during the dry season. Taxonomy study on marine nematode, Sphaerolaimus macrocirculus, showed slight differences in its morphology, either due to the geographical differences or maturity levels. Trial experiments showed that the marine nematodes had a wide toleration to the changes in salinity and undergone an inactive (dormant stage) when salinity reached 50 PSU. Their activity would return to normal after being left for a short period of time (1 to 10 minutes) in the distilled water.

Keywords: meiofauna, Sarawak, nematode, seasonal, taxonomy

Introduction

The term “meio” which means “smaller” was introduced in 1942 by Mare. It defines an organism that passed through the 500µm but retain on the 44 µm mesh width sieves (Higgin and Thiel, 1988). Today, members of the meiofauna (meiobenthos) are considered mobile and sometimes haptosessile benthic animals, smaller than macrofauna but larger than meiofauna (Giere, 2009). Meiofauna occupies a wide range of habitats and sediments which help in the production of detrital organic matter and recycling of nutrients that enrich the coastal waters which support the marine benthic products (Chinadurai and Fernando, 2007).

A total of 22 from 33 metazoan phyla are meiobenthic taxa: Tardigrada, Loricifera, Kinorhyncha, Gnathostomulida and Gastrotricha which are exclusively meiofauna (Coull, 1988). Members of “permanent” and “temporary” meiofauna have been widely used in categorizing to prevent misleading. The “temporary” meiofauna mostly refers to the newly settled larvae eventually grow to become macrofauna (Giere, 2009).

Coull (1988) stated that several meiofauna groups were restricted to certain particle fractions where particles diameter below 0.125 mm tend to be dominated