Mesozooplankton Species Composition and Community Structure in Shelf and Oceanic Waters from South China Sea during Winter

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Mesozooplankton community structure in the South China Sea (SCS) were studied based on samples collected by vertically towing a net in 26 November – 20 December (winter) of 2006. Mesozooplankton species distribution and abundance data at 16 locations in the shelf (30–200 m) and oceanic (1000–3800 m) regions off South China Sea revealed 124 species and 49 genera were recorded. Hydrographical parameters such as temperature, salinity, pH, dissolved oxygen, Chlorophyll *a*, nutrient concentrations, and turbidity were measured. Among the 49 genera were recorded during the season, Copepoda was the most abundant group in all samples. Over the entire area, copepods overwhelmingly dominated the mesozooplankton community in terms of abundance. The total mesozooplankton abundance ranged from 1800 – 17680 (ind. m^{-3}). In general mesozooplankton diversity (Shannon–Wiener H′, Margalef richness *d*, Pielou's evenness J′) increased in the direction of the open sea relative to coastal locations with a concomitant decrease in abundance. Based on multivariate analyses, it was possible to distinguish the mesozooplankton community into different assemblages according to their location (e.g., shelf, oceanic). While *Acartia negligens*, *Canthocalanus pauper*, *Clausocalanus furcatus*, *Corycaeus* spp. *Euchaeta concinna*, *Oithona* spp. *Oncaea venusta*, *Paracalanus* spp. *Sagitta* spp. and *Undinula vulgaris* were found characterizing the shelf and oceanic areas. The investigations revealed that changes in mesozooplankton community structure across water bodies could be associated with differing salinity. Canonical Correspondence Analysis (CCA) was applied in this paper for discriminating environmental factors acting on mesozooplankton community at species level.

Keywords: Mesozooplankton; species composition; community structure; hydrological parameters; South China Sea