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# Diversity and vertical distribution of Micromolluscs in the Gulf of Mannar marine biosphere reserve, Tamil nadu, India

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## Abstract

The diversity and vertical distribution of micromolluscs were examined in the core sediments of Kurusadai and Shingle Islands, Gulf of Mannar, India. A total of 66 subsamples were sectioned at a depth interval of 6 cm from the 5 core sediment samples which were collected from the coral islands. The depth of the core ranged from 72 to 90 cm. In all the samples, 57 micromollusc species (i.e. 49 gastropods and 8 bivalves) were identified. Shannon-Wiener diversity index and Pielou's evenness index of gastropods and bivalves ranged from 0.574 to 2.472 and 0.693 to 1.782; 0.829 to 1.0 and 0.978 to 1.0 respectively. Shannon diversity index of micromolluscs decreased with depth. Among the 5 cores, the highest species richness (3.357) was observed in Kurusadai A core and the least species richness was found in Shingle Island. The abundant gastropod species were *Rissoina pachystoma, Melanella sp., Clithon oualaniense* and *Cyclostrema sp.* whereas, the abundant bivalves were *Timoclea* and *Anadara sp.* The Principal Component Analysis of the variables showed that 28.89% of the total variance was accounted by positive factor loadings of silt, clay, protein, sulphate carbohydrate, and the remaining parameters like sand, organic carbon, and organic matter were negatively loaded. The bivariate Pearson correlation matrix of the studied parameters such as clay vs silt, silt vs carbohydrate, clay vs protein showed significant positive factor loading ($p < 0.001$). Redundancy analysis showed that the percentage of sand was the highest determining factor in the composition of gastropods and bivalves in the sampling stations.

## Keywords

coral islands, core sediments, micromolluscs, diversity indices