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Ostracoda Morphometry in Deciphering the Paleoenvironment of Epipelagic to Bathypelagic Zone, off Visakhapatnam, Bay of Bengal

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Abstract

An account of the Ostracoda morphometric measurement from the epi to bathypelagic zone of offshore Visakhapatnam and thereafter, the impact of paleoenvironmental changes are discussed. Traditional morphometry was done in carapace of *Actinocythereis scutigera, Bradleya andamanae, Cytheropteron* sp., *Lankacythere coralloides, Ruggieriaindo pacifica, Bythoceraina* sp., and *Bairidoppilata (Bairidoppilata) alcyonicola, Krithe* sp. Antero-posterior length and dorso-ventral height (dimensions) have been marked, measured and analysed for these dominant species. Different species exhibit shape variations with respect to bathymetry. Relative warp analysis reveals that Ostracoda can also thrive on deep waters by adapting the shells to environmental necessities. The results show that shallow dwelling species having greater dorso-ventral readings, than deep water forms. Observed antero-posterior length and dorso-ventral height ratio is 3:1 for deep water *Krithe* sp., but for shallow water forms the ratio is 2:1. However, the deep water taxa *Cytheropteron* sp. exhibits a thicker shell by accumulating maximum calcium percentage in the shell, which is absent in shallow water *Cytheropteron* sp. and this clarifies that different species of Ostracoda reacts differently to environmental changes for survival. Valve area, valve perimeter, shell thickness, roundness and elongation of Ostracoda valves vary with respect to the habitat of the species. The valve area of the carapace decreases in the agitated environment and cool water temperatures. Species with well-developed ornamentation maintain a thicker shell.

Keywords: Ostracoda, Morphometry, Relative warp analysis, Paleoenvironment, Bay of Bengal