Recent Foraminifers from Shallow Water Post-Tsunami Environments of Lhaviyani Atoll (Maldives Archipelago)

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The description of foraminiferal taxa from the Maldivian Archipelago is largely incomplete despite the noteworthy biogeographic interest (Matteucci, 1980, Lévy et al., 1997; Parker & Gishler, 2011), and a relative ease of sampling due to the recent tourism development.

The aim of this work is to contribute to the knowledge of the Lhaviyani atoll recent foraminiferal assemblages sampled after the December 2004 Tsunami event, which predictably affected the benthic communities of the Maldivian Archipelago.

A total of 124 species has been identified from 23 carbonate sediment samples collected from depths ranging from 1 to 41.6 meters. The taxonomic diversity, as typical in the Maldivian Archipelago (commonly 120 species have been described), is low compared with data from areas at the same latitude of the Pacific Ocean, and the taxa richness of similar sectors of the Indian Ocean (Hussain et al., 2006).

Six clusters have been recognized by a Q-mode Hierarchical Cluster Analysis (HCA) using Ward method as the amalgamation rule, and the Euclidean distance as a similarity measure.

The assemblages grouped in clusters are dominated mainly by Amphistegina spp. and Heterostegina depressa. Only one cluster is dominated by Borelis spp., and subordinately, Glabratella tabernacularis, Neorotalia aff. calcar, Sorites orbiculus, Tretomphalus bulloides, Cibicides spp., Eponides spp., Quinqueloculina spp., Sorites spp. and Textularia spp. occur.

The occurrence of Discorbia is firstly reported outside the Caribbean area.

Planktic foraminifers uniformly occur in all the samples, and the depth distribution range of the five species of Amphistegina appears altered and in disagreement with the known models (Hohenegger et al., 1999; Troesltra et al., 1996). These distributions are clearly unlinked to the water energy and the depth gradient, but are the most remarkable effects of the reworking of bottom-water substrate after the dramatic tsunami event occurred in December 2004.

REFERENCES


