

Paper Number: 452

Agglutinated Foraminifer Community within Central Andaman Trough of Andaman Sea: An approach to understand the effect of spreading axis channel way on fauna

D. Anwar¹, S.K. Verma¹, A. Lahiri¹, A.K. Jha¹

¹Geological Survey of India, Paleontology Lab, OPEC-1, M&CSD, GSI, Kolkata-91, danishglm@gmail.com

Andaman Basin is a unique basin especially in respect of the versatile geomorphological set up along with episodic tectonic signatures. An enormous documentation of various geological aspects of Andaman is recorded but very few studies came in light on ecology of the fauna in the Andaman Sea. Apart from some notable work on planktonic and calcareous benthic foraminifera no well detailed study on agglutinated foraminifera is noticed. To fulfil the gap an opportunity has achieved to describe the various agglutinated foraminifera from Central Andaman trough (CAT), present in first five centimetre sample of three cores (GC-1, SC-1, SC-2) along the spreading axis and one core (SC-3) from a distant valley toward Swell Rise with a water depth ranging from 3227.9m, 3050m, 3616m and 3139m respectively. This effort has paid back extraordinary outcome in the form of first report of thirteen taxa of agglutinated foraminifera i.e. *Rhabdammina Discrita* (Brady), *Rhabdammina Cylindrica* (Brady), *Rhabdammina cornuta* (Brady), *Ammodiscus tenuis* (Brady), *Rhizammina Indivisa* (Brady), *Lagenammina Laguncula* (Rhubler), *Lituotubalituifarnis* (Brady), *Saccummina sphaerica* (Brady), *Nodosinum Gaussicum* (Rhubler), *Schizammina Labyrinthica* (Heron-Allen), *Spirillina decorata* (Brady), *Reophax bilocularis* (Flint) and *Paratrochammina Challengeri* (Bronniman and Whittaker) from Andaman Sea. Two already reported taxa i.e. *Karriella apicularis* (Cushman) and *Glomospira charoides* (Jones and Parker) from the Andaman Sea has been re-described in this study. Spreading axis, despite of acquiring the deepest bathymetry is characterised by the meagre population, diversity and poor preservation of agglutinated foraminifera. So spreading axis zone of Andaman Sea reaches the oceanic depth but does not have the typical deep sea assemblage because of the high sediment influx from Irrawady, Salween and Sittoung rivers. These rivers are using the spreading axis as major channel way to supply sediment which is confirmed by the presence of meandering channels on ocean floor connected to the spreading axis. On the other hand sediment from distant part of this spreading axis having calm and quiet condition unlike spreading axis zone representing excellent preservation, diversity and population of agglutinated foraminifera as well as typical deep water assemblage despite of having lesser water depth than that of spreading axis. Typical deep water assemblage from this region is contradicting the earlier statement of the workers that Andaman sea doesn't reflect the typical deep sea assemblage and diversity because its water mass is more saline and warmer than the Indian Ocean where as our samples are actually reflecting the typical deep water assemblage. So it is not the case that Andaman Sea does not reflect the typical deep sea assemblage but demands a proper search for it in the more calm, quiet and deep environmental condition. The most important factors for the foraminifer distribution are oxygenation and food availability. It is derived in this study by carrying out detailed study on infaunal to epifaunal foraminifer concentration. It is observed that spreading axis is having increased proportion of infaunal

benthic foraminifera reveals reduced bottom-water oxygenation and relatively large nutrient availability. The occurrence of the low-oxygen might be associated with changes in the humidity of the borderlands and corresponding fresh-water inputs. Enhanced river run-off into the Andaman Sea probably triggered high productivity and enhanced fluxes of organic carbon to the sea floor of spreading axis. On the distant part of the channel there is almost balanced infaunal to epifaunal ratio which is nearly one (0.9226) marking it a best place to grow and for productivity of the fauna especially foraminifera as marked by the high species diversity.

