

Paper Number: 474

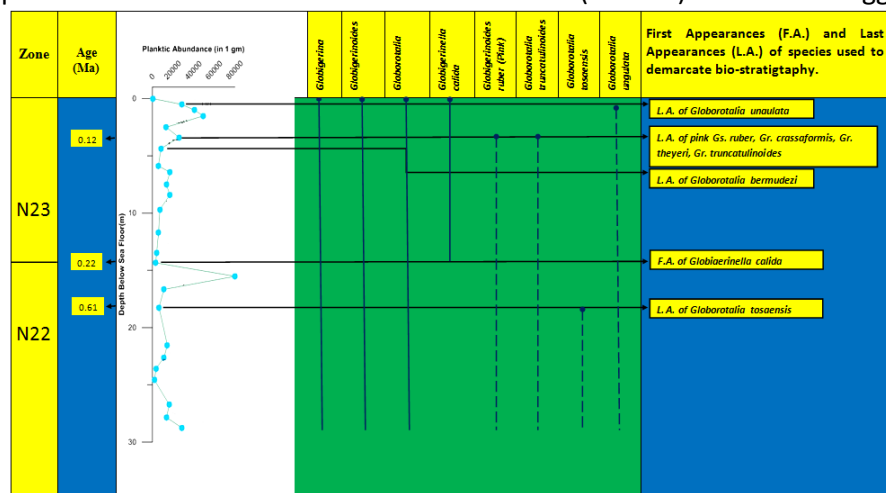
Quaternary Planktonic Foraminifer Biostratigraphy and Biochronology of a Deep Sea Core from South Andaman Sea

Chaturvedi, M.¹, Raghav, S.¹ and Tripathi, S.K.¹

¹Marine and Coastal Survey, Geological Survey of India, Kolkata – 700 091, India. mritunjay.gsi@gmail.com

An uninterrupted piston core (SR-003A/PC-1) of 28.85m was recovered from 3137m water depth in the South Andaman Sea basin (07°19.8566'N; 94°39.2624'E) during the SR-003A cruise onboard Geological Survey of India Research Vessel *Samudra Ratnakar*. The sediment core was studied in detail to construct planktonic foraminifer biostratigraphy and biochronology since it lies above the present day carbonate compensation depth. Based on the variation in the lithology twenty-five sub - samples representing entire core were selected and census data of planktonic foraminifer (PF) from greater than 150 µm fraction were generated. A total of 33 species of PF belonging to 12 genera were identified. The entire PF assemblage represents equatorial (tropical to subtropical) assemblage. Down core variation in the abundance of PF is also indicate of fluctuation in the paleo-monsoon condition associated with glacial and interglacial phases. The qualitative and quantitative temporal variations in the PF were used to establish the Bio-chronology. Five biostratigraphic marker datum were inferred on the basis of first appearance (FA) and last appearance (LA) of PF species namely *Globorotalia (Gr.) tosaensis*, *Globigerinella calida* and pink *Globigerinoides ruber*.

Based on Pleistocene Biostratigraphic datums from tropical oceans of the world, three distinct datum were identified within the sediment column corresponding to 0.61 Ma at 18.3m below sea floor (bsf), 0.22 Ma at 14.3m (bsf) and 0.12 Ma at 3.4 m bsf,. Considering these three bio-chronostratigraphic datum extrapolated age of the bottom level of the core at 28.85m has given an age of around 1.6 Ma which suggests that the entire sequence represents almost entire Pleistocene and Holocene. The presence of *Gr. truncatulinoides* in the bottom (28.85m) of the core suggests that the lower section of



the core between 28.85 to 14.3 m belongs to tropical PF zone N-22 of Blow (1969) [1]. Zone N-23 was defined by the first appearance of *Globigerinella calida* at the 14.3m level of the core which corresponds to 0.22Ma (Fig.1).

Figure 1: PF biostratigraphic zonation reconstructed on the basis of F.A. and L.A. of the PF species from the core SR-003A/PC-1 of south Andaman Sea.

References:

[1] Blow W H (1969) In: Proceeding on the first International conference on Planktonic Microfossils E. J. Brill, Leiden, 1., 199-422

