ABSTRACT

Mega earthquake occurs on 24<sup>th</sup> December 2004 leads to submerge of these islands into two meters. This provided a new coastal environment was a terrestrial environment existed. This provides an opportunity to understand the meiofaunal assemblages as well as it colonization and succession.

The present study is carried out in five stations (Wandoor, Sippighat, Dollygunj, Chidiyattapu and Carbys Cove) to understand the colonization of meiofaunal assemblages (in terms of abundance and community structure) with it environmental parameters in the newly formed marine environment, south Andaman, India.

The sediment samples were collected during the year 2009 and 2010. Understand the seasonal and tidal variations the samples were collected during the summer (February), First Phase of Monsoon (June) and Second phase of Monsoon (November) at high, mid, low and sub tides. Environmental parameters were observed in every month in these stations at low tide.

The results suggested that the highest temperature differences noticed in both the years during summer season (3.13 to 0.25ºC). The year 2010 had an unusual temperature increment in all the stations. pH followed the temperature pattern. Dissolved oxygen not provided any seasonal pattern of changes. Over all salinity change noticed during the first phase of monsoon due to more precipitation.

Sediment texture data was compared to all the stations suggested that sand was dominant in all the station except in Dollygunj. Organic Carbon (OC) concentration was high (0.10 to 3.68%) in the year 2009 than 2010 (0.14 to 2.96%). This was due to the low level of monsoonal rain than the year 2010 this leads to prevent the removal of organic matters by rainwater from intertide to deeper waters. The same phenomena represented the same trend of carbonate content in this period.

Highest density of meiofauna (2009 and 2010) noticed in Sippighat followed by Dollygunj, Wandoor, Carbys Cove and Chidiyattapu due to sand and clay texture (70 to 90%) combination with the optimum OC, carbonate, temperature, pH, DO and salinity. The low and sub tide had maximum meiofaunal density than the mid and high tide during the study period.

Out of twenty one taxa observed in the study area suggested that Chidiyattapu (16 taxa) and Carbys Cove (15 taxa) had highest number of taxa than the remaining stations. This
colonization suggested that the stations Chidiyattapu and Carbyns Cove converted to marine environmental conditions. Sippighat and Wandoor were in the next level of conversion to marine environment represented four and three taxa, respectively, in high density. Absence of succession taxa in Dollygunj suggested that this station need time to convert into full-fledged marine environment.

The observed meiofaunal communities in the newly formed marine environment suggested that the colonization of meiofaunal assemblages in the disturbed environment is fast, even though the environmental parameters, tidal differences and seasonal changes were the limiting factors.

This newly subsidence environment made the stable colonization with eight dominant taxa and it is matched with existed reports of meiofaunal assemblage of this environment (post tsunami tidal region). Apart from this some new faunal occurrences also noticed in this region also supports the robustness of this environment.

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