



FORAMINIFERA AND OSTRACODS: SIGNATURES FOR MIDDLE HOLOCENE PALAEOENVIRONMENTAL CHANGE, MUTTU KADU, CHENNAI, INDIA

UMA MAHESHWARI¹, HEMA ACHYUTHAN¹, S. GANDHI² and H. MOHAMMED²

1. DEPARTMENT OF GEOLOGY, ANNA UNIVERSITY, CHENNAI 600 025.

2. DEPARTMENT OF GEOLOGY, UNIVERSITY OF MADRAS, CHENNAI 600 025

Email: hachyuthan@yahoo.com

ABSTRACT

Numerous investigations have shown that foraminifera and ostracods leave a fossil record in estuarine and tidal sediments that are well suited for paleoenvironmental data collection and coastal zone monitoring ecosystems. In this study, a sediment core (~130 cm thick) was collected from Muttukadu, along the southeast coast of Chennai. This sediment core has been examined for foraminiferal and ostracods faunal assemblages. The sediment core has been dated to mid-Holocene age using radiocarbon method. The radiocarbon dates range in age from 3145 to 3475 yrs BP. 19 foraminifer and 8 ostracod species were identified. The following species of foraminifera such as *Ammonia beccarii*, *Ammonia tepida*, *Elphidium indicum*, and ostracods such as *Hemikrithe*, *Tanella gracilis* and *Paijenborchellina* sp., are abundant. It was observed that fresh water juvenile forms of ostracods and less saline foraminifer species are abundant in the upper layers; while in the lower layers of the sediment core, marine forms of foraminifera and brackish ostracod forms are dominant. Statistical data on foraminifer assemblage reveals a positive correlation and increase in the abundance of *A. tepida* with depth. The positive relation between the brackish ostracod species with depth could also be related to common habitat conditions such as increase in salinity and temperature conditions. Thus, the down core variations of the total number of foraminifera and ostracods correlate well with each other indicating shifts in the salinity and temperature conditions since the mid-Holocene period.

Keywords: Foraminifera, ostracods, sediment core, mid-Holocene, palaeoenvironments