

Lower Miocene, Larger Benthic Foraminifera Fauna And Depositional Environment Of Limestone Facies From Batu Luang, Klias Peninsula, Sabah

ABSTRACT

A limestone unit is exposed in Batu Luang exhibited well preserved larger benthic foraminifera. This limestone is in-situ and no sign of transported block due to its clear interbed with the argillaceous sediment in the sequence of the measured section. The argillaceous sediment in the surrounding area was mapped by previous researcher as a turbidite sedimentary sequence of the Setap Shale Formation. The aims of this study are to determine the age of the larger benthic foraminifera and the paleoenvironment of the limestone. Three samples of limestone were collected and thirty thin sections samples were prepared and analysed. A total of eleven species of larger benthic foraminifera were identified. One assemblage of larger benthic foraminifera can be recognised, namely *Lepidocyclina* (N.) *verbeeki* assemblage. This foraminifera assemblage is an indicative of Te5 or early Lower Miocene (Aquitanian) age. Two microfacies were characterised namely; 1) Coral-coralline algae boundstone microfacies (MF1) representing the reef flat environment and 2) Foraminifera packstone microfacies (MF2) which was related to the shallow open marine carbonate environment. The microfacies analysis and the outcrops observation show that the limestone unit at Batu Luang was a small reef deposited in shallow marine of carbonate environment. The limestone of Batu Luang could be the remnant bioherm that was developed during Te5 or early Lower Miocene (Aquitanian), associated with shoreline environment which negate the previous study.