

Miocene larger benthic foraminifera from the Kalumpang formation in Tawau, Sabah

ABSTRACT

Miocene larger benthic foraminifera have been discovered from a limestone unit of the Kalumpang Formation. The limestone is exposed at the Teck Guan Quarry, Tawau, southeast Sabah. The Kalumpang Formation consists predominantly of interbedded mudstone and sandstone (graywacke), conglomerate, limestone, marl, chert and volcanic rocks. Five limestone samples have been collected and processed for petrographic analysis and identification of larger benthic foraminifera. The limestone is classified as packstone and mudstone. A total of seventeen species of larger benthic foraminifera have been identified. The foraminifera are divided into two assemblages namely Assemblage I and Assemblage II. Assemblage I is characterized by the presence of *Lepidocyclina* (*Nephrolepidina*) *parva*, *Operculina* sp. and *Lepidocyclina* (*Eulepidina*) *formosa*. This assemblage is an indicative of Aquitanian to Burdigalian in age (Early Miocene). Assemblage II comprises of *Lepidocyclina* (*Nephrolepidina*) *sumatrensis*, *Lepidocyclina* (*Nephrolepidina*) *angulosa*, *Lepidocyclina* (*Nephrolepidina*) *ferreroi*, *Lepidocyclina* sp., *Miogypsina* sp., *Katacycloclypeus* *annulatus*, *Katacycloclypeus* *martini*, *Cycloclypeus* *carpenteri*, *Cycloclypeus* *indopacificus*, *Cycloclypeus* sp., *Flosculinella* *bontangensis*, *Operculina* *complanata*, *Amphistegina* *bowdenensis* and *Amphistegina* sp. This assemblage is an indicative of Langhian to Serravallian age (Middle Miocene). The foraminiferal assemblages suggest that the depositional environment was a warm tropical shallow-marine at the fore-reef shelf zone.