

Deep marine clays with intercalations of turbiditic limestone containing abundant debris of shallow water fauna outcrop some 20 kilometres from the "Atoll". Their age is Lower Miocene (N.9). The exposed shallow water carbonates can only be dated by means of the larger foraminifera. *Flosculinella globulosa*, *Flosculinella cf. reicheli* and *Austrotrillina howchini* are identified close to both the base and the top of the out — cropping carbonate sequences and these restrict the age to early Middle Miocene (lower Tf stage), corresponding to the N.7 — N.10 plankton zone span. The nearby deep marine clays and calciturbidites of late Lower Miocene (N.9) age are therefore taken to have been deposited synchronously with the shallow water carbonates.

Dolomitization is found only in the interior. On the exterior of the atoll edge, the limestones were partly dissolved and leached soon after deposition. Leached porosity and druses of secondary calcite were formed. Parts of these secondary cavities were infilled with very fine lime mud containing small forams and ostracods, not dissimilar to the cavity faunas known in the interior of recent reefs. These cavities and cements may therefore be penecontemporaneous with reef growth.

### **MIOCENE ALGAL REEF MOUNDS, SENGKANG PROVINCE, SULAWESI**

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The southern edge of the Sengkang Basin, situated in the South Arm of Sulawesi, contains well exposed outcrops of algal reef limestone. Numerous discrete mound-shaped bioherms are recognised, rooted into an Upper Miocene limestone platform and covered by pelagic calcareous mudstones of Upper Miocene to Pliocene age.

The bioherms are composed mainly of filamentous calcareous algae; corals form a significant proportion of the framework only at the base. Internally, no lateral facies trends are apparent. Flanking biostromes are thick and coarse-grained at the base where corals are common, but are thin towards the crest of the bioherms. The flanks generally possess fore-reef characteristics.

During the Upper Miocene, shallow water, moderate to high energy deposition gave way to open pelagic sedimentation. During this period of continual subsidence, the algal bioherms flourished and then died. The deterioration in reef growth is attributed to gradual subsidence below the photic zone.

### **REEF EXPLORATION IN BINTUNI BASIN AND BOMBERAI TROUGH — IRIAN JAYA**

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The Bintuni Basin of western Irian Jaya forms a part of the Australian miogeosyncline, the stable platform of which extends from the Salawati Basin area in