

Reconstructing sedimentation process of lagoon sediment in the Eastern Kume Island, Ryukyus

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This study aims to reveal the sedimentation process of the barrier reef lagoon in the Eastern Kume Island. We drilled at two sites (the south of Ooha island and the east of Eef beach) in Kume Island and obtained 4 cores. The penetration depth of cores were from 2.4 to 4.2 m. Unlithified sediments in coral reef lagoons in Kume Island were mainly composed of bioclast such as branching coral pebbles, foraminifera, shell, algae and lime mud.

We measured radiocarbon dating of 28 samples (18 coral pebbles and 10 foraminifera) in the cores and estimated their sedimentation rates. The results showed that the sedimentation rate was slow at the south of Ooha Island, but rapid at Eef beach. The timing of rapid sediment accumulation at Ooha Island coincided with the timing of relative sea-level rise around 6.7 ka and reached its highest level at Tonaki Island (Kan et al., 1997) locating next to Kume Island. The sediment accumulation at Eef Beach was from 4.1 to 3.2 ka and it lagged behind Ooha Island. It may be because the coastal plain was developed with three beach ridges behind Eef Beach (Kawana, 1990) and the coring sites were located at the front of the coastal plain formation.

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