

AMANO K. and MARTIN, A.J. The Department of Arc-arc collision tectonics and sedimentation in central Japan Environmental Sciences, Ibaraki University, Mito City, Japan.

The South Fossa Magna is an active arc-arc collision zone that became active during the Neogene, and has continued through the Quaternary right up to the present day. Except for Quaternary volcanics such as Mt. Fuji and Mt. Hakone, we can see two kinds of rock in the South Fossa Magna. One is composed mainly of subaqueous volcanoclastics, which originated from collided arc segments of the paleo-Izu-Bonin arc due to the subduction of the Philippine Sea Plate, and the other is trough fill sediment, deposited in the trough in front of each collided segment.

Collisions of four segments, belonging to the paleo-Izu-Bonin arc, have been clarified by field-based studies. In particular, we can reconstruct in detail, the first two collided segments; the Kushigatayama block: collision at 12Ma, and the Misaka block: collision at 8Ma. The former block represents a segment of forearc, and the later, a back arc rift - volcanic arc - forearc system. The third (the Tanzawa block) and fourth (the Izu block) collisions occurred at 5Ma and 1Ma, respectively. The trough fill sediments related to each collision, show upward-coarsening mega sequences, reflecting the hinterland uplift caused by buoyant subduction.

Paleomagnetic measurements show a re-arrangement of the collided blocks. The tectonic feature of the South Fossa Magna is a miniature of the collision of the Indian sub-continent, in central-east Asia.