

## Paleoceanographic evolution of Miocene to Pliocene mud sea in the Ryukyus based on calcareous nannofossil assemblages

IMAI, Ryo<sup>1\*</sup> ; SATO, Tokiyuki<sup>2</sup> ; IRYU, Yasufumi<sup>1</sup>

<sup>1</sup>Institute of Geology and Paleontology, Graduate School of Science, Tohoku University, <sup>2</sup>Institute of Applied Earth Sciences, Faculty of Engineering and Resource Science, Akita University

The Cenozoic sedimentary succession in Okinawa-jima, including the upper Miocene to Pleistocene siliciclastic deposits (Shimajiri Group) and the Pleistocene reef to shelf deposits (Ryukyu Group), suggests a drastic paleoceanographic change from a mud sea to a coral sea. To delineate the paleoceanographic evolution of the mud sea, we quantified the stratigraphic distribution of the calcareous nannofossil assemblages from the Shimajiri Group in a 2119.49 m-deep well (Nanjo R1 Exploratory Well) drilled in southern Okinawa-jima (Ryukyu Islands, southwestern Japan). Four late Miocene and Pliocene datum planes were found in the studied interval. The calcareous nannofossil assemblages suggest the existence of oligotrophic conditions between 5.3 and >8.3 Ma followed by eutrophic conditions and a return to oligotrophic conditions at 3.5 Ma. Micropaleontological evidence suggests that these oceanographic changes were likely caused by local tectonic movement (shallowing of the sedimentary basin in which the Shimajiri Group was deposited). We will report calcareous nannofossil records from two exploratory wells drilled in southern Okinawa-jima in 2013 – 2014 as well.

Keywords: calcareous nannofossil, Miocene, Pliocene, Ryukyu Islands