

Reconstruction of paleoceanographic environment using planktonic foraminifera fossils from the Mera Formation, Chikura Group in the southernmost part of the Boso Peninsula

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The continental ice sheet started to expand in northern hemisphere between late Pliocene and early Pleistocene. This is called as Northern Hemisphere Glaciation (NHG). In addition, the glacial - inter glacial cycle periodicity changed from 2.3 ka to 4.1 ka at the same time. Therefore, reconstruction of paleoceanographic environment during that time when NHG started must be important to understand the mechanism to control the earth's climate system.

The Mera Formation, Chikura Group, distributed in the southernmost part of the Boso Peninsula, has been revealed as that the sequence deposited during a period from 3.1 to 2.2 Ma when NHG started based on magneto and oxygen isotopic stratigraphies (Okada et al., 2012). Yamamoto et al. (2017) reported planktonic foraminiferal assemblages and reconstructed sea surface temperature (SST) by using the transfer function PFJ125 (Takemoto & Oda, 1997) and the modern analog technique. The reconstructed SST showed particularly decreasing at marine oxygen isotope stage (MIS) G6 and G4. Okada et al. (2012) measured oxygen isotopic ratio at 112 horizons, however, analysis of planktonic foraminiferal assemblages have not been reported. In this study, we carried out analysis of foraminiferal assemblages newly with 23 horizons: 9 of them correspond to 2.95Ma to 2.85Ma and 14 horizons correspond to 2.7 Ma to 2.4 Ma.

The occurrence of *Neogloboquadrina incompta*, preferring a transitional water mass, shows high frequency at 2.92 Ma and the reconstructed SST also decreased 1 to 2 °C. According to the age model based on oxygen isotope curve in the Mera Formation (Okada et al., 2012), this horizon corresponds to the glacial period of MIS G16 suggesting that the influence of transitional water became stronger around off the Boso region due to that the Kuroshio front went south. On the other hand, the occurrence of *Globigerinita glutinata*, which is a warm water species, shows high frequency in contrast that a cold water species like *N. incompta* or *Neogloboquadrina pachyderma* did not increase even at the glacial periods of MIS 102 and 100. In this way, the glacial - interglacial cycles seem to be not affecting directly to the composition of planktonic foraminiferal assemblages and it is necessary to make further investigation for the assemblage analysis at more horizons in the future.

Keywords: Northern Hemisphere Glaciation, planktonic foraminifera, Boso Peninsula