

Detailed stratigraphy of diatom assemblages from a core of the Kokumoto Formation collected in the Boso Peninsula, Japan

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Diatom analyses were conducted on a core of the Kazusa Group in the Boso Peninsula, central Japan, to reveal stratigraphic variations of diatom assemblages across the Matsuyama-Brunhes magnetic polarity boundary (MBB). The core is 54 m long collected near the Chiba section along the Yoro River, a candidate for the GSSP of the Early-Middle Pleistocene boundary. Stratigraphic variations of diatom assemblages in response to the glacial eustatic sea-level changes shown by the planktonic marine oxygen isotope record from *Globorotalia inflata*. Diatom assemblages in the lowermost part of the core are dominated by extinct species of *Actinocyclus ingens*, often observed in reworked deposits in the Kazusa Group. This part is correlated with the earliest stage of marine isotope stage (MIS) 19, and is dominated by reworked deposits that were accumulated during a low sea-level period. The extinct species suddenly decrease at a horizon of about 5 m below the Byakubi tephra (ByK) layer, during a gradual sea-level rise. Turbidity currents may have still affected the sedimentation at the site, although the lithology shows no turbidite layer above a horizon of about 8.5 m below the ByK. Above a level of 5 m below the ByK, marine littoral diatoms such as *Paralia sulcata* and *Cyclotella striata* become dominant, and have a peak at about 3 m below the ByK, coinciding with the lightest oxygen isotope value correlated with MIS 19.3. Above the peak abundance, the proportion of *P. sulcata* gradually decreases, and *A. ingens* re-increases at about 3m above the ByK, with a maximum at about 7m above the ByK, where marine isotope data show a maximum value. The re-increase of extinct diatom species suggests a sea-level drop. Thus the maximum of *A. ingens* at about 7 m above the ByK may be correlated with the MIS 19.2 sea-level lowstand. Therefore, the MBB that lies at 1 m above the ByK occurs between MIS 19.3 and 19.2. *A. ingens* can be used as a proxy of reworked deposits in the Kazusa Group.

Keywords: Kokumoto Formation, *Paralia sulcata*, *Actinocyclus ingens*, MIS19, Matsuyama-Brunhes boundary, GSSP