

Sedimentary facies of the Byakubi-E tephra bed (Byk-E) just below the Matuyama-Brunhes Polarity Chronozone boundary in Boso Peninsula, central Japan

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The Byakubi-E tephra bed (Byk-E) is a white pumiceous fine ash deposit with 1.0-7.0 cm thick, and is sandwiched between dark gray sandy silt layers in the middle part of the Kokumoto Formation (Kazusa Group).

The Byk-E is located at approximately 0.8 m below the Matuyama-Brunhes Chronozone boundary (MBB) in the Chiba composite section (along the Yoro, Yanagawa and Kokusabata rivers) in central part of the Boso Peninsula (Suganuma et al., 2015; Kazaoka et al., 2015). The middle part of the Kokumoto Formation across MBB is extremely well exposed in the Chiba composite section, and this section is a candidate of Global Boundary Stratotype Section and Point (GSSP) for the Lower-Middle Pleistocene boundary (Head et al., 2008; Head and Gibbard, 2015). The base of the Byk-E would serve as an appropriate level for of the L-M Pleistocene GSSP, because that is a clear lithofacies boundary just blow the MBB (Kazaoka et al., 2015).

It has been revealed that a distribution of the Byk-E in the Boso Peninsula (Kazaoka et al., 2015) and its source volcano (Takeshita et al., 2015), however, there is no detailed report on the sedimentary facies of this tephra bed. Therefore, we carried out a detailed observation of the sedimentary facies of the Byk-E in four outcrops (Yoro and Yanagawa rivers, Mt. Daifuku, and Tateyama). As a result of the observation, following three points were found in neither outcrop. 1) There is not a clear lamina in the Byk-E. 2) Mud clasts are not observed in the Byk-E. 3) The base of the Byk-E doesn't cut trace fossils in the underlying layer. Additionally, in the three outcrops except the Yoro River section, the thin layer consisting of fine volcanic ashes is found in a basement of the Byk-E. These results clearly show that the Byk-E is a primary fall-deposits, and conformably overlies the underlying silty layers.

Keywords: Byk-E, Lower-Middle Pleistocene boundary, GSSP, Sedimentary facies, Chiba composite section