

The source volcano and age of the Byakubi tephra in the Kazusa Group in Boso Peninsula, central Japan

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Introduction

The Kazusa Group in the Boso Peninsula, central Japan is composed of Lower- Middle Pleistocene marine sediments that contain numerous tephra layers (Mitsunashi et al.1959; Machida et al. 1980; Satoguchi 1995; Satoguchi 1996 and so on). One of numerous tephra layers, Byakubi tephra (BYK; Takeshita et al. 2005) is intercalated just above Brunhes/ Matuyama (B/M) boundary in middle part of the Kokumoto Formation (Okada and Niitsuma 1989; Aida et al. 1996). BYK was correlated with YUT4 or 5 from the Older Ontake Volcano, which provide a datum plane of the Lower-Middle Pleistocene boundary in central Japan (Takeshita et al. 2005).

Correlation of the tephra beds in the Kazusa Group with those from the Older Ontake Volcano

Heavy mineral assemblage and chemical compositions of hornblende of nine Lower-Middle Pleistocene tephra beds (Ku6E, Ku5C, BYK, Ka2.4A, Ka2.4B, Ch3, Ch1.5, Ks18, Ks12) from the Kazusa Group, in Boso Peninsula were examined in order to correlate with the tephra from the Older Ontake Volcano in central Japan by Takeshita et al. (2005). Conclusively, hornblende compositions from the nine tephra beds were distinguishable. Two of the nine beds, BYK and Ks12 tephra, were correlated with two tephra from the Older Ontake Volcano, YUT4 or 5 and KZT, respectively. The age of these tephra beds of the Kazusa Group could be inferred from the stratigraphic relationships with 47 dated lava flows on the foot of the Older Ontake Volcano, and from presence of well-known widespread tephra and magnetostratigraphy in the Boso Peninsula. Correlated these two tephra beds became valuable marker tephra for geochronological studies in inland and marine sediments from central Japan. It was also emphasized that the BYK and YUT4 or 5 could provide a datum plane of the Lower-Middle Pleistocene boundary in this region.

Keywords: Lower-Middle Pleistocene Boundary GSSP, Kazusa Group, Byakubi tephra, Ontake Volcano, Boso Peninsula