

## Distribution of the key tephra bed 'Kd38' occurring near the boundary between Tertiary and Quaternary in the southern Kanto area

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Almost continuous sequence from Middle Miocene to Pleistocene develops in the central Boso Peninsula where lithostratigraphic, tephrostratigraphic, microfossil-stratigraphic and magnetostratigraphic studies have been carried out. In the sequence, a tephra layer 'Kd38' in the Kiwada Formation, lower part of the Kazusa Group, is one of the most important key beds as an indicator of Tertiary-Quaternary boundary (Takayama et al., 1995). The tephra was correlated widely in central Japan; Uonuma Group in Niigata area and Osaka Group in Kinki area (Tomita and Kurokawa, 1997; Yoshikawa et al., 1996).

The authors have reported the special feature of the 'Kd38' tephra (include Fe-rich orthopyroxene with  $Mg\# [100 * Mg / (Mg + Fe)] = 26$ ; Yokoyama et al., 1997 & 1998) and indicated that the tephra was correlated widely in the Boso Peninsula (Mitsuoka et al., 2000; Takahashi et al., 2001). Yokoyama et al. (2002) have reported that the 'Kd38' tephra was found at the same Kazusa Group in the Yokohama area. As they did not succeed to find the critical tephra at the Chikura Group in the southern Boso Peninsula, they inferred that tephra sequence is different in the two sedimentary basins and distribution of 'Kd38' tephra is restricted in relatively narrow area.

In this study, we have collected and analyzed the tephtras correlated to the 'Kd38' in the Uonuma Group and the Osaka Group. It is confirmed that the key tephra bed 'Tsujiatagawa tuff (Tzc)' (Kazaoka et al., 1986) in the Uonuma Group is the 'Kd38' tephra, but not correlated to the 'Fukuda tuff' (Itihara et al., 1975) in the Osaka Group. It was confirmed that the 'Kd38' tephra is widely distributed in the central Japan.

Many samples were collected from the Chikura Group in the southern Boso Peninsula again to find the 'Kd38' tephra in different route from last report. The 'Kd38' tephra was confirmed in 50m above the 'KO' tephra (Kotake, 1988) and between 'AM' tephra and 'HR' tephra (Awa research group, unpublished data). The localities are well consistent with the horizon of the boundary of Tertiary and Quaternary inferred from paleomagnetism (Kotake et al., 1995).

The 'Kd39' tephra has also critical composition as well as the 'Kd38' tephra. It is characterized by sharp peak at  $Mg\# = 58$  in orthopyroxene. This tephra was found 12m under the 'Kd38' tephra in same route in the Chikura Group. The stratigraphic relationship of 'Kd38' and 'Kd39' is confirmed at three routes, Choshi area (Byobugaura), Yokohama area (Hitorizawa) and southern Boso area (Hata 2 woodland path). Whereas, the cumingtonite tuff (once mistaken to the 'Kd38' tephra) found in the Yorogawa route has not been confirmed in the Chikura Group.

The Chikura Group indicates intense change on lithofacies within a narrow area and apparent sequence of tephra is different in each route due to frequent erosion. We tried to compare the character of tephtras in the central Boso area (Yorogawa route) and the southern Boso area. Unit division of the lower Kiwada Formation by presence of hornblende in the Yorogawa route was not recognized in the southern Boso area. Hornblende bearing tephtras are found in various horizons in the southern Boso area. Considering a motion of the Philippine Sea plate, the difference of tephra pattern may be based on isolation of two sedimentary basin in the early Pleistocene age.