

Lithological and geochemical features of the Permian-Triassic boundary at the Gujo-Hachiman section in the Mino-Tamba belt, central Japan

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The most significant mass extinction event in the Phanerozoic era occurred across the Permian-Triassic boundary (PTB; ca. 252 Ma). However, the entire picture of this global environmental crisis has not reached a consensus, as well as a culprit that invoked the catastrophe. The PTB sections in the Japanese accretionary complex were primarily deposited in the deep-sea of the superocean Panthalassa, hence it is very likely to have recorded signatures of the global-scale environmental change. Therefore, a number of geological, geochemical, and paleontological researches have targeted them to deduce a series of environmental shift during the event (Isozaki, 1997; Kato et al., 2002; Takahashi et al., 2009). The Gujo-Hachiman section located in the Mino-Tamba belt, central Japan, has a continuous outcrop across the PTB (Kuwahara et al., 1998; Yao et al., 2001). In the present study, to decipher the marine environmental change across the PTB, we report the lithological and geochemical features on the basis of thin-section descriptions and chemical analyses of total organic carbon and bulk chemical compositions of the Gujo-Hachiman section.

Keywords: Permian-Triassic boundary, black shale, chert, Gujo-Hachiman, ocean anoxia