Preservation of Permian–Triassic boundary section in the Jurassic accretionary complex of the Lake Hamana, Central Japan

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The Permian-Triassic (P–T) boundary has been received extensive attention, because it recorded the largest mass extinction event in Earth's history. However, the entire P-T section has been rarely preserved in the pelagic sedimentary rocks. We examined the lithostratigraphy and deformation structures of the accreted pelagic rocks in Lake Hamana, Central Japan, based on a detailed field mapping and the radiolarian ages. The constructed lithostratigraphy is composed of Late Permian gray chert, black chert, black claystone with a high carbon content of 4.86%–6.78%, siliceous claystone, black chert, and middle Triassic gray chert, in the ascending order. The symmetry in the lithostratigraphy and the change in the radiolarian ages with respect to black carbonaceous claystone are presumed to represent a deep-sea anoxic event that occurred across the P–T boundary. The P–T boundary black carbonaceous claystone in the scaly black claystone matrix. In places, the sheared terrigenous rocks composed of sandstone blocks in the mudstone matrix are intercalated into the pelagic rocks, possibly representing complex mélange forming processes during the development of the Jurassic accretionary complex.

Keywords: P-T boundary, black carbonaceous claystone, Lake Hamana