

END-PERMIAN DOUBLE EXTINCTION IN MID-PANTHALASSA: SHALLOW-WATER RECORD FROM LOST MID-SUPEROCEAN

Isozaki, Yukio and Ota, Ayano Dept. Earth Science & Astronomy University of Tokyo, Japan

The Jurassic accretionary complex in SW Japan preserve numerous fragments from deep-sea floor of the lost superocean Panthalassa. In addition to deep-sea pelagic cherts older than 200 Ma, the accreted oceanic materials include Carboniferous to Triassic reefal limestone primarily deposited on top of ancient seamounts in mid-oceanic shallow-water environments. Some of these limestones preserve continuous stratigraphy across the Permo-Triassic boundary (PTB; 251 Ma), representing an exclusively valuable record from mid-oceanic domain of Panthalassa. Remarkable faunal turnovers were detected not only across the PTB per se but also across the Guadalupian(=Maokoan)-Wujapingian boundary (259 Ma) where representative mid-Permian taxa such as large-shelled fusulinids (e.g., Yabeina) were terminated. The abrupt lithologic change from black organic micritic limestone to light gray one occur at the end-Guadalupian horizon in the mid-oceanic reef limestone sequence. This suggests that the end-Permian biosphere catastrophe went through two major steps, as emphasized by Stanley & Yang (1994), not only in circum-Pangean domains but also in mid-Panthalassa. The double-phased extinction pattern in the end-Permian recognized here provides a new clue to analyze the global environmental change then. In particular, the nature and cause of the change across the Guadalupian-Wujapingian boundary is the most important, as it appears to have triggered the superanoxia and end-Guadalupian mass extinction nearly 10 million years before the PTB and the alleged Siberian flood basalt eruption.