

Lithostratigraphy of the Triassic pelagic sequence in Inuyama area: Implication for the recovery process from P/T mass extinction

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The end-Permian mass extinction is known as the largest extinction event in the Phanerozoic. The Early to Middle Triassic period is considered to be the interval of delayed biotic recovery characterized by the gaps followed by slow recoveries of pelagic chert, shallow marine reef, and terrestrial coal deposits (Here we will call Coal-Reef-Chert Gap). However, the interrelationships of environmental and biotic recovery processes among the terrestrial, shallow marine, and pelagic settings during the Early to Middle Triassic is largely unknown.

In this study, we reconstructed a continuous pelagic sequence of the lower-middle Triassic Panthalassa ocean with high-resolution, and correlated this sequence with the terrestrial and shallow marine sequences of by chemostratigraphy and biostratigraphy. The heavily folded and faulted lower to middle Triassic pelagic sequence is exposed in the Jurassic accretionary complex in the Inuyama area, Mino Terrane. Because of the intense faulting and folding during the accretionary process, bed-by-bed reconstruction of the lithostratigraphy has never been attempted. We made bed-by-bed-scale columnar sections for each fault-bounded block and spliced them into a continuous columnar section covering the early to late Triassic. We then correlated this pelagic sequence with terrestrial and shallow marine sequences based on the carbon isotope stratigraphy and biostratigraphy. Based on this correlation, we will discuss the origin of Coal-Reef-Chert Gap, namely productivity recovery process of terrestrial, shallow marine, and pelagic realms, and their interrelationship during the early to middle Triassic.