

Establishment of pelagic deep-sea sedimentary sequence of lower Permian in the Tamba belt, Southwest Japan

UCHIDA, Koya^{1*} ; TAKAHASHI, Satoshi¹ ; MUTO, Shun¹ ; TASHIRO, Takayuki¹ ; SUZUKI, Noritoshi²

¹Department of Earth and Planetary Science, the University of Tokyo, ²Graduate school of science, Tohoku University

The Carboniferous and following early Permian are associated with climate changes related to tectonics and glaciations. The development of ice-sheets occurred on the Gondwana continent, which was placed around the southern polar region. Repeated increase and decrease in the volume of such ice sheets have been suggested by the oxygen isotope ratio variations of carbonate fossils (e.g., Chen et al., 2012). According to previous researches, the fluctuation of ice-sheet volume occurs in the time interval of from one million years to several million years. Contemporaneous pelagic deep-sea sediments would provide materials available for the reconstruction of environmental conditions such as oceanic ventilations and biotic productivity, but their records have been poorly known. The delay in the establishment of Carboniferous and lower Permian pelagic deep-sea stratigraphy is the main reason of this problem. The Paleozoic to Mesozoic deep-sea sedimentary rocks including the lower Permian are preserved in Japanese accretionary complexes. Among previous researches, Ishiga et al. (1982) reports one of the best lithologic sections of lower Permian deep-sea. This section is named the Funaeda section, and located in Yagi area, Northwest of Kyoto city. The Funaeda section is composed of grey and red colored bedded chert. Although Ishiga et al. (1982) examined the age diagnostic radiolarian fossils, the Permian biostratigraphy has recently been updated, and therefore more detailed discussion on the age assignment of this section is required.

In this study, detailed field works on the Funaeda section were conducted, and the section was divided the Funaeda section into five subsections, namely Fd-A~E sections. We found conodont fossils from the uppermost and the middle part of the Fd-B section. Some specimens are identified *Mesogondolella* sp.. Occurrences of these species are limited within the Cisuralian, suggesting that the Fd-B section belongs to the Cisuralian. To observe each stratum in detail, we made polished rock specimens for the Fd-B section. We found periodic variations in the thickness of bedded chert, rock color and lamina preservation. Thickness, rock color, and lamina preservation of the Fd-B section vary every ca.50, 4 and 48 beds, respectively. In this presentation, we will discuss these lithologic features and their relationship with the paleo-environmental conditions at the early Permian pelagic ocean.

Keywords: early Permian, pelagic deep-sea, bedded chert