Lithostratigraphy and radiolarian biostratigraphy of Triassic bedded chert of the Sakahogi section in the Mino Terrane, Japan

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Pelagic sequences are well exposed along the Kiso River, Gifu and Aichi Prefectures. The Sakahogi section corresponding to the Inuyama CH-2 section is composed of bedded radiolarian chert. Lithologic columnar section at a scale of 1:10 was measured for an interval of 72m thick. The investigated interval is litho-stratigraphically divided into three (lower, middle and upper) parts. Samples for radiolarian biostratigraphy were collected at an interval of every 1m or less.

The lower part of the section (20 m in thickness) is mainly composed of rhythmical bedded brick-red chert. This part is characterized by the occurrence of Triassocampe coronata, T. deweveri, Pseudostylosphaera japonica, Spine A2, Yeharaia elegans, Tritortis kretaensis, Muelleritortis cochleata, Spongoserrula dehli and Capnuchosphaera sp. This assemblage is correlative with late Anisian to early Carnian (TR 2C to 5A).

In the middle part of 22 m thick, amalgamated greenish gray chert is dominant. Chert beds with striped structure are common in this part. There are two claystone beds at the bottom and top of this part, which are named CS-1 and CS-2. The middle part yielded Spongoserrula dehli, Capnodoce anapetes, C. sarisa, Poulpus carcharus, Trialatus robustus, Lysemelas olbia and Praemesosaturnalis multidentatus, indicating early Carnian to early Norian (TR 5A to 6B).

In the upper part of the section (12m in thickness), rhythmical bedded red chert and amalgamated greenish gray chert are alternated. A claystone layer called CS-3 limits the top of the upper part. Capnuchosphaera anapetes, Trialatus robustus, Lysemelas olbia, Praemesosaturnalis multidentatus, P. pseudokahleri, P. heilongjiangensis and Skirt F occur from the upper part. This assemblage is correlative with early Norian to early Rhaetian (TR 6B to 8C).

Lithostratigraphy and radiolarian biostratigraphy indicate that the Sakahogi section records a continuous sedimentation ranging from Middle Triassic to Early Jurassic in age. Because of the continuity, this section is suitable for discussing the Triassic paleoceanographic environment. According to the thickness of each radiolarian zones and corresponding duration, the accumulation rate ranges from 0.8 to 2.9 mm/k.y. Highest values in the accumulation rate are recorded in middle Carnian (TR 5B) and in late Norian (TR 8A).