

Stratigraphic distribution of striped cherts in the Triassic-Jurassic Sakahogi section in the Mino Terrane, Japan

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Pelagic chert sequences are well exposed along the Kiso River in the Inuyama area, Gifu Prefecture. In this area, the Sakahogi section has continuous exposure. The section corresponds to CH-2 unit and is composed of bedded radiolarian chert. Sugiyama (1997) established Triassic-Lower Jurassic radiolarian biozones in here. The investigated interval (72m thick) was measured as lithologic columnar section at a scale of 1:10. Samples for radiolarian biostratigraphy were collected at an interval of every 1m or less. This interval is litho-stratigraphically divided into three (lower, middle and upper) parts. There are two claystone beds at the bottom and top of middle part, which were named as CS-1 and CS-2. A claystone layer called CS-3 limits the top of the upper part.

In the bedded cherts, bedding parallel laminae-like sedimentary structure can be observed. The chert beds with this structure are called striped cherts. Stripe structures can be observed in any color chert beds if color of beds changes. There are traceable one laterally 20m in length. The stripe structures are categorized into four types as follows; thinning upward, constant, thickening upward, thickening+thinning.

The lower part of the section (20 m in thickness) is mainly composed of rhythmical bedded brick-red chert. This part is characterized by late Anisian to early Carnian (TR 2C to 5A) radiolarian fossils. Some thinning upward and constant type striped cherts are observed in the upper horizon of this part. In the middle part of 22 m thick, amalgamated greenish gray chert is dominant. This part yielded early Carnian to early Norian (TR 5A to 6B) radiolarian fossils. Chert beds with striped structure are common and four types of striped cherts are observed in this part. In the upper part of the section (12m in thickness), rhythmical bedded red chert and amalgamated greenish gray chert are alternated. Early Norian to early Rhaetian (TR 6B to 8C) radiolarian fossils occur from this part. Some thickening upward and constant type striped cherts are observed in this part. No striped cherts have been recognized above CS-3. The first occurrence of striped chert is the horizon of late Ladinian (TR4A). Stripe cherts increase above that horizon, can be observed 60 horizons in Carnian-early Norian (TR5A-6B) interval. The last occurrence of striped cherts is late Norian (TR8A) horizon.

Thickness and ages of radiolarian fossil zones indicate high accumulation rate in middle Carnian (TR5B). In the middle part (near the Carnian-Norian boundary; TR5B-6B), highly silicified chert is dominant, each thickness of fossil zone is thick, and striped chert is also dominant. The abundant occurrence of striped cherts together with highly siliceous nature is possibly indicative of high productivity signature.

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