

Redivision of the Kamiaso unit and the Nabi unit in the Mino terrane of the Mino-Hichiso area, Gifu Prefecture, central Japan

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The Mino terrane, one of the disrupted terranes in central Japan, is divided into several tectonostratigraphic units on the basis of composition, fabric and age. However, there is a problem that these data are biased, because detailed studies have been conducted only in limited areas. The Mino-Hichiso area of the central part in Gifu Prefecture is one of such areas. According to Wakita (1988), this area is occupied by the Kamiaso unit characterized by repeating coherent chert-clastic sequences and the Nabi unit characterized by broken formation composed of sandstone/mudstone and melange. Here, we will discuss redivision between the Kamiaso unit and the Nabi unit in the Mino terrane.

The Kamiaso unit is distributed in the northeastern-central part of the study area. The unit is characterized by a tectonic pile composed of chert-clastic sequences that retain the oceanic plate stratigraphy and consist of siliceous claystone, chert, siliceous mudstone, conglomerate, sandstone, mudstone, limestone and basalt. There are two types of conglomerates in the Kamiaso unit, the Kamiaso conglomerate (Adachi, 1971) and the Wadano conglomerate (Kanuma, 1956). The Kamiaso conglomerate is characterized by containing granitic rocks of pre-Cambrian age (e.g. Shibata et al., 1971). On the other hand, the Wadano conglomerate is characterized by breccias and blocks of chert, siliceous claystone, limestone and basaltic rocks of oceanic plate origin.

The Nabi unit is distributed in the southwestern part of the study area. The unit is characterized by tectonic melange and consist of siliceous claystone, chert, siliceous mudstone, sandstone, mudstone and alternating beds of chert and siliceous micrite. Melanges are categorized into three types: (1) mudstone-rich melange, (2) siliceous mudstone-rich melange, (3) siliceous claystone-rich melange. Alternating beds of chert and siliceous micrite commonly found along the Nagara River. The block including chert-limestone alternating beds continues about 10 km laterally.

As a result of extracting radiolarian fossils from rock samples, chert yield Middle Triassic to Early Jurassic radiolarians, while siliceous mudstone and mudstone samples

yield Middle Jurassic radiolarians. A chert sample in alternating beds of chert and siliceous micrite yields Late Triassic radiolarians. According to Sano et al. (2010), the Upper Triassic alternating beds of chert and siliceous micrite differs in containing siliceous micrite from the coeval bedded chert of the oceanic plate stratigraphy of the Mino terrane.

The chert-clastic sequences have been recognized as an important element in unit division. However, the chert slab distributed in Mount Takajare, which has been considered to be tectonostratigraphically the uppermost part of the Kamiaso unit, includes alternating beds of chert and siliceous micrite. The slab is different in the lithofacies from chert of the Kamiaso unit. Furthermore, sedimentary sequences distributed structurally higher than the chert slab are dominated by melange. Therefore, the unit boundary between the Kamiaso and Nabi units can be determined at the base of the chert slab. The presence or absence of alternating beds of chert and siliceous micrite is one of important criteria for distinguishing the Nabi unit from the Kamiaso unit.

References

- Adachi, M., 1971, Permian intraformational conglomerate at Kamiaso, Gifu Prefecture, central Japan. *Jour. Geol. Soc. Japan*, **77**, 321-340.
- Kanuma, M., 1956, On the Permian conglomerate of the southern Mino mountainland, Gifu Prefecture. *Bull. Tokyo Gakugei Univ.*, **7**, 99-104 (in Japanese).
- Sano, H., Kuwahara, K., Yao, A. and Onoue, T., 2010, Upper Triassic siliceous micrite in the Mt. Funabuseyama area of the western part of the Mino terrane, central Japan. *Jour. Geol. Soc. Jaapan*, **116**, 6, 321-340 (in Japanese).
- Shibata, K., Adachi, M. and Mizutani, S., 1971, Precambrian Rocks in Permian conglomerate from central Japan, *Geochemical Journal*, **30**, 57-69.
- Wakita, K., 1988, Origin of chaotically mixed rock bodies in the Early Jurassic to Early Cretaceous sedimentary complex of the Mino terrane, central Japan. *Bull. Geol. Surv. Japan*, **39**, 675-757.