

The Takatsuki Formation (the Upper Permian) and the Middle Triassic clastic formation in the Kyoto Nishiyama area

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The Tamba Terrane and the Takatsuki Formation distribute in the Nishiyama area, SW Kyoto and NE Osaka, Southwest Japan. The so-called Takatsuki Formation is had been regarded as one of member of the Ultra-Tamba Terrane.

Recently, KUSUNOKI et al. (1998), SUGAMORI and YAO (2004) and SUGAMORI (2004) reported about the Takatsuki Formation and the Tamba Terrane. According to them, the tectono-stratigraphically most upper part of the Tamba Terrane in the study area consists of the Honzanji Complex which is the mixed facies and is thought to be the late Middle - early Late Triassic accretionary complex. The Takatsuki Formation is the coherent-broken facies and consists of mainly sandstone and mudstone. Although SUGAMORI and YAO (2004) reported Middle Triassic (Anisian) radiolarians from nodule in mudstone, SUGAMORI (2004) reported Late Permian radiolarians from felsic tuff of the Takatsuki Formation. These indicate that the so-called Takatsuki Formation is divided to the Upper Permian formation and the Middle Triassic Formation.

In addition, the author extracted Late Permian radiolarians and Middle Triassic (Anisian) radiolarians from many localities in the so-called Takatsuki Formation and examined the relationship between the Upper Permian and the Middle Triassic formations. Moreover, the author studied the both geologic units on the distribution of lithologic characteristics. As the results, the Takatsuki Formation should be limited to the Upper Permian and the Hirose Formation (tentative name) is distinguished as the Middle Triassic formation from the so-called Takatsuki Formation.

The Takatsuki Formation is composed of mainly interbedded sandstone and mudstone, and partly includes felsic tuff. In this study, Late Permian radiolarians are extracted from felsic tuff, felsic tuffaceous mudstone and black felsic tuffaceous mudstone at different localities SUGAMORI (2004) reported. These felsic tuffs are included in mudstone as clast and interbedded with mudstone. On the basis of radiolarian fossils extracted from black felsic tuffaceous mudstone, the depositional age of the Takatsuki Formation is thought to be Late Permian.

On the other hand, the Hirose Formation has less than 600m thickness and includes massive medium-coarse grained, poorly sorted sandstone and mudstone. This sandstone is different from fine-medium lithic sandstone of the Takatsuki Formation. The sandstone like this distributes in the western part of study area, and is thought to correspond to a part of the Tojo Formation (NAKAE, 1988). This sandstone is also recognized in the southern limb of the Sakurai synform and is thought to correspond to the Hirose Formation. The Middle Triassic (Anisian) radiolarians were extracted from mudstone which located about 200m toward east from the locality of SUGAMORI and YAO (2004). This locality is in the northern limb of Sakurai synform.

The Takatsuki Formation and the Tamba Terrane form a synform named Sakurai synform gently plunging to W-WNW in the study area. In the northern limb of Sakurai synform, bedding plane and cleavage plane dip SSW. In the south limb, these dip NW-NE. The minor folds having a wave length less than a few hundreds meters are partly recognized. The Takatsuki Formation in the axial part of the Sakurai synform is partly thought to form a synclinorium.

The Hirose Formation apparently distributes to be interleaved with the Takatsuki Formation in the northern limb of the Sakurai synform. These formations are thought to be in fault (high angle) contact with each other, however, the original relationship between the Takatsuki Formation and the Hirose Formation is unknown. The Hirose Formation forms partly a synform.

The depositional age of clastic formations distributed in the axial part of Sakurai synform is elucidated by this study. Henceforth, it is necessary to analyze the forming place and the basement of these formations.