

Stratigraphy of the Tetori Group in the Nagano area, Ono City, Fukui Prefecture, Central Japan

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The Middle Jurassic to Lower Cretaceous Tetori Group is distributed in the Jinzu and Hakusan regions. The Group is divided into the Kuzuryu, Itoshiro, and Akaiwa Subgroups in ascending order (Maeda, 1961).

The Nagano area is located in the upper reaches of the Kuzuryu River. It is known the Kuzuryu, Itoshiro and Akaiwa Subgroups are distributed in the Nagano area in ascending order (e.g. Yamada et al., 1989 ; Fujita, 2002 ; Matsukawa et al., 2006). It is also known the formation in the area contains ammonite fossils. The formation containing Bathonian-Calloviaian ammonite fossils is regarded the Kaizara Formation or Middle Formation of the Kuzuryu Subgroup. However, the ammonite in the formation shows the geological age of Oxfordian (Sato and Westermann, 1991). Therefore, the formation is younger than the Kaizara Formation.

The Itoshiro area is type locality of the Kuzuryu and Itoshiro Subgroups. There are problem of stratigraphical correlation.

The Tetori Group in the Nagano area is divided into the A , B and C Formations in ascending order. The A Formation consists of mudstone. The B Formation consists of alternation of sandstone and mudstone. The C Formation consists of alternation of conglomerate, sandstone and siltstone. The A Formation contains molluscan fossils and trace fossils. Thickness of the A Formation is over 360m. The B Formation contains trace fossils in the lower part, leaf fossils in the middle to upper part. The B Formation also contains roots in the upper part. Thickness of the B Formation is 280 to 380m. The C Formation scraped the B Formation. The lowest part of the C Formation contains cobbles. Siltstone of the C Formation contains leaf fossils. Thickness of the C Formation is over 190m. The A, B and C Formations are limited by monoclinal structure. The structure has E-W strike and N dip.

The result of lithostratigraphical correlation, the A Formation to the C Formation in the Nagano area is similar to the Kaizara Formation to the Yambara Formation in Itoshiro area. However, there are some difference including lithostratigraphy, conglomerates and fossils. We found the change of marine sediments to continental sediments, because B Formation contains trace fossils and roots. We reviewed lithostratigraphical correlation between formations in Nagano and Itoshiro areas. Result of conglomerates correlation in the B and C Formations, they are granite-dominant type. However, the amount of chert becomes larger to the C Formation. This changing pattern is similar to Fujita (2002). On the other hand, the changing pattern is upperpart of the Ashidani Formation to the Obuchi Formation in Fujita (2002). It is not harmonic in lithostratigraphy.

There is a little gap in the two areas such a lithofacies and geological age. Therefore, we think the setting of basin is similar between the Itoshiro and Nagano areas. We need to survey in the Kamihambara area.

Keywords: Tetori Group, Kuzuryu Subgroup, Itoshiro Subgroup, Stratigraphy, Conglomerates, Nagano area