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SGL44-P04 Room:Convention Hall Time:May 23 17:30-18:30

Geology of the Hase-Ichinose district in the eastern margin of the Ryoke belt

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[1]None

Two particular geological structures are found in the eastern margin of the Inner Zone of Southwest Japan. One of them is the NE-SW trending folds of the Jurassic accretionary complex. Another is the N-S trending Median Tectonic Line (MTL). The trend of folds was initially E-W and it was changed to NE-SW before the volcanic activities of the Nohi rhyolite. While the N-S trending MTL was formed in the Miocene opening of the Sea of Japan [1]. The geological structure near the MTL depends on Miocene tectonics in central Japan. In this point of view the geology of the Hase-Ichinose district is reviewed.

Outline of geology

Gneissose granitoids and mylonites are exposed in the west of the MTL. Mylonites are mainly distributed in the yellow zone (Figure B). Pelitic and psammitic rocks are frequently found in this zone, whereas they are lacking in the west of the yellow zone. Faults are confirmed at the zone boundary. The original rocks of pelitic mylonites are believed to be high-temperature gneissic rocks. Nevertheless, many radiolarian fossils are found in a fine-grained pelitic mylonite which is exposed near the Nakazawa Pass. The srikes and dips of foliations of granitic rocks are N25-40E, >50 in the Mizoguchi area, N35-50 E, >60 in the Ichinose area and N5-20E, >60 in the Kitagawa area of the Ohshika village (Figures A and B).

Small geological bodies which are mainly composed of muscovite-garnet schists are distributed along the MTL in the Awasawa, Nakao and Mizoguchi areas. They are probably Ryoke metamorphic rocks. However, the K-Ar hornblende age of an amphibolite is 55.7Ma. Hence, the metamorphic rocks are tentatively called as the Awasawa metamorphic rocks [1].

Faults near the MTL

Faults are common in the study area. They are frequently accompanied by altered rocks and fault gouges. The strikes of fault planes are N-S and N10-80W. The geology of the Magoi area changes across the N-S trending fault. Pelitic rocks and strongly mylonitized granitic rocks are exposed in the east of the fault, while they are lacking in the west. The strikes of foliations are constant regardless of the fault. Similar geology is detected across the N-S trending fault of the Nakao area (Figure C). In the Awasawa area, several faults are found in the western margin of the yellow zone (Figure B). Metasomatized rocks are found near the faults. The strikes of the faults and foliations are about N35E. In the southern margin of the yellow zone, two faults which are running in N-S directions are developed.

Conclusions

Shear stress that is responsible for the formation of mylonites is believed to increase continuously towards the MTL. However, this assumption is denied by the existence of the Awasawa metamorphic rocks and the N-S trending faults in the Nakao-Magoi area. Moreover the metamorphic zoning of the Kashio mylonite is nearly parallel to the foliation and layering structures [1, 2]. However, the thermal structure is not clear in the north of the Ichinose fault because the initial geological structure was destroyed by many faults. Judging from the strikes of the Ryoke gneiss and mylonites, the geological bodies in the Kitagawa area were rotated in a counterclockwise direction relative to those in the surrounding areas.

[1] Ono, 2002, Jour. Geol. Soc. Japan, no.11, 733-745.
[2] Ono, 2008, Ann. Meet. Geol. Soc. Japan, p.243.

Keywords: Hase-Ichinose, gneissose granitoid, meta-granitoid, mylonite, Awasawa metamorphic rocks, fault

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