

Petrology of the Itagai gabbroic body, Aomori Prefecture

*Makoto Okazawa¹, Masatsugu Yamamoto²

1. Shimane University, 2. Akita University

Itagai gabbroic intrusion, on the border between Akita and Aomori prefectures along shore of Japan Sea, is one of typical tholeiitic bodies consisting of gabbro-norite including inverted pigeonite, clinopyroxene, orthopyroxene, plagioclase, magnetite and ilmenite.

Northern end of the Itagai gabbroic body and the Cretaceous Shirakamidake granitic complex are juxtaposed by a fault. But their geological relationship has been unclear. Magnetic susceptibility of both bodies across the fault was measured and shows increasing in magnetism of Shirakami granitic rocks near the Itagai gabbro. This suggests that the Itagai body is younger than the Shirakami granitic complex.

This body consists of three layers shown by variation of grain size being medium-, coarse-, and fine-grained from south to north. This indicates that Itagai gabbroic body was formed by at least three time's intrusions of magma, which is supported by the different ratio of Sr isotope and mineral chemistry of each layering.

There are more tholeiitic rocks inside and in contact with the Itagai gabbro such as small dykes, Sugozaki quartz diorite and an andesitic intrusion which covered by non-tholeiitic volcanic breccia, forming about 20Ma (Hayashi and Ohguchi, 1998). This suggests that tholeiitic magmatism was continued during Paleogene to Early Miocene.

Keywords: gabbro, tholeiite, inverted pigeonite