Yozgat Batholith is exposed in north central Anatolia and represents the biggest felsic plutonic body of Central Anatolian Crystalline Complex. The north-eastern part of Yozgat Batholith is mainly granitic and gabbroic rock. The granites are pinkish and make up most of the area, further differentiated into 3 subunits: coarsely crystalline biotite muscovite granite, fine crystalline biotite muscovite granite and fine crystalline muscovite granite with coarse quartz grains (map). All subunits have transitional contact with each other and do not have any mafic microgranular enclaves. The gabbroic rocks mostly outcrop at high topography with smooth elevation. The granite/gabbro contact relationship are mostly concealed by soil cover. Microscopic studies reveal that all subunits consist of quartz, K-feldspar, mica and garnet in different proportions. The gabbro has holocrystalline granular texture and has plagioclase and pyroxene.

Whole rock composition show that granitic and gabbroic units are subalkaline, the granite is calcalkaline and the gabbro is tholeiitic. Whole rock composition show that granitic and gabbroic units are subalkaline, the granite is calcalkaline and the gabbro is tholeiitic. AFC calculations were performed using isotopic evidence of "bulk mixing" of crustal materials, it is suggested that minor crustal assimilation occurred simultaneously with boundary layer fractionation; i.e., mixing of a magma in the main part of the magma body with a fractionated interstitial melt transported from the floor mushy boundary layer [1,2]. Additionally, systematic variations are observed for Pb, Sr, and Nd isotopic compositions of the lavas with whole-rock SiO\textsubscript{2} content (Fig. 1). Given that there is no petrological evidence of “bulk mixing” of crustal materials, it is suggested that minor crustal assimilation occurred simultaneously with boundary layer fractionation.

AFC calculations were performed using isotopic compositions of granodioritic rocks found in Rishiri Island that might represent country rocks to the magma body. The calculations show that the r-value (mass assimilated/mass crystallized) is 0.08, and is constant throughout the evolution. As is shown in Fig. 1, the variations of major element compositions are strongly coupled with those of isotopic compositions. This implies that the assimilated crustal melt mixed with the interstitial melt within the floor mush zones, and was then transported to the main magma. Therefore, melting of the floor country rocks is considered to have played an important role in the assimilation processes.

**Figure 1.** $^{206}\text{Pb}/^{204}\text{Pb}$ ratios of Kutsugata and Tanetomi lavas plotted against whole-rock SiO\textsubscript{2} content.

**References**
