

SMP046-09

Room:201B

Time:May 27 10:45-11:00

Heterogeneous distribution of garnet in the Sanbagawa metamorphic rocks in Kanto Mountains

Mutsuko Inui^{1*}, Kosuke Hatori¹, Youji Hanagaki¹, Ryota Hadachi¹

¹Kokushikan University

Occurrence of garnet in the Sanbagawa metamorphic rocks from Nagatoro area, Kanto Mountains, east Japan, was investigated in detail.

Garnet have been known to occur in the Nagatoro-area pelitic rocks, which contributed to the definition of the metamorphic zonation in the area. The occurrence, or texture, of the garnet grains have, however, not been described in detail. Textural observation of garnet is becoming more and more important, since garnet grains with different texture has now been reported from the Sanbagawa metamorphic rocks in Shikoku.

In this study, pelitic samples were taken from the high-grade zone area in the Sanbagawa belt exposed in the Kanto Mountains. Most garnet grains found in the pelitic schists were smaller than 0.1 mm in diameter, and were either included in the albite porphyroblasts (referred as albite-spot, hereafter) or among muscovite grains. The heterogeneous distribution is similar to the type-B garnet found in Shikoku (Inui, 2010). The average size of the albite-spot seemed to be larger in samples with garnet than in those without garnet. The shape of the garnet grains included in the albite-spots were mostly euhedral, whereas about half of the garnet grains within muscovite layers had round shape. Many of the rounded grains had aspect ratios larger than 2. Such grains often accompanied chlorite "tails" at their either end, which suggests that the grains have been resorbed after their euhedral growth. The overall texture suggests that the euhedral garnet grains in albite-spots are perfectly preserved, on the other hand, the long and round grains among muscovites are partly preserved. It is likely that garnet grains formed in the other parts of the rocks are mostly resorbed and are lost. It infers mechanism that resulted in the heterogeneous distribution of the garnet in the schists. The correlation of the size of garnet grains and the distance to its nearest neighbor suggested that the initial garnet growth was controlled by the velocity of material transfer in the rocks.

The heterogeneously distributed garnet grains in the Nagatoro area were compared to the similar garnet in the Asemigawa River area and the origin of the garnet will be discussed.

Inui, M. (2010) Two types of garnet in Sanbagawa pelitic schists along Asemigawa River, central Shikoku *Journal of Mineralogical and Petrological Sciences*, 105, 274-279.

Keywords: garnet, Kanto Mountains, Nagatoro, grain size distribution, heterogeneous distribution