

## Prograde P-T condition of the Sanbagawa metamorphic rocks of the Kanto Mountains.

# Atsushi Miyashita[1]; Kazumasa Aoki[2]; Soichi Omori[3]

[1] Seikei High; [2] Earth and Planetary Sci., Tokyo Institute of Technology; [3] Res. Centr. Evolving Earth and Planets, Tokyo Tech.

Paragonite and clinozoisite inclusions are found in garnet in the pelitic schist (Sample No. AM73p) of the Sanbagawa metamorphic rocks on the Kanto Mountains. The matrix assemblage around garnet is phengite + chlorite + albite + quartz, and neither paragonite, biotite nor oligoclase are observed in the matrix. This pelitic rock has the highest Mg-Fe partition coefficient between garnet and chlorite, and also has the highest Lc(002) of graphite. These values indicate that the pelitic rock is the highest-grade rock of the Sanbagawa metamorphic rocks in the Kanto Mountains.

Quartz, albite and zircon inclusion are common in garnet. 10 % of the garnet grains include paragonite and clinozoisite inclusions. Paragonite and clinozoisite occur as composite inclusions, also. Garnets have normal zoning and the inclusion assemblage is found in any position of garnet zoning, therefore paragonite + clinozoisite + albite + quartz are stable throughout prograde metamorphism.

P-T condition of this assemblage is estimated by the pseudosection method using Theriak-Domino (de Capitani and Brown, 1987) with Thermocalc database (Holland and Powell, 1998 and updates). Garnet + paragonite + clinozoisite + quartz + albite without lawsonite assemblage is stable in a P-T range, T=340 - 440C, P= 0.75 - 1.05 GPa, at the given bulk rock chemistry. This result suggests that the P-T condition of Sanbagawa metamorphic rocks in the Kanto Mountains is lower temperature and higher pressure than that of the Shikoku area (Enami et al., 1994).

### Reference:

de Capitani C. and Brown T.H. (1987): *Geochim. Cosmochim. Acta* 51:2639-2652.

Enami et al, (1994): *Contrib. Mineral. Petrol.*, 116, 182-198.

Holland T.J.B. and Powell R. (1998): *J. metamorphic Geol.*, 16: 309-343.