The petrography of staurolite-bearing garnet-gedrite-biotite-chlorite gneiss from the northeastern part of Akebono Rock in the Lützow-Holm Complex, East Antarctica

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The late Neoproterozoic metamorphic rocks sporadically expose along the Prince Olav Coast and around the Lützow-Holm Bay, East Antarctica, being termed as the Lützow-Holm Complex (LHC) (e.g., Shiraishi et al., 1994). Based on the progress increase of metamorphic grade, the LHC is divided into three zones of the amphibolite-facies zone, transitional zone and granulite-facies zone toward the southwest (e.g., Hiroi et al., 1983). The highest metamoprhic condition in the LHC reachs the ultrahigh-temperature beyond 900 ℃ (Motoyoshi and Ishikawa, 1997; Yoshimura et al., 2008; Kawasaki et al., 2011).

Akebono Rock on the Prince Olav Coast is located in the amphibolite zone next to the Cape Hinode, which has been identified as an allochthonous block in the LHC on the basis of the Grenville metamorphic age (*ca.* 1000 Ma) and granulite-facies grade (Shiraishi et al., 1994; Motoyoshi et al., 2004; Hiroi et al., 2006). The basement rocks in Akebono Rock are biotite gneiss, garnet-biotite gneiss, biotite-hornblende gneiss, calc-silicate rock and amphibolite in association with granite, pegmatite and slightly recrystallized basaltic to andesitic dyke (Hiroi et al., 1986). Recently, Baba et al. (2020) investigated the geological structure and metamorphic evolution in this area and discussed the tectonic significance of the major shear zone in the west. The peak metamorphic condition was estimated at *ca*. 8 kbar and 650-700 ℃ with subsequent uplift and retrograde metamorphism at *ca.* 4 kbar and 650 ℃ by the normal slip and dextral movement of the shear zone (Baba et al., 2020). The potential of the shear zone to transport the allochthonous block of the Cape Hinode vertically was also pointed out (Baba et al., 2020).

This study reports the occurrence and petrography of staurolite-bearing garnet-gedrite-biotite-chlorite gneiss collected from the northeastern part of the Akebono Rock during the oparation of the 58th Japanese Antarctica Research Expedition. The gneiss occurs as a garnetiferous layer in migmatitic pelitic gneiss. This sample contains porphyroblastic garnet, nematoblastic gedrite, lepidoblastic biotite and chlorite with minor staurolite included in plagioclase. The chlorite occurs as an inclusion in garnet porphyroblast or in the matrix. The chlorite in the matrix shows a preferred oriantation with following the foliation of the gneiss. It is surrounded by oriantated biotite±gedrite without contacting with quartz in most cases. The occurrence and texture of chlorite in this sample indicate it might be a relic of the prograde stage and produce biotite and gedrite with/without garnet. The detail petrography and discussion will be shown in the presentation.

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