

PETROLOGICAL NOTE ON SOME METAMORPHIC ROCKS
FROM SKALLEN, EAST ANTARCTICA

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Abstract: A preliminary petrography of a paragneiss and two metabasites from the Skallen area of the Lützow-Holm Bay region is given. The paragneiss has the stable association of garnet ($\text{Gr}_{2.2-3.3}\text{Alm}_{60.9-62.2}\text{Py}_{34.0-36.2}\text{Spes}_{0.7-0.8}$) + sillimanite + K feldspar + plagioclase ($X_{\text{Ca}}=0.23$) + quartz ± biotite + rutile + ilmenite, and metabasites, orthopyroxene ($X_{\text{Fe}}=0.56$ to 0.59) + clinopyroxene ($X_{\text{Fe}}=0.44$ to 0.45) + garnet ($\text{Gr}_{18.8-26.7}\text{Alm}_{56.6-63.4}\text{Py}_{11.7-14.3}\text{Spes}_{2.9-4.4}$) + plagioclase ($X_{\text{Ca}}=0.65$ to 0.87) + quartz ± hornblende + ilmenite and magnetite. Based on the calculations following some geothermometers (garnet-biotite, THOMPSON: *Am. J. Sci.*, **276**, 425, 1976 and orthopyroxene-clinopyroxene, WOOD and BANNO: *Contrib. Mineral. Petrol.*, **42**, 109, 1973, subtracting 50°C) and geobarometers (garnet-sillimanite-plagioclase, GHENT: *Am. Mineral.*, **61**, 710, 1976 and garnet-orthopyroxene-plagioclase, WELLS: *J. Petrol.*, **20**, 187, 1979), the metamorphic conditions have been inferred to be graded up to $725 \pm 25^{\circ}\text{C}$ and 6.3 ± 1.3 kb. These temperature and pressure values are considered to represent the conditions of some stage during the dominant granulite facies metamorphism in the area, although microstructures of rocks may suggest that some superposed metamorphic events took place in the area. Further detailed explanations, especially on microstructures of rocks and their correlation with the mineral chemistry, are left for future studies.

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