

GRANULITE-FACIES METAMORPHIC CONDITIONS IN THE
EASTERN SØR RONDANE MOUNTAINS, EAST
ANTARCTICA (ABSTRACT)

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Granulite-facies metamorphism in the eastern Sør Rondane Mountains is indicated by the mineral assemblages orthopyroxene + clinopyroxene ± garnet in quartz-bearing acid to basic rocks and corundum + garnet + sillimanite + spinel in quartz-free pelitic rocks. The former two-pyroxene assemblages are found almost all over the area except the northwestern nunataks Vesthjelmen, Austhjelmen, Hettene and Sørhjelmen. Nearly uniform equilibrium temperatures 780–800°C were obtained for two-pyroxene pairs in seven gneissic rock samples extensively collected from the area, being consistent with the two-pyroxene temperatures 780°C and 760°C reported from the northwestern nunatak, Austhamaren, and the central part, Balchenfjella, respectively (GREW *et al.*: Proc. NIPR Symp. Antarct. Geosci., 3, 124, 1989; MAKIMOTO *et al.*: Proc. NIPR Symp. Antarct. Geosci., 4, 18, 1990). A garnet-bearing rock, from Balchenfjella, of the seven samples gave garnet-clinopyroxene temperatures and pressures of 750–790°C and 7–8 kb, and garnet-orthopyroxene temperatures 750–770°C. Despite the difference of structural trends between the northwestern and the principal parts of this area, these T-P values, together with the occurrence of kyanite relics in both parts, suggest that actually all of the area suffered the same, medium pressure-type, prograde regional metamorphism attaining to the granulite-facies conditions.

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