Proc. NIPR Symp. Antarct. Geosci., 3, 148, 1989

NOTE ON THE GEOLOGY OF THE PROTEROZOIC RAYNER COMPLEX AT MT. VECHERNYAYA NEAR MOLODEZHNAYA STATION, ENDERBY LAND (ABSTRACT)

Hiroshi MAKIMOTO[1], Masao ASAMI[2] and Edward S. GREW[3]

[1]*Geological Survey of Japan, 1–3, Higashi 1-chome, Tsukuba 305*
[2]*Department of Geological Sciences, College of Liberal Arts, Okayama University, 1–1, Tsushimanaka 2-chome, Okayama 700*
[3]*Department of Geological Sciences, University of Maine, 110 Boardman Hall, Orono, Maine 04469, U.S.A.*

Geological reconnaissance of the Proterozoic Rayner Complex was carried out at Mt. Vechernyaya in western Enderby Land during the 29th Japanese Antarctic Research Expedition (JARE-29, 1987–1988) from February 14th to 17th, 1988. Mt. Vechernyaya (272 m above sea level), situated on the coast of Alasheyev Bight, is about 10 km east of Molodezhnaya Station.

The basement around Mt. Vechernyaya consists mainly of granulite-facies, locally migmatitic, well-layered gneisses and charnockitic gneiss. The well-layered gneisses include garnet-biotite gneiss, clinopyroxene gneiss, hornblende gneiss and quartzo-feldspathic gneiss. Gneissosity trends E-W to ESE-WNW, and dips steeply to the north. Lineations, due to the preferred orientation of the mafic minerals, dip 5 to 20° east. Typical mineral assemblages of the garnet-biotite gneiss are Bi-Gt, Bi-Gt-Sil, Bi-Gt-Sil-Crd and Bi-Gt-Opx-Mt. The above cordierite-bearing assemblage is the third report from the Molodezhnaya area. Six well-layered gneisses were sampled for geochronological studies.

The charnockitic gneiss, which is exposed in an elongate body, has mineral lineations but no marked compositional layering. Its intrusive relation with the well-layered gneisses suggests an igneous origin. This rock consists mainly of quartz, K-feldspar and plagioclase with minor orthopyroxene, clinopyroxene, hornblende and biotite.

Granite and pegmatite dikes, a few centimeters to 1 m thick, intrude the metamorphic rocks and charnockitic gneiss throughout the area.

(*Received March 6, 1989; Revised manuscript received May 12, 1989*)