

Geologic connection between Dronning Maud Land and Enderby Land

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East Antarctic Shield is one of essential pieces of the Gondwana supercontinent. Three spatially and temporally discrete Grenville-age (late Mesoproterozoic to early Neoproterozoic) crustal segments, the Maud, Rayner and Wilkes Provinces, comprise the pre-Gondwana fragments of East Antarctica, and these three provinces were juxtaposed along Pan African-age (late Neoproterozoic to Cambrian) mobile belts (Fitzsimons, 2000a, 200b). In Enderby Land, two distinct Proterozoic-Cambrian metamorphic terranes, the Rayner and the Western Rayner Complexes (e.g., Shiraishi et al., 2008) bound the southern margin of the Archaean-Paleoproterozoic Napier Complex. The Rayner Complex is characterized by >2500-1000 Ma protolith and 980-910 Ma granulite-facies metamorphic ages (e.g., Kelly et al., 2002). The Western Rayner Complex is granulite-facies and partly UHT metamorphism (Motoyoshi et al., 1994, 1995) and 2400-1000 Ma protolith and 540-520 Ma metamorphic ages were reported (Shiraishi et al., 1997). The boundary between the Rayner and the Western Rayner Complex has been not clearly defined until when Horie et al. (2016) obtained 934-894 Ma SHIRMP zircon U-Pb ages from Mt. Lira, Condon Hills and Mt. Yuzhnaya regions with minor 590-570 Ma zircons from Mt. Yuzhnaya. Hiroi (unpublished data) also demonstrated contrasting metamorphic P-T evolution among the Mt. Lira, Condon Hills and Mt. Yuzhnaya regions. Recent Japanese Antarctic program made short visits and sampling at several small nunataks in the Rayner and the Western Rayner Complexes boundary zones. We will report and discuss the update of the characteristic features of the Rayner and the Western Rayner Complexes, that are of the implications for Dronning Maud Land –Enderby Land connection.

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