GEOLOGICAL CORRELATION OF SRI LANKA AND EAST ANTARCTICA : PERSPECTIVES AND PROBLEMS

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In the reconstruction of Gondwanaland, the Precambrian metamorphic terrain of Sri Lanka is generally correlated and juxtapositioned with Enderby Land in East Antarctica. Enderby Land consists of three geologically distinct units, viz. the Napier Complex, the Rayner Complex and the Lutzow-Holm Complex. The Napier Complex is characterized by regionally developed, exceptionally high temperature assemblages such as hypersthene-sillimanite-quartz and sapphirine-quartz, absence of migmatites, isobaric cooling path and well established Archean age for the granulite facies metamorphism and therefore precludes geological continuity with Sri Lanka. The Proterozoic Rayner complex which is widely believed to represent reworked Napier Complex, shows some geological features such as lithological constitution, structural style, P.T. conditions and reaction textures similar to that of Sri Lankan rocks. However, the geological correlation and juxtaposition of Sri Lanka and Lutzow-Holm Complex is favoured by many workers. This correlation is critically examined and the following aspects are compared and constrasted : (1) lithological constitution, (2) structural style and evolution, (3) pressure-temperature conditions, (4) relict minerals and reaction textures (5) pressure-temperature-time path (6) paired metamorphic belt (7) plate tectonic model (8) isotopic data (9) special geological features (11) post-metamorphic features - dykes.