TECTONICS AND METAMORPHISM OF PRECAMBRIAN ROCKS OF CENTRAL TO SOUTH-WESTERN SRI LANKA

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Areas around Kandy, around Horana, and sporadic points throughout the area from central to south-western Sri Lanka were studied. Two earlier isoclinal folding events resulted in the wide development of axes of minor rootless and isoclinal folds and mineral distriubution lineation of various orientations, rootlessly folded quartz plates in some quartz-feldspathic gneisses, and banding and foliation structures of rocks. The major upright linear folding including the formation of arenas (doubly plunging synform) is the third tectonic event which formed younger schistosity paralleling the axial surface of the major fold. The fourth tectonic event is only found in arenas as sporadic en-echelon granitic pools and faint inclined schistosity.

The major ganulite facies metamorphism took place before the major upright folding. Very sporadic occurrence of xenolithi c minerals, which are regarded to be the decomposition product after staurolite, such as biotite-sillimanite, sillimanite (rarely kyanite)- spinel, and even, the sraurolite itself in garnet porphyroblast of some aluminous paragneisses suggest a possibility that the P-T-t path of the main granulite facies metamorphism is decompressional and temperature-increasing, rather than isothermal-decompressional. The later, superposing amphibolite facies assemblages over the main granulite facies ones are dominant in rocks in arenas. Biotite and hornblende are formed from anhydrous minerals and are arranged parallel to the axial surface of the major supright folds. Similar metamorphic events are also found locally in the granulite facies rocks outside arenas.

Rare occurrences of relic kyanite from rocks of both areas around Kandy and around Horana, along with simlar tectonic and metamorphic characteristics of rocks of both areasindicate the teectonic unity of the Highland Series and the Southwest Group.

A strong similarity in the P-T-t path of the major granulite facies metamorphism and that in the sequence of tectonothermal events between Precambrian rocks of Sri Lanka and those of Lutzow-Holm Bay area, Antarctica indicate the juxtaposition of the two areas sometime during Precambrian.