TECTONOTHERMAL EVOLUTION OF THE PRECAMBRIAN BASEMENT OF EAST ANTARCTICA: EVIDENCE FROM SCHIRMACHER HILLS

SENGUPTA, SUDIPTA. Department of Geological Sciences, JadavpurUniversity, Calcutta 700032. India

The Central Queen Maud Land is considered to be a continuation of the Mozambique Belt of East Africa. The Precambrian rocks of the Schirmacher Hills record multiple episodes of deformation, migmatization and emplacement of mafic bodies. The record of the earliest tectonothermal event, preserved in mafic and ultramafic enclaves, indicates deformation under granulite facies conditions. The enclaves represent a metaigneous layered complex. The second group of events also involved deformation under granulite facies with synchronous emplacement of enderbite and mafic dykes. The deformation involved isoclinal folding and formation of high strain zones. The third group of events involved deformation under amphibolite facies conditions with synchronous migmatization and emplacement of mafic dykes. Development of isoclinal folds culminated in regional thrusting producing a regional inversion, with the granulites emplaced over amphibolite facies rocks. The fourth and fifth groups of events produced upright folds and vertical shear zones under amphibolite facies conditions. The microstructures of the sheared rocks indicate a high temperature of mylonitization at mid crustal level. The last group of event involved development of discrete fractures and emplacement of late mafic dykes.