

## ABSTRACT

The present investigation includes the analysis of non-diastrophic and diastrophic structures of the archaean rocks of a part of the Singbhum district, Bihar (India) together with the mineralogical and textural evolution of the rocks during these tectonic disturbances. It has been found that the rocks comprise of a group of flysch sediments, deposited in geosynclines, which were subsequently folded by a north-south compression, followed by a post-tectonic high grade of metamorphism; these were subsequently intruded by thick basic igneous rocks (possibly supplying the basic lava flow in adjacent areas) and the whole series of rocks were refolded around an axis at a high angle to the earlier fold axis; this refolding was accompanied by synchronous cross-folding of fold axes and a synchronous evolution of a shear zone, close to the boundary of the basic intrusive body along a fold belt. This later refolding was accompanied by large-scale regional retrogression of the high grade metamorphic rocks, though occasionally in the shear zone, there was possibly a rise in temperature due to intense shearing, causing the sporadic development of a later generation of high grade minerals (andalusite, kyanite, staurolite and garnet). The epidiorites derived from the basic igneous rocks show a low-grade metamorphism corresponding to the dynamic metamorphism associated with the refolding movement.