Chapter 5
Metamorphic Rocks

Metamorphism is generally defined as a structural/textural modification and/or mineralogical modification of a pre-existing rock involving crystallisation of new phases, recrystallisation of existing phases, and/or strain.

Thermal Metamorphism

Metamorphic rocks in the district include thermally metamorphosed sedimentary rocks close to igneous contacts and incipiently metamorphosed rocks in zones of hydrothermal alteration. The best example of contact metamorphism is given by graphitic siltstones and sandstones of the Mai Po Member exposed on Tsz Kan Chau. The presence of spotted texture in these rocks is due to growth of metamorphic minerals such as andalusite.

Hydrothermal Metamorphism

Hydrothermal metamorphism (or alteration), involving the addition of hot water and crystallisation of new minerals, has locally affected volcanic and granitic rocks close to fault zones. In granites, this process is characterised by chloritization of biotite and hornblende, and sericitization and clay mineral alteration of feldspars (Plate 12). A zone of hydrothermal alteration is present in fine-grained granite 200 m south of Ng Kwu Leng associated with the intersection of E- and NNE-trending fault sets. Fault-related hydrothermal alteration has also produced a deep zone of weathering in feldsparphyric rhyolite in the vicinity of Yam O (20000 20500) and Sham Shui Kok.

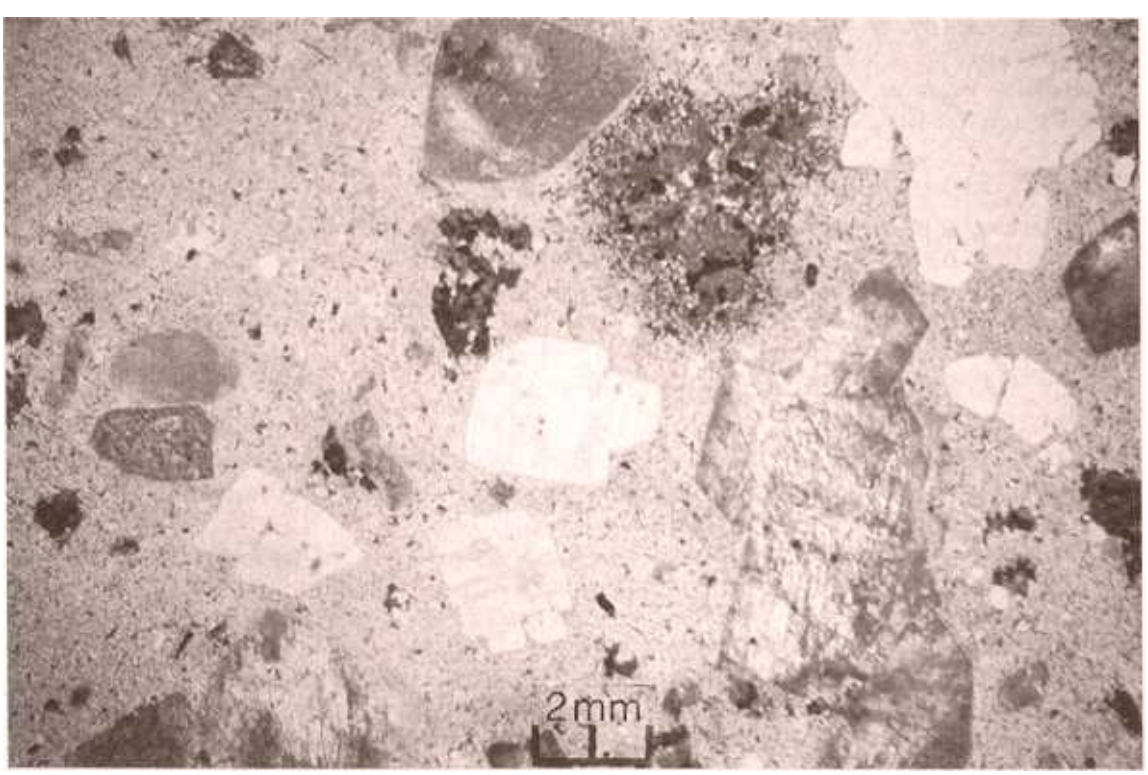

Plate 12 - Thin Section of Strongly Chloritized Biotite and Sericitized Plagioclase Phenocrysts in a Hydrothermally Altered Feldsparphyric Rhyolite Dyke from Ngau Tau Wan (16790 18625); PPL