

Chapter 5

Metamorphic Rocks

Thermal metamorphism has affected the sedimentary rocks and tuffs close to igneous intrusive contacts. These rocks have a hornfelsic or saccharoidal texture resulting from recrystallisation of constituent minerals. The absence of any preferred orientation of minerals gives the rock a massive appearance.

Hydrothermal alteration, caused by percolation of hot water, has affected some country rocks particularly along dyke margins. For example, a large basaltic dyke near Shek Wan (2730 2476) displays 20-30 mm wide margins of clay-rich minerals. These clay-rich zones have subsequently formed a plane of weakness along which there has been movement.

Thermal Metamorphism

Thermal metamorphism of welded tuffs close to the contacts with intrusive rocks typically produces decussate and granuloblastic texture in thin section (Plate 12). Overgrowths on quartz and feldspar phenocrysts are commonly observed along with a recrystallised matrix.

Thermally-metamorphosed siltstone of the Tsing Yan Member may show a spotted texture because of the crystallisation of metamorphic minerals. In thin sections, muscovite, sericite and quartz form the ground-mass, with biotite occurring as an accessory mineral.

Hydrothermal Alteration

Chemical alteration of feldsparphyric dykes and fine-grained granites by hydrothermal fluids sometimes results in kaolinization. An example of this type of alteration is seen in an abandoned kaolin mine at Shek Wan (see Plate 15), where hydrothermal fluids have altered a quartzphyric rhyolite dyke to kaolinite.

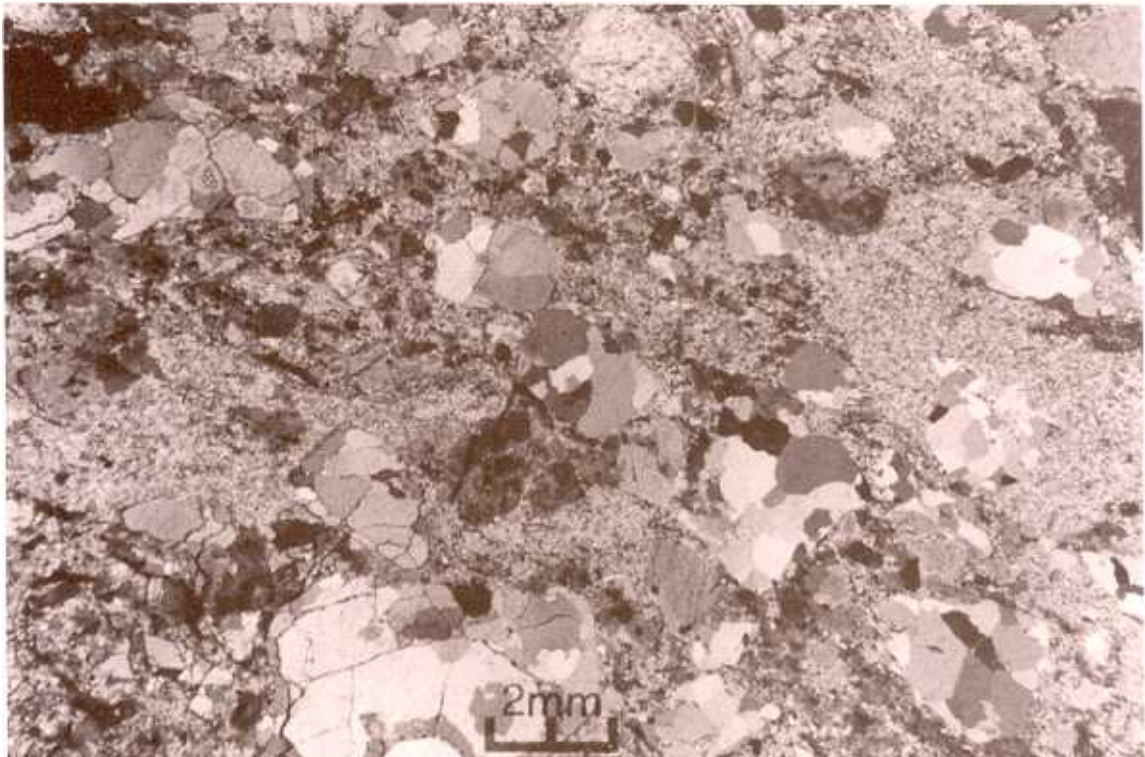


Plate 12 - Granuloblastic Texture Developed in Recrystallised Coarse Ash Crystal Tuff of the Yim Tin Tsai Formation (HK6080) from the Ridge Crest above Nam Wan (2837 2238); XPL