



## **Major Intrusions**

### ***Medium-grained Granite***

Medium-grained granite crops out over much of the low ground and hill country in the central and western parts of the map sheet. It has also been encountered in boreholes on the Ma On Shan reclamation.

The medium-grained granite generally consists of yellow to pink, equigranular biotite granite, although the colour depends on the grade of weathering. Petrographically, the granite is composed of quartz, strongly concentrically-zoned plagioclase, microcline, orthoclase and aggregates of brown biotite (Plate 8). Allanite and zircon are the dominant accessory minerals with subordinate Fe-oxide. Fresh granite (Grade I material) is exposed in cut slopes above Wu Kwai Sha, which also reveals strongly developed joints and minor faults. Discolouration and alteration of the granite to Grade II material commonly occurs along joint planes. Red and yellowish brown discolouration is probably associated with the breakdown of biotite and release of iron oxide. Feldspars are also sericitised close to major joint planes. Boreholes drilled in the eastern part of the Ma On Shan reclamation commonly encountered completely weathered granite at depths from approximately -30 mPD to more than -100 mPD. However, in the western part of the reclamation, the rockhead (Grade I material) is much shallower being of the order of -20 to -30 mPD. Large pink alkali feldspars characterise the fresh, medium-grained granite in the western part of the map sheet.

### ***Fine-grained granite***

Inequigranular fine-grained granite is chiefly exposed in the central and southern parts of the map sheet, where it is in sharp intrusive contact with medium-grained granite (4351 3297) and Devonian sedimentary rocks (Plate 9, 4355 3291). Petrographically, the granite is a quartz-alkali feldsparphyric leucogranite with minor biotite, and trace amounts of apatite, zircon and magnetite. Geochemically, the porphyritic fine-grained granite is distinct from the medium-grained granite in having higher abundances of Ni, Pb, Zn, Ga, Nb, Y, Th, Fe<sub>2</sub>O<sub>3</sub> and CaO, and lower abundances of K<sub>2</sub>O, Ba, and Sr (Table 3). On the lower northern slopes of Ngau Ngak Shan, the porphyritic fine-grained granite is predominantly weathered to Grade II material. Along the road towards Ma On Shan Tsuen, the granite may reach weathering Grade III in places.

Equigranular fine-grained granite is found mainly in the northeastern part of the map sheet. Exposures of fresh rock are present in a major borrow area at Wu Kwai Sha, but to the northeast, the fine-grained granite is deeply weathered. Pods of medium-grained granite contained within fine-grained granite are found along the coast near Wu Kwai Sha and thin (< 1 m) dykes of fine-grained granite are observed intruding medium-grained granite at Wu Kwai Sha Tsui (4351 3297).

## **Minor Intrusions**

### ***Quartzphyric Rhyolite***

Quartzphyric rhyolite dykes are exposed mainly on the lower slopes of Ngau Ngak Shan. In general, the dykes are less than 3 m wide and show prominent fine-grained chilled margins. They do not show any consistent orientation.

### ***Aplite***

Thin aplite dykes (0.2 m-wide) occur as late stage intrusives associated with granite intrusions. They are most conspicuous intruding the fine-grained granite close to intrusive boundaries. They are also present within medium-grained granite at Wu Kwai Sha Tsui (4345 3245), and are a feature of inequigranular granite exposed in the western part of the district. The orientation of aplite veins is consistent with that of the rhyolite dykes, suggesting emplacement has most likely been controlled by a similar stress field.

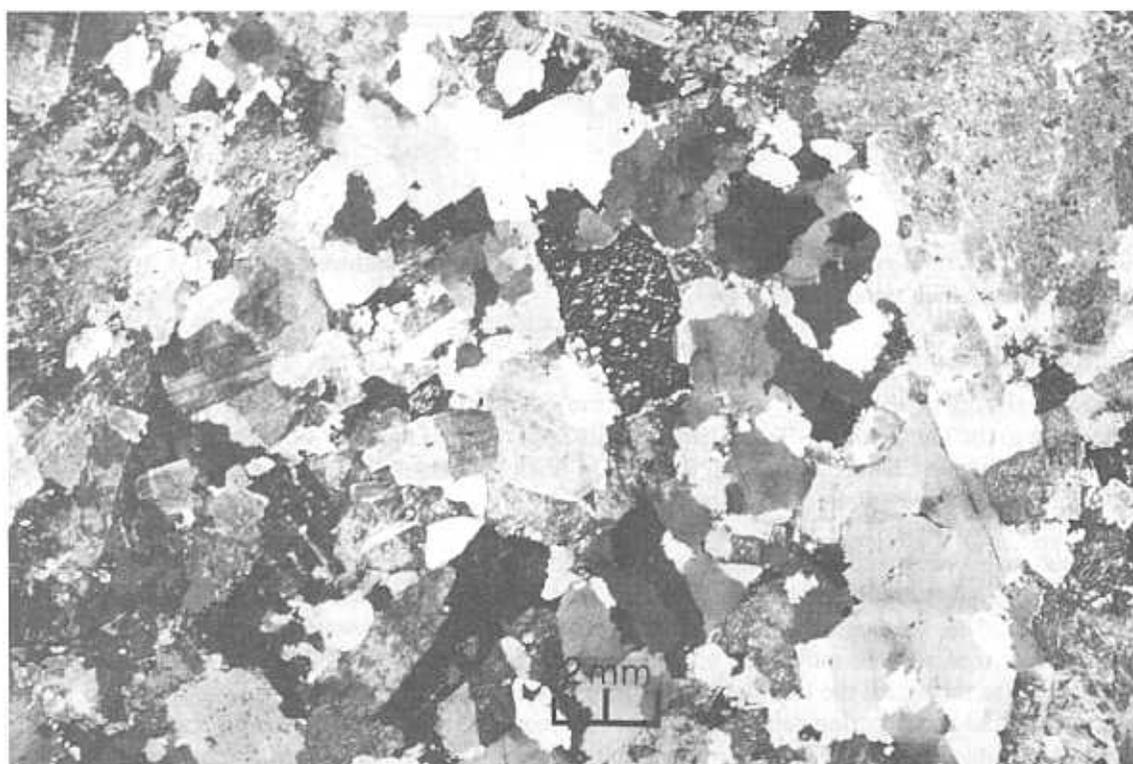


Plate 8 - *Thin Section of Medium-grained Granite from the Sha Tin Pluton Exposed at Wu Kwai Sha Tsui (2860 2875); XPL*



Plate 9 - *Intrusive Contact between Fine-grained Granite (gf) and Bluff Head Formation (DBH) Exposed at Wu Kwai Sha Tsui (4355 3291)*