

## UNPUBLISHED REPORT 1963/08

### Descriptions of rocks collected in the Mackintosh quadrangle

by G. B. Everard

The attached are descriptions of rocks collected in the Mackintosh quadrangle by geologist R. D. Gee.

#### **63-98 — Northwestern cliffs on Lake McRae**

Interbedded with Precambrian metamorphic rocks, underlying Permian.

The hand specimen is a fine grained quartzose rock mottled with limonite stains.

In thin section it consists of tightly packed grains of recrystallised quartz, together with a little hematite, largely altered to limonite, opaque white leucosene and some micaceous material in vague patches and interstitial to the quartz grains.

The rock is a quartzite.

#### **63-100 — Granite Tor**

The specimen is a tourmaline vein in granite.

The feldspars of the granite are completely kaolinised. The vein contains only about 10% tourmaline, the rest being quartz so that the vein might be better termed a quartz vein although it appears black in hand specimen. No other minerals are visible.

#### **63-101 — Granite Tor**

Vein in granite from Granite Tor, similar to 63-100.

#### **63-102 — Creek bed 2 miles NW of Mt Inglis**

Interfoliated with Precambrian metamorphic rocks.

In hand specimen the rock is a fine grained, finely banded light grey and dark grey bedded rock.

In thin section the rock consists of angular quartz grains up to 0.05 mm across in a matrix of very fine sericite with a little biotite. The dark bands are due to opaque carbonaceous material in thin anastomosing veinlets which also contain biotite and a little opaque white clayey material. Graded bedding does not appear and there are occasional irregular clots of chloritic material around which the dark laminae are curved. Scattered grains of zircon and crystals of tourmaline occur.

The rock is slaty siltstone.

#### **63-103 — Creek bed 2 miles NW of Mt Inglis**

Devonian dyke in Precambrian metamorphic rocks.

In hand specimen the rock is porphyritic, consisting of phenocrysts of pink and yellow-brown stained feldspar, irregular grains of colourless glassy quartz and transparent lustrous books of muscovite in a finer grained quartzo-feldspathic groundmass.

In thin section the rock consists of pinkish perthite which may be altered to a mass of fine grained sericite of a yellow colour. It appears both as phenocrysts and in the groundmass. Quartz is in irregular glassy grains of all sizes up to about 0.5 cm and muscovite is common as

irregular colourless books. A little opaque iron ore occurs with irregular flakes of biotite which is closely associated with muscovite.

The rock is a granite porphyry which has undergone a little greisenizing.

#### **63-104 — Creek bed 2 miles NW of Mt Inglis**

In hand specimen the rock is fine to medium grained and dark grey in colour and strongly foliated. Innumerable small grains (up to 1 mm across) show flat crystalline faces. A little fine pyrite is visible.

In thin section the foliation is well shown by ragged plates of biotite. In between the foliae of biotite is a fine grained recrystallised quartzo-feldspathic mosaic. The biotite foliae curve around numerous micro-augen of feldspar, many of which show evidence of rotation. Occasional small prisms of tourmaline occur as inclusions in the micro-augen. Magnetite is disseminated as single grains and pyrite occurs as somewhat scattered groups of irregular grains.

The feldspar is of negative optical sign and the refractive indices are slightly higher than that of Canada balsam, twinning is absent but the feldspar is probably oligoclase.

The rock is a pelitic schist.

#### **63-105 — Lake Rodway**

Interbanded with quartzite.

The specimen is a fine grained, schistose grey rock consisting of quartzose layers about 1 mm thick separated by thinner sericitic partings. The layers are folded.

In thin section the rock consists of a fine mosaic of interlocking quartz grains and sericite, with a few small scattered grains of zircon. Anastomosing veinlets of opaque carbonaceous material and mica make up intervening layers which contain irregularly rounded and lenticular porphyroblasts of albite, dark with fine layers of carbonaceous inclusions, the mica and other material being absorbed into the porphyroblast while the carbon remains undissolved.

The rock is an albitised quartz-sericite schist.

#### **63-106 — Devils Ravine**

Interbanded with Precambrian metamorphic rocks.

The hand specimen is a grey schistose rock fairly heavily mineralised with pyrite. The schistosity is very irregular and the specimen has a knot-like character.

In thin section it is a confused, fine grained aggregate of quartz and sericite, with ragged wisps of opaque carbonaceous material and crystals and irregular aggregates of crystals of pyrite.

The rock is a quartz sericite schist.

#### **63-107 — Devils Ravine**

Interbedded with Precambrian metamorphic rocks.

The rock in hand specimen is black and schistose with very fine bands of white quartz. A fine quartz stringer, here and there, crosses the schistosity.

In thin section the rock consists of a mosaic of recrystallised quartz with innumerable laminae of graphite. A little sericite also occurs between the very fine laminae.

The specimen consists of graphite-quartz-sericite schist.

### **63-108 — Devils Ravine**

Cambrian sill in Precambrian metamorphic rocks.

In hand specimen the rock is fine grained and pale greenish-grey in colour with subhedral phenocrysts of quartz and irregular dots of dark green ferromagnesian material.

In thin section the rock consists of a very fine grained quartzo-feldspathic matrix also containing much sericite, carbonate and chlorite. Phenocrysts of feldspar, largely altered to sericite, carbonate and chlorite are common; they have sharp euhedral outlines whereas the phenocrysts of quartz are somewhat rounded and often deeply embayed and corroded.

### **63-109 — Mouth of Devils Ravine**

Cambrian dyke in graphitic phyllite.

The hand specimen is a dark and light green mottled, sheared rock with numerous phenocrysts of glassy quartz and opaque white feldspar.

In thin section the rock has a finely granular feldspathic groundmass, partly sericitised, and containing quartz and chlorite.

The phenocrysts are quartz corroded and deeply embayed feldspar, completely sericitised, and albite in fresh euhedral crystals. There are also irregular masses of chlorite enclosing crystals of quartz, albite and masses of sericite, and occasional patches of carbonate.

The rock is an albitised quartz-feldspar porphyry.

### **63-110 — Mouth of Devils Ravine**

Granitic mass intruded into Cambrian porphyry.

The hand specimen consists of a medium grained quartzo-feldspathic rock weathered to a pinkish brown colour, and a fine grained green chloritic material which passes into the feldspathic rock as fine veinlets forming an irregular network.

In thin section the rock has an hypidiomorphic texture composed of quartz, orthoclase and oligoclase with occasional grains of ilmenite and zircon. Fine grained chlorite penetrates along grain boundaries and cleavages.

The rock is a contact rock.

### **63-111 — Mouth of Devils Ravine**

Granite mass.

The hand specimen is a coarse grained granitic rock containing quartz, feldspar and a dark greenish ferro-magnesian mineral.

In thin section the rock has an hypidiomorphic texture consisting of quartz, feldspar and ragged plates of chlorite with many inclusions. The feldspar is of different generations, some fresh untwinned feldspar being interstitial to quartz, some grains of which have a corroded appearance. This is probably albite from its low refractive index. Some of the earlier feldspar is too much altered for identification, and some of it shows compound twinning, and comes within the oligoclase range. The chlorite contains remnants of colourless pyroxene, white opaque leucoxene and occasional zircons with pleochroic haloes.

The rock is a granite.

**63-112 — *Fury River***

Porphyry mass.

The hand specimen is a fine grained greenish- grey rock with somewhat rounded phenocrysts of quartz 2 or 3 mm across, and dark green masses of ferromagnesian minerals of about the same size.

In thin section the rock consists of corroded and embayed phenocrysts of quartz and phenocrysts originally of feldspar, but altered to intergrown fine grained masses of chlorite and sericite. The groundmass is a mosaic of quartz, sericite and chlorite with a little ilmenite, largely altered to leucoxene, but this mosaic is not altogether uniform and may be a result of incomplete assimilation.

The rock is a porphyry.

**63-113 — *Fury River*.**

Porphyry mass.

In hand specimen the rock is fine to medium grained and greenish in colour, with irregular creamy phenocrysts. It is mineralised with a little pyrite.

In thin section it consists of a little granular quartz, ragged patches of chlorite with inclusions of rutile, and euhedral and subhedral crystals of plagioclase, now completely altered to sericite with a few wisps of chlorite. In some instances traces of zoning are preserved.

Skeletal crystals of fresh untwinned plagioclase are also present, this feldspar being in the oligoclase-andesine range. The texture of the section as a whole approaches hypidiomorphic.

The rock is a porphyry.

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