

6th April, 1960

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MEMORANDUM

The following are descriptions of specimens collected by Geologist R. McNeil on the Arthur River.

13. Dyke rock, approximately $3\frac{1}{2}$ miles downstream from the cage on Arthur River.

The specimen is a fine to medium grained, greenish, granular rock with strong shearing. Elongated aggregates of hornblende, feldspar and epidote are visible in hand specimen together with occasional octahedra of magnetite.

In thin section the rock consists of granoblastic and glomeroblastic feldspar and deep green, strongly pleochroic, fine acicular hornblende, in approximately equal amounts. Magnetite occurs as scattered idiomorphic crystals of relatively large size. Patches of epidote about 2 mm. across occur usually with a little quartz mosaic.

The feldspar has a refractive index usually lower than that of Canada balsam, and is therefore albite. It occurs in allotriomorphic grains or groups of grains and may be crowded with granules of epidote and fine needles of hornblende. These minute inclusions show lineation which is not parallel to the general lineation of the rock. This lineation is the same for the contiguous grains of a single group. No twinning is shown by the albite.

The rock is an amphibolite, the feldspar of which has been altered to albite.

10. Dyke approximately 2 miles downstream from the cage on Arthur River.

Medium to fine grained, somewhat sheared, greenish grey rock with disseminated iron pyrites. The specimen sparkles with the cleavage faces of innumerable minute feldspar crystals. Lineation is shown by acicular hornblende and elongated opaque white grains.

In thin section a granoblastic and glomeroblastic texture is shown somewhat similar to that of No. 13 except that the proportion of feldspar to ferromagnesian is higher. The feldspar grains, moreover, are larger and freer from inclusions which consist of fine hornblende needles and indicate rotation and recrystallisation in the same way as in No. 13. Ilmenite is fairly common, but there is much more opaque white leucoxene in irregular, elongated grains, and brown limonite. Much of the green, strongly pleochroic, hornblende has been altered to fine granular carbonate.

The rock is an albitised amphibolite, the amphibole of which has been largely carbonated.

8. 2 specimens from "dolemite" mass on the Arthur River.

Fine to medium grained, pale grey siliceous rock. The rock is not uniform in colour the tendency being towards greenish patches in a paler matrix.

In thin section the rock consists of angular quartz and (to a lesser extent) feldspar of an average grain size .02 mm. in a finer grained matrix. Opaque magnetite, ilmenite and leucoxene occur in irregular crystals. Irregular wisps of chlorite mottle the

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rock and suggest an original fabric, altered by
metasomatism and recrystallisation.

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