

Petrographic descriptions of a specimen from Single Hill

by G. B. Everard

A rock specimen collected by geologist D. Leaman is described as follows:

67-4 — Contact specimen, Single Hill, Lauderdale

The hand specimen is a medium-grained leucocratic doleritic rock in contact with a dark grey aphanitic rock. The contact is sharp and marked by a linear concentration of small crystals of magnetite. Along a part of the contact is interposed a patch about a quarter of an inch wide, of granularity and colour intermediate between the coarser and finer grained rocks, but the contacts of this intermediate rock with both the finer and coarser grained rocks are still quite sharp.

In thin section the finer grained rock has intergranular texture with minute granules of pale brownish green augite, the granules averaging about 0.02 mm across, in a network of labradorite laths averaging 0.05 mm in length. Octahedra of magnetite from 0.01 mm across, down to the finest dust, are disseminated through the rock. There are also rare platelets of brown biotite.

The mode is approximately labradorite 50%, augite 47.5% and magnetite 2.5%.

The rock is a fine-grained dolerite.

The intermediate rock is of slightly coarser grain with labradorite laths up to 0.2 mm long. The texture is also different, being in part sub-ophitic but most of the feldspar crystals are more or less equidimensional and form a mosaic with patches of micrographic intergrowth and ragged crystals of augite. Magnetite occurs in larger single crystals and irregular aggregates of minute crystals. Minute needles of apatite are common and there is a little epidote. Flakes of sericite appear in the plagioclase crystals.

The mode is approximately plagioclase 60%, augite 25%, micrographic intergrowth and mesostasis 12% and magnetite 3%.

The rock is a quartz dolerite.

In the medium grained rock the texture is largely granophyric, consisting of irregular altered crystals of plagioclase alternating with patches of micrographic intergrowth and sheaves of acicular quartz. A few laths and irregular crystals of plagioclase remain relatively unaltered, but the ferromagnesian minerals have been reduced to dark irregular patches associated with magnetite, or may be replaced by carbonate.

The rock consists approximately of plagioclase 50%, granophyric intergrowth 37.5%, pyroxene 7.5%, magnetite 2.5% and carbonate 2.5%.

The rock is a granophyre.

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