

Petrographic descriptions of specimens from the Oyster Bay area

by G. B. Everard

The following are petrographic descriptions of specimens collected by geologist V. Threader in the Oyster Bay area.

66-292: Nicholls Rivulet Road, 1 mile from Channel Highway

The hand specimen is a coarse grained mesocratic rock consisting of a dark ferromagnesian mineral with interstitial feldspar.

In thin section the rock is holocrystalline, ophitic and glomeroporphyritic, consisting of irregular phenocrysts of pyroxene 1–2 mm long and groups of crystals in a matrix of feldspar laths averaging 0.2 mm long. The pyroxene encloses laths of feldspar and a very small amount of micrographic quartz and feldspar is interstitial to the groundmass of feldspar laths.

The pyroxene is pinkish grey in colour and in places displays a strong schiller. There is some small alteration to hornblende in parallel position. The interference figure is biaxial positive with a variable axial angle from 40° to almost uniaxial. The mineral is therefore pigeonite.

The feldspar has an angle of a little over 30° on the lamellar twin plane and the mineral is therefore labradorite. There are also a few scattered crystals of ilmeno-magnetite.

The rock is a dolerite.

66-293: Nicholls Rivulet Road, quarry at Oyster Cove

The hand specimen is a medium grained leucocratic rock showing white stubby rectangular crystals of feldspar in a slightly more coloured aphanitic matrix.

In thin section the rock consists of phenocrysts of zoned feldspar in a felsitic matrix. Alteration, possibly by weathering, has given rise to some opaque white clay minerals and a trace of carbonate.

The phenocrysts consist of untwinned orthoclase and zoned plagioclase in the andesine-oligoclase range. There are also rounded and corroded crystals of quartz.

The rock is a syenite porphyry.

66-294: Nicholls Rivulet Road near Gardners Bay Road

The hand specimen is a somewhat weathered with a fine-grained pale grey groundmass containing abundant prismatic phenocrysts of hornblende, large irregular pink phenocrysts of orthoclase and smaller crystals of plagioclase.

In thin section the rock has a trachytic texture and consists of microlites of andesine-oligoclase with phenocrysts of hornblende up to 2 mm long. A little aegirine augite is also present in euhedral crystals up to 1 mm across. It is pleochroic in pale yellows and greens. Basal sections show the characteristic cleavage and give low polarization colours. The interference figure is biaxial negative with a large axial angle.

There are a few ragged crystals and aggregates of magnetite associated with the ferromagnesian minerals. Apatite occurs sparsely as well as developed stumpy prisms. There is in addition a pale brownish, faintly pleochroic mineral of fairly high refractive index and moderate birefringence occurring in sheaves. It is possibly prehnite.

The rock is a syenite porphyry.

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