

**SECTION 5 — PETROLOGICAL NOTES**

TR3-137-147

**Notes on Specimens Collected in Various  
Localities**

by G. Everard

**Iron Bound Range, South-West Tasmania.**

The following petrographic descriptions apply to rocks collected in the south-west by Senior Geologist T. D. Hughes.

1. Greyish, medium grained rock with visible quartz and rock fragments.

In thin section the rock consists of angular fragments of quartz, quartzite, quartz and sericite schist, glauconite and limestone varying in size from 0.1 to 5.0 m.m. A few small zircons are present together with opaque fragments and particles of indeterminate nature.

The rock is a greywacke.

2. Brownish or greyish fine grained rock, showing bedding planes.

In thin section the rock is a closely packed aggregate of angular grains, chiefly quartz, of about 0.1 mm. across. Irregular black, opaque grains, apparently of organic origin, are common, while the grains are cemented together by sericitic, limonitic and clayey materials.

The rock is a dense fine grained sandstone.

3. Fine grained dark grey rock.

In thin section the rock consists of angular to sub-rounded grains of quartz, carbonates, glauconite, rock fragments, feldspar and opaque and limonitic fragments, in a calcareous cement.

The rock is an arkositic greywacke, much of the feldspar having been altered to carbonate by diagenesis.

4. Very fine grained dark greenish grey rock, with imperfect slaty cleavage.

In thin section the rock is a fine grained aggregate of wisps of sericite and grains of quartz and feldspar and opaque material.

The rock is an argillite.

5. Banded mudstone.

In thin section the light bands consist principally of angular quartz particles of silt grade. The dark bands consist of sericite and opaque minerals. There is no gradation between the alternating bands and thin laminae of clay grade occur in the silt bands.

Evidently the banding is due to rhythmical sedimentation of some sort, but it is doubtful if the rock is of true varve character.

**Gould Saddle, Pine Valley.**

The following petrographic description is of a contact specimen, collected by Geologist K. Burns at Gould Saddle, Pine Valley.

The contact is between rocks of similar composition containing feldspar, augite and iron ore mineral. The contact is sharp, but there are inclusions of the coarser grained rock in the finer grained rock, and the boundaries of the inclusions are less sharp.

The coarser grained rock consists of interlacing lath-like crystals of plagioclase showing multiple twinning. Larger crystals of augite up to 0.5 mm. across are common and the feldspars are in ophitic relation to these. Euhedral iron ore occurs as minute crystals and clumps of crystals evenly scattered through the rock. The augite shows schiller texture and tends to be darkened on the edges of crystals by development of titanite. Brown iron staining also occurs.

In the finer grained rock plagioclase tends to be smoky. Feldspar laths tend to be oriented and suggest flow structure. The proportion of magnetite is much higher. Augite is coloured and has intergranular tendencies.

The rock is a Jurassic dolerite and the dike rocks appear to be a basic differentiate of the same.

**Levendale.**

The following is a petrographic description of a rock specimen collected by Senior Geologist, T. D. Hughes at Levendale.

Fine grained siliceous grey rock. Glassy grains of quartz 1 m.m. across or less may be distinguished.

In thin section appear angular grains of quartz and feldspar, the quartz greatly preponderating from 1 m.m. diameter down to the limits of visibility; set in a pale yellowish clayey matrix. There are occasional crystals and grains of zircon and much opaque iron ore mineral and black carbonaceous material. The rock is an indurated mudstone.

**Endurance Tin Mining Co. Ltd., South Mount Cameron.**

The following description applies to a specimen from a borehole on the ground of Endurance Tin Mining Company.

Very fine grained pale brownish cream rock, friable when freshly broken but hardening on exposure. The specimen is full of small holes, most of them less than 1 m.m. across, many of which are square or angular, others rounded or irregular, with infillings of white clayey material.

In thin section the rock consists of pale brownish isotropic material crowded with opaque white trichites and crystallites possibly of altered feldspar. Many minute clear granular crystals appear in the ground mass and even in the crystallites. These are of later growth and may represent devitrification and recrystallisation. These minute crystals may also line the larger cavities.

The cavities mark the position of phenocrysts which have been removed by solution. Their shape suggests feldspar.

The rock is a rhyolite porphyry.

**Mt. Stronach.**

The following descriptions apply to specimens of granite collected by Senior Geologist T. D. Hughes at Mt. Stronach.

No. 1. Medium to coarse even grained salmon pink rock, with irregular crystalline aggregates of molybdenite. The essential minerals, quartz, feldspar and a little biotite, are distinctly seen.

In thin section typical granite texture is apparent. Orthoclase is present in large irregular cloudy crystals that give the rock its pink colour. Albite is in more regular and smaller crystals, somewhat cloudy and sericitised and forming a coarse micrographic intergrowth with large and very irregular crystals of quartz. The quartz is sometimes corroded by reaction with feldspar, although crystallisation must have been more or less contemporary.

The mica is a pale brown variety in thin section.

No. 2. Leucocratic rock with a moderate amount of black biotite, and showing a splash of molybdenite. The feldspars are translucent white.

In thin section the biotite is pleochroic olive green to pale brown and contains many pleochroic haloes, sometimes centered on small zircons. There are large irregular crystals of orthoclase flecked with sericite. The plagioclase is albite; it shows very fine lamellar twinning as in specimen No. 1 but is not so plentiful as in that specimen.

**Beulah.**

The following brief descriptions apply to rocks collected at Beulah and received from Regional Geologist I. Jennings.

This suite of rocks is particularly interesting in connection with work now being undertaken on the porphyroids of the Middlesex quadrangle. Specimen A9 is a typical quartz feldspar porphyry, which rock type is usually assumed to be of igneous origin. However the other specimens have been diagnosed as sediments and the relation between these and the porphyry may have an important bearing on the origin of the porphyroids and their associated rock types.

A1. Grey "granite" from old gravel pit 894500N 431000E.

Pale gray fine grained rock with phenocrysts of quartz and feldspar and rather indefinite inclusions of dark material.

Thin section shows the specimen to consist of euhedral phenocrysts of feldspar and anhedral crystals of quartz in a fine quartzo-feldspathic matrix interlaced with fine laths of sericite.

Wisps of green pleochroic chlorite occur in the matrix, and gray shardlike shapes of crypto-crystalline material, that represent fragments of volcanic glass. The feldspar, albite, is but slightly altered and shows multiple twinning.

The rock is a tuff.

A6. Dense quartzite from peg 33 Adit Star of the West Mine.

Fine grained bluish gray rock with many larger grains. The rock weathered to a light brown colour.

In thin section euhedral and somewhat rounded or irregular crystals of feldspar, and fragments of quartz appear in a fine grained quartzo-feldspathic matrix.

The rock is a felspathic arenite.

A7. Peg 39 Inclined Shaft, Star of the West Mine.

Fine grained light brown weathered rock with white weathered crystals of feldspar 1-2 m.m. across.

In thin section the rock consists of a fine sericite matrix stained brown by iron oxides, and containing angular fragments of quartz, feldspar and quartzite.

The rock is a graywacke.

A8. Peg 36, shaft, Star of the West Mine.

Fine to medium grained grey rock. Glassy crystals of quartz about 1 m.m. across are visible in hand specimen.

In thin section the rock consists of irregular angular and corroded quartz crystals, and sericitised and cloudy laths of feldspar set in a fine grained quartzo-felspathic matrix. There are also indefinite looking fragments of dark isotropic material that may be volcanic glass, and thinly disseminated iron ore minerals.

The quartzo-felspathic matrix of this rock is not entirely uniform and appears to consist to some extent of fragments fused together.

This taken with the fragmental nature of the larger grains of quartz and feldspar and the presence of isotropic material diagnoses the rock as a tuffaceous graywacke.

A9. End face Peg 36 Adit, Star of the West Mine.

Fine grained grey rock with phenocrysts of quartz and feldspar.

In thin section the matrix appears as a fine grained quartzo-felspathic mosaic containing scattered ragged fragments of chlorite and disseminated iron ores. Phenocrysts are euhedral quartz, feldspar and chlorite pseudomorphous after hornblende. The quartz is somewhat rounded and corroded. Feldspar has inclusions of chlorite and the chlorite pseudomorphs have zircons in pleochroic haloes and inclusions of feldspar and carbonates.

The feldspar of the phenocrysts belongs to the albite—oligoclase range.

The rock is a quartz feldspar porphyry or porphyrite.

### Lorinna Area.

1. *Tubicolor*—Granite contact Forestry Road, Mersey River.

Medium to coarse grained pinkish weathered rock. Minerals visible are pink feldspar, glassy quartz and a greenish micaceous substance.

In thin section the rock shows typical granitic texture with quartz filling the interstices between the larger irregular crystals of orthoclase. The feldspar is generally only slightly turbid, but occasional areas are completely sericitised. Other areas show a mosaic of fine grained feldspar with very little quartz. Greenish pleochroic chlorite is closely associated with muscovite and magnetite, and in places quartz may be seen between the laminae of muscovite. Muscovite and chlorite are often interlaminated.

Granite specimen from surface deposits on Launceston Millboard Company's road between Liena and Lorinna.

Coarse even grained rock consisting of pink feldspar, colourless glassy quartz and dark green biotite.

In thin section all the felspar is cloudy pink colour. Irregular crystals of orthoclase are fresh, but the sub-hedral crystals of plagioclase are sericitised and twinning is thereby made difficult to observe. Shreds of pale green chlorite may be included in the quartz and felspar. Hornblende, somewhat cracked and altered, occurs along with the biotite, which seems to have been derived from it. Iron ore minerals are associated with the ferromagnesian. Small euhedral crystals of zircon are occasionally to be seen.

*Weathered granite from Launceston Millboard Quarry between Liena and Lorinna.* In hand specimen the rock is coarse grained and pale coloured showing large crystals of quartz and white kaolinised crystals of felspar. Other parts of the rock have a pale greenish grey appearance.

In thin section the large irregular and intergrown crystals of quartz show undulose extinction. The felspar crystals are completely altered and are semi-opaque with finely divided kaolin, streaked with highly birefringent sericite. Micrographic intergrowth occurs between quartz and fresh felspar.

7A. *Lorinna Road.*—Light grey, fine grained, sheared rock with phenocrysts of quartz.

In thin section the rock has a cloudy white appearance with a few spots of iron staining and cubes of limonite, often pyrite. The cloudiness is due to areas of sericite between which are a confused granular aggregate of quartz, the whole being relatively structureless.

The rock is an altered quartz porphyry.

7B. *Lorinna Road.*—Dark coloured rock spotted with white porphyroblasts of quartz and felspar. The matrix is fine grained and dark grey but somewhat patchy.

In thin section two types of quartz porphyroblasts may be distinguished. One is euhedral and generally of beta-quartz habit, the other highly irregular or even shard-like; both types tend to be corroded and embayed. Felspars are somewhat altered, both orthoclase and plagioclase are represented, but twinning is not distinct enough to identify further the latter. In some instances the twin planes are curved by distortion. Ferro-magnesian minerals are represented by indefinite prismatic shapes made up of fine grained biotite and magnetite.

The matrix consists of very fine muscovite and biotite in a felted mass. This mass forms a kind of network with roughly circular interstices filled with micro and cryptocrystalline quartz.

7C. Light grey sheared rock, apparently of fine to medium grain with dark platy masses up to 2 or 3 m.m. across, showing orientation. Glassy phenocrysts of quartz are common.

In thin section the granularity appears finer, because the quartz of the matrix has been recrystallised and feldspathic minerals altered to very fine sericitic aggregate. Of the quartz phenocrysts some have been sheared into halves and the halves displaced relative to one another, and some have been extensively corroded. The dark, platy masses are aggregates of minute crystals of biotite with grains of magnetite. The shapes of these aggregates are indefinite but suggest pyroxene or amphibole.

The rock is a quartz porphyry.

6A. *Lorinna Road*.—Light greenish grey, siliceous, fine grained rock with glassy phenocrysts of quartz and occasional lines, bands and patches of dark green ferromagnesian material. The small-scale fracture is sub-conchoidal.

In thin section the rock is a fine mosaic of quartz and feldspar, freely sprinkled with small shreds and patches of hornblende. There are also small amounts of epidote and calcite and a few scattered grains of magnetite.

Porphyroblasts of quartz and feldspar occur. The feldspar, in the matrix as well, is brownish or smoky, and the porphyroblasts are of rather irregular shape and show simple and compound twinning, but not very clearly. The feldspars are in the albite-andesine range. The larger quartz crystals are irregular and rounded and may have inclusions of calcite.

Dark veinlets are of quartz and hornblende and quartz, hornblende and epidote.

6B. *Lorinna Road*.—Contact specimen. A dark grey rock has light grey inclusions of epidote at the centre of each inclusion. Both types are fine grained and contain porphyroblasts of quartz and feldspar.

In thin section the matrix of dark coloured rock is similar to the matrix of Specimen No. 7B consisting of a very fine felted mass of muscovite and biotite forming a network in the interstices of which is a fine mosaic of recrystallised quartz.

The lighter portions are made up of fine quartzo-feldspathic mosaic cryptocrystalline material.

In the centre of the lighter coloured inclusion is a fragment of quartzite containing needles of hornblende. The fragment is surrounded by a halo of hornblende followed by a halo of epidote.

The porphyroblasts of quartz are corroded and embayed, and those of feldspar are altered and tend to merge into the ground mass.

10. *Lorinna Road north of Sassafras Creek*.—Greenish, strongly sheared rock, studded with glassy quartz grains, averaging 1-2 m.m. across.

In thin section the quartz grains appear as angular irregular crystals set in a greenish ground mass together with grains and irregular streaks and patches of magnetite. The magnetite may appear interbanded with other minerals as in a sedimentary rock; other patches appear where the banding seems to have been partly obliterated by contortion. Occasional quartz grains have the typical rectangular outlines of beta-quartz, others show reaction rims and embayments.

The ground mass consists of innumerable angular quartz grains about .03 mm. across, some having beta-quartz outlines, embedded in a matrix of fine chlorite and sericite stained and streaked with brown iron oxides. Clots of fine grained hornblende occur associated with magnetite and there is much very fine hornblende with chlorite in the matrix.

Occasional crystals of apatite are present.

11. *Lorinna Road on north side of Sassafras Creek*.—Pale greyish or greenish grey, medium grained, strongly sheared rock. Grains of quartz and of dark material up to 1 or 2 m.m. across are visible in hand specimen.

In thin section the rock is a fine grained aggregate of quartz and sericite, showing distinct signs of shearing in the alignment of wisps of sericite. Large angular quartz grains are common together with clots of serpentinous material and opaque iron oxides. There are occasional fragments of banded material set across the schistosity.

12. *Lorinna Road, north of Sassafras Creek.*—Fine grained dark greenish rock with grains of quartz up to 1-2 m.m. across. The rock is mottled and sheared.

In thin section the rock consists of fine granular quartz and epidote. The epidote is dirty greenish yellow and is very pleochroic yellow to brown. It occurs as grains and fine needles penetrating into quartz.

13. *Lorinna Road, south of Sassafras Creek.*—Greenish grey, weathered, strongly sheared rock with grains of quartz up to 5 m.m. across.

In thin section the rock shows a pronounced fragmental texture. The larger quartz grains show corrosion. The rock is made up of sericitic, serpentinous and fine grained quartzose patches. In places lamination is shown at angles to the schistosity, which suggests bedding. Patches consisting of interlocking grains of epidote are present.

14. *Lorinna Road, south side of Sassafras Creek.*—Greenish grey, weathered, sheared rock with a fine scale mottled appearance due to yellowish green, somewhat rounded fragments in a whitish fine grained base. Fragments up to 3 or 4 m.m. across are common.

In thin section the whitish base appears as a mosaic consisting chiefly of angular quartz fragments averaging .02-.03 m.m. across with occasional larger fragments up to several m.m. across. Very fine sericite occurs with the quartz and there are many wisps and patches up to 1 m.m. across consisting entirely of sericite. The yellowish green fragments seen in hand specimen lose definition in thin section, where they appear as patches of fine sericite and opaque iron ores and iron oxides.

The larger quartz fragments, are usually angular and irregular, but corroded crystals are also present.

15. *Lorinna Road, south side of Sassafras Creek.*—Light grey sheared rock mottled with iron oxide stains. Grains of quartz and white weathered felspar crystals can be seen, and irregular dark markings and patches occur.

In thin section the matrix is a fine mosaic of quartz fragments (as in 14) with very fine sericite, which also occurs in wisps and patches without quartz. Colourless or pale yellow pleochroic epidote is scattered through the section as single grains or groups of grains. Opaque iron ore sometimes converted to oxides is common as groups of minute crystals, and as part of schist-like fragments.

17. *Geales Bridge—sedimentary inclusions in the porphyroids.*—In hand specimen these inclusions consist of a very fine grained pale grey even grained rock. They are bleached by weathering and at the same time slightly stained by iron oxides. Fine bedding can often be seen. Sometimes they contain small clots that give them the appearance of porphyry.

In thin section they consist of an interlocking mass of quartz, sericite, wisps of hornblende and chlorite, opaque grains and other fragments, of an average grain size of .008 m.m.

The small clots, when they occur, consist of groups of minute flakes of a faintly coloured grey-brown mica. There may also be rounded or elliptical bodies of similar size consisting of quartz grains from two to four times the grain size of the rest of the specimen.

These inclusions may best be described as greywacke siltstones.

#### Razorback Mine, Dundas—No. 1 D.D.H.

A typical piece of core at 255 feet, about 4 inches long, was taken for further examination.

The rock is a conglomerate or breccia containing both rounded and angular fragments of carbonated grey and black shale, carbonate, chert and sulphide. The fragments range in size from 1 in. or more down to  $\frac{1}{8}$ -in. or less.

Repeated brecciation is indicated by the presence of a rounded fragment of grey shale penetrating an angular fragment of black shale. Both fragments contain veins of carbonate, so that repeated penetration by carbonate veins is indicated.

The smaller fragments show rough alignment indicating deposition, but the larger ones do not. This, together with the absence of pug, and the rounded shape of many of the fragments suggests that this is not a fault breccia but an intraformational bed, caused by slumping and fragmentation in incompletely consolidated shales.

#### Louisa Bay.

2c. *N.N.E. of Anchorage Beach.*—Schistose sericitic rock with lenticles of quartz and feldspar between the planes of schistosity.

In thin section the specimen appears as crenulated bands of sericite, with a little biotite, enclosing lenticular porphyroblasts of albite, sometimes showing simple twinning, with minute inclusions of quartz, and lenticles of quartz-feldspathic mosaic.

Capillary crystals, and minute dark inclusions in the albite porphyroblasts have curved or S forms, indicating rotation of the crystal during growth. Twisted rope-like bands of inclusions indicate rotation in two directions. Some of the albites are partially replaced by sericite with preservation of the S structures. Garnets, about 2 m.m. across, altered to opaque brown oxidation products, are plentiful and may be easily recognised by their dodecahedral forms. They also occur unaltered in the albite porphyroblasts.

The rock is a garnetiferous quartz-albite-sericite schist resulting from dynamo-thermal alteration of sub-greywacke or mictite type of sediment.

2A. *N.N.E. of Anchorage Beach.*—Silvery grey schistose sericitic rock with lenticles of quartz and feldspar between the planes of schistosity. The rock has a knotted appearance due to dark patches 1-2 mm. long.

The rock is a garnetiferous quartz-albite-sericite schist similar to No. 2c.

7. *N.N.E. of Louisa Camp.*—Pale coloured schistose rock. The specimen contains much sericite, and drawn out lenticles a few millimetres long of quartz and feldspar between the planes of schistosity. It is spotted with patches of biotite about 1 m.m. long.

In thin section the specimen is made up of bands of yellowish sericite, together with a little biotite between bands of recrystallised quartzo-felspathic mosaic. The albite feldspar is fresh and untwinned and difficult to distinguish from quartz without optical tests. Some of the larger quartz lenticles are optically homogeneous, but others show peripheral granulation followed by recrystallisation. Biotite is sometimes in parallel position with sericite, but some larger plates intersect the lines of schistosity and appear to be of subsequent development.

The rock is an albite quartz-mica schist.

7A. *N.N.E. of Louisa Camp Anchorage Beach.*—Pale grey sericitic sheared and crenulated rock with much granular quartz and feldspar.

In thin section the specimen consists of bands of yellowish sericite with some biotite and chlorite interleaving attenuated lenticles of quartzo-felspathic mosaic and a few porphyroblasts of albite with quartz inclusions. There is a little ilmenite and opaque white spots of leucoxene, associated with biotite and chlorite.

The albite porphyroblasts in many instances have been shattered and some of the finer material altered to opaque clay minerals.

The rock is a quartz-albite mica schist.

7B. *N.N.E. of Anchorage Beach camp.*—Fine grained strongly sheared sericitic rock, with lenticles of quartz and dark crystals of biotite.

In thin section the rock is finely laminated with alternate bands of mica, muscovite and a little biotite, and recrystallised quartz mosaic.

The rock is a quartz mica schist.

3A. *East of Louisa Creek Camp.*—Greenish medium grained weathered rock.

In thin section the rock is rendered semi-opaque by masses and minute grains of white clay material disseminated through the specimen. This tends to obliterate the texture, but evidence of shearing and crenulation is still faintly visible.

Minerals present are quartz, hornblende (largely altered to chlorite) and garnet. The quartz is in granular masses and angular grains, about .05 m.m. across. Chlorite may show centres of higher birefringence indicating unaltered hornblende. Garnet is in cracked porphyroblasts up to .5 m.m. across.

The specimen is an altered basic rock contaminated by country rock.

3D. *East of Louisa Creek Camp.*—Strongly sheared pale greenish rock with lenticles of quartz visible in the planes of schistosity. The rock has a somewhat knotted appearance and contains holes due to the weathering out of garnets.

In thin section the rock consists of wavy masses of sericite and chlorite interleaving granular quartz. The garnets, up to 1 m.m. diameter, contain slivers of quartz and are spiral in structure.

The rock is a garnetiferous quartz-sericite-chlorite schist.

3C. *East of Louisa Creek Camp.*—Pale greenish, micaceous, sheared rock. The grain is finer than 3D, but quartz can be seen in the planes of schistosity, and there are occasional brownish spots due to garnets.

In thin section the rock consists of minutely folded chlorite enclosing lenticles of granular quartz. There are also porphyroblasts of garnet and clinozoisite. Opaque white material, apparently clay, is plentifully scattered through the rock. This is apparently altered albite, so that the rock is a garnetiferous quartz-albite-chlorite schist, and may have resulted from the metamorphism of a basic igneous intrusive.

4. *Badger Lawn Creek*.—Light greenish medium to fine grained sheared rock.

In thin section the rock shows evidence of shearing, granulation and recrystallisation, but is otherwise structureless. Albite is in anhedral porphyroblasts with inclusions of quartz and other minerals. It shows simple twinning and corroded outlines in crystals averaging about .5 m.m. across.

Hornblende is in anhedral and subhedral crystals and granular masses. It is strongly pleochroic in green. Chlorite is very common in masses of minute plates.

Clinzoisite occurs as colourless grains, and garnet, similiar in appearance, is in the form of subhedral crystals and masses of small grains.

The rock is possibly an altered basic igneous intrusive or lava.

5. *Zed Bay, south side*.—Fine grained chloritic sheared rock with fine needles of amphibole.

In thin section the specimen is a granular aggregate of albite, hornblende and clinozoisite with intergranular pro-chlorite. There are remains of hornblende crystals up to 1 m.m. long, but these are largely eaten into and altered to pro-chlorite.

The rock is a clinozoisite amphibolite, resulting from the alteration of basic lava or tuff or basic intrusive.

5A. *Zed Bay*. Medium to fine grained pale green sericitic rock showing tabular and linear schistosity.

In thin section the rock consists of albite crystals, about .5 m.m. along the diagonal, in intact crystals in a matrix of sericite and pro-chlorite.

The texture is one of shearing and crenulation. The albite shows twinning and recrystallisation, but many, perhaps the majority of crystals have been completely granulated. The sericite is relatively coarse grained for a matrix, and includes some greenish pro-chlorite, with a higher refractive index and greater birefringence than chlorite.

The rock is an albite sericite schist. It may represent the country rock now altered to schists, contaminated with basic igneous material.

10. *Black Sandy Bay*.—Fine grained dark grey schistose rock.

In thin section consists of a mosaic of recrystallised quartz, sometimes showing twinning due to strain, between bands of sericite containing graphite between the laminae. Some chlorite is also present.

The rock is a sericite graphite schist.

11. *West of Louisa River, 350 yards north of Track*.—Fine grained weathered rock schisted and crenulated with dark and light bands.

In thin section the rock consists of a very fine grained mosaic of quartz and felspar, between bands of biotite and sericite stained brown by iron oxides. Magnetite and ilmenite partly altered to leucoxene are present and there is also a little carbonaceous matter between the laminae of the mica.

The rock is a mica schist derived from a greywacke.

11A. Is a similar rock.

11A. *West of Louisa River, 350 yards north of the track.*—Dark grey and white banded rock, showing some crenulation.

In thin section the rock shows confused lamination with bands consisting of quartzo-felspathic mosaic with a little fine sericite alternating with bands consisting chiefly of sericite stained with iron oxide and darkened by carbonaceous inclusions.

17. *On the track between Iron Bound and Mt. Louisa, west of Louisa River.*—Grey sheared, weathered rock, very fine grained.

In thin section the specimen is a very fine grained aggregate of sericite, quartz and feldspar. Patches of sericitic material are dark with graphite in between the laminae, and white opaque leucoxene is also present.

The rock is a weathered sericite-graphite schist.

### **Trial Harbour**

The following are petrographic descriptions of specimens collected by Regional Geologist A. H. Blissett:—

24/619/1—*Beach at Trial Harbour.*—Very fine grained sheared greenish rock.

In thin section the rock is a felted mass of antigorite and serpophite, with brown granular iddingsite and occasional shattered crystals of pyroxene. Irregular fragments of haematite, opaque or reddish brown are disseminated through the rock.

The specimen is of an altered ultrabasic rock.

24/619/2—*Beach, Trial Harbour.*—Fine grained black rock.

In thin section the rock consists of irregular grains and aggregates of quartz crowded with inclusions, in a matrix of biotite and muscovite. Minute grains and clumps of grains of magnetite are disseminated throughout the mass.

The rock is a hornfels.

24/619/3—*No. 1 N. of Contact with Dundas Group.*—Medium to coarse grained granitic rock with prominent quartz, feldspar and biotite.

In thin section the rock has a holocrystalline hypidiomorphic texture, with anhedral and subhedral crystals of quartz, micropertite, plagioclase and biotite. There are some graphic intergrowths of quartz and feldspar.

The rock is a granite.

25/548/2—*Fine grained greenish mottled rock, with slight mineralisation.*

In thin section the rock is a mass of fine granular diopsidic augite of neutral colour, with a little bright yellowish green garnierite between the grains, and as fine veins, associated with a brown semi-opaque mineral.

The rock is a pyroxenite.

23/548/1—*Fine grained greenish yellow sheared rock.*

In thin section the rock consists of massive antigorite and serpophite with thin asbestiform veins of deeper colour. A little haematite is also present.

The rock is a weathered serpentine.