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Miscellaneous rock descriptions, northeast and western Tasmania

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63-234 Near Myrtle Bank

The specimen is a pale grey, fine grained rock of very uniform texture.

In thin section the rock consists of a mosaic of sub angular quartz grains averaging about 0.075 mm across. The grains are tightly packed but there are frequent irregularly shaped voids in the rock. Almost every quartz grain exhibits cracks thus causing the rock to seem even finer grained. There is a little very fine grained interstitial quartz and a little interstitial organic material. There are also occasional grains of zircon, topaz, tourmaline etc.

The rock is a sandstone.

63-244 Chalet, Mt Barrow Road

The rock in hand specimen is medium grained consisting of quartz, kaolinised feldspar and biotite, and contains a cognate zenolith of similar but fine grained material.

In thin section the texture is hypidiomorphic consisting of interlocking grains of clear quartz, oligoclase showing polysynthitic twinning in one direction, red-brown biotite and accessory iron ore minerals associated with it. The biotite shows many pleochroic haloes and inclusions of zircon. The feldspar is altered in part to kaolin with very low birefringence and strongly birefringent sericite.

The xenolith consists of quartz in equidimensional grains, biotite and magnetite with a little very fine grained interstitial material.

The rock is a granodiorite.

63-245 Lisle Road near Forestry Corner

In thin section this rock is a mosaic of quartz grains 0.02 mm across with interspersed books of biotite, ragged masses of sericite and areas of cryptocrystalline silica. Minute crystals and aggregates of magnetite are common.

The rock is a hornfels.

63-246 Lisle Road, near granite contact

The hand specimen is a fine grained pink porous rock with much sericite, large flakes of mica and dark stainings appear on one face.

In thin section the rock consists of quartz grains averaging 0.02 mm across in a matrix of very fine grained sericite. It is heavily stained by iron oxides.

The rock is a hornfels.

63-256 Lalla, railway cutting

The hand specimen is a fine grained, dark gray bedded rock, with a few very small white fragments visible.

In thin section the grain size is generally very fine but there are a few angular grains of quartz and felspar ranging up to 0.1 mm. Below this size the grains are unsorted and consist of quartz, felspar and sericitised grains and minute particles of sericite and opaque argillaceous material.

The specimen is a graywacke.

63-257 Railway cutting, Downie

The hand specimen is a fine grained gray rock, slightly ironstained. A few particles up to 3 or 4 mm long occur; but most particles are below 1 mm. Particles of quartz and sericite are visible in a very fine slightly friable matrix.

In thin section the rock consists of poorly sorted rounded to angular grains of quartz, quartzite, felspar, epidote and white mica in a very fine grained opaque argillaceous matrix.

The rock is a coarse grained graywacke.

63-258 Railway cutting, Downie

In thin section the specimen is a fine grained sheared rock containing angular grains of quartz averaging 0.03 mm across, a little felspar and sericite in a semi opaque matrix of sericitic and argillaceous material. A few rock fragments, mainly quartzite, are also present.

The rock is a sub graywacke.

63-260 Upper Turner's Marsh

The hand specimen is a fine grained, cream coloured, slightly friable, siliceous rock.

In thin section it consists of angular and sub angular cracked grains of quartz averaging 0.05 mm across, with semi opaque argillaceous interstitial material containing minute grains of quartz and sericite, cementing the larger grains together.

The rock is a fine grained sandstone.

63-262 Road cutting south of Patersonia Creek

The rock in hand specimen is fine grained, with some visible grains of quartz and small flakes of sericite. It is cream coloured with dark mottlings which disappear on roasting.

In thin section the rock consists of occasional shattered grains of quartz up to 0.25 mm across in a matrix of argillaceous and carbonaceous material containing minute angular grains of quartz and white mica. The material is relatively unsorted and the finer material largely predominates.

The rock is a mudstone.

63-263 Road cutting south of Patersonia Creek.

The hand specimen is a fine grained, buff coloured rock, showing bedding and a rough cleavage at an angle to the bedding.

In thin section the rock consists of minute angular fragments of quartz with some feldspar in a matrix of fine sericite and opaque white argillaceous material. Although the grain size is very fine in general the grains are relatively unsorted and fragments occur up to 0.1 mm and more in length.

The rock is an indurated mudstone.

64-175 Tullibardine Creek

The hand specimen shows pinkish brown phenocrysts of feldspar and shapeless dark patches in a yellowish green matrix.

In thin section the texture is clearly porphyritic and glomeroporphyritic consisting of phenocrysts of brownish pink felspar up to 3 mm long, occurring sometimes as single crystals and sometimes as groups of crystals in a local matrix of epidote and chlorite. The phenocrysts show simple and sometimes multiple twinning and consist of albite.

The matrix is a fine grained mosaic of felspar, showing alteration, some quartz and interstitial and disseminated epidote in radiating aggregates and minute granules. Ilmenite, altered to leucoxene and limonite occurs as opaque masses with crystalline outlines.

The rock is hybridised albite porphyrite.

64-176 Mackintosh River

The hand specimen is a greyish green rock, consisting of creamy white laths of feldspar up to about 3 mm long and reddish brown crystals in a very fine grained matrix.

In thin section the rock consists of albite crystals in all stages of alteration, some being completely sericitised, in a feldspathic matrix also largely sericitised. The reddish crystals seen in hand specimen consist of white leucoxene and red limonite and are alteration products of ilmeno-magnetite. However, this opaque material may be closely associated with the felspar and its sericitic pseudomorphs.

The rock is very similar to 64-175 but is somewhat more altered and is without ferromagnesian minerals.

The rock is an albite porphyrite.

64-177 Mackintosh River

In hand specimen the rock is fine to medium grained, grey and strongly sheared. Cleavage planes of platy sericite are prominent and show movement, and cut faces show irregular oval porphyroclasts of quartz.

In thin section the rock consists of alternating fine bands, consisting of a thinner band of sericite with a thicker band of fine grained quartz and sericite. The porphyroclasts of quartz, up to 3 or 4 mm long but averaging less than 1 mm, show undulose extinction and sometimes slightly curved faces. Lines of bubbles in the quartz are often at a high angle to the schistosity, suggesting rotation. Peripheral granulation is common and lines of schistosity curve round the outlines of the porphyroclasts. There is much opaque white material and limonite.

The rock is a quartz sericite schist.

64-178A Pieman River

The hand specimen is a fine grained greenish rock, with small angular white grains.

In thin section the rock consists of a fine grained felted mass of laths of plagioclase, and tremolite with ragged ends. Minute irregular grains of epidote are common. Opaque white crystals of leucoxene are distributed at fairly even intervals throughout the specimen.

The rock is an altered basic lava or dyke.

64-178B Pieman River

The hand specimen is a medium grained, greenish rock with vesicles about 1 cm long. The vesicles are flattened and elongated and contain remnants of platy crystals. On a polished face both green and pink components are visible together with irregular white phenocrysts and orbicular structures with green centres.

In thin section the texture is inequigranular consisting of orbicular and radiating structures and phenocrysts of felspar in a finer grained groundmass. The fine grained groundmass is felspathic and of a pinkish tinge due to partial alteration. Chlorite appears as irregular clots. Orbicular structures consist of an outer rim of material appearing opaque white in reflected light. In transmitted light this grades into a deep brown amorphous material allowed by radiating needles of epidote and clinozoisite all pointing to the centre of the structure which may sometimes consist of chlorite, which is frequently of an anomalous purple colour under crossed nicols. The feldspar phenocrysts consist of albite and show compound twinning.

The vesicles in the specimen may have been original vesicles in an acid lava, subsequent hybridisation resulted in their infilling and final erosion removed the filling.

The rock is a hybridised albite porphyrite.

64-179 Pieman River

The hand specimen is a medium grained sheared rock, the shearing being somewhat obscured in a small hand specimen by the grain size. It consists of pink and white feldspathic patches in a greenish matrix, and feldspars tending to be broken and corroded.

In thin section the pink patches seen in hand specimen prove to be porphyrite with included white crystals of albite and occasionally, an albite crystal appears on its own in a greenish matrix containing volcanic glass, chlorite, apatite, epidote and feldspar. The fragments of porphyrite tend to be somewhat rounded with indefinite edges. There is also much white opaque material.

The rock is a hybridised porphyrite.

64-180 Pieman River

The hand specimen is a pale grey bedded rock, slightly sheared. A fine grained pale band about ¼" thick runs through the specimen and is faulted about $^{1}/_{8}$". White phenocrysts of felspar about 1 mm long are common.

In thin section the texture is somewhat confused due to alteration, but broken euhedral saussuritised crystals of felspar are visible in a very fine grained matrix consisting mainly of microcrystalline felspar. Epidote and zoisite are fairly common and sometimes a little clear recrystallised quartz is associated with the epidote. A little chlorite is present in structureless masses. Generally the rock has a mottled appearance as though composed of fragments which have now lost their identity.

The rock is a sheared and altered tuff.

64-181 Murchison Highway

The hand specimen is a fine grained mottled dark greenish and pinkish grey rock with phenocrysts of feldspar up to 2 or 3 mm long. The mottlings are on the scale of about a centimetre.

In thin section the rock consists of slightly rounded, cloudy crystals of albite, oddly shaped aggregates of epidote crystals, irregular masses of semi opaque white material and irregular areas of greenish mineraloid grading into chlorite; all in a feldspathic matrix.

The matrix is fairly uniform in composition, consisting of fine grained feldspathic material, but shows differences in structures. Flow texture is shown very locally about the perimeters of felspar phenocrysts in the alignment of minute crystals of albite. In some parts of the section a polygonal network of greenish isotropic material is imposed on the fine grained matrix and in other parts the network is broken down into separate circular, crescentic and irregular strings of mineraloid.

The phenocrysts of albite are cloudy and cracked and show complex twinning, they are frequently of irregular shape, but showing some crystal faces, occasional crystals are euhedral. The phenocrysts occur both singly and in clumps, some show displacement along cleavage cracks.

Epidote and clinozoisite occur together in granular and acicular radiating masses. The white opaque material as seen under low power is resolved by high power magnification as very fine grained epidote.

The chlorite is in irregularly and indefinitely shaped masses of minute flakes showing pleochroism and anomalous interference colours.

The rock is a contaminated porphyrite.

182 Murchison Highway

The hand specimen is a fine grained greenish rock.

In hand specimen the rock consists of anhedral quartz and euhedral felspar, completely saussuritised, in a structureless matrix of chlorite and epidote. The quartz crystals average 0.1 mm and the felspar 0.3 mm long. Minute skeletal crystals of ilmenite altered to brownish white opaque leucoxene are freely disseminated.

The rock is a quartz diabase.

183 Murchison Highway

The hand specimen is a fine grained sheared yellowish green rock. Pinkish brown feldspar crystals and irregular dark green plates of ferromagnesian minerals are discernible. Platy flow structure is evident.

In thin section the rock consists principally of sub aligned albite crystals up to about 1 mm in length, showing lamellar twinning, and faintly brown from incipient alteration. A structureless mass of chlorite, tremolite and epidote fills the interstices between the felspar crystals, which themselves are of a platy nature. Black opaque magnetite is common.

The rock is an altered trachyte.

64-184 Murchison Highway

The hand specimen is a very fine grained dark brownish grey rock with phenocrysts of feldspar and occasional rounded masses of calcite, both averaging about 2–3 mm in length.

In thin section the specimen consists of somewhat rounded, imperfect, and twinned crystals of albite in a very fine grained feldspathic groundmass. Some of the phenocrysts have been almost entirely replaced by calcite. The texture tends to be seriate, with phenocrysts of smaller sizes ranging down to the minute grains in the groundmass. Some of the smaller phenocrysts are partly sericitised. Chlorite is present in sparse ragged aggregates. Opaque minerals include ilmenite largely altered to opaque white leucoxene.

The rock is an albite porphyrite.

61-185 Quarry, Murchison Highway

The hand specimen is a fine grained, banded greyish green rock. It contains phenocrysts of feldspar up to 2 mm across, and is cut by occasional siliceous veinlets. On a cut face irregularities in the banding appears.

In thin section the texture is fluidal consisting of euhedral phenocrysts of feldspar in a fine grained matrix composed of alternating bands of colourless microcrystalline feldspathic material and dark green, partly devitrified glass. There are also occasional irregular masses of chlorite and chlorite occurs rather plentifully as inclusions in the phenocrysts of feldspar.

The rock is a trachyte obsidian.

64-186 Murchison Highway

The hand specimen is a medium grained greenish rock, with visible laths of felspar and green ferromagnesian minerals.

In thin section the rock is a rather fine even grained mass consisting of twinned laths of felspar partly altered, with the formation of fine grained granular epidote and zoisite. The ferromagnesium minerals are represented by somewhat ragged crystals of hornblende largely altered to chlorite. Ilmenite largely altered to leucoxene is present in somewhat large and skeletal crystals. Fresh secondary albite is very common as clear irregular grains, sometimes showing twinning and generally crisscrossed by irregular cracks.

65-187 Murchison Highway

The hand specimen is a fine grained leucocratic rock with visible phenocrysts of felspar, average 1 mm across.

In thin section the rock consists mainly of minute interlocking grains of feldspar with occasional phenocrysts. There are also greenish clots consisting mainly of a micaceous mineral with a high birefringence, but there is also in the clots a little greenish epidote and colourless zoisite. There are also a few scattered crystals and aggregates of ilmeno-magnetite partly altered to leucoxene and limonite. Some of the small felspar crystals of the groundmass show zoning and the felspar is partly altered to opaque white clay minerals. The zoning then shows as opaque white ring structures.

The rock is a felspar porphyry.

66-188 Murchison Highway

The hand specimen is a sheared clastic rock with fragments of reddish brown felspar porphyry in a dark green matrix which also contains crystals of felspar and dark coloured clastic grains.

In thin section shearing is shown by the general alignment of wisps of sericite and chlorite. The fragments are rounded and outlined by wisps of sericite. The crystals of feldspar show decided porphyroblastic characteristics and consist of albite. The fine grained feldspathic fragments show systems of crack unrelated to the texture indicating recrystallisation.

The rock is a metamorphosed volcanic breccia

67-189 Murchison Highway

In hand specimen this is a pale coloured clastic rock made up of sub angular grains averaging about 2 mm across. White grains predominate but there are also greenish grey and black grains. Sometimes the boundaries of the grains are hard to see.

In thin section the clastic nature of the rock is shown by frequent and sudden change of fabric as the grains may be fused together and have indefinite boundaries. The fragments consist of albite porphyrite with phenocrysts of albite in a fine grained feldspathic matrix; fine grained feldspathic rock sometimes with structures like devitrified glass shards and sometimes like the remains of perlitic texture in a rock that has been recrystallised. There are also a few fragments of quartz schist. Brown glass and fine grained structureless epidote are also common. White opaque material is very common. Zoisite occurs freely in colourless grains with high relief and deep blue anomalous interference colours. A system of fine cracks, unrelated to rock texture is frequent.

The rock is a volcanic breccia.

68-190 Tullibardine Creek

The hand specimen is a medium to fine grained greenish rock with small crystals of feldspar and ferromagnesian minerals. A few thin veinlets of epidote cut the specimen.

In thin section the texture is equigranular and holocrystalline. Original laths of feldspar show twinning, but are largely altered to microcrystalline calcite, zoisite and epidote. Hornblende, very largely altered to chlorite and carbonates is the ferromagnesian component. Magnetite is present as uniformly disseminated skeletal crystals; but the commonest mineral is fresh, untwinned secondary albite, filling the interstices between the other crystals.

The rock is a diabase.