

GE/1

10th September, 1958

MEMORANDUM:

The rock specimens described hereunder were collected by Geologist H. Blissett at Rossarden.

The sedimentary specimens are argillaceous rocks of the Mathinna series which have been thermally metamorphosed by Devonian granitic intrusions. These rocks have also been sheared to some extent, incipient slaty cleavage being apparent in specimens Nos. 13, 14, 15; and in No. 12 there are structures at angles to the cleavage.

Metamorphism is of low grade with dispersed minerals aggregating to form new crystalline structures, resulting in spotted shales. Thus in No. 12 patches of graphite have developed, in No. 13 biotite has formed as well. A further stage has been attained in No. 11 with the formation of chiastolite.

A 100 Near contact of Granite & Mathinna Series  
S.W. of Storeys Creek Mine

This specimen is a pale coloured sheared and weathered rock. The matrix is a light gray in which are plentifully distributed dark and light elongated spots.

The matrix is a very fine grained mass of sericite feldspar and quartz. The light spots consist of fine grained quartzo-feldspathic mosaic. A little biotite in part oxidised to limonite, and clayey material gives rise to darker spots. Iron ore minerals are disseminated in minute crystals frequently oxidised.

The rock is a bleached spotted shale.  
A. 11 Metamorphosed Mathinna Silky Slate, Gipps Creek.

Pale grey schistose micaceous rock stained with iron oxide, and containing many needles up to 1" long, sheafs of needles and rosettes of grayish or brownish material.

In thin section the needles appear as rhomboidal sections of chiastolite largely altered to sericite, in a matrix of small plates and books of muscovite, and minute brown needles of tourmaline. quartz appears in the matrix as occasional small interstitial patches. Iron ore minerals are disseminated in minute crystals and their oxidation products give a brown stain to the specimen.

The rock is a pneumatolytically altered chiastolite schist.

A 12 Spotted Slate S.W. of Storeys Creek Mine

Fine grained sheared gray rock with dark and light spots.

In thin section the rock has a very fine grain composed of sericite, feldspar and quartz. The white spots appear as areas of opaque white clay minerals

and fine granular quartz. The dark spots consist of sericite containing flakes of graphite and minute crystals of magnetite, sometimes stained with limonite.

Fine veinlets of sericite cross the general orientation of the sericite flakes of the specimen, and may represent original bedding planes, somewhat disturbed.

A 13 Spotted Slate S.W. of Storeys Creek Mine

Dark gray fine grained sheared rock, with lighter spots.

In thin section the rock consists of a fine felted mass of sericite with fine granular quartz and feldspar. There is a little pyritic and some opaque white clay minerals.

Depositional laminae of the rock have been disturbed by shearing, and slaty cleavage initiated.

The white spots consist of quartz feldspathic mosaic of very fine grain size. There are also darker areas containing biotite, often altered to limonite.

A 14 Altered Mathinna Slate, Gipps Creek

Fine grained sheared dark gray rock, with salmon-pink patches of sericitic material.

In thin section the rock is a very finely laminated one and the laminations are strongly crumpled, and show the beginnings of true slaty cleavage. Fine fibres of sericite and irregular small grains of quartz and feldspar make up the bulk of the rock, but dark organic matter and brown oxide are feely present. Irregular patches of coarser grained mica, pleochroic in pinkish brown to colourless are common.

A 15 Near contact with granite S.W. of Storeys Creek Mine

Fine grained gray sheared rock with round spots represented by holes on weathered surfaces.

In thin section the rock shows a fine felted sericitic groundmass with quartz and feldspar. The groundmass is unevenly stained by iron oxides to give lighter and darker patches. Areas of coarser grained sericite are common.

The spots consist of coarser grained areas of quartz and feldspar, with limonite. There are also dark spots consisting of iron oxides, altered to limonite, and parallel with the general grain of the rock. The fine bedding planes are crumpled, with the beginnings of slaty cleavage.

A 97 Light coloured, fine grained, micaceous rock containing dark coloured elongated spots about 2 mm long.

In thin section the specimen reveals a ground mass of fine sericite, the crystals in sub-parallel arrangement, with intergranular quartz. The elongated spots appear as lenticular patches of various kinds. The majority consist of graphite with recrystallised quartz and possibly some albite, others are free from graphite and others again consist principally of limonite.

The rock is bleached shale of low grade metamorphism.

A 96 Medium grained granitic rock with pinkish feldspars, glassy quartz crystals and dark irregular patches of ferromagnesian mineral

In thin section the larger feldspars cannot be identified as single crystals and the rock consists of embayed and peripherally eroded crystals of quartz in a complex matrix of quartz, feldspar, mica and iron ores.

The peripheries of the larger quartz crystals show corrosion and detached areas of quartz with simultaneous extinction indicate that, originally, they formed part of the main crystal.

Orthoclase is in cloudy crystals with irregular borders and so much corroded that original individuals are now difficult to identify. Quartz and orthoclase are associated in micrographic textures.

Some plagioclase may exhibit similar features, but albite is in clear fresh crystals of smaller size, tending to be lath-like in shape and exhibiting lamellar twinning. Biotite is present in ragged crystals partly altered to iron ore minerals. A faintly tinted pleochroic muscovite is also present.

The general texture of the specimen indicates alteration subsequent to crystallisation with corrosion of the early formed crystals. Thus biotite is in ragged patches with alteration to magnetite. Quartz has been corroded with the introduction of aluminous material. Micrographic texture may arise from replacement.

The rock is fine to medium grained graphic granite, and may have been derived from a normal granite by hybridisation.

A 17 Fault scarp East of Rossarden

Medium grained halocrystalline rock with larger crystals of black and white quartz and pink feldspar.

In thin section a wide range in grain size may be seen, large crystals with irregular boundaries of clear quartz and smoky feldspar are common up to 2 or 3 mm. across. Biotite, weathered and stained by oxides of iron also occurs in large plates. However the same minerals occur in smaller grains down to .05 mm. across, either in intergranular or poikilitic relationship to the larger crystals.

This specimen differs from A 96 chiefly in the absence of micrographic texture.

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