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REPORT ON RED GRANITE AT COLES BAY

Coles Bay is an identation on the eastern side of Fleurieu or Oyster Bay on the east coast of Tasmania. The township of Swansea is situated on the western side of Oyster Bay, Coles Bay being distant 11 miles therefrom.

The eastern side of Oyster Bay is formed by Freycinet Peninsula - a long and rugged peninsula with mountains rising to heights of 2000 feet, and Coles Bay is situated toward the northern end of it.

The greater part of this peninsula is occupied by granite. In general the granite in north-eastern Tasmania is a black and white or a grey type consisting of large white crystals of felspar, with quartz and biotite. At many places on Freycinet Peninsula the granite is of a totally different type. At the north-western corner of Coles Bay the rock is a faint pink, even-grained type. Along the western shore of Coles Bay a very red type extends for at least three quarters of a mile north of and half a mile south of Fishery Creek. This type is a coarse-grained rock consisting essentially of red felspar, quartz (colourless and black varieties), biotite and a small quantity of a greenish mineral or minerals. To the north of Fishery Creek the rock is apparently fairly constant in grain size and appearance. To the south it is more variable, areas of coarser pegmatitic and fine-grained types being present on the shore. In Zanchetta's quarry very narrow veins of pegmatite, alpite and fluorspar occur along vertical joint planes.

Under the microscope the rock is seen to consist of red felspar, quartz, plagioclase, biotite and the greenish alteration product. The red felspar is orthoclase, the colour being due to staining with hematite (red oxide of iron). Some original colourless plagioclase is present, as well as rings of clear albite around some of the greenish mineral. Very little biotite was visible in the section and that present was altered largely to chlorite. The green mineral represents an alteration product of felspar. In the hand specimen it sometimes occupies the central portion of a red felspar crystal, but also occurs between quartz and felspar &c. Under the microscope, it is seen to occur as separate patches and also distributed throughout some orthoclase crystals. The green material is difficult to determine by its optical properties but it appears to be largely epidote and is a mixture of epidote and probably albite or in other words saussurite. Its formation would therefore, be due to the deep seated alteration known as saussuritisation. Further investigation is however being made to confirm or otherwise the above determinations.

The red colour of the granite renders it an attractive one for building and monumental purposes. In common with other granites it would have similar durability. As regards the green spots they are not common but are distributed throughout the rock. They are somewhat softer than the felspar and quartz, but are little if any softer than the biotite or other mica which is present in every granite. It should withstand the weathering agencies as well as the other minerals. When using the stone in its natural or unpolished state this mineral would not therefore be detrimental. As regards the use of the rock in the polished state the deciding test is whether the mineral will take and retain a polish. This factor has already been partly decided by the slabs &c. that have been polished.

The working facilities are very good. The rock outcrops along the shore for a distance of at least one mile and

it extends inland for many chains. The ground rises steeply from the shore and quarry faces of 50 to 100 feet would soon be formed and faces of 200 feet and more would be obtained within a comparatively short distance from the shore.

The above figures also show that the area occupied by the granite is extensive (and its boundaries have not been determined) and the available quantity is very large.

The jointing varies from place to place. Vertical jointing is common and the distance between joints being different in different localities. Horizontal (or nearly so) jointing also occurs. In other places jointing is more or less absent. Thus the jointing would in places enable blocks of various size to be obtained (if the workings were designed to utilise the jointing) and in others (where absent or nearly so) would enable blocks of any desired size to be broken out of the solid.

The transport facilities are also good. Water deep enough to permit ketches and small steamers to load direct from the quarry exists along the shore. Deeper water for larger vessels could be obtained by the construction of short piers. The partly constructed pier of the East Coast Development Company is situated in the north-west corner of the bay and could be connected with the quarries by a tramway 2½ to 3 miles in length. Coles Bay is well sheltered and forms a good port for shipping.

Three leases are held, viz. 11046/M of 30 acres and 10996/M of 36 acres in the names of S.T. Laughton & P.R.N. Wright, and 10994/M of 5 acres in the name of B. Zanchetta, while an application (11125/M) for 2 acres has been made by A. Pearson.

Laughton's workings are in the southern portion of 11046/M. Efforts have been devoted mainly to breaking rock off the cliff and exposing a face of fairly fresh rock, explosives being used to effect this. At the same time a rough ledge has been prepared for working on and small trial shipments of granite made. The face is 15 to 20 feet high but will become higher as work progresses inland.

Zanchetta's workings on lease 10994/M are situated immediately north of the small creek. A working ledge has been formed about 15 to 20 feet above the sea and a face 20 feet high and 12 feet wide carried into the low hill. A large crane capable of lifting 5 tons is installed for work in the quarry and loading vessels. All quarrying is done with punch and hammer. A number of shipments have been made to Hobart, Launceston and the mainland. It is understood that granite is now being shipped for portions of the Commonwealth Bank, Hobart, and that it will be used in the polished form.

It is apparent therefore that there exists large quantities of red granite at Coles Bay and that facilities for working and transport are excellent. It has only been exploited for a year or so and developments are small, having been carried out by small parties with limited means. For efficient production plant including air compressor, drills, cranes &c. would be required while small wharves and jetties might be eventually needed for larger vessels. The question of dressing and polishing plant would also need to be considered.

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