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DOLOMITE & MAGNESITE DEPOSIT NEAR THE VICTORY MINE, ARTHUR RIVER

Introduction

While examining the Arthur River water scheme for the Hydro Electric Department I had occasion to investigate the "dolomite" at the Old Victory Mine.

In order to determine the exact character of the deposit several grab samples were taken for assay and gave some unexpected results. A short report is therefore being submitted on this deposit.

Location and Access

The dolomite occurs in the vicinity of the old mine workings known as the Victory Mine. The only means of access at present is by road and track from Wynyard. The Wynyard-Waratah road (also known as the Mt. Hicks road) is followed as far as the township reserve of Henrietta on a general southerly direction. A good branch road then leads in a south-westerly direction to Takone and a short distance beyond. This road continues as far as the property of Mr. L.A. Barrett, but is merely formed and not metalled. From this property an old pack track, four miles in length, which has been recently opened again, leads along the summit of the Campbell Range and then down to the Victory Mine on the banks of the Arthur River.

Geology

Upstream from the mine workings the country consists of mica and mica-quartz schists of Pre-Cambrian age. These strike from 310 to 360 and dip to the NE angles up to 40^{0}.

West of the schists pyroxinites and dolomite occur with apparently an intrusive contact.

To the west of the pyroxinites, Permo-Carboniferous mudstones occur. These strata overlie the schists and the dolomite to the east of the Arthur River.

The pyroxenites are dark green types, apparently devoid of feldspar, and consisting wholly of ferromagnesian minerals. They are similar to others in Tasmania to which the field name of pyroxenite is applied, and they are named accordingly (Waller 1901). Altered or dolomitized portions are found, and in addition large bodies of crystallised carbonate rock also occur in association with the above.

The pyroxenites are similar to those of Devonian age found in Tasmania, and are probably of such age. Further, such rocks are frequently altered by mineralising agencies producing dolomitized portions and also bodies of nearly pure carbonate rock. Such alterations are associated with the final phase of the Devonian granitic intrusions. It is extremely probable, therefore, that the Victory Mine pyroxenite and the alteration thereof are of Devonian age.

The "Dolomite"

On the bank of the Arthur River the dolomite is approximately 50 feet wide, but in the valleys of the creeks to the east, its width is several hundreds of feet. It outcrops boldly in huge irregular bodies, in and between which tortuous passages, caverns and caves, occur.

When broken it is found that several varieties of material are present. One is a coarsely crystalline type, the crystals being pure white and clear with a pearly lustre. Another is a dense fine grained chert-like variety which varies considerably in appearance. The finer grained varieties appear, from a general survey of the deposit to be the more abundant.

Grab samples were taken to determine the general composition of the deposit. Seven of these were submitted for assay in the Mines Department Laboratory, Launceston, with the following results:-

	No. 1	No. 2	No.3	No.4	No.5	No.6	No.7
Silicia SiO2	3.08	6.04	6.96	3.40	3.40	0.16	0.36
Ferric Oxide Fe203	3.00	0.80	4.57	3.57	1.57	Trace	1.43
Aluminia Al203	0.88	1.10	0.32	0.20	0.43	2.28	1.37
Lime CaO	30.50	26.80	25.75	28.20	0.90	1.25	0.88
Magnetia M90	20.27	19.15	20.60	20.60	45.48	47.58	46.30
Carbonate CO2	42.80	39.00	41.80	44.16	49.00	48.60	50.40
Iron Sulphide FeS2		7.60	Trace	Trace			

The analysis of samples Nos. 1 - 4 prove the mineral to be dolomite with a slight and variable amount of impurities such as silica oxide of iron, pyrite etc.

The analysis of samples Nos. 5-7 prove the mineral to be nearly pure magnesite.

Samples Nos. 1 - 4 were the white crystalline mineral, while Nos. 5 - 7 were the dense fine-grained type. It is evident therefore, that the white crystalline mineral is dolomite, and that the dense fine grained mineral is magnesite. Pyrite is apparently present in some portions of the deposit judging by the analysis of Sample No. 2.

The importance of the deposit is that it is the first one found in Tasmania containing magnesite, and which is likely to be of commercial importance.

A much more detailed examination and sampling campaign would be necessary before it could be definitely stated the deposit could be actually utilized as a source of dolomite and magnesite. In the first place, if either or both of these minerals were required separately, it would be necessary to ascertain their distribution in the deposit. As a result of a general survey it would appear, however, that large bodies of the magnesite occur with little or no associated dolomite. If a mixed product could be satisfactorily utilized this factor would not be so important.

Secondly, sulphides might be present in sufficient quantity to affect the utilization of the material. Other factors such as accessibility, transportation facilities, would also have to be considered.

For the present, however, it is worthy of record that a large deposit of dolomite and magnesite, suitable as regards quantity and probably also as regards quality for commercial exploitation exists. This is particularly so in view of the fact that it is the first known deposit of magnesite in Tasmania.

It is especially important at present on account of a possible demand for dolomite and or magnesite for the contemplated paper pulping manufacture.

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