

LIMESTONE AT GLAZIERS BAY.

Location and Access:

Glaziers Bay, from which the surrounding district takes its name, is a shallow indentation in the left, or eastern bank of the estuary of the River Huon, and lies 24 miles S.W. of Hobart, to which it is connected through Huonville by the Huon Highway. Silver Hill, where the limestone deposit examined is situated, is in the Glaziers Bay district and connected by road with the town of Cygnet 3 miles E.S.E.

Previous Work:

The Silver Hill limestone deposit has not been previously described, but there are many references to the surrounding area, chiefly in connection with the alkaline intrusive rocks. A.M. Reid has given a general description of the area in the "Coal Resources of Tasmania", together with a geological map on a scale of $\frac{1}{80,000}$, and T.D. Hughes reported on limestone in the Huon and Channel districts, describing a deposit at Margate which has many points of resemblance to the one at Silver Hill.

Topography:

The area is one of strong relief due to igneous intrusion and block faulting, followed by normal erosion. The angular course of the lower Huon suggests fault control. Subsequent drowning gave the wide estuary of the Huon and the inlet of Port Cygnet. Where the Huon and Port Cygnet are parallel, small streams enter them at right angles from the intervening land, leaving a watershed between of which Silver Hill is part.

Geology:

Permian mudstones are the typical country rocks, and where undisturbed by igneous intrusion, have slight dips, usually to the west and south west. Recent deposits may be found in river valleys and form islands in the Huon. Dolerite is present in the area, but the principal igneous rock is the alkaline intrusive, possibly of tertiary age. Contaminated rocks fringe the intrusive masses.

The Limestone:

The only known deposit of limestone in the area is situated on a spur in a steep sided valley of a stream on the western slope of Silver Hill. The limestone is revealed by shallow pits and trenches, now partly filled up with soil, and from three of these it was possible to obtain clean grab samples. The deposit could not be traced for more than about a chain along the strike because of a thin overburden of hard, sun-baked soil covered with grass; and, although almost certainly

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more extensive than this, the limestone bed appeared to pass into mudstone at no great distance in either direction. At the places where the samples were taken there was a minimum thickness of twenty feet of limestone, but the base of the limestone could not be seen, and the true thickness may be much greater. The dip of the limestone bed itself could not be determined but the mudstones nearby had slight dips to the S.W. For a distance of about forty feet down the slope of the spur, the limestone had as overburden, only a thin cover of soil debris, but at its upper boundary passed in under the overlying mudstones.

The limestones are fine-grained, dark grey rocks which weather to a pale colour on exterior surfaces and then appear not unlike the mudstones. They contain a great variety of organic remains. Under the microscope they are seen to consist largely of cryptocrystalline calcite. Angular quartz grains are fairly numerous and are largely of silt dimensions. There is a light staining of limonite and this mineral also occurs in minute grains. Felspar and felspar altered to calcite are also common. Numerous remains of microorganisms are present.

Reg. No.	Field No.	Locality	Acid Insol.	Al ₂ O ₃	Fe ₂ O ₃	MgO	CaO	Ig. Loss	CaCO ₃ Calc from CaO
882/50	1	Central Pit	45.6	0.9	1.6	0.1	28.3	23.5	50.5
883/50	2	N. W. Trench	44.4	1.8	1.9	0.5	27.3	23.8	48.9
884/50	3	S.E. Trench	45.3	1.4	1.7	0.46	27.5	23.5	49.1

Table of Analyses:

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Conclusion and Recommendation:

From the tabulated analyses it will be seen that the Silver Hill limestones are of low grade. A crushed limestone containing 50% carbonate of lime would be only about one quarter as effective as pure burnt lime. However, these limestones have been very imperfectly exposed and it is not improbable that higher grade material exists in the deposit. The site is a very suitable one for quarrying operations and no other limestone deposits are known in the area. For these reasons, it is recommended that before the deposit be abandoned as a possible supply of agricultural lime, the following further work, which could be accomplished at small cost, be put in hand:

1. Clearing out and deepening existing trenches, particularly the north westerly one (No. 1. on plan)
2. Cutting further trenches beyond the limits of the existing trenches to define the extent of the deposit along the strike (i.e. to N.W. and to S.E.)
3. Cutting further trenches down the slope of the spur to define the thickness of the deposit.
4. Taking samples for analysis from the fresh exposures.

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