

LIMESTONE AT FLORENTINE RIVER.

The limestone area, at Dawson's road, on the Florentine River, is the closest known formation of high grade limestone to the Ouse bauxite deposits. Approximately half way between Hamilton and Ouse a branch road runs westerly from the main road to Dunrobin Bridge, a distance of about one mile. After crossing the bridge, the road forks and the more northerly branch is followed, roughly paralleling the Derwent River. After crossing the Broad and Repulse Rivers this road reaches Fenton's saw mill, at about eleven miles from Dunrobin Bridge. For this distance the road, although narrow and in parts steep, is trafficable in all weathers for motor trucks and is regularly used for timber cartage.

Beyond the timber mill, an old convict-built track, known as Dawson's Road, winds up across the Mount Misery Range and down into the Florentine Valley, entering the limestone country in about eleven miles and reaching the river a mile further on. Parts of this road could be put in order quite readily, while in other places widening, drainage and re-grading and easing of curves would be necessary. For much of the distance, the road-bed is hard and rocky but there are old corduroy sections that would need considerable attention. In its present state, the road could be negotiated by horse and cart only in summer, and even then, it would be a difficult trip. The through distance from the main road to the limestone is about 23 miles.

No attempt has been made to explore in detail the limestone outcrops of the Florentine Valley, but rapid inspection shows them to be of sufficient magnitude for all likely requirements. In the vicinity of Dawson's Road, the limestone takes the form of low hills rising from the flat, swampy river valley. Certain of these rises are admirably situated for quarrying and there is little or no overburden.

In all probability, the limestone persists under much of the flat country between the rises, but here it is obscured by sandy soil and grass lands. In some parts, evidence of underlying limestone is provided by large sink holes. Detailed mapping, supplemented by boring, should readily prove a large area of limestone, but in view of the obvious quantities of stone in elevated situations, such a procedure does not appear to be necessary.

Areas of massive limestone are known to occur elsewhere in the Florentine Valley, and the formation recurs over a considerable area of country. The series has commonly been referred to the Silurian period, but D. E. Thomas, on more recently assembled evidence, has now placed it in the Ordovician system.

The rock is hard, dense and fine grained. The colour is usually blue-grey or greyish-black, sparingly seamed with white calcite veins. In the Dawson Road locality, dips are variable, but tend to be flat and generally easterly. The formation varies from a massive blocky type to a reasonably close-jointed phase.

Four samples were broken on Allotments 29341 and 29344, Parish of Bethune, County of Buckingham. In obtaining these, an effort was made to avoid stone showing secondary surface silicification, but otherwise they do not represent selected material, and are quite probably inferior in grade to some of the less weathered rock. If production were to be contemplated, the only satisfactory method of preliminary

sampling would be by core boring, but the following results may be taken as an indication that the general grade of material encountered at Ida Bay and Junee is available in this area also :-

| | PERCENT. | | | |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| | <u>Regd.No.</u> <u>498</u> | <u>Regd.No.</u> <u>499</u> | <u>Regd.No.</u> <u>500</u> | <u>Regd.No.</u> <u>501</u> |
| SiO ₂ | 4.52 | 3.66 | 2.96 | 8.20 |
| Al ₂ O ₃ | 1.66 | 1.09 | 1.23 | 1.61 |
| Fe ₂ O ₃ | 0.50 | 0.35 | 0.40 | 0.35 |
| P ₂ O ₅ | Trace | Trace | Trace | Trace |
| CaO | 50.60 | 51.74 | 52.05 | 48.79 |
| MgO | 1.02 | 1.20 | 1.12 | 1.29 |
| Moisture | 0.12 | | 0.06 | |
| Loss on Ignition | 41.30 | 41.62 | 41.88 | 39.08 |
| S | 0.06 | 0.09 | 0.12 | 0.15 |

The percentages of elements not shown above were not determined.

Transport is the principal factor that would militate against the economic utilization of the Florentine limestone. In this respect, it is worthy of notice that the deposits are situated in a heavily wooded area, and that in the immediate vicinity there is a large quantity of standing dead timber. It would, therefore, be quite practicable to burn portion at least of the output on the spot using wood fuel. This would reduce the tonnage for transport by more than forty per cent.

SUMMARY:

A rapid inspection has shown that there is situated in the Florentine Valley, 23 miles from the main Ouse-Hamilton road, a large quantity of commercial grade limestone that could be adapted to economical methods of quarrying. Some miles of road would require attention before regular access by motor vehicles would be practicable. Core boring would be necessary to properly determine the grade of stone at any particular quarry site.

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