

Tasmania is plentifully endowed with deposits of limestone. These occur in every part of the island; are generally of high grade; are convenient to means of transportation; and occur under conditions favourable for cheap extraction.

At the present time, the deposits are being used for cement manufacture, carbide manufacture, in the electrolytic zinc process, for fluxes in the copper and iron smelting industries, and for the production of quick-lime.

Geology. The limestone beds occur in several rock systems of different eras, viz, Lower Palaeozoic (Ordovician (?) and Silurian), Upper Palaeozoic (Permo-Carboniferous), and Tertiary.

It is not quite definite as to whether all the Lower Palaeozoic beds are of the one period (Silurian) as certain evidence suggests the presence of limestone of the Ordovician period.

All the Lower Palaeozoic limestones are, however, similar in quality and general mode of occurrence and so may be considered as one. These beds are distributed throughout the northern, western, and southern parts of the Island and range in thickness from 1000 to 5000 feet.

The Permo-Carboniferous limestone forms a bed of the Lower Marine series of the above system. The bed shows a considerable range in thickness in different parts of the State from a few feet in the north to several hundred feet at Maria Island.

The Tertiary limestone occurs only at isolated localities in the north-western and southern parts of the State. It is of little economic importance.

Geographical Distribution - The limestones are well distributed throughout the island. The Lower Palaeozoic beds occur in southern, western and north-western parts. The Permo-Carboniferous beds are restricted to the eastern parts, while the Tertiary deposits are restricted to small areas in the far north-western and southern parts.

Quality - The quality of the limestone is dependent upon the system of rocks in which it occurs.

The Lower Palaeozoic stone is a dark blue, dense type with a content of calcium carbonate ranging from 80% to 97%. In many of the quarries, e.g. the Carbide quarry at Ida Bay a product averaging between 94% and 97% can be obtained, the higher quality being reached as more selective mining methods are applied.

The Permo-Carboniferous stone is generally lighter in colour with a lower content of calcium carbonate and generally a higher silica content than the above. Small portions are of better quality but generally do not lend themselves to selective mining.

Cement Manufacture - Lower Palaeozoic limestone is being used for manufacturing cement at the works of the Tasmanian Cement Coy. at Railton. It has an average content of calcium carbonate of 85 to 93 per cent. The clay material is supplied by the residual clay overlying the limestone or spent shale from the Tasmanite Oil Shale of the district. Since 1926 the above Company has produced 22,002 tons of cement with a value of £91,731.

Many of the other outcrops of limestone, especially in northern Tasmania represent potential cement industries as the conditions including proximity of supplies of suitable clay material and transportation facilities are generally suitable. In particular the areas at Flowery Gully and Palcoona may be mentioned.

The Permo-Carboniferous limestones are not so suitable for cement manufacture on account of their relatively high silica percentage. The best quality is represented at Maria Island, where the National Portland Cement Company has its works. Clay material exists on the island in the form of weathered diabase. Since 1924, this company has produced 103,899 tons of cement with a value of £519,495.

Other areas of Permo-Carboniferous may be utilised for cement manufacture providing a suitable clay (low in silica) can be obtained, or a high silica cement can be made with standard properties.

Carbide Manufacture - Calcium carbide has been manufactured at Electrona (18 miles south of Hobart) since 1918.

The limestone used is quarried at Ida Bay some 35 miles to the south-west. The quality of the limestone as mined ranges from 93 to 96 per cent calcium carbide, while by selective mining a content of 96 percent could be maintained.

The total production from 1922 to date has been 19,479 tons valued at £429,232.

Fluxes in Metallurgical Industries - Tasmanian limestone is used by two large metallurgical companies for fluxing purposes, viz, the Mt. Lyell Mining and Railway Coy. and the Broken Hill Proprietary Coy. Ltd.

The Mt. Lyell copper smelters are situated at Queenstown and the limestone is quarried within a short distance of the works. The stone has been quarried during the whole period of operations of the company and so large quantities must have been used, but statistics are not available.

The Broken Hill Pty. quarry their limestone at Melrose in the northern part of the state and ship the material from Devonport to their iron smelting works in Newcastle, New South Wales. Since 1924, a total of 566,329 tons have been exported by this company.

Metallurgical Process - The Electrolytic Zinc Coy. utilise limestone in their process for the production of electrolytic zinc at their works at Risdon, near Hobart. The material used at first was Tertiary limestone from Risdon but at present the Lower Palaeozoic limestone from Ida Bay is being utilised. During the past four years, 18,173 tons have been quarried for this purpose.

Lime-burning - Limestone is burnt for quicklime in many parts of the island. In the northern districts at such localities as Beaconsfield, Flowery Gully, Railton and Melrose, the Lower Palaeozoic limestone is used.

In the southern districts at Bridgewater and Berriedale the Permo-Carboniferous limestone is burnt.

The quality of limestone used and the quicklime produced therefrom during the history of the State must represent considerable amounts, but unfortunately statistics have not been kept of this industry.

Uses - From the above descriptions of the purposes for which the limestones of Tasmania are being used, it is obvious that the limestones can be used for practically all purposes for which they are required. In addition it is also probable that the limestones will be used in the future for other industries such as paper pulping.

It is evident therefore that the State possesses limestone deposits of considerable economic importance. Only a portion of the deposits are at present being exploited and there is therefore opportunity for a great expansion in the mining thereof.

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