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PHOSPHATE MATERIALS

Deposits of phosphate materials of commercial importance have not been so far proved to exist in Tasmania. Apatite, the mineral source of phosphate, has been found only in microscopic crystals in certain igneous and metamorphic rocks. Many of the limestones have analysed to determine their content of phosphoric acid, but only one (a fossiliferous Permo-Carboniferous limestone from near St. Marys) has been proved to contain more than 5% phosphoric acid. The small amount of phosphate material which has been produced has been obtained from guano deposits on small islands off the East Coast of Tasmania and in Bass Strait. Similar deposits may perhaps be of rock phosphate by replacement of limestones underlying the guano deposits. As a matter of fact most of the islands on which the guano occurs are formed of granite so that replacement has been impossible. The location of the above islands are shown on the accompanying plan. The production of guano has been small and the reserves of this material are inconsiderable.

The limestone in the St. Marys district occurs interbedded with the Permo-Carboniferous strata of that district. These strata are either lying horizontal or dipping at only small angles. The limestone beds occupy a zone of about 100 feet thick. It outcrops conspicuously on the flanks of Mt. Elephant and the Mt. Nicholas Range and also underlies the Break O'Day Plain to the west. The sample referred to and which was analysed was obtained from a locality 4 miles south from St. Marys. The quoted analysis is as follows:-

	%
Phosphoric acid	5.12
Silica	22.01
Carbonate of Calcium	40.80
Oxide of Calcium	3.82
Oxide of Magnesium	0.31
Oxide of Aluminium	5.97
Oxide of Iron	2.03
Organic matter	13.88
Water given off at 100°C.	6.11
	100.05

The limestone thus contains 5.12% anhydrous phosphoric acid and would thus come within the range of low-grade phosphate materials being considered. If this sample is representative of the whole or even portion of the limestone zone, the deposit must be considered to be potentially an important one as the possible reserves are enormous.

Fuller descriptions are given in the Tasmanian Geological Survey Mineral Resources No. 3.

P.B. Nye
GOVT. GEOLOGIST.

Hobart
5th March, 1925.