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NEW ZEALAND.

WATER-SUPPLIES FOR MINING AND AGRICULTURAL PURPOSES, AND TOWNS

(PAPERS RELATIVE TO).

Laid on the Table by the Hon. W. J. M. Larnach, with leave of the House

Mr. H. A. GORDON, F.G.S., Inspecting Engineer, Mines Department, to the Hon. W. J. M. LARNACH, C.M.G., Minister of Mines.

SIR,—

Mines Department, Wellington, 1st June, 1886.

With reference to the information requested by Mr. W. Hammond Hall, the Engineer for the State of California, regarding the nature and character of the water-supplies in this colony, and as to whether they are used for irrigation purposes, I have the honour to report on the same as follows:—

The water-supplies may be classed under three heads—viz., (1) Water-supplies for goldfields, (2) water-supplies connected with agricultural and pastoral pursuits, (3) water-supplies for towns.

Water-supplies for Goldfields.

A large number of water-races have been constructed by private enterprise for bringing a supply of water on to the different goldfields districts for the purpose of working the auriferous deposits by hydraulic sluicing, and also as a motive-power for working machinery connected with mining; but, as the goldfields extended and the richest of the gold-deposits began to get worked out, the miners directed their attention to the deep wash-drift terraces that contained a little gold, but not sufficient to pay unless they were sluiced away in a wholesale manner. The quantity of water that had hitherto been brought on to some of the fields was insufficient to accomplish this object; and, as the works required were of so costly a character, the Government deemed it advisable, when taking into consideration the general policy of constructing public works, for the purpose of opening up the lands of the colony with a view of speedy settlement, to also make provision for the construction of works for the development of the mineral resources. Water-supplies for goldfields were therefore provided by the Immigration and Public Works Act of 1870, and £300,000 set apart for that purpose, with the view of enabling mining to be carried on in a more systematic manner, so as to make the large deposits of superincumbent auriferous-drifts wash on the terraces pay for working.

It may be mentioned here that there are large areas of land within the colony that are almost valueless for agricultural and pastoral pursuits, but have proved rich in mineral deposits; therefore, mining is an industry that requires to be fostered to a great extent, for in the rapid development of the minerals lies in a measure the future prosperity of New Zealand, as it will be the means of increasing to a large extent the population, tending eventually to settlement on the lands. The Government, having this end in view, deemed it desirable to construct waterworks in districts where the outlay was beyond private enterprise, and where the area of auriferous ground likely to be worked by means of these works was sufficient to warrant the expenditure. This was a difficult matter for the Government to determine, for after it became known that the Government would undertake works of this nature every district wished to secure as much of the money as possible; and the information that was received with regard to the extent of auriferous ground that could be profitably worked if a good supply of water was brought on to the field must have been given in some instances without due consideration, as few of these works will ever pay interest on the capital expended; but, if not taken as a commercial venture, they are the means of maintaining a population in the districts where they are constructed, and thereby increasing the revenue indirectly.

The waterworks constructed by the Government are in the Waimea-Kumara, Nelson Creek, and Charleston districts, of the West Coast, and the Mount Ida District, on the East Coast, of the Middle Island, and in the Thames District of the North Island. There are also works in course of construction in the Totara District, on the west coast of the Middle Island. A description of these works may be of interest, showing their cost and magnitude.

Waimea-Kumara Water-supply.—This consists of two water-races, one to the Waimea District, the other to the Kumara District. In conjunction with the latter there is a sludge-channel, or tail-race, to enable the tailings to be conveyed from the several mining-claims that are being worked by water from this supply, and deposited on a tailings-site common to the field. The water-supply for Waimea is taken from Kawahaka Creek (which is a tributary of the