

principal workings are carried on by hydraulic sluicing and elevating. During recent years, also, much of the gold has been got by using dredging-machines.

The auriferous gravels are divided into five different classes—namely, the recent and more modern deposits; the older gravels found on the West Coast belonging to the Upper Miocene or Lower Pliocene periods; the still older quartz-drifts found in Otago from the denudation of the Silurian quartz-schist formation which covers so large an area in that district; the more concentrated gravel-drifts found in the beds of rivers from the different formations; and the sea-beach leads along the coast-line, together with those formed at the higher levels on the West Coast. All these may be designated littoral, fluvatile, and lacustrine deposits.

The great factor for carrying on alluvial mining operations of every description is water; not only is this essential for hydraulic-sluicing operations, but it is also required as a motive-power for working pumping, winding, and dredging machinery. Wherever water can be utilised as a motive-power, it lessens the cost of mining, and enables men to work ground remuneratively which could not be done if steam had to be used, unless the operations were close to a coal-mine where fuel could be obtained at a cheap rate.

The mining districts in Otago being principally in the interior, where the rainfall is considerably less than elsewhere in the colony, extensive water-races and reservoirs, although they may cost a considerable sum to construct in the first instance, will be a valuable asset, as when they are not required for mining purposes they can be fully utilised for irrigation, and greatly enhance the value of both agricultural and pastoral land.

Provision was made by legislation last year to afford encouragement to those interested in mining to construct large water-supplies, so as to extend the scope of carrying on hydraulic-sluicing operations; but, so far, only two applications have been made for subsidies under the regulations, for the construction of water-races having a carrying-capacity of over twenty sluice-heads. Inquiries are now being instituted as to collateral advantages to be derived by the proposals submitted.

In order to allow hydraulic-sluicing operations to be carried on, it was found necessary to proclaim several streams as watercourses into which tailings, mining *débris*, and waste water from mining claims may be allowed to be discharged, and for the past year, and up to the end of July last, £2,982 has been paid as compensation to the owners of land alienated since 1886. The question of any further proclamations will have to be carefully considered, as the claims for compensation in many instances amount to large sums of money.

MARLBOROUGH.

The alluvial workings in this district are situated in the Wairau Valley, Wakamarina, and at Mahakipawa. There are, however, only a limited number of men engaged in mining at these places. At Wakamarina another attempt is being made to work the gorge near the junction of Deep Creek with the river, where several companies, after spending a good many thousand pounds, have failed. It is to be hoped that the present company will benefit by the experience of their predecessors, and take better precautions against the floods which heretofore have prevented the bed of the gorge being worked.

At Mahakipawa there are still a number of men employed in mining, although many less than there were two years ago. Rich auriferous wash-drift has been obtained in the King Solomon Mine, on Mr. Cullen's freehold, and the same run of gold is likely to be traced further down the flat. The difficulty experienced is the quantity of water, which requires good-sized pumping machinery to overcome it.

The total number of miners employed in the Marlborough District last year was 253.

WEST COAST.

The alluvial workings on the West Coast extend from Collingwood to Jackson's Bay, and include mining in the proper sense of the term—namely, sinking and driving as well as hydraulic sluicing and dredging. The latter branch of mining is only yet in its infancy on the West Coast. Although a great many