

(in past years) in use. The expense of collecting and carting these scattered tailings forms a charge which might have been avoided, and the fact also remains that only a portion of these old tailings—which might have been saved—are now available for collection. It now goes without saying that at mines where the output is fairly large the battery plant will comprise a cyanide or other plant for the extraction of such gold as is contained in the sands after amalgamation, but there are numerous small mines where the output is not sufficient to warrant the expenditure which the installation of a cyanide or similar plant would entail. It has been suggested that, as the methods of gold-saving are being rapidly improved upon, it might even pay to stack the tailings from those mills which have cyanide plants; *but, in any case, tailings from such batteries as have amalgamating appliances only ought certainly to be saved for future treatment.* In the case of a single small mine the cost of a plant for chemical treatment would hardly be entertained, but, as there are frequently a number of small mines in the same locality, the importance of tailings being saved will be seen when it is pointed out that the combined collections of tailings from several small places would in a few years' time furnish a sufficient amount to warrant the erection of an extraction plant—not necessarily a large one—in a centrally convenient position. The matter, although not apparently great as applying to one or two small mines, becomes one of considerable extent when viewed collectively, and is of real importance to the entire colony. Most batteries have a little spare power, and, as tailings-elevator wheels are easily made and cheaply worked, there is little or no real difficulty (so long as a suitable site is available, or can be made without much expense) in stacking tailings with a view to their being operated upon in the future.

HYDRAULIC AND ALLUVIAL MINING.

The interest in this class of mining, which abated considerably during the recent "dredging boom," now shows a tendency to revive. During the past year no new works on what may be termed a large scale are reported, but the accuracy of the statement made in my annual report of 1900, as to the greater suitability of hydraulic mining as compared with dredging for some areas of ground then taken up as dredging claims (and which have in some instances since been actually worked as such), has again been verified by the fact of dredges proving unsuitable and being displaced by hydraulic-mining plants which are giving better results.

At Mahakipawa operations have been commenced which are expected to effect a renewal of mining activity to some extent.

In the neighbourhood of Takaka the work of bringing in a water-supply has been in progress, and good results have been obtained by the Takaka Hydraulic-sluicing Company.

No fresh developments of any note are reported from the West Coast district, matters generally being much the same as has been the case for the last two years. As showing the present working-value of the Government water-races at and near Kumara, the following figures, made up for the twelve months ending the 31st March, will be interesting. The several races supplied water to an average of 165 men, for a total yield of gold amounting to 13,434 oz., valued at £52,392 12s., or £3 18s. per ounce. This gives an average of £317 10s. 7d. per man for the year's work. The sales of water for the same period amounted to £5,672 5s. 2d., and the expenditure in connection with the races and water-supply works to £5,648 13s. 8d. Full details of this appear in the report of Mr. Alex. Aitken, Manager of the Government races in the Kumara district.

Work in Otago and Southland is very fully described in the report of the Inspector of Mines for the Southern district, Mr. E. R. Green. From this it will be seen that a considerable number of men are employed in the class of mining under notice.

The siphons in connection with the Mountain Hut Race at Maerewhenua were approaching completion at the end of the year. The several siphons above the dam are of 18 in. diameter pipes with telescopic joints, and, except when work is stopped by frost, the water will be constantly running through these. The siphon below the dam (where it crosses the Maerewhenua River) is 22 in. diameter, and the pressure at the lowest part is that due to a head of 750 ft., or approximately 325 lb. per square inch. This siphon will only be in use during working-hours. The various sections of the race have been cut by a working party of diggers, and the pipe-siphon connections supplied by the Government. This work will be the means of infusing fresh life into the Maerewhenua Diggings.

It is to be regretted that in the Waikaia district three hydraulic claims, upon which considerable sums of money have been spent in water-races and plant, should be compelled to cease operations owing to poor ground and indifferent water-supplies. The Argyle Company's claim, however, continues to do well, and dredging is to be commenced near the mouth of the Argyle Stream.

At my last visit to the goldfields of Otago and Southland I noticed that in some instances ground overlying the old shallow underground workings of the early days of mining, and also blocks of ground which had been left in the old workings, were being sluiced away and payable results obtained. As hydraulic and alluvial mining has been steadily carried on for many years, much ground has naturally been worked out during that time, and on the present scale of working it is not unreasonable to infer that within the next decade several of the auriferous areas now available to the present methods of hydraulic and dredging operations will be largely exhausted. There are, however, many claims which have, to all appearances, a good long working-life still ahead of them, and gold-bearing areas of ground which are as yet practically untouched are not unknown.

The largest and most important plants connected with hydraulic mining are at Blue Spur (Lawrence), Roxburgh, St. Bathans, Nokomai, and Round Hill (Southland). On the Shotover River several parties are working the river-beaches with the aid of Smith and Son's jet-pump