

tember to the 19th November, accounts for the heavy increase—£150 3s. 9d.—in the expenditure over that of last year, and the reduction in the price of water is largely responsible for the falling-off in the revenue this year.

The number of days on which no water was supplied to the miners was: Winter, fifty-four; Christmas holidays, one; New Year, one; while cleaning out slips, seven: a total of sixty-four days.

The parties working in the "Maori bottom" are, I believe, earning about wages. They are very much handicapped for the want of sufficient pressure, the ground being very light.

Two new elevating claims have been taken up during the year—one of 5 acres in Milkman's Gully, and one of 18 acres at the bottom of Mulholland's Gully. There are fifteen elevating claims at work in the district, eleven of which are supplied from the Government race; all, I believe, doing fairly well.

Blackstone Hill Water-race

The total sales of water from this race during the year amounted to £74 9s. 6d. The total cash received was £78 4s. 6d. The total cost of maintenance and repairs was £13 5s. The approximate quantity of gold obtained was 125 oz., valued at £481 5s.

A good side-trimming was given this race during the dry weather in April; further slight repairs during the season had to be given to it on account of rabbit-burrowing. It, like the Mount Ida Race, suffered from the want of water during the dry season.

There have been only two parties—R. Johnstone and C. Rose—using water from this race during the year.

The Under-Secretary, Mines Department, Wellington.

I have, &c.,

R. MURRAY, Manager.

WATER-CONSERVATION.

Mr. T. PERHAM, A.M.Inst.C.E., to the UNDER-SECRETARY for MINES, Wellington.

SIR,—

Mines Department, Wellington, 21st May, 1902.

I have the honour to forward my report, for the year ending the 31st March, 1902.

NORTH ISLAND.

Domestic Water-supplies, Thames-Hauraki Goldfields.

Several plans and reports in connection with the above water-supplies have been revised and recorded. The Mackaytown reticulation extension by means of smaller pipes has been approved, and is being carried out. With regard to Waikino and Golden Cross supplies, no further action has as yet been taken.

An examination and report was made early in the year on an encroachment by the sea upon the foreshore at Tapu, Thames, and also an exhaustive examination and survey in relation to the silting-up of the junction of the Ohinemuri and Waihou Rivers by the slime or fine tailings from the mines at Waihi, Karangahake, and Waitekauri, and copies have been supplied to the local bodies interested.

SOUTH ISLAND.

The West Eweburn Storage-reservoir, near Naseby, is now completed and in full working-order, securely fenced, and a commencement has been made towards planting the reserve with suitable trees.

The weeping has entirely ceased, and the water-level risen to 57 ft., or within 8 ft. of the by-wash, in spite of the water being constantly drawn on for mining purposes since the caulking of the eastern wing was completed. In this connection Mr. Hayes, Inspecting Engineer, who has recently visited the dam, reports: "The grouting recommended in the joint report of Mr. Perham and myself appears to have been well done, but its efficiency will not be fully proved this season owing to the reservoir being largely drawn upon for supply purposes. The present level of the water has, however, enabled me to see clearly that some of the soakage observed at the time referred to in a former report is due to percolation down a spur from a higher level than the top of the dam, and is not, in this part at least, due to any weakness in the dam itself."

I have before reported on this percolation down the spur mentioned above. It is entirely separate from the constructed portion of the dam proper. Since the stripping of that end of the water-face and the subsequent grouting, all weeping at the junction has entirely ceased. The water-race manager reports: "The dam has been severely tested lately by heavy floods in the creek, and by the water being also intermittently drawn off for exceptional mining purposes." I am of opinion there will be no further trouble now that the seepage has been stopped, and the bank settled down and become well consolidated. In my last year's report I mentioned that this weeping is no sign of weakness in the construction of the dam, as it is well known that all earthen dams, especially of this magnitude, sometimes take years before they completely tighten up.

A re-examination and survey has been made of the locality of the proposed wrought-iron pipe-siphon across the Wedderburn Valley to cut off about four miles and a half of very treacherous country through which the race runs. For the length named the race is liable to damage owing to continuous slips and consequent erosions. Amended plans and estimates have been formed, and a contract for 39 chains of 27 in. pipes let to a Dunedin firm; but owing to the plate iron not being obtainable in the colony the work of construction cannot be commenced until next spring.

Full working-plans of the proposed irrigation reservoir in the Idaburn Gorge are completed, and plans for a reservoir on Hill's Creek, five miles from the township of that name, are in course of preparation. This will form a valuable addition to the Mount Ida Water-race for