

SUBSIDIZED DRAINAGE-CHANNELS AND SLUDGE-CHANNELS.

Kumara Sludge-channel No. 2, Westland.—This is a channel constructed by the miners, with a subsidy of £2,500 from the Mines Department, to relieve the No. 1 Channel, that was wholly constructed by Government. A great deal of dissatisfaction some time ago existed among the miners who had claims opened out into this channel, inasmuch as its carrying-capacity was not sufficient to accommodate all parties. Permits were originally issued by the manager to thirty parties to use this channel; and, after the whole of them were in full work, it was found that not more than twenty-one of these could be accommodated; and in order to provide for the remainder it was decided to only allow each party three-hour shifts. This method of working is not an advantageous one, and is the means of a good payable claim becoming one of little value; hence the necessity for a second channel. The tailings-site available for No. 1 Channel is likewise getting fast filled up, which was also an inducement for the miners to construct another. About eleven parties that are now using the Government channel will, as soon as a connection is made and flushing-water conducted into the channel, use the one which is now nearly completed. Arrangements are now made for the completion of the whole of the works on a satisfactory basis, both to the miners and to the Government. From the warm feeling and kind expressions of the miners towards the Hon. the Minister of Mines on his recent visit to this district, I think that all dissatisfaction is at an end regarding the working of the race and sludge-channel.

Muddy Creek Sludge-channel, St. Bathans, Otago.—This channel is one of the most gigantic works of the kind undertaken by private enterprise in the colony. It was commenced about twelve years ago; but the first company that undertook it failed. It was then purchased by the present proprietors, who have been steadily at work for the last four years and a half. It has cost up to the present time about £12,000, and it will yet take a considerable amount to construct it to the ground intended to be worked. It has had to be constructed through from 30ft. to 50ft. of tailings deposited in the bottom of the creek from the early workings; and great difficulties have been encountered in constructing it through a description of pug, which slides bodily from the side of the gully into the cutting, and has had from time to time to be sluiced away. When completed it will be about four miles in length. It is 12ft. wide in the bottom, which is paved with stones, and the sides are lined in places with stones and scrub. A subsidy of £1,000 was authorized for the completion of this work on the principle of £1 for £1, and £700 5s. 11d. have been paid.

St. Bathans Sludge-channel, St. Bathans, Otago.—This is a large tail-race or sludge-channel which has been undertaken by the miners to work the deep old quartz wash-lead below St. Bathans Township. It will be about a mile and a quarter long when completed. At the present time there are 40 chains of the lower end completed, and 23 additional chains almost finished. This tail-race was commenced in 1882, and it has been in progress ever since. It is 10ft. wide in the bottom, paved with stones where the ground is not solid, and lined with stones and scrub on the sides; having a grade or fall of 1 in 100 up to a point where a large body of flushing-water has been brought in from Dunstan Creek, and from this point to the head it is constructed with a grade of 1 in 60. The principle upon which this tail-race is constructed shows the unity that exists among the miners. A company was formed from among those who had claims that would be enhanced in value by the construction of this work, and each person had a number of shares allotted to him in proportion to the benefit to be derived, or ground held that this tail-race would be the means of working. There are four men steadily engaged cutting this tail-race with water, by merely loosening the drift wash, throwing out the large stones, and sluicing away the fine material down the race. From the progress made it will yet take several years before the channel is completed. There has been £2,700 already expended on the work, out of which a subsidy of £217 3s. 9d. have been paid, and a further subsidy of £782 16s. 3d. authorized for the work.

Lawrence Drainage-channel, Otago.—This is an extension of the channel constructed about three years ago, and also a connection with the lower end of Gabriel's Gully, to prevent the tailings that are accumulating there from getting into the channel and silting it up. The estimated cost of this work is £750, of which £150 have been paid.

Ross Sludge- or Stormwater-channel, Westland.—This work is a reconstruction of the present channel, which is found to have insufficient carrying-capacity in time of heavy floods; and works are also required to prevent the tailings from accumulating on private land alongside the railway reserve. The urgency of these works was clearly demonstrated recently, during the heavy floods that occurred in March last, when about five chains of the upper portion of the channel was completely washed away, and the ground cut down for 30ft. below its level, filling the whole of the workings on Ross flat with water and *débris*. Before this took place, portions of the channel were torn up by the current, and in several places the water flowed over to such an extent that the houses on the side of Aylmer Street next the channel were flooded. This damage was caused to a great extent by the manner in which the channel is constructed. By having ties across the channel, the logs and roots got held fast and backed the water. The channel has been temporarily repaired so as to enable working on the flat to be resumed, at a cost of about £500, out of which a subsidy of £200 was paid; but these temporary repairs will be of no service in the event of another large flood taking place. The whole channel requires to be reconstructed, and the timber frames, if used, should be tied back into the bank, and not across the top as at present. The other portion of the work consists of temporary protective works to prevent the tailings and sludge from destroying private property. The total cost of these works is estimated at £1,500, which amount has been authorized.