

the quartz is stacked, which gave about 10dwt. per ton: the stone has every appearance of gold-bearing quartz, and possibly when the reef is prospected at a deeper level the lode may be found to contain more gold.

OTAGO.—The Government has just completed the construction of a dray-road from near Arthur's Point, on the Shotover River, to the top of the saddle, for a distance of nearly four miles on the road leading to Maori Point and Skipper's. It is constructed with 12ft. formation, and with grades of not worse than one in ten. This will enable goods and machinery to be taken to the top of the saddle with drays, instead of packhorses, sleighs, and trollies, as formerly; but from there they will have to be conveyed by the means of locomotion now used. There is still a very bad hill to get over, known as the "Zigzag," near Stapleton's Beach, which is really the worse part of the whole road, and the most difficult portion to use sleighs or trollies on to transport heavy machinery to the quartz reefs at Skipper's and the Upper Shotover, the present track being narrow, extremely steep, and very sharp bends, almost in every instance being acute angles, so that horses cannot pull any vehicle round the bends, but they have to be unyoked and the sleigh or trolly hauled up to the bend with blocks and tackle. If a deviation were made here and a road constructed it would enable heavy goods and machinery to be taken up to the quartz reefs at a considerably less cost, and therefore enable them to be worked more cheaply. There is likewise a dray-road in course of construction from Arrowtown to Macetown for a distance of about six miles through the gorge of the Arrow River, and is now near completion: it is constructed with 12ft. formation, and is metalled, and, with the exception of two short pinches which could not be avoided unless at a great cost, has very good grades. This will afford great facilities for working the quartz reefs, which are numerous in the vicinity of Macetown. The mining timber and goods have heretofore been either packed on horses, or taken with trollies over a very steep hill, nearly 3,000ft. above the level of the river, and is for several months in midwinter covered with snow, and impassable. The quartz reefs, except where rich stone was got, could not be profitably worked owing to the high price paid for the transit of mining timber. This road will allow wagons to be taken up to the mines, and therefore will enable quartz claims to be worked that heretofore would not pay for working, and get heavy improved machinery taken on to the ground. The heavy parts of the crushing machinery that is erected at present had to be made in small pieces, which made it more costly to construct.

The total value of works on gold fields constructed during the last two years wholly by the Mines Department, or by means of subsidies to County Councils or local bodies, and the amount of expenditure and liability on the same, are as follow, viz.:—

	Total Cost of Construction.	Expenditure by way of Subsidy or otherwise.	Amount of Liabilities on Works in Progress.
	£ s. d.	£ s. d.	£ s. d.
Water-races	29,261 11 0	21,670 9 10	7,591 1 2
Roads on gold fields	21,437 11 2	13,089 16 0	8,347 15 2
Roads undertaken by County Councils, and subsidized by Mines Department	52,841 17 0	21,844 16 7	10,207 15 9
Works undertaken by prospecting associations, and subsidized by Mines Department	13,216 13 4	3,350 0 0	3,400 0 0
Construction of sludge-channels, subsidized by Mines Department	5,750 0 0	2,468 15 4	781 4 8
Total	122,507 12 6	62,423 17 9	30,327 16 9

Deducting the value of works constructed and in progress during the year ending the 31st March, 1883, it leaves £31,946 16s. 10d. for new works undertaken during last year, of which sum the Government contribution amounts to £25,480 5s. 2d.

The roads and tracks that have been constructed to assist in developing the gold fields of the colony have been carefully laid out with such grades that almost the smallest track can be widened into a dray-road if required.

In subsidized roads and tracks plans and specifications have been approved before the works were authorized, and copies of same filed for reference. Some of the local bodies considered it a hardship at first to have to forward plans of works they proposed to construct, but it will be seen that this method is essentially necessary to guard against money being spent on works which, although they might serve for a time, would be ultimately of no value. There are still a great many districts, especially where quartz reefs abound, that will require to be opened up by roads and tracks: as a rule quartz reefs are generally found in very rough, broken country, and difficult of access, and before they can be properly tested heavy machinery has to be brought on the ground, which necessitates the construction of dray-roads.

The alluvial gold fields still continue to support a large population, but the yield of gold from them may be expected to diminish yearly, while the yield from the quartz reefs ought to be increasing, as the latter are the only permanent gold mines: it is a branch of industry that requires to be fostered, as it will be the means of supporting a large population, and gradually developing the mineral wealth of the colony.

Annexed is a list—taken from the departmental records—of works that have been constructed and are in progress to assist in developing the gold fields, and likewise plans of pumping machinery, Ross Flat, and section of the Ross Extended Gold-Mining Company's shaft at Ross, showing the various strata gone through.

I have, &c.,
HENRY GORDON,
Inspecting Engineer.

The Under-Secretary for Gold Fields, Wellington.