

PAPERS RELATING TO THE

No. 3.

Hon. Mr. GISBORNE to His Honor T. B. GILLIES.

Colonial Secretary's Office, Wellington, 21st November, 1870.

SIR,—

I have the honor to acknowledge the receipt of your letter No. 613 of the 14th inst., addressed to the Hon. the Minister for Public Works, enclosing a request by Your Honor and the Provincial Council of Auckland to His Excellency the Governor, under the 26th section of "The Immigration and Public Works Act, 1870," relative to water supply on the Thames Gold Fields, and to refer Your Honor to my letter No. 275 of the 19th instant.

I have, &c.,

His Honor the Superintendent, Auckland.

W. GISBORNE.

No. 4.

Mr. BLACKETT to Hon. Mr. GISBORNE.

Public Works Office, Auckland, 16th January, 1871.

SIR,—

I have the honor to report that, in accordance with your instructions, I have visited the Thames Gold Field, for the purpose of obtaining such information as would enable me to give the necessary instructions in reference to the survey which will be required for the purpose of ascertaining what water works ought to be constructed, and the mode of their construction, as provided for under the 26th section of the "Immigration and Public Works Act, 1870."

The portions of the gold field inspected by me comprise the Hape Creek, Karaka Creek, Waiotahi Creek, Moanataiari Creek, Tararu Creek (all these with tramways), and the Kuranui Creek, as well as a portion of the valley of the Kauaeranga, from which it is proposed to obtain the supply of water, and which is the only one likely to afford sufficient. I also took an opportunity of inspecting the working of the Long Drive Claim, for the purpose of making myself acquainted with the general character of the ground, &c.

The general opinion expressed by those whose position and connection with the gold field would give that opinion value is, that much good would result from the introduction of a good water supply, not only in leading to an increased yield of gold, and increase in the number of machines, and, consequently, of population, but in lessening the cost of obtaining the gold by those machines already at work. I found, however, the greatest difference of opinion as to the amount of increase to be expected, which, in fact, must be purely speculative, the amount varying from 25 to 50 or 60 per cent.; but none whatever as to the increased economy of working, the latter saving leading at once to the working of ground now not considered payable. The saving on this latter head may be reckoned at about 50 per cent. on all machines driven by steam, costing now about 20s per week per head of stamps, which might be reduced at once to 10s per head; and a further saving and greater yield would be effected by the use of clean water for crushing, in place of that now used, in many cases very dirty, from having passed through other machines, and time sufficient not being allowed it to settle.

The greatest difference of opinion exists as to the level on which the supply should be brought in, varying from 60 or 80 feet up to 500 feet above the sea level.

In the latter case, the water could be used over and over again for different machines, in each of the Creeks, in steps say from 60 to 100 feet, either in turbines or water wheels, the water flowing from one to the other.

This plan was proposed to the Auckland Provincial Government by a company, who offered to construct the work at a guaranteed rate of interest on the outlay, and to bring in 40 sluice heads from the head water of the Kauaeranga along a channel 36 to 40 miles long, at a cost of £60,000, and a large part of the survey, I am told, has been completed. An exaggerated estimate of the returns of such a work may, however, be formed by taking for data merely the supply of water and its elevation; thus, say each machine required two sluice heads, 40 heads would supply 20 machines at 500 feet, and assuming that the supply fell in three stages below this, the water would work 80 machines, which, at £10 per week, for 20 stamps, would give £41,000 per year as returns for water rent.

The number of machines now on the field is only 35, and it is improbable that this number would be increased to 80 by any water supply.

A low level water supply, say at 100 feet, would not only tend to the erection of new machinery in the lower part of the creeks, but would supply all those steam machines now at work on the flat, embracing about 230 heads of stamps.

This scheme, it is obvious, would require the construction of a very much shorter race than the high level scheme.

Very much difference of opinion exists as to the capability of the Kauaeranga to supply the amount of water required, but as far as my examination extended, I have no doubt that it will afford an ample supply either on a high level or on one comparatively low.

I shall now lay before you a few general facts relative to the gold fields, and from these endeavor to shew what probable results would be obtained from an efficient water supply. Taking the published return of last month, the yield of gold was 13,086 ounces from 8,991 tons of quartz, or about 1.45 ounces of gold per ton. The number of stamp heads on the field is about 600, giving about 22 ounces of gold per stamp head per month, or 5.5 ounces per stamp head per week, and the actual quantity of quartz crushed per stamp head per month 14.8 tons, or 3.9 tons per week. The real amount crushed per stamp head in 24 hours reaches 1 to 1½ tons, which would give 6 to 7½ tons per week each, but the full number of days per week is not worked, which will explain the difference.

Assuming therefore that the work on the field will be increased 25 per cent, as represented by the number of stamp heads (and leaving out the Tararu Creek, which could not well be included in this calculation from its distance, and from the fact that it is already tolerably well supplied with water) the