

5. *The Chairman.*] Would the work of conducting water be of such magnitude as to be beyond the ability of private diggers to undertake, or do you think the work should be undertaken by the Government?—I think, in the case of water supply for the use of miners, the Government should refrain, if possible, from interfering in the way of giving direct assistance.

6. *Mr. Macfarlane.*] Why?—Because it would be almost impossible to control the expenditure, and to see that it was rightly applied. It should be done by guarantee, or any indirect method, arranged so that the company of miners who undertook the works would be secured against loss beyond the ordinary risk of the adventure. That is a subject which would require consideration to arrange a scheme. I do not feel able to give an opinion at present.

7. *The Chairman.*] Are alluvial diggings now conducted in a scientific manner, and are the appliances of the best description?—The only way in which they could be improved would be by organized combination among the diggers, so that they could conduct their operations at the least expenditure, and make the most of the water supply that they have. In a single case, where the alluvial digging extends below the average water-level or becomes deep sinking, as at Ross, on the West Coast: there, I understand, the machinery is very perfect, and the works are conducted in a thoroughly scientific manner—they were, at least, in 1867, when I saw them last. I may state that all I have said hitherto applied to the alluvial diggings, with the exception of what I said of Cape Colville.

8. You are acquainted with the Californian mines: are you acquainted with the working of the extensive organizations that exist for supplying water?—In 1860, when I travelled over California, the water companies were quite distinct from the miners, who bought the use of the water at a certain prescribed rate. The capital at that time for the water companies was chiefly found in England, and I was informed that they made a very handsome profit. The water was supplied both to alluvial mining, by the system known as hydraulic, and was also supplied to the reef mines and quartz machinery.

9. I understand you to be of opinion that similar organizations here would very much develop the gold-producing capabilities of the country?—That would depend upon whether the diggers would remain spread over the gold fields, and so keep up the average yield; but probably the first great find that took place, as the result of the undertaking, would lead to a rush, and a constant fall in the average yield. That is an element that could not be controlled.

10. *Hon. Mr. Gray.*] Do you not think money expended for the purpose of bringing water to the gold fields would make a material difference in the average yield of gold over New Zealand?—Yes, I think it would, especially on the West Coast, where many deposits are known to exist in positions perfectly beyond the means of the present diggers to reach. I may point out that there is a general tendency in the gold deposits, in passing northward from the neighbourhood of Hokitika, to rise in level, so that the continuation of the leads, which are in accessible positions in the South, are in the North only found in hill tops and inaccessible places, and on the tops of high terraces.

11. Is the supply of water required for alluvial diggings greater than that for reef mining?—Yes, much greater. The cradle diggings, which is the only form of alluvial digging where a small quantity of water is required, may be considered as practically exhausted.

12. *Hon. Dr. Remwick.*] Do you consider that the alluvial diggings will be found to extend over a greater extent of country than has yet been discovered?—Not to any material extent. So far as I can judge from the data I possess, there will be no material addition to the area of alluvial gold digging. I do not wish to be understood as meaning that no diggings will be found in other places. There is one form of alluvial diggings which I have not noticed, and that is the beach or black sand diggings. They require particular attention, as they are practically inexhaustible, although not retaining the richness which they have when first discovered. They extend along the whole of the Westland coast, and in patches along the West Coast of Nelson. In the west of Otago there are no beaches, the cliffs rising abruptly from the sea. Around the South-east Coast, as far north as Waitaki, where the shingle plains commence, gold is also obtained in the beaches in small quantities. The source of this gold is partly from that brought down the rivers and distributed along the beach by the sea, and also from the re-sorting of old river deposits, or old drifts, as they are gradually encroached upon by the sea. After experience of many years, it is found that these deposits are continually re-forming, every storm and high tide re-arranging and laying bare fresh streaks. A proper water supply is required for these diggings, but in most cases it can very easily be applied. As they are generally contiguous to the best alluvial land on the coast, and possess a good natural road along the sea beach, I think it would be desirable, if possible, to give these diggings a more permanent character, by giving the holders a more secure and permanent tenure than is the case with other diggings, and thereby lead to the permanent settlement of the district.

13. *The Chairman.*] Is there any large amount of production of gold at the present time from the black sand?—At one time the chief production of gold on the West Coast was from the black sand. Although I have no exact information on the subject at the present time, I should think they constitute a large proportion of the yield of gold. Considering that these diggings will be more or less continuous it might be worthy of consideration whether some arrangement similar to that by which the coast fisheries are held in some countries in conjunction with the freehold of the land might not be adopted. If some such step is not taken with regard to the West Coast, as soon as the chief diggings are worked out, a great part of the country will be deserted, as it presents but few attractive natural features as compared to other parts of New Zealand.

14. Are the gold-bearing veins in the Middle Island being developed to any great extent, and do you consider that they are capable of much increased development?—They are hardly worked at all as yet, the total quantity which has been directly extracted from the matrix in the Middle Island being quite insignificant compared to the amount of alluvial gold.

15. *The Hon. Mr. Gray.*] Can you state approximately what the area of quartz reefs in the Middle Island is?—The quartz reefs have been largely developed throughout the whole auriferous area which I have previously indicated, but they have only proved auriferous in a few cases, and it is doubtful if a great part of the gold has been derived directly from quartz reefs, as is generally supposed to be the case in Australia. There appear to be well-marked lines in the auriferous formations from which