

good samples of copper and iron ore got in the neighbourhood. At Bruce Bay, which is a lingering beach-terrace diggings, worked by about twenty men, I spent a very profitable evening with Mr. Baird, who kindly provided in his house comfortable accommodation for three of the party. Mr. Baird had a small collection of metallic ores representing that and other districts.

From Bruce Bay we made on the 10th a short journey (eighteen or twenty miles) to Gillespie's Beach, where we spent the night, and where I delivered to an audience of about 120 people of all ages (pretty nearly all the population of the place) a lecture on reef and alluvial formations and the occurrence of gold. The miners of Gillespie's, as well as those of Bruce Bay and other settlements along the coast, showed a most intelligent interest in the art of developing the mineral and other resources of the country by means of tracks and roads, of which they are virtually destitute, and increased facilities for bringing water from higher sources to work the claims. The present system that prevails at Gillespie's of running out the washdirt by wheelbarrows, to be worked off in cradles and other similar primitive appliances, ought long ago to have been superseded by the iron pipes and nozzles and sluices of more favoured fields.

On the 11th we reached Okarito, after surmounting various difficulties, such as quicksands, treacherous rivers, tempestuous headlands which had to be rounded in a rather dangerous state of the tide, but of which it must be said that they could be avoided by taking a more circuitous route. Leaving Okarito I proceeded with Messrs. McGoldrich, Butler, and Fenton to the Lake Mapourika Settlement, where I lectured for about three hours to a number of miners, and then at midnight rode ten miles to Mr. Butler's farm, where we arrived at 2 o'clock in the morning and spent the night. From Mapourika there is a fine view of the lower portion of the famous Francis Joseph glacier, at the apparent distance of ten or twelve miles in a straight line, but probably much farther by any practicable track. From Mr. Butler's we rode, on the 13th, into Ross, where I found Goodlet carrying on a large class of miners, schoolboys, and others, who were taking seriously and with very great success to the study of the chemistry of metallic ores and of the processes for testing the same. I delivered one lecture at Ross to a large audience, and was highly gratified at the advanced state in which I found many of the audience (notably several of the younger people) in their knowledge of the details of all my testing experiments. There is now a strong local school of mines established at Ross, with a good working assortment of apparatus and chemicals for carrying on the classes. The funds subscribed amount to something like £30, collected mainly by the efforts of Mr. McJannet, Mr. Grimmond, and other members of the committee.

I left Ross on the 15th, and delivered one lecture in each of the following centres: Rimu, Kanieri, Hokitika, Stafford, Kumara, Greymouth, Reefton, and Boatman's, in each case to a large and most appreciative audience. Mr. Fenton, at each of these places, gathered round him during the day in the nearest blacksmith's forge a crowd of miners interested in the fire processes for assaying the ores of silver-, lead-, tin-, antimony-, and gold-bearing pyrites.

So short a visit to each place did not afford scope for doing much useful work: the passing visit on this occasion served merely to keep alive the interest in the schools that had been created by my previous visit, and to give me an opportunity of conferring with the various committees, and of arranging with them for future operations when an adequate teaching staff will be provided for carrying them on.

I found everywhere, from Kumara to Westport, great disappointment at my inability to carry out fully my last year's promises of more teaching assistance. Of course my long engagement with the whole staff at the Thames, in November and December last, sufficiently explained the matter; but the explanation was not quite satisfactory from a West Coast point of view. It was really a just cause of complaint on the part of these committees that they had raised funds, procured appliances, enrolled members, and had made arrangements for accommodating the classes that were to be taught by myself and Messrs. Montgomery, McLymont, and Goodlet for a period of at least two months; whereas what they really had now offered to them, after all their trouble and preparations, was a flying visit from Mr. Fenton and myself, arriving one day and leaving the next.

A similar grievance arising from the same cause—too much ground to cover by so small a staff—faced me in all parts of the Otago Goldfields. In both cases I succeeded in putting a more cheerful prospect before them by an assurance that a liberal scheme was being considered with the view of fairly meeting their requirements.

I visited Westport and Denniston, but, being able to stay only one day, did not lecture at either. There is a strong committee at Westport, and they are now provided with a well-found collection of appliances for the work of the school. At Denniston, Mr. Brown, the manager of the Westport Coal-mine, informed me that steps would be taken to form chemistry and mining classes there, provided they were assured of a visit from the teaching staff.

There are vigorous schools of mines now at Ross, Rimu, Kanieri, Hokitika, Stafford, Kumara, Greymouth, and Reefton. I regret exceedingly not being able to lecture at Westport, and to visit Lyell, Charleston, and Nelson Creek, at each of which provision must be made for an annual visit of a few weeks from a member of the staff.

Before closing this report, it is desirable, without prejudice to the claims and great requirements of the other goldfields of the colony, to draw attention to some considerations that would make the Thames a peculiarly favourable home for a thorough-going school of mines.

1. The great variety of valuable metals that are found in the Coromandel Peninsula—gold, silver, mercury, lead, copper, antimony, and zinc.

2. The great complexity of the ores containing these metals, all of them being sometimes found together, mostly as sulphides, with the sulphide of iron in the same stone.

3. The state of combination of the silver and sometimes of the gold, both occurring as sulphides, and the silver sometimes as chloride, and occasionally as ruby silver ore, combined with sulphur and antimony, together with antimonial silver ore. In all these states of combination the gold and silver are not seen as such, and are not therefore recognized by the miners unless they