me then terminated for a time. I returned to Dunedin by way of the Hot Lakes and overland to Napier, thence by steamer to Dunedin, where I arrived on the 29th December. From that date till the 7th January, 1886, I was engaged with McLymont and Goodlet packing boxes of apparatus for my Otago and McLymont's West Coast tour. I had previously arranged that Mr. Montgomery should take the Coast in the beginning of January, and had promised the miners there to that effect on my former visit; but the energetic action of the Thames committee, my own recognition of the overwhelming claims and necessity of that district for the services of a resident member of the staff —the best available—and your request to do what was best for the whole colony, compelled me, at the cost of dislocating all my arrangements for the West Coast and Otago, to leave Mr. Montgomery at the Thames. To meet the claims of the West Coast as well as I could under the altered circumstances, I sent Mr. McLymont to the Hokitika District on the 11th January, and proceeded myself with Goodlet to revisit the Otago Goldfields. We left Dunedin on the 8th January, and lectured for four hours in Orepuki on the 9th to an audience of about ninety miners. Classes were formed at once, and for three days we carried them on in the same way as already described for Karangahake, except that, owing to the absence of Messrs. Montgomery and Fenton, we had no blowpipe and assaying classes.

During the day I visited the leading claims, all of which are alluvial, and spent the Sunday at Round Hill and the Waiau Beach diggings. At Round Hill all the good claims are in the hands of Chinamen, of whom there are in the district about 300 men, whilst the European miners do not exceed ten or twelve.

From Orepuki, where all the arrangements for my visit had been previously made by Mr. Hirst, M.H.R., I went to Riverton on the 13th, where I showed the tests for the most important metallic ores during all the afternoon, and lectured to an audience of over 120 on quartz reefs and gold till 11 p.m. I then, after half an hour's interval, got into a buggy and accompanied three of the Merrivale miners to see their claims and inspect some quartz at Merrivale, a distance of about thirty-six miles. We reached Merrivale at half-past 6 o'clock in the morning, boiled the billy, spent four hours on the Merrivale diggings among the claims, returned *viâ* Otautau and Thornbury on horseback, thence to Invercargill, where I arrived at 7.45 p.m., and lectured to an audience of about 150 the same evening.

Next day I proceeded, with Goodlet, to Queenstown, where I delivered three lectures. While staying in this district I visited the Invincible Mine, the Pyrites Company's works, and the Duke of Cornwall reefs on the Rees River, at the head of Lake Wakatipu. The Pyrites Company's plant in process of erection is a new feature in gold-saving processes in New Zealand. The appliances are designed to concentrate the tailings from the Invincible Mine and any other mines that may be opened up in the Rees Valley. I analysed these tailings about three years ago, and reported from eight to twelve ounces of gold per ton in the samples submitted. The gold exists locked up in the pyrites, and will, for its extraction, require either a preliminary process of roasting or long exposure to the oxidizing influence of a damp atmosphere, after which it may be taken out in the berdans, or by the chlorine process, or by simply passing it, after grinding, over the blankets. The company, I believe, owes its origin to my report on the rich character of the pyrites tailings. They do not intend to extract the gold at the works, but merely concentrate the pyrites tailings, and then ship them to Europe for further treatment. In Europe the bye-products have a sufficient commercial value to render there a process profitable which might not, owing to the high price of labour, fuel, and plant, and the absence of a market, pay here. The concentrating operations are, I believe, carried on under the advice of Professor Ulrich, who has, I understand, some interest in the company, and than whom there is not, I should think, a man in the Australian Colonies better qualified to guide such operations. The concentrating process, well enough fitted for concentrating tin ore, will therefore get a fair trial in this case under the best conditions and the most skilled direction. Great hopes are entertained of its success, and great things are expected from it; and, should it be found efficient for the purpose, it will be adopted in other districts where they have similar rich pyrites-bearing stone.

From the Rees I proceeded to Arrowtown, where I delivered three lectures, and thence to Skipper's, where Mr. Fred. Evans, the enterprising manager of the famous Phoenix Mine, had made excellent arrangements for the lectures. Here I was fortunate in having the use of the Bullen Hall, which Mr. Evans hurried to completion for the accommodation of the classes. The hall was brilliantly lighted with the electric light, which, with the telephone connection with Skipper's Point, Mr. Evans had recently introduced. All the men here are in one way or another connected directly with the Phœnix Mine. There are about ninety of them altogether, and nearly all attended the lectures, and showed a considerable degree of interest in the methods of testing the ores. During my stay here I visited the Mount Aurum reef, with Mr. Fred. Evans, jun. From the top of the mountain, some 7,500 feet above sea-level, we could trace the outcrop of many reefs traversing the ranges in the direction of Macetown. They were easily recognizable with a good glass by the yellowish-brown colour they showed on the outcrop. The colour is due to the oxide of iron produced by the weathering and oxidizing action of the atmosphere on the iron pyrites contained in the mullocky quartz. Mr. Bullen, the enterprising proprietor of the Phœnix Mine, has set an example in another direction to the Australian Colonies which is sure to be followed: this is, in the application of electricity generated by water-power to the purpose of driving the crushing machinery. The dynamos were fitted up in a spacious building, on a beautiful and most romantic site, on what is called the left-hand branch (but really the right-hand branch) of Skipper's Creek, at a distance, following the surface up and down over the lofty spur that separates the branches, of, I should say, two or three miles from the Phœnix battery on the "right-hand" branch. The dynamos are worked by two Pelton wheels, driven by a splendid fall of water directed through two strong iron pipes, with a pressure of, at a guess, a hundred and twenty feet. The dynamos had not been started at the time of my visit, but I learn that they are now working splendidly, and capable, in the opinion of Mr. Evans, of driving twenty-five or thirty head of stampers. The success of this