I proceeded to the Invincible Mine on the 10th, on the return of the men to their work after the holidays, and opened an assaying-class on the 11th, which was conducted by Mr. Goodlet, and was attended in the evening by about fifteen of the men; whilst I myself spent the forenoon with Mr. Morrisby, the manager, who was directing prospecting operations for a continuation of the reef down the gorge, and in the afternoon accompanied Mr. Meagher to the Duke of Cornwall Mine, which he has opened up since my last visit. After inspecting the mine and taking samples of the stone, we went up the range to prospect some reefs which cross the country at an elevation of from 4,000ft. to 6,000ft. above sea-level. We took samples of all the reefs we saw, and assayed them a few days afterwards at Glenorchy. The stone yielded from 2dwt. up to 19dwt. of gold to the ton; but the reefs, from their elevation, cannot well be worked for more than four or five months in the year. Mr. Morrisby, the manager of the Invincible Mine, so works the mine, I am told, as to get paying results from 7dwt. or 8dwt. per ton.

On my return to Queenstown, as there are no miners staying in the town, I contented myself with showing the process of assaying to three or four alluvial miners who came in from some distance for the purpose of seeing it.

Being summoned to Dunedin on the 20th January to attend at the Supreme Court, I despatched Goodlet to Bannockburn—where there is a strong school of mines—to conduct testing-classes there till my return. In these he was very successful, especially among the older schoolboys. I was again fortunate in having as teacher of the Government school Mr. Strong, who had been one of my own old Dunedin students. Mr. Strong, like all my old teacher-students, interested himself very warmly in the local school of mines, and brought his more advanced pupils to the testing-classes.

On my arrival at Bannockburn, on the 9th February, I found a large class of about ninety miners awaiting me. Being fatigued with the journey, I allowed Goodlet to conduct the boys' class the first evening. This he did with wonderful success. I found that about a dozen of these schoolboys could apply the proper tests to all the leading metallic ores, demonstrate their properties and behaviour with the proper chemicals on the lecture-table, and extract the metal itself in many cases from the ore. This class Goodlet had conducted for only about two weeks before my arrival, and the results which he obtained among the boys and some of the men would surprise any one who had not personal experience of the eagerness with which men and boys engage in the work of these classes. At Bannockburn they are now able to assay any quartz or pyrites for gold and silver, and to identify by the wet and blowpipe tests any ordinary mineral they may meet with.

After delivering two lectures in Bannockburn—one on the specimens in the splendid collection presented to the school by Government, and one on the fire-assay of gold- and silver-bearing stone—I proceeded with Goodlet and Messrs. McKersie and Tippit to the Nevis diggings. This was my third visit there, and, although the miners had only a few hours' notice of my arrival, I had an audience of over forty men—nearly every man in the district. They had come, many of them, from three to six miles—indeed, from as far as intimation of the lecture had reached. Having only one evening at Nevis I occupied it in performing and explaining the tests for about ten of the most important and common metallic ores. I should like to spend a week with these men on my next visit.

From Nevis we proceeded, *viâ* Cromwell, Arrow, and Queenstown, to the Phœnix Mine at Skipper's, where Mr. Evans, the manager, has a fine hall and reading-room for the use of the miners.

Leaving Goodlet to conduct assays with as many as could attend in the Phœnix Extended forge, kindly placed at our service for that purpose by Mr. Pearce, the mine-manager, I accompanied Mr. James Evans, the underground manager of the Phœnix, up the right-hand branch of Skipper's Creek to prospect the reefs that intersect the Mount Aurum country. For the particulars of this prospecting visit I have the honour to refer you to my progress report on the Shotover and Skipper's District, dated the 2nd March last.

On my return from Mount Aurum I delivered a lecture on assaying to an audience of about a hundred men, in the Bullen Hall.

The importance of this district, the intelligent interest the men take in assaying, mineralogy, and the testing of ores, the grand reefing-features of the country, and the encouragement and facilities which Messrs. Bullen and Evans give to their men, lead me to recommend that this district should be regarded as one of the best in Otago for the establishment of a strong school of mines. The natural home of a mining-school is among the mines, the minerals, and the miners; and here we have, from the Invincible, on the Rees, through Mount Aurum, the Phœnix, Skipper's Point, Maori Point, and Macetown, on the Arrow, a field which bids fair to become one of the best reefing-districts in New Zealand.

On my return from the Phœnix I delivered one lecture at Skipper's Point to an audience of about forty miners; and Goodlet conducted, here and at Maori Point, with myself, fire-assays on various samples of quartz taken from reefs in the district. The yield was in every case very satisfactory, ranging from 1oz. to 4oz.; one picked sample, in which gold was visible, from a newly-discovered reef, going as high as 90oz. to the ton.

Of course, in my lectures on assaying I pointed out clearly the misleading character of results got from picked samples of stone, and insisted on the necessity of so sampling stone to be assayed that the sample may fairly represent one, two, four, six, eight, ten, or more tons of the reef. This average sample is got by taking out the quantity which the assay is to represent. This quantity—one, two, or more tons—is then systematically, but roughly, quartered, and one quarter of it is broken to the size of road-metal. This is also quartered, and one quarter crushed to the size of hazel-nuts or pigeon's eggs and less. This is again quartered, and crushed finer still, and the process repeated seven or eight times in all, till a pound or so of the stone is got. This pound fairly represents the bulk taken from the reef, and is assayed by the usual process. The result of such assay is as reliable as the result got by passing the same stone—one or two or more tons—through the battery, and it is much less expensive. It can also be applied in all cases wherever the quartz is found among the ranges, however far from any battery; for the desired quantity can, by