shillings, which would enable many yonng miners and apprentices, whose earnings are small, to take advantage of the class.

"*Saturday Science Class.*—Throughout the year I have given weekly lectures on theoretical chemistry, illustrated by experiments, to show the properties of the elements and their compounds. As the course of study has advanced the attendance of the smaller boys has fallen off, the remaining pupils being now mostly High-school boys, with others in the higher standards from the State schools.

"In the third term of 1890 I gave a course of lectures in agricultural chemistry to prepare the pupils to compete for the prizes offered by Professor Thomas through the Board of Education. The Board examination was held last March, but the results became known too late for my last annual report. I am now pleased to state that Master George Fleming, who gained the School of Mines first prize, also carried off Professor Thomas's first prize in competition with several hundreds from all parts of the provincial district.

"*Annual Examinations.*—The examinations were held throughout the first week in December. The number of candidates for examination was 45, compared with 39 the preceding year, and of these 11 secured first-class, 20 second-class, and 13 third-class certificates. The work in all the subjects showed a great improvement on former years, the papers having been set with a view of finding out what the candidates actually did know of the subjects taught during the year.

"The honours for the year fell to Mr. W. O. Bell, of Auckland, who took first place in practical assaying, practical chemistry, theoretical chemistry, mineralogy, and geology. Mr. Bell did much good work in the laboratory, and his papers of examination were full, clear, and accurate, and an evidence of much careful preparation and hard work. His record of five firsts is superior to that of any other student who has passed through the school, and I regret to say that the Committee, from lack of funds, were unable to recognise and reward his well-merited honours with the usual medal and prizes. The annual presentation of a medal would be a great incentive to the students to pursue their studies with zeal and ardour, and perhaps something may yet be done to place Mr. Bell on the same footing as his successful predecessors.

"*Laboratory.*—The number of assays and analyses performed for the public during the year was 382, being an increase of 111 compared with the previous year. The most of these were determinations for gold and silver, all of which were done in duplicate, and as parting assays. These assays, &c., involved the writing of 114 separate reports by the Director; but the actual assays and analyses were performed by advanced students, except in special cases. A considerable decrease in the public assays may be looked for in the future, on account of the number of assayers who have been trained during the last few years at the School of Mines and found employment throughout the goldfields.

"*Appliances and Fittings.*—At the beginning of last year the Committee imported from London a large stock of chemicals, glassware, crucibles and apparatus, including a fine assay-balance and a large muffle-furnace. These were much needed, and formed a welcome addition to our scanty stock.

"During the year thirty-two new cupboards were fixed in the laboratory, also a new drawing-table and a quantity of shelving to store the imported goods. The defective ventilation of the lecture-room and laboratory received some attention, and a water-jet was fixed to draw out the heated air and gases, but so far it has proved only a partial success, and some more effective method will have to be adopted before the much-needed ventilation is obtained. In November a retorting furnace was built in the experimental battery, and since that date wooden handrails have been erected round the elevated platforms at the pan and stamper-box. At the present time, perhaps the most pressing need of the school is a small workshop, fitted with a lathe and a set of carpenters' tools, so that apparatus for experiments and the trial of new processes could be made on the premises by the students themselves, and thus add fresh interest to their studies. A technical school without a workshop is like a foundry without its smithy; but this need, like many others, would be speedily remedied if the money were available.

"*Coromandel.*—In August and December of last year I visited this place, and held classes in mining, surveying, practical assaying, and practical chemistry. As in former years, the greatest interest was taken in the mining and surveying classes, and very satisfactory progress was made by a few of the students who attended regularly. The average attendance was under ten, or about the same as the preceding year. There is little interest taken in the school, and but for the efforts of Captain Argil, Mr. W. Horne, and a few others, would fall through altogether.

Experimental Plant.

"During the year six separate parcels of ore were forwarded to the school for treatment, and the results of the working-tests obtained in each are given below:—

"*No. 1.*—This was a parcel of 84lb. of ore from the Luminary Gold- and Silver-mining Company's mine at Puhipuhi. It showed an assay-value of £1 8s. per ton, as under: Bullion, 6oz. 1dwt. per ton; gold, 2dwt. 12gr. per ton; silver, 5oz. 18dwt. 12gr. per ton. A sample weighing 80lb. was dry-crushed, and hot-pan amalgamated with chemicals, and yielded 4dwt. of bullion, valued at 4s. 2d. per ounce, representing a saving of £1 3s. 4d. per ton, equal to 83·3 per cent. of the assay-value. The silver existed in the form of the simple sulphide argentite, and was easily extracted, as shown by the high percentage of saving, but the ore is altogether too low-grade to be mined with profit.

"*No. 2.*—This was a parcel of ore from Waitekauri, forwarded by Messrs. Bentham and Mason for the extraction of the contained gold and silver. It weighed one ton, and consisted of hard splintery yellowish-brown finely granular quartz, quite free from base sulphides. It contained free gold and silver-sulphide (argentite), and showed an assay-value of—bullion, 30oz. 5dwt. 2gr. per ton; gold, 7oz. 16dwt. 2gr. per ton; silver, 22oz. 9dwt. per ton: value, £34 8s. 8d. per ton.