

Summary.—The ore is easily crushed. As the chief values lie in gold, silver, and lead, it is economically preferable to disregard the other minerals at present. The zinc-residues could be stacked, and if high prices continue could be re-treated by flotation. Concentration will recover 60 per cent. of the bullion and lead values in one-seventh of its bulk, and cyanidation, after tube-milling, will recover without difficulty a high percentage of the remaining gold-silver content.

I have, &c.,

W. H. BAKER, Director.

Mr. W. A. GIVEN, M.A., A.O.S.M., Director of the Karangahake School of Mines, to the UNDER-SECRETARY OF MINES, Wellington.

SIR,—

Karangahake, 12th March, 1917.

I have the honour to present my report on the work done at the above school of mines for the year ended December, 1916.

Attendance.—Twenty students in all attended the school during the year, and instruction was given in all the school subjects. Notwithstanding the fact that several of our best and most promising students had enlisted for active service, the work done at the school compared favourably with that of previous years.

Examinations.—Ten students sat at the annual examinations, obtaining eleven first-class, six second-class, and three third-class passes. Three students sat for the examination for battery superintendents, at which examination one student was successful, while one obtained a partial pass, having failed in one subject only.

Open Nights.—Two open nights were held during the year, one at Karangahake and one at Waikino. Short illustrated lectures were given by Mr. H. C. Tempest, electrical instructor, and myself, on “Electricity in respect to the War” and “Chlorine Gas” respectively. These lectures were well attended, and our efforts were thoroughly appreciated.

School Equipment.—A late-pattern Braun pulverizer and a 2 horse-power Fairbanks-Morse oil-engine were recently installed in the assay department. The laying of the foundation and the setting-up of this plant were done by the voluntary efforts of the Council members themselves. During the year a large specimen-case was added to the geological-museum equipment, in order to hold a number of specimens kindly presented during the past few years.

Public Assays.—In all 117 public assays were made during the year, a decided increase on the last few years. A number of mineral determinations were also made.

In conclusion, I desire to express my appreciation of the work done by the other members of the staff; also of the keen and active interest taken in the school affairs by the members of the Council.

I have, &c.,

W. A. GIVEN, Director.

Mr. A. H. V. MORGAN, M.A., Director of the Waihi School of Mines, to the UNDER-SECRETARY OF MINES, Wellington.

SIR,—

Waihi, 16th March, 1917.

I have the honour to present the following report on the work of the school during 1916:—

Attendance.—The attendance for each of the three terms is shown in the following table:—

						Number of Student.	Class Attendance.
First term	...	...	...	...	...	61	97
Second term	...	...	...	...	...	50	73
Third term	...	...	...	...	...	48	70
						—	—
Average	...	...	...	...	...	53	80

This must be considered highly satisfactory, considering the large number of young men who are at present on active service.

Examinations.—Thirty candidates presented themselves for the written examinations, sending in forty-two papers, of which twenty-six gained first-class, four second-class, and nine third-class certificates. In addition ten passes were recorded in the practical examinations. Advice has just been received also that Mr. C. Kingsford was successful in completing a pass for first-class metal-mine manager's certificate.

Public Assays.—As in previous years, a large number of assays and analyses were made for the public. A considerable number of these were assays for gold and silver made for prospectors free of charge. Several analyses of mine-air were made also for the Inspector of Mines.

Metallurgical Plant.—At the close of the year an experimental flotation machine was procured and has been installed in the metallurgical building, which was extended to accommodate it, as well as any additional plant that it may be found advisable to obtain. We have now a convenient and up-to-date experimental plant, comprising machinery for grinding ore to any required degree of fineness, and apparatus for varying the treatment of the ore in any desired manner. The crushing machinery has also proved extremely useful in preparing samples for assay. The exhaust fan installed to carry off the dust does its work effectively.

Library.—During the year a number of recent works was purchased in order to keep the library up to date. We are indebted also to Mr. Jarman for a gift of mining literature, as well as a considerable number of lantern-slides of mining subjects.