

*Equipment.*—The equipment of the schools in respect of apparatus and instruments is fairly good, especially in connection with the surveying classes. The class in electricity has been considerably handicapped owing to the oil-engine for driving the dynamo not proving suitable. A Pelton wheel is now being installed, and will doubtless permit of more systematic work being carried out.

*Assays.*—During the year a large number of assays were made for the public, those for *bona fide* prospectors being free of charge.

*Conclusion.*—I desire to express my thanks to the Council and the secretary for their generous support since my arrival, and my appreciation of the excellent work done by Mr. W. Gibson, B.E., at Waikino, as well as by the other members of the teaching staff.

I have, &c.,

F. W. REID, Director.

Mr. W. F. WORLEY, Director of the Nelson School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Nelson, 15th March, 1909.

I have the honour to submit the following report of School of Mines work carried on in Nelson during the year 1908. The work undertaken may be grouped under three heads—(1) Teaching mineralogy and blowpipe analyses to boys attending the public school; (2) making assays and tests for the public; (3) giving lectures on some subject connected with geology.

*Mineralogy and Blowpipe Analyses Classes.*—These classes are held, by permission of the Town Schools Committee, in one of the rooms of the Nelson Boys' School. Two classes were formed at the beginning of the year, and each class met once a week throughout the year. Twenty-three boys were under instruction, and each class met thirty-six times. The identification of minerals by means of the blowpipe is the chief work of these classes, but attention is also given to the important physical properties of minerals, and to the panning-off of wash-dirt and beach-sands. Boys who remain in the class only one year are taught to detect by means of the blowpipe antimony, arsenic, lead, bismuth, zinc, tin, cobalt, copper, chrome, manganese, iron, and nickel, salts of these metals being used for the first tests, followed by ores rich in the one element for a second test. Those boys who take a second year's course practise on poorer ores, requiring more skill, and also make the tests necessary for the identification of sulphur, calcium, potassium, barium, strontium, and sodium. At the end of the year an examination is held for those boys who have had a two-years course, and a certificate granted if 50 per cent. or more marks are obtained. Louis Bennett and Kenneth Liddell passed this examination last December.

At the close of the year's work the class was taken for an outing to the Wangapeka Valley, where the boys enjoyed themselves thoroughly by fossicking in the river-gravels.

*Assaying.*—Twenty-seven assays and tests were made for the public during the year. These comprised twelve assays for gold and silver, four tests of rock for phosphate, and nine miscellaneous tests for copper, manganese, chrome, purity of water, &c.

*Lectures.*—Owing to numerous interruptions, only one lecture could be given, though several were planned. The subject of this lecture was "Volcanoes," and lantern views were used for illustration of the subject, which was treated in a popular but somewhat scientific manner. First, a description of a typical volcano was given, then followed the phenomena usually attending volcanic eruptions, with an inquiry into the probable causes of vulcanism. The well-known volcanic districts were then mentioned, and views of their most famous volcanoes shown, including those of our own country. The lecture was concluded by showing views of New Zealand mountain-scenery which owes its origin to volcanic activity in the past. In this connection my thanks are due to the Tourist Department for the loan of several beautiful slides.

In concluding this report I have merely to add that, with the exception of the assaying, which was charged for at school of mines rates, the work was done gratuitously.

I have, &c.,

W. F. WORLEY, Director.

Dr. J. HENDERSON, M.A., D.Sc., Director of the Reefton School of Mines, to the UNDER-SECRETARY, Mines Department, Wellington.

SIR,—

Reefton, 17th March, 1909.

I have the honour to submit the following report for the Reefton School of Mines for the year ended December, 1908 :—

Classes were commenced in March, and continued without interruption throughout the year.

Instruction was given in chemistry, assaying, mathematics, surveying, mining, mechanical drawing, metallurgy, and geology.

The total number of students on the roll was thirty-five, with an average attendance of twenty-three. The distance of the mines from the school militates most unfavourably on the attendance.

For the year 214 assays were made, including ordinary fire assays for gold and silver; analyses of coals, fireclays, limestones, and black sands; determinations of copper, lead, platinum, and tin, besides some two score rocks and minerals identified. As in former years, all prospectors' samples were reported on free of charge.

I have, &c.,

J. HENDERSON, Director.