Thirty boys joined the classes at the beginning of the year, four only of whom dropped out through lack of interest. Two classes were formed, and each class met forty times during the year, or at the rate of one attendance per week for the school year, the average attendance at each class being eleven.

The course of work undertaken was similar to that of past years—namely, practical training in the use of the blowpipe for the identification of the chief ores of commerce. By this means the boys are taught to identify ores of antimony, arsenic, lead, tin, zinc, bismuth, copper, chrome, iron, nickel, cobalt, and manganese; and it is astonishing how readily most of them learn to make these tests. In addition to the blowpipe-work, the study of minerals is undertaken; but this part of our work is at present in an unsatisfactory state, owing to our chief minerals being in the Nelson Museum, which is still in a dilapidated state, owing to the fire of 1906. Three of my boys, however, managed to secure prizes for the exhibition of minerals at the Technical School Exhibition, held in Nelson last December.

In the early part of the year an excursion was made to the Dun Mountain mineral belt, where collections were made of the ores and rocks of that neighbourhood, each boy returning home well laden with specimens.

Geology Class.

By special arrangement with the Nelson Education Board, a course of lessons on elementary geology was given to a class of school-teachers. There were nineteen members in the class, some of whom were ladies, and the class met for one hour each week for ten consecutive weeks. This amount of time did not allow of much work being undertaken, but a good start with the subject was nevertheless made, the object aimed at being the training of the class to observe geological facts. To this end the weathering of rocks was dealt with, the illustrations being drawn from rocks found in or near the City of Nelson, and in this way information about local rocks was conveyed. As an outdoor study, the synclinal arrangement of the conglomerates, clay-stones, and sandstones of the Port Hills was studied, an afternoon being given to this part of the work. At the close of the course of lessons a lantern lecture on earthquakes was given, but this lecture was thrown open to all teachers who cared to attend. About sixty availed themselves of the opportunity. The causes and phenomena of earthquakes were explained by means of apparatus, diagrams, and limelight views, the illustrations being drawn from New Zealand (chiefly Marlborough), Japan, and San Francisco. The lecture appeared to be successful, and has opened up a new way of extending our usefulness. By request of the Principal of the Boys' College, Mr. H. L. Fowler, the lecture was repeated for the benefit of the boys of that institution.

Testing for Gold.

One student, an old prospector, was put through a course of practical instruction in the art of detecting even small quantities of gold in a sample of rock. The method adopted was to first crush the rock in a Taylor's rock-crusher, thoroughly mix the crushed material, take a fair average sample of it, reduce the average sample to fine powder, take one ounce of this and carefully pan it off in a suitable saucer, if necessary boil the heavy residues in nitric acid, and then finally grind in an agate mortar and pan off. It was shown that by careful manipulation even 1 dwt. to the ton could easily be detected by this method, as fire assays were made to check the pan tests and to show their reliability if properly carried out. Larger samples were then treated, by grinding several pounds weight to fine powder and recovering the gold by pan-amalgamation in the usual way; retorting the amalgam, and weighing the gold to get an approximate idea of the value of the sample operated upon. As might have been expected, however, the check fire assays showed that the pan-amalgamation assay is not of much value where pyritous material has to be dealt with, and that the result obtained must only be taken as a minimum, which, if good, is, of course, valuable information. The testing method described above is, however, a really valuable one, and, as the Taylor's rock-crusher is not an absolute necessity, though a great convenience, could be carried out in the field by miners and prospectors if they only knew exactly how to go about it, as the apparatus required is of the simplest kind. The average miner is generally too rough and ready with his tests, and is likely to miss the gold if it exists in only moderate quantities. A little more refinement is needed in these days, when small quantities of gold per ton can be made to pay under suitable conditions.

Assaying.

Only twenty assays were made for the public during the year, and not one of these led to any important results.

Conclusion.

The foregoing is a brief record of our year's work, which has been by no means light, considering that it had to be done in one's spare time after the discharge of pressing duties.

I have, &c.,

W. F. Worley, Director.