April 5.—White mineral found at Waikouaiti, forwarded by editor of *Witness*, proved to be a hydrous silicate of alumina allied to halloysite.

June 30.—A sample of fine black sand, forwarded by Mr. W. Motherwell, Ophir, was found to consist of titaniferous iron with a small percentage of magnetite. Two rock specimens from same district proved to be argillaceous mica schist coated with manganiferous brown iron-ore.

July 17.—A sample of coal from Fortrose, sent by the editor of *Witness*, resembled pitch-coal, but was found to be so strongly impregnated with pyrite and to be generally so friable as to render it of very little value.

July 25.—Sample of rocky material supposed to contain gold found near Oamaru, and sent by Dr. Garland, proved to be non-auriferous.

August 22.—Sample of rock from Raggedy Ridge, near Ophir, sent by Mr. W. Motherwell, and supposed to be of some value in containing gold and other metals, was found to be rather decomposed quartziferous phyllite mixed with micaceous quartz schist, all impregnated with small crystals of pyrite and magnetite; an assay gave a small trace of gold.

September 1.—Mineral specimens from western spur of Mount Cook, forwarded by D. M. McFarlane, S.M., Hokitika: These specimens contained in a matrix of quartz and tremolite small crystals and granular patches of a red transparent mineral, supposed to resemble the Oriental ruby once found at Rimu, but the mineral proved to be common garnet of no value.

November 3.—Specimen of rock from the Inkerman Mine, Reefton, forwarded by Mr. G. Dixon, was found to be a fine-grained somewhat feldspathic sandstone.

Information and Reports on Various Subjects.

(Furnished by myself without charge.)

December 3.—Information to editor of *Witness* about market price of aluminium.

December 10.—Information by letter to Mr. W. H. Young, miner, Hyde, about prospecting of quartz reefs.

April 4.—Furnished to editor of *Witness* instructions for the preparations of corrosive sublimate and nitrate of quicksilver, to be used for the amalgamation of copper-plates.

July 16.—Prepared for the Council of the Bendigo School of Mines, Victoria, at their request, a detailed description of our crushing and gold-extraction plant.

July 24.—Furnished information in answer to two inquiries—one from Watson Brothers, the other from Mr. A. Selby, Melbourne—regarding the occurrence and best mode of procuring scheelite in this province, to be used for the manufacture of fluorescent screens required for obtaining proper effects by means of the Röntgen X-rays.

NELSON SCHOOL OF MINES.

This is a school where the pupils are taught mineralogy, assaying, and elementary chemistry. The following is Mr. W. F. Worley's report on the progress made during the year:—

I have the honour to report as follows on the work done in connection with the Nelson School of Mines from the 31st March, 1896, to the 31st March, 1897.

Blowpipe Class.

Thirty-six boys joined this class early in April, 1896. Most of these attended well till the end of the year, but after the Christmas vacation, owing to some of the boys having left school and to the rearrangement of classes, the numbers fell off to twenty. The attention of the class was directed mainly to the testing of ores and metals of commercial importance. Each boy, in addition to the ordinary blowpipe outfit, was provided with a small tin pan and some gold-bearing sand with which he practised the art of panning. The boys took great interest in the work of their class, and, for their years, made considerable progress. The class was examined on the 31st March of this year. Small quantities of lead, antimony, bismuth, chrome, copper, and manganese compounds were given to each boy, and one hour was allowed for the testing of these. To prevent mere guesswork, each boy was required to assign his reason for giving a given name to any of the test-powders with which he had been provided. There were thirteen boys present at the examination. Jesse Hill named correctly five of the minerals, and was awarded the first prize—a handsome blowpipe cabinet, presented by J. D. Hornsby, Esq. Six others named correctly four of the minerals, but owing to their thus tying were examined again with fresh tests for the honour of second place. Harold Hounsell proved the best among these, and was awarded second prize—a copy of the "Prospector's Handbook," presented by myself.

Lectures.

A lecture on fire-damp and choke-damp was prepared to illustrate the supposed cause of the Brunner disaster. It is not necessary for me to mention the theoretical parts of this lecture, but a description of the experiments by which it was illustrated might be useful to those who have to do with coal-mines. A large wide-mouthed glass bottle was procured, and graduated into twenty parts. The graduating was done thus: The bottle was placed on a pair of good scales and carefully counterpoised. A 4 oz. weight was then added to the weights, and water poured into the bottle till the scales again balanced. The bottle was then placed upon a level surface, and on each side of the bottle was drawn a short, thin line of red paint, just at the level of the water. This operation was repeated till the whole of the bottle was graduated. To facilitate counting the marks on the bottle each fifth mark was numbered. A tinsmith was then got to make a small Davy lamp, just large enough to pass through the neck of the bottle. The diameter of the Davy lamp was $1\frac{3}{4}$ in. and its depth 8 in. One of the three stout wires used for strengthening the sides of the lamp was pro-