

Conclusion.—Owing to my being sent to Reefton at the end of last October to take temporary charge of the school there, my blowpipe-analysis classes were curtailed by about six weeks. Advantage, however, was taken of my stay in Reefton to learn as much as possible about practical gold-saving; and my thanks are due to the managers of the mines there for the courtesy shown to me in allowing me to visit freely the mines and reduction-works. The knowledge thus gained will be useful to me here. My visit to Reefton also caused a projected lecture on agricultural chemistry to be abandoned, but probably two or three lectures upon that subject will be delivered during the present year.

WESTPORT SCHOOL OF MINES.

Mr. Sidney Fry, Hon. Director of the Westport School of Mines, reports as follows:—

From the beginning of the year up to the time of the appointment of the present Director, in the middle of the year, no regular classes had been carried on. We then made arrangements to carry on classes in mineralogy, theoretical and practical chemistry, and mine and land surveying under the instruction of the Director. A class in assaying was also instituted under the instruction of Mr. James Bradley, the President of the Committee.

From that time up till the present we have enrolled twenty students, some of whom attended for a time till the novelty wore off, and then ceased attending. There are also a few who attend in a desultory manner, but the remainder have settled down to earnest study and are already showing a marked improvement. The average attendance at the classes has been as follows: Mineralogy, 10·4; theoretical and practical chemistry, 10·4; land and mine surveying, 5·4; and assaying, 10·6.

Among the more advanced students are Messrs. K. Ross, R. Connell, and W. Gowans. The last-named student travelled in from Millerton every week for the purpose of attending the lectures in land and mining surveying, and has sat at the recent examinations, held at Reefton, for a first-class colliery-manager's certificate, with what result I am not yet able to report.

During the year we have done, in the course of experimental work and assays for the public, fifty-two fire assays for gold and silver, twenty-two assays of other metals (some of these being wet assays), and sixty-six analyses of coal from various parts of the world. Among a few of the most notable we may quote the following.

No. 1. Mineral filling cracks in Denniston coal.—Occurs in rhombic scales. Hardness, 2; lustre, dull; earthy to resinous; colour, white to brownish; yields water in closed tube; B.B. infusible, gives blue colour with cobalt-nitrate (aluminium); with micro-salt gives silica reaction, it is therefore Kaolin. (Analysis by the Director.)

No. 2. Sample of gold-bullion from the cleaning-up of the tail-race of the Rochfort Hydraulic-slucing Claim. This, after cupellation was found to be brittle and to have a specific gravity of 19·7, and, on analysis, gave—gold, 90·8; silver, 0·7; platinum, 8·5: 100. (Analysis by the Director.)

Actuated by the impression, gained through reading the reports of Messrs. Cox, Binns, Park and McKay, on the geology and physical condition of the Parapara iron-ore deposits of Collingwood, that they would be favourable as a matrix of gold, the Director obtained a few samples of the ore, and on assay this proved to be the case, the ore being auriferous; but to what extent is not known yet, as no systematic sampling has as yet been done with it.

Mr. Kenneth Ross, an advanced student, has done some very useful work in the treatment, experimentally, with solutions of cyanide of potassium, of auriferous black sand and cement, in which the gold is not in a good physical condition for either amalgamation or for concentration on blankets. As a result of his investigations, and ultimate conviction that there is a great future before these deposits on the West Coast if treated in a scientific and extensive manner, he communicated with Mr. Thomas Edison, with a view to enlisting his interest in them, and thereby getting a trial of them by his new method of gold-saving from low-grade deposits. An encouraging reply was received to the effect that the engineer in charge of Mr. Edison's new invention was absent on an extended tour, examining placer-deposits, but that, as soon as he returned, the matter would be placed before him for consideration. Mr. Ross, in reply, said that he was confident that a visit to New Zealand by Mr. Edison's engineer would be productive of good results; and he also sent small samples of the auriferous sand. Whether or not this new method of treatment would be applicable to these deposits remains to be seen; but the fact is plain that we have enormous low-grade propositions in this district alone, which only await the time when we are sufficiently educated to treat them profitably, and I have no doubt that it would well repay the Government to assist such matters as the foregoing in the way of sending bulk samples away for treatment, and any other thing which might bring matters to a good issue. I have mentioned the matter to show the good the school is doing by educating practical men up to the point whence they may clearly see the possibilities lying around them, instead of looking away to some other part of the world where "distance lends enchantment to the view."

Mr. P. Bingham, Admiralty Inspector, has done a great many analyses of coal for sulphur during the year, as also has Mr. Bradley, who has also investigated the composition and properties of different samples of coal from various parts of the West Coast.

Towards the end of the year, the Director organized branch classes in Denniston under his own instruction, the subjects taught being mathematics, including arithmetic, algebra, plane trigonometry and use of logarithms, mining, under which head come mining geology, boring and sinking, mine working and timbering, haulage and drainage, and ventilation and mine-surveying. There is also a steam class for the use of those desiring to go up for engine-drivers' certificates.

These classes were really organized in July last, but as we could not get a number sufficiently interested to form a committee to work it as a school of mines the Director deemed it expedient to get it amalgamated with the Westport School of Mines, so as to give the students a higher