

them is in my possession, and I have been granted the right of teaching mineralogy there to my classes. By this arrangement these valuable specimens are now available to the public. Any miner or prospector may see them, and, by means of the descriptive catalogue, learn their chief properties and modes of occurrence.

My thanks are due to the town School Committee for the loan of the schoolroom on two afternoons of each week.

REEFTON SCHOOL OF MINES.

Report of the Director, Mr. J. W. Lee:—

During the year classes in the various subjects have been held regularly, at which the attendance has been fairly good. The number of students, however, is not so large as might be expected, especially when the number of young men working in the district is considered. It should be remembered, however, that the distances from the school at which their work is situated seriously affect their regular attendance, especially with weekly shift changing, which drawbacks are intensified during the winter months.

In January last examinations for battery-superintendents' and mine-managers' certificates were held under the supervision of Mr. R. Tennent, Inspector of Mines for this district. At these examinations three students obtained full passes as battery-superintendents; one a partial pass in the same examination, since completed at the interim examination; and three have since been successful in obtaining complete passes as mine-managers.

At present the number of individual attending students is twenty-five. During the year the average attendance has been as under:—

Class.	Number of Students.	Average Attendance.
Mining and mathematics	15	10
Surveying	12	10
Theoretical and practical chemistry	10	6
Practical assaying	11	6

The instruction in each class has been as follows:—

Mining (including Mining Geology and the Dynamics of Lodes).—The construction and timbering of shafts, drives, stopes, &c., with sketches of timbering; hauling and winding; explosives; mineral veins, their nature, modes of occurrence; metalliferous ores, their character, and strata in which they chiefly occur; faults and fault rules. Special attention has been paid to ventilation, embracing natural and artificial, fans, water-gauge, horse-power, friction, and splitting of air in mines, anemometers, furnaces, water-blasts, &c., and also to pumping, comprising drawing and forcing pumps, motors, rods, with all other accessory appliances, sinking pumps, &c.; also calculations as to horse-power required for pumping and delivery water from pipes and pumps have been fully dealt with; dams, their construction and use. Students have also been instructed to draw plans and sketches of the various appliances in use for ventilation and pumping. Mine accounts, comprising wages, time-sheets, costs per ton, statements and analyses of expenditure.

Text-books: Gordon's "Mining and Engineering," Le Neve Foster's "Ore and Stone Mining," C. Pamely's "Colliery Managers' Handbook."

Mathematics.—The whole subject of arithmetic.

Surveying.—Logarithms, plane trigonometry, chaining, keeping field-notes, traversing, computation of traverses by rectangular co-ordinates; closing lines; areas; magnetic and true meridians compared; connection of underground and surface meridians; adjustments of the theodolite, miners' dial, and compass; dialling by fast and loose needle; problems *re* dip and strike of lodes, and connection with reefs and mine-workings at required relative positions; plotting by co-ordinates, and protracting.

A considerable amount of field-work has been done with the Y theodolite, granted to the school in last January, and students are shown practical instrumental work with it as often as possible.

Text-book: Brough's "Mine Surveying."

Theoretical Chemistry.—General principles; atoms and molecules; combining weights; the non-metallic elements; alkali metals; the metric system of weights and measures; chemical notation and formulæ, and corresponding percentage composition; salts, acids, alkalies, and general fundamental principles of inorganic chemistry.

Text-books: Bloxam's "Chemistry," Lupton's "Chemical Arithmetic."

Practical Chemistry.—Reagents; qualitative analysis, comprising group and detailed separations, thence proceeding to simple analyses; volumetric analysis, with especial reference to the testing of potassium-cyanide solutions; analyses of simple substances; tests for gold and silver in ores and alloys, and also in solution as chloride; manipulation and laboratory-work; preparation of different gases, as hydrogen, oxygen, &c., and their physical and chemical properties.

Assaying.—Fluxes; reducing agents; dry assays of gold, silver, lead, tin, mercury, and antimony ores; wet assays of copper, lead, zinc, antimony, and iron ores, with calculation of results in each case; tests and special methods of assaying tellurides of gold and silver; tests by wet and dry methods of different minerals and alloys. Some work has also been done in electro-metallurgy and electroplating.

In both practical chemistry and assaying subjects students are taught practical work and manipulation, and encouraged to verify their results by their own practical observation and experiments as far as possible.