

arithmetic, together with special exercises in mining calculations and problems, use of logarithms, formulæ, and a little algebra.

(3.) *Theoretical Surveying* (Lecturer and instructor, the Director).—The average attendance in this class was 14.7. The work done comprised elementary trigonometry, including solution of triangles, filling up traverse sheets, calculating areas, calculating closing lines, mine-surveying problems, elementary levelling, &c.

(4.) *Practical Surveying* (Instructor, the Director).—The average attendance in this class was 12.3. The members were taught chaining both of horizontal and of sloping lines; uses and adjustment of the theodolite, miners' dial, dumpy level, &c. A considerable amount of field-work was done by the members of this class, including the checking of the local meridian by daylight observations of a star.

(5.) *Geology* (Lecturer, the Director).—During the first term instruction was given to four students in general geology, but their interest soon fell off, and the class was discontinued at the end of the term. The small attendance in this class is to be attributed principally to the fact that it is not often taken up by first-year students such as comprised the majority of those attending last year. A number of students, however, have stated their intention of taking up this important subject during the coming year, and I anticipate a good class. It may not be out of place for me to say that great advances in the study of mining geology have been made during recent years, and a very wide field is now opening up for the trained mining geologist. The subject of geology is therefore becoming more and more important in connection with the working of all classes of ore-deposits, and is one that must not be neglected by modern mine-managers.

(6.) *Mineralogy and Blowpipe* (Lecturer, the Director).—During the last term a course of lectures of a popular character was given in this subject, and was largely attended. The subject-matter of these lectures included physical characters of minerals, blowpipe tests, the six crystallographic systems, &c. The lectures were illustrated by numerous experiments, and by the handing-round of some hundreds of specimens.

(7.) *Theoretical Chemistry* (Lecturer, Mr. F. T. Seelye).—The average attendance in this class was 8.3. The course of instruction comprised the chemistry of the non-metallic elements and of the alkali metals, together with the atomic theory, physico-chemical laws, chemical arithmetic, &c. It is to be regretted that more students did not avail themselves of instruction in a subject which is not only interesting in itself, but also of the greatest value to all assayers and battery-superintendents, and is a science of which every mine-manager also ought to acquire at least the rudiments.

(8.) *Practical Chemistry* (Lecturer and instructor, Mr. F. T. Seelye).—The average attendance was 8.7. The instruction given in this class comprised methods of preparing oxygen, hydrogen, chlorine, and carbon-dioxide; tests for metals and acids; separation of the metals; manipulation of chemical apparatus; and quantitative analysis of simple substances.

(9.) *Dry and Wet Assaying* (Lecturers and instructors, the Director and Mr. F. T. Seelye).—The average attendance was 18.3, which is not quite up to last year's average. The work done in this class comprised the whole of Park's "Assaying and Practical Chemistry," with the exception of two or three analyses, which seem out of place in a school of mines course. Some good work was done by the students in dry assaying, but those who took up wet assaying made but very moderate progress. The results of their practical work were in many cases far more inaccurate than they ought to have been. The fact is that one and all lack an adequate knowledge of theoretical and practical chemistry. Despite all advice, our students will neglect these subjects, and devote their main efforts to learning how to "do" the copper assay, the iron assay, &c. Their usual method of preparing for an examination is to learn the text-book description off by heart. From the point of view of a worried school of mines teacher, it would be a good thing if the term "assaying" (which in its very derivation savours of the empirical) were tabooed, and some such name as "economic quantitative analysis" substituted.

(10.) *Metallurgy of Gold and Silver* (Lecturer, the Director).—The average attendance in this class was 5.3. Last year's course of instruction included crushing and concentrating machinery, amalgamating processes and machines, cyanide process, chlorination process, bromination process, lixiviation processes for silver-ores, roasting and smelting furnaces. The members of this class were specially prepared for the Government examination for battery-superintendent's certificate. Partly on this account, perhaps, this was one of the subjects in which the want of a suitable text-book was much felt.

(11.) *Drawing* (Instructor, Mr. R. H. Mitchell).—This class was fairly well attended during the year, the average number of pupils being eleven. The instruction given was of a valuable character, and comprised elementary geometrical drawing; machine-drawing, both from copies and from actual examples; some architectural drawing, and the plotting and drawing of survey-plans.

*Changes in Staff.*—I have again to record a change in the teaching staff, Mr. A. H. V. Morgan, M.A., who had ably acted as assistant lecturer for twelve months, having left in March to take up the duties of first assistant at the Thames School of Mines. Mr. F. T. Seelye, A.O.S.M., who was selected to fill the vacancy, arrived in April, and has since then been of great assistance in carrying on the work of the school. During the month preceding Mr. Seelye's arrival, Mr. Leslie Jolly, A.O.S.M., acted capably as temporary assistant.

*Examinations.*—At the annual Government examinations for schools of mines, held during December, twenty-two of our students presented themselves, a greater number than in any former year. Altogether forty-three papers, representing every subject on the list except mathematics, were given in. The detailed results which are just to hand, show that six first-class, twenty-two second-class, and thirteen third-class certificates were obtained, whilst the remaining two papers failed to reach the standard required for a certificate.