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## Mineralogy at Cambridge.

THE position of mineralogy in the studies of the University of Cambridge is the subject of a report by a syndicate appointed by a Grace of the Senate dated May 12, 1928, in accordance with a recommendation made on the election, for a term of five years, of the present professor of mineralogy in 1926. The Syndicate held five meetings, at some of which the professor of mineralogy was present by invitation. The members also had before them a memorandum on the history and present position of the Department by the professor of mineralogy (published as an appendix to the report), and a memorandum on the study of structural crystallography in Great Britain and on the Continent prepared by the University lecturer in that subject. The University reader in petrology was a member of the Syndicate. The main recommendations which have been put forward were reported in a note in NATURE of May 18, p. 780.

The foundation of the Woodwardian professorship provided for the teaching and development of mineralogy as well as geology, but apparently not to the satisfaction of a great enthusiast, Edward Daniel Clarke, at whose instance the present chair of mineralogy was founded in 1808. This originated the separation of geology and mineralogy, which resulted in their representation as independent subjects in the Tripos. Under Clarke's successors, however, crystallography became the main subject taught by the professors of mineralogy. Petrology was practically ignored, and when the study of thin sections of rocks with the polarizing microscope opened up great possibilities in this branch of the science, it was left to the department of geology to develop the new method. Thus an important part of mineralogy came again under the Woodwardian professor and has remained separated from the department of mineralogy. This separation, the Syndicate truly remarks, has adversely affected both studies.

More recently, the great advance in the development of crystallography due to the X-ray analysis of crystal structure has made crystallography still more dominant in the department of mineralogy and further accentuated its separation from petrology and economic mineralogy. The Syndicate believes that the future development of crystallography "lies mainly in fields bordering upon both physics and chemistry". It is convinced that crystallography and mineralogy (and petrology) cannot be adequately developed in one

department, but it does not think that they can be separately catered for in existing departments. It accordingly recommends a new grouping of the subjects, for which the department of mineralogy is to be replaced by two departments, crystallography being taught in one, and mineralogy and petrology in the other. It is recommended that the department of mineralogy and petrology should be in "the closest possible relation with the department of geology" and that "the teaching of such crystallography and crystal physics as is required by students of mineralogy and petrology should be provided by the department of crystallography". The successful carrying out of these particular recommendations will depend mainly on the cordial co-operation of the three professors concerned. As regards the staffing of the two departments, the minimum establishment proposed—a professor, lecturer, and demonstrator in each—is actually less than the number at present engaged in teaching mineralogy, crystallography, and petrology in the University. The only innovation proposed is the foundation of a professorship in place of the post at present occupied by the University reader in petrology.

For the success of the new departments the Syndicate thinks it essential that the subjects taught in both shall be separate subjects in Part I. of the Natural Sciences Tripos. These separate subjects are, however, not regarded as of sufficient importance to rank equally with the existing subjects in that examination, yet they are too important to be crowded into the already overburdened curriculum of geology, physics, and chemistry. The solution offered is to create 'half-subjects'. Under this scheme crystallography, the scope of which is outlined, is to be an independent subject but to carry a smaller maximum of marks than the existing subjects: mineralogy and petrology either to be treated similarly or—at the students' option—to be allowed to be an alternative to palæontology in the existing subject of geology. Thus a student offering chemistry and physics could take crystallography without mineralogy, while students offering geology could omit palæontology and take mineralogy and petrology "and such crystallography and crystal physics as is required", or they could include palæontology and take both mineralogy and petrology and also crystallography, and one (or more) of the existing subjects.

Finally, the Syndicate has considered accommodation. The creation of an additional department demands a new building, and the recommendation is to build new laboratories and a museum for mineralogy and petrology adjoining and communicating with the Sedgwick Museum. Crystallography could then be adequately developed in the rooms at present occupied by mineralogy. This would involve considerable capital expenditure, and, in a note to the report, the Financial Board points out that this "could only be provided at the expense of existing University activities". It may be thought that in recommending a plan the adoption of which depends on the provision of a new building, the Syndicate has doomed its report to rejection. But the memorandum on accommodation submitted by the professor of mineralogy, and the remarks of the Syndicate on the lack of laboratories for the study of petrology in the Sedgwick Museum, are convincing proof that the present accommodation is lamentably inadequate and unworthy of the University. Proper accommodation to allow the development of crystallography, mineralogy, and petrology has been an urgent need for the past ten years, and the Syndicate has done good service by bringing this need prominently to the notice of the University.

If the means to meet this need cannot be found, the main recommendations of the Syndicate for the creation of two departments will inevitably be postponed. There would remain the possibility of the suggested changes in the Natural Sciences Tripos, which do not actually necessitate the splitting up of the present department of mineralogy. The introduction of these changes might be sufficient to effect that close co-operation between mineralogy and geology which the Syndicate desires, and then, as is remarked, "the fact that [mineralogy and petrology] are taught in separate departments might be no more than an inconvenience". With suitable modifications in the scheme of lectures, students of physics and chemistry could take crystallography as a subject without the necessity of learning descriptive mineralogy.

The report was discussed during last term by the appropriate Boards in the University, and the results of their deliberations will be awaited with interest. The adoption of a definite policy with regard to mineralogy cannot long be postponed, as any changes decided on must take effect from 1931, when the chair of mineralogy will be vacated by the present professor, who succeeded W. J. Lewis in 1926 after thirty-one years' devoted service to the department over which his two immediate predecessors had ruled for almost a century.