

## REVIEWS.

C. Friedel. *Cours de Minéralogie*. Paris, 1898.

This text-book, which is a *resumé* of the author's lectures at the École Normale and the Faculté des Sciences, contains the general introduction to the subject, and is written in the clear and lucid style which we have learnt to expect in a French text-book.

Nearly three-quarters of the volume are devoted to the external characters of minerals, and the laws of crystalline symmetry are developed according to the principles laid down by Haüy and Bravais.

Here, however, as in all *mineralogical* text-books, we find little attention paid to recent theory, and no attempt to indicate the possibility of the 32 crystalline types. In spite of the investigations of Curie (to mention only a French worker in this subject) and the books of Liebisch, the importance of this theorem from an educational point of view appears to have attracted little attention. Undoubtedly the art of writing a readable text-book consists largely in the judicious omission of what is unnecessary, but to leave out a statement of the 32 groups in a text-book mainly occupied with crystallography is as unjustifiable as the omission of the Periodic law in a text-book of chemistry.

A considerable amount of space is well devoted to methods of calculation, always a stumbling-block in the path of the mineralogical student, but several pages are wasted over the customary comparison of different notations.

The latter portion of the book contains a sketch of the optical and physical characters, a somewhat too brief exposition of the principles of mineral chemistry, and a chapter of considerable value and interest upon the synthesis of minerals. Here, as might be expected from Professor Friedel, a far more comprehensive and intelligible survey of this important subject is given than can be found in any similar book.

A second volume, to be prepared with the collaboration of the author's son, is promised, and is to contain descriptions of the principal mineral species.

F. Pisani. *Les Minéraux usuels et leur essai chimique sommaire*. Paris, 1898.

This little book is designed for the use of miners, chemists, jewellers,

&c., and does not profess to do more than give a short summary of the characters of some of the best known minerals, especially as regards solubility, fusibility, action with acids and behaviour before the blowpipe. It may possibly serve the purpose for which it is written, but at the present time, when there are several excellent French text-books, we doubt whether it will supply a real want, and little books written in this tabular form are not calculated, we fear, to encourage a study of the science among beginners.

C. J. Woodward. *A B C Five-figure Logarithms for General Use.*

This is a handy little book of tables, in which the proportional parts are given by what the author has introduced in a previous book as the A B C system. The present tables are an enlargement and improvement of those in the earlier work, in that it contains the logarithms of arc functions as well as of numbers. The book is also provided with a lateral index which is extremely convenient for practical use.

The tables are well adapted for the crystallographic calculations required by the mineralogical student, and we note with gratification that among the applications illustrated in an introductory chapter the author has included the formula for the positions of four poles in a crystal zone—certainly the first time that this formula has found a place in logarithmic tables for general use.

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