Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. Copy should be sent direct to the British Co-editor (R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England).

Computing Methods and the Phase Problem in X-ray Analysis

The papers which were given at the conference on the above subject held in April 1950 at the Pennsylvania State College (see *Acta Cryst.* (1950), **3**, 401) have now been issued in a final form. Those who attended this conference will remember the lively discussions and the wealth of information it produced. The present photo-offset volume of 390 pages makes this material available to a wider group of crystallographers. It also brings up to date some of the matters which were still in the development stage at the time of the meeting—for instance the structure-factor computer of Prof. Pepinsky. The volume, which bears the title *Computing Methods and the Phase Problem in X-ray Crystal Analysis*, is obtainable at a cost of $7·50 from the X-ray Crystal Analysis Laboratory, Pennsylvania State College, State College, Pa., U.S.A.; cheques should be made out to the Laboratory.

Orientation des molécules d'eau dans le cristal $ClO_4Li.3H_2O$: correction

In this article by Couture-Mathieu & Mathieu (*Acta Cryst.* (1952), **5**, 571) the following correction should be made: p. 573, 2ème colonne. — Les résultats relatifs à la raie 3547 sont à modifier de la façon suivante: ε_{XX} et ε_{ZZ} d'une part, $\varepsilon_{xx}+\varepsilon_{zz}$ et ε_{yy} d'autre part, ont même signe (et non des signes contraires). Ce résultat est en désaccord avec la théorie de Silberstein.

Book Reviews

Works intended for notice in this column should be sent direct to the Editor (P. P. Ewald, Polytechnic Institute of Brooklyn, 99 Livingston Street, Brooklyn 2, N.Y., U.S.A.). As far as practicable books will be reviewed in a country different from that of publication.

Principles of Geochemistry. By B. Mason. Pp. ix+276, with 42 figs. New York: Wiley; London: Chapman and Hall. 1952. Price $5·00; 40*s*.

As the author of this book points out, geochemistry is essentially a development of this century, although the name was coined by Schönbein over a hundred years ago and the Russians have recently emphasized that some statements of Lomonsov have a distinct geochemical flavour. Like other aspects of earth science, geochemistry has shown remarkable advances during the last 30–40 years owing to great developments in physics and chemistry; these developments provided the basic knowledge and techniques without which the great mass of data accumulated by geologists over many decades could not be adequately co-ordinated and explained. What may be called the 'accumulative phase' of geochemistry ended with the last edition of F. W. Clarke's classic *The Data of Geochemistry* in 1924, just when V. M. Goldschmidt had begun to apply the newer physical techniques to the study and development of crystal chemistry and to add so greatly to our knowledge of the distribution of the less common elements. Not without justification did Goldschmidt entitle his famous series of papers *Geochemische Verteilungsgesetze der Elemente*, for in them he developed the necessary theory to explain the abundance and distribution of the elements which he expounded so well in Part IX—*Die Mengenverhältnisse der Elemente*. In this he was able to consider not only the data for the earth but also data for stellar bodies and meteorites, and to arrive at a first approximation of cosmic abundances.

This latter extension of geochemistry fittingly begins Prof. Mason's excellent introduction to the principles of the science. It is obvious that whatever theory is adopted for the origin of the earth and other planets some guidance on the abundance of the elements in the earth can be gained from the study of stellar matter, and indeed the first adequate explanation for the scarcity of the light elements lithium, boron and beryllium came from astrophysics. Coming down to earth, as it were, Prof. Mason passes to a consideration of the structure and composition of the earth and its pre-geological history, making full use of the latest information. In the table of element abundances, however, one or two revisions are desirable. Sandell's values for molybdenum and tungsten are more in line with the actual abundance of these elements than Goldschmidt's old values, and Prof. Mason repeats the value of 250 p.p.m. barium for which there seems to be no justification, since von Engelhardt's data indicate a value about 400 p.p.m. Another, minor, point may be mentioned here: the term *clarke* for the percentage of an element in the earth's crust was introduced by Fersman, and not Vernadsky as stated.

Before a clear understanding can be gained of the migrations of the elements and the transformations of their compounds in the various zones of the earth some knowledge of thermodynamics and crystal chemistry is required, but the chapter dealing with these subjects is barely adequate and could have been expanded with advantage. Prof. Mason then turns to the various zones and gives what to the present writer seems a very clear exposition of the main features of each. Making full use of phase-rule studies on the crystallization of silicate melts, the relations of the various important silicates are discussed and there is a useful summary of the distribution