a wide variety of states of matter (gas, liquid and solid). The book is written especially for students who are not physicists. The author illustrates the basic principles of the diffraction process with the minimum of formulae, therefore, and 'often supplements mathematics with descriptions in words'. Only the classical theory is developed while the quantum nature of the phenomenon and the dynamical theory are ignored. Whenever necessary, the author refers to the best papers and authors. Each chapter contains a list of these references.

The book starts (chapters I and II) by explaining two basic principles: the electrons in matter are responsible for scattering, and the scattered waves are the Fourier transform of the electron density distribution of the sample. Following chapters (V to X) then describe how the diffraction patterns are modified by various interference processes as the nature of the sample changes: isolated atom, group of atoms or molecule, ideal gas, diluted solution, liquid, amorphous solid, and ordered materials in one, two or three dimensions. For each of these cases, the author explains what are the limits of the experiments and what region in the pattern is significant. He gives the basic methods for the analysis of the data and consequently shows what kind of parameters can be measured. He treats the reader as a prospective experimenter and defines for him the scale of the observation (size and shape of the scattering bodies or collective arrangement of atoms or internal structure of the molecule ...). Typical examples of one-, two- and three-dimensional systems are chosen from among biological materials. These give a good overview of contemporary crystallography in this field. More illustrations would have been useful.

The last chapter (XI) introduces electron microscopy. The author discusses the relationship which exists between the Abbé theory and the optical principles of the diffraction of X-rays. Useful comparisons show the complementarity of the two techniques.

The book is designed very much as a teaching text, with a style that is clear, progressive and simple. As the author insists on the phenomenology of the diffraction process, students should read this book to improve their crystallographic knowledge.

F. ROUSSEAUX

Laboratoire Chimie de Solide Minéral
Université Nancy I
BP 239
54506 *Vandoeuvre-les-Nancy CEDEX*
Boulevard des Aiguillettes
Vandoeuvre
France

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Book Received

The following book has been received by the Editor. Brief and generally uncritical notices are given of works of marginal crystallographic interest; occasionally a book of fundamental interest is included under this heading because of difficulty in finding a suitable reviewer without great delay.

Crystallography: an introduction for earth science (and other solid state) students. By E. J. W. WHITTAKER. Pp. xii + 254. Oxford: Pergamon Press, 1981. Price £8·35, US $19·95 (softback); £13·50, US $32·50 (hardback). A review of this book, by M. J. Buerger, has been published in the July 1982 issue of *Acta Crystallographica*, Section A, p. 560.