

Methods in X-ray crystallography. By J. W. JEFFERY. Pp.xxix + 571. London: Academic Press, 1971. Price £11.50, \$35.00.

Automatic single-crystal diffractometers are now generally available, making X-ray data collection largely a matter of routine. The appearance of a new book dealing primarily with photographic methods of recording diffraction patterns is unexpected, but there is little that is usual about this book. Apart from the introduction of the reciprocal lattice and a few essential formulae, theoretical aspects of the subject are relegated to a set of Appendices. The text proper contains a description of all the phenomena arising from Bragg diffraction which appear in X-ray photographs. None is too small to escape attention, and minor features in the Laue streaking are explained with admirable clarity. There is a detailed discussion of the information which may be obtained from the size of the blank area in a Laue photograph. If a phenomenon is not fully understood, this is clearly stated. A typical example is the description of the reflexion conics in divergent beam photographs.

The highlight of the book is the collection of diffraction photographs used as illustrations. Some of the finer detail has been lost in the reproduction, but these still convey the author's skill and experience in this field. As an aid to the

student there are 36 pages of examples. The answers are given in a later section with detail which will warm the hearts of those who find diffraction hard to understand. Sections on instrument safety and equipment are well done, and the book is useful as a users' manual as well as a text. One minor blemish is the reference to a computer as if it were a magic box, instead of a device for carrying out arithmetic operations at high speed, but on the whole the work is free from inaccurate statements and typographical errors.

Fundamental problems are not explored in any depth, and there is no speculation on the design of equipment in the future. The book deals only with established techniques, and its preparation was obviously a labour of love. Students will enjoy it, and the least talented will follow without difficulty. It is not for those whose sole interest in crystallography is in the approximate determination of structures, but for those who are keen to extract the best from their equipment and to obtain the last bit of information from their photographs it will be very helpful indeed.

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