

collimation and monochromatization. The geometry of the recorded diffraction pattern and a description of three programming systems for evaluating the data films are subsequently presented. The book concludes with a comparison of films and electronic area detectors as diffraction recording media.

Although so many authors have contributed to this book, and naturally some redundancies are unavoidable, it seems to me well edited and rather well illustrated. It contains much useful information for protein crystallographers.

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Molecular structure by diffraction methods. Vol. 4. By G. A. SIM and L. E. SUTTON (Senior Reporters). Pp xiv + 439. London: The Chemical Society, 1976. Price: £28.50 (US \$57.00).

This is the fourth volume of an annual series of comprehensive reports on the elucidation of molecular structures by diffraction. Structure determinations by electron diffraction published during the period September 1974 to August 1975 are reviewed in the first section. In a neutron diffraction section papers appearing up to September 1975 are included, while in an X-ray diffraction section papers published from April 1974 to March 1975 are treated.

The electron diffraction section comprises three chapters devoted to electron diffraction studies of molecular structures. The first is a survey of about 85 papers reporting the results of electron diffraction determinations of gas-phase molecular structures, often combined with spectroscopic data providing additional information, resulting in solutions with high accuracy. The review of the development of apparatus used for studies of electron diffraction is restricted to the advances made in Europe, including the USSR. This

scope complements that of the previous volume which reviewed developments of gas-phase electron diffraction instrumentation in the United States, Canada and Japan. The article presents a general review of diffraction apparatus and microdensitometers, including details of a commercially available piece of equipment, the Eldigraph KDG 2. In the third chapter, which deals with large-amplitude vibrations in molecules studied by spectroscopic and diffraction methods, a survey of some of the special problems within this field is given, together with recent developments.

Just as in Vol. 3, the X-ray and neutron diffraction sections are restricted to structural results for molecules and finite ions. The treatment is very systematic and illustrative. The reports span the field from small and in some cases simple inorganic and organic molecules to proteins. The survey shows the impressive progress in both theoretical and experimental crystal structure analysis.

The contributions to this book survey structure determination by diffraction methods and give the most recent results in a very systematic and often well illustrated way. Relevant papers can easily be located from the references (more than 2400 are provided). The book may be highly recommended; it will be of interest to all structural chemists and to other scientists working in related fields.

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Crystal form and structure. Edited by C. J. SCHNEER (Benchmark Papers in Geology, No. 34). Pp. xiii + 369. Chichester: John Wiley, 1977 (for Dowden, Hutchinson & Ross, Inc., Stroudsburg, Pennsylvania), Price £24.00, \$38.00.

A review of this book by C. W. Bunn has been published in the March issue of *Acta Crystallographica*, Section A, p. 349.