

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (R. F. Bryan, Department of Chemistry, University of Virginia, McCormick Road, Charlottesville, Virginia 22901, USA). As far as practicable, books will be reviewed in a country different from that of publication.

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Crystallography made crystal clear. A guide for users of macromolecular models. By GALE RHODES. Pp. xiv + 202. San Diego: Academic Press, 1993. Price \$34.95 (paperback). ISBN 0-12-587075-2.

The rapid development of modern techniques of protein crystallography has recently been aided by a number of highly specialized textbooks and monographs. This short book presents yet another attempt to facilitate our basic understanding of macromolecular structure analysis and the results that it produces. According to the author the text 'lies in the vast area and heretofore empty region between brief textbook sections and complete treatments of the method aimed at the professional crystallographer'. Indeed, the book seems to be well suited for students in undergraduate courses in biochemistry and related fields. Chapters 1 and 2 provide the reader with an explanation of the concept of a structural model and a very general introduction to diffraction by crystals. They are followed by a short chapter on crystallization of proteins. The details of data-collection methods are then explained in a concise but quite informative manner. The leitmotif of the book is the derivation of molecular models from X-ray diffraction data. Thus, the remaining chapters deal with the phase problem and its solutions, obtaining and fitting electron-density maps as well as improvement and refinement of the models. Finally, Chapter 8 brings a very useful discussion of strengths and limitations of crystallographic models. The section of this chapter devoted to an analysis of typical crystallographic publication may be particularly attractive to a novice in the complex field. The author has been quite successful in keeping the language simple but clear and the book is relatively free of conceptual and typographical errors. However, given the book's emphasis on pictorial illustration as a pedagogical tool, two exceptions should be pointed out. The student may wish to examine the images and diffraction patterns in Fig. 2.10

with a critical eye, and would be well advised to obtain the recommended viewer to deal with the various stereo plates, rather than try to follow the quite ineffectual directions given for viewerless perception on page 3. Despite these minor flaws, and a few other misplaced emphases that may jar the professional, I consider this book a quite successful introduction for those who try to understand and explore biological macromolecular structures. Since the text is loaded with many excellent didactic concepts and approaches, it could also benefit those professionals who struggle with the often seemingly impossible translation of the highly complex ideas of macromolecular crystallography into language and images comprehensible to students and other beginners.

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Books Received

The following books have 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.

Crystal structure analysis for chemists and biologists. By JENNY P. GLUSKER, MITCHELL LEWIS and MIRIAM ROSSI. Pp. xviii + 854. New York: VCH Publishers, Inc., 1994. Price \$69.95. ISBN 0-89573-273-4. A review of this book, by Joel Bernstein, has been published in the June 1995 issue of *Acta Crystallographica Section B*, pages 382–384.