few references as late as 1982, but the effective cut-off date in some chapters appears to be about 1980.

The book is authoritatively written; it fills an obvious gap in the literature and is to be welcomed. It has been printed from camera-ready copy, and thus is less pleasant to read than a conventionally typeset volume. It is exceptionally expensive for a book produced in this way, but it must find a place in many chemical libraries.

School of Chemistry and Molecular Sciences,
University of Sussex, Brighton BN1 9QJ (Great Britain)

COLIN EABORN

Structure Determination by X-ray Crystallography; by M.F.C. Ladd and R.A. Palmer, 2nd edit., Plenum Press, New York and London; xviii + 502 pages, US$39.50, ISBN 0-306-41878-9.

This is a second edition of a textbook first published in 1977. Much of the original remains unchanged, but an extra 109 pages have been added dealing particularly with direct methods in non-centrosymmetric space groups, the MULTAN program, Patterson search techniques, torsion angles and conformational analysis, and further treatment of least squares refinement. As in the first edition, the book is aimed at the undergraduate or post-graduate who is seriously studying single crystal X-ray crystallography, rather than the chemist who needs a guide book for a one-off structure determination. At the end of each chapter there are questions, with the solutions included at the end of the book. The first six chapters deal with crystal geometry; preliminary examination of crystals; intensity of scattering of X-rays by crystals; and methods in X-ray structure analysis. There is then the much extended chapter on direct methods and refinement, and finally two examples of real crystal structure determinations. There is throughout the book an emphasis on understanding the detailed workings of techniques which are in practice often carried out by using default options in standard computer programs.

Its relatively low cost makes this book a worthwhile purchase for the individual seeking a thorough treatment of the subject.

School of Chemistry and Molecular Sciences
University of Sussex, Brighton BN1 9QJ (Great Britain)

PETER B. HITCHCOCK