in a crystallography book from a positive standpoint, and I heartily applaud Professor Vainshtein for doing this. However, I think that a realistic perspective of the difficulties could also have been presented. The Russian school of electron diffraction has often relied on the use of texture diffraction patterns for data collection from a large specimen area, sampling a relatively wide distribution of crystal orientations. Cowley has pointed out that this approach minimizes nonsystematic dynamical interactions, so that the two-beam dynamical theory is often adequate for such data sets. This is not necessarily the case for selected-area electron diffraction, where the sampled crystal area is generally much smaller and corrections must account for multiple-beam interactions. It is even less true for convergent-beam methods where a virtually flat specimen area is being used for the electron-diffraction experiment. More than a cursory mention of zone-axis convergent-beam diffraction patterns could have been made, particularly since they are quite useful for the determination of crystal point-group symmetries. While examples depicting a near correspondence to the weak phase object approximation in high-resolution electron micrographs of inorganics is valuable, this is a topic of considerable controversy nowadays. More than a passing mention of multislice calculations might have been given, with a frank discussion of where experimental images will cease to be useful for direct structure interpretation. At a different level of criticism, better copyediting would have corrected some minor deviations from standard spelling. In the newer sections, some references are out of sequence and some of the index citations are unreliable.

In general, I find this book to be a refreshing and comprehensive approach to crystallography in a style that could be imitated more often by other authors. While it will not, by itself, replace all other crystallography books on the shelf, each having its own strengths, it well deserves to be placed among them, especially in its newer version.

DOUGLAS L. DORSET

Electron Diffraction Department
Hauptmann-Woodward Medical Research Institute
73 High Street
Buffalo
NY 14203
USA

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Crystallographic computing 6. A window on modern crystallography. (IUCr Crystallographic Symposia No. 6.) Edited by H. D. FLACK, L. PÁRKÁNYI and K. SIMON. Pp. x + 310. Oxford: IUCr/Oxford University Press, 1994. Price £40.00. ISBN 0-19-855788-4.

This volume is the proceedings of an International School of Crystallographic Computing held at Balatonfüred, Hungary, in June 1992. It contains 19 chapters by 19 authors (two chapters have two authors, and two authors contributed two chapters each) and extended abstracts of nine submitted contributions. The topics of these chapters cover a wide range, from practical nuts-and-bolts details, such as a description of the crystallographic information file (CIF) by B. McMahon and descriptions of particular programs (*SHELXL*-92, by G. M. Sheldrick, and *CRYSTALS*, by D. J. Watkin) to advanced concepts, including a discussion of likelihood as a phasing tool, by C. Gilmore, and of the particular problems posed by incommensurate structures and quasicrystals, by W. A. Paciorek. In between, there are discussions of various topics of interest to working crystallographers, including direct methods, restrained refinement, powder diffraction, order–disorder, isomorphous replacement, charge-density determination, program structure and databases. With such a broad range of material, it is unlikely that any one reader will find every chapter useful, but there is something for almost everyone, and the book has the advantage over a collection of journal articles that it is not a mixture of articles on completely different subjects; it is also less restricted by space constraints than a journal.

With all of the contributors to this volume being innovative users of computers, it is somewhat surprising that the authors submitted their copy in camera-ready rather than machine-readable form. Before the computerization of the publishing industry, manuscripts were traditionally double-spaced to allow insertion of instructions to the typesetters by copyeditors. Most of these chapters appear to have been produced by similar wordprocessing systems and similar printers, and they have generally similar styles. The fact that this style contains extra space between the lines may improve readability slightly, and does not detract from the value of the volume, but it surely increases the cost. The most unfortunate effect of camera-ready copy, however, is that it reduces the role of the editors to putting the pages in order and writing a preface. The authors of several of the chapters are not native speakers of English, and in some of these chapters there are errors of punctuation and grammar that could have been removed by editing. This would presumably have delayed publication had it been necessary to return manuscripts to their authors for correction.

In spite of these reservations, this book contains useful information, and it is a worthy addition to the library of any group that is actively involved in crystallographic computing.

EDWARD PRINCE

Reactor Radiation Division
National Institute of Standards and Technology
Gaithersburg
MD 20899
USA

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Point group theory tables. By S. L. ALTMANN and P. HERTZIG. Pp. xii + 704. Oxford: Oxford University Press, 1994. Price £90.00. ISBN 0-19-855226-2.

This is, as the title states, a book consisting primarily of tables; not only for the crystallographic point groups, but also for the icosahedral group, the infinite dihedral and cyclic groups, and the finite dihedral and cyclic groups for axes up to order 10. For these groups, the authors give diagrams, character tables, representation matrices, product and branching rules

and Clebsh–Gordan coefficients. The coverage is thorough and well organized. I particularly appreciated the mini-table of contents that appears at the foot of each page of tables.

A useful and comprehensive introduction to the tables is given. This provides key references but, conversely, assumes some familiarity with the literature. One would not expect to learn group theory from this book, and clearly that is not the intention.

As I am somewhat biased towards the alternative tables of Butler [P. H. Butler (1981). *Point Group Symmetry Applications: Methods and Tables*. New York: Plenum], my first impulse was to compare the listings. Such a comparison brings one immediately face to face with the issue of basis and phase choices, and emphasizes that it is essential to stick to one consistent set of tables. It also reveals a difference in philosophy. Altmann & Hertzig are careful to define the basis functions before generating Clebsh–Gordan coefficients. I prefer Butler's approach of first defining phase choices, then deducing basis functions, and working with the more symmetrical 3*jm* factors rather than Clebsh–Gordan coefficients. Nevertheless, I suspect that many users will find this book much more comfortable to work with than Butler's.

The serious shortcoming that both books share is that to do a real calculation the user really does not need several hundred pages of tables, but access to appropriate computer programs. In neither case are such programs forthcoming.

The book is remarkably free from errors. Given the obvious care that has gone into making it so, I was surprised to find that the crystal-field potential given for *f* electrons in the problems section omits the $l = 6$ operators. However, this is a relatively minor blemish in a work of this complexity.

As a self-consistent set of tables, this book is currently unrivalled. It will be an essential reference for anyone interested in point-group calculations. However, the main audience will most likely be spectroscopists – there is little in this book for the pure crystallographer. The Hermann–Mauguin notation is downplayed and, of course, this is a book of *point-group* tables.

MICHAEL F. REID

Department of Physics and Astronomy
University of Canterbury
Christchurch
New Zealand