techniques. It thus concerns itself with the directly observable mineralogy and texture of metamorphic rocks without recourse to paragenesis, metamorphic facies or the complex terminology associated with these subjects, and is blessed by a complete absence of triangular (or other) phase diagrams. The book does use the concept of metamorphic grade and loosely defines various grades in terms of P–T conditions, an approach which may find disfavour with some protagonists of metamorphic facies description.

The text is published as a robust pocket sized ($17.9 \times 11.5 \times 0.8$ cm) edition which is intended for use in the field. It is written in a clear concise style with a commendable use of clearly defined terminology. The numerous well-prepared diagrams, field sketches, and photographs of the various textures and features described, together with a final chapter of reference tables and checklists, which is cross referenced with the main body of the text (and additional blank pages for the readers own notes, diagrams, etc.) make this a very valuable field tool for geologists inexperienced in working in metamorphic terrains. This book will also serve another important role because it provides a very simple introduction to metamorphic rocks, as they are encountered in the field, something lacking in many standard texts on metamorphic petrology.

This well-written and well-produced little text will, I am certain, become standard reading for most geology undergraduates, it will also interest many geologists who do not regularly work in metamorphic terrains and will be particularly useful to engineering geologists and civil engineers who are often concerned with describing the fabrics of metamorphic rocks without being concerned about their origins.

M. E. JONES

Hahn, T., ed. *International Tables for Crystallography, Vol. A: Space-group Symmetry*. Dordrecht, Holland and Boston, USA (D. Reidel Publishing Company for The International Union of Crystallography), 1983. xvi + 854 pp. Price Dfl. 385 (US $165, £80).

This is the first volume of a third series of *International Tables* and deals with crystallographic symmetry in direct space. Comparison with the corresponding volume 1 of the 1952 edition of *International Tables for X-ray Crystallography* (IT1952) is inevitable, though the present volume is not a revision but a completely new compilation. It is just over fifteen times the price of IT1952 and has roughly half as many pages again. As a book, the new volume is above average in quality with first rate printing but it doesn't quite match the high standard of its predecessor: the paper is not so heavy nor the binding quite so strong. A significant advance is the use of computer production to typeset the main space-group tables starting from the generating symmetry operators.

Some of the changes in the new volume result from the experience gained in using the old. The symmetry elements and equivalent positions of the cubic space groups, which were always difficult to visualize, are now illustrated in admirably clear diagrams. The confusion arising from alternative choices of origin or unit cell is also relieved by including additional entries where such alternatives exist.

But there have also been changes in overall content to match developments in crystallography. For the first time sub- and super-group information is included in each space group entry to facilitate comparison of crystal structures, e.g. in structural transformations or order–disorder transitions. The major omissions from the new 'Int. Tab.' are the tables of geometrical structure factors and electron density formulae, the need for which the computer has largely eliminated.

Part II, *Symmetry in Crystallography*, is new. It deals with the mathematical theory behind the use of the space-group tables. Symmetry is endlessly fascinating and there is something here to appeal to every crystallographer, whether it is the elegance and rigour of the mathematics, a different view of an old concept or some new use of established principles. Much attention is paid to matrix notation, recognizing both its usefulness and its increased use in crystallographic computing.

The explanatory chapters are models of scientific exposition, especially those in Part II, where the authors have wisely used examples to ensure that the meaning is clear however complicated the mathematical notation. But in Part I, *Tables for Plane Groups and Space Groups*, some chapters concentrate too much on explaining and justifying the notation and the content of the tables, and do not altogether succeed in passing on an understanding of symmetry itself, which is what the beginner needs most.

Like its predecessor, the new 'Int. Tab.' will imperceptibly influence our thinking as we use the extra information and new ideas it places at our disposal. Every mineralogical institution which takes crystallography and crystal structures seriously will require a copy. For the specialist crystallographer who wants his personal copy, there is a reduced price for prepaid orders of Dfl. 215 (US $90, £45) advertised in *Acta Crystallographica*.

J. E. CHISHOLM