are advised to consult the first edition for earlier information of zoning, crystal morphology and habit. The main reason for the large amount of new data in this sphere is due in large measure to the impetus of the Apollo project. There is no doubt but that the experimental study of growth of feldspars and rock-forming minerals in general received a great stimulus because of the textures found in the lunar rocks, and experiments designed to try to explain the significance of these textures have been rewarding. The finding of lamellar intergrowth of two feldspars in laboratory experiments was perhaps necessary before some petrographers could believe that this texture could be produced by some process other than exsolution.

The penultimate chapter on 'Intimate feldspar intergrowths' has been updated considerably because of the increasing use of electron microscopy in studying perthites. It is surprising that there is not much new data on antiperthites available yet.

I was asked recently to name a few text books which could be used as models of the English language in its written form in my special subject. The criteria for inclusion in this list of books were:

(1) the text should be influential
(2) the text should be frequently used as a prescribed text in educational establishment
(3) the text should be fairly typical of the kind of language used in the particular field of study—in this case mineralogy.

I had no hesitation whatever in recommending that this book should be included in the list.

J. V. Smith has a fairly distinctive style of writing and he has never been afraid of expressing his opinions on the basis of the information available to him. W. L. Brown has been closely involved with J. V. Smith for many years and he has adopted a not dissimilar style of writing, so that it would be difficult to detect which author had written each chapter if we had not been told. This results in a book which is of a very high standard throughout and the authors are to be congratulated on the final result.

It is not the fault of the authors that the cost of the book is going to put it out of the reach of many individual research workers and he or she must hope that the library copy will not be missing from the shelf because everybody interested in feldspars will have to consult this work from time to time. As this review is in press the number of cards in J. V. Smith's filing system must be increasing steadily. From references in chapter 19 to chapters 23–25 we have some inkling of what is in store in volume 2 which is currently being written by J. V. Smith, W. L. Brown and I. Parsons. We look forward to this next volume and have no doubt that it will maintain the high standards set by volume 1: in addition to being completely authoritative, it is a very readable monograph.

W. S. MacKenzie

Hyde, B. G. and Andersson, S. *Inorganic Crystal Structures*. Chichester, New York and Toronto (John Wiley and Sons), 1989. xviii + 430 pp. Price £41.55.

This is a very valuable monograph that covers many members of that subgroup of inorganic crystal structures that can be related to simple polyhedra, especially tetrahedra and octahedra. Approximately 1000 chemical compositions are listed in the formula index, and just under 200 minerals in the subject index. The monograph is very comprehensive in the types of condensed materials in which A. D. Wadsley and his associates rightly made their reputations. The authors have fitted together a wide range of metals, insulators and semiconductors into their comprehensive theoretical schemes. Indeed there are approximately 420 figures (most of which are schematic projections), about 190 tables (most of which record crystallographic data), and about 530 references (mostly to the primary crystal-structure papers). Of course, the old chestnuts are present, but many new structural relationships are presented, including ones involving complex structures. The monograph is a mine of information that one can plumb for many happy days. Some readers may need a magnifying glass to read information that goes below the desirable limit of 1 mm: indeed, most of the figures would benefit from a larger scale and a more generous size of page. I shall be indebted to Drs Hyde and Andersson for being able to spot new structures that will provide suitable questions for the final examination in a course in crystallography. The proofreading is excellent, and only a few errors were spotted: e.g. three not four systems in Figure 3, dachiardite not dachiderite in the Subject Index and on p. 408.

Having admired so much in this monograph, it seems churlish to carp. First, coordination polyhedra are very useful for the description of many structures, but other representations (sphere packings, bond linkages, nets) are better in my opinion for many inorganic structures. The present monograph is a bit claustrophobic. Second, not all the classic literature is listed; e.g. Pearson's magnificent handbook on metals and alloys is not listed except for the trivial mention on p. 215.

Third, the usefulness of the monograph to mineralogists is diminished for several reasons. The chemical fomulae of several minerals are present in the Formula Index, but the mineral names are not listed in the Subject Index (e.g. cuprite, niccolite, osbornite); furthermore, obvious analogues like ringwoodite, majorite and wadsleyite are not listed, even though the type scientists come from Australian National University! Many important minerals, including apatite, sillimanite, and kyanite, are not listed, as well as a host of hydrates that are not amenable to ready description by the Hyde–Andersson procedures. Geophysicists may be amused by the description of continental drift on p. 65, and by the statement that spinel is believed to be the main constituent of the lower mantle. The monograph by Liu and Bassett should be consulted for high-pressure structures. It would have been so easy to fit perovskite $(Mg,Fe)SiO_3$ and ferropericlase/magnesiowüstite $(Mg,Fe)_{1-x}O$ into this monograph. The section on silicates is thin, and ignores most of the major research discoveries of the past twenty years—only a few structures of particular interest to the authors are listed. To summarize, this is an excellent monograph for many materials scientists, especially those involved in compact materials with interesting physical properties. However, mineralogists should cherish the old reliable (Bragg and Claringbull; Wells) and the host of new specialized monographs on the crystal structures of minerals, while taking as much benefit as possible from this gallant production by Bruce Hyde and Sten Andersson. It is an excellent memorial to David Wadsley.

J. V. SMITH

Butler, B. C. M. and Bell, J. D. *Interpretation of Geological Maps*. London (Longman) and New York (John Wiley), 1988. xii + 236 pp. Price £12.95.

This 236 page soft cover book is designed to explain the methods of map interpretation to those beginning to study geology for the first time, whether at school or university. It consists of ten chapters, together with 6 appendices, a list of symbols used on maps, references and an index. Chapters one to seven involve the step-by-step techniques used in map interpretation, from parallel-sided units to lithological units with less regular shapes, faults, folds, unconformities and landforms and superficial deposits. Chapter eight deals with ocean-floor geology, whereas chapters nine and ten describe the synthesis of the geology of an area from geometrical and geological standpoints. The appendices include a summary of radiometric dating techniques and the geological time scale. The book is illustrated with 4 full-colour plates of selected geological maps, together with abundant two-colour (red and black) line tracings of geological maps and illustrative line diagrams. Limited and rather poorly reproduced half-tone photographs are used to illustrate various features. The maps used in this book are drawn from a wide range of sources including the Geological Surveys of Great Britain, the United States, South Australia, Canada, Japan, West Germany, Switzerland, and Italy.

The authors state that the aim of this book is to explain both the geometric and geologic interpretation of geological maps as the products of geological processes operating through geological time. They attempt to make use of modern geological concepts relating to environments of formation of structures and lithologies, and to illustrate the determination of rates of processes from the map interpretation. Chapter 1 is an introduction to the aims of actualistic map interpretation in terms of modern concepts and environments, processes, and rates. Tables 1.1 and 1.2 are useful summaries of Major Earth Environments and Rates of Present Day and Recent Earth Movements. Chapter 2 focuses upon the interpretation of parallel-sided lithological units and the analysis of dips in various topographic terrains. The construction of stratigraphic columns, thickness contours, and structure contours are briefly dealt with. Chapter 3 deals with lithological units with less regular shapes and principally covers igneous and metamorphic relationships. Discontinuous stratigraphic units are briefly dealt with and there appears to be little consideration of, or examples of fault controlled sedimentary units, e.g. wedges formed in half-graben environments. Chapter 4 deals with fault structures and how to recognize and analyse them. Unfortunately insufficient emphasis has been placed upon modern concepts of linked fault systems and families of faults—for example the interpretation and analysis of map patterns of linked thrust systems is somewhat limited. The analysis of fault displacement using piercing points is not mentioned and the classification of faults is somewhat limited. There appears to be no mention or analysis of either fault separation analysis, section balancing in faulted terrain or of fault-related folding, cf. roll-over anticlines in extensional fault systems or 'snakes head structures' in thrust terrains. Chapter 5 deals with fold structures in a fairly fundamental way. This section is limited in that it does not consider isogon analysis and classification of folds according to