such transpositions in a formal book which is at once a source of data and a seat of opinion and omission. The volume has many useful and verifiable passages. The tabulated mineralogical variations and substitutions are helpful in establishing the geology of the species and there are reasonable arguments about the carbonate apatites. The excursion into teeth and bones, however, is less instructive. While the sub-title invokes *Biological Occurrences* and the preface proffers a 'formal education in the biological sciences' there are only thirteen unhappy pages on this substantial subject, no references of recent date [Fleisch & Neuman (1963) is but a historic echo of Wuthier, Bisaz, Russell & Fleisch (1972) and Neuman & Mulryan (1971)], and no mention of many major contributors to our knowledge of the inorganic phase of bone, dentine and enamel (Bachra, Bonar, Dallemagne, Eanes, Glimcher, Leach, Montel, Posner, Richelle, Rowles, Termine, Scott, to name but twelve). A casual reader of the book would suppose that biological apatites were studied by few and abandoned by most ten years ago. Except that to the astute, the coloured excitements of 'self-mesmerism of vibrational spectra' in the preface and the exclamatory (but unreferenced) denunciation of amorphous fallacies on p. 72 might just conceal a large and well documented canvas painted in many formal shades of grey by those who do not omit to quote McConnell in a dispassionate search for the truth about apatite.

F. G. E. PAUTARD

*MRC Mineral Metabolism Unit*
*The General Infirmary*
*Great George Street*
*Leeds 1*
*England*

## Dislocations and plastic deformation. By I. KOVÁCS and L. ZSOLDOS. Pp.xii+343, Figs. 158, Tables 9. Oxford: Pergamon Press, 1974. Price £3·50.

Since many first-class texts devoted to the topic of dislocations are already currently available to the English-speaking public, it is almost inevitable that any new monographs in this general area will be measured against the yardstick of attainment and presentational felicity of the definitive monographs associated with the names of Nabarro, Friedel, Amelinckx, Cottrell and Read (for the expert) or with Hull and Weertman and Weertman (for the novitiate). This extended translation from the original Hungarian published in 1965 sets out, in the first six chapters, to provide a concise account of the nature – geometry, topology, energetics and movement – of dislocations both in crystalline solids and in an elastic continuum. It then proceeds, in the remaining three chapters, first to deal with the influence of defects (both of point and line character) on the physical properties of metals, second with the hardening of alloys and the work-hardening of metals, and third with the influence of heat treatment on the structural-defective character of metals.

There can be little doubt in view of its overall lucidity and fluency, and not least because of the numerous excellent diagrams and the several elegant high-resolution micrographs, that this book has much merit. Admittedly it does not chart new territory and much of the ground that is described in detail is familiar to readers of earlier texts: there are also a few minor omissions – no reference is made to deformation studies or dislocation behaviour of molecular crystals or minerals, for example – but even for readers not primarily interested in plastic deformation this book will serve as a quarry for much useful and readily retrievable basic information of general interest to the physical scientist. It is culturally satisfying to commend a book written by two authors from the stirring city of Budapest, the cradle from which emerged two of the trio of individuals who first conceived dislocations.

J. M. THOMAS

*Edward Davies Chemical Laboratories*
*The University College of Wales*
*Aberystwyth SY23 1NE*
*Wales*

## Book Received

*The following book has 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.*

**Mechanische anisotropie.** Edited by H. P. STÜWE. Pp.vi+314, Figs. 92, Tables 18. Vienna. Berlin, New York: Springer-Verlag, 1974. Price S 486, DM 68, U.S. $ 27.80.

The problem of the mechanical strain of bulk materials has been studied for a long time. Early theoretical studies were based on ideally isotropic behaviour of workpieces but subsequently anisotropic media were also considered. In the twenties of this century a second field of investigation, concentrating on the anisotropy of elastic and plastic behaviour, has become accessible through the growth of large crystals and by structure and texture research employing X-ray diffraction. Today these investigations are performed with great frequency with special consideration given to the importance of lattice defects.

Representatives of both these areas of research used to report their results at conferences of the 'Society of Applied Mathematics and Mechanics' but unfortunately this cooperation ceased, leaving both groups quite isolated. Because of this regrettable situation an attempt to reinitiate cooperation has been made by the 'Erich-Schmid-Institute für Festkörperphysik' of the Austrian 'Akademie der Wissenschaften'. On the 17–18 May 1973 a colloquium on elastic and plastic anisotropy was held in Vienna and was attended by scientists of both groups.

The present volume is based essentially on the lectures and discussion at this conference, covering experimental as well as theoretical results. By presenting this compilation the author hopes to extend the common knowledge of the two groups and to assist the collaboration of scientists studying the anisotropic behaviour of bulk materials.