

Part I (189 pp.) deals with all aspects of the new classification. Most of these chapters have a good historical introduction. The systematic Part II (481 pp.) gives for each species: name, chemical composition, space group, unit-cell dimensions, main interatomic distances, density and hardness. Then follows a description of the structure, of chemical variations, of morphology in qualitative terms and of cleavages. Optical, electric or magnetic properties are not given. For the hardness a new scale is introduced by Povarennykh, ranging from 1 to 10 as does Mohs's scale, but not directly comparable with this.

Minerals with unknown crystal structure are classified on the basis of chemical composition and properties as morphology, hardness and density.

It is hard to expect that this work will satisfy everybody, however rational and straightforward the classification is. Several objections to the presentation can be made: insufficient information about the quantities used as criteria in the classification; formulae are not derived; a subject index is lacking; sometimes different crystallographic settings are used in the description of the structure, the accompanying illustration and the morphology, as on p. 256 (chalcostibite) and on p. 257 (lorandite). Besides there are many small errors. On p. 67 the structural changes 4) and 5) are incorrect and should be replaced by the corresponding entries of Table 15. On p. 190 an Å is seemingly defined as a nm. The illustrations have been taken from many sources, some are original, so their quality varies, but nevertheless Figs. 23, 25 and 26 should not be upside down. On p. 223 the cleavage of sphalerite should read (110), not (111). The translation is well done, but there are very awkward mis-spellings.

Povarennykh's book can be considered as a major contribution to mineralogy. It marks a stage in the development of the mineral classification, clearly based on Dana's *System of Mineralogy* and on Strunz's *Mineralogische Tabellen*. The silicate classification occurring in the latter work evidently served as a model for Povarennykh's classification. Notwithstanding the objections, the book should form part of any mineralogical library.

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Grain boundaries and interfaces. By P. CHAUDHARI and J. W. MATTHEWS. Pp. ix + 622, Figs. 365, 33 Tables. Amsterdam: North Holland, 1972. Price £140.00 (ca. US \$43.75).

This volume reports the proceedings of a Conference held in New York in August 1971; it has already appeared as volume 31 of *Surface Science* in 1972 and is now issued by North Holland as a separate book. The 27 papers (plus discussion) contained in it have a strong 'metals' bias and include several substantial review papers on recent developments in the field. One third of the papers deal with theoretical aspects of boundary structure and energetics, another third with dislocation structures at boundaries as observed by transmission electron microscopy. The last five papers are concerned with grain-boundary sliding and migration, and diffusion effects.

Many libraries will already possess this volume as a result of their subscription to *Surface Science*. Research groups in physical metallurgy and materials science which do not have access to *Surface Science* would be well advised to obtain a copy.

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Les textures dans les métaux de réseau cubique. By PIERRE COULOMB. Pp. vii + 217, 81 Figs., 8 Tables. Paris: Dunod, 1972. Price 78 F.

It has been some years since the subject of preferred orientation in metals was first put into text-book form. The present volume represents a bold step on the part of the author in view of the ever increasing amount of research and application in this field. The standard of the book is essentially post-graduate but the presentation includes a large amount of fundamental work which should be of interest to final year students.

The foreword places the subject in perspective, differentiating between crystallographic anisotropy and mechanical fibering and attempts to justify the

almost complete exclusion of non-cubic metals by quoting world usage.

The commencing chapters on texture and symmetry, representation and determination of textures give adequate coverage of principles and methods available to date. Pole figures are introduced in a way which aids basic understanding. Techniques are discussed in brief rather than in working detail. Further chapters cover adequately the role of defects, quantitative relation of single and polycrystalline properties, deformation of single crystals and formation of textures in polycrystals.

As with experimental methods the author has chosen to review theories in brief but the trend of the book changes slightly as recrystallization textures are presented in review form rather than as a generalization of results. The section on phase transformations might have been more adventurous, especially from a crystallographic approach, in view of increased interest in this variable over the last few years.

The chapters on laboratory and industrial applications will be extremely useful to readers, and the final chapter considers problems encountered in non-cubic metals, single crystals of non-metals, eutectics and composites. A concluding paragraph justifies the merit of the book by quoting specific examples of texture control which have resulted in considerable cost savings over the years.

One major criticism is that the language of publication may restrict interest in the book. For a subject such as this, of world-wide appeal, it should be worthwhile to the publisher to consider an edited version in English.

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Books Received

The following books have 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.

**Advances in X-ray analysis,
Vol. 16. Proceedings of 21st
Annual Conference on Ap-
plication of X-ray Analysis,**