Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. The notes (in duplicate) should be sent to the General Secretary of the International Union of Crystallography (D. W. Smits, Rekencentrum der Rijksuniversiteit, Grote Appelstraat 11, Groningen, The Netherlands). Publication of an item in a particular issue cannot be guaranteed unless the draft is received 8 weeks before the date of publication.

International Union of Crystallography

Grants to support the production of motion picture films

UNESCO has made available some funds to support the production of short motion picture films on crystallographic topics. These films, of 3 to 4 minutes duration, silent, on either black-and-white or colour film, should be primarily designed for instructional purposes. The funds will be administered by the Commission on Crystallographic Teaching of the International Union of Crystallography. Individual scientists who have suitable filming facilities and wish to apply for grants to support the production of such films should address their applications to the Secretary of the Commission, Professor H. Curien, Laboratoire de Minéralogie et Cristallographie, 1 rue Victor Cousin, Paris 5e, France. A tentative script, or at least an outline, of the proposed film, and a financial budget should accompany the application.

Book Reviews

Works intended for notice in this column should be sent direct to the Editor (A. J. C. Wilson, Department of Physics, The University, Birmingham 15, England). As far as practicable books will be reviewed in a country different from that of publication.

Physical properties of diamond. Edited by R. BERMAN. Pp. xii+443 with 286 figs and 40 tables. Oxford: Clarendon Press, 1965. Price (U.K. only) £3.15s.

The preface to this book explains its unusual origin. For a number of years an annual conference on diamond research has been held and a group of people have met and described their work. Until now nothing has been published arising from these conferences, but this book is a survey of the various fields covered in these conferences. It is therefore a survey of much unpublished as well as published material written by those most qualified to do so. The subjects and authors of the fifteen chapters are as follow: Introduction, R. W. Ditchburn and J. F. H. Custers; X-ray diffraction studies on diamond and some related materials, K. Lonsdale and H. J. Milledge; X-ray topography of diamond, F. C. Frank and A. R. Lang; Transmission electron microscopy of diamond, T. Evans; Optical studies on diamond, S. Tolansky; Ring cracks on diamond surfaces, V. R. Howes; Deformation, friction and wear of diamond, F. P. Bowden and D. Tabor; The hardness and wear of diamond during grinding and polishing, E. M. Wilks and J. Wilks; Electronic structure of diamond, M. H. L. Pryce; Paramagnetic resonance in diamond, J. Owen; Optical properties of natural diamonds, C. D. Clark; Semiconducting diamond, P. J. Kennedy and P. T. Wedepohl; The counting properties of diamonds under ionizing radiations, F. C. Champion and P. J. Kennedy; Thermal properties, R. Berman; Radiation damage in diamond, E. W. J. Mitchell.

The book is invaluable for those who are in any way concerned with the properties of diamond. The theoretical problems presented by diamond as well as the practical problems associated with its hardness, grinding, electrical and thermal conduction are excellently set out. At the present time the synthesis of diamond is of great general interest and perhaps some readers will be disappointed to find no account of this. The editor doubtless felt that it could not be included under the title of 'physical properties', but there would have been little objection if it had been included. The book is very well produced and there are many remarkable photographs contained in it. Even if the Diamond Conferences had had no other result than the production of this book they would have been justified.

W. A. WOOSTER

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Advanced methods of crystallography. Edited by G. N. RAMACHANDRAN. Pp. x+279. London, New York: Academic Press, 1964. Price £3.5s or $10.50.

Publishing a series of lectures from a conference may be of great value to those who attend the conference but, I feel, of limited value to others. This book is a collection of short courses, written as separate chapters, given at the 1963 Winter School in Madras, which I understand was held as an aid to crystallographic education in India. With this in mind it is not surprising to find no new work covered, although the title might lead one to except some. Structural crystallographers particularly will be disappointed that there is no mention of the application of computers to modern statistical and vector search methods of structure solution.

The individual chapters are well written but necessarily concise. The first chapter, *Image Methods in Crystal-structure Analysis* by M. J. Buerger is a theoretical treatment of image algebra and its application to crystal-structure solution. The next two chapters, *Fourier Syntheses for Partially*

Known Crystal Structures by G.N.Ramachandran and *The Use of Anomalous Scattering in Crystal Structure Analysis* by S.Ramaseshan are very interesting and written with exceptional clarity. In *Group Theory and Crystal Properties*, S.Bhagavantanam gives a unified approach to the general problem of symmetry and physical properties of crystals. The three chapters, *Diffuse X-ray Reflections from Crystals* by W.A.Wooster, *Diffuse Disorder Scattering by Crystals* by H.Jagodzinski and *Imperfections in Crystals and their Effect on X-ray Diffraction by Crystals* by L.V.Azaroff, deal with the many types of lattice defects and disorder and the use of these phenomena in deducing crystal properties. The chapter on *Aberrations and Line Broadening in X-ray Powder Diffractometry* by A.J.C.Wilson is an analysis of the geometrical and physical aberrations present in powder diffractometry and the attempts to deal with these aberrations in determining lattice parameters and interpreting diffraction broadening. The title of the remaining chapter *Elementary Theory of Neutron Scattering by Crystals* by I.Waller is perhaps misleading; it is inevitably extremely condensed and the nature of the subject is such that this leads to rather heavy reading. The list of references and the end of each chapter adds greatly to the overall value.

Those attending the school will derive great benefit from the book as they undoubtedly did from the courses themselves. However, I cannot help thinking that other workers who are well enough acquainted with the subject matter of this book to read it with profit would probably turn to more comprehensive works on any topic they were interested in. Another point that might affect a decision to buy the book is that several of the topics covered have been published in books based on the International Symposium on Protein Structure and Crystallography which preceded the Winter School. For these reasons I think the book is hardly worth the price asked.

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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. Mention here does not necessarily preclude a full review at a later date.

Special ceramics 1964. Edited by P.POPPER. Pp. xii +341, with many figures. London and New York: Academic Press, for the British Ceramic Research Association, 1965. Price £4.10*s*.

The corresponding 1962 volume has been noted in *Acta Cryst.*, **17**, 75 (1964). Like its predecessor, the present volume contains papers given at a symposium at Stoke-on-Trent, the main topics being Preparation of non-oxides, Pyrolytics, Inorganic polymers, Oxides, Properties, Fabrication techniques, and Applications. X-ray methods are often mentioned in connexion with identification and analysis, and there is a full determination of the structure of lithium phosphamide, $LiPN_2$. Interest in this and other materials regarded as inorganic polymers is perhaps the main development since the earlier symposium.

Physics and chemistry of the earth. Volume 6. Edited by L.H.AHRENS, FRANK PRESS, S.K.RUNCORN and H.C.UREY. Pp. vi+510. Oxford: Pergamon Press, 1965. Price £7.

This volume in the series contains seven papers: Recent Evidence Concerning the Structure and Composition of the Earth's Mantle, by D. L. Anderson; The Application of Trace Element Data to Problems in Petrology, by S. R. Taylor; Factors in the Distribution of the Trace Elements During the Crystallisation of Magmas, by L. V. Tauson; Seismic Surface Waves: Some Observations and Recent Developments, by R. L. Kovach; Sea Floor Relief and Mantle Convection, by H. W. Menard; Present Status of Oceanic Heat-Flow Measurements, by R. P. von Herzen and M. G. Langseth; and Experimental Tectonics, by V. V. Belousov and M. V. Czovskii. Most of the contributions are of geophysical rather than crystallographic interest, but those of Taylor (Australia) and Tauson (U.S.S.R.) contain a good deal of information about isostructural replacement.

The book is very well produced, with numerous figures, detailed bibliographies, author and subject indexes. It will undoubtedly be of great value to workers in the fields covered. The subject index could with advantage have been enlarged and made more systematic; for example, none of the entries under 'trace elements' relate to Taylor's article. The only misprint noted was Pauline for Pauling.

Handbook of microwave ferrite materials. Edited by W.H. VON AULOCK. Pp. xxiv+518. New York: Academic Press, 1965. Price 96*s*.

After a brief introduction (48 pages), this book contains two long sections (nearly 200 pages each) on ferrites with the garnet structure and ferrites with the spinel structure, and closes with a shorter section (about 70 pages) devoted to hexagonal ferrites. In each case the crystal structure is described in some detail, and then the physical properties (saturation magnetization, Curie temperature, lattice parameter, *g* factor, and sometimes others) are given in an arrangement based on chemical composition. Data are normally in the form of graphs, but there are also some tables. The period covered is from 1950 to 1963 inclusive.

The book, which is reproduced from unjustified typescript, is an expansion and revision of a technical report originally prepared for the United States Air Force. It is curious (and irritating) that there should be no indexes in a relatively expensive reference work.