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 Executive Secretary of the International Union of Crystallography (J. N. King, 13 White Friars, Chester CH1 1NZ, England).

International Union of Crystallography
Commission on Electron Diffraction

In accordance with a decision of the Commission on Electron Diffraction a directory of persons working in the field of low-energy electron diffraction (LEED) is to be established. Please write to: Pr. S. Goldsztaub, Laboratoire de Minéralogie, 1, rue Blessig, 67 Strasbourg, France.

International Union of Crystallography
Resignation of General Secretary

Dr G. Boom has resigned as General Secretary of the Union, his resignation taking effect from the close of the recent meeting of the Executive Committee, held in London from 31 March to 3 April. On 31 March the Executive Committee accepted his resignation with regret and, after agreeing to recombine the offices of General Secretary and Treasurer, unanimously agreed to appoint Professor D.W.J. Cruickshank (formerly Treasurer) to this joint office as from 3 April 1970.

Book Reviews

Works intended for notice in this column should be sent direct to the Book-Review Editor (M.M. Woolfson, Physics Department, University of York, Heslington, York YO1 5DD, England). As far as practicable books will be reviewed in a country different from that of publication.

Physics of the solid state. Edited by S. BALAKRISHNA, M. KRISHNAMURTHY, and B. RAMACHANDRA RAO. Pp. xxiv + 540. London: Academic Press, 1969. Price 160*s*. $ 24.00.

This well produced book commemorates the 60th birthday of Professor Suri Bhagavantam. Sir C.V. Raman in the foreword writes that Professor Bhagavantam has helped to raise the status of India in the world of science. This book with its consistent high quality of writing is indeed a fitting tribute. There are 29 articles of a review nature of which about half are written by Indian scientists and the remainder by foreign scientists who have been in close contact with Professor Bhagavantam and his work. The Editors have done their job extremely well – the quest for errors is fruitless.

The scientific content of the book follows very much the wide interests Professor Bhagavantam has in physics, ranging over symmetry and group theory, the study of the structure, elasticity, defects and Raman scattering of crystals and even the study of the Earth. Because the range is so wide this book will become more of a library reference than a book personally owned, and any department which does solid state physics should be equipped with it.

The book starts for the crystallographer with two articles on symmetry by A.V. Shubnikov and N.V. Belov *et al.* There seems to be little new in these articles, which are followed by a revised table of diffraction symbols by M.J. Buerger. This will surely be referred to many times. The most stimulating of the crystallographic articles then follows, concerning the geometry of chemical reactions in single crystals by K. Lonsdale. Here we see quite distinctly one of the reasons for doing crystallography today. How to do it is another matter and some of us may choose to try the β-synthesis as reviewed in the fifth article. Many modern crystallographers are not preoccupied with the perfect crystal state, and so we are not surprised to find an article on the cholesteric liquid crystalline state, and a number on static defects and dynamical problems.

If your library owns this book do not be surprised to find a gap in its shelves. If you take the book out you might find yourself waylaid by articles you had not intended to read. One such is by A. Jayaraman on high pressure phenomena in solids. One phase change he describes at high pressures is thought to involve $6s \rightarrow 5d$ electron collapse but essentially no structural change. This is indeed fascinating for the crystallographer and points to one of the many problems of the future.

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Theory of X-ray and thermal neutron scattering by real crystals. By MIKHAIL A. KRIVOGLAZ. Translation Editor SIMON C. MOSS. Pp. xix + 405. New York: Plenum Press, 1969. Price $25.00.

Over the last decade or so Professor Krivoglaz and others in the Soviet Union have made important contributions to theories of the elastic scattering of X-rays and neutrons at static inhomogeneities in real crystals and the inelastic scattering of X-rays and thermal neutrons: much of this work has not received adequate attention from Western scientists. We therefore welcome the publication of an English translation of Professor Krivoglaz's book, only two years after the Russian edition.

This is not an introductory text to the subject but a very personal account of the theory of scattering in real crystals for an expert audience. In his treatment of scattering by

point defects, extended defects and thermal vibrations alike, it is impressive how models of very complicated physical situations lead to reasonably simple predictions for the scattering properties. Very few workers in this area are sufficiently familiar with *both* the static and dynamical aspects of disorder scattering: the attempt at a unified presentation of these topics is especially to be commended. Inevitably some of the comparisons with experiment already require updating, but the real value of the book is its strong insight into the structure of the theory of scattering in complicated solid state situations.

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Gallium arsenide. Symposium proceedings, Dallas, Texas, October 1968. Conference Series No. 7. Pp. vii+244. London: The Institute of Physics and the Physical Society, 1969. Price £6 5s. (U.S. $15).

Gallium arsenide has become one of the most interesting of the III–V semiconducting compounds due to its applications in the field of semiconductor lasers and more particularly, solid state microwave devices including the Gunn effect oscillator.

This volume, the seventh in the series of complete conference reports, contains 35 papers presented at the second international symposium on gallium arsenide held in Dallas, Texas, U.S.A. from 16th to 18th October 1968.

The papers group conveniently into six chapters covering (i) liquid epitaxic growth (ii) vapour phase epitaxic growth and growth of bulk material (iii) stimulated emission (iv) spontaneous emission (v) microwave devices and (vi) other devices. This conference drew together renowned experts in these fields and the papers are of the expected high quality.

There is some doubt in the reviewer's mind however, as to the desirability of collecting conference papers together in book form particularly, as in this instance, when the sections are not headed by a review paper on the subject matter of the section. The value of this book would be greatly enhanced by a paper, even though not a part of the conference, reviewing the present situation on GaAs lasers and preceding Chapter 3. A similar paper heading the chapter on applications of GaAs in the microwave field would also be of value.

The contents of a book of this nature are governed by the conference committee and they are to be commended for selecting papers which cover effectively the whole field of GaAs, its properties and applications. However this book is of value only to research workers in this specialized field. It is well produced by the Institute of Physics and the Physical Society and for its size is not unduly expensive.

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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.

High magnetic fields and their applications, Nottingham 1969. Conference booklet 1, Pp. 168. London: The Institute of Physics and the Physical Society, 1969. Price 30*s* (U.S. $3.60).

This booklet reproduces papers from the fourth *International Conference on High Magnetic Fields* held at the University of Nottingham, September 17–19, 1969. It contains little of direct crystallographic application but will be of interest to some solid-state physicists.

Advances in X-ray analysis. Vol. 11. Proceedings of the Sixteenth Annual Conference on Applications of X-ray Analysis. August 9-11, 1967, Denver, U. S. A. Edited by JOHN B. NEWKIRK, GAVIN R. MALLETT and HEINZ G. PFEIFFER. Pp. xi+499. New York: Plenum Press, 1968. Price $22.50.

The latest in a continuing series of volumes based on the Annual Conferences sponsored by the Denver Research Institute of the University of Denver has as its theme X-ray emission spectrography. Quantitative methods in X-ray spectrometric analysis are dealt with in a large number of papers, attesting to the growth and currency of the application and usefulness of X-ray emission.

Advances in X-ray analysis. Vol. 12. Proceedings of the Seventeenth Annual Conference on Applications of X-ray Analysis. August 21-23, 1968, Estes Park, Colorado, U.S.A. Edited by C.S. BARRETT, GAVIN R. MALLETT and JOHN B. NEWKIRK. Pp. x+648. New York: Plenum Press, 1969. Price $22.50.

This volume emphasizes developments in X-ray metallography. Papers by eminent authorities cover a wide range of topics and report on the most recent advances in the field. Areas covered include crystallography and diffraction, methods and their applications, strain analysis, crystalline fine structure, fluorescence and texture analysis, and X-ray spectrochemical analysis.