International Union of Crystallography

Forward Planning of Inter-Congress Meetings

The Executive Committee of the IUCr is anxious to encourage Inter-Congress meetings to avoid future Triennial Congresses becoming excessively large and cumbersome to handle. A Sub-Committee on the Union Calendar has therefore been set up [see *Acta Cryst.* (1969). A**25**, 719] to implement this policy. Its function is to gather information on proposed or prospective meetings, coordinate the long-term planning of meetings which the Union organises or co-sponsors, and actively to encourage the initiation of small or intermediate-sized meetings in fields where development is significant.

Since it is the aim of the Sub-Committee to plan at least three, and preferably more, years ahead, it is advisable to have early advice of meetings, being planned or in prospect, which might appropriately come within the category of Union sponsorship or co-sponsorship in terms of their content, location, size and date. It would therefore be appreciated if bodies such as Commissions of the Union, National Committees for Crystallography, regional associations and other bodies which are contemplating or have begun the planning of a future international meeting on crystallography or with a major content of crystallography would contact the Sub-Committee Chairman, Dr A. McL. Mathieson, Division of Chemical Physics, CSIRO, P.O. Box 160, Clayton, Victoria 3168, Australia.

The Sub-Committee would be pleased to receive advice of provisional details of proposed Inter-Congress meeting as soon as possible and it will also consider requests for Union co-sponsorship of these meetings. Nominal financial support could be available in some cases.

Commission on Crystallographic Computing

It is proposed to set up a bank of trial structures for testing direct methods. It is frequently found that a new method may be effective for the one or two structures to which it is first applied but that the overall pattern of success is less encouraging when a larger number of trials are made.

The bank of trial structures will cover a range of space groups and structural complexity. The structures should be those which have been difficult to solve, perhaps showing only a few atoms in the first E map, or those which direct methods failed to solve but were subsequently solved in some other way.

Any crystallographer having the data and solution for such a structure in invited to contact Professor M. M. Woolfson, Department of Physics, University of York, Heslington, York YO1 5DD, England, giving as complete a description as possible of the structural problem. If the problem seems suitable for inclusion in the bank then further information will be requested.

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.

Introduction to anisotropic elasticity theory of dislocations (Monographs on the physics and chemistry of materials). By J. W. STEEDS. Pp. 270. Figs. 95, Tables 24. Oxford Univ. Press, 1973. Price £8.35.

For many years discussions on the elastic properties of dislocations and on the interpretation of the contrast of their images in transmission electron microscopy or X-ray topographs were based on the elastic-isotropy approximation. This was good enough for qualitative studies, but as soon as quantitative comparisons could be made, it was realized that the use of anisotropic elasticity is absolutely necessary, even for cubic materials. This is particularly true, among other cases, in the computer-aided simulation of dislocation images in electron microscopy or X-ray topographs which can be brought to the point where they are almost indistinguishable from the observed ones. The anisotropic problem for straight dislocations was first solved in 1953 but the mathematics involved is complicated and the resolution of a sixth-degree equation is required. J. W. Steeds has simplified the notations and the approach to the problem and shown that under certain symmetry conditions analytical solutions can be found. The major part of the book is concerned with the application of these solutions in several examples of slip systems in cubic crystals. The case of hexagonal and lower-symmetry crystals is also considered in some detail. Extensive tabulations of anisotropic parameters are given in an Appendix for metals, alloys, intermetallics and semiconductors. The whole book should be very valuable not only to students but also to researchers in many fields of material science.

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Physical processes in lasers. Vol. 56. Edited by D. V. SKOBEL'TSYN. Pp.ix+181. Figs. 109, Tables 12. New York: Plenum Press, 1973. Price $34.00.

The high pulse powers emitted by the first solid-state lasers represented a dramatic step in the intensities available from optical sources. The technique of Q-switching – initially with rotating mirrors or elaborately synchronized switching devices – marked a further enormous step in pulsed power. The discovery that bleachable dyes such as rhodamine 6G could effect Q-switching provided a simple, powerful laser tool for high-intensity studies. In this volume, A. S. Markin considers in detail spectral composition of the output, mode discrimination and locking and the characteristics of the