

## 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 (G. Boom, Department of Metallurgy, University of Oxford, Parks Road, Oxford, England). Publication of an item in a particular issue cannot be guaranteed unless the draft is received 8 weeks before the date of publication.*

### The Precision of Determination of Molecular Geometry by Diffraction and Spectroscopic Techniques

Advanced course, Aarhus, 29 July – 7 August 1968

An advanced course on the determination of molecular geometry by diffraction and spectroscopic techniques will be held at Aarhus University, Denmark, from 29 July to 7 August 1968. The course is supported by NATO and is intended primarily for advanced students or young research workers with research experience in determining accurate geometric molecular parameters. Accommodation is available for 80 participants. There will be the opportunity of critically comparing the different methods, and ample time will be provided for discussion. The course will be followed by a symposium announced below.

A limited number of grants are available for applicants from NATO countries.

Enquiries should be addressed to Prof. S. E. Rasmussen, Department of Inorganic Chemistry, Institute of Chemistry, University of Aarhus, 8000 Aarhus C, Denmark, not later than 15 April 1968.

Symposium, Aarhus, 8–10 August 1968

An advanced symposium on the determination of molecular geometry by diffraction and spectroscopic techniques will be held at Aarhus University, Denmark, from 8 to 10 August 1968. The symposium is a continuation of the advanced course mentioned above. Attendance is limited to about 160 participants, including the participants in the course. It is intended to obtain a balanced participation of older and younger workers, and a reasonable spread among the different methods.

Enquiries should be addressed to Prof. S. E. Rasmussen, Department of Inorganic Chemistry, Institute of Chemistry, University of Aarhus, 8000 Aarhus C, Denmark, not later than 15 April 1968.

## Film Review

**Symmetry.** An animated film and accompanying booklet. *Film design and direction:* Philip Stapp. *Physics:* Judith Bregman (Polytechnic Institute of Brooklyn), Richard Davison (University of Washington), Alan Holden (Bell Telephone Laboratories). *Music:* Gene Forrell. *Production:* Sturgis-Grant Productions, Inc. *Booklet:* designed by Sutter & Wartik, Inc. 1967. *Distribution:* Contemporary Films, Inc., 267 West 25th street, New York, N.Y., 10001, U.S.A. Sale, \$125.00; Rental, \$12.50.

This film was conceived, as an aid in teaching geometric symmetry, by three physicists who recognize that symmetry finds applications at various levels and in many fields. The scientists asked the artists to help, and the project was supported by the National Science Foundation.

There is no doubt that the physicists have succeeded brilliantly in teaching symmetry to their artists, both the movie-maker and the musician. As an old professor I wish I could believe that I have done as well in my own teaching! Perhaps the two artists were unusually responsive to the esthetic appeal of symmetry. At any rate their film, from the point of view of their understanding of the subject matter, deserves an *A*. What they have done with their newly acquired scientific knowledge, from the point of view of artistic creation, can be gathered from the appraisal of a sophisticated New York critic\* who called this animated color work 'a fast, sparkling beauty'.

I saw the film twice, once at the ACA meeting in Atlanta, where it was viewed by professional crystallographers, and again when I showed it to a group of graduate students in chemistry and geology, who were asked to submit their

comments in writing. I also heard echoes of the reactions of the fifth-graders at our local elementary school, where the film was projected in their science class. Everybody enjoyed the picture: artistically it reaches old and young, whether already versed in symmetry, barely initiated to it, or completely ignorant of it. So far, so good. But what about pedagogic value? Does the film *teach* symmetry? It does no talking; it has no legends. The eleven-year-olds were stimulated and intrigued by it, and they asked many questions. Some full-fledged crystallographers, who presumably needed no symmetry teaching, admitted that they could not follow all the symmetry sequences. Graduate students, who had taken my course last semester, thought the film would have been helpful to them at the time. Some of the others, who had never had any course in crystallography, complained that the film had not taught them any symmetry! Their negative reaction is easily explained: symmetry is a vast subject, and a ten-minute short is an awfully short short! Nobody should expect to acquire a working knowledge of symmetry by watching this film only once. The film should be projected several times, the showings alternating with perusals of the booklet, which is very well done and conveys a *minimum minimorum* of symmetry concepts in 700 words and 31 labelled sketches.

As we never get tired of watching classical ballet, we can enjoy repeated performances of this film. Some of the high lights are unforgettable: the lost battle of the pentagons, the formation of the capital letters, the futile attempts of R to acquire symmetry by itself and its sensible decision to co-exist with Я in perfect mirror harmony.

J. D. H. DONNAY

*The Johns Hopkins University  
Baltimore  
Maryland 21218  
U.S.A.*

\*Howard Thompson in *The New York Times*, 21. January 1967.