delegates. The Committee, therefore, hopes that authors will as far as possible present their papers in one of these three languages.

Enrolment

It is hoped that crystallographers will now be in a position to give firm notice of their intention to be present and it is requested that such notice should reach the General Secretary as soon as possible, and in any case not later than 15 February 1951.* While every effort will be made to meet the convenience of those able to register only after this date, no guarantee can be given that it will be possible to find hotel accommodation for them. Those who in any case prefer to arrange their accommodation independently are advised to act early, as Stockholm hotels are heavily booked in the summer months.

No further public announcements about the Congress will be made and future notices will be distributed only to those who have indicated their interest. All those who expect or hope to be present are, therefore, earnestly requested to register their names with the General Secretary.

Offers of papers for consideration by the Programme Committee are cordially invited and should be submitted as soon as possible, and in any case not later than 15 February 1951.* Crystallographers whose contributions are accepted will be notified shortly after this date and will then be requested to submit an abstract of their papers not later than 31 March 1951.

Correspondence

All correspondence concerning contributions to the Congress or to the Symposia should be addressed to the Secretary of the Programme Committee:

F. E. Wickman, Stockholm 50, Sweden.

All other correspondence should be addressed to the General Secretary of the Union:

R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England (*Telegraphic address:* Crystals, Cambridge, England).

* To save unnecessary correspondence these communications should, if possible, be on the forms accompanying the Second Circular, copies of which may be had from the General Secretary or from the Secretaries of the National Committees (see *Acta Cryst.* (1950), **3**, 388).

Notes and News

Announcements and other items of crystallographic interest will be published under this heading at the discretion of the Editorial Board. Copy should be sent direct to the British Co-editor (R. C. Evans, Crystallographic Laboratory, Cavendish Laboratory, Cambridge, England).

Charts for X-ray Crystallography

The X-ray Analysis Group of the British Institute of Physics, with the approval of the Chairman of the Commission on Crystallographic Apparatus of the International Union of Crystallography, is proposing to arrange for the supply and distribution of the different types of charts used in X-ray crystallography. The Graphical Methods Panel of the Group has prepared these notes on available charts as a preliminary to making arrangements for their supply to individual users. It is proposed that stocks of those charts for which sufficient demand exists shall be held centrally to be sold in large or small quantities to X-ray crystallographers.

1. *Stereographic and other nets for Laue method and all orientation work*

(1) The following are now available:

(*a*) Equatorial (Wulff) stereographic net (half circle); 5 in. diameter on tracing paper; 2° intervals.

(*b*) Equatorial (Wulff) stereographic net (whole circle); 20 cm. diameter on thin card; 2° intervals.

(*c*) Equatorial (Wulff) stereographic net (whole circle); 30 cm. diameter on thin card; 1° intervals.

(*d*) Combined equatorial and polar (Fedorov) stereographic net (whole circle); 5 in. diameter on opaque paper; 5° intervals.

(*e*) Greninger chart for back-reflection photographs; 2° intervals; specimen–film distance 3 cm. (C. S. Barrett, *Structure of Metals*, p. 170. New York: McGraw Hill, 1943).

(2) The following might be made available if a sufficient demand existed:

(*a*) Equatorial (Wulff) stereographic net (whole circle); 5 in. diameter; 2° intervals.

(*b*) Equatorial (Wulff) stereographic net (whole circle); 18 in. diameter.

(*c*) Polar stereographic net.

(*d*) Equatorial (Schmidt) net for Lambert's equal-area projection (whole circle); 20 cm. diameter.

(*e*) Chart for reading α and θ from a stationary cylindrical film (C. S. Barrett, *Structure of Metals*, p. 164. New York: McGraw Hill, 1943).

2. *Charts for rotation and oscillation methods*

(1) The following are now available, all on tracing paper:

(*a*) Bernal ξ, ζ chart for flat film; specimen–film distance 4 cm. (J. D. Bernal, *Proc. Roy. Soc.* A, **113**, 117, 1927).

(*b*) Bernal ξ, ζ chart for cylindrical film of diameter 6 cm.

(*c*) Portion of same for film of diameter 12 cm.

(*d*) i, ϕ charts and corresponding absorption-correction charts for use with reflecting crystal plates: (i) ϕ 20–47°, (ii) ϕ 41–71°, (iii) ϕ 66–100°. Here i is the glancing angle between the X-ray beam and crystal plate, and ϕ is the angle between incident and diffracted X-ray beams.

(*e*) Weissenberg chart for cylindrical film of diameter 6 cm.; 9 cm. traverse = 180° (chart to cover 13·5 cm.) (M. J. Buerger, *X-ray Crystallography*, p. 268. New York: Wiley, 1942). (Also available on opaque paper.)

(*f*) Constant-ρ and constant-θ charts for same (N. Wooster & W. A. Wooster, *Phil. Mag.* (7), **37**, 262, 1946).

(*g*) (i) Weissenberg chart (as (*e*)) for cylindrical film of diameter 5·73 cm.; 9 cm. traverse = 180°. (ii) Same with 240° traverse.

(2) The following may be available soon or could be made available if the demand is sufficient:

(*a*) Bernal ξ, ζ chart (as (*b*)) for cylindrical film of diameter 5·73 cm.

(*b*) α, ω, θ (or ρ, ϕ, θ) chart for cylindrical film of diameter 6 cm., for orientation purposes. Here α (or ρ) is the angle between the axis (A) of oscillation and the normal (N) to the reflecting planes; ω (or ϕ) is the angle between the plane containing A and N and that containing A and the incident X-ray beam; and θ is the Bragg angle.

(*c*) Charts on a scale of one reciprocal unit = 10 cm., for combined correction for Lorentz and polarization factors (including Cox–Shaw–Tunell corrections) in terms of reciprocal lattice for (i) normal beam, (ii) equi-inclination (W. Cochran, *J. Sci. Instrum.* **25**, 253, 1948). (The use of these charts is strongly recommended as an alternative to charts which can be superimposed on photographs or, in general, to use of tables for correction of oscillation or Weissenberg intensities to obtain F^2 values. The charts themselves were unfortunately omitted from the periodical in which their description appeared.)

(*d*) Charts for direct determination of identity distances from rotation photographs on flat or cylindrical films. Since these would be dependent on specimen–film distance, and could only be used for approximate work, these charts would not be made unless a demand for a particular size exists.

(*e*) Charts corresponding to Figs. 142, 144 and 155 of M. J. Buerger's *X-ray Crystallography* (New York: Wiley, 1942) (all for a camera of diameter 5·73 cm.):

(i) Variation of the ξ scale with the inclination angle μ for equi-inclination Weissenberg photographs.

(ii) Variation of the ξ scale along $O\Xi$ with inclination angle μ for equi-inclination Weissenberg photographs.

(iii) Chart for deriving the equi-inclination setting angle μ from either the reciprocal-lattice-level co-ordinate ζ or the height y of the layer line as it appears on a rotation photograph.

3. *Charts for powder method*

(1) Sets of five Bunn charts, each 2 × 4 ft. (C. W. Bunn, *Chemical Crystallography*, Chap. 6. Oxford: Clarendon Press, 1945), are now available as follows:

(i) For tetragonal crystals $5{\cdot}0 > c/a > 1$.

(ii) For tetragonal crystals $0{\cdot}224 < c/a < 1$.

(iii) For hexagonal crystals $10 > c/a > 0{\cdot}9$.

(iv) For hexagonal crystals $0{\cdot}1 < c/a < 0{\cdot}9$.

(v) For layer lines of single-crystal rotation photographs of crystals having rectangular cell bases.

(These are recommended in preference to the Hull or Bjurström type of chart.)

(2) Similar charts for higher or lower c/a values could be provided if required.

(3) It is not proposed that orthorhombic charts should be supplied unless a considerable and specific demand exists.

4. *Interpretation*

(1) The use of atomic factor charts is not recommended.

(2) Bragg–Lipson charts (W. L. Bragg & H. Lipson, *Z. Krystallogr.* **95**, 323, 1936) are charts of the functions

$$S = \cos 2\pi hx \cos 2\pi ky$$

and

$$S = \cos 2\pi(hx + ky)$$

for h and k varying from 1 to 10. They may be available in large size (40 × 40 cm.) blueprint form, fully contoured in steps of 0·1, and will cover the plane groups *P*1, *P*2, *Pm*, *Pb*, *Cm*, *Pmm*, *Pba*, *Pbm*, *Cmm*.

5. *General comments*

(1) The supply of d versus 2θ (or θ) charts for various X-ray wave-lengths has been suggested. We doubt whether these would be as useful as tables.

(2) In general the use of tracing cloth should be avoided because of differential shrinkage. It is better to use tracing-paper and to have sufficient for frequent replacement.

(3) In order that the demand for these and other charts over the next five years may be estimated, users of charts are invited to assist the Panel by supplying the following information:

(*a*) Comments on the use of the charts listed above.

(*b*) Suggestions for the inclusion of other charts (i) known to be now available, or (ii) not now available but likely to be of use.

(*c*) Number of charts of each type required for teaching, research and industrial purposes over the next five years.

(*d*) In the case of charts to be used with X-ray photographs, are transparent or opaque charts preferred?

Replies should be sent as soon as possible to

Mr A. E. De Barr,
Research Laboratories of Elliott Brothers (London) Ltd.
Elstree Way
Borehamwood
Herts, England

Until a reliable estimate of the demand for any particular chart can be made, it is not possible to quote definite prices but, as a guide in this matter, items 1(1)(*a*) (5 in. Wulff net) will cost approximately one shilling for 20 copies and 1(1)(*c*) (30 cm. Wulff net) approximately ten shillings for 12 copies.

(4) The Panel would like to take this opportunity of thanking those who have kindly offered to loan blocks or who have supplied information.

Spanish Crystallographic Association

The *Asociacion Española de Cristalografia* was founded at the first crystallographic meeting in Spain, held in Barcelona during the period 5–8 July 1950. The activities of the new Association are specially to strengthen the relationship between the different laboratories of crystallography in Spain and to give the necessary support to

the Spanish National Committee of the International Union of Crystallography.

Officers of the Association for the two first years have been elected in the General Assembly as follows:

President: F. PARDILLO.
Vice President: L. RIVOIR.
Vocal: J. L. AMOROS.
Secretary: M. ABBAD.
Treasurer: G. MARTIN CARDOSO.

Further information about the Association may be obtained from its Secretary, Instituto Alonso de Santa Cruz, Serrano 117, Madrid, Spain.

Crystallographic Society of Japan

The Crystallographic Society of Japan was recently created at an inaugural meeting held during the period 13–15 May 1950 at the University of Tokyo and attended by some sixty of the one hundred charter members. S. NISHIKAWA was elected President, and S. KOZU, K. HONDA and S. NAKAMURA were elected Honorary Members. Further information about the Society may be obtained from its Secretary at the Mineralogical Institute, Science Department, University of Tokyo, Hongo, Bunkyo-ku, Tokyo, Japan.

Book Review

Works intended for notice in this column should be sent direct to the Editor (P. P. Ewald, Polytechnic Institute of Brooklyn, 99 Livingston Street, Brooklyn 2, N.Y., U.S.A.). As far as practicable books will be reviewed in a country different from that of publication.

Probleme der Naturwissenschaften, erläutert am Begriff der Mineralart. Von PAUL NIGGLI. S. xi+240 mit 100 Abb. Basel: Birkhäuser. 1949. Preis 18·50 Schw. Fr.

Das Wort Goethes

Wär nicht das Auge sonnenhaft
Wie könnten wir das Licht erblicken,
Wär nicht in uns des Gottes Kraft,
Wie könnt uns Göttliches entzücken

hätte dem Buche Nigglis als Motto vorangesetzt sein können.

Das Geheimnis der Form und der Zauber von Proportionen und Symmetrie, im Mittelalter mit der Seele empfunden und vom menschlichen Genius in geistiger und künstlerischer Struktur manifestiert, erschien dem Verfasser durch die Entwicklung mancher Zweige der 'exakten' Naturwissenschaften in seiner Bedeutung für die, menschliche Kultur gefährdet. Ohne von der Exaktheit abzuweichen, weist ihr der Verfasser für das Erkennen der Natur und ihrer Gesetze eine der einheitlichen Schau dienende, nicht eine übergeordnete Rolle an. So sucht das Buch dem Leser die Ehrfurcht vor den ordnenden Kräften zu bewahren, welche die Form in der organischen wie der anorganischen Natur als wesentliche Schöpfung und nicht als Auswirkung irgendwelcher Zufälle erscheinen lassen.

Aus solchem Blickwinkel heraus werden die Gesetze und Regeln der Kristallographie und Mineralogie beleuchtet und diskutiert, meist ohne den Leser mit strengen Beweisen, die ja in den Lehrbüchern zu finden sind, zu belasten. Eine zentrale Stellung nimmt die Diskussion des Arten- und Typen-Begriffes in der Mineralogie ein, umrankt von Kapiteln mit Betrachtungen über 'Allgemeine Methoden naturwissenschaftlicher Forschung', 'Voraussetzungen der wissenschaftlichen Begreiflichkeit der Natur', 'Genotypus und Phänotypus', 'Die innere Variabilität der Kristallarten, bezogen auf den Idealbauplan', 'Zur Lehre von den Mineralassoziationen' u.a.

Eine Fülle ausgezeichneter Abbildungen unterstützt den Leser im Folgen der sehr anregenden Gedanken, die das Weltbild jedes philosophisch Interessierten in vieler Hinsicht bereichern werden, gleichgültig ob er immer mit dem Verfasser übereinstimmen wird oder nicht.

F. LAVES
Department of Geology, The University Chicago, Ill., U.S.A.

Books Received

The undermentioned works have been received by the Editors. Mention here does not preclude review at a later date.

Das Polarisationsmikroskop. Eine Einführung in die mikroskopische Untersuchungsmethodik durchsichtiger kristalliner Stoffe für Mineralogen, Petrographen, Chemiker und Naturwissenschafter im allgemeinen. By CONRAD BURRI. Pp. 308, with 168 figs. and 4 diagrams. Basel: Birkhäuser. 1950. Price 32·80 Swiss francs.

Gmelins Handbuch der anorganischen Chemie. Aluminium *A* 8. Pp. 136, with 78 figs. Clausthal-Zellerfeld: Gmelin-Verlag. 8th ed. 1950. Price DM. 30.

Untersuchungen über die Fouriersynthese der Ladungsverteilung in Kristallen. I. Verfahren und Geräte zur mehrdimensionalen Fouriersynthese. By W. DE BEAUCLAIR. Berlin: Akademie-Verlag. 1949.

Untersuchungen über die Fouriersynthese der Ladungsverteilung in Kristallen. II. Phasenfaktorentafel zur kristallographischen zweidimensionalen Fouriersynthese in Punkten eines Achtundvierzigstel-Netzes. By W. DE BEAUCLAIR and U. SINOGOWITZ. Berlin: Akademie-Verlag. 1949.

Gmelins Handbuch der anorganischen Chemie. Calcium *A* 1. Pp. 68. Weinheim: Verlag Chemie. 1950. Price DM. 15·50.

Gmelins Handbuch der anorganischen Chemie. Gold *A* 1. Pp. 100. Weinheim: Verlag Chemie. 1950. Price DM. 22·50.

Gmelins Handbuch der anorganischen Chemie. Selen *A* 2. Pp. 122, with 106 figs. Weinheim: Verlag Chemie. 1950. Price DM. 28.