

## International Union of Crystallography

### Third General Assembly and International Congress



Under the patronage of the President of the French Republic, and by kind invitation of the French Government, the Third General Assembly and International Congress of the Union was held in Paris from 21 to 28 July 1954. The Congress was followed by two Symposia held on 29 and 30 July and by geological excursions during the period 31 July to 7 August. About 630 crystallographers and 150 passive members were present at the Congress. The following twenty Adhering Bodies were represented: Australia, Austria, Belgium, Brazil, Canada, Czechoslovakia, Denmark, France, German Federal Republic, India, Italy, Japan, Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, United States of America, Union of Socialist Soviet Republics; and the following nine other countries: Algeria, Egypt, Finland, Gold Coast, Greece, Morocco, Saar, Tunisia, Yugoslavia.

The Congress was formally opened on 21 July by H. LONGCHAMBON, Secretary of State for Scientific Research, whose speech was followed by short addresses by J. M. BIJVOET, L. DE BROGLIE and C. MAUGUIN. A programme of music was presented by the Garde Républicaine.

At a banquet held at Versailles on 27 July H. LONGCHAMBON, who presided, declared the proceedings closed and emphasized in his speech the value of such meetings in cementing international relationships. J. M. BIJVOET and G. HÄGG expressed the thanks of the Union to the French Government, to the Presidents of the Congress, to J. Wyart, A. J. Rose, H. Curien and the other members of the Organizing Committee, and to all the members of the Congress Bureau for their invaluable work in organizing the meeting.

### Third General Assembly

Detailed minutes of the General Assembly have been sent to the Secretaries of the National Committees in the

Adhering Countries. The following is a summary of the business transacted:

#### (1) *By-Laws*

By-Law 6 was amended. The Statutes and By-Laws in their current form are printed elsewhere in this issue.

It was agreed that the Executive Committee should undertake a complete review of the Statutes and By-Laws and that their proposals should be brought before the Fourth General Assembly.

#### (2) *Adhering Bodies*

Adhesion of the following four countries was approved (in addition to the 18 whose adhesion had been approved at earlier General Assemblies): Austria (Group I), Chile (Group I), German Federal Republic (Group VIII), U.S.S.R. (Group VIII) (subject to confirmation of the application by the Academy of Sciences) [this confirmation has now been received].

#### (3) *Commission on Acta Crystallographica*

A report of the Commission was discussed and approved. In amplifying the report P. P. EWALD stated that the change of publisher which had taken place since the previous General Assembly had enabled the journal to expand very considerably in size. In spite of the encouraging increase in the number of subscribers the journal was still being published at a loss and it had, therefore, been necessary to increase the price as from the beginning of 1954. The Executive Committee had considered the possibility of introducing a voluntary page charge but had decided not to recommend this step at present. They had, however, decided to carry advertisements in the journal as from the beginning of 1955 and it was hoped that it would be possible for the journal to be self-supporting in the future. The Executive Com-

mittee were also exploring the possibility of economies in printing.

The Editor stated that although it was the policy of *Acta Crystallographica* to concern itself with all phenomena and properties of matter which were related to atomic arrangement, a very large proportion of the papers submitted were, in fact, on structure determination; he hoped that more papers in other branches of solid-state physics would be submitted and he also emphasized that the journal was willing to publish papers on apparatus and techniques, provided that these were concerned with new general principles rather than with mechanical details.

The Editor added that he understood that the *Zeitschrift für Kristallographie* would shortly resume publication but he hoped that crystallographers would continue to give their support to *Acta Crystallographica*. Finally he reported that I. Nitta (Japan) had been co-opted as a co-editor, and thanked the many referees for their unselfish and painstaking anonymous work.

#### (4) *Commission on Structure Reports*

A report of the Commission was discussed and approved. In presenting this report A. J. C. WILSON stated that in the three years since the Second General Assembly *Structure Reports* covering four years (1945-6, 1949 and 1950) had been published. The years 1945-1950 had, therefore, now been covered, and the volumes still to be prepared were those for 1940-1944 and for the years 1951 and onwards. The Editor reported that the form of the index had been the subject of much discussion and that in future the volumes would carry a fourth index listing structures in order of the number of carbon atoms.

The Editor added that during the period under review N. C. Baenziger had been co-opted as a sectional editor in place of C. S. Barrett, resigned, and that J. M. Bijvoet found it necessary to retire shortly and that a successor would have to be appointed.

#### (5) *Commission on International Tables*

A report of the Commission was discussed and approved. In presenting this report K. LONSDALE stated that nearly one-third of the 4000 copies of Volume 1 which had been printed had now been sold and that the stock of reprints of selected passages for teaching purposes was almost exhausted. Editorial work on Volumes 2 and 3 continued and it was hoped that Volume 2 would go to press in 1955.

The Commission reaffirmed the importance of recognizing the distinction between the Ångström unit and the kX. unit and of always stating clearly which unit is employed in any published work. The General Assembly agreed to accept any decision which might be reached by the International Union of Pure and Applied Physics concerning a new definition of the X. unit in terms of an X-ray wavelength instead of in terms of the calcite spacing.

#### (6) *Commission on Crystallographic Apparatus*

A. GUINIER presented a report summarizing the work of the Commission since the Second General Assembly. An Information Bureau had been established but in its original form had not fulfilled its purpose; it had therefore been decided to modify somewhat the character of

the Bureau, and to prepare and distribute lists of manufacturers of crystallographic apparatus and schedules of their catalogues and other publications. The Commission had also in preparation monographs, the first two of which would be on 'X-ray protection' and 'Fine-focus tubes'. Other work of the Commission included the development of a transparent plastic material of exceptional stability suitable for the preparation of precision crystallographic charts, and a comparative study of the properties of some sixty types of X-ray film used in crystallographic work. The results of these two experimental investigations would be published shortly.

#### (7) *Commission on Crystallographic Data*

F. W. MATTHEWS reported that the Commission had continued to cooperate with national data committees in various countries in gathering crystallographic data. The Commission had organized a series of papers for the International Congress giving recommended practices for powder-diffraction identification.

#### (8) *Commission on Crystallographic Nomenclature*

L. O. BROCKWAY, on behalf of the Commission, reported that the Commission had under consideration the question of a symbol which would designate a space group without implying any particular choice of axes. Several alternative suggestions had been reviewed but the Commission was not yet in a position to make a firm recommendation.

#### (9) *Commission on Crystallographic Teaching*

It was agreed to establish a Commission on Crystallographic Teaching with the following terms of reference:

1. To exchange information on teaching on an international scale.
2. To promote publication of articles on teaching.
3. To arrange for discussions on teaching under the auspices of the Union.

Crystallographers interested in the work of this new Commission are invited to communicate with its Chairman.

#### (10) *Commission on Macromolecules of the International Union of Pure and Applied Physics*

A report of the representative of the Union was discussed and approved.

#### (11) *Commission on Solid-State Physics of the International Union of Pure and Applied Physics*

It was reported that, arising from discussions at the Second General Assembly, the International Union of Pure and Applied Physics had established a Commission on Solid-State Physics in which the International Union of Crystallography had been invited to participate. The Commission had cooperated in a symposium held at Bristol in July 1954 and was proposing to hold a summer school at the Massachusetts Institute of Technology in 1957, immediately before or after the Fourth General Assembly.

#### (12) *Joint Commission on Electron Microscopy*

R. W. G. WYCKOFF reported that a conference or-

ganized by the Joint Commission had been held in London in July 1954. It was intended to broaden the basis of the Commission, and proposals to this effect would be brought before the next meeting of the Executive Board of the International Council of Scientific Unions.

(13) *I.C.S.U. Abstracting Board*

It was reported that the Joint Commission on Physics Abstracting had been dissolved and that the International Council of Scientific Unions has set up an Abstracting Board to which the Union had been invited to nominate a representative.

(14) *World List of Crystallographers*

A proposal to publish a world list of crystallographers was discussed. It was decided to ask the Executive Committee to give the matter further consideration and to report at the Fourth General Assembly.

(15) *Election of Officers and of Commissions*

Officers and members of Commissions and other bodies were elected as follows:

*Executive Committee*

<i>President:</i>	R. W. G. WYCKOFF (U.S.A.)*
<i>Vice-Presidents:</i>	G. HÄGG (Sweden)* P. P. EWALD (U.S.A.)†
<i>General Secretary:</i>	D. W. SMITS (Netherlands)*
<i>Ordinary Members:</i>	J. D. BERNAL (U.K.)* N. V. BJELOV (U.S.S.R.)* A. TOVBORG JENSEN (Denmark)* A. GUINIER (France)† C. H. MACGILLAVRY (Netherlands)† A. J. C. WILSON (U.K.)†

*Acta Crystallographica Advisory Board*

SIR LAWRENCE BRAGG (U.K.)
M. VON LAUE (Germany)
C. MAUGUIN (France)
L. PAULING (U.S.A.)
R. W. G. WYCKOFF (U.S.A.)

*Commission on Acta Crystallographica*

<i>Chairman:</i>	P. P. EWALD, Polytechnic Institute of Brooklyn, 99 Livingston Street, Brooklyn 2, N.Y., U.S.A.
<i>Other Members:</i>	R. C. EVANS (U.K.) I. FANKUCHEN (U.S.A.) I. NITTA (Japan) J. WYART (France)

*Commission on Structure Reports*

<i>Chairman:</i>	A. J. C. WILSON, Physics Department, University College, Cardiff, Wales.
<i>Other Members:</i>	N. C. BAENZIGER (U.S.A.) J. M. BIJVOET (Netherlands)

\* Till close of the Fourth General Assembly.

† Till the close of the Fifth General Assembly.

G. B. BOKIJ (U.S.S.R.)  
G. HÄGG (Sweden)  
V. LUZZATI (France)  
I. NITTA (Japan)  
H. O'DANIEL (Germany)  
J. M. ROBERTSON (U.K.)  
The Chairman of the Commission on Crystallographic Data

*Commission on International Tables*

<i>Chairman:</i>	K. LONSDALE, Chemistry Department, University College, London W.C. 1, England.
<i>Other Members:</i>	M. J. BUERGER (U.S.A.) N. F. M. HENRY (U.K.) C. H. MACGILLAVRY (Netherlands) J. S. KASPER (U.S.A.)

*Commission on Crystallographic Apparatus*

<i>Chairman:</i>	A. GUINIER, Conservatoire des Arts et Métiers, 292 Rue St Martin, Paris 3, France.
<i>Other Members:</i>	J. L. AMORÓS (Spain) M. J. BUERGER (U.S.A.) E. G. COX (U.K.) G. HÄGG (Sweden) H. JAGODZINSKI (Germany) W. PARRISH (U.S.A.) H. P. ROOKSBY (U.K.) E. H. WIEBENGA (Netherlands) A representative of the U.S.S.R. to be nominated later

*Commission on Crystallographic Data*

<i>Chairman:</i>	P. M. DE WOLFF, Technisch Physische Dienst, T.N.O. en T.H., Delft, The Netherlands.
<i>Other Members:</i>	E. G. COX (U.K.) J. D. H. DONNAY (U.S.A.) W. L. FINK (U.S.A.) M. H. HEY (U.K.) T. ITO (Japan) F. W. MATTHEWS (Canada) J. N. VAN NIEKERK (South Africa) H. STRUNZ (Germany) A. J. C. WILSON (U.K.) E. A. WOOD (U.S.A.) A representative of the U.S.S.R. to be nominated later

*Commission on Crystallographic Nomenclature*

<i>Chairman:</i>	W. L. BOND, Bell Telephone Laboratories, Murray Hill, N.J., U.S.A.
<i>Other Members:</i>	S. BHAGAVANTAM (India) H. BRASSEUR (Belgium) W. DE KEYSER (Belgium) J. D. H. DONNAY (U.S.A.) C. HERMANN (Germany) K. LONSDALE (U.K.) W. NOWACKI (Switzerland) E. W. NUFFIELD (Canada) J. THEWLIS (U.K.)

*Commission on Crystallographic Teaching*

- Chairman:* N. F. M. HENRY, Department of Mineralogy and Petrology, Cambridge, England.
- Other Members:* L. BRÚ (Spain)  
G. DONNAY (U.S.A.)  
I. FANKUCHEN (U.S.A.)  
M. FORNASERI (Italy)  
J. GRENVILLE-WELLS (U.K.)  
R. HOCART (France)  
G. A. HOMES (Belgium)  
A. MAGNELI (Sweden)  
W. NOWACKI (Switzerland)  
A. PABST (U.S.A.)  
W. G. PERDOK (Netherlands)  
E. TAVORA (Brazil)  
A. F. WELLS (U.K.)  
H. WINKLER (Germany)

*Commission on Macromolecules of the International Union of Pure and Applied Chemistry*

- Representative:* C. W. BUNN, I.C.I. (Plastics) Ltd, Black Fan Road, Welwyn Garden City, Herts., England.

*Commission on Solid-State Physics of the International Union of Pure and Applied Physics*

- Representatives:* P. P. EWALD (U.S.A.)  
A. GUINIER (France)  
W. H. TAYLOR (U.K.)

*Joint Commission on Electron Microscopy*

- Representative:* R. W. G. WYCKOFF, National Institute of Health, Bethesda 14, Maryland, U.S.A.

*Abstracting Board of the International Council of Scientific Unions*

- Representative:* A. J. C. WILSON, Physics Department, University College, Cardiff, Wales.

**(16) Unit Contribution**

In presenting proposals of the Executive Committee that the unit contribution should be increased, R. C. EVANS explained that it was the view of the Executive Committee that the growing work of the Union made more frequent meetings of the Committee imperative. There was, moreover, increasing activity on the part of the non-publishing Commissions, which would involve increased expenditure from the General Fund. Finally the Executive Committee believed that the financial stability of the Union depended on its being more nearly self-supporting in its affairs and independent of subventions from outside bodies, subventions which were outside of its control and liable to fluctuate considerably from year to year. For these reasons the Executive Committee proposed an increase in the unit contribution to the gold equivalent of £20.

The proposal was carried *nemine contradicente*.

**(17) Future structure of the International Council of Scientific Unions**

A proposal to reorganize the International Council of Scientific Unions and to group Unions into Federations was discussed. The General Assembly was of the opinion that these proposals did not solve the problems facing the Council and that the proposed structure would not be in the interests of the International Union of Crystallography.

**(18) Fourth General Assembly**

It was agreed to accept the invitation of the Canadian National Research Council to hold the Fourth General Assembly in Canada in 1957.

**(19) Votes of thanks**

J. M. BIJVOET expressed the thanks of the Union to the retiring Officers and members of the Commissions. G. HÄGG thanked the retiring President for his services to the Union during his period of office.

**Third International Congress**

(1) The principal business of the Congress was conducted at a number of morning and afternoon sessions at which invited review lectures were delivered and short original papers were read. At each session the presentation of the papers was followed by an informal discussion. Abstracts of the lectures and papers are printed elsewhere in this issue.

An exhibition of apparatus and of scientific publications was held throughout the Congress, and visits were arranged to academic and industrial laboratories in the Paris area.

(2) During the Congress a programme of social events was organized for the members. On 22 July a visit was paid to the Department of Greek and Roman Antiquities at the Louvre. On 23 July Messrs Philips entertained members to a film show and reception at the Maison de la Chimie. During the week-end 24-25 July excursions were arranged to the châteaux of the Loire and to Fontainebleau, Reims, Chartres and Malmaison, and sight-seeing tours were held in Paris. On 26 July a reception was held in the Palais de la Découverte, where the planetarium was demonstrated. On 27 July a banquet was given in the Orangerie of Versailles Palace and was followed by a performance 'Son et Lumière' in the park.

(3) A further programme of social events was arranged for the passive members. This included sight-seeing tours in Paris, visits to Royaumont, Chantilly and the Zoological Gardens of Vincennes, and a fashion display.

**Symposia**

The procedure at the Symposia followed closely that at the Congress, and at each session the presentation of papers was followed by informal discussion. Abstracts of the papers are printed elsewhere in this issue.

**Geological Excursions**

(1) On 31 July a number of members visited the clay deposits at Provins under the guidance of A. Jourdain,