

## International Union of Crystallography

### Report of Executive Committee for 1955

#### Introduction

During the year under review the principal activities of the Union have been the continuation of its publishing programme, the arrangements for the Madrid Symposium to be held in April 1956, and the preliminary preparations for the Fourth General Assembly and International Congress to be held in Montreal, Canada, in July 1957.

The total number of adhering countries, which amounted to twenty-two at the end of 1954, remained unchanged in 1955; details concerning these countries, including the names and addresses of the secretaries of the National Committees, can be found in Table 1, which has been brought up to date (June 1956).

#### Work of the Commissions

##### *Commission on Acta Crystallographica*

The year 1955 saw the completion of Vol. 8 with 872 pages, containing 238 original articles and short communications. The number of subscribers rose slowly from 1278 at the end of 1954 to 1365 by the end of 1955.

The year 1955 was the first year in which *Acta Crystallographica* carried advertisements. Only a small number of firms were invited to place advertisements, and the number of (detachable) advertisement pages per issue lay between two and six. It is intended to extend the scheme to more firms and countries.

After considerable discussion and correspondence throughout the year, it was decided at the end of 1955 to enlarge the Editorial Board of the journal as a means of lightening the task of the three busiest editors, Dr R. C. Evans, Prof. P. P. Ewald and Prof. I. Fankuchen. The Executive Committee is glad that Prof. E. W. Hughes and Prof. H. Lipson have accepted the invitation to join the Editorial Board as an additional American and an additional British Co-editor respectively, as from 1 January 1956.

##### *Commission on International Tables for X-ray Crystallography*

By the end of the year the manuscript for Vol. 2 was almost complete, and that for Vol. 3 was making good progress. Work has continued on the preparation of the supplement to Vol. 1. The total sales of copies of Vol. 1 up to 31 December 1955 were 1468 copies, of which 514 were at the preferential price for personal subscribers.

##### *Commission on Structure Reports*

*Structure Reports for 1942-1944* (Vol. 9, pp. viii + 448), the fifth volume to appear, was published in December 1955. Vol. 8 (1940-1941) is in the press, and should appear during 1956. The publication of this latter volume will close the gap between *Strukturbericht* and *Structure Reports*. It is intended to publish a cumulative index 1940-1950, covering Vols. 8-13 inclusive.

##### *Commission on Crystallographic Apparatus*

The comparison of the properties of some forty types of X-ray film was completed under the supervision of Dr D. W. Smits and Prof. E. H. Wiebenga, and the manuscript was submitted for publication to *Acta Crystallographica*\*. The preparation of a list of manufacturers and suppliers of crystallographic apparatus has continued in 1955. A survey article on fine-focus X-ray tubes by Prof. S. Goldsztaub will be published in *Acta Crystallographica* before long†. The Commission will meet in Madrid in April 1956, and an open session has been arranged at which a series of papers on the subject of the Commission will be presented.

##### *Commission on Crystallographic Data*

The Commission continued its deliberations on sponsoring the publication of a systematic collection of single-crystal data. Agreement was reached on a provisional scheme, which has subsequently been examined in greater detail. Reports on powder data have been received from the U.K. and the Netherlands, and contact with the Joint Committee editing the ASTM Index has led to a definite proposal for establishing a connexion between the Joint Committee and the Commission on Crystallographic Data.

##### *Commission on Crystallographic Nomenclature*

No report has been received from this Commission.

##### *Commission on Crystallographic Teaching*

In pursuance of its aims, the Commission has drafted and circulated to crystallographers all over the world a questionnaire concerning the crystallographic subjects taught and the numbers of students reached by these courses. The large amount of material already received is being analysed as quickly as possible. A survey of existing books on crystallography has been commenced to see if there exist gaps in the literature, and if there is a need of translations or the commissioning of particular works. This survey will make it possible to advise teachers and librarians on the availability of books to suit their requirements. A similar survey of apparatus for teaching is also in hand. A programme of invited lectures and discussions concerning crystallographic teaching has been organized to be held in Madrid in April 1956 concurrently with the Symposium. Arrangements have been made for the subsequent publication of the proceedings of the meeting.

##### *Joint Commission on Electron Microscopy*

As already mentioned in the Report for 1954, at the instigation of this Joint Commission an International Committee on Electron Microscopy was formed in that year, whereupon the Joint Commission had requested to be dissolved. This request was acceded to by the Exe-

\* It has now been published, see *Acta Cryst.* (1956), 9, 520.

† It has now been published, see *Acta Cryst.* (1956), 9, 118.

Table 1. *Adhering Bodies*

Country	Group*	Secretary of National Committee
Australia	I	R. I. GARROD, Aeronautical Research Laboratories, Lorimer Street, Fishermen's Bend, Victoria
Austria	I	F. MACHATSCHKI, Mineralogisches Institut der Universität, Vienna 1
Belgium	III	R. VAN TASSEL, Institut Royal des Sciences Naturelles de Belgique, Rue Vautier 31, Brussels
Brazil	I	E. TAVORA, Faculdade Nacional de Filosofia, Av. Pres. Antonio Carlos 40, Rio de Janeiro, D.F.
Canada	IV	W. H. BARNES, Division of Physics, National Research Council, Ottawa 2
Chile	I	N. JOEL, Laboratorio de Cristalografia y Fisica Molecular, Universidad de Chile, Casilla 147, Santiago
Czechoslovakia	I	The Secretary, Czechoslovak National Research Council, Opletalova 19, Prague 2
Denmark	I	A. TOVBORG JENSEN, Den Kgl. Veterinær- og Landbohøjskoles Kemiske Laboratorium, Bülowsvej 13, Copenhagen V
France	VII	H. CURIEN, Laboratoire de Minéralogie de la Sorbonne, 1 Rue Victor Cousin, Paris 5
German Federal Republic	VI	H. O'DANIEL, Mineralogisches Institut der Universität, Senckenberg Anlage 30, Frankfurt/M.
India	I	The Secretary, Ministry of Natural Resources and Scientific Research, Government of India, New Delhi
Italy	III	G. GIACOMELLO, Istituto di Chimica Farmaceutica, Università di Roma, Rome
Japan	IV	T. ITO, National Committee for Crystallography, Science Council of Japan, Ueno Park, Tokyo
Netherlands	IV	D. W. SMITS, Laboratorium voor Anorganische en Fysische Chemie, Bloemsingel 10, Groningen
Norway	I	I. OFTEDAL, Universitetets Mineralogiske Institutt, Blindern, Oslo
South Africa	I	The Officer-in-Charge, Liaison Division, South African Council for Scientific and Industrial Research, P.O. Box 395, Pretoria
Spain	IV	M. ABBAD Y BERGER, Instituto de Fisica 'Alonso de Santa Cruz', Serrano 119, Madrid
Sweden	I	F. E. WICKMAN, Naturhistoriska Riksmuseet, Stockholm 50
Switzerland	I	W. NOWACKI, Mineralogisch-Petrographisches Institut der Universität, Hermann-Sahlstrasse 6, Bern
U.K.	VIII	The Secretary of the British National Committee for Crystallography, The Royal Society, Burlington House, London W. 1
U.S.A.	VIII	G. A. JEFFREY, Department of Chemistry, University of Pittsburgh, Pittsburgh 13, Pa.
U.S.S.R.	VIII	Academy of Sciences of the U.S.S.R., Kaloujskaia 14, Moscow

\* See Statutes 8 and 10 (*Acta Cryst.* (1954), 7, 613).

cutive Board of the International Council of Scientific Unions at its meeting in Oslo in August 1955.

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

A meeting of the Commission was held in Zürich in July 1955. The discussions were chiefly on questions of nomenclature. For the viscosity of macromolecular solutions, it was decided not to make new proposals for amendment of the Huggins report. The German version of this Report is still under discussion by a group presided over by Prof. O. Kratky.

For the new types of highly crystalline polymers of  $\alpha$ -olefines, which have properties very different from the earlier known glass polymers of these substances, the word 'isotactic' was suggested, meaning that the substituent groups are 'equally placed'. No decision was reached; it was considered that the introduction of a definite word would be premature at the present time.

The measurement of properties of standard polystyrene fractions in a number of different laboratories has continued; satisfactory agreement has been attained except for osmotic pressure measurements.

The Bureau of IUPAC is to be asked to provide assistance for the translation of articles on macromole-

cules which are written in languages for which it is difficult to find expert translators in Western Europe and America.

The next Symposium will be held in Rehovoth, Israel, in April 1956.

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

This Commission has made further arrangements for the meeting to be held in conjunction with the Fourth International Congress of the International Union of Crystallography in 1957. The invitation of Prof. Slater to have the meeting at the Massachusetts Institute of Technology, Cambridge, Mass., U.S.A., was accepted, and the programme will probably include the following topics: the determination of the thermal vibrations of solids by temperature diffuse scattering of X-rays; X-ray determination of the form factors of the outer electrons of atoms, with a view to determining non-spherical charge distributions; neutron-diffraction determination of the distribution of magnetic scattering in ferromagnetic metals and alloys and in antiferromagnetic substances; determination of hydrogen positions in crystals by X-ray, electron, and neutron diffraction.

### *Abstracting Board of the International Council of Scientific Unions*

The Executive Committee of the Board met in Zürich in July 1955, and the Editors of the abstracting journals met in Heidelberg at the end of the same month. Arrangements for the extension of the Board's activities to chemistry were completed, and various matters concerning international cooperation were discussed.

### International Council of Scientific Unions

The Union was represented by Dr D. W. Smits at the seventh meeting of the Executive Board of the International Council of Scientific Unions, and by him and Prof. A. J. C. Wilson at the Seventh General Assembly of the Council. These meetings were held in Oslo, at the Norwegian Academy of Science and Letters, in August 1955. Among the more important decisions taken were the following: the admission of the International Union of Physiological Sciences and the International Union of Biochemistry as new Scientific Members, and of the U.S.S.R. as a new National Member; recognition of the fusion of the already existing International Unions, the International Union of the History of Science, with the International Union of Logic, Methodology and Philosophy of Science, of which the former Union was a Scientific Member of ICSU, and the place of which was taken by the new Union, the International Union of the History and Philosophy of Science; the adoption of a new scheme for the annual dues of the National Members; the allocation of the UNESCO subvention for 1956; the decision to offer services to the United Nations, through UNESCO, in a study of the biological and other effects of nuclear radiation as a basis for the scientific assessment of their implication with respect to living systems; and the decision to plead for freedom for fundamental research on the physical characteristics, geology, and biology of the sea-bed and subsoil of the continental shelf. Reports of the Unions, Special Committees, and Joint Commissions were presented. The adequacy of the present structure and functions of ICSU was discussed at length by the Assembly.

### Finances

The audited accounts of the Union for the year 1955 are published at the end of this Report. Once again, the Union received generous subventions for the support of its activities, and the Executive Committee wishes to express its sincere gratitude to the donors. A subvention of \$ 4000 was received from UNESCO for publications and was credited to the *Structure Reports* Account. A donation of \$ 1530 was received from the American Crystallographic Association for the support of the publication of *Acta Crystallographica*, and for the same purpose a donation of D. Cr. 3000 (£155) from a Danish source and a donation of Sw. Fr. 500 (£41) from a Swiss source were received. A subvention of Sw. Cr. 10,563 (£732) from Swedish sources was credited to the General Publications Fund.

The *Acta Crystallographica* Account for 1955 shows in comparison with that for 1954 an increased income from subscriptions to the journal, as a result of an increase in the number of subscribers, and an increased sale of back numbers. These advantageous differences were,

however, practically compensated by the increase in the publication and the editorial expenses, notwithstanding the reduction of the rate of the publisher's commission on production and sales from 12½% to 10%. By this reason the credit balance on the publication of the journal was in 1955 almost the same as in 1954, namely about f. 19,000, to which, however, an amount of f. 10,827 should be added, being the net yield of the advertisements carried in the journal in 1955. The total income, including an amount of f. 7893 from subventions, exceeded expenditure during the year by f. 37,378, and the accumulated balance of the *Acta Crystallographica* Account amounted to f. 41,877 at the end of 1955.

Income from sales of copies of Vol. 1 of *International Tables* was lower in 1955 than in 1954. On the other hand there were only relatively small (editorial) expenses in 1955, so that in that year the excess of income over expenditure was larger than in 1954. The accumulated balance of the *International Tables* Account increased in this way from f. 67,090 at the end of 1954 to f. 71,122 at the end of 1955; this balance will be needed for the publication of the next volume to appear.

The *Structure Reports* Account showed an excess of expenditure over income during the year of f. 14,694, notwithstanding the subvention of f. 15,200 which was credited to this account. It should, however, be kept in mind that the total cost of production of Vol. 9, which appeared just before the end of 1955, was charged to the 1955 account, without any income from sales of copies of this volume. Moreover, a large part of the editorial honoraria in respect of the forthcoming Vols. 8 and 15 were already paid in 1955. The accumulated balance of the *Structure Reports* Account decreased to f. 22,805 at the end of that year.

Thanks to the Swedish subventions the accumulated balance of the General Publications Fund increased from f. 93,853 at the end of 1954 to f. 101,642 at the end of 1955.

Relatively small expenses were charged to the General Fund in 1955, and the greater part of these expenses could be met from the income from investments. An amount of f. 5428 (500,000 Fr. Fr.) was received from the French National Committee, which was the balance remaining of funds raised for the Third General Assembly and International Congress. The Executive Committee has accepted with gratitude this donation, and decided that the sum be used under the advice of the French National Committee to facilitate the attendance of French crystallographers at the Fourth General Assembly and International Congress. Including this donation, the excess of income over expenditure for the General Fund amounted to f. 24,657 in 1955, which made the accumulated balance of this Fund increase to f. 55,506. It may be expected that heavy charges on the General Fund will be made in 1956 in consequence of the meetings of various Committees and Commissions in Madrid, and again in 1957 in view of the Fourth General Assembly and International Congress in Canada.

### Membership of Committees, Commissions and Other Bodies

The membership of Committees, Commissions and other bodies on 31 December 1955 was the same as that given in the Report for 1954 (see *Acta Cryst.* (1955), 8, 857).

*Acta Cryst.* (1956). 9, 694

### International Union of Crystallography

The audited accounts of the Union for the calendar year 1955 are printed below.

#### *Acta Crystallographica* Account for the year ended 31 December 1955

Publication Expenses:	<i>f.</i>	<i>f.</i>
Printing and Binding, Volume 8, 1955	(D. Cr. 117,773-64)	64,636-41
Distribution and Postage	(D. Cr. 14,911-40)	8,183-66
Insurance on Stock at Cambridge, and Shipping of Back Volumes to Copenhagen	(£ 31.13.2)	336-84
Publisher's Commission on Production	(D. Cr. 11,353-20)	6,230-85
		<u>79,387-76</u>
Editorial Expenses:		
Editorial Honoraria		5,109-30
Secretarial Salaries and National Insurance, Office Rent, Postages, Telephone, Stationery, Printing and Sundries		6,785-35
Depreciation of Office Equipment		34-58
		<u>11,929-23</u>
Advertisement Expenses:		
Printing	(D. Cr. 3,453-84)	1,895-53
Publisher's Commission on Printing	(D. Cr. 345-39)	189-56
Sundry Expenses of Editor and Advertising Agent	(£ 95-25)	361-95
		<u>2,447-04</u>
<i>Excess of Income over Expenditure carried to Balance Sheet</i>		<u>37,377-88</u>
		<u><u>f. 131,141-91</u></u>
		<u><u>f. 131,141-91</u></u>
Editorial Expenses:	<i>f.</i>	<i>f.</i>
Computational Work for Volume 3	...	1,781-80
Travelling Expenses	...	11-04
Stationery, Postages and Sundries	...	106-80
		<u>1,899-64</u>
<i>Excess of Income over Expenditure carried to Balance Sheet</i>		<u>4,032-11</u>
		<u><u>f. 5,931-75</u></u>
		<u><u>f. 5,931-75</u></u>
Subscriptions to Volume 8, 1955	(D. Cr. 198,959-55)	109,192-78
Sale of Back Numbers	(D. Cr. 23,485-00)	12,889-02
Sundries	(£ 9.10.0)	101-08
		<u>122,182-88</u>
<i>Less</i> Publisher's Commission on Sales	(D. Cr. 22,244-45)	12,208-18
		<u>109,974-70</u>
Income from Advertisements	...	15,576-46
<i>Less</i> Advertising Agent's Commission	...	2,302-49
		<u>13,273-97</u>
Subvention from U.S.A. Source	...	5,814-00
Subvention from Danish Source	(D. Cr. 3,000-00)	1,646-46
Subvention from Swiss Source	(Sw. Fr. 500-00)	432-78
		<u>7,893-24</u>

#### *International Tables* Account for the year ended 31 December 1955

Editorial Expenses:	<i>f.</i>	<i>f.</i>
Computational Work for Volume 3	...	1,781-80
Travelling Expenses	...	11-04
Stationery, Postages and Sundries	...	106-80
		<u>1,899-64</u>
<i>Excess of Income over Expenditure carried to Balance Sheet</i>		<u>4,032-11</u>
		<u><u>f. 5,931-75</u></u>
		<u><u>f. 5,931-75</u></u>
Sale of Copies of Volume 1	...	7,113-77
<i>Less</i> Publisher's Commission on Sales	...	1,173-06
Bank Charges	...	8-96
		<u>1,182-02</u>
		<u>5,931-75</u>
		<u><u>f. 5,931-75</u></u>

## Structure Reports Account for the year ended 31 December 1955

	<i>f.</i>	<i>f.</i>		<i>f.</i>	<i>f.</i>
Publication Expenses:					
Printing and Binding Volume 9 ... ..	13,541.61		Sale of Copies of Volume 10 ... ..		4,442.40
Binding additional Copies of previous Volumes ... ..	2,078.25		Sale of Copies of Volume 11 ... ..		3,907.50
		15,619.86	Sale of Copies of Volume 12 ... ..		3,492.90
Editorial Expenses:			Sale of Copies of Volume 13 ... ..		12,673.50
Editorial Honoraria, Abstractors' and Assistants' Salaries	30,891.65			24,516.30	
Subscriptions to Journals, Photocopies, Stationery,			Less Publisher's Commission on Sales ... ..		6,129.08
Postages and Sundries ... ..	878.92		Subvention from UNESCO ... ..		18,387.22
Travelling Expenses ... ..	853.86		Excess of Expenditure over Income carried to Balance Sheet...		15,200.00
Depreciation of Office Equipment ... ..	37.24				14,694.31
		32,661.67			
	<i>f.</i>	<i>f.</i>			<i>f.</i>
	48,281.53				48,281.53

## General Publications Fund Account for the year ended 31 December 1955

	<i>f.</i>	<i>f.</i>		<i>f.</i>
Excess of Income over Expenditure carried to Balance Sheet ... ..		7,789.02	Subventions from Swedish Sources ... (Sw. Cr. 10,562.81) ...	7,789.02
		<i>f.</i>		<i>f.</i>
		7,789.02		7,789.02

## General Fund Account for the year ended 31 December 1955

	<i>f.</i>	<i>f.</i>		<i>f.</i>
I.C.S.U. (1 % of Subscriptions from Adhering Bodies) ... ..		174.38	Subscriptions from Adhering Bodies ... ..	21,959.88
Office Expenses:			Interest on Investments:	
Secretarial Assistance ... ..	1,214.94		2½ % National War Bonds 1954/46 ... ..	912.72
Auditors' Fees ... ..	1,332.19		3 % Nederlandsch Indië 1937 ... ..	1,770.00
Postages, Stationery, Printing and Sundries ... ..	622.07		4½ % Noorwegen 1955 ... ..	123.25
Bank Charges and Differences on Exchange ... ..	230.88		4 % Unie van Zuid Afrika 1955 ... ..	113.34
		3,400.08	Interest on Banking Account ... ..	2,919.31
Incidental Travelling Expenses of Officers ... ..		1,777.61	Subvention from French National Committee	131.99
Expenses of Commission on Crystallographic Teaching ... ..		430.19	(Fr. Fr. 500,000)	5,428.57
Excess of Income over Expenditure carried to Balance Sheet...		24,657.49		<i>f.</i>
		<i>f.</i>		30,439.75

## Balance Sheet as at 31 December 1955

<i>Liabilities</i>		<i>f.</i>	<i>f.</i>	<i>Assets</i>	
Sundry Creditors:				Cash at Bank:	
Office Expenses	...	1,351.35		Amsterdamsche Bank N.V., Groningen,	
Subscription to I.C.S.U., due for 1955	...	174.38		including interest on account, due	
Computational Work for Volume 3 of <i>International Tables</i>	...	1,781.80		for 1955	4,368.22
Unspent UNESCO Subventions, Virement to 1955/56 approved...	...		3,307.53	Comptoir National d'Escompte de Paris	22.61
				First National City Bank of New York	54,951.47
				Westminster Bank Ltd, Cambridge	5,300.27
					63,742.57
<i>Acta Crystallographica</i> Account:				Cash with Editors and Commissions:	
Balance as at 1 January 1955	...	4,499.34		Technical Editor of <i>Acta Crystallographica</i>	
Add Excess of Income over Expenditure for the year to date	...	37,377.88		ica	
			41,877.22	General Editor of <i>International Tables</i>	847.87
<i>International Tables</i> Account:				General Editor of <i>Structure Reports</i>	239.18
Balance as at 1 January 1955	...	67,089.83		Commission on Crystallographic Teaching	903.51
Add Excess of Income over Expenditure for the year to date	...	4,032.11			208.01
			71,121.94		2,198.57
<i>Structure Reports</i> Account:				Due from:	
Balance as at 1 January 1955	...	37,489.54		N.V. A. Oosthoek's Uitgevers Mij., Utrecht	3,233.61
Less Excess of Expenditure over Income for the year to date	...	14,694.31		Messrs Ejnar Munksgaard, Copenhagen (D. Cr. 55,289.63)	30,344.00
			22,805.23	The Kynoch Press Ltd, Birmingham...	1,271.88
General Publications Fund:				Subscriptions from Adhering Bodies, due for 1954 and 1955	34,849.49
Balance as at 1 January 1955	...	93,852.91		Advertisements in <i>Acta Crystallographica</i> , due for 1955, after deduction of Advertising Agent's Commission	5,213.60
Add Excess of Income over Expenditure for the year to date	...	7,789.02		Investments at Cost:	3,421.06
			101,641.93	£6,000 2½% National War Bonds 1954/56...	64,794.94
General Fund:				f. 105,000 3% Nederlandsch Indië 1937	106,104.24
Balance as at 1 January 1955	...	30,848.21		f. 6,000 4½% Noorwegen 1955	6,007.20
Add Excess of Income over Expenditure for the year to date	...	24,657.49		f. 6,000 4% Unie van Zuid Afrika 1955	6,007.20
			55,505.70	Fr. Fr. 500,000. Bons du Trésor à Intérêt Progressif	5,401.43
				Interest accrued thereon	188,315.01
					1,797.89
				Office Equipment at Cambridge:	190,112.90
				As at 1 January 1955	252.70
				Less Depreciation	34.58
					218.12
				Office Equipment at Cardiff:	
				As at 1 January 1955	340.48
				Less Depreciation	37.24
					303.24
				Stocks of unsold Copies of <i>Acta Crystallographica</i> , <i>International Tables</i> and <i>Structure Reports</i>	pro memoria
					f. 300,059.55

£ 1 = f. 10.64; \$ 1 = f. 3.80 (UNESCO rates of exchange)

We declare, that the above Balance Sheet as at 31 December 1955 and the attached *Acta Crystallographica* Account, *International Tables* Account, *Structure Reports* Account, General Publications Fund Account and General Fund Account exhibit a true and correct view of the affairs of the International Union of Crystallography.

Groningen, Holland  
 Ubbo Emmiussingel 75  
 9 June 1956

Signed: VAN DIEN, VAN UDEN & Co.

Accountants