

## International Union of Crystallography

### Report of the Executive Committee for 1984

#### Thirteenth General Assembly and Congress

The Thirteenth General Assembly and International Congress of Crystallography was held at the Congress Centrum Hamburg, Hamburg, Federal Republic of Germany, 9-18 August 1984, by invitation of the Arbeitsgemeinschaft Kristallographie. A report, including a detailed report of the General Assembly, will be published in this journal.

The General Assembly and Congress were attended by 1470 scientists from 46 countries, together with 191 accompanying members. E. F. Bertaut delivered the Congress Discourse, entitled 'Commensurate-Incommensurate', whilst Th. Hahn gave a Public Evening Lecture, entitled 'Kristalle in Technik und Alltag'.

There were 16 Main Lectures and 40 Microsymposia, some of which were organized by the Commissions of the Union. There were also many *ad hoc* meetings.

In all, 1397 abstracts were accepted and printed in the Book of Communicated Abstracts, which was reproduced as a supplement to *Acta Crystallographica*, Section A. They consisted of 160 invited and 59 contributed oral presentations and 1178 poster presentations.

Exhibitions of commercial and non-commercial crystallographic equipment (including teaching aids) and crystallographic books were held during the Congress. Demonstrations were given of various databases. An extensive programme of excursions and social events was arranged. The Congress was organized excellently under the direction of H. Saalfeld, Chairman of the Organizing Committee, and U. Bonse, Chairman of the Programme Committee.

The General Assembly met on the evenings of 9, 10 and 14 August. The Consejo Nacional de Ciencia y Tecnologia of Mexico was accepted as an Adhering Body in Category I, whilst there were changes in the Category of Adherence for three other Adhering Bodies (See Table 1 for the current list).

The Assembly received the triennial financial report and the reports of the Executive Committee, the Commissions and the Union Representatives on other bodies since the Twelfth General Assembly in 1981. New Officers of the Union, Chairmen and members of Commissions and Union Representatives were elected, the full list of these people being given as an annex to the report of the General Assembly. The Assembly continued the unit contribution for the years 1985-1987 inclusive at SwFr 890.

The General Assembly reaffirmed its decision to hold the Fourteenth General Assembly and Congress in Perth, Australia, in August 1987, and provisionally accepted an invitation from the French Académie des Sciences to hold the Fifteenth General Assembly and Congress in Bordeaux in 1990.

The Executive Committee met for several days before, and most days during, the Congress, mainly to deal with matters directly related to the business of the General Assembly and the work of the Commissions.

#### Other Meetings

In conjunction with its Congress mentioned above, the Union sponsored several associated meetings held in the Federal Republic of Germany, namely: International Summer School on Crystallographic Computing, Mülheim/Ruhr, 30 July-8 August; Symposium on Neutron Scattering, West Berlin, 6-8 August; Symposium on Metals and Intermetallic Compounds, Aachen, 20-22 August; Symposium on Small Angle Scattering and Related Methods, Hamburg, 20-23 August; International Summer School on Symmetry-Related Crystal Structures: Group-Subgroup Relations, Schloss Rauischholzhausen, 20-24 August.

Other meetings held in 1984 and sponsored by the Union were International Course on Direct Methods of Solving Crystal Structures, Erice, Italy, 7-19 April; Conference on Crystal Growth and Characterization of Polytype Structures, Marseille, France, 3-6 July.

#### Executive Committee

The membership of the Executive Committee, including new members elected by the General Assembly in 1984, is as follows:

President: Professor Th. H. Hahn (Germany, Federal Republic); Vice-President: Professor V. I. Simonov (USSR); General Secretary and Treasurer: Professor K. V. J. Kurki-Suonio (Finland); Immediate Past President: Dr. J. Karle (USA); Ordinary Members: Professor A. Authier (France), Dr R. Diamond (UK), Professor A. Kálmán (Hungary), Dr E. N. Maslen (Australia), Professor M. Nardelli (Italy), Professor Y.-q. Tang (China, People's Republic). Dr J. N. King continues as Executive Secretary.

#### Publications

Volume 40 of *Acta Crystallographica* and Volume 17 of the *Journal of Applied Crystallography* were published in 1984, as were Volumes 45B and 48A of *Structure Reports*, Volume 15 of *Molecular Structures and Dimensions* and a further nine pamphlets for teaching crystallography. Volume A of *International Tables for Crystallography* and Volume III of the earlier series, *International Tables for X-ray Crystallography*, were reprinted.

#### Adhering Bodies

The latest list of Adhering Bodies of the Union, and the names and addresses of the Secretaries of the National Committees, is given in Table 1.

#### Work of the Commissions

##### *Commission on Journals*

Volumes 40 of *Acta Crystallographica* (*Acta*) and 17 of the *Journal of Applied Crystallography* (*JAC*) were pro-

Table 1. *Adhering Bodies*

<i>Country</i>	<i>Category*</i>	<i>Adhering Body</i>	<i>Secretary of National Committee</i>
Argentina	I	Consejo Nacional de Investigaciones Científicas y Técnicas	M. A. R. DE BENYACAR, Division Fisca del Solido Comision Nacional de Energia Atomica, Av. del Libertador 8250, 1429 Buenos Aires
Australia	III	Australian Academy of Science	The Executive Secretary, Australian Academy of Science, PO Box 783, Canberra City, ACT 2601
Austria	I	Österreichische Akademie der Wissenschaften	A. PREISINGER, Institut für Mineralogie, Kristallographie und Strukturchemie der Technischen Universität Wien, Getriedemarkt 9, A-1060 Vienna
Belgium	II	Académie Royale des Sciences, des Lettres et des Beaux-Arts de Belgique	E. LEGRAND, Materials Sciences Department, Studiecentrum voor Kernenergie, B-2400 Mol
Brazil	III	Conselho Nacional de Desenvolvimento Científico e Tecnológico	S. CATICHA ELLIS, DESCM, Instituto de Fisica, Universidade Estadual de Campinas, Campinas, São Paulo 13100
Canada	III	National Research Council	J. T. SZYMANSKI, CANMET, Department of Energy, Mines and Resources, 555 Booth St, Ottawa, Ontario K1A 0G1
Chile	I	National Committee for Crystallography	D. BOYS, Departamento de Fisica, Universidad de Chile, Casilla 5487, Santiago
China, People's Republic of	IV	Academia Sinica	XU XIAOJIE, Institute of Physical Chemistry, Peking University, Beijing
Czechoslovakia	I	Československá Akademie Věd	J. GARAJ, Department of Analytical Chemistry, Slovak Technical University, Janska 1, 880 37 Bratislava
Denmark	I	Royal Danish Academy of Sciences and Letters	B. JENSEN, Chemical Institute BC, Danish School of Pharmacy, Universitetsparken 2, Copenhagen DK-2100
Egypt, Arab Republic of	I	Academy of Scientific Research and Technology	S. A. ABDEL-HADY, Faculty of Engineering & Technology, Cairo Higher Institute of Technology, Helwan, Cairo
Finland	I	Suomen Tiedeakatemiain Valtuuskunta	A. VAHVASELKÄ, Department of Physics, University of Helsinki, Siltavuorenpenger, 20 D, SF-00170 Helsinki 17
France	IV	Académie des Sciences (Institut de France)	Y. EPELBOIN, Association Française de Cristallographie, Tour 26, 4 place Jussieu, 75230 Paris CEDEX 05
German Democratic Republic	I	Vereinigung für Kristallographie in der GGW de DDR	P. PAUFLER, VFK Invalidenstrasse 43, DDR-104 Berlin
Germany, Federal Republic of	IV	Arbeitsgemeinschaft Kristallographie	H. BURZLAFF, Institut für Angewandte Physik, Lehrstuhl für Kristallographie, Universität, Loewenichstrasse 22, D-8520 Erlangen
Hungary	I	Magyar Tudományos Akadémia	P. GADÓ, Aluterv FKI, Pf. 128, Budapest H-1389
India	II	Indian National Science Academy	S. K. SIKKA, Scientific Officer, Neutron Physics Division, Bhabha Atomic Research Centre, Trombay, Bombay 400085
Israel	I	Israel Academy of Sciences and Humanities	M. HAREL, Weizmann Institute of Science, Rehovot
Italy	III	Consiglio Nazionale delle Ricerche	G. FILIPPINI, Istituto di Chimica Fisica, Università di Milano, Via Golgi 19, Milano
Japan	IV	Science Council of Japan	Y. IITAKA, Faculty of Pharmaceutical Sciences, University of Tokyo, Bunkyo-ku, Tokyo
Mexico	I	Consejo Nacional de Ciencia y Tecnologia	M. SORIANO-GARCIA, Instituto de Quimica, Circuito Exterior, UNAM, Delegacion Coyoacan, 04510 Mexico D.F.
Netherlands	II	Stichting voor Fundamenteel Onderzoek der Materie met Röntgen-en Elektronenstralen	The Executive Secretary, FOMRE, Koningin Sophiestraat 124, 2595 TM's-Gravenhage
New Zealand	I	The Royal Society of New Zealand	J. M. WATERS, Department of Chemistry, Massey University, Palmerston North
Norway	I	Det Norske Videnskaps Akademi	B. F. PEDERSEN, Department of Pharmacy, University of Oslo, PO Box 1068, Blindern, Oslo 3
Poland	I	Polska Akademia Nauk	A. PIETRASZKO, Instytut Niskich Temperatur i Badań Strukturalnych, Polskiej Akademii Nauk, Plac Katedralny 1, 50-950 Wrocław
Portugal	I	Sociedade Portuguesa de Fisica	M. M. R. R. COSTA, Departamento de Fisica, Universidade de Coimbra, 3000 Coimbra

\* Adherence to the Union is in one of five Categories I-V, with corresponding voting powers and contributions as set out in Statutes 3·6, 5·5 and 9·4.

Table 1 (*cont.*)

Country	Category*	Adhering Body	Secretary of National Committee
South Africa	I	South African Council for Scientific and Industrial Research	G. U. SCHIRGE, International Relations Division, CSIR, PO Box 395, 0001 Pretoria
Spain	III	Consejo Superior de Investigaciones Cientificas	M. MARTINEZ, Instituto de Quimica Fisica 'Rocasolano', Consejo Superior de Investigaciones Cientificas, Serrano 119, 28006 Madrid
Sweden	II	Kungliga Vetenskapsakademien	P. KIERKEGAARD, Arrhenius Laboratory, University of Stockholm, S-106 91 Stockholm
Switzerland	II	Schweizerische Gesellschaft für Kristallographie	H.-B. BÜRGI, Universität Bern, Laboratorium für Chemische und Mineralogische Kristallographie, Freiestrasse 3, CH-3012 Bern
UK	V	The Royal Society	The Executive Secretary, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG
USA	V	National Academy of Sciences—National Research Council	C. T. PREWITT, National Research Council, Commission on Physical Sciences, Mathematics and Resources, 2101 Constitution Avenue, Washington, DC 20418
USSR	V	Akademija Nauk SSSR	V. I. SIMONOV, Institute of Crystallography, Leninsky prospekt 50, Moscow 117333
Yugoslavia	I	Jugoslavenska Akademija Znanosti i Umjetnosti	B. KAMENAR, Laboratory of General and Inorganic Chemistry, Faculty of Science, Ulica Soc. Revolucije 8, 41 000 Zagreb

\* See footnote on preceding page.

duced and published in 1984, the second year for the new Sections B and C of *Acta*. The decennial *Index for Volumes 29-38 of Acta* was published in July 1984, as a reprint by index type of the ten individual annual indexes. The total number of papers published in *Acta* increased 13% as compared with 1983, those in *JAC* decreased by 23%. The increase for *Acta* was due entirely to the 26% rise in the number of Section C papers, Sections A and B decreasing 16% and 18% respectively. The total number of manuscripts accepted for *Acta* and *JAC* in 1983 and 1984 was nearly identical.

The average length of all articles in *Acta* decreased from 3.8 pages in 1983 to 3.4 pages in 1984, the largest average decrease being in Section A from 6.5 to 5.9 pages: those in *JAC* decreased from an average length of 4.9 pages in 1983 to 4.7 pages in 1984 (see Table 2). Median publication times for full articles, the average elapsed time in months between the published acceptance and nominal publication dates, were 5.1 months for *Acta* A, 5.5 months for *Acta* B, 3.9 months for *Acta* C and 5.0 months for *JAC*. Corresponding publication times in 1983 were 4.8, 5.3, 4.3 and 5.3 months. Mean publication times for Short Communications were 4.3 months for *Acta* A, 3.0 months for *Acta* C and 4.4 months for *JAC* in 1984 (*Acta* B had no Short Communications in 1984). The present mean publication time for *Acta* C compares favourably with the best corresponding times for other major scientific monthlies.

A total of 58 inorganic, 14 organometallic and 24 organic related papers appeared in Section B in 1984, compared with 59, 15 and 40 respectively in 1983. The large percentage drop in structural science papers based on organic compounds was not anticipated. Submission of papers that successfully relate chemical, physical, biological, pharmacological, mineralogical, metallurgical or other properties to the underlying crystal structure continues to be warmly encouraged for this new Section. By contrast, the distribution of papers in Section C was 94 inorganic, 240 organometallic and 455 organic in 1984, compared with

118 inorganic, 188 organometallic and 330 organic articles in 1983.

The distribution of papers and authors by country in all sections of *Acta* and in *JAC* is given in Table 3. The allocation method used is given in the notes to the table. Twelve countries contributed papers in 1983 but not in 1984 while four countries contributed in 1984 that did not in 1983. In addition to many countries for which the number of papers published changed by fewer than fifteen over the two years, five had larger changes. The contribution from France decreased in 1984 while that from India, Japan, the UK and USA each increased by fifteen papers or more.

Publication of the *Index* to Volume 39 of *Acta* was greatly delayed due to the introduction of a computerized index-production system. The system will be used to produce the next five-year index to Volumes 39-43 at a considerable financial saving to the IUCr. The computer-prepared index to Volume 17 of *JAC* was bound in with the final issue, delaying publication by three weeks.

The Commission on Journals met in Hamburg on 7-9 August 1984 and reviewed most aspects of the journal publication programme of the Union. Among the decisions taken was the introduction of a new category of Lead Articles for *Acta* A and B. The purpose of these articles, which normally will be invited, is to be forward looking and original, highlighting major unsolved problems in the field of interest, and suggesting likely directions for new developments. It is anticipated that Lead Articles will stimulate new work in the field, leading to the submission of additional regular articles. A second new category of papers was introduced for *Acta* C, entitled Short-Format Papers. This category will differ from the present Section C format in having neither *Introduction* nor *Discussion* sections. The structural criteria for full and Short-Format papers are identical, the latter category being expected to appeal strongly to authors having a large output of high-quality structural determinations. Two new categories have also been initiated in *JAC*. Computer Program Abstracts will

Table 2. Survey of the contents of the Union Journals  
*Acta Crystallographica*

Vol.	Year	Number of Pages*	Number of Papers	Full Articles		Short Structural Papers		Short Communications	
				Number	Average Length	Number	Average Length	Number	Average Length
A36 } B36 }	1980	1096 } 3212 }4308	194 } 877 }1071	168 } 417 }585	6.1 } 5.0 }5.3	— 438	— 2.5	26 } 22 }48	1.3 } 1.3 }1.3
A37 } B37 }†		1981	944 } 2250 }3194	158 } 630 }788	136 } 286 }422	6.4 } 4.9 }5.4	— 333	— 2.5	22 } 11 }33
A38 } B38 }	1982		880 } 3176 }4056	155 } 905 }1060	129 } 370 }499	6.3 } 4.9 }5.3	— 518	— 2.6	26 } 17 }43
A39 } B39 }‡ C39 }		1983	950 } 770 }3434 1714 }	146 } 121 }912 645 }	129 } 118 }247	6.4 } 6.4 }6.4	— — 636	— — 2.7	17 } 3 }29 9 }
A40 } B40 }† C40 }	1984		728 } 616 }3470 2126 }	123 } 99 }1033 811 }	109 } 99 }208	6.2 } 6.2 }6.2	— — 789	— — 2.7	14 } — }36 22 }

*Journal of Applied Crystallography*

Vol.	Year	Number of Pages*	Number of Papers	Full Articles‡		Short Communications		Crystal Data		Computer Programs		Short Items**	
				Number	Average Length	Number	Average Length	Number	Average Length	Number	Average Length	Number	Average Length
13	1980	638	130	81	6.2	6	2.0	25	1.8	7	2.7	11	1.0
14	1981	492	118	69	5.7	7	1.7	26	1.5	7	3.1	9	0.9
15§	1982	676	132	89	6.2	8	1.0	19	1.7	9	2.3	7	0.9
16	1983	661	135	86	6.8	11	1.7	21	0.6	12	2.7	5	1.0
17	1984	488	104	66	6.2	11	1.5	7	0.5	7	2.4	14	0.9

\* Excluding indexes.

† Volume A37 includes, in addition, 428 pages of abstracts communicated to the Ottawa Congress and Volume A40 includes, in addition, 542 pages of abstracts communicated to the Hamburg Congress.

‡ Volume 39 divided into three new Sections in 1983.

§ Volume 15 includes, in addition, 37 pages of 'Current Crystallographic Books 1970 through 1981.'

¶ Excluding Lead Articles.

\*\* Excluding Union Announcements, Crystallographers, and Book Reviews.

provide a rapid means of communicating current information concerning new programs, systems and significant updates. New Commercial Products will describe new items for sale of interest to readers.

M. Schlenker was appointed to succeed M. Hart as Editor of *JAC* and Co-chairman of the Commission at the Thirteenth General Assembly of the Union in August 1984. N. W. Alcock, C. E. Bugg, H. Burzlaff, H. Hope, M. B. Hursthouse, H. Steinfink and J. Trotter were appointed Co-editors of *Acta* and A. M. Glazer and H. Iwasaki Co-editors of *JAC* during the year in succession to F. R. Ahmed, J. A. Ibers, H. Schulz, G. A. Sim, D. H. Templeton and D. Watanabe, whose resignations had been accepted.

*Commission on Structure Reports*

Volume 48A (Metals and Inorganic Compounds for 1981, 420 pages) and Volume 45B (Organic Compounds for 1979, 1542 pages in two volumes) were published in 1984. Volume 46B (Organic Compounds for 1980, 1452 pages in two volumes) is with the publisher and will appear in 1985. Co-editorial work is 99% completed for Volume 48B (Organic Compounds for 1981) and is in progress for

Volumes 49B, 50B and 51B (Organic Compounds for 1982, 1983 and 1984 respectively). The manuscripts for the Inorganic sections of Volumes 49A and 50A (Metals and Inorganic Compounds for 1982 and 1983 respectively) are ready and only await completion of the Metals sections (which have been temporarily delayed); these sections are now being worked on and completion is anticipated in 1985.

*Commission on International Tables*

Until the General Assembly of the Union held in 1984, the Commission on *International Tables for Crystallography* had consisted *ex officio* of the Editors and the President and General Secretary of the Union. The Editors had received great help from certain Commissions of the Union, and at the General Assembly the Chairmen of these Commissions (Charge, Spin and Momentum Densities, Crystallographic Apparatus, Crystallographic Computing, Crystallographic Teaching, Electron Diffraction, Neutron Diffraction) were added, also *ex officio*. The Commission held an open meeting during the Congress associated with the Thirteenth General Assembly. Each Editor presented his plans for his Volume, and profited from the discussion.

Table 3. *Distribution of papers and authors, by country, in Acta and JAC for 1983 and 1984*

Country	<i>Acta Crystallographica</i>								<i>Applied Crystallography</i>							
	Section A				Section B				Section C				Applied Crystallography			
	Papers		Authors		Papers		Authors		Papers		Authors		Papers		Authors	
1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	1983	1984	
Algeria	-	0-8	-	-	-	-	-	-	-	-	-	-	-	-	-	
Argentina	-	-	1	-	0-5	-	1	-	0-5	1-8	2	4	1-0	-	3	
Australia	12-5	6-1	19	11	3-9	6-9	7	21	24-3	18-0	66	45	5-7	5-0	5	10
Austria	-	3-0	-	8	0-4	-	2	-	1-9	0-8	6	4	0-7	2-0	2	3
Bangladesh	-	-	-	-	-	-	-	-	0-3	1-5	2	6	-	-	-	-
Belgium	5-0	1-0	10	3	1-0	-	3	-	9-2	19-7	31	67	1-0	-	1	-
Brazil	1-0	-	6	1	-	-	-	-	1-0	0-8	4	3	2-0	1-0	6	1
Bulgaria	-	-	-	-	-	-	-	-	-	-	-	-	1-0	-	4	-
Cameroons	-	-	-	-	-	-	-	-	0-3	-	1	-	-	-	-	-
Canada	4-3	2-7	5	7	1-2	4-0	1	8	35-6	38-5	91	90	-	2-0	-	5
Chile	-	-	-	-	-	-	-	-	2-0	4-2	5	11	1-0	-	3	-
China, Peoples' Rep.	1-5	2-0	7	7	-	2-2	1	7	0-3	2-8	2	10	1-0	-	5	2
Columbia	-	-	-	-	-	-	-	-	0-2	-	2	-	-	-	-	-
Cuba	-	-	-	-	-	-	-	-	-	-	-	-	1-0	-	3	-
Czechoslovakia	1-0	7-1	1	10	1-7	0-4	4	2	3-3	7-0	11	25	5-0	4-0	10	14
Denmark	1-0	2-5	2	6	-	0-5	-	1	8-0	6-0	22	9	-	-	1	-
Egypt, Arab Rep.	-	-	-	-	1-0	-	3	-	-	-	1	-	-	-	-	-
Finland	-	0-3	-	1	0-5	-	2	-	2-5	2-0	5	5	1-0	1-5	3	5
France	13-4	10-9	21	28	14-1	6-8	41	18	85-7	80-7	286	303	20-6	13-2	55	44
German Dem. Rep.	-	2-1	-	5	0-3	2-0	1	3	1-0	6-0	4	14	2-0	2-5	2	4
Germany, Fed. Rep.	12-2	7-3	17	16	13-6	5-8	36	9	53-3	68-3	100	187	11-3	7-5	33	18
Greece	-	-	-	3	1-0	-	3	-	4-7	4-7	16	17	-	-	-	-
Hong Kong	-	-	-	-	-	-	-	-	1-0	2-0	3	5	-	-	-	-
Hungary	-	-	-	-	-	-	-	-	1-0	1-0	5	5	-	0-5	-	1
India	1-0	2-1	3	5	-	3-0	-	5	33-4	60-0	116	204	2-0	3-0	6	6
Iran	-	-	-	-	-	-	-	-	-	-	-	-	0-5	-	1	-
Ireland	-	-	-	-	-	-	-	-	0-8	1-5	2	4	-	-	-	-
Israel	2-5	2-3	4	4	3-5	3-0	9	4	1-5	5-4	4	10	3-5	1-0	9	3
Italy	8-3	3-0	17	15	6-1	4-0	18	12	44-9	48-3	142	174	1-2	2-0	3	5
Ivory Coast	-	-	-	-	-	-	-	-	-	1-8	-	10	-	-	-	-
Jamaica	-	-	-	-	-	-	-	-	0-3	-	1	-	-	-	-	-
Japan	7-0	2-1	17	7	16-3	18-5	64	65	39-0	61-2	164	235	7-6	8-0	19	22
Korea, South	-	-	-	1	-	-	-	-	-	-	1	1	-	-	-	-
Lebanon	-	-	-	-	-	-	-	-	0-3	-	3	-	-	-	-	-
Malaysia	-	-	-	-	-	-	-	-	-	1-2	-	4	-	-	-	-
Mexico	-	-	-	1	-	-	-	-	-	6-3	1	25	-	-	-	-
Netherlands	11-8	8-9	27	18	3-0	1-0	8	2	24-6	25-3	79	83	3-5	7-0	8	11
New Zealand	-	-	-	-	0-1	-	2	-	4-0	5-0	12	14	-	-	-	-
Nigeria	-	-	-	-	-	-	-	-	1-3	-	3	2	-	-	-	-
Norway	1-0	1-0	2	1	-	1-2	-	4	1-0	0-5	4	1	2-0	-	3	-
Poland	-	2-0	-	7	2-0	1-5	4	2	24-4	15-0	62	51	1-0	-	3	-
Portugal	2-0	1-0	2	1	1-0	-	1	-	-	0-7	1	2	1-0	-	1	-
Romania	-	-	-	-	-	-	-	-	-	-	-	-	-	1-0	-	2
Saudi Arabia	-	-	-	-	-	-	-	-	6-0	3-0	11	10	-	-	-	-
South Africa	-	0-5	-	1	-	1-0	-	2	2-3	4-9	6	16	-	1-0	-	3
Spain	-	1-0	-	3	1-0	-	4	-	28-0	19-3	104	64	2-8	0-5	12	2
Sweden	-	1-0	-	2	2-5	2-8	5	6	14-8	11-7	27	25	2-3	1-5	7	2
Switzerland	2-0	3-0	1	4	6-0	5-0	16	13	5-5	11-9	16	36	1-0	1-0	1	1
Syria	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Taiwan	-	-	-	-	-	-	-	-	1-0	9-0	4	31	-	-	-	-
Thailand	-	-	-	-	-	-	-	-	1-0	-	3	-	-	-	-	-
Tunisia	-	0-8	-	2	-	-	-	-	1-2	0-6	4	3	1-3	-	5	1
Turkey	1-0	-	1	-	-	-	-	-	-	-	1	-	-	-	1	-
UK	18-7	18-6	35	26	10-3	8-7	37	19	60-7	81-7	205	240	17-2	13-0	44	28
USA	27-5	19-9	46	46	27-3	19-2	68	51	100-9	179-4	282	590	27-8	24-8	66	54
USSR	6-3	5-1	13	16	0-7	0-6	4	3	0-3	3-0	2	16	1-2	-	7	1
Venezuela	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
Yugoslavia	-	-	-	-	-	-	-	-	4-7	6-2	12	22	4-0	1-0	14	4

- Notes:
1. Errata have been excluded.
  2. The papers have been allocated to the country or countries where the work was done, directly proportional to the number of authors per country for each paper.
  3. The authors' nationalities have been given where known. If an author's nationality is not known to be otherwise it is given as that of the country in which the work was done.

In addition, many formal and informal meetings between the Editors and Commissions took place, and the Editors were able to discuss many individual contributions with their authors, and to invite many new authors.

Reports on the individual Volumes follow. The Editors of Volumes B and C intend to prepare detailed interim

reports for the Executive Committee and the Commission during 1985.

#### Volume A

The first printing of Volume A ('Space-Group Symmetry') appeared in 1983, and sold out quickly; a reprint with

corrections was published in 1984. A brief 'teaching edition' has been published, and it is expected that a revised reprint of the full volume, possibly amounting to a second edition, will appear in 1986.

#### Volume B

A summary of the status of Volume B ('Reciprocal Space'), as it stood after the Hamburg Congress, was distributed to all authors, to the Executive Committee, and to the Commission. A unified time schedule was proposed, and this has been adhered to by a substantial number of authors. Further invitations were issued to prospective authors; most answers were favourable, but two chapters still lack authors.

The algorithms related to the preparation of Chapters B.1.4 and B.1.1 (the latter being less complete) were written. The automated preparation of the structure-factor tables and of the reciprocal-space space-group tables is essentially complete, and will be described in the report for 1985.

#### Volume C

Volume C ('Mathematical, Physical and Chemical Tables') has presented problems rather different from those of Volume B. Volume C was originally planned as an editorial condensation of the existing Volumes II, III and IV, with obsolete or readily available material eliminated, and tables for which a pocket calculator would be an acceptable substitute reduced to a skeleton tabulation. Consultation with the Chairmen of relevant Commissions, however, convinced the Editor that much fundamental re-writing would be necessary if Volume C were to be a worthy companion to Volumes A and B. The material is widely disparate, and it was therefore necessary to invite a large number of authors to contribute, some of them responsible for only a couple of pages, others for substantial chapters. Because of this change of plan and of the large number of contributions, Volume C is in a less advanced state than Volume B. In particular, many more chapters and sections still lack authors.

#### Commission on Biological Macromolecules

No report has been received from the Chairman of the Commission.

#### Commission on Charge, Spin and Momentum Densities

The Commission held two closed and one open meetings during the Hamburg Congress. At the Congress the activities of the Commission were also represented by a general lecture on 'Electron-Density and Bonding from Metal Oxides to Protein', given by E. N. Maslen, and a microsposium.

The Open Commission Meeting was devoted to discussion of the present state of the vanadium project. Reviews of the experimental results on charge, spin and momentum density in vanadium were given by some of the participants in the project and this was followed by an assessment of the theoretical situation given by J. Ashkenazi. In the concluding discussion it was decided to continue the project at least until the Sagamore meeting in August 1985 in the hope that some more charge density results would be forthcoming.

In the Commission meetings the charge density data bank was discussed. H. Burzlaff reported on its current status

and was encouraged to prepare a short paper on the use of the data bank for publication in *Acta Crystallographica*.

The 8th Sagamore Conference was held in Sweden, 28 July-3 August 1985, under the Chairmanship of I. Olovsson.

#### Commission on Crystal Growth and Characterization of Materials

The principal activity was the organization of the open meeting on 'Structure of Materials in Relation to their Physical Properties', held during the Hamburg Congress.

As the widening of the bridge between crystallography and materials science is a very important issue for the Union, an open meeting during the 1985 European Crystallographic Meeting was arranged by the Commission in order to continue discussion of this specific point.

Compared with its work in the past, this year the Commission has not been very active, mainly because of the changes in membership. However, ideas have been collected, especially concerning future arrangements in the transfer of expertise to developing countries. This being one of the most important aspects of the scientific policy of the Commission, organizational work has begun for the preparation of two international schools in 1986.

#### Commission on Crystallographic Apparatus

Major changes in the membership of this Commission took place at the Hamburg General Assembly. It gained a new Chairman to take the place of Sixten Abrahamsson who died early in 1984.

With the changes in membership have come changes in the projects under consideration by the Commission. Some of the earlier projects have been completed. These include:

1. *Microdensitometer Project* [S. Abrahamsson, P. Kierkegaard, O. Lindqvist and L. Sjölin. *J. Appl. Cryst.* (1981), **13**, 318-337];
2. *Survey of Film Characteristics* (M. Elder and O. S. Mills);
3. *Polarization Ratio Survey* [L. D. Jennings. *Acta Cryst.* (1984), **A40**, 12-16].

The results of these projects have either been published in *Acta Crystallographica* or reported at international congresses.

Of the others:

4. The *X-ray Attenuation Project* (D. C. Creagh) has almost been completed. Results for silicon are to be submitted to *Acta Crystallographica* for publication early in 1985. Further results for copper and pyrolytic graphite will be submitted later, when more data has been forthcoming from laboratories participating in the project. These results and results of anomalous scattering experiments will be included in Volume C of *International Tables for Crystallography*.

5. The *Intensity Meeting* (P. Kierkegaard) was held as an Open Commission Meeting on 'Determination of Accurate Intensities and Structure Factors' at the Hamburg Congress. We are indebted to P. Kierkegaard for the efficient manner in which he organized this meeting following the death of our former Chairman Sixten Abrahamsson.

6. The *Radiation Safety Project* (S. Martinez-Carrera) has proceeded to the point where the information gained can be used in the forthcoming Volume C of *International Tables for Crystallography*.

7. The *Accurate Determination of Diffractometer Intensities Project* (H. Hope) has lapsed because of insufficient interest by other laboratories in the project, despite its demonstrable usefulness.

8. The *Profile Analysis Project*, which was initiated by J. Čermák, has been taken over by M. Zocchi. Problems have occurred in the procurement of appropriate specimen material but it is hoped that this problem has now been overcome. We much appreciate the effort expended by J. Čermák on this project.

No new projects have been suggested to the Commission. It is now devoting its energies to assisting actively with the production of Volume C of *International Tables for Crystallography*.

#### *Commission on Crystallographic Computing*

In 1984 the attention of the Commission was focused on preparing the Computing School held in Mülheim/Ruhr, Federal Republic of Germany, 30 July–8 August. Members of the Commission were active on the Programme Committee of this most successful and enjoyable school.

The 130 participants from 23 countries, including 30 invited lecturers, were provided with lectures and workshop sessions on crystallographic topics ranging from area-detector diffractometers to the latest graphics software.

During this period the Commission considered several sites for future Computing Schools. In 1986 a School will be held in Leipzig, German Democratic Republic, 11–20 August. H. Schenk will be the Programme Committee Chairman and P. Paufler will be the Local Chairman. A School will also be held in Adelaide, Australia, 22–29 August 1987, following the Perth Congress. N. Isaacs will be the Programme Committee Chairman and M. R. Taylor will be the Local Chairman.

A microsposium on 'New Developments in Crystallographic Computing' was organized by the Commission during the Hamburg Congress. S. R. Hall was the Chairman. Five invited and contributed lectures were given in the field of structure refinement methods.

In 1984 the Commission finalized the guidelines and format for Computer Program Abstracts for publication in the *Journal of Applied Crystallography* [*J. Appl. Cryst.* (1985), **18**, 189–190].

#### *Commission on Crystallographic Data*

The Chairman attended the CODATA General Assembly at Jerusalem.

During the Hamburg Congress the Commission held two closed meetings, two open meetings, one special meeting with database producers and distributors and one joint meeting with the Commission on Journals. G. Bergerhoff succeeded I. D. Brown as Chairman and five new members were elected.

The Standard Crystallographic File Structure will be further developed and I. D. Brown will act as coordinator for all proposals.

P. Murray-Rust was to maintain liaison between the Commission and the Molecular Graphics Society to ensure compatibility of crystallographic definitions.

The Commission discussed a proposal for standard setting of crystal structures and a report of the working group on crystallographic keywords.

During the special meeting accessibility of databases was widely discussed. The new Chairman will distribute a questionnaire to the National Committees in order to find out about the situation in the member countries.

#### *Commission on Crystallographic Nomenclature*

The Commission met in Hamburg on 10 August 1984. The final report of the *ad hoc* Committee on the Nomenclature of Symmetry was received and accepted later during the Congress [see *Acta Cryst.* (1981), **A37**, 928 for the committee membership]. The report, entitled 'Nomenclature for Crystal Families, Bravais-Lattice Types and Arithmetic Classes', was published in *Acta Cryst.* (1985), **A41**, 278–280. A new *ad hoc* Committee on the Nomenclature of Symmetry with P. M. de Wolff as Chairman and Y. Billiet, J. D. H. Donnay, W. Fischer, R. V. Galulin, A. M. Glazer, D. P. Shoemaker and H. Wondratschek as regular members was appointed, under the ground rules outlined in *Acta Cryst.* (1979), **A35**, 1072, to consider the nomenclature of symmetry elements.

The Commission sponsored an *ad hoc* meeting on the Nomenclature of Inorganic Structure Types during the Congress, under the chairmanship of J. Lima-de-Faria. The possibility of arriving at a universal notation was sufficiently promising to lead to the appointment of a provisional subcommittee to consider the present notational schemes in use, with J. Lima-de-Faria as chairman and E. E. Hellner, F. K. F. Liebau, E. Makovicky and E. Parthé as regular members. A Subcommittee on Statistical Descriptors in Crystallography was also established, to examine the validity of current statistical approaches used in estimating the variances in crystallographic quantities and to make recommendations for an improved methodology that rests securely on sound statistical theory for adoption by crystallographers. The Subcommittee Chairman is D. Schwarzenbach.

#### *Commission on Crystallographic Studies at Controlled Pressures and Temperatures*

The current high degree of interest and research activity in high-pressure-high-temperature X-ray diffraction measurements with both powders and single crystals justifies the scheduling of a symposium in this area for the next IUCr Congress. Consequently, inquiries have been sent out to all Commission members and also to interested laboratories world wide to solicit opinions and comments on the proposal to hold a 'Symposium on High-Pressure-High-Temperature Crystallographic Measurements' at the Perth Congress in 1987.

#### *Commission on Crystallographic Teaching*

At the Hamburg Congress, the Commission changed membership and held three fruitful meetings of most old and new members and a number of consultants. The Commission held a lively open meeting on the last day of the Congress, organized a book exhibition and a non-commercial exhibition and, on an *ad-hoc* basis, two afternoon crystallographic film shows. Similar activities will be organized at the Perth Congress in 1987.

In the series of IUCr pamphlets (Editor: C. A. Taylor), nine new titles were published, so that the total number of available pamphlets is now 19. The Commission welcomes suggestions for subjects and authors for future pamphlets.

The Commission tries to continue a series of summer schools throughout the world. The next school will be held in Madras (December 1985) and will be devoted to the teaching and practice of statistics, direct methods and macromolecular crystallography and their interrelation. Other activities will include a school in Peking at a later date.

The Commission installed a Subcommittee on the History of Crystallography.

#### *Commission on Electron Diffraction*

The work of the Commission in 1984 included the following items:

(1) *Hamburg Congress*. The Commission had proposed that K. Yagi give a Plenary Lecture on Surface Studies by Electron Microscopy. This lecture was very well attended and proved to be extremely stimulating with some superb high-resolution images of surfaces. Two Open Commission Meetings were held, one on low-energy electron diffraction and the other on space-group and symmetry analysis using convergent-beam electron diffraction, which were also well attended. In addition, an *ad hoc* meeting was held by the gas electron diffraction group, which included a lecture on a comparable study of molecular structures in gas and solid phases, of joint interest to gas and solid-state scientists. Electron diffraction and microscopy featured strongly in many papers at the Congress.

(2) *Increased size of the Commission*. The General Assembly at Hamburg approved the application of the Commission for an increase in its membership from nine to ten, to take into account new developments in the field. There are now five HEED (high-energy electron diffraction) members, three GED (gas electron diffraction) members and two LEED (low-energy electron diffraction) members.

(3) *International Tables for Crystallography*. The Commission is responsible for advising the editors of Volumes B and C on sections dealing with electron diffraction and microscopy. A meeting with A. J. C. Wilson, editor of Volume C, was held at Hamburg in which a revised table of contents was drawn up. Considerable correspondence has occurred between the editors of *International Tables*, the Chairman of the Commission and authors of the various sections.

(4) *Newsletters*. Newsletters provide an important means of communication among Commission members and between the Commission and the electron diffraction community. The Gas Electron Diffraction Information Service (GEDIS) is the main newsletter and circulates to the GED community. A LEED newsletter was initiated in 1984, and M. Prutton accepted responsibility for continuing with this. Finally, P. Goodman, who retired as Chairman of the Commission at the Hamburg Congress, composed and circulated five newsletters in 1984.

#### *Commission on Neutron Diffraction*

The next symposium on neutron scattering will be held at Sydney, Australia, 5-8 August 1987, as a satellite meeting of the Perth Congress. T. J. Hicks will chair the Programme Committee.

The Newsletter appears twice annually with a different editor for successive issues. The editors will be drawn from the membership of the Commission: the editors in 1984 were B. T. M. Willis and M. S. Lehmann. The Newsletter

covers international news, but also reflects the local or regional interests of the editor.

Other projects pursued by the Commission include the compilation of magnetic form factors, the inter-comparison of neutron single-crystal diffractometers, and the compilation of Debye-Waller temperature factors of materials with simple crystal structures. These three projects are coordinated by J. X. Boucherle, G. Heger and N. M. Butt, respectively.

The Commission has given assistance to G. E. Bacon who is editing a book, *Fifty Years of Neutron Diffraction*, due to be published in 1986.

#### *Commission on Small Molecules*

The Commission was established at the Hamburg General Assembly. Since then the Commission has actively sought to represent small-molecule crystallographers in both the general scientific and the crystallographic communities.

The following list summarizes that effort:

(1) Assistance with the 'International Symposium on Steric Aspects of Biomolecular Interactions', Sopron, Hungary, 26-29 August, 1985; International Programme Chairman J. J. Stezowski.

(2) Organization (with the Commission on Crystallographic Teaching) of a tutorial entitled 'Molecular Systematics: Detection, Evaluation and Presentation' to be held in conjunction with the Ninth European Crystallographic Meeting in Torino, Italy, 1 September 1985; organized by F. Allen.

(3) Organization of a microsposium entitled 'X-ray Crystallographic Studies of Biologically Active Heterocycles' to be held as part of the Tenth International Congress of Heterocyclic Chemistry, 11-16 August 1985, University of Waterloo, Ontario, Canada; organized by P. W. Coddling.

(4) Organization of an intercongress meeting entitled 'International Symposium on Molecular Structure: Chemical Reactivity and Biological Activity' to be held in Beijing, China, October 1986; Programme Chairman J. J. Stezowski; Cochairman J.-L. Huang.

(5) The distribution of a Commission Newsletter, through representatives in interested countries, is being set up.

(6) The Commission encourages contact with small-molecule crystallographers of all disciplines and seeks to support their interaction with scientific societies relevant to their professional interests.

#### **Sub-Committee on the Union Calendar**

The Sub-Committee receives and considers requests for Union sponsorship and nominal financial support, and makes recommendations to the Executive Committee. Acting on the recommendations made by the Sub-Committee, during 1984 the Executive Committee approved sponsorship of the following schools and meetings, mostly with financial support:

1. Symposium on Steric Aspects of Biomolecular Interactions, Sopron, Hungary, 26-29 September 1985.

2. Winter School on Epitaxial Electronic Materials, Trieste, Italy, 12-26 January 1986.



3. Summer School on Crystallographic Computing, Leipzig, German Democratic Republic, 11–20 August 1986.

4. International School on Solar Cell Materials and Applications, Alexandria, Egypt, 19–30 October 1986.

5. School on Crystallographic Computing, Bedford Park, Australia, 22–29 August 1987.

Other meetings which received Union support have been listed earlier in this Report. Organizers of meetings wishing to seek Union sponsorship should write as early as possible to the Chairman of the Sub-Committee: Professor M. Nardelli, Istituto di Chimica Generale ed Inorganica, Università di Parma, Via M. D'Azeglio 85, 43100 Parma, Italy.

### Representatives on Other Bodies

#### *International Council for Scientific and Technical Information (formerly the ICSU Abstracting Board)*

The ICSU Abstracting Board held its 1984 meetings in the Franklin Plaza Hotel, Philadelphia, USA, 17–21 June. The Extraordinary General Assembly, at which the new name International Council for Scientific and Technical Information, new Statutes, and new By-Laws were adopted, took place on 20 June. Four topics dominated the meetings: relations with ICSU; relations with CODATA; the new Statutes; and future technical programme. The new Statutes and By-Laws were adopted unanimously.

1. *Relations with ICSU.* ICSU AB, with the support of ICSU and Unesco, was incorporated in 1952 as an International Scientific Association with a registered office in Belgium, under a Belgian law dated 25 October 1919. Its legal status thus differed from purely ICSU bodies such as SCOPE or CODATA, but this is understandable in view of the need to include the actual information services in its membership. The Statutes of ICSU AB described ICSU as the 'Sponsoring Body' of ICSU AB and gave ICSU two votes in the ICSU AB General Assembly and a permanent seat on the ICSU AB Executive Committee. They did not provide for payment of any fixed dues, but up to the present ICSU has made an annual contribution to ICSU AB. The amount was originally very substantial; in recent years it has dropped to \$1000.

Under the ICSTI Statutes, ICSU remains as the Sponsoring Body and becomes a member of ICSTI in Class A (see section 3 below), with one, two or three votes in the General Assembly (depending on the Dues Category that it considers appropriate). It loses its guaranteed seat on the Executive Board of ICSTI, but there is little doubt that it would be elected to the Executive Board if (one of) its Representative(s) were a candidate.

Various ICSU bodies met in Ottawa in September 1984, and ICSU Newsletter No. 19 records that the General Committee accepted ICSTI as a Scientific Associate of ICSU and that the Executive Board had ratified the Statutes of ICSTI.

2. *Relations with CODATA.* ICSU AB and CODATA have cooperated on joint projects in the past, the most notable being a report on Data Tagging and Flagging. Recently, there have been moves to re-establish this cooperation on a permanent basis, and representatives of ICSU AB and CODATA met in the Marriott Crystal Gateway Hotel, near Washington, on 4 March 1984. At this meeting it was decided that it would be desirable for ICSU

AB/ICSTI and CODATA to acquire mutual associate membership under the provisions of their respective Statutes, and several areas were identified where there was an overlap of interest and the possibility of fruitful cooperation. These include methodologies for handling data; coordination of data projects; compilation of directories of sources of data; standardization of symbols, nomenclature *etc.*; provision of advice to ICSU, Unions, and other international bodies. The process of consultation and of establishing formal reciprocal relations is continuing actively.

3. *Statutes and By-Laws.* Work on a revision of the Statutes and By-Laws of ICSU AB began about five years ago. As a result of intensive discussion, the following principal changes are taking place:

(a) The name of the organization becomes the International Council for Scientific and Technical Information, with acronym ICSTI.

(b) The Classes of membership are redefined, and become the following:

Class A(i). Organizations with principal interests in the generation or use of new scientific or technical information.

Class A(ii). Organizations with principal interests in the coordination of activities of type (i) within a geographical area or within a discipline.

Class B. Organizations with principal activities in the collection, storage, organization, or dissemination of scientific or technical information.

Class C. Organizations with some interests in common with those of ICSTI.

Class D. Persons whose work within the field of interest of ICSTI merits special recognition.

Classes A and B together are the Full Members, with voting rights, Class C members are Associate Members, and Class D members are Honorary Members.

(c) Classes A and B have several Dues Categories, with one, two or three votes on certain financial matters, according to the level of dues paid. Associate Members have a small dues liability; Honorary Members pay no dues.

(d) In order to prevent the organization from becoming too unwieldy, Classes A and B are limited to fifty members each, Class C to ten members, and Class D to ten living members.

The words 'scientific and technical' are defined broadly, to include *inter alia* the fields of pure and applied science, social and behavioural science, mathematics and technology. The word 'information' is defined to include *inter alia* bibliographic information, textual information, factual information, and data both numerical and non-numerical.

4. *Technical programme.* During the last few years the energies of ICSU AB have been devoted largely to its reorganization, and with two notable exceptions its technical programme has been in abeyance. The exceptions are the preparation and organization of two successful seminars, in Amsterdam in 1982 and in Luxembourg in 1984, the latter in cooperation with DG XIII of the Commission of the European Communities. The papers presented at the first have been published [see review in *Acta Cryst.* (1983), A39, 599] and it is expected that the papers presented at the second will be published by the CEC. Both seminars produced a small surplus for the benefit of ICSU AB finances.

Likely subjects for work during the next two years are:

Study of 'value added' at successive stages in the information-transfer process.

Study of document demand at several document-delivery agencies. This is expected to be of value to librarians in deciding on holdings of 'core journals', and to publishers in deciding on their future programmes.

Inventory of current activity of Members in the field of factual (as distinct from bibliographic) data.

Organization of a seminar in 1986 on Barriers to Information Flow.

This list will be supplemented by joint activities with CODATA.

*Committee on Data for Science and Technology (CODATA) of the International Council of Scientific Unions*

No further report has been received beyond that presented to the Hamburg General Assembly.

*Committee on Space Research (COSPAR) of the International Council of Scientific Unions*

In 1984 COSPAR organized a conference in Gratz, Austria, which was not attended by the IUCr Representative. It included a Symposium on Materials Science in Space.

*Committee on the Teaching of Science (CTS) of the International Council of Scientific Unions*

Preparations took place for the World Education Conference, Bangalore, India, August 1985 on the theme 'Science and Technology Education and Future Human Needs'.

*Committee on Science and Technology in Developing Countries (COSTED) of the International Council of Scientific Unions*

COSTED continues to provide financial support to scientists from developing countries to attend scientific meetings and schools. Arrangements have been made to increase cooperation with the Unions and Committees of ICSU. In this connection specific mention was made of the Committee on the Teaching of Science (CTS), a committee in which crystallography has been well represented by C. A. Taylor.

*Scientific Committee on Problems of the Environment (SCOPE) of the International Council of Scientific Unions*

IUCr representation on this body was terminated in 1984 by the Hamburg General Assembly.

*Interdivisional Committee on Nomenclature and Symbols of the International Union of Pure and Applied Chemistry*

S. C. Abrahams was appointed the first IUCr Representative on the Committee at the Hamburg Congress, in his capacity as Chairman of the Commission on Crystallographic Nomenclature. However, the Commission has been in close correspondence with the Committee throughout the year on a range of nomenclature matters of mutual interest.

*Commission on the Structure and Dynamics of Condensed Matter of the International Union of Pure and Applied Physics*

M. Nardelli was appointed IUCr Representative on this Commission, following the death of A. Línek on 30 September 1984.

Each year the Commission studies the applications by conferences to be sponsored and supported by IUPAP, and makes appropriate recommendations. Recently, the scientific content of these conferences has differed to some extent

from the conferences in the past, and their content was closer to the interests of crystallographers.

*Conference Committee of the European Physical Society*

M. Nardelli was appointed IUCr Representative on this Committee, following the death of A. Línek on 30 September 1984. The first meeting he will attend will be in Bucharest on 13 September 1985.

The Committee meets once a year in different European cities, when it discusses requests for sponsorship of meetings by the European Physical Society and ways to help organizers of conferences.

*International Organization for Crystal Growth*

The main activity, only indirectly associated with the IOCG, has been the Sixth American Conference on Crystal Growth in conjunction with The Sixth International Conference on Vapour Growth and Epitaxy (ACCG-6/ICGVE-6) held at Atlantic City, NJ, USA 15-20 July 1985. The conference, whose proceedings will be published in *J. Cryst. Growth*, attracted about 210 papers, including 36 invited presentations and 16 late news items which were organized into 22 half-day sections. The total registration was around 540.

New features of this joint conference were an industrial exhibit and photo contests. Both were highly successful and will be incorporated into future AACG conferences.

*European Crystallographic Committee*

A meeting of this Committee was held on 13 August 1984, during the Hamburg Congress. Progress reports were received on ECM-9 to be held in Turin, Italy, 2-6 September 1985.

The invitation to hold ECM-10 in Wrocław, Poland, 6-10 August 1986 was unanimously accepted.

The invitation to hold ECM-11 in Vienna, Austria, in 1988 was accepted, and subsequent meetings are likely to be held in the UK and the USSR.

Officers elected for the period 1984-1987 were K. Łukasiewicz (President); G. S. D. King (Vice-President); G. Filippini (Secretary).

**International Council of Scientific Unions**

J. Karle represented the IUCr at the 20th ICSU General Assembly and 19th Meeting of the General Committee in Ottawa, Canada, 21-28 September 1984. The main actions of the General Assembly were (1) to inaugurate a very broad programme designed to investigate global change with the cooperation of scientific organizations throughout the world; (2) to ratify the establishment of the ICSU Press; (3) to accept a report on the disposal of hazardous waste and consider the problem further; and (4) to facilitate the production of a report to the 21st General Assembly on biological, medical and physical effects of the large-scale use of nuclear weapons.

In addition there were discussions of matters concerning the free circulation of scientists and the observation that fine progress has been made in the development of ICSU publishing activities by the Committee on Publications and Communications. COSTED continues with its publications programme having the particular objective of serving the scientific and educational needs of developing countries.

The next meeting of the ICSU General Committee will take place in Munich, Federal Republic of Germany, 14-15 October 1985.

### Finances

The audited accounts for the year 1984 are given at the end of this Report. For comparison, the figures for 1983 are provided in italics. Negative quantities are indicated by parentheses. The accounts are presented in Swiss Francs.

The Unesco rates of exchange, as issued by the ICSU Secretariat, have been used in the preparation of these accounts. As a consequence of the many fluctuations in exchange rates during the year, the following procedure has been adopted for the accounts. Assets and liabilities in currencies other than Swiss Francs at 31 December 1984 have been translated into Swiss Francs in the balance sheet at the rate operative at that date. For the income and expenditure accounts, transactions have been translated into Swiss Francs by applying the rates of exchange appropriate to the individual dates of these transactions. As a consequence of the fluctuations in exchange rates, a gain has arisen on the assets of the Union, in terms of Swiss Francs, amounting to SwFr 145 333. This gain has been divided amongst the ten Fund Accounts with credit balances, in direct proportion to the balances on these accounts at 31 December 1984.

As on previous balance sheets, the investments have been valued according to their quotation at the end of the year. Their depreciation in value, together amounting to SwFr 2597, has not been entered in the General Fund but has again been included in the assets on the Balance Sheet, to avoid annual fluctuations in value influencing the General Fund Account. At the end of 1984 the Union held investments of SwFr 18 000 and £100 000 in government bonds.

The total of SwFr 2 306 580 with the banks at the end of the year was represented by Dfl 25 528 and \$220 231 with the Amsterdam-Rotterdam Bank, \$259 155 with the First American Bank of New York (formerly the Bankers Trust Company), £342 466 with the National Westminster Bank and SwFr 53 096 with the Union Bank of Switzerland. The amounts shown in the balance sheet for debtors and creditors relate to sums, principally on the publishing accounts, due at 31 December 1984. Where appropriate, these accounts have now been settled.

The balance sheet shows that the assets of the Union, excluding stocks of unsold publications but including the gain of SwFr 145 333 resulting from fluctuations in rates of exchange, have increased during the year, from SwFr 1 917 217 to SwFr 2 806 867.

Three new fund accounts were established in 1984, namely the Book Fund, the Publications and Journals Development Fund and the Research and Education Fund, whilst five fund accounts were closed. Details are given at the end of the audited accounts. The Special Publications Fund was closed in 1983.

The General Fund account shows a surplus of SwFr 95 119, after transfer of SwFr 50 000 to the new fund accounts, as compared with a surplus of SwFr 113 114 in 1983. The administrative expenses were SwFr 140 652 in 1984 as compared with SwFr 140 047 in 1983. Of this amount, SwFr 53 104 was charged to the publications of the Union. The expenses of SwFr 90 845 for the Thirteenth

General Assembly and Congress included SwFr 43 602 for travel grants. A further SwFr 24 951 was spent on supporting other scientific meetings, and SwFr 7034 was required for travel expenses of Union representatives on other bodies. The Executive Committee Meeting cost SwFr 47 243 and the Finance Committee SwFr 14 419. The Union received SwFr 37 905 from the Unesco subvention to ICSU. The subscriptions from Adhering Bodies were SwFr 132 610. Interest on bank accounts and investments was SwFr 211 211.

The President's Fund account received no donations during 1984 and no payments were made from the fund.

The *Acta Crystallographica* account for 1984 shows a surplus of SwFr 170 540, after transfer of SwFr 250 000 to the new fund accounts, as compared with a surplus of SwFr 559 473 in 1983.

The division of *Acta* into three sections in 1983 created large uncertainties in planning the budget. The subscription rates were determined to yield a small surplus. However, the number of pages printed was less than estimated and the fall in the number of subscriptions was also less than expected.

The number of paid subscriptions to all sections of the journal dropped from 1197 in 1983 to 1170 in 1984, including 145 personal subscriptions in 1983 and 140 in 1984. There were also 249 paid subscriptions to Section A and 133 paid subscriptions to Sections B and C in 1984, compared with 271 and 142 respectively in 1983. The cost of the technical editing office has been divided between the *Acta Crystallographica* and the *Journal of Applied Crystallography* accounts in percentages based on the number of text pages published during the year. The technical editing costs for *Acta Crystallographica* were SwFr 273 044 in 1984 as compared with SwFr 244 671 in 1983. The journals accounts have also been charged with administrative expenses as in previous years and as shown in the General Fund.

The *Journal of Applied Crystallography* account shows a deficit of SwFr 67 302, after transfer of SwFr 200 000 to the new fund accounts, as compared with a surplus of SwFr 104 696 in 1983. The number of paid subscriptions decreased from 1076 in 1983 to 1061 in 1984, including 115 personal subscriptions in 1983 and 1984.

The *Structure Reports* account shows a deficit of SwFr 9120 as compared with a deficit of SwFr 59 415 in 1983, when sales were very low, with no annual volumes being published, and there were still considerable editorial expenses for new volumes to be published in the near future. Publishing and editorial expenses in 1984 were SwFr 56 661 and SwFr 85 105 respectively, as compared with SwFr 20 744 and SwFr 70 373 in 1983. The net income from sales was SwFr 133 107 in 1984 as compared with SwFr 32 131 in 1983.

The *International Tables* account shows a surplus of SwFr 93 050, including the transfer of SwFr 41 208 from the General Publications Fund on its closure, as compared with a surplus of SwFr 64 746 in 1983. Volume A was reprinted at a cost of SwFr 34 076. The editorial expenses were SwFr 14 236. The income from sales of SwFr 100 154 derived mostly from the sale of 504 copies of Volume A.

The *Molecular Structures and Dimensions* account shows no surplus for 1984, because this account was charged with a contribution of SwFr 35 877 towards the publication costs of Volume 15, the volume published in 1984 and for which

393 copies were sold in the year. The sale of earlier volumes included 42 copies of Volume 14 and 170 copies of earlier volumes.

The newly-established Book Fund includes the sales of the remaining publications of the Union. SwFr 335 was received from the sale of 19 copies of *Fifty Years of X-ray Diffraction*. SwFr 357 was received from the sale of 21 copies of *Symmetry Aspects of M. C. Escher's Periodic Drawings*,

as well as SwFr 203 royalties for the Japanese edition of this book. SwFr 99 was received from the sale of 6 copies of Volume I and 3 copies of Volume II of *Early Papers on Diffraction of X-rays by Crystals*. SwFr 1956 was received from the sale of 29 copies of *Fifty Years of Electron Diffraction*. Sales of the Sixth Edition of the *World Directory of Crystallographers* and of the sundry publications yielded SwFr 185 and SwFr 103, respectively.



## General Fund Account for the year ended 31 December 1984

	Swiss Francs			Swiss Francs	
	1984	1983		1984	1983
Subscriptions to ICSU and ICSU bodies		4,723	Grant received from Unesco subvention to ICSU	37,905	30,714
Administration expenses: General Secretary and Treasurer: honorarium and secretarial assistance	6,002		Grant received from ICSU	—	4,260
Audit and accountancy charges	12,107		Subscriptions from Adhering Bodies	132,610	129,940
Legal and professional fees	1,284		Interest on investments	32,563	1,818
Postage and sundries	1,231		Interest on bank accounts	178,648	133,854
Travelling expenses	2,677		Gain on redemption of Treasury Bills	—	2,498
Bank charges	570		Commission expenses refund	4,528	—
Executive Secretary's office: Salaries and expenses	109,785	109,612	Sale of <i>World Directory of Crystallographers</i> , 6th Edition*	—	385
Computer expenses	6,575	—	Net sales of sundry publications*	—	153
Transfer to Special Publications Fund re computer	—	11,505	Amounts charged to the following journals and publications:		
Depreciation of office equipment	421	422	<i>Acta Crystallographica</i>	31,647	31,511
			<i>Journal of Applied Crystallography</i>	10,549	10,503
			<i>Molecular Structures and Dimensions</i>	908	955
				43,104	42,969
Twelfth General Assembly and Congress: publication of Report		11,756			
Thirteenth General Assembly and Congress:					
Executive Committee	47,243	—			
Travel grants	43,602	—			
Programme Committee	—	16,203			
Meeting of the Executive Committee					
Finance Committee expenses	14,419	17,640			
Travel Expenses of IUCr	—	8,557			
Representatives on other bodies	7,034	3,101			
Commission expenses	420	213			
Sponsorship of meetings	24,951	30,247			
Loss on sale of investments	—	990			
Transfers to other Funds: Publications and Journals	537	—			
Development Fund	25,000	—			
Research and Education Fund	25,000	—			
Excess of income over expenditure carried to balance sheet	95,119	113,114			
	429,358	346,591		429,358	346,591

\* Sales in 1984 included in the Book Fund account.

## President's Fund Account for the year ended 31 December 1984

	Swiss Francs	
	1984	1983
Excess of income over expenditure carried to balance sheet		
		3,972
		<u>3,972</u>
		<u>3,972</u>
Donations received		3,972
		<u>3,972</u>

## Acta Crystallographica Account for the year ended 31 December 1984

	Swiss Francs	
	1984	1983
Publication expenses:		
Printing and binding Volume 40 (1983 Volume 39)	416,158	433,183
Distribution and postage	70,696	67,061
Airfreight costs	29,552	29,394
	<u>516,406</u>	<u>529,638</u>
Printing Acta Supplement to Volume A40	28,365	—
Printing Index to Volume 39 (1983 Volume 38) and sundry printing	21,746	30,453
	<u>566,517</u>	<u>560,091</u>
Editorial expenses:		
Editorial honoraria	46,538	31,172
Secretarial assistance	12,031	9,179
Postage and sundries	12,770	15,622
Technical editing:		
Salaries and expenses	268,310	236,477
Computer expenses	4,734	—
Transfer to Special Publications Fund re computer	—	8,194
Depreciation of office equipment	2,143	346,526
	<u>31,647</u>	<u>302,209</u>
Administration expenses		
Transfers to other Funds:		
Publications and Journals Development Fund	125,000	—
Research and Education Fund	125,000	—
	<u>170,540</u>	<u>559,473</u>
Excess of income over expenditure carried to balance sheet		
		559,473
		<u>559,473</u>
		<u>559,473</u>
Subscriptions to Volume 40 (1983 Volume 39)	1,396,516	1,511,324
Sale of back numbers and single copies	38,716	24,772
Airfreight charged to subscribers	30,307	24,517
Royalties and copyright fees	157	198
	<u>1,465,696</u>	<u>1,560,811</u>
Less Publisher's commission on sales	100,466	107,527
	<u>1,365,230</u>	<u>1,453,284</u>





**Structure Reports Account for the year ended 31 December 1984**

	Swiss Francs	
	1984	1983
Publication expenses:		
Printing and binding Volume 45B and 48A (1983 Volume 36)	40,039	9,982
Typing of manuscripts	16,622	10,762
	<u>56,661</u>	<u>20,744</u>
Depreciation	461	429
Editorial expenses:		
Editorial honoraria	85,105	70,373
	<u>142,227</u>	<u>91,546</u>
	<u>142,227</u>	<u>91,546</u>
Sale of copies Volumes 45B and 48A (1983 Volume 36)	164,052	19,616
Earlier volumes and indexes	16,451	24,545
	<u>180,503</u>	<u>44,161</u>
Less Publisher's commission on sales	47,396	12,030
	<u>133,107</u>	<u>32,131</u>
Excess of expenditure over income carried to balance sheet	9,120	59,415
	<u>142,227</u>	<u>91,546</u>
	<u>142,227</u>	<u>91,546</u>

**International Tables Account for the year ended 31 December 1984**

	Swiss Francs	
	1984	1983
Publication expenses:		
Printing and binding Volume A	34,076	84,287
Reprinting Volume III	—	13,390
	<u>34,076</u>	<u>97,677</u>
Editorial expenses:		
Honoraria	7,500	19,370
Secretarial assistance and postage	6,736	7,330
	<u>14,236</u>	<u>26,700</u>
Excess of income over expenditure carried to balance sheet	93,050	64,746
	<u>141,362</u>	<u>189,123</u>
	<u>141,362</u>	<u>189,123</u>
Sale of copies Volume A	113,567	229,184
Volumes II, III and IV	27,677	32,875
	<u>141,244</u>	<u>262,059</u>
Less Publisher's commission on sales	41,090	72,936
	<u>100,154</u>	<u>189,123</u>
Transfer from General Publications Fund	41,208	
	<u>141,362</u>	<u>189,123</u>
	<u>141,362</u>	<u>189,123</u>



**Book Fund Account for the year ended 31 December 1984**

	Swiss Francs	
	1984	1983
<i>Excess of income over expenditure for the year</i>	3,238	3,474
Transfers from other Funds at 1 January 1984*	5,880	—
<i>Excess of income over expenditure carried to balance sheet</i>	9,118	3,474
	<u>9,118</u>	<u>3,474</u>
	<u>9,118</u>	<u>3,474</u>
	1984	1983
Sale of copies, net of Publisher's commission on sales	335	261
<i>Fifty Years of X-ray Diffraction</i>	357	457
<i>Escher Drawings</i>	99	176
<i>Early Papers</i>	1,956	2,254
<i>Fifty Years of Electron Diffraction</i>	185	—
<i>World Directory of Crystallographers</i> , 6th Edition	103	—
Sundry publications	203	326
Royalties	5,880	—
<i>Escher Drawings</i>	—	—
Opening balance at 1 January 1984	—	—
from a combination of other funds*	—	—
	<u>9,118</u>	<u>3,474</u>
	<u>9,118</u>	<u>3,474</u>

\* The balances on the following Fund accounts were combined on 1 January 1984 to form a new fund - the 'Book Fund':

	Swiss Francs
<i>Fifty Years of X-ray Diffraction</i>	5,127
<i>Escher Drawings</i>	21,095
<i>Early Papers</i>	(9,827)
<i>Fifty years of Electron Diffraction</i>	(10,515)
	<u>5,880</u>
	<u>5,880</u>

**Publications and Journals Development Fund Account for the year ended 31 December 1984**

	Swiss Francs	
	1984	1983
<i>Excess of income over expenditure carried to balance sheet</i>	283,815	—
	<u>283,815</u>	<u>—</u>
	<u>283,815</u>	<u>—</u>
	25,000	—
Transfers from other Funds:	125,000	—
General Fund	100,000	—
<i>Acta Crystallographica</i>	33,815	—
<i>Journal of Applied Crystallography</i>	<u>283,815</u>	<u>—</u>
General Publications Fund	<u>283,815</u>	<u>—</u>

**Research and Education Fund Account for the year ended 31 December 1984**

	Swiss Francs	
	1984	1983
<i>Excess of income over expenditure carried to balance sheet</i>	250,000	—
	<u>250,000</u>	<u>—</u>
	<u>250,000</u>	<u>—</u>
	25,000	—
Transfers from other Funds:	125,000	—
General Fund	100,000	—
<i>Acta Crystallographica</i>	25,000	—
<i>Journal of Applied Crystallography</i>	<u>250,000</u>	<u>—</u>

**Statement of Source and Application of Funds  
Year ended 31 December 1984**

	Swiss Francs	
	1984	1983
Source of funds		
Excess of income over expenditure for the year	744,317	740,453
Gain/(loss) on fluctuations in rates of exchange	145,333	(27,197)
	<hr/>	<hr/>
	889,650	713,256
Adjustment for items not involving the movement of funds:		
Depreciation	3,294	2,623
Loss on sale of investment	537	990
Loss on fluctuations in rates of exchange on office equipment and investments	15,988	526
	<hr/>	<hr/>
Total generated from operations	909,469	717,395
Proceeds on sale of investments	18,000	18,000
Decrease in debtors and accrued income (including subscriptions)	178,734	—
Increase in creditors and accrued charges	—	31,175
	<hr/>	<hr/>
	1,106,203	766,570
Application of funds		
Increase in debtors and accrued income (including subscriptions)	—	(162,336)
Decrease in creditors and accrued charges	(19,322)	—
Purchase of office equipment	(7,922)	(783)
Purchase of investments	(24,615)	(332,055)
	<hr/>	<hr/>
Increase in net liquid funds	1,054,344	271,396
	<hr/>	<hr/>

Net liquid funds include cash at banks and with Union officials.

**Establishment of New Funds**

(i) The Book Fund was established by combination of four Fund accounts and the net value at 1 January 1984 was treated as the opening balance on this Fund.

	Swiss Francs Credit/(Debit)
From <i>Fifty Years of X-ray Diffraction</i>	5,127
<i>Escher Drawings</i>	21,095
<i>Early Papers</i>	(9,827)
<i>Fifty Years of Electron Diffraction</i>	(10,515)
	<hr/>
Opening balance of the Book Fund	5,880
	<hr/>

(iii) The Research and Education Fund was established by the following transfers from existing Fund accounts.

	Swiss Francs
From General Fund	25,000
<i>Acta Crystallographica</i>	125,000
<i>Journal of Applied Crystallography</i>	100,000
	<hr/>
Opening balance of the Research and Education Fund	250,000
	<hr/>

(ii) The Publications and Journals Development Fund was established by the following transfers from existing Fund accounts.

	Swiss Francs
From General Fund	25,000
<i>Acta Crystallographica</i>	125,000
<i>Journal of Applied Crystallography</i>	100,000
General Publications Fund	33,815
	<hr/>
Opening balance of the Publications and Journals Development Fund	283,815
	<hr/>

**Closure of the General Publications Fund**

This Fund was closed and the balance of SwFr 75,023 allocated to the following Fund accounts.

	Swiss Francs
<i>International Tables</i>	41,208
Publications and Journals Development Fund	33,815
	<hr/>
	75,023
	<hr/>

## Notes to the Financial Statements

## 1. Accounting Policies

## (a) Accounting convention

The financial statements are prepared under the historical cost convention.

## (b) Rates of exchange

Unesco rates of exchange as issued by the ICSU Secretariat are used in the preparation of the financial statements.

Assets and liabilities held in currencies other than Swiss Francs at the balance sheet date are translated into Swiss Francs at the rates operative on that date.

In each of the income and expenditure accounts, transactions in currencies other than Swiss Francs are translated by applying the rates of exchange appropriate to the individual dates of the transactions.

Profits and losses arising from the fluctuations in rates of exchange during the year are divided between the fund accounts with credit balances in direct proportion to those balances at the closing balance sheet date.

## (c) Publication costs

Publication, editorial and administrative expenses of publications are charged in the appropriate income and expenditure account as and when incurred.

## (d) Stocks of unsold copies of Union publications

Stocks of unsold copies of publications are not valued for accounting purposes.

## (e) Expenditure on premises

Expenditure on renovation and refurbishing is charged against the appropriate income and expenditure accounts in the year in which it is incurred.

## (f) Depreciation

(i) Office equipment is depreciated on the straight line basis at a rate of 20% per annum.

(ii) The office computer was fully depreciated in the year of purchase.

## 2. Rates of Exchange

The rates of exchange operative at the balanced sheet date compared with the Swiss Franc were as follows:

	1984	1983
Netherland Guilders	1.3800	1.3899
Danish Crowns	4.4000	4.4953
Pounds Sterling	0.3304	0.3142
US Dollars	0.4000	0.4587
Canadian Dollars	0.5240	0.5642
German Marks	1.2200	1.2385

## 3. Taxation

As an association incorporated in Switzerland, the Union is exempt from Swiss Federal and Geneva Cantonal tax. Under the terms of the United Kingdom/Switzerland Double Taxation Agreement dated 8 December 1977, investment income arising within the United Kingdom under present circumstances will not be subject to United Kingdom tax.

Other investment income received from countries with which Switzerland has a Double Taxation Agreement is exempt from tax.

## 4. Investments

	Holding at cost 1 January 1984	Additions during the year	Swiss Francs Disposals during the year	Loss on fluctuations in rates of exchange	Holding at cost 31 December 1984
Deposited for safe custody with the Union Bank of Switzerland Sw Fr 18,000 (5% Swiss Federal 1972-1987)	18,537	—	(18,537)	—	—
Sw Fr 25,000 (4.5% Swiss Federal 1983-1995)	—	24,615	—	—	24,615
Deposited for safe custody with National Westminster Bank PLC, Manchester £100,000 (10.5% Treasury Stock 1989)	313,518	—	—	(15,372)	298,146
	<u>332,055</u>	<u>24,615</u>	<u>(18,537)</u>	<u>(15,372)</u>	<u>322,761</u>

Investments are noted in the balance sheet at their market value at 31 December 1984. To this has been added the difference between cost and market value to bring the investments back to cost. This prevents the fluctuations in value from influencing the General Fund.