

Society of Crystallographers

in

Australia

Newsletter No. 12

December 1985

Contents:	Office Bearers
	1985 Nobel Prize in Chemistry
	An Evening with Sandy Mathieson (and Friends)
	SCA Logo/Letterhead - Back to Square One
	Council Actions Since the Last Newsletter
	Proposed Amendment to the SCA Constitution
	Proposals for the XIVth IUCr Congress Program
	Federation of Australian Scientific & Technological Societies
	Academy Exchange Agreements
	Australian Representation in the IUCr
	New Journal of Powder Diffraction
	Memorial Issue of Acta Crystallographica for P.P. Ewald
	Personalalia/Miscellaneous
	SCA Subscriptions for 1986
	New Members
	Forthcoming Meetings

A MERRY CHRISTMAS AND A HAPPY NEW YEAR TO YOU ALL

OFFICE BEARERS

President: S.R. Hall (Univ WA)
Vice President: P.M. Colman (CSIRO, Protein Chemistry)
Secretary: R.J. Hill (CSIRO Min Chem: 03 647 0211)
Treasurer: M.F. Mackay (LaTrobe Univ)
Council: F.H. Moore (AINSE, Lucas Heights)
R.W. Cheary (NSWIT)
J. Graham (CSIRO, Mineralogy)
T.M. Sabine (NSWIT)
(immediate past President)

Standing Committees (* Chairperson)

Electron diffraction: J.R.J. Sellar (ANU)*
R.A. Eggleton (ANU)
L.A. Bursill (Univ Melbourne)

X-ray diffraction: S.W. Wilkins (CSIRO Chem Phys)*
J.N. Varghese (CSIRO Protein Chem)
B.H. O'Connor (WAIT)

Neutron diffraction: T.J. Hicks (Monash Univ)*
C.H.L. Kennard (Univ Qld)
F.H. Moore (AINSE)

Computing: A.D. Rae (Univ NSW)*
T.R. Welberry (ANU)
M.R. Taylor (Flinders Univ)

Nominations: M.R. Snow (Univ Adelaide)*
J. Epstein (Kodak, Vic)
M. Sterns (ANU)

Newsletter Editor: Rod Hill
CSIRO Division of Mineral Chemistry
P.O. Box 124
Port Melbourne VIC 3207

With technical assistance from
Anne Foxworthy

1985 NOBEL PRIZE IN CHEMISTRY

The Nobel Prize in Chemistry for 1985 has been awarded to Herbert A. Hauptman of the Medical Foundation of Buffalo, and Jerome Karle of the Naval Research Laboratory, Washington, DC "for their outstanding achievements in the development of direct methods for the determination of crystal structures". Syd Hall has sent a congratulatory telegram to both winners on behalf of the Council and all members of the SCA.

Both Jerry and Karle are natives of New York City and attended City College at the same time, graduating together in 1937. Jerry obtained his PhD at the University of Michigan in 1943 with Larry Brockway and met his wife Isabella, also a chemist, while at Michigan. Herb received a Masters Degree in mathematics from Columbia University and a PhD from the University of Maryland in 1955. After World War II, they came together again at the Naval Research Laboratory in Washington to collaborate on crystal structure research. Much of the now prize-winning work was completed at the NRL during the 1950's and 60's.

Although now so commonly used that they are virtually taken for granted, the foundations of the direct methods for crystal structure solution developed by Jerry and Herb went without recognition for many years after they were initially published. It was not until Jerry's wife Isabella immersed herself in the mathematics and pointed out to others the potential applications that the work became accepted among the crystallographic community.

Jerry and Herb received the A.L. Patterson award of the ACA in 1984. Jerry was president of the IUCr from 1981 to 1984 and is a member of the US National Academy of Sciences.

AN EVENING WITH SANDY MATHIESON (AND FRIENDS)

On July 30th of this year approximately 110 of Sandy Mathieson's friends and colleagues met for an evening of festivity, reunion and reminiscence at Leonda Restaurant in Hawthorn to celebrate Sandy's 65th birthday and his retirement from CSIRO. The attendees came from far and wide (even interstate) and included Knights of the Realm, many past and present Officers of CSIRO, Captains of Industry, Officers and Members of the SCA, members of the Academic Fraternity, representatives of private research organisations, innumerable friends, relatives (including Lois of course), and a host of other innocent and not so innocent bystanders.

The evening was an outstanding success, from the official speeches and humorous repartee of Sir Alan Walsh and Lloyd Rees, to the excellent food and drink (including two gigantic birthday cakes) and the very pleasant restaurant service and surroundings. The accolades for Sandy came thick and fast from everywhere, perhaps highlighted by the presentation of a Special Commemorative Issue of the Australian Journal of Physics, containing a

collection of papers by more than 40 of his friends and colleagues.

Although retiring from CSIRO, it was made quite clear that Sandy will continue active research for the foreseeable future; he has taken up an Honorary Research Associateship at LaTrobe University, working with Maureen Mackay on the structure of polysaccharides.

Sylvia Mair and Stephen Wilkins are to be congratulated for their achievement in bringing this auspicious occasion to such a successful conclusion after many months of behind-the-scenes (and secret) organisation. With their permission, the Introduction from their paper "On the Contribution of A. McL. Mathieson to Crystallography" from the above-mentioned AJP Commemorative Issue (Volume 38, number 3, 1985) is reproduced below, along with some photographs taken at Leonda.

Alexander McLeod Mathieson was born in 1920 in Aberdeen, Scotland, where he attended the Central School and, later, the University, graduating in 1942 with the degree of B.Sc. in Chemistry. He was introduced to the field of chemical crystallography at the University of Glasgow, where he studied under Professor J. Monteath Robertson, graduating with a Ph.D. in 1948. In 1947 he came to Australia to join a newly formed section of the CSIR Division of Industrial Chemistry (later to become the CSIRO Division of Chemical Physics).

From the mid-1940s Mathieson has been an extremely active researcher in the area of X-ray crystallography and has also led, for more than 30 years, what has arguably been one of the most influential X-ray diffraction groups for its size in the world. The principal thrusts of Mathieson's work lie in the directions of X-ray structural studies of molecules¹⁻⁷³) and of the associated development of instruments and measurement procedures⁷⁴⁻¹²⁴). The unifying force which binds together these seemingly disparate aspects of his work has been the fervent desire to assess and improve the accuracy of measurements of X-ray structure factors, in order both to lead to more reliable structure determinations and to the derivation of bonding-electron density information and atomic thermal vibration properties. This unyielding quest for accuracy led him to design new types of X-ray diffractometers, goniometer heads and monochromator arrangements. In each case the design for a new instrument appears to have arisen out of an intense desire to understand the underlying physical principles operating in a given experimental configuration. Often this driving curiosity provided the impetus for careful experiments to isolate the key physical factors and, in the important case of extinction (multiple scattering), led in turn to the development of a new general principle for the elimination of extinction from structure factor measurements.

Mathieson's scientific achievements gained early recognition when, for example, in 1954 he was awarded the David Syme Medal and in 1956 he received a D.Sc. from the University of Melbourne. These were followed by the H. G. Smith Memorial Medal of the Royal Australian Chemical Institute in 1965 and election to the Australian Academy of Science in 1967. Mathieson served as a member of Council of the Australian Academy of Science from 1975-8 and as a member of the Australian National Committee of Crystallography from 1956-74 (and as Chairman 1965-74). He has been a member of two Commissions of the International Union for Crystallography (IUCr): the Commission on Crystallographic Apparatus (1960-72, Chairman 1963-72) and the Commission on Structure Reports (1960-72). He has also chaired the organizing committees of two international meetings; namely, the 1968 IUCr 'Accurate Determinations of X-ray Intensities and Structure Factors' (Cambridge, U.K.) and the 1974 IUCr/Australian Academy of Science meeting, 'Diffraction Studies of Real Atoms and Real Crystals' (Melbourne, Australia).



Sandy Mathieson
 Sylvia Mair
 Stephen Wilkins

Maureen Mackay
 Alex Moodie
 Jeff Wunderlich

Alan Walsh
 Bryan Gatehouse

Anne Colman
 Hans Freeman
 Peter Colman



Barbara Moss
Grant Moss
Zwi Barnea
Andrew Stevenson
Sylvia Mair

Sharman Hill
John Parise

Editor/
Photographer

Neil Isaacs
Henry Scott

Jose Varghese
Linda Wilkins

SCA LOGO/LETTERHEAD - BACK TO SQUARE ONE

Readers will recall that the last newsletter contained an announcement of the winning entry for the logo/letterhead competition run in conjunction with the Crystal 15 meeting in Adelaide. This entry displayed a radiating cluster of (quartz) crystals above two parallel lines enclosing the name of the Society.

Upon receiving notification from the Secretary of the winning design (by way of the newsletter) Syd Hall made the following written comments to Council:

"I don't believe that this logo conveys the correct impression of the types of scientific endeavour our Society represents. ... It implies that crystals and their morphological habit are our main field of study. It is a suitable logo for (a) gem or rock collectors(') association but (does) not represent (the) molecular studies that most SCA members are engaged in. ... It can also be argued that the choice of a suitable logo is not important. I personally think it is and am worried that this logo will continue to perpetuate the impression that crystallography is the study of crystal morphology (19th century science!) rather than that of one of the most precise tools available to molecular science."

When questioned on this matter, five of the eight SCA Councillors concurred with the above comments by Syd and suggested that Council should ask for a new competition to be held. Therefore, over the past six months a number of new designs and several different combinations of the Adelaide competition set have been collected together. Council has decided to allow the full membership of the SCA to decide on the winner this time, rather than only the subset represented by those who attended the Adelaide meeting.

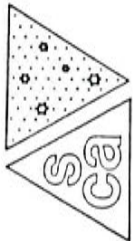
The new set of logo entries is reproduced below, not necessarily in order of Council preference. You are invited to fill out the voting sheet included as a flier with this newsletter and mail it to the Secretary before January 31, 1986. Note that this sheet also contains space for your votes on the suggested amendments to the SCA Constitution (see below). The voting rules for the logo are as follows:

- Vote for between 1 and 6 of the entries
- Rank each vote with a weight between 1 and 10
(where 10 represents the most favourable design)

If you feel strongly about a particular combination of these possibilities that is not represented below (i.e., one at the top of the page and the other at the bottom, or a different design at each end of the Society's name), then please indicate this on your voting sheet, but vote as indicated above anyway. Please note that Council is still awaiting copyright clearance for design number 12.

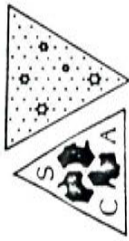
The winner will be determined by simply adding up the total

1



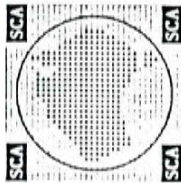
society of
crystallographers
in australia

2



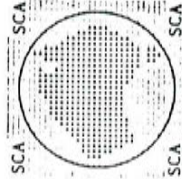
society of
crystallographers
in australia

3



SOCIETY
OF
CRYSTALLOGRAPHERS
IN
AUSTRALIA

4



SOCIETY
OF
CRYSTALLOGRAPHERS
IN
AUSTRALIA

5



SOCIETY OF CRYSTALLOGRAPHERS
IN AUSTRALIA INC.



6



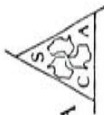
society of
crystallographers
in australia

7



SOCIETY OF CRYSTALLOGRAPHERS IN AUSTRALIA

8



SOCIETY OF CRYSTALLOGRAPHERS IN AUSTRALIA

9



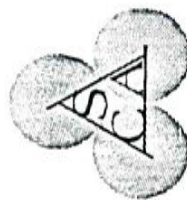
SOCIETY OF CRYSTALLOGRAPHERS IN AUSTRALIA

10



SOCIETY OF CRYSTALLOGRAPHERS
IN AUSTRALIA

11



SOCIETY OF CRYSTALLOGRAPHERS
IN AUSTRALIA

12



society of
crystallographers
in australia

weight given to each entry. The membership has the assurance of the Secretary that, if the response rate is greater than 50% of the membership, the majority decision of the ballot will be accepted by Council, regardless of result. On the other hand, if less than 50% of the membership respond, this will be taken to mean that the responsibility for choosing a logo is relinquished by them into Council's hands.

Editor's note: Please do not opt out of voting if you can help it because even though there is only a small number of them, the Councillors will have great difficulty in coming to an agreement about something as subjective as a logo design. Moreover, their lives are difficult enough already!

COUNCIL ACTIONS SINCE THE LAST NEWSLETTER

- Based on requests for earlier editions, a bulk order has been placed with the IUCr for 50 copies of the 7th Edition of the World Directory of Crystallographers. Distribution of the new edition will be undertaken by Maureen Mackay; if you wish to order a copy, please indicate this at the time you send off your 1986 SCA subscription to her.
- Letters of thanks have been sent on behalf of the membership to Max Taylor, Neil Issacs and 12 other people/organisations who provided support for, or assistance with the Crystal 15 Meeting in Adelaide.
- The draft Constitution of the South East Asian Regional Crystallographic Association (SEARCA) has been amended in accordance with the wishes of the membership expressed during the SCA Business Meeting in Adelaide. Copies of the amended draft have been circulated to 18 contacts in the SE Asian region.
- Collaboration with Prof J. Harada on a SEARCA Newsletter has continued. A draft version of the inaugural edition has been forwarded to Prof Harada for further amendments/additions prior to final production in Japan.
- Close contact with the Local Organising Committee and Program Committee of the 1987 Perth IUCr Congress has been maintained.
- In accordance with the wishes of the Business Meeting in Adelaide, SCA support for the Interim Committee of the Federation of Scientific and Technological Societies (FASTS) has been forwarded in writing to this Committee and a contribution of \$0.50 per member (\$75) has been provided (see below for further details on this matter).

PROPOSED AMENDMENT TO THE SCA CONSTITUTION

It has come to the attention of the SCA Council that our Constitution does not provide for the class of Honorary Life Membership. Council therefore formally proposes that Article III (Membership), be expanded to include the following Section:

"Section 3. Honorary Life Membership of the Society may be granted to a person pre-eminent in Crystallography and/or one who has rendered conspicuous service to the Society. A nomination for Honourary Life Membership shall be sponsored by three members of the Society, and shall be accompanied by a supporting citation. Election of the candidate shall be by the full Council and shall be confirmed by a majority of at least two thirds of those voting at a duly announced Business Meeting. Such Honorary Life Members pay no subscription to the Society, but are entitled to normal voting privileges and are bound by the Articles and Rules of the Society."

Council has noted that Article VII of the Constitution requires that an amendment can be proposed only at a duly announced Business Meeting of the Society and that its subsequent submission to the Membership for a postal ballot requires a majority vote at this Meeting.

Since no Business Meeting of the SCA has been scheduled prior to the IUCr Congress in Perth in August 1987, Council recommends that the provisions of the Constitution embodied in Article VII (Amendments to Constitution) be set aside on this one unusual occasion in order to permit the proposed amendment to Article III (Membership) to be considered (and subsequently incorporated) into the Constitution in time for the SCA Meeting in Perth.

Please indicate your support or otherwise for the proposed amendment on the ballot paper provided as a flier with this newsletter. An affirmative vote on the amendment will be taken as ratification of the temporary setting aside of Article VII to accomplish this end. Council will, however, resubmit the proposed amendment for another vote by the membership at the next Business Meeting (in accordance with the terms of the Constitution), regardless of the outcome of the present ballot.

PROPOSALS FOR THE XIVth IUCr CONGRESS PROGRAM

Hans Freeman, Chairman of the Program Committee of the XIVth International Congress of Crystallography to be held in Perth in 1987, has distributed a 'Call for Program Proposals' to all National Committees for Crystallography and to the Chairpersons of the IUCr Commissions. He now invites suggestions for all aspects of the Congress Program from the membership of the SCA.

Proposals under the following headings are specifically invited:

- General lectures: Topics
Speakers
Chairpersons

• Symposia:	Topics
	Organisers
	Speakers
	Chairpersons

Hans will be pleased to discuss any matter relating to the Congress Program. Specific responses to this 'Call for Program Proposals' should be forwarded not later than February 15, 1986 to:

Prof H.C. Freeman	Telex: AA26169 UNISYD
Dept of Inorganic Chemistry	Fax: 612-692-4203
University of Sydney	Phone: 02-692-2757
Sydney 2006	02-328-6859 (AH)

FEDERATION OF AUSTRALIAN SCIENTIFIC & TECHNOLOGICAL SOCIETIES

As indicated above in the section on Council Actions, the SCA lent its moral and financial support to the Interim Committee of FASTS. Council was kept well informed of the actions and recommendations of this committee and was invited to send a representative to the Foundation Meeting of FASTS in Canberra on November 12, 1985. At this meeting the representative was to be asked to approve of the proposed FASTS Constitution and By-Laws, to register the SCA's intention to join the Federation, and to provisionally commit the SCA to the payment of a subscription of \$1.50 per member for the period 1-1-86 to 30-6-86 (discounted by \$0.50 per member for our earlier donation to the Interim Committee), and \$2.50 per member for the period 1-7-86 to 30-6-87. In so doing, the SCA's representative would become a Council Member of the Federation and be eligible for nomination to the Board and election to the Executive Committee.

Syd Hall was unable to attend the Canberra meeting and so Peter Colman, as Vice-President of the SCA, acted on our behalf. As reported in the last newsletter, a motion to limit the SCA's ability to respond to the recommendations of the Interim FASTS Committee (specifically in relation to financial matters) was lost at the Adelaide Business Meeting. Council therefore authorised Peter to commit the SCA to the payment of a total subscription of \$525, this figure being calculated on the basis of a membership of 150, and representing a continuation of our formal involvement up to 30-6-87.

Peter duly executed these actions in Canberra and has now reported that the SCA is a Foundation Member Society of FASTS. Council strongly supports this commitment and fervently hopes that it will improve the communication between Scientists and Technologists and Government, perhaps ultimately leading to a higher level of financial support for research and development. Council wishes to point out, however, that the SCA has until June 30, 1986 to change its mind.



Australian
Academy
of Science

AUSTRALIAN ACADEMY OF SCIENCE

JAPAN SOCIETY FOR THE PROMOTION OF SCIENCE

EXCHANGE AGREEMENT 1986/87

(with support from the Australia Japan Foundation)

The Australian Academy of Science invites applications from scientists resident in Australia to participate in an exchange programme with the Japan Society for the Promotion of Science. Applications will be considered from biological and physical scientists for short-term visits and for post-doctoral fellowships.

Senior scientists may apply for short-term visits which will not normally exceed four weeks. The purpose of the visits is to exchange lectures, information and ideas between scientists in the two countries.

For short-term visits, the Academy provides APEX international airfares and the Japan Society for the Promotion of Science provides maintenance allowances and the cost of travel within Japan.

Scientists who have less than five years of post-doctoral experience may apply for fellowships to visit Japan for six to twelve months.

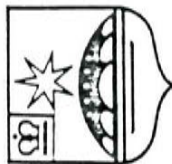
For fellowships, the Academy provides APEX international airfares and the Japan Society for the Promotion of Science provides remuneration.

Scientists interested in participating in the exchange programme in the 1986/87 financial year may obtain more information about the programme and application forms from:

International Relations Section
The Australian Academy of Science
GPO Box 783
Canberra, ACT 2601

Applications must reach the Academy by 1 February 1986.

For enquiries, please telephone 47-3966.



Australian
Academy
of Science

AUSTRALIAN ACADEMY OF SCIENCE

ACADEMIA SINICA

EXCHANGE AGREEMENT

1986/87

A scientific exchange agreement between the Australian Academy of Science and Academia Sinica (Beijing) has been in operation since 1977. Applications are invited from scientists wishing to participate in the 1986/87 programme.

The Academy funds exchanges in the field of natural science. Applications from individual scientists or groups (up to a maximum of six in number) should have a specific programme or project in mind, preferably one that has been developed in consultation with the Academia Sinica Institutes which applicants wish to visit. Visits may be short-term (3 to 4 weeks) exploratory or fact-finding visits or long-term (up to 12 months) visits to carry out joint research work or field studies.

Under the terms of the agreement, travel expenses to and from China are the responsibility of the Academy, and expenses within China are the responsibility of Academia Sinica. The Australian side of the agreement is funded by the Commonwealth Government.

Application forms and a list of Academia Sinica Institutes are available from the Academy. Scientists interested in participating in the 1986/87 programme should write to:

International Relations Section
The Australian Academy of Science
GPO Box 783
Canberra, ACT 2601

Applications must reach the Academy by 1 February 1986.

For enquiries, please telephone (062) 47-3966.

AUSTRALIAN REPRESENTATION IN THE IUCr

The following Australian Crystallographers are currently serving terms in the International Union of Crystallography:

E.N. Maslen	Member, Executive Committee.
D.C. Creagh	Chairperson, Comm on Crystallographic Apparatus. Ex officio member, Comm on International Tables, and Comm on Crystallographic Studies at Controlled Pressures and Temperatures.
P.M. Colman	Member, Comm on Biological Macromolecules.
N.W. Isaacs	Member, Comm on Crystallographic Computing.
C.H.L. Kennard	Member, Comm on Crystallographic Teaching.
T.J. Hicks	Member, Comm on Neutron Diffraction.

NEW JOURNAL OF POWDER DIFFRACTION

The JCPDS-ICDD organisation has announced the launching of an international journal of materials characterisation to be titled 'Powder Diffraction'. The first issue is to be published in early 1986. The 'Call for Papers', which details the scope of the journal and manuscript formats, will be available shortly; copies may then be obtained from Brian O'Connor at the School of Physics and Geosciences, WAIT, Kent Street, Bentley 6102.

The people administering the journal are:

Deane K. Smith, Editor-in-Chief Dept of Geosciences & Mineralogy Pennsylvania State University 239 Deike Building University Park Pennsylvania 16802 USA	Ron Jenkins, Managing Editor JCPDS-International Centre for Diffraction Data 1601 Park Lane Swarthmore Pennsylvania 19081 USA
--	---

The Advisory Board consists of 37 eminent diffractionists, mineralogists, physicists and chemists. The members for Australia are Larry Calvert and Brian O'Connor; both urge Australians to lend their support to the new journal by submitting manuscripts currently nearing completion with a view to having their work published in one of the first issues.

It is expected that the journal will consider papers on any aspect of powder diffraction, particularly those subjects not generally covered by 'Journal of Applied Crystallography', and ones requiring rapid dissemination of crystallographic data. There will be a working relationship with that journal to exchange papers on powder diffraction.

MEMORIAL ISSUE OF ACTA CRYSTALLOGRAPHICA FOR P.P. EWALD

Heinrich Wagenfeld of the Department of Applied Physics at RMIT is organising a memorial issue of Acta Crystallographica for Paul P. Ewald, who died in Ithaca, New York on August 22, 1985. Manuscripts should be submitted to any Acta Co-editor by February 1986. For further information please contact Heinrich at RMIT by mail, or telephone 03-660-2600.

Paul was our link with the beginning of the science of crystal structure determination by X-ray diffraction. His touchstone was light (at all wavelengths) and its interaction with matter. He named his first child, a son, Lux. His Ph.D. thesis on the interaction of electromagnetic radiation with solids is fundamental, and was recently translated by the Air Force! Ewald tells the story of how, in 1910, he went to Sommerfeld to ask if he could do a doctoral thesis with him. Sommerfeld had a list and at the end was the problem "To find the optical properties of an anisotropic arrangement of isotropic resonators." Sommerfeld said this was the only one that he did not know how to tackle. Naturally Ewald selected this! While writing his thesis he discussed it with Laue at supper in January 1912. He told Laue of the internal regularity of crystals and Laue became very interested in the "distance between the resonators." This led Laue to ponder the effect of irradiating crystals with short wavelength radiation (i.e., X-rays if they are waves, not particles). Ewald obtained his doctorate on 5 March 1912 and only read of the Laue-Friedrich-Knipping experiments, using a copper sulfate crystal to diffract X-rays, in June 1912. Thus the happy concordance of the discovery of X-rays, atom size estimates and crystal periodicity yielded Laue's question to Paul about possible dimensions of spacings between atoms in crystals. This was quickly answered with the discovery that X-rays are diffracted by crystals and hence are wave-like (in the context of thought on this in 1912). The rest is history - the Ewald sphere, reciprocal lattice, dynamical diffraction, all developed by Paul with great impact on crystal structure analysis by X-ray diffraction.

Paul Peter Ewald was born in Berlin on January 23, 1888, and had a boyhood interest in chemistry. His mother was a well-known artist and his father died when he was young. He obtained his doctorate in Munich and then worked in Stuttgart in the Institute for Theoretical Physics of the Technical University and in Paris. In 1932 he was elected rector of the University of Stuttgart. He met his wife, Ella Philippson when she was a medical student in Munich.

In 1937 after the rise of the Nazis he moved to Cambridge University in England (where he helped set up the discussion group known as the "Space Group") and then to Queens University in Belfast, Northern Ireland. In 1949, he joined the Polytechnic Institute of Brooklyn, now the Polytechnic Institute of New York as Physics Professor and Department Head, with the enthusiastic support of Isidor Fankuchen (Fan) and Hermann Mark. In 1959 he became Professor Emeritus. His dynamical theory of X-ray diffraction was developed in a field hospital on the Russian front during the First World War when Ewald was Field X-ray Mechanic of the Army.

To celebrate the 50th anniversary of the first x-ray diffraction experiment Ewald edited a volume entitled "Fifty Years of X-ray Diffraction Dedicated to the International Union of Crystallography on the Occasion of the Commemoration Meeting in Munich, July 1962." This is an excellent source for any reader of this Newsletter who wants to learn more about Ewald; for example, Chapter 15 on "Dynamical X-ray Optics; Electron and Neutron Diffraction" was written by him.

Paul was involved in the founding of The International Union of Pure and Applied Physics and the International Union of Crystallography. The latter was first thought of in the spring of 1944 at a meeting of the X-ray Analysis Group in Oxford which Ewald attended. He envisioned an International Union of Crystallography to cover publications such as a journal, "International Tables" and "Structure Reports." He had been co-editor with C. Herman of the 1931 Edition of "Strukturbericht" which covered the years 1913-1926. W. L. Bragg furthered this idea in July 1946 and "Acta Crystallographica" (named by Shubnikov) was founded in 1948 with Paul Ewald as Editor-in-Chief for 12 years and R. C. Evans (England), I. Fankuchen (U.S.A.) and J. Wyart (France) as the three co-editors. Paul was a careful editor and read and commented on each submitted manuscript.

PERSONALIA / MISCELLANEOUS

Peter Colman (CSIRO Division of Protein Chemistry) hit the headlines again recently when he was announced as the winner of one of three inaugural CSIRO Medals. The medal was presented by former CSIRO Chairman Dr Paul Wild at a ceremony on October 9, 1985, in acknowledgement of work which, through its creativity and impact, has captured the imagination of Peter's colleagues.



Photo: L. Monarch

Dr Peter Colman has made an outstanding contribution to the unravelling of the molecular mechanisms involved in viral infection and immunity. His recent determination of the three dimensional structure of the influenza virus coat protein, neuraminidase, has been hailed as a landmark in molecular virology and has received widespread international recognition because of its implications for community health and the pharmaceutical industry. The work explains the mechanism by which influenza virus changes its coat proteins to evade the immune response and has revealed the highly conserved structure of the enzyme active site. This led Dr Colman to suggest that the future control of influenza could be by use of prophylactic blocking drugs specifically designed to fit this highly-conserved structure. His work involves the response of the immune system to viral (and other) infections and the potential of neuraminidase inhibitors as anti-viral agents. Dr Colman has provided new data on the way antibodies interact with antigens and a basis for the design of drugs effective against influenza. He joined CSIRO in 1978.

Alex Moodie, FAA, Chief Research Scientist at the CSIRO Division of Chemical Physics, has become an Industrial Fellow of the Department of Applied Physics, RMIT.

Alex and Bob Croft
at Leonda



The Scientific and Industrial Division of Philips Industries Holdings has created a research prize in the names of John Cowley and Alex Moodie. John formerly worked with Alex at CSIRO Chemical Physics, but is now Professor of Physics at Arizona State University. The award is made by a panel of electron microscopists from a wide range of disciplines and is presented to a young Australian scientist who has shown promise in research involving electron microscopy as a major technique.

The inaugural Cowley-Moodie Research Prize has been awarded to Dr T.J. White, formerly a graduate student of Bruce Hyde at the Research School of Chemistry at ANU, and now working on SYNROC materials for the Australian Atomic Energy Commission at Lucas Heights. The prize has enabled Tim to undertake an extensive trip to leading Centres of Electron Microscopic Research overseas.

All members of the SCA should be saddened, if not outraged, to hear that one of Australia's brightest young crystallographers, Mark Spackman, has left these shores yet again in search of employment. Mark obtained his PhD in Quantum

Chemistry with Graham Chandler in the Chemistry Department at UWA and then spent four years with Bob Stewart at Carnegie-Mellon in Pittsburgh. He returned to Australia in 1983 to work with Ted Maslen in the Crystallography Centre at UWA, but the funds ran out and he is now back in the US working with Brian Craven in the Department of Crystallography at the University of Pittsburgh. We all hope that he will be able to return to Australia again when research funding at the cutting edge of crystallography (and other fields) is again supported by the Australian Government. In the meantime, we wish him well.

Another recent victim of funding short-sightedness is Grant (affectionately known as 'Dick' to his closest friends) Moss, a former student of Zwi Barnea in the Physics Department at the University of Melbourne. Dick was awarded his PhD in 1977 for work in diffraction physics and took up post doctoral positions in the Chemistry Department at SUNY and at the Medical Foundation, both in Buffalo, New York. He returned to Australia in 1984 as an AINSE Fellow studying lattice vibrations with the triple-axis spectrometer at Lucas Heights, but has now accepted a decidedly non-crystallographic position with BHP Petroleum in Melbourne. We also take this opportunity to wish Dick well in his new job.

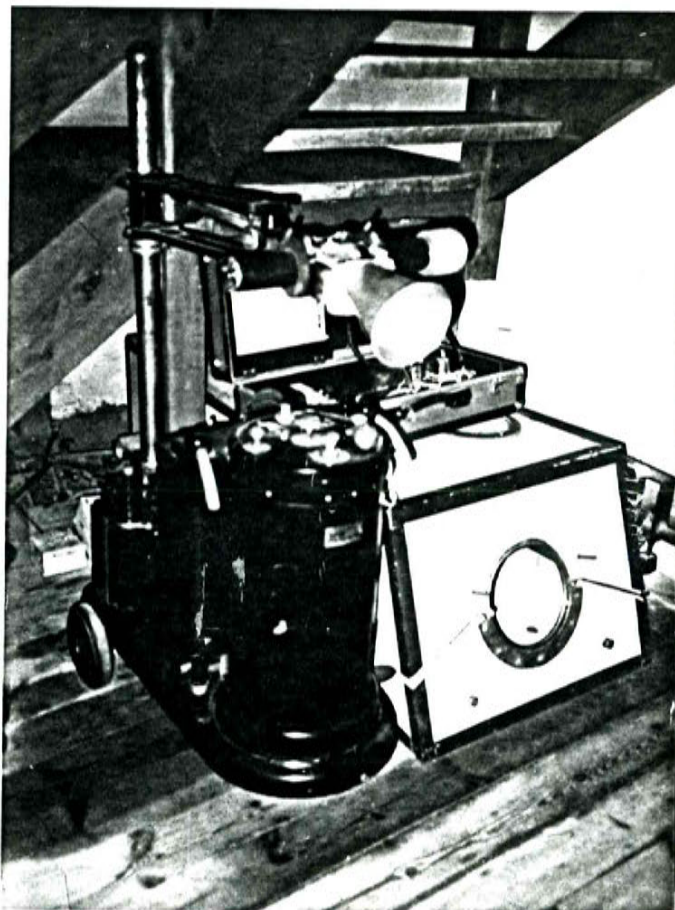
On a brighter note, and with a welcome change in transfer direction, John White, a chemist who has been at the forefront of the development of neutron scattering techniques at Oxford and the ILL, has joined the ANU as Professor of Physical and Theoretical Chemistry in the Research School of Chemistry. He succeeds Prof David Craig, under whom he studied at Sydney University in the 1950's. Prof White is Australian born, but went to Oxford in 1959 to complete his PhD after winning an 1851 Exhibition Scholarship. He was awarded the Marlow Medal in 1968 by the Faraday Society for his development of chemical aspects of neutron inelastic scattering. In 1974 he was seconded to the ILL and became Director of that Institute in 1977, succeeding Nobel prize-winner in physics, Prof Rudolf Mossbauer.

Readers will be saddened to hear of the untimely death of Max O'Connor in March of this year; an obituary has been published in the June 1985 issue of Chemistry in Australia. Nan Dawson, wife of the legendary Barry, also died in June.

The SCA has received a letter from Prof R.D. Brown of the Dept of Chemistry, Monash University in his capacity as Chairman of the ABC Advisory Committee on Science and Technology. This Committee is a group offering advice to the ABC in matters relating particularly to science and technology programs on radio and television. It is also seen as a link between the Corporation and the scientific community. Prof Brown is anxious to have some feedback from members of the SCA on audience reaction to the programs Technology Report, The Science Show, Ockham's Razor, Science Bookshop, Science Review, Science Talkback, Warmboot and Quantum.

Stephen Wilkins has just returned from a four week trip to Japan, during which he visited a number of Japanese laboratories involved in research using high intensity X-ray sources. These included the Department of Applied Physics at Nagoya University, where he talked with scientists working on the 90 kW rotating anode instrument, and the Photon Factory at the Tsukuba Science Centre, where he made arrangements for future experiments using the synchrotron source there. Stephen also visited several other laboratories in Tokyo and attended a meeting of the Japanese Crystallographic Association in Tsukuba. Members of the SCA can expect to hear from Stephen in the next few weeks as he attempts to solicit them for further collaborative projects with our colleagues in Japan.

For those less inclined to travel, the Editor would like to offer unlimited time, for a modest fee, on the recently acquired X-ray generator shown opposite. This equipment was about the best we could do with current levels of NERRDC and ARGCE funding. They did, however, discover the neutron (etc, etc) in the old days with not much more, so we can obviously expect to be able to do alright in the 1980's. The only problem is that funding for running expenses is so tight that we can't afford the cost of electricity to turn it on! Furthermore, it appears that the Birdwood Mill and Museum in South Australia has a similar instrument, so we have stiff competition to contend with as well!



Even more devastated, however, are the crystallographers at the Catalysis and Surface Science Laboratory of the CSIRO Division of Materials Science. Having at last moved from the Melbourne City Limits out to the new laboratories at Clayton, many are reported to be suffering severe withdrawal symptoms resulting from the cessation of years (decades?) of sampling the culinary delights of Lygon and Johnston Streets, Carlton. Doing the Christmas shopping is not going to be all that easy this year either!

SCA SUBSCRIPTIONS FOR 1986

Members are reminded that SCA subscriptions for 1986 are now due. Note that the Adelaide Business Meeting approved an increase in subscriptions for non-student membership from \$10 to \$15. Please send your cheque to Maureen Mackay as soon as possible using the form provided as a flier with this newsletter, and please include any outstanding dues from previous years if such are indicated on the form.

NEW MEMBERS

Council of the SCA extends a warm welcome to the following new members:

Full:	Dr V. McKee Dr C. Pakawatchai Dr B.W. Skelton Dr E. Summerville Mr J.G. Thompson	New Zealand Thailand WA SA ACT
Student:	Ms S.W. Cowan Mr M.G. Trefry	Vic WA

FORTHCOMING MEETINGS

1986: Feb 5-7:	10th AIP Condensed Matter Physics Meeting, Wagga Wagga. Contact: Dr T.R. Finlayson, Dept Physics, Monash Univ, Clayton, Vic 3168.
Feb 9-11:	Structure and Reactivity of Solids and Solid Surfaces, Nathan, Qld. Contact: Dr R. Smart, School of Science, Griffith Univ, Nathan, Qld 4111.
Feb 10-14:	6th Australasian Conference and Schools on X-ray Analysis, UNSW. Contact: Fred Scott, School of Metallurgy, Univ NSW, PO Box 1, Kensington, NSW 2033.
Feb 15-21:	9th Australian Electron Microscopy Conf, Sydney. Contact: Conf Secretariat, Aust Acad Science, GPO Box 783, Canberra, ACT 2601.
April 7-10:	BCA Spring Meeting, York. Contact: Prof M.M. Woolfson, Dept Physics, Univ York, Heslington, York, YO1 5DD, UK.
May 27-29:	2nd International Symposium on Drug Analysis, Catholic Univ of Louvain-en-Woluwe (UCL), Brussels. Contact: Mrs C. Van Kerchove, Soc. Biege des Sciences Pharm, Belgisch Genootschap voor Pharm Wetensch, Rue Steyevinstraat 137, B-1040 Brussels.
June 10-19:	Synchrotron Radiation for X-ray Crystallography (Summer School), Erice, Sicily. Contact: Prof L. Riva Di Sanseverino, Piazza Porta San Donato 1, 40127 Bologna, Italy.
June 22-27:	American Crystallographic Association Meeting, Hamilton, Ontario. Contact: Dr I.D. Brown, Inst Materials Research, McMaster Univ, 1280 Main St West, Hamilton, Ontario L8S 4M1, Canada.
July 8-11:	Int Symp on Molecules, Clusters and Networks in the Solid State, Birmingham. Contact: Dr J.F. Gibson, Royal Soc Chem, Burlington House, London, W1V 0RN, UK.
July 13-18:	14th General Meeting of the International Mineralogical Association, Stanford, USA. Contact: Prof C.T. Prewitt, Chairman IMA 1986, PO Box 183, Stony Brook, New York 11790, USA.
Aug 1-4:	Organic Crystal Chem Symp, Rydzyna Castle, Poland. Contact: Dr Z. Kaluski, Inst Chem, Adam Mickiewicz Univ, Grunwaldzka 5, 60-780, Poznan, Poland.

- Aug 4-9: 10th European Cryst Meeting (ECH-10), Wrocław, Poland. Contact: Dr K. Kubiak, Inst for Low Temp and Structure Res, Plac Katedralny 1, 50-950 Wrocław, Poland.
- Aug 10-14: 12th Conf on Applied Cryst, Cieszyn, Poland. Contact: Dr E. Lagiewka, Uniwersytet Śląski, Inst Fizyki i Chemii Metali, ul Bankowa 12, 40-007 Katowice, Poland.
- Aug 11-20: Int Summer School on Crystallographic Computing, Leipzig, GDR. Contact: Prof P. Pauler, Sektion Chemie der Karl-Marx-Universität, Liebigstr 18, 1710 Leipzig, German Dem Rep.
- Aug 17-22: 7th Int Zeolite Conference, Tokyo, Japan. Contact: Hiro-O Tominaga (7 IZC), Dept Synthetic Chemistry, Faculty of Engineering, Univ Tokyo, Hongo, Bunkyo-Ku, Tokyo 113, Japan.
- Aug 31 - Sept 7: 11th Int Congress on Electron Microscopy, Kyoto, Japan. Contact: Congress Secretariat, XI ICEM, Dept Anatomy, Faculty of Medicine, Kyoto Univ, Konocho Yoshida Sakyo-ku, Kyoto 606, Japan.
- Sept 9-10: Symp on 3D Structure and Drug Design, Tokyo. Contact: Prof Y. Iitaka, Univ Tokyo, Faculty of Pharm Sciences, Bunkyo-ku, Tokyo, Japan.
- Sept 15-19: Int Symp on Molecular Structure: Chem Reactivity and Biological Activity, Beijing. Contact: Dr Xu Xiao-Jie, Inst Physical Chem, Peking Univ, Beijing, China.
- Oct 20-26: Computational Chem in Molecular Design: Molecular Modelling and Computer Graphics, Garmish, Germany. Contact: J.J. Stezowski, Inst Organische Chemie, Biochemie and Isotop, Univ Stuttgart, Pfaffenw 55 D-7000 Stuttgart 80, Fed Rep Germany.
- Nov 19-26: 56th ANZAAS Congress, Sydney, NSW. Contact: Executive Officer, 56th ANZAAS Congress, GPO Box 873, Sydney, NSW 2001.
- 1987:
- Feb: 15th Australian Spectroscopy Conf. Contact: Conf Secretariat, Aust Acad Science, GPO Box 783, Canberra, ACT 2600.
- Apr 7-9: BCA Spring Meeting, Heriot-Watt Univ, Edinburgh, UK. Contact: Dr J.C. Halfpenny, Dept Chemistry, Napier College, Colinton Rd, Edinburgh EH10 5DT, UK.
- July 13-16: Conf on Small Angle Scattering and Related Methods, Praha, Czechoslovakia. Contact: Dr J. Baldrian, Praha, Czechoslovakia.
- Aug 12-20: 14th General Assembly and Congress of the IUCr, Perth, Western Australia. Contact: Dr E.N. Maslen, Crystallography Centre, Univ. of WA, Nedlands 6009, Western Australia.
- Satellites:
- Neutron Scattering, Sydney, Aug 5-8. Contact: Dr T.J. Hicks, Monash Univ, Validity of Structures from Electron Microscopy, Melbourne, Aug 8-9. Contact: Dr J.V. Sanders, CSIRO Mat Sci, X-ray Powder Diffractometry, Perth, Aug 21-22. Contact: Dr B.H. O'Connor, WAIT, Int (Winter) School on Crystallographic Computing, Adelaide, Aug 22-29. Contact: Dr M.R. Taylor, Flinders Univ, Accuracy in Structure Factor Measurements, Melbourne, Aug 23-25. Contact: Dr S.W. Wilkins, CSIRO Chem Phys.
- 1988
- Jan 28-31: RACI Inorganic Chem Div Nat Meeting (COMO 13), Melbourne. Contact: Dr P. Tregloan, Dept Inorg Chem, Univ Melbourne, Parkville, Vic 3052.
- May 30 - June 7: Crystallography of Molecular Biology (Summer School), Erice, Italy. Contact: Prof L. Riva Di San Severino, Piazza Porta San Donato 1, 40127 Bologna, Italy.

Fireworks ended
And spectators gone away...
Ah, how vast and dark

Shiki

