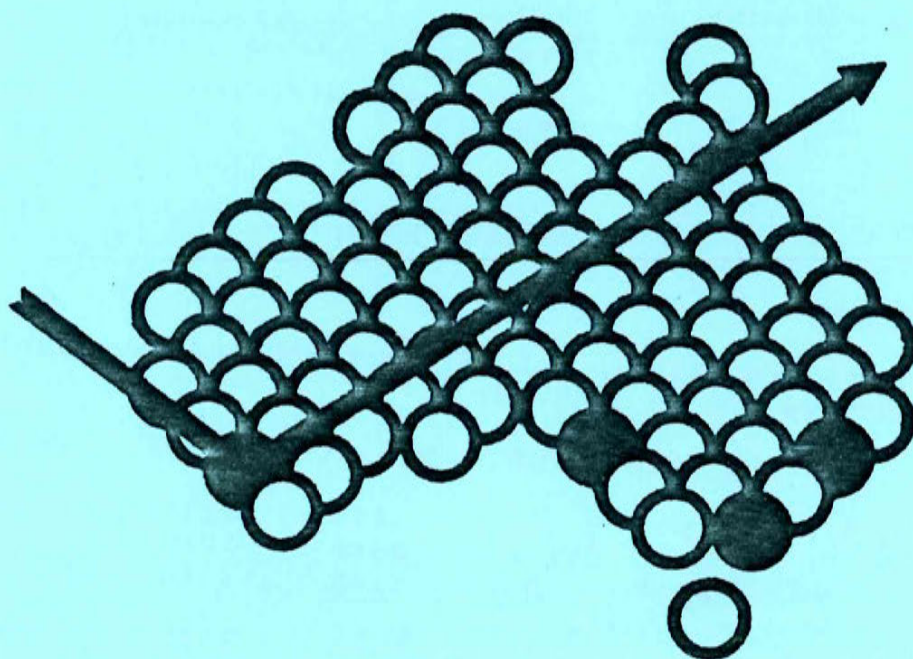


# Society of Crystallographers in Australia

## Newsletter No. 15

### IUCr XIV



### PERTH 87

June 1987

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# 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) (past President)

## Standing Committees (\*Chairperson)

Computing: A.D. Rae (Univ NSW)\*  
 T.R. Welberry (ANU)  
 M.R. Taylor (Flinders Univ)  
 Electron diffraction: J.R.J. Sellar (ANU)\*  
 R.A. Eggleton (ANU)  
 L.A. Bursill (Univ Melbourne)  
 Neutron diffraction: T.J. Hicks (Monash Univ)\*  
 C.H.L. Kennard (Univ Qld)  
 F.H. Moore (AINSE)  
 Nominations: M.R. Snow (Univ Adelaide)\*  
 J. Epstein (Kodak, Vic)  
 M. Sterns (ANU)  
 X-ray diffraction: S.W. Wilkins (CSIRO Mat Sci & Tech)\*  
 J.N. Varghese (CSIRO Protein Chem)  
 B.H. O'Connor (Curtin Univ)  
 Newsletter Editor: Rod Hill  
 CSIRO Division of Mineral Chemistry  
 PO Box 124, Port Melbourne, Vic 3207

With technical assistance from  
 Anne Foxworthy

## PERTH CONGRESS NEWS

### Travel Discounts

Details of Australian Airlines APEX block bookings available to Congress Attendees are as follows:

	Aug date	TN#	Depart	Arrive	Seats
Sydney to Perth	11	16	1840	2115	10 H8BPJ
" "	11	571-4	0645	1020	10 H8OV
return	21	3	1145	1740	10
Melbourne to Perth	11	4	0835	1020	10 H8BXZ
return	21	19	1715	2230	"
Melbourne to Perth	12	14	1855	2040	10 H8BSV
return	21	9	0800	1315	"
Adelaide to Perth	11	2	1035	1210	10 H8C40
return	21	1	1300	1710	"
Brisbane to Perth	11	465-16	1400	2115	10 H8C7Z
return	22	11-494	0010	0830	"
Canberra to Perth	11	425-14	1700	2040	5 H8CDV
return	21	9-428	0800	1430	"
Hobart to Perth	12	454-20	1025	1545	5 H8CJ9
return	22	5-403	1110	2040	"

All names and payment for these block-booked seats must be received at least 45 days prior to departure, and changes or cancellations made inside 30 days will incur a fee of 50%.



### Student Assistance

Help will be required at the Congress with the projection facilities during oral presentations, the organization of poster sessions, and various specific tasks associated with other events. By providing assistance in this way, students attending the Congress may reduce their costs by 50 to 100% of the student registration fee, depending on the allocation of duties. Interested students should contact Ted Maslen by phone (09 3802727) or mail at the Crystallography Centre, University of Western Australia, Nedlands, WA 6009, IMMEDIATELY.

### Australian Delegates

The National Committee for Crystallography has nominated the following delegates to vote on behalf of Australia during the forthcoming General Assembly in Perth:

H.C. Freeman  
T.J. Hicks  
S.R. Hall

ANCCr Chairman  
Member of ANCCr  
SCA President

### Accuracy in Structure Factors Symposium

This satellite meeting of the Congress will be held at Warburton in Victoria from Sun 23 to Wed 26 August. Sessions on the following topics, with speakers appended, have been arranged:

General: Kato, Hart, Mathieson, Spackman, Schwarzenbach, Harada

Extinction: Kato, Delapalme

Powders: Suorrti, Parrish (+ Hart), Kimmel (+ Schreiner), Sabine, Nowak

N-beam Problems: Juretschke (+ Wagenfeld), Hauback, Okazaki (+ Ohe, Soejima)

TDS: Willis

Results for Si etc: Cummings (+ Hart), Saka (+ Kato), Wagenfeld, Schneider (x2), Sakama (+ Sato), Takama (+ Kobayashi, Sato), Olekhnovich.

Models of Scattering Density: Kuhs, Howard, Tanaka (+ Marumo)

Anom Disp & Phase Det: Templeton (+ Templeton), Creagh, Cusatis, Mazzaro, Juretschke

Surface Crystallography: Robinson

Measurement: Hope, Stevenson, Destro (+ Marsh)

Electron Diffraction: Gjønnes (+ Hoier, Marthinsen), Fox (+ Fisher), Spargo

STOP PRESS: International School on Crystallographic Computing.

A limited number of places are still available at the Computing School at Flinders University from August 22-29, so Max Taylor has extended the closing date for registration to July 10. There are already 92 registrants from Australia and overseas, so please contact Max immediately if you are planning to attend.

### WORKSHOP ON USES OF SYNCHROTRON RADIATION

If you are interested in attending this workshop, please fill out the fly sheet included with the Newsletter and return same to Stephen Wilkins.



ANNOUNCEMENT OF DEPARTMENT OF SCIENCE FUNDED WORKSHOP ON  
USES OF SYNCHROTRON RADIATION

TO BE HELD AT THE UNIVERSITY OF MELBOURNE

ON SATURDAY AUGUST 29 AND SUNDAY AUGUST 30, 1987

Aims: To provide information on recent developments in the use of synchrotron radiation for research. To inform the local scientific community on possibilities for using synchrotron radiation and to help develop proposals for accessing overseas synchrotron radiation facilities.

Overseas speakers include:

Prof. M. Ando, Photon Factory, KEK, JAPAN

Prof. M. Hart, FRSE, Univ. of Manchester & SERC Facility, Daresbury, U.K.

Prof. J. Harada, University of Nagoya, JAPAN

Prof. P. Suortti, Dept. of Physics, University of Helsinki, FINLAND

It is expected that several other leading workers from the principal SR facilities will also be contributing.

Local speakers include:

1. Prof. T.M. Sabine, Faculty of Science, NSMUT

i) Powder Diffraction on a Synchrotron Source  
ii) Rietveld Analysis of Data on TiO<sub>2</sub> obtained at DESY

2. Dr B. O'Connor, School of Physics & Geosciences, Curtin University, WA  
Potential Uses of Synchrotron Radiation by Australian Industry

3. Dr R. J. Leckey, Dept of Physics, La Trobe University, VIC.  
Electronic Properties of Metal-Semiconductor Interfaces Studied by Angle-Resolved Ultra-Violet Photoelectron Spectroscopy Using Synchrotron Radiation

4. Dr K. Foger, CSIRO, Division of Materials Science & Technology  
EXAFS - Examination of Catalysts Under "Real" Process Conditions (T up to 450 C, P up to 14 MPa)

5. Prof H. Freeman, Dept of Inorganic Chemistry, Sydney University  
i) XAS-EXAFS of Metal Centres in Biomolecules  
ii) Multiple Wavelength Diffraction data from Protein Crystals

6. Prof J. White, RSC, ANU, Canberra  
Opportunities for Small-Angle X-ray Scattering at a Synchrotron Source

7. Dr S. W. Wilkins, CSIRO, Division of Materials Science and Technology  
Triple-Crystal Diffraction from Some Ion-Implanted and other Silicon Samples Using the 5-Circle Diffractometer on BL-4C at the Photon Factory

8. Dr H. Magenfeld, Physics Dept., RMIT Applied Physics  
Prospect for Sino-Australian Collaboration at Synchrotron being built at Hefei

9. Dr J.B. Parise, Inorganic Chemistry Dept., Sydney University  
EXAFS and RED Studies of Nucleation in Ceramic Materials

10. Dr D.C. Creagh, Dept. of Physics, Aust. Defence Forces Academy, Campbell, ACT  
The requirements for Monochromator Systems for the investigation of the Magnetic Properties of the light rare Earth Systems and their Alloys

12. Prof. A. McL. Mathieson, Dept of Chemistry, La Trobe University, VIC  
Single-Crystal Investigations Using the A20, A4 - Method at a Synchrotron Source

ORGANIZATIONAL DETAILS:

The meeting will be organized in conjunction with the Institute of Metals and Materials Australia (IMMA). Registration cost is expected to be \$20 or less per person (and even less for students, etc.). College accommodation will be available at approx \$30 per night B&B on a first come first served basis.

## FIRST EWALD PRIZE AWARDED TO JOHN COWLEY AND ALEC MOODIE

Theo Hahn, president of the IUCr, announced on 24th April, 1987 that the First Ewald Prize for outstanding contributions to the science of crystallography has been awarded to

Professor J.M. Cowley and Dr A.F. Moodie

for their 'outstanding achievements in electron diffraction and microscopy, especially for their fundamental contributions to the theory and technique of direct imaging of crystal structures and structure defects by high resolution electron microscopy.

'Their pioneering work on the dynamical scattering of electrons was reported in a series of papers in Acta Crystallographica and other journals from 1957 onwards. A theory of Fourier images led them to the multi-slice formulation of the scattering of an electron wave in its passage through a crystal. This formulation is able to take into account many hundreds of scattered beams, and has become the basis of widely-used computer programs. The theory allows the electron micrographs, obtained with modern high resolution instruments, to be reliably and quantitatively interpreted, and used for the determination of structures of both perfect crystals and crystals containing defects.

'Professor Cowley and Dr Moodie, together and separately, have made many further contributions to theory, methods and results in electron diffraction and microscopy. Their work has often stressed a unified approach to diffraction and microscopy through physical optics. An overview of the whole field may be found in Professor Cowley's book Diffraction Physics (1981).

'John Maxwell Cowley, born in Australia in 1923 and a graduate of Adelaide University, was formerly a Chief Research Scientist at the Division of Chemical Physics, CSIRO, Melbourne, Australia. Later he was Professor of Physics at the University of Melbourne, and since 1970 has been the Galvin Professor of Physics at Arizona State University, Tempe, USA.



'Alexander Forbes Moodie, born in Scotland in 1923, graduated from St Andrews University in 1948. Since then he has been a member of CSIRO in Australia where he is a Chief Research Scientist at the Division of ... Materials Science and Technology.'

The presentation of the Ewald Prize will take place at the Opening Ceremony of the Perth Congress on 12 August 1987. The prize consists of a medal, a certificate and a financial award.

John and Alec have both been featured pictorially in previous editions of this newsletter:

John in #13, p 12:	Brisbane, June 1961
Alec in #14, p 12:	Melbourne, May 1986
#12, pp 5,15:	Melbourne, July 1985

However, in view of the importance of this occasion, they can be found again in the following photograph taken sometime early in 1959 in the Old Conference Room of the Division of Industrial Chemistry at Fisherman's Bend, not long after their very fruitful collaboration began. Some of the more senior SCA members may also recognize the presence of:

Dave Wadsley	Alan Wylie	
Ian Wark	Alan Walsh	and
Lloyd Rees	Arthur Gaskin	many
Dick Thomas	Peter Goodman	others
Alan Walkley	Ken McTaggart	

A key to all those present may be obtained from the Editor.

#### SCA ELECTION RESULTS

No nominations additional to those produced by the Nominations Committee were forthcoming from a mailed request to the full membership, so the following candidates are deemed to have been elected and will take office during the SCA Business Meeting in Perth. [The position of President is assumed automatically by the Vice President of the previous term.]

##### Executive:

President	P.M. Colman (CSIRO, Protein Chem)
Vice President	N.W. Isaacs (St Vin Sch Med Res, Vic)
Secretary	G.A. Williams (Aust Rad Lab, Vic)
Treasurer	C.H.L. Kennard (Univ Q)
Councillor	M.F. Mackay (LaTrobe Univ)

##### Standing Committees:

Computing	J.M. Guss (Univ Sydney)
Electron Diffraction	C.J. Rossouw (CSIRO, Mat Sci & Tech)
Neutron Diffraction	C.J. Howard (ANSTO, NSW)
	D.C. Creagh (UNSW Duntroon)
Nominations	B.M.K. Gatehouse (Monash Univ)
	S.W. Wilkins (CSIRO, Mat Sci & Tech)
X-ray Diffraction	J.B. Parise (Univ Sydney)

[Note: CSIRO Division names are provisional only, and are subject/likely to change at any moment.]







## COUNCIL ACTIONS SINCE THE LAST NEWSLETTER

The SCA Council has not met formally since the last Newsletter, although a meeting will be held in Melbourne on July 25th to prepare for the Business Meeting at the Perth Congress. Actions of the Council and Standing Committees since the last Newsletter have been as follows:

- Progress in the organization of the Perth IUCr Congress has been monitored. Latest estimates indicate that more than 1000 people will be attending!
- A slate of nominations for Officers of the SCA has been prepared and a list of these nominations has been circulated to the membership in accordance with the Constitution. Council takes this opportunity to thank Mike Snow and the other members of the Nominations Committee for successfully completing this recurrent and rather onerous task.
- Invitations to join the SCA have been sent to approximately half of those 90 people listed in the World Directory of Crystallographers who are not already SCA members. The remaining half will be contacted in due course.
- Another round of amendments have been made to the Draft Constitution of the proposed Asian Crystallographic Association (ASCA) and copies of the draft have been forwarded to all member-country contact-persons.
- An agenda for a meeting to discuss the ratification of the Constitution and other steps necessary for the formation of ASCA and to effect its affiliation with the IUCr has been prepared in consultation with Dr J.N. King, IUCr Executive Secretary. Copies of the agenda, minutes of the Hamburg meeting, and suggestions for preparatory action by member countries, have been sent to all contacts. The meeting will take place during the Congress at 1400h on Friday August 14.
- Hans Freeman has kept the SCA informed of the actions of the National Committee for Crystallography. The current membership is as outlined later in this Newsletter. The ANCCr will meet on July 26/27 to discuss the Agenda for the IUCr XIVth General Assembly.

## NOTICE OF BUSINESS MEETING

Members of the SCA should note that a Business Meeting of the SCA will be held during the Perth Congress. Your attendance at this meeting is essential as we will be discussing and voting on several very important matters, including:

- The date and venue for Crystal 16
- Formation of ASCA
- Continuation of membership of FASTS
- Amendments to the Constitution

A detailed Agenda will be available during the Congress.

## SCA MEMBERSHIP

### Changes

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

Full:	Dr T.R. Finlayson	Monash Univ
	Dr D.F. Lynch	CSIRO Mat Sci & Tech
	Dr P.P. Phahey	Monash Univ
	Dr C.J. Roussouw	CSIRO Mat Sci & Tech
Student:	Mr A.I. Johnston	Monash Univ

The following resignations are noted, with regret:

Ms S.A. Miller	CSIRO, Lucas Heights
Dr E.K. Nunn	Monash Univ

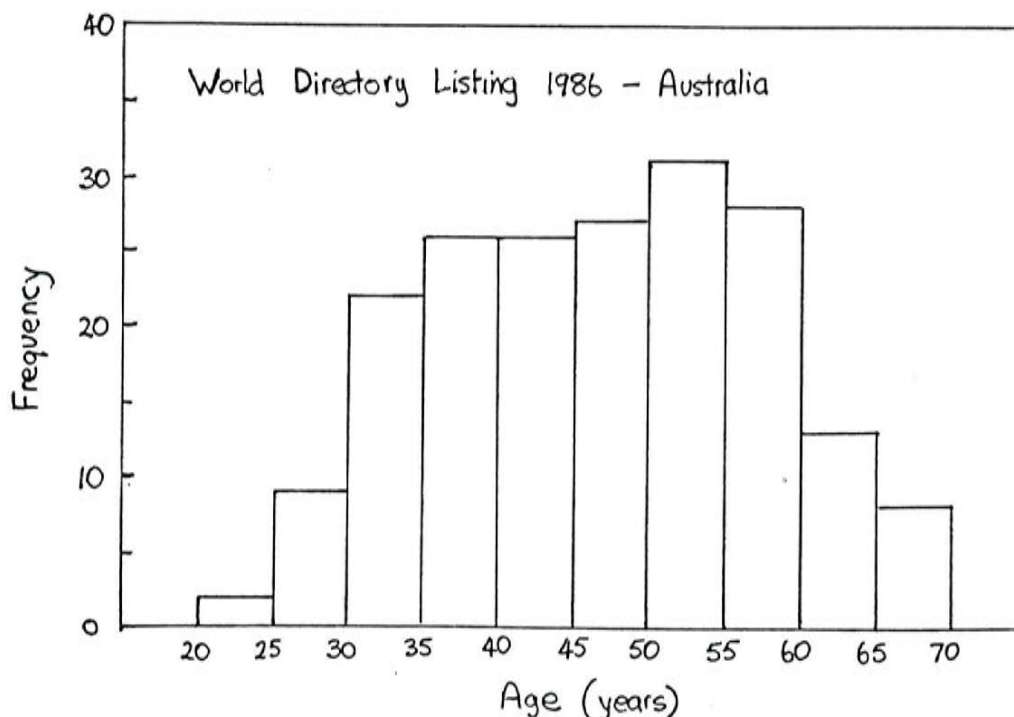
### Analysis

As indicated in a Section above, the Secretary is currently in the process of inviting to join the SCA all those Australians who have sufficient interest in Crystallography to register themselves in the latest edition of the World Directory of Crystallographers, yet are not members of our Society. As a byproduct of this membership drive, and partly in response to some statistics received from the ACA, it was decided to undertake a short analysis of the Australian entries in the World Directory.

Total number of entries in 1986 edition: 199

Consisting of:	Gender:	Males	187
		Females	12 (6%)
	Qualification:	Professor	14
		Doctorate	139
		Student	9

The distribution of ages is illustrated as follows:





The histogram indicates that there is a somewhat 'top-heavy' aspect to the age distribution: some 38% of the entries are in the age group 51-65, suggesting that there is about to be a significant number of retirements in Crystallography in Australia. [Note that this percentage is, if anything, an underestimate, since the 7 people who did not provide an age in the listing are likely to be in this higher age group.]

Since only about 17% of the entries have ages in the lowest 15 years (21-35), these younger Crystallographers might expect to have good prospects for employment/promotion in the next 5-10 years. Furthermore, if the demand (?) for Crystallographers continues at its present level, the Universities can afford to encourage a larger number of students to focus on Crystallography at the graduate level.

At the time of this analysis (January, 1987), the membership of the SCA was 164, including 19 non-residents of Australia. Of these, 109 were listed in the World Directory (WD), so that 90 people in the WD are not SCA members, and 55 SCA members are not in the WD. Further analysis of the SCA membership is as follows:

Gender:	Males	146
	Females	18 (11%)
Country of residence:	New Zealand	8
	United Kingdom	4
	USA, Jap, Can, Fin	
	Fr, Thai, Nor	1 each

For comparison, as of June 4 1986, statistics for the ACA were:

Total membership:		1782
Including:	Males	1568
	Females	212 (12%)
	US residents	1243 (70%)
	Canadian res	73
	Non US/Can res	466

The figures for all three collections of crystallographers raise the question: Where is the evidence for the 'unique tradition' of equality of opportunity and encouragement for females that is supposed to be the jewel in the Crystallography crown? The Australian entries in the WD consist of only 6% females, and the SCA and ACA female membership is a remarkably consistent 12%: not exactly a powerful example of a positive attitude to the employment of women!

#### NATIONAL COMMITTEE FOR CRYSTALLOGRAPHY

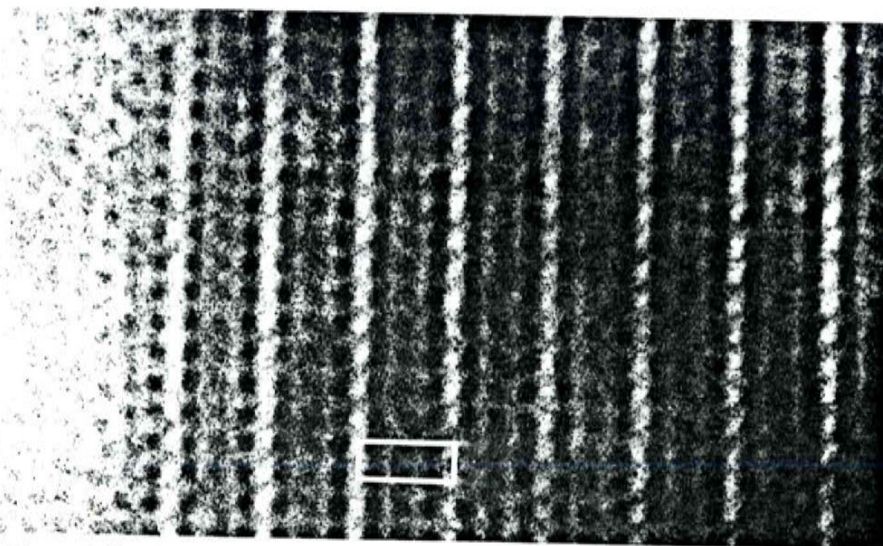
The current membership of the Australian National Committee for Crystallography, with the final year of the term in parenthesis, is as follows:

H.C. Freeman, Chairman (90)	S.R. Hall, SCA rep
T.J. Hicks (90)	(to Aug 87)
I.E. Grey (89)	P.M. Colman, SCA rep
M.R. Taylor (89)	(from Sept 87)
E.N. Maslen (88)	

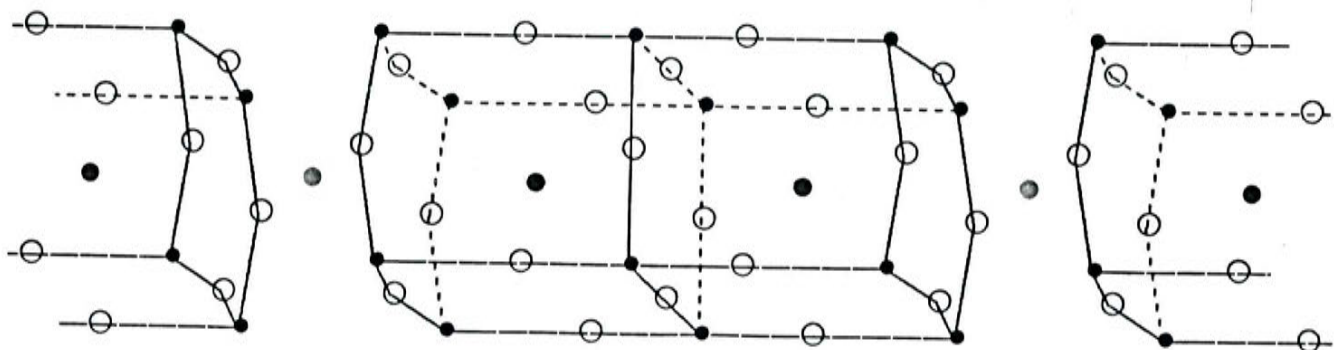


## SUPERCONDUCTIVITY ABOVE THE BOILING POINT OF NITROGEN

Members will no doubt be aware of the excitement that is currently gripping chemists, physicists and engineers all over the country following the discovery of the ostensibly new class of 'warm' ( $>70\text{K}$ ) superconductors based on lanthanum - group 2 - copper oxides with an orthorhombically distorted perovskite structure. Scientific sessions on these materials have already been organized for the IUCr and RACI Congresses in Perth and Sydney, and there will also be a meeting specifically on this class of compounds at Warburton following the satellite meeting on Accuracy in Structure Factors. For further details on this latter meeting, please contact Peter Goodman at the CSIRO Division of Mat Sci & Tech.



High-resolution transmission electron micrograph of  $\text{YBa}_2\text{Cu}_3\text{O}_{9-y}$ , looking along the (100) direction in the crystal. Assuming that the image can be interpreted as a projected charge density of the crystal, the three colinear black spots correspond to barium and yttrium atoms. The bright layers separating the darker (barium) layers suggest that oxygen vacancies are present on the copper planes between the barium planes. The white rectangle (dimensions approximately  $0.4 \times 1.2 \text{ nm}$ ) outlines the unit cell of the crystal. (Photo by Thomas Shaw, IBM Yorktown Heights.)



Crystal structure of  $\text{YBa}_2\text{Cu}_3\text{O}_{9-y}$ , an orthorhombically distorted perovskite, also consists of layers of Cu (black) and O (white) normal to the  $c$ -axis, here along the horizontal. Every third layer is yttrium (red) rich. The  $\text{CuO}_2\text{-Ba-CuO}_2\text{-Ba-CuO}_2$  sandwich shown in the middle is important for superconductivity; Ba sites shown in blue. (Adapted from a figure provided by the Bellcore group.)

[From Physics Today, April 1987, 17-23]

### Editor's Note:

With all the scientific jockeying-for-position, one-upmanship, and political point-scoring taking place overseas (and in Australia?) in association with this revolution in superconductor research, one should be careful not to fall into one of the yawning traps that await the unwary 'bandwagoner'. In the



scramble to produce results/patents for potential and future sponsors and/or to prop up a flagging reputation for tactical (i.e., applied) research within one's own organization, the dangers are clearly twofold. Firstly, critical fundamental aspects of the problem may be missed in the rush, and secondly, standards of scientific check/countercheck may be relaxed.

The first of these problems probably occurred 25 years ago when the original students of the phase diagram and crystal structures of these oxides did not have the chance, were not permitted, or did not think of checking for the presence of superconductivity. The second problem is taking place right now overseas, where results are being published in newspapers without any semblance of a legitimate review process. We must be careful to ensure that neither of these problems occurs in Australia, despite the very fashionable and all-too-transparent political push for more 'relevance' in today's research climate.

#### PERSONALIA / MISCELLANEOUS

- The Cowley-Moodie award for 1986 has been won by John FitzGerald of the Research School of Earth Sciences at the ANU. The award is offered annually by the Scientific and Industrial Division of Philips Industries, and is for a young scientist, resident in Australia, who has shown outstanding promise in the field of electron microscopy or electron diffraction through original work of international standing.

John is 32 years old and obtained a 1st Class BSc from James Cook University in 1974, together with a University Medal, and was awarded his PhD from Monash University in 1980. From 1980 to 1985 he was a Research Fellow in the RSES at ANU, and is now a Research Officer in the same school. His research interests are in the microstructural details of silicate mineral systems, where he has applied and developed a wide range of electron optical techniques. He plans to use the Award to attend the Pacific Workshop on Analytical Microscopy and the 22nd Annual Microbeam Analysis Meeting in Hawaii in July and to visit electron microscopy and geological laboratories in the USA and Europe.

- Congratulations also to Chris Howard of the Applied Physics Division of ANSTO in being joint winner of the Lucas Heights Scientific Society Prize for 1987. The award consists of a medal and citation, and was granted in recognition of his original research on neutron powder diffraction methods and applications at Lucas Heights. The prize was shared with a team of three scientists working on PIXE at ANSTO.

Chris obtained an MSc from the Physics Department at Melbourne University in 1966 and completed a PhD in NMR at the University of Nottingham, UK, in 1969. He then returned to Australia to take up a position with the Atomic Energy Commission at Lucas Heights, and is now a Principal Research Scientist and leader of the Neutron Scattering Group in the Applied Physics Division of the renamed ANSTO. He has returned to the UK and France several times on extended visits in recent years to work with Richard Nelmes and Alan Hewat to pursue his interests in various aspects of single crystal and powder neutron and X-ray diffraction.

- The Royal Australian Chemical Institute Solid State Division Medal for 1987 has been awarded to Rod Hill of the CSIRO Division of Mineral Chemistry, Port Melbourne. The award consists of an inscribed medal and a citation. It is granted triannually to scientists under the age of 40 who have carried out significant



original work, primarily within Australia, on the Physics or Chemistry of the Solid State or of Solid Surfaces. The award will be presented during the RACI 8th National Convention in Sydney in August.

Rod received a PhD in Mineralogy/Crystallography from the University of Adelaide in 1975 and then went to Virginia Polytechnic Inst & State Univ in Blacksburg, VA, to work on theoretical and experimental electron densities in silicates and aluminates. This work continued when he returned to Australia in 1978 as a Queen Elizabeth II Fellow attached to the CSIRO Division of Mineral Chemistry. In 1980 he was awarded a CSIRO Postdoctoral Fellowship to work at Min Chem on the crystal chemistry of the lead-acid battery using X-ray and neutron powder diffraction. He is now a Principal Research Scientist in that Division.

- Update on Mark Spackman's movements! Mark is not in the RSC at ANU after all; he has, instead, taken up an appointment as Lecturer in the Department of Chemistry at the University of New England, Armidale.
- The Australian Academy of Science invites applications from scientists resident in Australia to participate in scientific exchanges (during the 1988/89 financial year) with the People's Republic of China, through the Academia Sinica, and with Japan, through the Japan Society for the Promotion of Science. A similar exchange programme operates between the AAS/AATS and the Royal Society for visits to the United Kingdom during the 1988 calendar year. Application forms are available from the International Exchanges Officer, Australian Academy of Science, GPO Box 783, Canberra, ACT 2601. The deadline for applications for visits to China and Japan is October 1, 1987, and for the UK, September 1, 1987.
- The neatest, correct answer to the question about the broken stick in the last Newsletter was received from expatriot Australian John Tibballs, now at the Centre for Industrial Research, Oslo, Norway. John graduated with a PhD from the Department of Physics at Melbourne University in 1974, and has spent most of his time overseas since then. He correctly deduced that the average length of the smaller piece of a stick broken in two at random is  $1/4$  of the total length. His calculus can't be all that rusty either, since he successfully deduced that the length ratio of the shorter to the longer pieces is  $2\ln 2 - 1$ , not the intuitive  $1/3$ . Hope to see you at the Perth Congress John.
- On the other hand, no-one managed to identify the mystery object in the last Newsletter. The photograph depicts the almost-completed cold source under construction at the National Bureau of Standards Reactor at Gaithersburg, Maryland. And I thought the clues were a dead give-away too!
- The Institute of Metals and Materials Australasia (IMMA) has announced the publication of a new journal Materials Forum (formerly Metals Forum). This is an international journal that seeks to provide a medium for the communication and discussion of original thought and research on the science and technology of materials, from basic understanding to final application. A key aim is to further understanding of the relationship between the structure of materials and the properties which are of importance in engineering applications. Enquiries and papers for consideration should be forwarded to the Editor-in-Chief, Dr R.A. Jago, CSIRO Division of Manufacturing Technology, PO Box 4, Woodville,



SA 5011. Members of the Solid State Division of the RACI are reminded that they can receive copies of the journal at cost.

- John White and his colleagues at the RSC, ANU have recently installed a Huxley-Holmes SAXS camera on a GX13 rotating anode with a 1.2kW microsource (0.1x0.1mm). Preliminary testing has indicated that in-house improvements to the optics and collimation have produced the most intense and smallest angle aperture beam on a laboratory anode anywhere in the world.
- The Australian Academy of Science invites organizations and societies with the intention of planning a research conference during 1988 to contact the Academy regarding the possibility of utilizing its facilities and support under the umbrella of an Elizabeth and Frederick White Research Conference. These conferences are intended to fill, in Australia, part of the niche satisfied by the Gordon Research Conferences in the US. For further information, contact Mrs Hilary Back, GPO Box 783, Canberra ACT 2601, or telephone 062 47 5330.
- The third A.L. Patterson Award has been given jointly to David H. Templeton and Lieselotte K. Templeton for their pioneering contributions to our understanding of anomalous scattering of X-rays. During the last 10 years David and Lieselotte have been engaged in the accurate measurement of anomalous scattering terms at wavelengths near absorption edges and have coauthored many important papers. This detailed experimental work was made possible only with access to highly monochromatic X-radiation over a variety of wavelengths as obtained in a synchrotron radiation source.
- Happened to notice the following map of Australia in the Dec 1986 ACA Newsletter. It was appended to an article announcing a US National Committee for Crystallography / NRC Travel Award Program to assist young scientists to get to the 14th IUCr Congress in Perth. An acknowledgement below the map ascribed it to one C.H.L. Kennard. What happened to 'best wines' alongside Adelaide Colin? Or 'nuttiest/oldest politicians' near Brisbane?



- The JCPDS International Centre for Diffraction Data has announced that the J.D. Hannawalt Award for excellence in the field of powder diffraction has been granted to William Parrish, IBM Corp, Research Division, CA. The presentation of the award will take place during the satellite meeting on X-ray Powder Diffractometry in Fremantle in August.



- Members should note that copies of the 1986 edition of the World Directory of Crystallographers are still available from Maureen Mackay upon payment of \$7.50.

- Maureen Mackay or Ted Malsen would like to hear, as soon as possible, from anyone interested in having their four-circle diffractometer (conventional configuration) updated. At present they are exploring the feasibility of having a drive-control system developed with an interface to a small computer such as an Apple Macintosh.

#### POSTDOCTORAL POSITION AT ANU

The Mineralogical Research Centre at the ANU invites applications from men and women with experience of or an interest in the use of TEM in the study of microstructures which influence the physical and chemical properties of geologically important materials. This (limited tenure) position would be of interest to materials scientists, metallurgists, solid state physicists and chemists, mineralogists and geologists. The work is to be undertaken in the Mineralogical Research Centre, which consists of groups from the RSC, RSES and the Department of Geology. The Centre is equipped with three microscopes - Philips 430, JEOL 200CX and JEOL 100CX - as well as high temperature and high pressure facilities. Depending on the level of employment, the salary will be in the range \$A24013 to 36600 pa. Interested persons should contact Prof B.G. Hyde at the RSC as soon as possible for further details.

#### FORTHCOMING MEETINGS

1987:

- Aug 12-20: 14th General Assembly and Congress of the IUCr, University of Western Australia, Perth, Western Australia. Contact: Dr E.N. Maslen, Crystallography Centre, Univ. of WA, Nedlands 6009, Western Australia.
- Satellites: Validity of Structures from Electron Microscopy, Melbourne, Aug 7-9. Contact: Dr J.V. Sanders, CSIRO Mat Sci. Locked Bag 33, Clayton 3168 Australia.
- Neutron Scattering, Sydney, Aug 8-10. Contact: Prof T.M. Sabine, NSW Inst Tech, PO Box 123, Sydney 2007 Australia
- X-ray Powder Diffractometry, Perth, Aug 20-22. Contact: Dr B.H. O'Connor, School of Physics & Geosciences, WA Inst Tech, Perth 6102 Australia
- School on Crystallographic Computing, Adelaide, Aug 22-29. Contact: Dr M.R. Taylor, School of Physical Sciences, Flinders Univ Adelaide 5042 Australia
- Accuracy in Structure Factor Measurement, Melbourne, Aug 23-26. Contact: Dr S.W. Wilkins, CSIRO Chem Phys, PO Box 160, Clayton 3168 Australia
- Aug 23-29: Symp on Molec Structure and Drug Design, Sydney. Contact: Prof G. Johnston, Dept Pharmacology, Univ Sydney, Sydney 2006, Australia.
- Aug 24-29: Conf on Structure and Reactivity of Solids and Solid Surfaces, Sydney. Contact: Dr R. Smart, School of Science, Griffith Univ, Nathan 4111, Australia.
- Sep 21-25: 10th Symp on Industrial Crystallization, Bechyne Castle, Czechoslovakia. Contact: 10th SIC, Inst Inorganic Chem, Czech Acad Science, Polska 20, 120 00 Prague 2 Czechoslovakia.



Nov 18-20: Pittsburgh Diffraction Conf, University of VA,  
Charlottesville, VA. Contact: Robert Bryan, Chem  
Dept, Univ VA, Charlottesville, VA 22901.

1988

Jan 28-31: RACI Inorganic Chem Div, National Meeting,  
Melbourne. Contact: Dr P. Tregloan, Inorganic  
Chem, Univ Melbourne, Parkville, Vic 3052.

Feb: 10th Aust. Electron Microscopy Conference.  
Contact: Conference Secretariat, Aust Acad  
Science, GPO Box 783, Canberra, ACT 2601.

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.

June 27 - July 1: ACA Annual Meeting, Philadelphia, PA.  
Contact: Donald H. Voet, Dept Chem, Univ PA,  
Philadelphia, PA 19104

Aug 22-26: Austceram 88, Sydney. Contact: Mr R. Bowman,  
Austceram 88 Sec, PO Box 56, Highett, Vic 3190.

### EPILOGUE

This is the last of 12 Newsletters to be produced from the SCA Communications Centre at Port Melbourne (for the foreseeable future). This Secretary/Editor will no longer hold office in the SCA from the Perth Business Meeting and is taking a much-needed rest from his amateur journalistic responsibilities. However, before disappearing (perhaps forever) into the anonymity of 'ordinary' SCA membership, I would like to take this opportunity to say how much I have enjoyed being SCA Secretary and producing the Newsletters during the past 5 years.

In particular, I would like to thank Maureen Mackay for not only very efficiently carrying out her by no means insignificant tasks as SCA Treasurer during these 5 years, but also for assuming the responsibility of keeping membership records, a job that the Constitution states is that of the Secretary. I also wish to thank Bryan Gatehouse, Terry Sabine and Syd Hall for their leadership, patience and cooperation as respective Presidents during the relatively turbulent period in the SCA's history while we were trying to get the Perth Congress and the Asian Crystallographic Association off the ground.

As regards the Newsletter, I must thank Anne Foxworthy for her very able and efficient assistance with copying, collating, stapling, folding and mailing the last 7 issues. I also wish to thank those members who provided material of a written and verbal nature for inclusion therein. Some of it came easily (from the high profilers), but other bits had to be painfully extracted by hook, crook, or plain persistence and/or nosiness. If I have offended anyone, please forgive me; if I have provided information that was not already common knowledge, I have achieved my task; if I have given some pleasure, I am happy.

Farewell, and goodnight.



