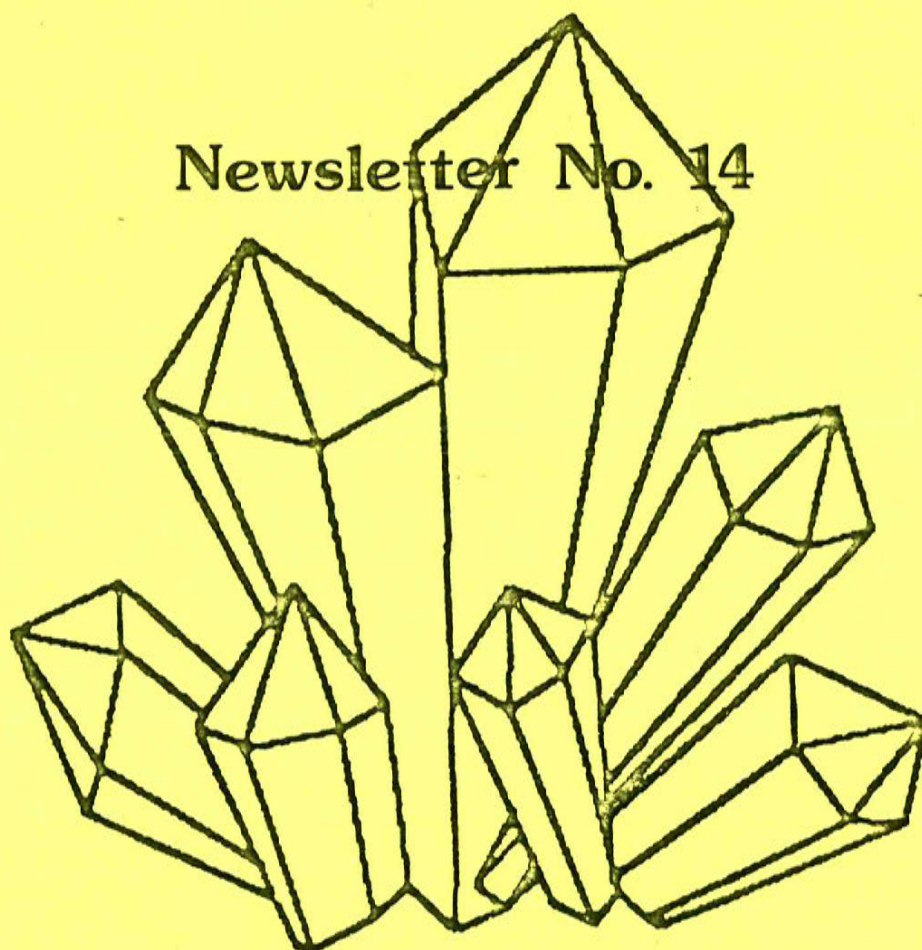


Society of Crystallographers in Australia

Newsletter No. 14



November 1986

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OFFICE BEARERS

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 X-ray diffraction: S.W. Wilkins (CSIRO Chem Phys)
 J.N. Varghese (CSIRO Protein Chem)
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 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)
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 CSIRO Division of Mineral Chemistry
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 With technical assistance from
 Anne Foxworthy

MESSAGE FROM THE SCA PRESIDENT

Dear SCA Members,

The XIVth IUCr Congress is now less than a year away. This comes as no surprise to those involved in organizing the Congress or the associated meetings! For those who are not, it is now time to reflect on the importance of these meetings and ask 'How can I contribute to their success?' The prime contribution is to attend the meetings if you can. A strong Australian presence is important both to fly the flag scientifically, and to assist with the tasks (co-chairmanships, etc.) that make big meetings run smoothly. So far the Australian response to the first Congress circular is not large. This is understandable since there is less urgency in seeking information about locally-held meetings. However, now is the time to relieve the anxiety of Organizers by sending in the reply slips. The second Congress circular, and details of associated meetings, have already been distributed. This Newsletter also contains some up-to-date information on the Congress and associated meetings (see below for a summary).

Despite the headaches involved in running these meetings, many of us are looking forward to hosting the large number of visitors that are expected. We have all enjoyed the hospitality extended to us at overseas conferences and it is our turn to reciprocate. Meetings with a high local involvement are always the most memorable. It is the responsibility of ALL of us, not just the Organizers, to help make these meetings both productive and enjoyable, and your presence will contribute to their success. If you can help beyond being a valued participant, please let me know.

One thing is certain, most of us will not have the opportunity to organize a venture of this size again. Once in a lifetime is probably enough!

Syd Hall, SCA President

MESSAGE FROM THE CONGRESS ORGANIZING CHAIRMAN

The XIVth IUCr Congress - An Opportunity

An interesting quirk of history is that neither the SCA President, nor the Program Chairman, nor the Organizing Chairman voted in favour when the SCA resolved to invite the IUCr to hold its XIVth Congress in Australia. The difficulties (our widely dispersed manpower and the lack of industrial support) have been alleviated by factors which have turned in our favour. More versatile electronic communication and computers help. The weakness of the Australian dollar and low fuel prices have brought the cost of attending within the reach of many who could not have come six years ago.

The response from overseas has gathered momentum, and now looks encouraging, with 840 responses to the first circular and about 50 other enquiries so far. The crystallographic communities in Italy, the United Kingdom and the United States are coordinating their travel, and others are studying their example. The IUCr's financial position has improved to the point where it can assist young crystallographers to come. The probable attendance is about 800 plus accompanying guests. Although this figure has quite large error-bars, those attending will be a blend of lively enthusiasm and experience - promising ingredients for a successful Congress.

At this stage the financial position looks reasonable. The Congress should break even provided we do most of the work ourselves. So if your name is mis-spelled on the address label, it's because I was fumble-fingered on the keyboard that day. Some mistakes will be made. What we are concentrating on is getting the most important things right. Given the support which I know we will receive from our colleagues I am sure that the Congress will be thoroughly worthwhile. However, it is a lot of effort, and we should ask if we are making the best use of the opportunities which it offers.

Staging the Congress puts crystallography in the spotlight, and we should look at its role in Australian science. In most areas we are in good shape, but there is a structural weakness because of the remoteness of Australian biological science from macromolecular crystallography. That is an area of dramatic developments, which will transform biology just as small molecular crystallography transformed chemistry a decade or so ago. Of course we have good macromolecular crystallographers, but they are not ideally located to provide biologists with convenient access to their skills. Neither are they in positions with strong influence on the evolution of biological science in Australia. Australia has pretensions in biotechnology, but working in that area without crystallographic support is like riding a bicycle with one arm tied behind your back. It can be done - but it is far more sensible to do it another way.

The XIVth Congress provides the opportunity to show our colleagues in the biological sciences the tremendous power of crystallography in their work. Many of the best biological crystallographers in the world will attend the Congress - but unless we make an effort those who could benefit most from their presence will not even know that the Congress is on. What is

necessary is to draw the attention of molecular biologists both to the Congress and to those who will be here. Some of those coming will be on excursion fares, and will be available for seminars before and after the Congress. However attending a seminar from one biological crystallographer is a poor substitute for seeing the full range of work in progress. What should be done, now, is to encourage molecular biologists to attend the Congress.

Neither the Organizing Committee nor the Program Committee has time to do this. Can you help?

Ted Maslen, Congress Organizing Chairman

EXTRACTS FROM THE SECOND CIRCULAR

Provisional Timetable

August

- | | | |
|-------|---|--|
| 7-9 | Symposium on Validity of Structures from Electron Microscopy
University of Melbourne, Melbourne, Victoria. | |
| 8-10 | Symposium on Neutron Scattering: Advances and Applications
N.S.W. Institute of Technology, Sydney, New South Wales. | |
| 9-12 | Business Meetings of the IUCr Executive Committee and the IUCr Commissions,
University of Western Australia, Perth. | |
| 12-20 | XIVth IUCr Congress, University of Western Australia, Perth | |
| 12 | Wednesday | Registration
evening Opening Ceremony, Ewald Award & Bragg Lecture |
| 13 | Thursday | Scientific sessions
evening General Assembly; Film Festival |
| 14 | Friday | Scientific sessions
evening General Assembly |
| 15 | Saturday | Scientific sessions
evening Special session: History of Crystallography |
| 16 | Sunday | Congress Excursion |
| 17 | Monday | Scientific sessions
evening Symposium in Honour of J. Karle and H. Hauptman |
| 18 | Tuesday | Scientific sessions
evening General Assembly; Film Festival |
| 19 | Wednesday | Scientific sessions
evening Farewell Function |
| 20 | Thursday | morning General Assembly and Closing Ceremony |
| 20-22 | Symposium on X-ray Powder Diffractometry
Esplanade Hotel, Fremantle, Western Australia. | |
| 22-29 | International School on Crystallographic Computing
Flinders University, Adelaide, South Australia. | |
| 23-26 | Symposium on Accuracy in Structure Factor Measurements
Green Gables Chalet, Warburton, Victoria. | |
| 23-28 | Xth International Congress of Pharmacology
Opera House, Sydney, New South Wales. | |
| 23-28 | Symposium on Medicinal and Agricultural Chemistry
University of New South Wales, Sydney, New South Wales. | |
| 24-29 | VIIIth National Convention, Royal Australian Chemical Institute
University of New South Wales, Sydney, New South Wales. | |
| 24-29 | Symposium on Structure and Reactivity of Solids and Solid Surfaces
University of New South Wales, Sydney, New South Wales. | |

SCIENTIFIC PROGRAM

The Bragg Lecture will be given at the Opening Ceremony on Wednesday evening, 12 August. The scientific program will continue on Thursday morning, 13 August, with the first two main lectures.

GENERAL STRUCTURE

The scientific program will consist of:

- Main Lectures
- Microsymposia
- Open Meetings of the Commissions
- Poster Sessions
- Ad hoc* meetings and panel discussions
- Exhibitions and demonstrations

Mornings will be reserved for oral presentations, with afternoons for poster sessions and *ad hoc* meetings. Most contributed papers will be presented as posters. The six days of scientific sessions will start with two Main Lectures in parallel, followed by five or six parallel sessions of Microsymposia and Open Commission Meetings. Each poster will be displayed for one day, the author(s) being present for at least half of the afternoon.

MAIN LECTURES

Wednesday 12 August (Opening Ceremony)

THE BRAGG LECTURE: CRYSTALLOGRAPHY IN THE LIFE SCIENCES

B.W. Matthews

Thursday 13 August

SITE-DIRECTED MUTAGENESIS AND STRUCTURAL STUDIES TO PROBE AND MODIFY ENZYME ACTION

D.M. Blow

STRUCTURE SOLUTION AND REFINEMENT FROM POWDER DIFFRACTION DATA

A. Hewat

Friday 14 August

CATALYSIS IN CAGES: THE STRUCTURES AND FUNCTIONS OF ZEOLITES

J. Thomas

SURFACE ATOM LOCALISATION BY X-RAY METHODS

G. Materlik

Saturday 15 August

SMALL MOLECULE CRYSTALLOGRAPHY: INSIGHT INTO BIOLOGICAL ACTIVITY

J.P. Glusker

QUASI-CRYSTALS

D. Schechtman

Monday 17 August

STRUCTURE OF A BACTERIAL PHOTOSYNTHETIC REACTION CENTRE

H. Drenth

LATTICE DEFECTS STUDIED BY HIGH RESOLUTION ELECTRON MICROSCOPY

M. Hirabayashi

Tuesday 18 August

COMPUTER GRAPHICS IN STRUCTURE ANALYSIS

A. Jones

X-RAY CHARACTERISATION OF SUPERLATTICES AND EPITAXIAL LAYERS

M. Sauvage

Wednesday 19 August

STRUCTURAL CORRELATIONS IN THREE-DIMENSIONAL NETWORKS OF SOLIDS

F.C. Hawthorne

ATOMIC MECHANISMS OF STRUCTURAL PHASE TRANSITIONS

K.S. Alexandrov

MICROSYMPOSIA

Each session will be organised by a Topic Chairman who will invite speakers to present papers. A SYMPOSIUM TO COMMEMORATE THE WORK OF PAUL P. EWALD NEW DEVELOPMENTS IN DIRECT METHODS

(A Symposium in honour of Jerome Karle and Herbert Hauptman, Nobel Laureates in Chemistry, 1985)

RECENT DEVELOPMENTS IN DATA COLLECTION TECHNIQUES FOR LARGE UNIT CELLS

PROTEIN ENGINEERING

PROTEIN-NUCLEIC ACID INTERACTIONS

CRYSTALLOGRAPHY IN THE DESIGN OF MOLECULES WITH SPECIFIC BIOLOGICAL PROPERTIES

MOLECULAR COMPLEXES AND INCLUSION COMPOUNDS

ORGANIC AND ORGANOMETALLIC CONDUCTORS

STRUCTURE-CORRELATIONS IN TRANSITION METAL COMPLEXES

THE CRYSTAL CHEMISTRY OF MINERALS

CHARGE, SPIN AND MOMENTUM DENSITY

STRUCTURES AND PROPERTIES OF FERROIC CRYSTALS

MATERIALS ENGINEERING FOR ELECTRO-OPTICS

SURFACE CRYSTALLOGRAPHY

DEVELOPMENT OF X-RAY AND NEUTRON POWDER DIFFRACTION METHODS

USEFUL TO INDUSTRY

NEW ASPECTS OF NEUTRON DIFFRACTION

SYNCHROTRON RADIATION: USES OF UNIQUE PROPERTIES IN CRYSTALLOGRAPHY

DYNAMICAL X-RAY DIFFRACTION AND X-RAY OPTICS

INTERPRETATION OF HIGH RESOLUTION ELECTRON MICROSCOPE IMAGES

QUASI-CRYSTALS

INCOMMENSURATE PHASES

CURRENT TRENDS IN COMPUTER GRAPHICS FOR CRYSTALLOGRAPHY

OPEN MEETINGS OF THE COMMISSIONS

The following sessions will be organised by Commissions of the Union.

RECENT ADVANCES IN POWDER DIFFRACTION

(Commission on Crystallographic Apparatus)

CRYSTAL GROWTH AND EPITAXY OF ADVANCED MATERIALS

(Commission on Crystal Growth)

DYNAMICAL ELECTRON DIFFRACTION IN TRANSMISSION AND REFLECTION

(THEED, MEED, LEED, RHEED)

(Commission on Electron Diffraction)

CRYSTALLOGRAPHIC MICRO-COMPUTING

(Commission on Crystallographic Computing and Crystallographic Teaching)

CRYSTALLOGRAPHIC INFORMATION — ACQUISITION, STORAGE AND USE

(Commission on Crystallographic Data)

CURRENT STATUS AND FUTURE DEVELOPMENTS OF INTERNATIONAL TABLES

(Commission on International Tables)

STATISTICAL DESCRIPTIONS OF CRYSTALLOGRAPHIC DATA: NOMENCLATURE

OF INORGANIC STRUCTURE TYPES: NOMENCLATURE OF SYMMETRY

(Commission on Crystallographic Nomenclature)

CHALLENGES IN CRYSTALLOGRAPHIC PUBLISHING:

INCORRECTLY DESCRIBED SPACE-GROUPS, THERMAL PARAMETERS

NOMENCLATURE AND TREATMENT, SINGLE-CRYSTAL

DIFFRACTOMETER DATA

(Commission on Crystallographic Journals)

SATELLITE MEETINGS

SYMPOSIUM ON VALIDITY OF STRUCTURES FROM ELECTRON MICROSCOPY

7-9 August 1987. University of Melbourne, Melbourne, Victoria.

Main Topics: Interpretation of high-resolution TEM images; computation of images from periodic and non-periodic structures; quantitative information from images of defects in crystals; image processing; symmetry determination.

Registration fee: A\$50, students A\$30

Accommodation with meals: per day A\$60 (motel), A\$40 (college)

For details and registration forms write to: Dr J.V. Sanders, CSIRO Division of Materials Science, Bag 33, PO, Clayton 3168, AUSTRALIA.

SYMPOSIUM ON NEUTRON SCATTERING AND APPLICATIONS

8-10 August 1987, N.S.W. Institute of Technology, Sydney, New South Wales.

Main Topics: Powder diffraction; magnetism; single crystal diffraction; industrial applications of neutron scattering.

Registration fee: A\$130, students A\$35

Accommodation: A\$30 (minimum rate per day for single room)

For details and registration forms write to: Prof. T.M. Sabine, N.S.W. Institute of Technology, Broadway 2007, AUSTRALIA; or phone: [612] 218 9418.

SYMPOSIUM ON X-RAY POWDER DIFFRACTOMETRY

20-22 August 1987, Esplanade Hotel, Fremantle, Western Australia.

Main Topics: Data acquisition; profile characteristics and applications; quantitative studies of materials, including Rietveld method; future directions.

Registration fee (provisional): A\$80

Accommodation (provisional): A\$200 (three days)

For details and registration forms write to: Dr E.H. Nickel, Division of Minerals and Geochemistry, CSIRO, Private Bag PO, Wembley 6014, AUSTRALIA.

INTERNATIONAL SCHOOL ON CRYSTALLOGRAPHIC COMPUTING

22-29 August 1987, Flinders University of South Australia, Adelaide.

Main Topics: Multivariate analysis of structure data; molecular mechanics; error analysis; direct methods for small, medium and large molecules; maximum entropy; refinement of small molecules and proteins; electron diffraction and microscopy, lattice imaging, LEED, RHEED; diffractometry; graphics; program systems; electronic mail and networking systems.

Registration fee (provisional): A\$150, students A\$85

Accommodation (including meals) for 7 nights (provisional): A\$220

For details and registration forms write to: Dr M.R. Taylor, School of Physical Sciences, Flinders University, Bedford Park 5042, AUSTRALIA.

SYMPOSIUM ON ACCURACY IN STRUCTURE FACTOR MEASUREMENTS

23-26 August 1987, Green Gables Chalet, Warburton, Victoria (70km NE of Melbourne)

Main Topics: Advances in the accurate measurement of X-ray, gamma-ray, neutron and electron structure factors; new developments in sources and instrumentation; measurement procedures; validity of underlying assumptions in structure factor formalism and its application to real materials; validity of correction procedures; comparison of techniques and results.

Registration fee (provisional): A\$120, for students A\$50

Accommodation (three days with meals): A\$180 (twin share), A\$240 (single)

For further information and registration forms write to: Dr S.W. Wilkins, CSIRO, Division of Chemical Physics, PO Box 160, Clayton 3168, AUSTRALIA.

ASSOCIATED MEETINGS

Xth INTERNATIONAL CONGRESS OF PHARMACOLOGY

23-28 August 1987, Opera House, Sydney, New South Wales.

Main Topics: Clinical, experimental and molecular aspects of pharmacology; including symposia on drug design and molecular architecture of receptors.

Registration fee: A\$375 (before 1 February), A\$425 (after 1 February)

For details and registration forms write to: Congress Secretariat, GPO Box 2609, Sydney 2001, AUSTRALIA, or phone: [612] 27 6940.

VIIIth NATIONAL CONVENTION, ROYAL AUSTRALIAN CHEMICAL INSTITUTE

24-29 August 1987, University of New South Wales, Sydney.

Main Topics: Concurrent conferences, as well as some joint activities, of the twelve Divisions of the Institute: Analytical Chemistry; Cereal Chemistry; Chemical Education; Colloid and Surface Chemistry; Electrochemistry; Industrial Chemistry; Inorganic Chemistry; Medicinal and Agricultural Chemistry; Organic Chemistry; Physical Chemistry; Polymer Chemistry; Solid State Chemistry.

Registration fee: \$A135 (see previous entry)

For details write to: Dr Roger Bishop, School of Chemistry, University of New South Wales, PO Box 1, Kensington 2033, AUSTRALIA.

SYMPOSIUM ON MEDICINAL AND AGRICULTURAL CHEMISTRY

23-28 August 1987, RACI Convention, University of New South Wales, Sydney.

Main Topics: Contributions of crystallography to structure-activity studies on medicinal and agricultural products; computer modelling of ligand-receptor interactions; design and synthesis of new agents.

Registration fee: \$A135 (see previous entry)

For details write to: Prof. G.A.R. Johnson, Department of Pharmacology, University of Sydney, Sydney 2006, AUSTRALIA; or phone: [612] 692 2408.

SYMPOSIUM ON STRUCTURE AND REACTIVITY OF SOLIDS AND SOLID SURFACES

24-29 August 1987, RACI Convention, University of New South Wales, Sydney.

Main Topics: Catalysis; solid state processes; photoprocesses at surfaces; adsorption and surface energetics; structure and properties of minerals; technologically important processes and materials.

Registration fee: A\$135 (see RACI Convention)

For details write to: Dr W. Danaber, Ampol Research Laboratories, PO Box 40, Wynnun Central 4178, AUSTRALIA.

TRAVEL DISCOUNTS (relevant to May, 1987)

1. TRANS AUSTRALIA AIRLINES

Excursion 45
45% discount
Flight & departure is confirmed the day before travel.
One night minimum stay, 21 nights maximum stay.
Reservations and payment is made between 14 and 4 days prior to travel.
Limited seats on most flights.
Tickets are valid for the allocated days of travel only.
Cancellation of the return journey prior to taking the forward journey will be subject to a cancellation fee equal to 50% of the return fare.
Cancellation of the return journey after the forward journey has been taken, a full Economy fare will be charged.

Super Apex (Advance Purchase)
35% discount
Minimum stay is 7 nights between forward and return journeys
Maximum stay is 1 year from date of ticket issue.
Booking of forward and return journey must be made 30 days prior to departure.
Payment for forward and return journeys must be made within 14 days of reservation.

Limited seats available on most flights, and on a return basis.
No alteration to forward or return journeys can be made within 30 days of the forward journey.
A 50% refund is available for a ticket cancelled within 30 days prior to departure.

Standby
20% discount
No minimum or maximum stays required
Tickets can only be purchased at the airport on the day of departure.
Subject to seat availability.
On multi-stage journeys passengers are required to re-present their standby ticket for seat re-allocation after each flight stage.

Common Interest Groups
15% discount
A common interest group of 15 or more adults travelling together in the same aircraft on the forward journey.
No minimum stay. One year's maximum stay.

Holiday Airfare
25% discount
Minimum stay of 7 nights stay, and taken in conjunction with a TAA Holiday Package.
Maximum stay of 1 year.

Forward and return journeys must be booked prior to departure.
The holiday airfare cannot be used on any other carrier.
The holiday airfare cannot be discounted further for children, students, or group concessions.

2. INTERSTATE RAIL TRAVEL

Caper Fare
20% discount (approximately)
Reservation and payment is made 30 days in advance.
Limited seats available and early booking is essential.

Common Interest Groups
Discounted fares are available but dependent on size of the group.

Situp Fares
Situp travel is approximately 50% cheaper than reserving the economy sleeper.
A further reduction in fare (approximately 20%) can be obtained by advance purchase (Caper Fare)

3. COACH TRAVEL (DELUXE COACH-LINES)

Group travel
Discounted fares are available but are dependent on size of the group.
There are no further discounts for travel by coach.

Supplementary information:

Current costs of Sydney-Perth-Sydney fares:

		\$
Air (AA)	Economy	766.80
	APEX	498.00
Rail	Seat only	347.00
	With sleeper and all meals:	
	Regular	First Class 1190.00
		Economy 884.00
	Advance purchase	First Class 952.00
Coach		Economy 708.00
	Ansett Pioneer - seat only	
	3 days and 2 nights on the coach, 45 min meal breaks, 2.5 hour stopover in Adelaide	290.00

SATELLITE MEETINGS UPDATE

• SYMPOSIUM ON NEUTRON SCATTERING: ADVANCES AND APPLICATIONS

NSW Institute of Technology, Sydney, NSW, August 8-10.

The First Circular was distributed several months ago and by the end of October, more than 90 replies had been received. Please note that Lindsay Davis has taken over the Chairmanship of the Local Organizing Committee during Terry Sabine's extended absence overseas. For further information, contact Dr R.L. Davis at the AINSE, Locked Bag No 1, Menai 2234.

• INTERNATIONAL SYMPOSIUM ON X-RAY POWDER DIFFRACTOMETRY

Fremantle, Western Australia, August 20-22.

The Program Committee has so far received acceptances from 15 overseas speakers as detailed below in the draft program. It is clear from this list that the meeting is a must for any Australian even remotely associated with X-ray powder diffraction.

Scientific Program (partial only)

SESSION 1 : OPENING

The Rietveld Method - Origins and Future Prospects

(Dr H.M. Rietveld, The Netherlands)

SESSION 2 : DATA ACQUISITION

Keynote Address: Position sensitive detectors and their use in rapid and time-resolved data collection

(Dr H. Goebel, FRG)

Invited Papers: Acquisition of powder diffraction data with synchrotron radiation

(Dr D. Cox, USA)

Data acquisition for laboratory X-ray powder diffractometry

(Prof R. Snyder, USA)

Powder diffractometry at the Tsukuba Photon Factory

(Prof R. Uno, Japan)

Automated powder diffraction with an incident beam monitor

(Dr N. Ganey, Czechoslovakia)

Profile data acquisition for the JCPDS-ICDD data base

(Dr R. Jenkins, USA)

SESSION 3 : PROFILE SHAPE CHARACTERISTICS AND APPLICATIONS

Keynote Address: Profile analysis for microcrystalline properties with special emphasis on Fourier methods (Dr J. Langford, UK)

Invited Papers: Mathematical analysis of peak positions and shapes

(Dr T.C. Huang, USA)

Size and strain parameters from peak profiles

(Dr T. H. de Keijser, The Netherlands)

Pitfalls in the evaluation of diffraction line shape

(Dr E. Zorn, FRG)

Learned peak profiles

(Dr Ch. Baerlocher, Switzerland)

Analysis of shock-modified powders for crystallite size and variance of residual stress

(Dr C. Hubbard, USA)

Instrumentation for residual stress measurement

(Dr C. Ruud, USA)

SESSION 4 : QUANTITATIVE STUDIES OF MATERIALS, INCLUDING RIETVELD METHODS

Keynote Address: Quantitative analysis of crystalline materials by discrete-peak and whole-profile analysis (Dr C. Hubbard, USA)

Invited Papers: State-of-the-art Rietveld

(Prof R. Young, USA)

Quantitative X-ray phase analysis

(Dr L. Zevin, Israel)

Quantitative phase analysis using focusing geometries

(Dr P-E. Werner, Sweden)

Quantitative phase analysis with calculated XRPD patterns

(Prof D. Smith, USA)

Constrained Rietveld refinements

(Prof Ch. Baerlocher, Switzerland)

Rietveld analysis of powder diffraction patterns of inorganic structures

(Dr L. Smrcek, Czechoslovakia)

Quantitative mineral analysis

(Dr J. Taylor, Australia)

Computer-assisted phase identification

(Prof G. McCarthy, USA)

Session 5 : CONCLUDING

Keynote Address: Manawatt Award Oration, Advances in synchrotron X-ray polycrystalline diffraction

(Dr W. Parrish, USA)

Keynote Address: Future directions in X-ray powder diffractometry

(Prof M. Hart, UK)

For further information contact Dr E.H. Nickel (address above).

• INTERNATIONAL SCHOOL ON CRYSTALLOGRAPHIC COMPUTING

The Flinders University of South Australia, August 22-29.

Copies of the first circular have been distributed internationally, and as you are aware, a copy was sent to all members of the SCA about two months ago. By the end of October, 80 requests for pre-registration information had been received but only 14 of these came from within Australia.

If you are intending to attend the Computing School please send in your request for pre-registration information as soon as possible. Some places will be reserved for students who are commencing in 1987.

For further information contact Dr M.R. Taylor (address above).

• INTERNATIONAL SYMPOSIUM ON ACCURACY IN STRUCTURE FACTOR MEASUREMENT

Green Gables Chalet, Warburton, Victoria, 23-26 August.

A copy of the first circular is included with this Newsletter.

COUNCIL ACTIONS SINCE THE LAST NEWSLETTER

The SCA Council has not met formally since the last Newsletter, but several actions have been taken in the normal course of conducting SCA business:

- The winning entry from the logo competition (reported in the last Newsletter) has been incorporated into a letterhead for official SCA correspondence. Other members of Council offer their thanks and congratulations to Maureen Mackay and Frank Moore on their superhuman efforts to bring this matter to a successful conclusion. We all look forward to putting the letterhead to good use.
- The SCA has outlaid a further \$300 subscription to the Federation of Australian Scientific and Technological Societies (FASTS) for the period ending 30-6-87. This contribution is the final one authorized by the SCA membership at the Crystal 15 Meeting in Adelaide. The membership will be asked if it desires continued association with FASTS at the next SCA Business Meeting in Perth in August, 1987.
- Richard Welberry (RSC, ANU) has very generously consented to take over Peter Colman's responsibilities as the FASTS contact-person and Budget Analysis representative for the SCA until June 30, 1987.
- Assistance has been provided to several of the Satellite Meeting Organizing Committees in the form of copies of the SCA membership list and address labels, and mailings of Satellite Meeting brochures.
- Hans Freeman, Chairperson of the National Committee for Crystallography of the Australian Academy of Science, has kept the SCA well informed of the activities of his Committee. This has included details of their Budget, changes in the membership of the Council of the Australian Academy of Science, progress with the production of the brochure on "Crystallography in Australia", appointments to the Australian Ionising Radiation Advisory Council, and nomination of a replacement to fill the NCC vacancy caused by Frank Moore's resignation.
- Contact with the Perth Organizing Committee has been maintained at close hand (many thanks to Ted Maslen for this courtesy); a detailed Budget for the Congress has been received, together with drafts of the various circulars, minutes of meetings, and other relevant documents.
- The Organizing Committee of the International School on Crystallographic Computing has been provided with \$1500 bridging finance from the SCA to assist with early expenses associated with the production and mailing of their circulars.
- Further extensive series of amendments have been made to the Draft Constitution of the proposed Asian Crystallographic Association (ASCA), formerly referred to as the South East Asian Regional Crystallographic Association (SEARCA). The new draft has been forwarded to all member country contact-persons for their comments.

- Copies of the Draft Constitution of ASCA, and a list of the "Foundation" countries and contacts, has been sent to Jim King, Executive Secretary of the IUCr, at his request.

TREASURER'S REPORT

State of Income and Expenditure

for the year ended 30th June, 1986.

<u>INCOME</u>	\$	\$
Membership Subs.	1,867.79	
La Trobe Credit Union, Interest	257.66	
Advantage Saver Interest (Westpac)	127.37	
Savings Bank Interest (Westpac)	9.71	
Interest on FCA Debs.	485.96	
Interest on Commonwealth Gov. Sec.	367.50	
Interest on A.G.C.	<u>271.81</u>	<u>3,387.80</u>
 <u>LESS EXPENDITURE</u>		
Bank Charges	4.20	
Clerical Costs IUCr Congress	1,123.00	
Fed. of Scient. & Technol. Soc.	<u>105.00</u>	<u>1,232.20</u>
 Surplus for year transferred to Accumulated Funds		 <u>2,155.60</u>
		<u>3,387.80</u>
 <u>ACCUMULATED FUNDS</u>		
Balance as at 30.6.85	16,208.58	
Less Loan to Crystal XIV not detailed as expenditure year ended June 1983	<u>250.00</u>	
 Adjusted Balance as at 30.6.85	15,958.58	
Add Surplus for this year	<u>2,155.60</u>	<u>18,114.18</u>
<u>THESE FUNDS ARE REPRESENTED BY ASSETS</u>		
Finance Corp. of Aust. Ltd Debs. (maturing 24.11.86)	4,153.56	
Westpac Ind. Bearing Dep. (maturing 5.4.87)	3,736.25	
Common. Gov. Sec. (maturing 1.2.91)	3,000.00	
A.G.C. Redeemable 3.9.86	3,000.00	
La Trobe Credit Union	2,548.39	
Westpac Savings Account	65.86	
Advantage Saver Account (Westpac)	<u>1,610.12</u>	<u>18,114.18</u>
 <u>LIABILITIES</u>		 <u>18,114.18</u>

CHECKED AND FOUND CORRECT

JOHN LUCK, MANAGER, WESTPAC, LA TROBE UNIVERSITY BRANCH
HON. AUDITOR

(Signed) M.F. Mackay
Hon. Treasurer.

TSUKUBA SYNCHROTRON UPDATE

Dear Colleague,

As you are perhaps aware, the proposal to ARGS for funding of a branch beam line and instrument station at the Photon Factory in Japan received a gold star award but no funds for fiscal year 1986/87. Although we do not as yet have a written explanation for the reason not to fund the proposal for 86/87, we believe that two factors were involved.

i) the drastic devaluation of the Australian dollar relative to the Yen making the cost of purchasing the branch beam line more expensive than proposed.

ii) it is believed that the ARGS Committee decided that the proposals for specific experiments which were submitted after the formal proposal had been submitted, were not all of a sufficiently high standard for the whole proposal to be funded.

From my recent visit to Japan (Oct/Nov 1986), I found that the directors of the PF are still extremely keen for Australia to become involved there and that there are various ways in which the PF is prepared to help to make such an entry possible. Firstly, it may be possible for Australia to share - a branch beam line with the PF itself (thus halving the cost). Secondly, it may be possible for Australia to borrow operational instruments from other groups when the instruments are not being used by them. This means that problems of instrument development at long-range would be alleviated and a large variety of experimental studies could begin almost immediately after completion of the branch beam line.

In order to build an even stronger case for Australian involvement at the PF, it is vital that people interested in ultimately using the station submit proposals (say 3 paragraphs per proposal) to me before end of February 1987. These will then be collated and submitted to ARGS in the next round. It is also hoped that a Workshop on Uses of Synchrotron Radiation will be held sometime close to the I.U.C.R Congress in Perth in August 1987.

Please send proposals to:

Dr. Stephen Wilkins,
CSIRO, Division of Chemical Physics,
P.O. Box 160,
CLAYTON, VIC. 3168

Tel: 03 542-2918
Fax: 03 544-1128

If you know of other people who may be interested in submitting proposals to the PF, please don't hesitate to pass a copy of this letter on to them.

Yours sincerely,



STEPHEN WILKINS

AS YOU WERE / ARE

The following pages contain a few more photographs of Australian (and overseas) crystallographers at work and play, taken from the slowly-growing SCA Archive File. Once again, the Archivist / Editor / Secretary respectfully asks that if you have any photographs of this kind buried somewhere, please get them out, dust them off, and send them to him while you think of it.

1



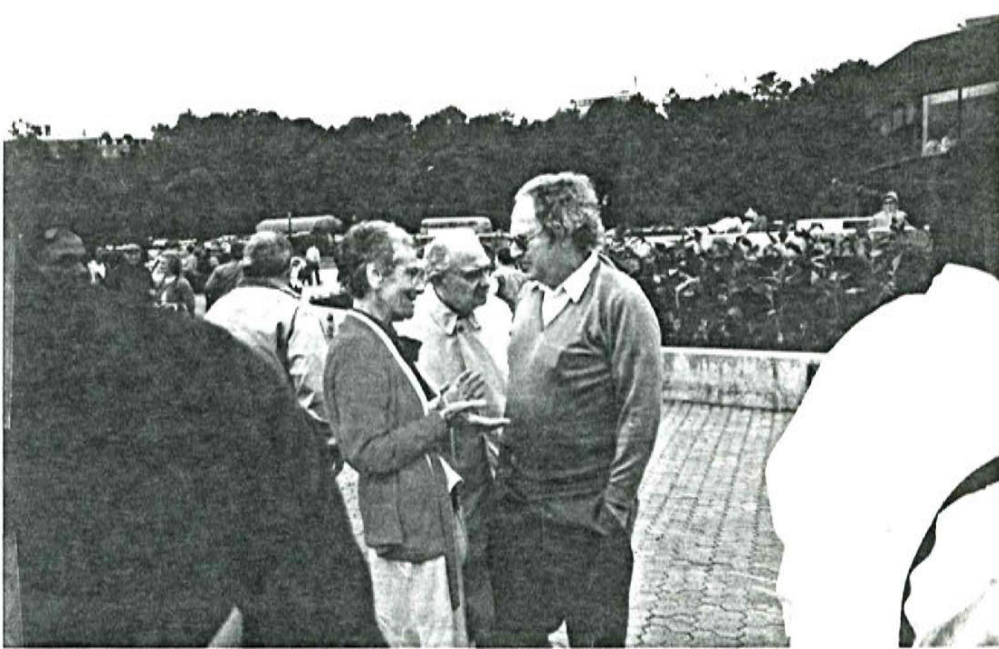
2



3



4a



4b



5



Details of the photographs reproduced above are as follows:

1. In Munich at the IUCr Meeting to commemorate 50 years of X-ray diffraction, July, 1962.
(L to R) Hans Freeman, Sandy Mathieson, Struther Arnott.
2. CRYSTAL 9 Dinner at the Edelweiss Restaurant, Heidelberg, Victoria, February 15, 1973.
(L to R) Ken Watson, Frank Moore, Margaret Elcombe, David McKenzie, Chris Howard, John Taylor.
3. Dinner at Stephen and Linda Wilkins' House, May 3, 1986.
(L to R) Jimpei Harada, Eleanor Bastow, Alex Moodie.
4. At Niagara Falls during the Summer ACA Conference at McMaster University, Ontario, Canada, June 24, 1986.
A (L to R) Gabrielle Donnay, Jose Donnay, Herb Hauptman.
B (L to R) Farid Ahmed, Jerry Karle, Isabella Karle.
5. At Mark and Kitty Spackman's, Pittsburgh, PA, July 6, 1986.
Pat and Bryan Craven.

PERSONALIA / MISCELLANEOUS

- The death of Dr G.B. Johnston is noted with regret. Gordon Johnston was Director of the Electron Microscope Unit at the University of Newcastle, and had been a member of the SCA since its formal inception in 1976. He obtained his PhD from the University of Newcastle in 1967 for work on "The Structures of Certain Magnetically Ordered Ternary Alloys Containing Manganese." On behalf of the membership, Council extends its sympathies to Gordon's family.
- John Jones, Dept of Geology, Univ of Adelaide, has been incapacitated for several months but is now, thankfully, slowly convalescing at home. We wish John a rapid recovery and hope that he is soon firing again on all cylinders. Best wishes also to Max Taylor, after his recent major operation. And the third on the list is Maureen Mackay, who recently broke her arm just before going overseas.
- Ian Grey, CSIRO Div of Mineral Chemistry, will be spending 6 months at the Laboratoire de Cristallographie, CNRS, Grenoble, France from January to July, 1987. Ian will be working with Dr Marezio's group on a variety of projects, including neutron diffraction studies of sodium ferrites using data collected at the ILL.
- CRYSTALLOMANCY, crystal gazing or scrying, is a form of divination. James I described it as follows: "The Seer looks into a Chrystal of Berryl, wherein he will see the answer, represented either by Types or Figures" (Demonology, 1597). The term includes any form of divination by means of a transparent or reflecting body, and the art of scrying has been practised since very early times. In India an animal's liver was used, in Egypt a pool of ink in the hollow of the hand, in classical Greece a mirror. Where a crystal is used it properly consists of beryl.

- And speaking of mysteries, here is a message for Frank Moore, wherever he is! Please don't resign from the SCA Council or Neutron Diffraction Standing Committee until at least the next Business Meeting in August 1987 Frank. We have already had to find replacements for you on the Australian National Committee for Crystallography, the ANBUG Council, the Local Organizing Committee for the Neutron Scattering Satellite, and as Leader of the AINSE Neutron Scattering Group, and we are running out of ideas!
- Congratulations to Lindsay Davis, by the way, on his appointment as Acting Leader of the AINSE Neutron Scattering Group. We wish him every success in this new venture.
- The recently held 3rd AINSE Neutron Scattering Meeting at Lucas Heights (Nov 6 and 7) was extremely worthwhile from many points of view for the more than 50 registrants in attendance. The scientific contributions were of a very high standard and the organization was also top-shelf, all of which augers well for the international Neutron Scattering Satellite Meeting taking place next year. One of the highlights of the meeting, however, came not in the content of one of the formal presentations, but rather in an aside from the floor. Trevor Finlayson was talking very expertly about Neutron Scattering from Premartensitic Metal Alloys when he made the mistake of pointing out that one of this genre, the so-called "shape-memory" alloys, were used in Japan in the construction of brassieres. Lindsay Davis, quick as a flash, called out from the back of the AINSE Theatre, "Does that mean they remember what they were like when she was young?" That has to be a classic example of one(two)-upmanship Lindsay!
- And speaking of AINSE, readers familiar with the AINSE staff at Lucas Heights will be disappointed to hear that June and Joan (Smith) have both resigned. Our only consolation is that their replacements, Jean and Margaret (the first exception to the "J" rule), give every indication that they will have no trouble in continuing the high standards of charm and efficiency that have been the hallmark of AINSE operations in the past. Please note, in passing, that the new address of AINSE is Locked Bag No 1, Menai 2234.
- Progress on the subject of the HIFAR safety and instrument upgrade has been slow over recent months despite much activity behind the scenes. The general reluctance of anyone to make any decisions can be related to several recent events, including the accident at Chernobyl, the need to wait for the Collins Report to be tabled, and general apprehension about the outcome of and reaction to the review of the AAEC (ANSTO). The Collins Report appears to have been quite favourable, although rather more neutral than hoped.

[Editor's aside. One unsettling provision of the Collins Report in particular, and many other "reviews" of research institutions that have recently taken place in Australia, is the request for increased commitment to short-term, problem-based, industry-related projects. If they weren't so serious about all this I suppose it would be amusing: when asked how we are to maintain (let alone improve) our skills in fundamental research at the same time as doing all this "strategic" work, we are glibly told that we will

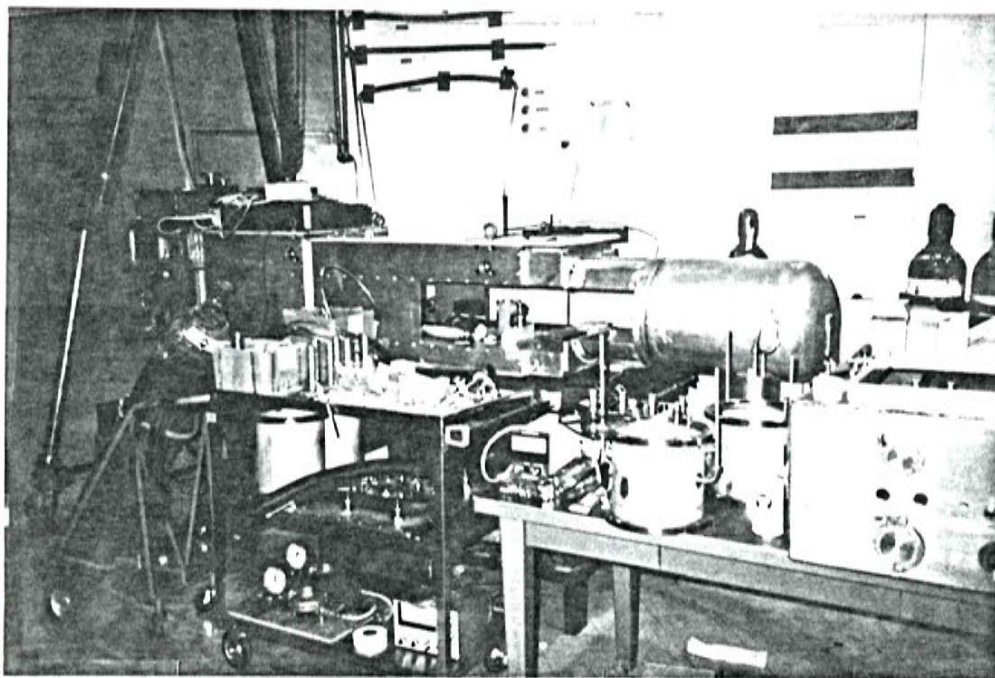
just have to work longer hours! This is all very well for the Administrators and/or Managers - they aren't the ones at the bench trying to do the Science with, I might add, fewer and fewer resources at their disposal!]

- Yet another Australian Crystallographer has been honoured by having a mineral named after him. This time the new mineral is mummeite, after Gus (W.G.) Mumme of the CSIRO Div of Mineral Chemistry. It is the eighth member of the pavonite (sulfosalt) homologous series, and has the ideal composition $M_{11}S_{13}$, where $M = Ag, Cu, Pb \text{ or } Bi$. Mummeite was identified from the Alaska Mine, Colorado, and is described as "columnar, present in random orientation, associated with chalcopyrite and small amounts of ourayite or heyrovskyite and patches of decomposed schapbachite." Congratulations Gus!
- Mark Spackman will return to Australia later this year to take up a position as a Research Fellow with Richard Welberry at the RSC, ANU early in February 1987. Coming from Adelaide originally, but now living in Melbourne, the Editor can claim to be an authority on moving from great to dreadful weather. So he really has to admire Mark and Kitty's courage and degree of self-denial in moving to Canberra. Then again, perhaps even Canberra's dismal outdoor conditions will be an improvement from Pittsburgh's, where it is said they are the "pits" in more ways than one! In any event, it will be good to have the Spackmans back in Australia and we wish them well (and warmth) in their new location.
- Welcome back also to John Parise, who returns to Australia from 6 months with the E.I du Pont Company in Delaware, USA. John will take up a position as Lecturer in the Department of Chemistry at Sydney University in 1987.
- Congratulations also to Margaret Elcombe on her recent superb achievements in orienteering. During the last 6 months she has: won the Australian title in her class (women over 40), won the ACT title, come second in the NSW title, and won the NSW aggregate points score with a perfect score of 600.
- Members should note that the Australian Academy of Science invites applications from scientists resident in Australia to participate in scientific exchanges (during the 1987/88 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. Application forms are available from the International Exchanges Officer, Australian Academy of Science, GPO Box 783, Canberra, ACT 2601. The deadline for applications is February 1, 1987.
- Stephen Wilkins and Andrew Stevenson have just returned from a short period of collaborative research at the Photon Factory in Tsukuba, Japan, under sponsorship from the Australia / Japan Bilateral Exchange Program. Stephen reports that "my first emotional reaction to working at the PF was that the transition from normal lab-type experiments to working at the PF is quite large, in part due to the emphasis on being highly organized and also the need to function effectively as a team (the) experience of doing experiments at the PF was one of the most stimulating of my scientific life and I hope that it is but one

of the first of a long series of exchange visits between Australian and Japanese workers in x-ray scattering research". Which leads the Editor to draw your attention, once again, to Stephen's earlier report in this Newsletter, on the progress that has been made towards achieving the goal of "an Australian flag flying above one of the hutches at the PF".

- The Inorganic and Crystallography Specialist Groups of the New Zealand Institute of Chemistry held a pioneering two-day joint meeting at Massey University in May. The pattern of the meeting was an oral presentation by members of each main group, supported by a series of posters from students. A more detailed description of the meeting is provided in the November 1986 issue of Chemistry in Australia, page 385.
- And while on the subject of meetings, the SCA Secretary had the privilege of meeting Herb Hauptman and Jerry Karle during a rather informal barbeque at the McMaster ACA Conference last June. Both men seemed to be totally oblivious of all of the awe and attention that their Nobel Prize had generated among their colleagues. As the photographs in this Newsletter show, they just went about their own business as best they could, while dozens of we adoring mortals buzzed around them trying to get a decent picture, and hoping that some of the genius rubbed off.
- Everyone had to admire the organizers of the ACA Nobel Laureate Symposium at Hamilton for their innovative decision-making abilities. When you have Herb Hauptman, Jerry Karle and Linus Pauling as your speakers, how do you choose the order in which to present them without offending anyone, but at the same time giving proper respect - by age, alphabetically, or by drawing straws? It was eventually decided that the above order should prevail, for the simple and so obvious reason that it reflected the natural sequence H K L.
- Since the SCA is a member society of FASTS, its individual members can receive a substantial discount on subscriptions to SEARCH. The cost to members is only \$25 per annum, half the normal amount.
- As if we haven't had enough already, FASTS is now calling for ideas for a logo of its own. Any SCA member who is so inclined should send their suggestions to the FASTS Secretary, Dr C.D. Branch, Dept of Mines and Energy, PO Box 151 Eastwood 5063.
- Members should note that the new (1986) edition of the World Directory of Crystallographers (and of other scientists employing crystallographic methods) is now available from Maureen Mackay at a reduced cost of only \$7.50. Please make your cheques payable to the SCA, and please pay your SCA membership subscription for 1987 (together with any back dues) at the same time (see below).
- A stick is broken in two at random. Given that all points on the stick are equally likely as a breaking point, what is the average length of the smaller piece (as a fraction of the whole)? Furthermore, what is the average ratio of the smaller length to the larger? Answers in next newsletter, along with the name of the person submitting the first correct answer to either or both parts of the question.

- What is the object in the photograph below? The clues are:
 (i) it is something urgently needed by Australian molecular biologists and industrial metallurgists, among many others, (ii) it costs a lot of money, and (iii) once installed, you wouldn't really want to have to do repair work on it.



JETSETTERS

- Dave Rae: June/July, 1986. To the USA and Canada for research, and the Hamilton ACA meeting.
- Rod Hill: June/July, 1986. To Canada for the Hamilton ACA meeting, and the USA for the 14th Meeting of the International Mineral. Assoc at Stanford and a period of data collection at the NBS.
- Ernie Nickel: July, 1986. To the USA for the Stanford IMA meeting.
- Bob Cheary: July/August, 1986. To Poland for conferences and to catch up with Jadwiga.
- Terry Sabine: Mid Sept to Dec 10, 1986. To the Chemical Crystallography Lab at Oxford to work with Tony Cheetham, with side trips to the Rutherford Lab and DESY.
- Maureen Mackay: Sept, 1986. To Beijing, China, for the conference on Molecular Structure, Chemical Reactivity and Biological Reactivity.
- Syd Hall: Oct, 1986. To the Computer Graphics meeting at Elman, and the Computational Physics meeting at Trieste.
- Stephen Wilkins / Andrew Stevenson: Oct, 1986. To the Photon Factory at Tsukuba, to work with Jimpei Harada's group on the near-surface structure of intrinsic and ion-implanted Si.

CRYSTALLOGRAPHERS' CRITICAL CONDITION - A Personal View

Apparently Ward Robinson is not the only one to warn us about the downgrading of Crystallography (Newsletter No. 11, page 5 - Report on Crystal 15). Doris Evans of Corning Glass in the USA, and Chairperson of the Applied Crystallography SIG of the ACA, recently sounded the following warning to her colleagues in the USA:

The unexpected redefinition (and trivialization) of crystallography underway in the condensed matter Physics community raises very serious concerns for crystallographers and science in general. The key ones are:

- 1) The absence of crystallography departments at universities. It seems obvious that the apparent arrogance and serious ignorance of the Physicists must arise because they were taught some kind of cookbook definitions and mechanical-computerized operations that were labelled "Crystallography." It should be equally obvious that the ignorance revealed by condensed matter physicists is by no means confined to them. Crystallography at most American universities has systematically become a technicians routine - either in structure determination as an adjunct to chemistry or powder diffractational identification in materials science departments.
- 2) In brief, we are on the U.S. academic endangered species list - despite the Nobel prizes in all the areas of science, the existence of the IUCr etc. The loss, to the whole of science, has already been large and may ultimately be fatal. I suggest that the ACA initiate a serious campaign involving other societies, universities and government agencies to ensure continuity of the discipline.

Doris L. Evans

SCA SUBSCRIPTIONS FOR 1986/87

Subscriptions for SCA membership for 1987 are now due. Please use the form accompanying this Newsletter when paying your dues to Maureen.

Members who have not paid their SCA subscriptions for 1986 and/or 1985 are reminded that these dues are now long overdue. For those who can't remember whether they paid their subscription in past years, the dues reminder slip documents the money owed to the Society. Tardy members are again reminded of a part of Rule 1, Section 2 of the SCA Constitution:

".... Members whose subscriptions are not paid will be kept on the membership list for one year. Members still in arrears at the end of the year will be dropped from the membership list."

This is the last warning for those who have not paid their 1985/6 membership dues. Please do the right thing and send your subscription off to Maureen now!

MEMBERSHIP NEWS

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

Full:	Prof J. Harada	Applied Phys, Nagoya Univ, Japan
	Prof J.W. White	RSC, ANU, Canberra
	Mr H. Kisi	Jesmond, NSW
	Mr P.C. Davis	CSIRO Protein Chem, Vic
	Prof J.M. Waters	Chem Dept, Univ Auckland, NZ
Student:	Mr R.W. Gable	Flemington, Vic

FORTHCOMING MEETINGS

- 1987:
- Jan 26-30: 56th ANZAAS Congress "Science in a Changing Society", Palmerston North, New Zealand. Contact: Dr M. Baxter, Massey Univ, Palmerston North, New Zealand.
- Feb 4-6: 11th Condensed Matter Physics Meeting, Pakatua Island, Auckland, New Zealand. Contact: Dr G. Jones, Dept Physics, Univ Canterbury, Christchurch, New Zealand.
- Feb 23-25: Application of Computer Systems in Drug Design and Development, Hilton Head Island, South Carolina, USA. Contact: Mariner's Inn, Hilton Head Island.
- Feb 25-26: Cambridge Structural Database User's Workshop, Hilton Head Island, South Carolina. Contact: Mariner's Inn, Hilton Head Island.
- Mar 15-20: ACA Meeting, Austin, Texas, USA. Contact: Dr Helen M. Berman, Inst for Cancer Research, 7701 Burholme Ave, Philadelphia, PA 19111, USA
- Apr 7-9: BCA Spring Meeting, Heriot-Watt Univ, Edinburgh, UK. Contact: Dr J.C. Halpenny, Dept Chemistry, Napier College, Colinton Rd, Edinburgh EH10 5DT, UK.
- July 6-10: 8th Int Conf on Chem of the Organic Solid State, Lyon, France. Contact: Dr R. Lamartine, Lab Chim Industrielle, Univ Claude Bernard, 43 Boulevard 11 Nov 1918, 69622 Villeurbanne Cedex, France.
- July 13-16: 10th Disc Conf on Small Angle Scattering and Related Methods, Prague, Czechoslovakia. Contact: Dr J. Baldrian, PMM Secretariat, Inst of Macromol Chem, Czech Acad of Sci, 16206 Prague, Czechoslovakia.
- July 13-18: 31st Int Congress of Pure and Applied Chem, Sofia, Bulgaria. Contact: The Secretariat, 31st IUPAC Congress, c/o Dr R. Vlahov, Inst of Organic Chem, Bulgarian Acad of Science, 1113 Sofia, Bulgaria.
- July 26-31: XXV Int Conf on Coordination Chem, Nanjing, China. Contact: Prof Xiao-Zeng You, Conf Secretary, XXV ICC, Coord Chem Inst, Nanjing Univ, Jiangsu Province, China.
- Aug 12-19: World Congress of Theoretical Organic Chemists, Budapest, Hungary. Contact: E.A. Lang, Hung Chem Soc, Anker koz 1, H-1061 Budapest, Hungary.
- Aug 12-20: 14th General Assembly and Congress of the IUCr, University of Western Australia, Perth, Western Australia. Contact: Dr E.N. Maslen, Crystallology 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
- Symp on Molec Structure and Drug Design, Sydney. Contact: Prof G. Johnston, Dept Pharmacology, Univ Sydney, Sydney 2006, Australia.
- Conf on Structure and Reactivity of Solids and Solid Surfaces, Sydney. Contact: Dr R. Smart, School of Science, Griffith Univ, Nathan 4111, Australia.
- 10th Symp on Industrial Crystallization, Bechyně Castle, Czechoslovakia. Contact: 10th SIC, Inst Inorganic Chem, Czech Acad Science, Polska 20, 120 00 Prague 2 Czechoslovakia.
- 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.
- Aug 22-26: Austceram 88, Sydney. Contact: Mr R. Bowman, Austceram 88 Sec, PO Box 56, Highett, Vic 3190.

We were given two ends:

One to sit on and the other to think with.
Your success depends upon which end you use the most.
It's a case of heads you win, tails you lose.