Fourteen days in the Land of the Rising Sun

Impressions of materials research in Japan

Between May 30 and June 13, I attended two international conferences in Tokyo and visited Tsukuba Science City. This experience did not make me an instant expert on all things Nipponese, but it did afford some valuable insights into work going on in the field of advanced materials.

It preceded, too, first hand experience of laboratory practices in Japan. For all the laboratories I visited, and I believe for most industries, Saturday is a normal working day, and although only one or two Saturdays in four may be formally required, most staff are dedicated enough to work every Saturday. One university laboratory I visited was crammed with scientific instruments and obviously underspaced, but for all that it contained a double bunk for the research students to allow them to work 'round the clock!

The first conference covered the general theme of Advanced Materials and was held under the auspices of the Materials Research Society. Over 1000 delegates were attracted to a series of 20 specialised sub-conferences on topics of intensive current research interest.

Included were superconductivity, superplasticity, biomaterials, structural ceramics, rapidly quenched metals, powder preparation, photo-responsive materials and shape-memory alloys.

I concentrated mainly on the sub-conference on shape-memory alloys, presenting a paper on research conducted at the Katholieke Universiteit in Leuven, Belgium, during a recent study leave. I was also invited to chair a session on copper-based, shape-memory alloys and was afforded the opportunity, by means of a short talk, of promoting ICOMAT '89—the international conference on martensitic transformations—to be held in Sydney in July next year, and for which Associate Professor Noel Kennon and I are members of the organising committee.

An interesting aspect of the MRS Conference was the allocation of conference papers to the delegates for peer review before acceptance for publication in the Proceedings. I reviewed four papers from Chinese and Japanese research groups.

The second conference was Thermec '89 an international gathering on thermomechanical processing of high-strength, low-alloy steels. This conference was held in the headquarters of the Iron and Steel Institute of Japan—Keidanren Kaikan—near the Imperial Palace in Tokyo. Over 200 delegates attended this four-day meeting and two papers were contributed by the Department of Metallurgy and Materials Engineering. I presented one paper on precipitation hardening of vanadium microalloyed strip steels and the other, on hot working of titanium steels, was given by Dr Tara Chandra.

During this conference, I was invited by Dr S Kajiwara, Head of the Materials Development group on steel-based, shape-memory alloys, to visit the laboratories of the National Research Institute for Metals (NRIM) in Tokyo. NRIM is a government-supported scientific research establishment specialising in the development of advanced metallic and non-metallic materials, as well as methods for processing preparation.

Discussions on ferrous martensites and shape memory alloys were followed by inspections of research laboratories and briefings on aspects of advanced materials research in which NRIM claim to be world leaders. One of these areas was techniques for preparation of ultra-fine, high-purity particles of metals and compounds for powder processing by mechanical alloying or hot isostatic pressing.

Another was the development of magnetic fluids for use in thermo-magnetic systems for energy conversion. A

continued on back page
The Australian Research Council and its role

The Federal Parliament has now passed the legislation to establish the National Board of Employment, Education and Training and its Councils.

The Australian Research Council differs from the other Councils in that its functions fall into two categories. The Council will provide information and advice to the Board on matters relating to national research priorities and the co-ordination of research policy. However, with respect to the distribution of resources allocated to research schemes referred to the Council by the Minister, and the administrative and other costs of these schemes, the Council will make recommendations direct to the Minister.

The Council has been given responsibility for the research grants programs formerly administered by the Australian Research Grants Committee, the Marine Research Allocations Advisory Committee and the National Research Fellowships Advisory Committee, as well as the Key Centres of Teaching and Research and the Special Research Centres programs, which were previously administered by the Commonwealth Tertiary Education Commission.

In order to carry out its grant allocation functions, the Council expects to set up advisory committees in each of four discipline areas, similar to those established to assist the Interim Council in the current selection round. The legislation provides for such committees to be set up by the Minister on the recommendation of the Council to the National Board and in consultation with the Minister for Industry, Technology and Commerce. What is envisaged is that the Advisory Committees will continue to be chaired by part-time members of the Council, as this device has already proved useful in keeping the Council in touch with the concerns and priorities of the academic research community.

THE ART OF LUNCH 2

The Art of Lunch program of Thursday lunch-hour performances earlier this year will continue next session on 21 July at 12.35 pm in the Music Auditorium, School of Creative Arts, University of Wollongong.

The new program reflects the diversity of the School of Creative Arts in its combination of a variety of arts events including recitals, poetry and prose readings, short plays and films.

The second semester program includes the popular Latin American folk music group Sonido de los Andes, leading Australian writer Louis Nowra (an artist-in-residence at the School of Creative Arts) reading from his own works, the Wollongong premiere of three short surrealist films, the virtuoso Dutch contemporary music ensemble Duo Contemporain playing new music, and a series of new scripts presented and produced by Creative Arts students under the title Local Products.

Wollongong University ties and scarves are available from the Union Shop. They are excellent presents to those travelling overseas, or as gifts to colleagues, friends, and graduates.

Admission to all Art of Lunch performances is FREE, all are welcome and performances last from 12.35 to 1.25 pm on Thursdays during session.

Full details of the 15-event series can be obtained by ringing the School of Creative Arts on (042) 27 0987 and requesting a copy of the advertising poster. Other enquiries can be directed to the Art of Lunch convenor, Dr Andrew Schultz, on (042) 27 0302.

AMALGAMATION WORKS-AT WOLLONGONG

The ensuing article was published in the Newcastle University News.

Readers of Campus News interested in seeing the Newcastle Herald article referred to in Linda Aurelius’ article should contact Gillian Curtis on ext 3926.

As a member of the staff of the University of Newcastle, I wish to make the public aware that Mr Robert Mackie, President of the Staff Association, does not speak on behalf of the entire staff when he argues against amalgamation of the University and the Hunter Institute of Higher Education. When he is quoted on NBN, or by The Newcastle Herald, the general community is not aware that the Staff Association is made up of academic staff only. People think Mr Mackie speaks for all the staff employed at the University. I feel that Mr Mackie should point this out when he is being interviewed. Some members of staff who are not academics—and thus not members of the Staff Association—do not necessarily agree with Mr Mackie’s views. (Nor do some members of his Association, I understand).

If the experience of the Wollongong amalgamation is a guide, we probably have more good things to look forward to than bad.

The recent story by Ann-Maree Lourey, Education Reporter, The Newcastle Herald (May 26), revealed that neither management nor staff was hurt by the merger of the University of Wollongong and the Institute of Education.

The Vice-Chancellor, Professor Ken McKinnon, was reported as saying that the merger had a positive effect on the attitudes of the staff and students. They are more outward looking, more aware of the world around them, more willing to change and develop the structures of the University to suit modern needs and more thoughtful of their teaching and their offerings, he said. The former President of the Wollongong University Staff Association, Dr John Panter, stated that the amalgamation had been a good thing. The Acting Co-ordinator of teacher education at Wollongong University, Mr Malcolm Harris, made the very thought provoking comment: 'The two institutions simply had a different ethos and, human nature being what it is, people try to retain that ethos. They take a defensive stance, and try to keep their own. Now they have come to see that neither View was true.'

It seems as though Mr Mackie’s howls of protest lack substance. Let’s face it: bringing new interests and disciplines to the University and sharing new ideas, can only strengthen the University.

Wollongong and Newcastle have many similarities and we are lucky to be able to take advantage of the experience of the steel town north of Sydney in the matter of amalgamation. Given the imperatives in the Federal Government’s policy, I can only suggest we follow Wollongong’s lead and prepare for amalgamation. That way it will be easier. Confrontation will prepare us for failure, not success.
Tenure traded for pay rise

Senior academics will find it harder to gain tenure in universities and colleges following an agreement between academic unions and tertiary institutions.

Under the deal, more senior academics will be expected to take fixed-term contracts, rather than tenure.

The agreement between academic unions and employers, ratified by the Arbitration Commission, gives universities and colleges greater flexibility for sacking and disciplining academics for poor performance.

But academics will receive a four per cent pay rise in return for the reduction in conditions.

And the Government has been forced to give universities and colleges another $46 million to help pay for the deal.

Tertiary institutions received the money after they claimed they could not pay for the four per cent increase immediately out of productivity savings.

The Minister for Education, Employment and Training, Mr Dawkins, said the Government would provide the $46 million to pay for the changes under a second-tier wage deal.

Changes include voluntary early retirement for academics and pay rises for non-academic staff.

The Government will give the institutions $17.7 million as part of the assistance to pay for early retirement.

The package aims to retire 1000 staff over the next three years.

But institutions receiving part of the $17.7 million will be expected to repay the money.

Under the agreement, universities and colleges will aim to have ten per cent of senior staff on contract, an increase of seven per cent.

An Arbitration Commission hearing will also be scheduled to discuss redundancy packages for academic staff.

Mr Dawkins used negotiations for the four per cent wage increase to push productivity reforms, in line with the Government’s Green Paper on Higher Education.

They were not expected to be considered fully until another discussion paper was released at the end of this month.

Mr Dawkins stepped in to ensure the agreement was parallel with Government restructuring proposals for the tertiary system.

He said he expected institutions to move quickly to take advantage of increased flexibility in staffing available, “particularly through the early retirement package”.

They had negotiated a draft agreement, but the Government had forced more from the unions in reduction of conditions. They said many union officials had been unhappy with Mr Dawkins’s intervention.

The above is a lightly edited version of an article published in The Australians for July 4.

WANTED BOOKS WANTED

Needed now by the Graduates’ Group of the Friends for their bookstall on University Open Day, August 28. Please deliver donations of novels, texts, comics and old publications to Friends’ House, 55 Northfields Avenue, Keiraville. Your old stuff can be somebody else’s treasure!

For inquiries telephone 61 2714 (Dapto), 29 1951 (Wollongong), 67 2229 (Austinmer).

Book conveners: Johanna de Jonge 67 2229, Marjory Macdonald 29 1951.

UNDERSTANDING THE MEDIA

A seminar for academic and senior administrative staff on understanding the requirements of the media, and specifically on how to make maximum advantage of opportunities presented to staff to raise the profile of this University, was held in the Union on Tuesday July 5.

The seminar was conducted by Dr Austin Steele, Production Executive, SBS Television. Dr Steele has devised and conducted over 500 seminars and workshops dealing with media affairs.

He is amply qualified for playing an active role in a seminar such as this. In academic terms he has an MA (Communications) from Columbia University, NY, a PhD (Linguistics) from University College, Dublin, and a DIP (Drama) from London University.

Currently Dr Steele is Production Executive of SBS-TV and before that he was Executive Producer of BBC Television.

The lunchtime address was given by Helen Trinca, Public Relations Officer of the Australian Vice-Chancellors Committee, who talked on the general problem of raising the image of universities in today’s environment. Helen is a former editor of The Australian Higher Education Supplement and in 1987 was Chief of Staff of The Australian Canberra Bureau.

She was for two years Features Editor at the Australian. Helen in her address argued that the real challenge for universities this year rests not so much with integrating the Green Paper reforms, but with improving the public image of campuses. She suggested that significant damage has been done to the higher-education system because of the Federal Government’s rhetoric this year. The challenge is to find a broader approach than we have managed in the past to public relations.

TELEPHONE SERVICES

For all of those who have been frustrated in the past by the difficulties in obtaining an outside telephone line “THE MATTER HAS BEEN RESOLVED”.

We have been able to prevail upon Telecom to increase our external and internal—line capacity by 25 per cent.

Thank you for your patience in the past and happy dialling.
Research Funds

The sources of research funds given below are available to members of academic staff. Further information including application forms may be obtained from Kim Harriss (ext 3201). Intending applicants are reminded that all research applications must be forwarded through the Office of Research and Post-graduate Studies.

AUSTRALIAN POSTDOCTORAL FELLOWSHIPS

The NH&MRC have invited applications for Australian postdoctoral fellowships. The purpose of the fellowships is to provide a vehicle for training in basic research within the biomedical sciences in Australia. Fellowships are usually awarded for a period of three years.

Applications close with the University on August 5.

C.J. MARTIN FELLOWSHIPS

The NH&MRC have invited applications for C.J. Martin postdoctoral fellowships to enable fellows to work overseas on specific research projects within the biomedical sciences. Fellowships are usually awarded for a period of three years.

Applications close with the University on August 5.

PREVIOUSLY REPORTED IN CAMPUS NEWS

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AUSTRALIAN APPLIED HEALTH SCIENCES FELLOWSHIPS

The NH&MRC have invited applications for Australian Applied Health Sciences fellowships. The aim of the fellowships is to provide training in scientific research methods, including those of the social and behavioural sciences, which can be applied to any area of clinical or community medicine.

Applications close with the University on August 5.

NH&MRC/INSERM EXCHANGE FELLOWSHIPS

The NH&MRC/INSERM have invited applications for exchange fellowships to enable fellows to work overseas on specific research projects within the bio-medical sciences. Fellowships are usually awarded for a period of three years.

Applications close with the University on August 5.

NEIL HAMILTON FAIRLEY FELLOWSHIPS

The NH&MRC have invited applications for Neil Hamilton Fairley (overseas) fellowships. The purpose is to provide training in scientific research methods, including those of the social and behavioural sciences, which can be applied to any area of clinical or community medicine.

Applications close with the University on August 5.

GRANTS FOR INFORMATION TECHNOLOGY AND COMMUNICATIONS TECHNOLOGY

The Industry Research and Development Board invites applications for grants in information and communications technology. The scheme provides grants for pre-competitive strategic research projects of special significance to long-term industry growth and competitiveness.

Applications close with the University on September 2.

SEMINAR ON INFORMATION AND COMMUNICATION TECHNOLOGY GRANTS

To assist intending applicants the Industry Research and Development Board will be holding an information seminar on 14 July. The seminar will be held at the Electricity Technology Centre, 172 Silverwater Road, Silverwater starting at 3 pm. There is no charge. Those interested should contact Ken Garner on (02) 748 3399.

INTERNATIONAL DEVELOPMENT PROGRAM RESEARCH FUNDING SCHEME

Applications are invited for funds under a research funding scheme for IDP-sponsored postgraduate students. Applications will be considered only if they are related to cases of individual overseas students who are receiving IDP Fellowships for Masters or PhD, or are being considered for acceptance into such degrees.

Applications close with the University at any time.

THE ROYAL SOCIETY OF VICTORIA MEDAL

Nominations are invited by The Royal Society of Victoria Silver Medal awarded annually for scientific research. The award for 1988 will be in the category of social science and
will be for work carried out in Australia during the six years from 1 January 1982 to 31 December 1987.

Applications close with the University on September 16.

ROTHMANS FELLOWSHIPS

Applications are invited for Rothmans Fellowships awarded to enable Fellows to undertake postdoctoral research within an Australian University. The Fellowships, valued at $25,000, are awarded initially for one year and may be renewed for a second year. The Fellowships are open to graduates and must be taken up before the Fellow attains the age of 30.

Applications close with the University on July 15.

FLOREY FELLOWSHIP

The Royal Society of London and The Australian National University invite applications for the Florey Fellowships in the field of biomedical sciences. Fellowships are tenable at an appropriate university or research institution in the United Kingdom for two years. Applicants must be Australian citizens or residents of Australia and should have a MB.BS or BVSc degree with appropriate research experience or a PhD or equivalent qualification in one of the biomedical sciences.

Applications may be obtained from The Secretary -- Florey Fellowships, The Australian National University, GPO Box 4, Canberra ACT 2611.

Applications close with ANU on July 29.

AUSTRALIA COUNCIL INCENTIVE PROGRAMS

The community Cultural Development Unit of The Australia Council invites applications for grants under the Art and Working Life Program. Projects should be aimed at encouraging working class cultural traditions, promoting communication between the trade union movement and the arts, and developing opportunities for workers to gain access to the arts.

Applications close with the University on August 1.

AUSTRALIA COUNCIL -- VISUAL ARTS/CRAFTS PROGRAMS OF ASSISTANCE

The Visual Arts/Craft Board of The Australia Council invites applications for grants to assist the development of Australian visual art and craft. Funding is provided to fulfil five principal objectives:

- **Professional Development of Artists** -- to consolidate and develop the work of artists;
- **National Infrastructure Support** -- to develop the role of arts organisations;
- **Exhibition and Access** -- to develop the role of art museums and public galleries;
- **International Program** -- to develop the international recognition of the work of Australian artists overseas;
- **Advocacy** -- to promote the work of Australian artists.

Further information is available from the Office of Research and Postgraduate Studies.

NH&MRC MEDICAL AND DENTAL SCHOLARSHIPS

The National Health and Medical Research Council is offering scholarships to medical or dental graduates to gain full-time research experience. The Scholarships are open to graduates who are currently living in Australia, and are awarded initially for one year but may be renewed subject to suitable progress.

Applications close with University on July 17.

LIONEL MURPHY POSTGRADUATE SCHOLARSHIPS

The Lionel Murphy Foundation is offering four postgraduate scholarships for Australian citizens. Three scholarships are tenable at any Australian Institution for the academic year starting in 1989 and one scholarship is tenable overseas. Preference will be given to applicants who propose to study law in a social context; science and/or law as a means of attaining social justice; and human rights or international law as a force for peace.

Applications close with the University on November 16.

AINSE RESEARCH FELLOWSHIPS

AINSE Research Fellowships are offered by the Australian Institute of Nuclear Science and Engineering for postdoctoral scientists and engineers wishing to undertake research projects within the Institute's field of interest. Minimum tenure is two years.

Applications close with the University on August 17.

General Notices

FUND-RAISING BARBECUE

The Aboriginal Education Unit hosted a barbecue last month to raise funds for the coming National Aborigines Week, to be held in September. Programs will be running simultaneously on campus and in the Illawarra community.

The barbecue was staged by the recently formed National Aboriginal Day Organising Committee (NADOC), which consists of Aboriginal community members, Dorothy Tungai and Mary Davis, Aboriginal student representatives, Carol Speechley, Yvonne De Vries, Joy Williams, Winifred Mitchell and Janice Wilson.

Arising from the success of the barbecue it has been decided to hold two more—on July 29 (at noon) and on August 26. Anyone is welcome to join in, at a cost of $2. Contact person is Janice on ext 3776.

I would like to thank the Union for its generous donation of the barbecue and Graham Ward for taking on the cooking.

Janice Wilson

GIPPS STREET STUDENT ACCOMMODATION NAMED GUNDI

At its meeting on June 10 the University Council approved the Aboriginal name GUNDI for the Gipps Street, Smiths Hill, Student Accommodation facility.

The name GUNDI (pronounced Goondi—the 'oo' being pronounced as in the word 'book') means camp, house or pronouned as in the word 'book') means camp, house or and was selected following discussion with the University's Aboriginal Education Unit and the local Aboriginal community. It had been previously agreed that an Aboriginal name would be appropriate and consistent with Weerona and Kooloobong, which are the names of other student accommodation facilities.
Grant-in-Aid Payments to Appear on Group Certificates

In November 1986 and again in June 1987, all members of staff received documents which explained the impact of changes to Income Tax Legislation and their effect on group certificates.

Among the changes identified was the requirement that Grant-In-Aid payments for both local and overseas travel appear on group certificates. Staff should be aware that the University is bound by the legislation and accordingly payments made during the 1987-1988 tax year will be shown on group certificates.

The employee is entitled to claim deductions against the Grant-In-Aid payment for business-related travel expenses incurred, subject to substantiation requirements. The University recommends that for extended travel overseas, employees should contact their own tax agent regarding any taxation implications.

Inquiries may be directed to Bob Hogarth on ext 3930 between 2 pm and 4 pm daily.

Smokers! Here's Your Chance to Quit

The University is considering providing a Workplace Quit Smoking Program for staff. In order to assess interest and to give more details, a lunchtime meeting has been arranged as follows:

When: Friday July 22.
Time: 12:30 pm to 1:30 pm.
Where: Pentagon Lecture Theatre 5.
Content: Smoking and its effects, passive smoking, workplace quit smoking programs and how they work.
Speaker: Felicity Gardiner, Co-ordinator Smoking Prevention/Treatment Programs, Illawarra Area Health Services.

Non-smokers are also welcome!
If interested, please contact Wendy Raikes (who will be the first to enrol) on ext 3946 by July 20.

Coming Staff Development Activities

The following activities are scheduled in the near future. Staff interested in undertaking any of the programs should complete the blue nomination form, available from their Departments or Personnel Services, and return it by the date given below. Staff must have their Head of Department's recommendation on the nomination form.

Effective Communication Skills Training -- This workshop will emphasise the skills of developing self-awareness and self-confidence, decision-making, and communication.
UNLEASHED DOGS ON CAMPUS

The Disability Committee has been made aware that some staff and students with restricted mobility or sight are experiencing harassment problems by stray dogs on campus. Although the University does not at present have a policy covering this, we have been advised by Security that a recent meeting of the Health and Safety Committee has determined if troublesome dogs are observed, the pound will be called to remove them.

It would be advisable for anyone bringing dogs on campus to be sure they are properly restrained.

Peg MacLeod, EEO Coordinator.

Seminars

WHAT ABOUT MANAGING SICKNESS ABSENCE IN ORGANISATIONS?

Speaker: Michael Zanko, Lecturer, School of Industrial and Administrative Studies.
Date and Time: July 12, 10.30 am.
Venue: Building 19, Room 2043.

PREJUDICE IN THE PUBLIC ARENA -- THE ASIAN AUSTRALIAN PERSPECTIVE

The Asian Australian Resource Centre (NSW) will be conducting a half-day seminar to present the Asian Australian perspective in the current debate about multiculturalism, immigration, racism, education and settlement issues.

Speakers include Mrs Franca Arena MLC, Dr Andrew Jakubowicz (University of Technology), Ms Irene Moss (Human Rights Commission), Hon Helen Sham-Ho MLC, and Mr Uri Themal (Deputy Chairman, Ethnic Affairs Commission).

There will be an open panel discussion involving the audience, the speakers and a representative from the Office of Multicultural Affairs.
Location: Carslaw Building, Lecture Hall 10, Sydney University.

DEPARTMENT OF BIOLOGY SEMINAR SERIES

SESSION II

The Department of Biology seminars are held at The University of Wollongong on Wednesdays at 3.30 pm in Room 19, Building 35.
July 20
Speaker: Dr Murray Fletcher, Senior Entomologist, Department of Agriculture.
Title: The use of genitalia in agriculture.

GEOGRAPHY DEPARTMENT STAFF AND VISITORS' SEMINAR SERIES

Room G027, 12.30 to 1.30 pm each Thursday.
July 21
Speaker: Professor Victor Baker, University of Arizona.
Title: 'Cataclysmic flooding'.
Special Seminar 5 pm, Room G027
Speaker: Professor Victor Baker
Title: 'Palaeoflood hydrology'.

DEPARTMENT OF MECHANICAL ENGINEERING POSTGRADUATE SEMINARS

Time: 11 am (Friday)
Venue: Department of Mechanical Engineering Seminar Room, Building 8.
July 22
Speaker: Mukeschandra Desai
Title: Flowability Assessment of Powders During Pneumatic Conveying.

DEPARTMENT OF CHEMISTRY

Date and Time: Friday July 22, 11.30 am.
Speaker: Mr Ian Carter, Uniadvice.
Topic: Commercialising Research and Technology.
For further details please contact Dr G.G. Wallace, ext 3504.

DEPARTMENT OF PHILOSOPHY

Date and Time: Friday July 22, 2.30 pm
Topic: Reason and Ethical Goodness
Speaker: Lloyd Reinhardt, Senior Lecturer, Department of Traditional and Modern Philosophy, Sydney
Venue: Department of Philosophy Seminar Room, North Wing, Social Sciences Building, The University of Wollongong (Building 19.1034).

DEPARTMENT OF ECONOMICS

The schedule of Department of Economics seminars to August 1988 are:
July 26
S. Mark -- Rural income and employment opportunities in the Cimanuk River Basin of West Java.

STAFF/POSTGRADUATE RESEARCH SEMINAR

Date: Monday July 25 4.30-5.30 pm.
Venue: Room 35.C45.
Speaker: Tian You Chai. Department of Automatic Control, Northeast University of Technology, Shenyang, Liaoning, People's Republic of China, (Visiting Fellow in Department of Systems Engineering, Research School of Physical Sciences, the Australian National University).
Materials research in Japan

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powder preparation technique for the production of large single crystals of tungsten and molybdenum in plate and rod form was also discussed. Single crystals of tungsten can be used as efficient reflectors in carbon-dioxide gas lasers.

In the last three days of my stay, I travelled to Tsukuba, about 60 km north-east of Tokyo, to visit Professor H. Otsuka in the College of Engineering Sciences at the University of Tsukuba. By invitation, I gave a colloquium on crystallographic aspects of martensitic transformations and discussed research topics of mutual interest with Professor Otsuka and his staff and students.

Visits were also arranged to several of the many research centres in Tsukuba Science City. Most of these are financed by government agencies or ministries such as Education, Health and Welfare, Transport and Internation Trade and Industry. The Last—MITI—has achieved notoriety among Japan's trading partners because of its power, its strong co-ordination and support of industrial development and the competitive (restrictive) trading policies that it encourages.

The National Laboratory for High Energy Physics (KEK) was one of the laboratories visited. This laboratory is under the control of the Ministry of Education, Science and Culture (MONTBUSHO) and boasts a 12 GeV proton synchrotron and a recently completed 30 GeV electron-positron collider accelerator. This visit was hosted by Prof. Steve Wilkins of the CSIRO who, as a visiting scientist, is carrying out structural studies using high intensity x-rays generated in the accelerator. With two of the 20 tangential outlet ports of the accelerator remaining uncommitted, Dr Wilkins is attempting to raise the funding necessary for an "Australian" lease of one of the remaining ports and the setting up of equipment for materials analysis using high-intensity beams.

A second visit was to the Tsukuba laboratories of NRIM which, within five years, will also house the equipment and personnel of the present Tokyo site. At Tsukuba, NRIM is renowned for its work on superconductors and superconducting magnets. Using liquid helium-cooled superconductors, NRIM have constructed a superconducting magnet with the world's highest magnetic field of 20 tesla. Work on the ceramic oxide, high Tc superconductors is also vigorous and NRIM have reported Tc values as high as 123K. In addition to this work, the Institute is also concentrating on high-performance titanium alloys for aerospace use, radiation damage of nuclear materials and performance of materials under cryogenic conditions.

NRIM will be one of the major beneficiaries of a recently announced government scheme to fund the development of "super" materials with outstanding heat resistance, magnetic properties, shape-memory behaviour and superconducting capacity. This program will involve $350 million (Aus) over an eight-year period.

Tsukuba Science City also possesses the National Space Agency, the National Research Centre for Disaster Prevention, the National Institute for Environmental Studies, the National Agriculture Research Centre, as well as government-sponsored laboratories dealing with metrology, food, forestry, animal health, geology, pollution, resources, public works and building construction. Private laboratories also thrive at Tsukuba—Okamura Corporation, Kobe Steel, Nippon Glass, Eisa Co. Ltd, Omron Tateisi Electronics Co., and Toda Construction Co. Ltd have established research centres and there is a Research consortium which has been established by eight high-tech corporations and is dedicated to the development of new industrial technologies.

The intensive concentration on scientific and technological research at Tsukuba, combined with the enthusiastic support and outstanding contributions of Japanese research workers to the two conferences I attended, attest to the depth of the scientific and technological strength of the Japanese and their commitment to excelling in research and in the application of advanced materials. Their openness in discussing their work also indicated their confidence in keeping up with, or in front of, rival research in other countries. And who can doubt it!

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