NEW APPOINTMENTS

Above Dr. John Blake

Dr. John R. Blake has been appointed Professor of Mathematics at The University of Wollongong, a Chair left vacant by the death earlier this year of the late Professor Austin Keane. He took up his duties on 1st November.

Dr. Blake graduated B.Sc. (Hons.) from The University of Adelaide in 1969 and was awarded the degree of Ph.D. from The University of Cambridge in 1972.

Prior to his appointment Dr. Blake was Senior Research Scientist and Leader of the Applied Mathematics Group in the C.S.I.R.O., Division of Mathematics and Statistics, Canberra. Previous to this he held positions as Research Fellow at Trinity College, Cambridge and at the California Institute of Technology. He has lectured at Adelaide and Cambridge Universities, California Institute of Technology and the A.N.U.

Dr. Blake's background is in Applied Mathematics with research interests in biological, medical, environmental and engineering sciences.

Dr. Linda L. Viney has been appointed to the tenured post of Associate Professor of Psychology at the University of Wollongong and will also be Chairman of the Psychology Department for a period of 4 years. Dr. Viney is currently Senior Lecturer in Psychology in the School of Behavioural Science at Macquarie University.

Dr. Viney held a Commonwealth Scholarship from 1959-62, was awarded a University of Tasmania Honours Scholarship in 1962 and graduated B.A. (Hons.) in Psychology from the University of Tasmania in 1963. She obtained the degree of M.A. from the Australian National University in 1966 and was awarded a Ph.D. in Clinical Psychology from the University of Cincinnati, U.S.A., in 1969.

She is a Fellow of the Australian Psychological Society. She has served on many committees of that Society, including those concerned with health care, ethics, accreditation of courses and the affairs of the Division of Clinical Psychology. She was invited by the Society in 1974 to prepare two reports on the role of psychologists in health care and social welfare for government funding bodies. These reports have been influential in the deployment of psychologists in government service in Australia as well as overseas.

She has had considerable teaching experience at the A.N.U., The University of Cincinnati, the University of St. Andrews (Scotland) and the University of Waterloo, Ontario (Canada). She has also had practical experience as an intern at the Cincinnati General Hospital and the Daniel Drake Memorial Hospital. This involved diagnostic and psychotherapeutic work. Her psychotherapeutic practice she has continued, with both individuals and groups, at the North Ryde Psychiatric Centre and the Counselling Centre at Macquarie University.

Dr. Viney's research interests lie in the fields of personality, clinical psychology, community psychology and health psychology.

Dr. Viney has published extensively both on her own and in conjunction with colleagues. Cassell (Aust.) Pty. Ltd., will, in May 1980, be publishing a monograph of hers on how women cope with transition throughout their life span, Steps and Stairs. She is being funded by the A.R.G.C., with Dr. Mary Westbrook of the Cumberland College of Health Sciences, to examine how people respond emotionally to and cope with chronic illness. This work has attracted some $30,000 from 1978 to 1980. She is currently a member of an inter-disciplinary team from the University of Wollongong working with The Bulli District Hospital on a Commonwealth-funded Health Service Development Project. This $90,000 project involves the counselling of patients during hospitalization for acute illness or injury. This has stemmed from the standing interest of Dr. Viney in the primary prevention of illness.

Above Dr. Linda Viney.
Dear Professor Birt,

As a member of Convocation, I was very pleased to have recently received the special graduation issue of the University of Wollongong Campus News. In response to your letter on the front page of that issue, I am happy to be able to tell you that just last week, I finalised the 3 year Ph. D. term at the A.N.U., with the oral examination. I have been studying in the field of many-body solid-state physics and submitted my thesis entitled "Role of Collective Modes in Some Surface Properties of Metals" on August 10.

In mid-October I will be travelling to Edmonton, Canada, with my wife Angela and our two daughters Nicole (22 months) and Renee (1 week old), to take up a postdoctoral position on a Canadian Fellowship. If it is feasible to send the occasional convocation news, my address for the next year or two will be Department of Physics, University of Alberta, Edmonton, Canada, T6G 2E1. I would look forward to any such correspondence, as I visit the members of the Physics Department as frequently as possible and hope to return to the Wollongong area within say, 5 years.

In a recent visit to the campus, I was, as you assured in your letter, most pleasantly surprised with the campus development, particularly with the emphasis on its aesthetic quality, which I believe is destined to (if it has not done so already) exceed that of the A.N.U. campus. Considering the much greater fortune of this "lucky city" Canberra, you and your staff are to be most heartily congratulated. I wish you every success in furthering this development and look forward to my next visit.

Yours sincerely,
Peter Summerside.

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Dear Peter Summerside,

Many thanks for your welcome letter of 25 September, 1979. Congratulations on achieving your doctorate and on the Canadian Fellowship. It is pleasing to see our best people making progress internationally.

We will certainly continue to mail "Campus News" to you regularly and I hope we will see you again one day at Wollongong.

With kindest regards,

Yours sincerely,

L. Michael Birt
Vice-Chancellor.

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Dear Mr. G. J. Smith,

It was heartening to receive your letter of September 24. Thank you for your interest and support. I have passed your letter on to the relevant officers and also to Professor Reinfelds who, I am sure, will be as pleased as I was to hear from you.

I know that we at Wollongong will see you again one day.

Yours sincerely,

L. Michael Birt
Vice-Chancellor.

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Dr. Peter Summerside,
C/o Department of Physics,
University of Alberta,
EDMONTON. ALBERTA. T6G 2E1.
CANADA.

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Mr. G. J. Smith,
Union College,
Upland Road,
ST. LUCIA. QLD. 4067.

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L. Michael Birt
Vice-Chancellor.
USE OF WASTE IN ROAD CONSTRUCTION

The Department of Civil Engineering at the University of Wollongong recently held a seminar on “the use of waste and low-grade materials in road construction.”

The seminar was attended by engineers from Wollongong City Council, Shoalhaven City Council, Wicketscarbope, Mittagong and Campbelltown Councils, the Department of Main Roads, the Lands Department, Australian Iron and Steel, and Heggies Transport, as well as staff and students.

Papers were presented by postgraduate students at the University of Wollongong on the following topics:

- The use of pulvemized fuel ash precipitated from the smoke stacks of power stations. When mixed with lime produces a useful cement-like substance.

- Incinerator waste from Council incinerators. Two advantages in that it reduces the volume and weight of the waste and the end result is useful in making minor roads, foresting roads, farm roads, etc.

- Furnance clinker or Bottom Ash. The usefulness depends on the type of coal used. Mummorah produces bottom ash. Bottom ash can be used in any application where clear coarse sand is used. At the moment it is given away free.

- Unburnt Colliery Shale. Use in road making is not permitted at the moment, but it may be used as a bulk fill provided that it is not close to concrete structures as the sulphate leachate can attack concrete. It can also be used in brick making. There is a large amount available and the CSIRO is presently looking at further uses.

- Burnt Colliery Shale. Can be used for road base if cement is added. Also useful for bulk fill.

- Quarry Waste. Can be used in road material but in Australia the price is not very competitive with blue metals, etc., which are available closer to the road making sites.

- Oil Shale. Not produced in Australia yet, but we have large unworked deposits in Queensland. The waste material can be used in all kinds of road construction.

- Blast Furnace Slag. Produced in three forms, air cooled, expanded and granulated. All are useful in road construction.

The seminar leader, Dr. Donald Pearson-Kirk, demonstrated the University’s new road testing device which consists of a truck wheel with which repeated loads may be applied to a road pavement contained in a steel tank. He said the device would enable the University road researchers to get results from controlled trials of various road pavement designs under various conditions of use, using various mixtures of materials, including those mentioned above. Another testing device, a car wheel which runs on a road surface inside a large rotating drum at speeds of up to 100 km/hour, enables tyre/road surface problems to be investigated.

It is hoped that research results would eventually mean better roads using, where appropriate, the cheaper waste materials, thus alleviating the two problems of waste disposal and good road making simultaneously.

PIRANDELLIAN STUDIES

Mrs. Madeleine Strong Cincotta, holder of a University postgraduate grant and part-time lecturer in Italian at the University, is presently finishing her doctoral thesis in the Philosophy Department on the topic: “Luigi Pirandello, Existentialist avant la lettre.” Pirandello, universally recognized as a literary giant with philosophical over-tones, has never been studied thoroughly from a purely philosophical point of view. Within the field of Philosophy, at least in the Anglo-Saxon world, he remains unknown.

The Director of the Institute of Pirandellian Studies in Agriento, birthplace of the famous Sicilian, and headquarters for Pirandellian studies, has invited Mrs. Cincotta to present a portion of her thesis as a paper to the Sixth Annual Congress of Pirandellian Studies in December. With the aid of a grant from the University, Mrs. Cincotta will attend the conference and present a paper dealing with Existentialism in the Short Stories of Pirandello. The English version of this paper will also be presented at the AUU Conference in Newcastle in January.

KAMPUCHEAN RELIEF

The Chairman and members of the Public Questions Forum of the University of Wollongong are happy to announce that the recent collections of donations for Kampuchea at the University and Crown Central amounted to $5,847. The money has been forwarded to the Kampuchean Relief Appeal, Sydney.

Our thanks go to all those who gave willingly of their time, in particular the management and staff of Crown Central and the local media for the publicity. To the generous donors - a very special thank-you.

It is hoped that the publicity given to the Kampuchean Relief Appeal will stimulate other persons and groups in the community to contribute further to this most worthwhile cause.
Campus News

Associate Professor Colm Kiernan of the University's Department of History has received a grant of $3000 from the N.S.W. Government Department of Cultural Activities to write a History of Wollongong. Professor Kiernan hopes to complete this task within eighteen months - or 2 years at the most. Meanwhile, he wants help, and urgently!

"I want to hear from anyone who has information about Wollongong and its environs in the early days," he said. "This could be in the form of reminiscences by 'old timers', or from their children who have taken an interest in family history and listened to the tales told by their elders. It could come through family letters or documents which will allow me to see. I am particularly interested in learning about every day life in the region. It is terribly frustrating for an historian to write a book and find, after it is published that people come to him and say: 'You should have asked me about that, I could have put you on the right track.' When you start on a job like this, you start with an hypothesis, an idea of your own and, as you gather more and more information you may find you have to modify your original idea, even scrap it altogether. So it is vital to gather as much information as possible, and gather it early.

Professor Kiernan's hypothesis is that Wollongong is developing a greater independence of Sydney than it had in the early days. He attributes this to two factors - firstly, the establishment of an autonomous steel industry in the area, and secondly, a growing cultural independence accelerating since the establishment of an autonomous university in the city but deriving originally from Wollongong's development as a multicultural society drawing heavily on the cultural heritage of many nations.

But how does life in Wollongong today compare with life here in earlier times? A generation or three ago, where did children go to play after school and during holidays? How did the housewife organize her week? What did the men do if they were out of work, perhaps due to an industrial dispute? (Professor Kiernan has been told they used to go fishing or rabbitting so that they could provide food for their families although there was no money coming in - can anyone confirm this?) Anyone who has information that could contribute to his painting a true picture of life here in the early days is requested to contact Professor Colm Kiernan, at the University, Department of History, ext. 831.

Professor Kiernan has already published two books on French History (third as in preparation.) Last year his biography of Arthur Caldwell was published and was very well reviewed.

Earlier this year the University's Centre For Multicultural Studies held a two day Forum on the subject of Multicultural Education and The Expectations of Immigrants. Proceedings of this Forum have just been published and are available from The Centre for $3.00 a copy.

The text has been edited by Dr. Andrew Jakubowicz, who writes in the introduction: 

"The notion of multicultural education raises many more questions than it answers. For organisations such as the Australian Ethnic Affairs Council, it implies a triad of goals - social cohesion, equality and cultural identity. In the past it has meant scarcely more than teaching non-English speakers how to speak English. In practice it is a confusing and hazily understood concept, operationalised as Bi-lingual education or the teaching of art, sport, ethnic cooking, mother tongue maintenance programmes, ethnic schools, folk dancing and major ideological programmes such as "Come on Aussie, come on!"

For many Australians, the notion of a diverse and pluralist mainstream in which many "cultures" share equal validity is strange. Those who advocate multiculturalism in education come to it from backgrounds as diverse as the history of European and Asian migration to this country, and the far older history of the original Australians - the Aborigines. For some the upsurge in "multiculturalism" provides a niche of status and recognition that mainstream Anglo-Australian society still seems to deny them. The normative content, still woolly and unclear, seems to promise a Utopian future, yet the reality to be faced gives little hint of how that promise will be carried through.

The proponents have their opponents - those who say that the process of multiculturalism will destroy Anglo culture, that migration is a transitory stage to be overcome by assimilation into some mythical "Australian" culture, that the only "problem" is the learning of English, that if "they" don't want to be like "us" "they" can go back to where "they" came from. Other opponents, while accepting the values that lie increasingly hidden in the idea of cultural pluralism, see other problems. To them cultural recognition is a "cover" for continuing exploitation, an anathema that refuses to recognise the continuing class position of most non-English speakers in Australia.

This forum, jointly organized by the University of Wollongong, Centre for Multicultural Studies and the South Coast Regional Office of the N.S.W. Department of Education, is a demonstration of the hopes and fears that lie bound-up with the whole package of multicultural education. There are appeals for empathy and recognition, for tolerance and understanding. There are also demands for clearer thinking, and a call for a serious analysis of what multiculturalism actually means in practice.

The contributors to this forum are teachers, government officials, ethnic group activists, academics, students - some wear more than one hat. Through the presentations and workshop groups with the audience an attempt has been made to put out some of the more difficult issues. As a first move in the Illawarra to explore and extend these ideas, the forum has acted as a stimulus for positive and creative thought and action. I believe that its outcome will help shape the sort of movement that will begin to grapple seriously with the needs not only of migrant parents and their children, but also of the great "Australian" mainstream over which these currents have washed in the past."

For the full proceedings of the Forum Contact:
Andrew Jakubowicz, Centre for Multicultural Studies, University of Wollongong,

LONDON FOUNDATION

At this stage of the year, it is timely to remind all academic staff that the University of Wollongong has a "working affiliation" with the Australian National University Edith and Joy London Foundation and that the facilities of this foundation are available for use by Wollongong University departments.

The Edith and Joy London Foundation is a 348 hectare property at Kioloa on the South Coast between Ulladulla and Bate-man's Bay. It was donated to the A.N.U., by the London Family for use by that University and the University of Wollongong as a research and instruction facility for the field sciences, but is also available to study groups from other disciplines. The foundation has had extensive use by field classes of Biology, Geography and Geology students, while groups of linguists, anthropologists, historians and sociologists have also held residential courses on the site.

Facilities at the research foundation include comfortable sleeping accommodation for 38 people, hot showers and flush toilets, a modern kitchen and dining hall, an extensive laboratory with running water, gas, electricity, and dark room, and a library. The property is partly farmed and partly bush and is a three minute walk from the beach. Charges per night at $2.00 for undergraduates, $3.00 for graduate students, and $4.00 for academic staff.

Continued page 11
CHRISTMAS CONCERT

Below: Conductor David Vance, far R. with some of The University singers who will give a Christmas Concert in the Union Common Room on December 4th at 8.15pm. Tickets: $2.50 and $1.50 may be obtained at the door.

Christmas Cards bearing the crest of the university in full colour on a plain white high gloss background are now available at the Book Shop in The University Union for 30c each. Also available are similarly styled correspondence cards, ideal for informal invitations, “thank-you” notes and the like. These too are priced at 30c.

PEASCOD PAINTINGS

Distinguished local artist, Mr. William (almost invariably, ‘Bill’) Peascod has handed over to the University his personal collection of his own paintings. This comprises some 211 works with a total estimated value of $73,400. The collection, which is on indefinite loan to the University, was handed over during the course of an informal meeting in the Council Room at the University.

In accepting the paintings on behalf of the University, The Vice-Chancellor, Professor L. M. Birt, paid tribute to Mr. Peascod’s long-standing involvement with the University, including his services as a teacher in the Fine Arts Course. He said that the University seeks to encourage creativity and freedom of thought and that it is particularly significant that Bill Peascod’s experiences as a miner have had such a formative influence on his work. Coal mining and its extraction from the rich south-coast veins have given reason for the growth of this city and indeed for the beginnings of this University. In Bill’s case, as in that of artists in different medium, such as D. H. Lawrence, coal-mining and the landscape which it inhabits and shapes, has provoked a fine insight into the forms of Nature.

Mr. Peascod and his wife have since left for a visit to England but will be back by mid-1980, for the Retrospective Peascod Exhibition, scheduled for the Wollongong Art Gallery.
AUSTRALIAN MANUFACTURING INDUSTRIES IN "POOR CONDITION"

In a speech to the Australian Industrial Research Group (a group consisting of the R & D Managers of all major Australian Industrial firms) in Sydney on Wednesday, 7th November, Professor Ron Johnston, Chairman of the Department of History and Philosophy of Science at the University of Wollongong, claimed that Australian Manufacturing Industry was in such a poor condition that it was unlikely to be able to respond to new challenges of technology in the 1980s, and therefore might be expected to decline further.

The climate for the development of new technology is undergoing major and irreversible changes. The emergence of newly industrialising nations such as South Korea and Brazil, with their low wage structure, placed a premium on the development of capital and skill-intensive technologies, at the same time as the unemployment problem requires an era of job creation. The rising social awareness of the negative effects of technology which is making itself felt through new and more rigorously enforced regulations to protect the environment, the consumer and the worker, requires new technology to be designed and developed with a much greater sensitivity to its far-reaching economic and social effects. The international political control over the availability and cost of energy, particularly oil, needs to be met by investment in the development of alternative energy sources, more efficient use and conservation techniques, and low-energy alternatives to present manufacturing practice. Finally, the major new technologies already on the horizon, particularly in micro-processors and biotechnology, offer enormous opportunities for exploitation.

All of these will require higher levels of scientific and technological sophistication, linked with an ability to assess not only markets but also broader economic and social consequences. However, in the past five years, Australian manufacturing industries have run down their innovative capabilities as measured by R & D expenditure and employment of qualified scientists and engineers, to less than half the level of 1974. All this at a time when there has been marked increase in investment in R & D by industry in almost all other OECD nations i.e, Australia's competitors. While electrical and electronics industries have become the largest performers of industrial R & D elsewhere, in Australia the research capacity has been almost totally wiped out.

The immediate need is to regenerate confidence within manufacturing industries. The major responsibility must lie with industry itself, as it alone can determine the research and investment needed to develop the products which will enable it to survive on an open market. The Federal Government should expand the package of measures recently established under the aegis of the Department of Productivity by a gradual and progressive replacement of tariff barriers by more appropriate incentives, including improved tax write-offs for R & D investment and a much expanded programme of contracting out to industry of government research needs.

WOLLONGONG FOR CONFERENCE

Wollongong has been selected as the venue for a national conference of logicians, to be held in August 1980. The conference has been organised by the Australian Logic Association, which has members in universities, colleges, and schools throughout Australia and New Zealand.

At its national conference at Monash University in Melbourne earlier this month, two Wollongong University academics were elected to its top posts. They are Dr. Martin Bunder of the Department of Mathematics (President) and Dr. Jim Mackenzie of the Department of Philosophy (Secretary.)

The University of Wollongong is one of the major teaching and research centres in logic in N.S.W., with activity concentrated on three departments of Mathematics, Philosophy and Computing Science. Students attending the University of Wollongong in 1980 will have wider opportunities to study logic than are available in many of the older and larger Australian universities.

It is expected that university departments will provide some financial support for the conference which will bring visitors to the region from all Australian states and overseas.
The University of Wollongong has attracted $114,928 in research grants from the A.R.G.C.

The University welcomes the support being given by the A.R.G.C. Flourishing research activity is essential in a university. In recognition of this the University of Wollongong allocates a significant amount of its funds towards research projects which may eventually attract financial support from external sources.

Competition for the A.R.G.C. grants is extraordinarily keen and the university's performance here is seen as a vindication of its research policies.

The successful applicants for grants in 1980 are:

**Humanities and Social Sciences**
- Professor R. Johnston - $7,188
  Australian Science Policy: the state of University Research.
- Dr. I. McLaine - $8,210
  Britain, the United States and the Korean War.
- Dr. Linda Viney - $12,416
  The Transition of the Chronically Iii from Hospital to the Community.

(Dr. Viney is presently at Macquarie University, but will take up the position of Professor of Psychology at Wollongong University in January, 1980.)

**Chemical Sciences**
- Dr. J. Ellis - $6,000
  Detoxification of Phenolic Effluents by Oxidation/Precipitation.
- Dr. P. Burton - $5,000
  The nature of chemical bonds to metals - precise theoretical studies.
- Professor B. Halpern and Associate Professor P. Bolton - $14,651
  Rapid and Quantitative Amino-acid analysis by direct mass spectroscopy.

**Physical Sciences**
- Professor P. Fisher, Dr. P. Simmonds & Dr. A. Martin - $8,000
- Dr. L. F. Smith - $7,146
  Fast Photo-Electric Photometry of Astronomical Sources.

**Biological Sciences**
- Dr. T. Grant and Dr. A. Hulbert - $3,500
  Studies on the environmental biology of the Platypus.
- Professor A. D. Brown - $6,625
  Thermodynamic studies of solute retention and solute fluxes in microorganisms.
- Dr. R. M. Lilley and Professor A. D. Brown - $7,075
  Photosynthesis and osmoregulation in marine algae. Isolation and study of chloroplasts from Dunaliella.

**Earth Sciences**
- Dr. R. Facer and Professor A. Cook - $2,022
  Thermal Properties and Thermal history of rocks from the Southern Sydney Basin.
- Dr. G. Nanson - $1,578
  Channel Migration and the character of flow through meander bends.

**Engineering and Applied Sciences**
- Dr. R. Chowdhury - $6,000
  Reliability approach to soil stability problems in geotechnical engineering.
- Dr. F. Paoloni - $1,200
  Microwave Wavefront reconstruction.
- Dr. Y. Loo & Associate Professor W. Upfold - $3,317
  The development of earthquake energy absorbers for bridges.
- Professor J. Reinfields - $7,000
  Performance and evaluation of a portable operating system.

**ILLAWARRA TERTIARY EDUCATION**

The Inaugural Meeting of The Illawarra Regional Advisory Committee on Tertiary Education was held recently at The University of Wollongong. Representatives of The University, The Wollongong Institute of Education and The Wollongong Technical College attended.

Pictured here on the occasion are from l to r Back Row: Mr. W. Pike (W.I.E.), Mr. M. Koder (W.I.E.), Mr. D. S. Short (T.A.F.E.), Professor L. M. Birt (University), Front Row: Professor A. M. Clarke (University), Mrs. E. Absonon (T.A.F.E.), and Dr. P. Rousch (W.I.E.).
Recently the University’s Development Officer, Mr. Giles Pickford, hailed a taxi in town and asked to be driven to the University. “Ah”, said the driver, “That is Wollongong’s greatest asset.” This remark naturally led to a lively conversation between passenger and driver, Mr. Laurie O’Leary of Balgownie. Mr. O’Leary knew the University well - he and his father before him had run a dairy farm for many years on the land where the University and the Institute of Education now stand.

Mr. O’Leary snr., had earlier run a dairy farm on land leased from the Fuller family at Shellharbour but early in 1943 decided it would be better for the education of his 13 children to move to Wollongong. He therefore arranged to lease 440 acres of land from the Dobbie Family this included the land on which the University Union stands (their corn paddock was the site of the present Union Building.)

At the time of the move, Laurie O’Leary was serving with the A.I.F., in New Guinea, but his father, with the aid of 7 of his sons decided to take the cattle, about 100 head, by road from Shellharbour to their new home. It was a pretty wild round-up with the cattle invading every private garden and every open shop door en route.

After his father’s death, Laurie O’Leary continued to run the dairy farm until 1961. “We knew from the first”, he said, “that our lease was a limited one but we never resented that. I always felt that the University would be the city’s greatest asset and that young people would in the future have better chances in life through it than I had as a youngster.”
David Vance and Maurie Scott of the Department of English, and Heather Pulsford of Wollongong High School deserve the thanks and praise of the 1200 people who saw Noye's Fludde: The Chester Miracle Play put to music by Benjamin Britten and produced by the Department of English in association with a cast of 60 enthusiastic children wearing animal masks.

The play, which was staged in St. Mark's Church at West Wollongong, begins with a hymn of pilgrimage sung by the audience.

After the hymn God's voice is heard instructing Noah to build an Ark to preserve him, his family, and all beasts, great and small, from the coming Flood. Noah's children enter, offering to help build the Ark with their small tools. Mrs. Noah enters with her gossips, and sits at the side of the stage mocking Noah, as he builds the ark. When invited to enter the finished boat, she refuses, and continues to mock her husband.

Bugle fanfares herald the arrival of the animals, who march through the church onto the ark, singing a vigorous Kyrie. Mrs. Noah refuses still to join her husband, until the rising waves wash her gossips away, and she is dragged shouting into the ark.

A momentary calm precedes the storm, which now begins slowly, gathering momentum and force till at its height the full cast and congregation sing the famous hymn Eternal Father, Strong to Save.

The storm abates, and Noah sends first a raven and then a dove to seek dry land. These roles are danced.

The dove returns with a branch of olive, and Noah releases the animals from the ark. A jubilant Alleluia chorus is sung, with bugle fanfares, and then God's voice is heard proclaiming never again to flood the world. This is accompanied by the Ethereal sound of handbells, rung in the gallery of the church. The rainbow is created, and the cast begin the tune of Tallis Canon, which culminates in an eight-part canon, led by the audience.

The orchestra, too, was constituted largely of local children, playing strings, recorders, bugles, handbells and percussion.

They were used to supplement a cord of ten professional players (string quartet, piano duet, recorder, organ and timpani).

Britten has written music for the children's orchestra in such a way that it uses even the limited capabilities of beginners to the fullest, yet without demanding techniques as yet beyond command. As an educational experience for the players, the score is of great value, introducing young players to contemporary musical idioms, yet ones well within their grasp. 'The music is as enjoyable to hear as it is to play, and the memorable and simple tunes exciting to perform."

"Noye's Fludde" was produced for the Festival of Wollongong and also as a University contribution to the International Year of the Child.

Noah was played by English Lecturer Bill McGaw who is shown in the picture being made up by Heather Pulsford. Mrs. Noah was sung by Helen Mandl formerly of the Australian Opera and now an honours year student in French. The voice of God was Noel Meddows. The remainder of the cast was made up of Noah's three sons, their wives, a chorus of gossips and a chorus of sixty animals.
As part of exchange visits between Hayes Park School, Kanahooka and Wellington (N.S.W.) Primary School, a group of 40 students from 11th year classes visited the University Climatological Station on the 8th November.

The Climatological Station is operated by the Department of Civil Engineering and collects data on rainfall, temperature, windspeed, barometric pressure, humidity and air pollution. The station is included in the Commonwealth Bureau of Meteorology's official network and transmits data twice daily to the Bureau. The data is available to local industry, government authorities, broadcasting and publishing organisations and has been used for litigation purposes.

Above: Mrs. Olga Bouma of the Department of Civil Engineering explaining the operation to the students.
We wish to advise departmental chairmen to notify staff who may wish to use the Foundation for teaching or research in the coming year. Bookings for large groups need to be made well in advance. For further information please contact Dr. Gerald Nanson on extension 475 or Dr. Tom Grant on 967.

Note: Accommodation is restricted to working groups and the Foundation cannot be used for holiday weekends.

FESTIVAL LAURELS

Campus News congratulates the following university organizations for their excellent contributions to The Festival of Wollongong.

The Department of English and Maurie Scott, David Vance, Bill McGaw in collaboration with Heather Pulsford of Wollongong High, local schools and the musical community for “Noye’s Fludde.” This very successful children musical was considered by many to be the highlight of the entire Festival.

The University of Wollongong Cricket Club, in collaboration with The Lord Mayor and The Vice-Chancellor for the “Town versus Gown Cricket Match.” An exciting and an enjoyable time for all.

The University of Wollongong Historical Society for the inaugural “Rex Connor Memorial Lecture.” A fine performance by Mr. Gough Whitlam speaking to an overflow audience in the Union Hall.

Dr. V. Cincotta of the Department of European Languages in collaboration with Maurie Scott, the students of Italian and the Circolo Italiana for “La Serva Amorosa” by Carlo Goldini.

The University Camera Club for an excellent Photographic Exhibition in The Northern Lounge. May those people who stole some of the finest pictures rot in hell.

The Illawarra Planetarium Society, the Department of Physics and the staff of the University Library for the interesting Planetarium Display.

The University has made a contribution to the cultural, intellectual and sporting life of Wollongong of which all the above happy souls can be well proud.

HPS - SENATORS INTERESTED

Keen interest is being shown in developments in HPS by Commonwealth Senators Baden Teague and Christopher Puplick, respectively Secretary and Chairman of the Government members Education, Science and Environment Committee. These two Senators have contributed significantly to the current high standard of debate on issues of science and technology in the Senate. They see an important role for an HPS Department, with the orientation to contemporary problems of science and technology which Professor Ron Johnston is introducing at Wollongong, in aiding and improving policy formation and have offered their assistance in keeping the Department informed of important developments in Canberra and gaining access to relevant information.

FROM HANSARD

SCIENCE AND TECHNOLOGY

Senator PUPLICK - I ask the Minister for Science and the Environment whether he has seen a report prepared for the Australian Science and Technology Council in June, 1979, by Professor Ron Johnston which deals with science indicators and their role in Australian science policy. Does the Minister agree with the often made claim that there is a lack of up-to-date statistical data in Australia since Project SCORE - the Survey and Comparison of Research and Expenditure - was published, which allows changes in various aspects of science and technology to be measured and monitored? Will the Government give active support to a program to develop a comprehensive set of science indicators in Australia along the lines suggested by Professor Johnston?

Senator WEBSTER - I have not recently had my attention directed to that report. I know that it went to the Australian Science and Technology Council, that Council may have reported upon it. The particular comments that Senator Puplick noted have relevance to scientific information in the community today. The Department of Science and the Environment has endeavoured, through Project SCORE, bring together some of the facts. The honourable senator asked whether the Government will give consideration to supporting the development of science indicators so that they may direct the community more accurately than previously. I will take that question on notice and attempt to give the honourable senator an answer.

AVCC AND OVERSEAS STUDENTS

The Australian Vice-Chancellors' Committee is pleased that the Government has agreed to make some important concessions concerning the imposition of charges for private overseas students attending tertiary institutions in Australia, the AVCC Chairman, Professor Rupert Myers, has announced.

Professor Myers said the AVCC had made a series of representations to the Government since the proposed charges were first announced in the budget in August. In particular, the Deputy Chairman of the AVCC, Professor D. W. George, and the Vice-Chancellor of the ANU, Professor Low, had made direct representations to the Minister for Immigration, Mr. MacKellar; and the charges were discussed with the Minister for Education, Senator Carrick.

One of the important issues raised by the AVCC and accepted by the Government was that the charge should not be levied against students who went on to do a Diploma of Education after completing a first degree.

Another was that students who were already in Australia to complete their final years of secondary school should not be charged the fee when they went on to university.

Professor Myers said the AVCC would continue to make representations to the Government over the plight of some students undertaking postgraduate work in Australia. Many of these students made direct and important contributions to the universities they attended through their study.

The Government had agreed to exempt some scholarship holders from the charges, but the AVCC believed that some further concessions were necessary.

The detailed arrangements to apply for next year were announced by Mr. MacKellar.

AVCC VISITING FELLOWSHIPS 1980/81

Two AVCC Visiting Fellowships will be offered for Australian scholars to visit universities in overseas countries in 1980. The applications must be sponsored by and submitted through the Applicant's own University. The AVCC requires that the application be signed by the Vice-Chancellor. Details of the scheme are available from The Academic Registrar. Nominations should be sent to the Academic Registrar, Mr. B. C. Moldrich, no later than 30th November, 1979.
METALLURGY OFFERS A CAREER

Above: Members of the Department of Metallurgy. (l to r): Mr. Graham Hamilton, Mr. Bob DeJong, Mr. Nony Salasoo, Professor Geoff Brinson, Dr. Tara Chandra, Mr. Mohamed Metwally, Mrs. Patricia Batt, Assoc. Professor Nick Standish, Mrs. Margaret Standen, Mr. Fred Groves, Dr. Gordon Delamore, Mr. Tony Pearce, Assoc. Professor Noel Kennon, Dr. Druce Dunne. Absent:- Mr. M. Atkinson, Mr. R. Kinnell, Mr. J. Lewin.

Considered as the art of working metals, metallurgy is one of the oldest arts known to man. Archeologists such as Schleeman at Troy and Carter at Thebes have brought to light superb examples of metal work dating from earliest historic times. At Troy some of the gold found was of such a high purity it must have been deliberately refined. It is indicative of the importance of metals to the history of mankind that it has become customary to refer to whole eras of early history by the name of the dominant metal of the period. Thus people refer to the ‘bronze age’ and to the ‘iron age’ even though scholars today regard this as an oversimplification for the periods merged and even varied from country to country so that the development of bronze was going on while the production of iron was also proceeding.

The first metals known to man were those that occur in the native state, possibly nuggets of gold found in the sands and gravels of river beds.

Copper is another metal occurring in the native state in many parts of the world and usually in a high state of purity. The earliest smelted copper artefacts were examples found in Iran and probably date back to about 3800BC.

Iron is much more difficult to smelt and reasonably large-scale use of smelted iron begins only about 1000BC.

Early metallurgists were empiricists and traditionalists and a lack of chemical knowledge precluded the development of a scientific approach to extraction metallurgy until the underlying chemical processes of oxidation and reduction became understood in the eighteenth century.

Before the beginning of the Christian era 7 metals were recognized - gold, copper, silver, lead, tin, iron and mercury. Important alloys were also discovered during antiquity bronze, an alloy of copper and tin, is very old, though early alloys must have been produced pretty much in high-or-miss fashion. The earliest known piece of bronze is a rod found in the pyramid of Medum, the date of origin being generally accepted as around 3700BC.

The growth of chemistry led to the discovery of new metals such as nickel, cobalt and chromium, which are important in themselves but even more important as "alloying" elements.

Today, the term 'metallurgy' is applied not to the work of the skilled metal worker but to the scientific study of metals. Even as such it is a reasonably venerable science when compared with such Twentieth Century newcomers as electronics and computer science. The essential idea of physical metallurgy, namely that the important properties of alloys (e.g. strength, electrical and magnetic properties) can be understood and controlled, developed with the growth of scientific knowledge generally. A key figure is H.C. Sorby, 'a descendant of a long line of Sheffield master cutlers', who, in the eighteen-sixties began to study the metallic meteorites and iron alloys by examining the carefully polished surface of specimens under a microscope.

Today, Metallurgy is firmly established as an Applied Science of an interdisciplinary nature involving also the study of associated disciplines, such as mathematics, chemistry and physics. Departments of Metallurgy exist in major universities throughout the world and in Australia at present there are no less than thirteen in various tertiary education institutions. Not surprisingly, one of these is at the University of Wollongong - so often referred to as 'the steel city.'
WITH A HISTORY AND A FUTURE

What is surprising is that Australia, in common with the rest of the world, is currently suffering from a shortage of trained metallurgists - this seems to be part of a general drop in enrolments for science-based subjects. For a number of years the number of new graduates in Australia remained constant, however, a marked drop occurred in 1977 and will certainly be confirmed for 1978 when precise figures become available. The table below gives details.

Number of Metallurgists Graduating in Australia.

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<thead>
<tr>
<th>Year</th>
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<tr>
<td>1969</td>
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<td>1978</td>
<td>81</td>
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Clearly the thirteen departments now operating in Australia are not operating at anything like their optimum enrolment - an uneconomic situation and it is probable that consideration should be given to the development in Australia of several centres of excellence in general metallurgy, of which Wollongong would have a strong claim to be one. In the meantime, a substantial proportion of metallurgists graduating in Australia, do so from this University.

The University of Wollongong offers a course leading to the honours degree of Bachelor of Metallurgy after four years of full-time study or a longer period of part-time study. Satisfactory completion of the fourth year qualifies a student for a class of honours determined by the performance in all subjects of the course. Completion of the fourth year qualifies a student for the degree of Bachelor of Metallurgy.

Research interests in extractive metallurgy include the chemical engineering aspects of the blast furnace process being studied by Associate Professor Nick Standish and the techno-economic aspects of metallurgical resources and energy that interests Professor Geoff Brinson.

In the steel industry the blast furnace starts the flow of iron ("pig iron") to the steelmaking process where it is refined and the resultant steel cast into ingots or billets which are then rolled into plates, sheets, beams, etc., for use in the manufacturing and construction industries.

The modern blast furnace is the giant of the steel industry and of great economic importance. It typically costs $150 million and daily uses about 15,000 tonnes of ore, 5,000 tonnes of coke and 25,000 tonnes of air (!) - the lot costing about $400 million a year.

The three main branches of metallurgy are:

* Extractive Metallurgy, which is concerned with accepting the ore from the mine and treating it to extract the metal.
* Physical Metallurgy, involving a study of the internal structure of metals, using microscopes, both optical and electron, x-ray diffraction and other methods to relate the structure of the metal to its physical properties such as ductility, hardness and toughness.
* Mechanical Metallurgy, concerned with the theory and practice of forming metals into useful articles like bumper bars, door panels, pipes and so on.

The Metallurgy course offered at the University of Wollongong aims to prepare graduates for all aspects of the metallurgical industry. The common alternatives of this type of course are materials science or materials engineering courses. In such courses the methods of physical metallurgy are extended to cover materials generally and, in particular, ceramics and polymers are fully considered in addition to metallic materials. To provide adequate coverage of this additional material, extractive topics are either excluded or considered only in a very minor way. Materials courses have been introduced into American Universities and to a lesser extent in Britain. But recent trends show that there is a stronger demand for metallurgy courses than for materials courses and undoubtedly there are more opportunities in Australia for the trained metallurgist. To over-simplify somewhat there are two main types of employers seeking metallurgists in this country, namely the big metal-producing and semi-finishing firms (essentially the steel and aluminium industries) and a large number of manufacturing companies varying greatly in size from small foundries to the car manufacturers. And both groups are seeking mostly metallurgy graduates with a general training. The Metal-producing companies hope that their good, young graduates will gain experience on both the primary and secondary side of the industry and as a preparation for managerial responsibilities, whereas the manufacturing firms expect senior metallurgists to assume broad roles such as responsibility for material selection and performance or the effective operation of a variety of forming and heat treatment operations.

Research in Physical and mechanical metallurgy is directed to studies of structures and associated properties in a wide range of metals and alloys. In any material, the structure is formed or modified during any process to which it is subjected but our concern is restricted to the influence of solidification, of mechanical working and of heat treatment.

Solidification studies are being conducted by Mr. Nony Salasoo who is interested in the foundry aspects of casting metals to complex shapes and by Dr. Gordon Delamore who is working on very high rate (split) quenching of liquids to form non-crystalline structures in such alloys as iron-silicon-boron. He is also making a study of defect structures in low melting point tin-cadmium alloys after directional solidification.

Mechanical working processes at high temperature are being examined by Dr. Tara Chandra using the stiff tensile testing machines developed and built in the Department. Mr. Malcolm Atkinson is also using these machines and a servo-hydraulic testing facility to investigate formability and work hardening of sheet metals particularly low carbon steels.

Deformation at room temperature of such alloys as nickel-titanium, copper-aluminium-nickel and copper-zinc-aluminium produces a change in external shape that can be recovered completely by modest working. Associate Professor Noel Kennon and
METALLURGY CONT’D.

Dr. Duce Dunne are using research grants from the University and from A.R.G.C. to study the structures formed during the deformation and the heating of these shape memory alloys. They are also working on the structures formed in plain carbon steels and in high strength low alloy steels (along with Dr. Tara Chandra) by a variety of heat treatment processes.

These structural studies are made using the optical microscope, scanning electron microscope, transmission electron microscope and x-ray diffraction facilities of the Department, and the computing facilities of the University, very capably assisted by Professional Officer, Mr. Tony Pearce.

The whole research effort of the Department is facilitated by the support received from the excellent workshop staff supervised by Mr. Graham Hamilton.

Nobody could doubt the appropriateness of having a lively and flourishing Department of Metallurgy at the University of Wollong. Neighbouring Port Kembla is a centre of ferrous and non-ferrous industries and the largest metallurgical complex in Australia. Almost as handy is the research establishment of the Australian Atomic Energy Commission at Lucas Heights, so that, from the point of view of a metallurgist, Wollongong is the centre of an area that could hardly be more interesting and diverse. This is reflected in that the University produces more than the average number of Metallurgy graduates.

Regarding the importance of the discipline to the world in general this survey can appropriately conclude with the words of one enthusiastic metallurgist: “I can hardly think of anything in general use today that is not made of metal or was not made on machines made of metal. Without Metallurgy, civilization as we know it today could not go on.”

INTERDISCIPLINARY SEMINARS

This year (1979) has seen the introduction to the University of a regular series of staff seminars to discuss epistemological and methodological problems - for example, the character of scientific explanation, the status of the social sciences, historical method, etc.. A comparative, interdisciplinary, approach has been adopted, and participants have included members of the Departments of History, Philosophy, History and Philosophy of Science, Psychology, Sociology, Metallurgy, Chemistry, English, Education and Geography, not to mention the Academic Registrar!

Dr. John Bishop (Philosophy), one of the founding members of the seminar, commented that he thought that the experiment had proved successful, and that participants had found it stimulating to consider methodological problems in an interdisciplinary context. The seminar has proceeded, either by discussing a section of a methodological work, or by having a member of the seminar leading a discussion on a problem in his or her own discipline or research project. Proceedings have been informal; after dinner together in the Bistro, participants have met for up to three hours - sometimes in Dr. Ian McLaine’s room, and sometimes in Dr. Beverley Walker’s. Dr. Bishop said that he thought the seminar had produced a kind of genuinely academic interchange between staff in different departments with a congenial social dimension to it as well. It seemed that there was much to be gained from a sympathetic appreciation of other people’s research methods and problems. Although he thought that participants might disagree about the extent of strict academic progress made so far, Dr. Bishop said that he was certain that everyone believed that the seminar had great potential and was well worth continuing in 1980. The Academic Registrar, Mr. Challice Moldrich said that he attended the seminars as an interested spectator and enjoyed every session. He thought that the seminar group should be continued irrespective of whether or not the undergraduate subject Epistemology and Comparative Methodology was offered in 1980.

In parallel with the staff seminar’s development, the first 400-level General Studies subject has been devised during 1979, and will be offered for the first time in 1980. Called ‘Epistemology and Comparative Methodology’, the subject will be available for Honours and postgraduate students. Machinery has been arranged to enable Honours students who have the approval of the relevant Chairman of Department to take this course either in addition to their regular Honours programme or as a constituent part of it. Some departments already incorporate a methodological component into their Honours programmes, and may find it useful to complement this by including participation in the new General Studies subject as a requirement. The motivation for this development has been the conviction that the experience of interdisciplinary discussion of methodological questions can be of great benefit to an Honours student, allowing him or her to see the methodology of his own subject in a new perspective.

In 1980, then, the staff seminar will continue fortnightly during session. In alternate weeks, there will be a 2-hour tutorial seminar designed especially for students taking Epistemology and Comparative Methodology. This will allow students who may sometimes get a bit lost in the cut and thrust of debate amongst staff members to go over material at a more gentle pace, follow up some issues in greater detail, and be supervised in their reading.

In late September a memorandum was distributed to all members of academic staff providing further details of the seminar and General Studies subject, and inviting participation in 1980. Further copies of this memorandum can be obtained from Dr. Bishop, Department of Philosophy (ext 403).
ILLAWARRA PLAN

On Friday, 19th October, the University of Wollongong was host to a seminar concerned with the issues raised in the Draft Illawarra Regional Plan. The Draft Plan has been prepared by the Planning and Environment Commission of New South Wales, and covers issues such as use of coastal lands, provision of public transport, and development of ports and harbours.

The seminar, which attracted over 100 people, was chaired by Professor Murray Wilson of the University’s Department of Geography. Opening remarks were made by Mr. John Wickham, a Commissioner of the Planning and Environment Commission, and Chairman of the Illawarra Regional Planning Committee. Mr. Wickham’s comments were followed by those of Professor Mal Logan of Monash University. Professor Logan is a specialist in the field of regional planning. Dr. Ken Ausburn and Mr. John Steinke of the University’s academic staff, spoke on the social, economic, and environmental issues covered within the Plan.

Representatives of a number of local environmentalist groups attended the seminar, and questions raised by them during open discussion were particularly concerned with prospects for better public transport facilities in Wollongong.

Local authorities, interest groups, and citizens generally have been invited to study the Draft Plan and to submit views and ideas to the Regional Planning Committee. For further information please contact the Wollongong Office of the Planning and Environment Commission, Phone (042) 28 4644.

ARCHIVES GEAR FOR THE EIGHTIES

New reference and reading areas for researchers, the establishment of an Archives Panel, the obtaining of State records pertaining to the Illawarra and the surveying and scheduling of official University records are major developments now underway at the University’s Archives. Their benefits should be felt well into the 1980’s.

Current extensions to the Archives Office, first floor, Library will provide a secure, quiet reading room for up to six researchers, a small entrance/reference lobby and 24 bays of high quality mobile shelving.

Sections of the complex can be closed off to permit researchers to work by arrangement during the absence of staff. A “locker” system for records on issue will assist in this approach, possibly a first for Australia.

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Above: Archivist, Laurie Dillon pictured in the Archives, for which interesting developments are under way.

upgrade its minimal archival facilities in the Library and a concurrent willingness of the Department of Decentralisation to keep its valuable Illawarra development records in the region.

The surveying and scheduling of official University records will intensify, so enabling the systematic sifting out of valuable records and the routine disposal of unwanted, space consuming items.

Archives staff are receiving a small but increasing number of historical enquiries about the University.

With the University five years old on 1 January, 1980, a review of all documentation back to the early 1950’s and the days of the University of Technology will be carried out during the year.

It is intended to publicise findings of interest, not forgetting early personalities and problems.

Laurie Dillon, the University’s Archivist views the Archives as moving rapidly away from having something of an outpost existence (and mentality) in the University. But a major problem still remains.

“We are becoming better integrated and much more certain of our future place and potential.

However, our Kenny Street repository is not environmentally suitable for the permanent housing of valuable records. Also, to service it from campus is becoming an increasing burden for a small, busy staff.

I believe the problem can be successfully overcome. If so, the 1980’s promises to be a very rewarding period indeed for all those concerned with the care and use of past documentation in the University.”
Peter McNamara, Clerk of Works in the University’s Estate Division and Wilhelm von Appin, foreman for building contractor H. V. Jennings and Co., recently met on campus where Jennings and Co., are contractors for the new east wing of the Social Science Building, and soon found they had more in common than a mutual desire to have the building satisfactorily completed in time for first session in 1980. During the war Peter was an air gunner with the Fleet Air Arm. Wilhelm an air gunner with the Luftwaffe. Both were wounded in 1943. Result of this discovery, enhanced mutual respect and a sense of camaraderie.

Left: Wilhelm and Peter on the job.

Below: The University’s Estate Manager, Mr. John Bell (r) and Mr. R. Anderson of Jennings Industries, sign the contract for the Social Science Building extensions.