

# CAMPUS NEWS

A MAGAZINE FOR THE UNIVERSITY

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WEDNESDAY, AUGUST 31, 1977

## GEOLOGY STUDENTS ROCK THE BOAT



### They left no stone unturned

PICTURE: Members of the Geological Society team after winning the CommemWeek boat race on the lawn outside the Union. From left standing: Peter Cowan, Glen Hart, Mariann Thorne, Brian Kelley, Dennis Frost and Ross Tanswell.

MORE PICTURES PAGE 10

## V.C. pays tribute to Rex Connor

The University has lost a good friend, staunch ally and enthusiastic participant, the Vice-Chancellor, Professor L. Michael Birt, said after the death of Member for Cunningham, Mr. Rex Connor.

Mr. Connor had been a member of the University Council since August, 1975.

The Deputy Chancellor, Dr. David Parry, the Vice-Chancellor, Acting Registrar, Mr. Challice Moldrich and the Chairman of the Academic Senate, Professor Geoff Brinson, represented the University at the State funeral on Thursday, August 25.

"From the time I first came to Wollongong, Mr. Connor expressed a lively interest in the University," Professor Birt said.

"Mr. Connor helped lay the foundations of the University and his interest finally came in a fashion most welcome when he was elected to the University Council."

Professor Birt said the University was able to benefit from the knowledge and interest Mr. Connor had in local affairs.



# LEGISLATION CHANGE PROPOSED

## MEMBERSHIP OF UNIVERSITY COUNCIL

Council has been recently requested to consider an increase in its general staff membership.

At a recent meeting, Council resolved in the following terms:

- (a) that, without finally committing itself, Council favourably consider the request for an additional general staff member on the Council;
- (b) that the Vice-Chancellor be requested to prepare a paper on the composition of Council with specific reference to the ramifications and effects of an increase in the general staff membership of the Council;
- (c) that the Vice-Chancellor's document be published in 'Campus News' for comment prior to its presentation to the Council.

The Vice-Chancellor's document is printed below. Any comment on the document should reach Mr. B.C. Moldrich, Secretary, Committee on Legislation, no later than 30th September, 1977.

### Composition of the Council

1. It is my understanding that the composition of the University of Wollongong Council was part of the evolutionary growth of University Acts of Incorporation from the founding of the University of Sydney in 1850 through the University of New South Wales in 1949 and 1958, the University of New England in 1954, the University of Newcastle in 1964, Macquarie University in 1964 and the University of Wollongong in 1972.
2. The Act provides that the University Council should consist of
  - 2.1 *Parliamentary Members*  
Two, one elected by and from the members of the Legislative Council; and one elected by and from the members of the Legislative Assembly.
  - 2.2 *Official Members*  
Two, the Chancellor and the Vice-Chancellor.
  - 2.3 *Nominated Members*  
Four, appointed by the Governor on the nomination of the Minister.

### 2.4 *Elected Student and Non-Student Members (Thirteen)*

- 2.4.1 *Two*, elected by and from students enrolled at the University (but excluding full-time staff).
  - 2.4.2 *Three*, elected by Convocation (excluding students and full-time staff).
  - 2.4.3 *Three*, elected by and from professors.
  - 2.4.4 *One*, elected by and from non-professorial academic staff.
  - 2.4.5 *One*, elected by and from non-academic staff.
  - 2.4.6 *Three*, elected by members of the Council (excluding students).
3. Any variation in any of the classes of membership will have an effect on
- (a) the other classes of membership, and
  - (b) the other Universities, especially those with Acts similar to ours (e.g. Newcastle, Macquarie).
- Consequently, any proposal we make to the Government for a variation in membership will have to take account of (a) and (b).

4. I do not know the arguments which might convince the Government that the membership arrangements should be varied. Presumably the Government has sought to create representative and balanced bodies, acceptable to the people of the State as capable managers of their own University's affairs and responsible guardians of public money.

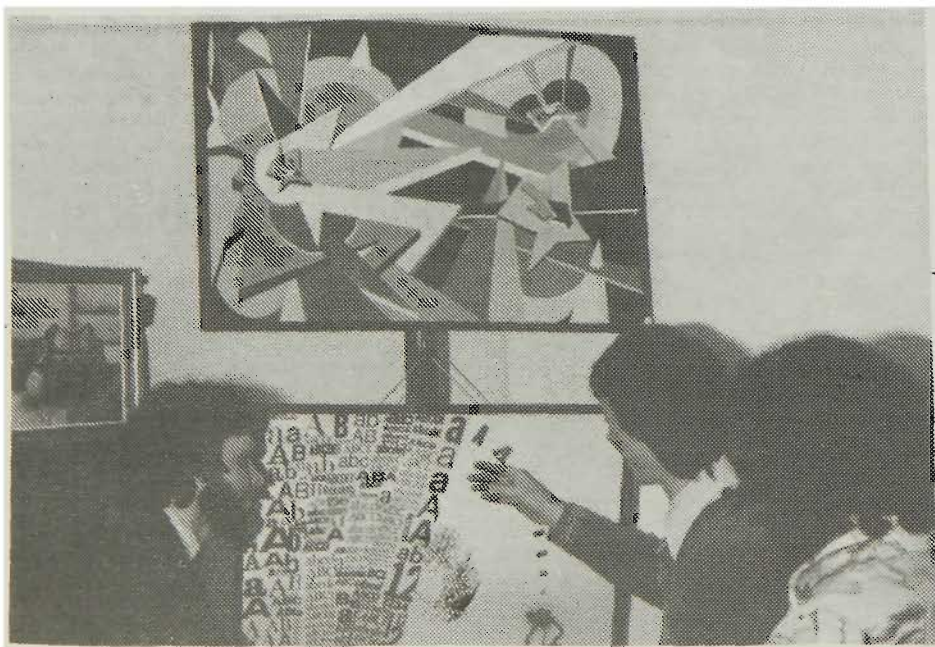
5. As I understand it, the main argument of the Wollongong Division of the Public Service Association in wishing to increase the non-academic staff membership from one to two is to ease the burden on a single member in watching the interests of his or her electors.

I have some difficulties with this view because I do not see the elected members as being "responsible to their electorate" in the same way as a member of parliament is. I see their first responsibility being to the University; but it is unlikely that all members of Council will share this view.

If the Public Service Association argument is accepted then perhaps it might also be argued that as a general principle, all specific electorates should have at least two members. Following through, this would require an additional member of non-professorial staff by a transfer of one of the professorial positions or an additional academic staff position. It might also suggest that there be two members elected from each of the Legislative Council and the Legislative Assembly.

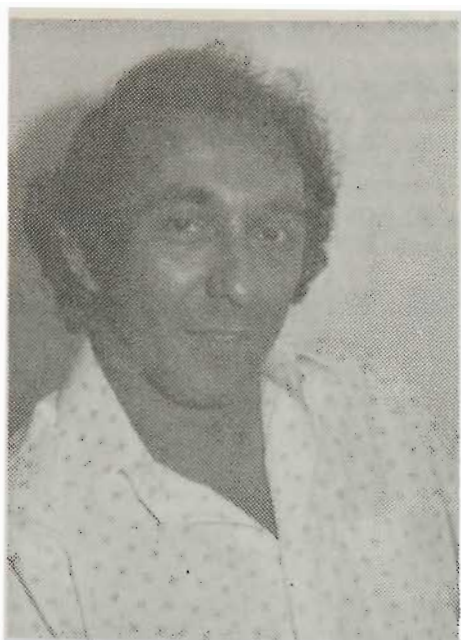
L. Michael Birt  
Vice-Chancellor

## Students' art admired



STUDENTS (left to right) Phil Brown, Michael Askew and Paul Quinn, all third year Arts students, admire paintings entered in the Student Art Exhibition. About 30 paintings, wall hangings and sculptures were on display in the Union Building for two weeks in August.

# New acting registrar



MR. Challice Moldrich

The Vice-Chancellor of the University of Wollongong, Professor L.M. Birt, has announced that the University Council had appointed Mr. Challice Moldrich as Acting Registrar for the next twelve months.

Mr. Moldrich will take office on August 29, when the Registrar, Mr. R.F. Stewart, leaves to examine management organisational structures of universities and teacher training institutions in the United Kingdom, Western Europe, Canada and the United States.

Mr. Moldrich is assistant registrar, and has been with the University since June, 1970, when he joined the then Wollongong University College as Administrative Officer.

Mr. Moldrich gained his B.A. at the University of Ceylon and his Diploma of Tertiary Education at the University of New England.

He is currently enrolled for a Ph.D. at the University of Wollongong. His subject area is decision making in Australian universities.



MR. Ron Stewart.

He is secretary to the Academic Senate and is also secretary to the N.S.W. Vice-Chancellors' Conference whose chairman is Professor Birt.

Mr. Stewart has been awarded an Administrative Travelling Fellowship by the Association of Commonwealth Universities/Commonwealth Foundation.

It is the first time the University has appointed an Acting Registrar.

## QUEEN'S MEDAL GRANTED TO FIVE ACADEMICS

The Queen has approved the N.S.W. Government's recommendation for the award of the Queen's Silver Jubilee Medal to five members of the University.

They are: Professor Ken Blakey, Professor Bert Halpern, Associate Professor Bill Upfold, Mr. Abe Segal and Mr. John Steinke.

PROFESSOR BLAKEY took up his position as Professor of Economics at the then Wollongong University College in 1969. Immediately prior to this appointment he was an economist with the International Bank of Reconstruction and Development, Washington, D.C., United States. Since coming to Wollongong, Professor Blakey has been active in the local community. Soon after his arrival he was appointed as co-director of research of the Illawarra Regional Development Committee. He is now a member of the Illawarra District Advisory Council.

PROFESSOR HALPERN. Professor of Chemistry at the University since 1970. He is the author of more than one hundred published papers. Research includes the diagnoses and study of genetic defects.

ASSOCIATE PROFESSOR UPFOLD. Joined the University College as lecturer in 1955. Promoted to Associate Professor in the University's Department of Civil Engineering in 1973. Has been chairman of International House, vice-president of the Y.M.C.A., Wollongong, and various consultancies held for Kembla Coal and Coke, Australian Iron and Steel, etc. Past chairman and part founder of the Wollongong Art Prize Committee.

MR. SEGAL. Lecturer in the Department of Physics at the University since 1960. Founder and president of the Illawarra Music Club. Founder of the University Music Club.

MR. STEINKE. Senior lecturer in the Department of Economics. Joined the University in 1964 and has been a regional economist for the United States Department of the Interior. Published many papers on regional, urban and transport problems. A member of the Regional Advisory Council.



Mr. John Steinke

## UNION BOARD ELECTIONS SOON

The Union Board of Management annual elections will be held on Monday, September 12 and Tuesday, September 13 between 12.30 p.m. and 6.30 p.m.

There are six vacant positions; the first five persons elected will serve for a period of two years and the sixth person elected will serve for either one or two years.

The period of service for the sixth elected person will be determined by the Board of Management at its November meeting in the light of the University Council's decision on October 28, 1977, as to the number of persons it wishes to nominate to the Board for 1977-78.



# UNIVERSITY EFFICIENCY

## but what does it all mean....?

What is meant by the efficiency of a University? A senior Australian academic and administrator has described the Federal Government as "mean" and a Minister in that Government has referred to universities as "the bloody end".

Efficiency is a measure of the adaptation of means to ends and the most efficient university is the one which most successfully manipulates Government to serve its own interests.

It is understandable that Governments should seek to deflect universities from the proper pursuit of true effectiveness into a hypochondriacal concern for their own functions.

The "functions" of a university, however, are not analogous to those of a human body nor for that matter to those of a plant, a machine or even a group of persons.

The functions of a university are convenient fictions and the merit of any definition of them depends entirely on whatever grand conception they have been devised to serve.

Because this is so it is possible to describe the functions of a university in any way one chooses and the most efficient university will be that whose descriptions have been most cleverly devised to ensure that Government policy is made to serve its interests.

Whenever the economy lurches from boom to slump, the Mondism of the "twenties" comes back into fashion and the demands of Government are for "rationalization".

Thus it is that in the boom an academic spends most of his time teaching and in the slump he spends most of it on committees.

It is possible, therefore, to discover how affluent a university is simply by determining how many man-hours are devoted to education and how many are devoted to organization.

It is a law of the economy of universities that metaproduction increases as income decreases.

At the present time the economy is in a slump and consequently, according to the official view, the efficiency of a university is to be seen as entirely dependent upon its organization.

In the figure below, the educational and organizational activities of a university are expressed in person hours (p). The shaded portion represents the efficiency (E) of the university.

It will be noted that the amount of time devoted to education is in inverse proportion to the amount of time spent in organization, since if  $x + y = 100$ , then the higher the value of  $x$  the lower the value of  $y$ .

It will also be noted that a university that spends 90 per cent of its time upon education (production) and only 10 per cent of its time upon organization (metaproduction) is not very efficient.

The 10 per cent efficiency of the university represented in the figure above would horrify a commercial or industrial manager.

It must be realized, however, that although such a university should look for a

considerable improvement, its efficiency is unlikely to be improvable beyond 60 per cent.

The line  $c$  in the figure above represents the common industrial assumption that even the most efficient industry must produce something.

The existence of the  $c$  Factor creates a critical condition in a university.

In stringent circumstances, the university will find itself in a double bind. Having improved efficiency to 60 per cent it can make no further improvement and therefore will appear to be making no further effort to increase its efficiency.

However, any attempt to improve efficiency beyond 60 per cent will call into question the credibility of the university as a crude production unit and so threaten its continued existence.

How is this predicament to be resolved to the advantage of the university?

It is implicit in what has been remarked already that in universities the law of the inverse proportionality of production and metaproduction operates and does so in favour of metaproduction in periods of economic slump.

It has also been remarked that the functions of a university are convenient fictions and that the most efficient university is that whose description of its functions has been devised to serve its own best interests.

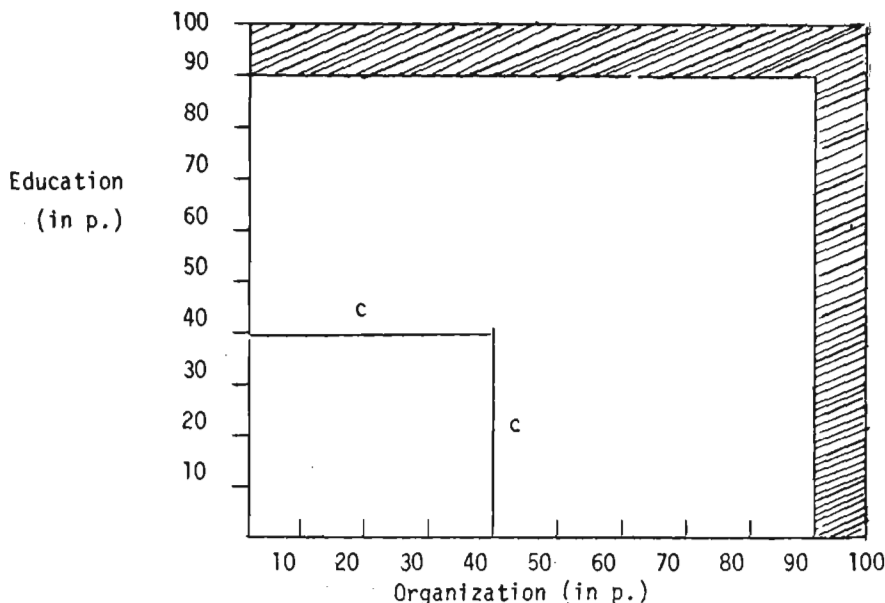
Consequently, during boom periods a university should represent its basic functions as in the figure given above, since official interest at such times is concentrated upon the volume of crude output.

During periods of slump, however, a university should redefine its basic functions so that the figures expressed on the vertical axis are considered to represent Organizational activity and those on the horizontal axis to represent Educational activity.

Such a redefinition of basic functions would reduce the  $c$  Factor to a matter of little consequence and a target of 90 per cent efficiency would become quite realistic.

It might be objected that this practical proposal would in effect constitute a considerable alteration in the nature of a university's crude production.

This is true, but in "education" as elsewhere protein deficiencies must be made good even at the expense of a few sacred cows.



Dr. Roland Quilp Jnr., OBS.,  
Director, East Ealing  
Institute of Managerial Technology.

## LIBRARY NEWS

### M.L.A. MAKES GIFT TO ARCHIVES

The Member for Corrimal, Mr. Laurie Kelly, who is Speaker of the N.S.W. Legislative Assembly, and a member of the Council of the University of Wollongong, paid an official visit to the University on August 9.

Mr. Kelly met with the Vice-Chancellor and senior members of the academic and administrative staff during his visit to the campus. He discussed the present state of the University, and its prospects for future growth.

During his visit, Mr. Kelly presented his personal general parliamentary papers to the University Librarian and the Archives Officer for preservation in the University's Archives.

Some of these papers relate specifically to the establishment of the University.



MEMBER for Corrimal, Mr. Laurie Kelly presents his personal general parliamentary papers to Archives Officer, Mr. Laurie Dillon, while the Vice-Chancellor, Professor Michael Birt and University Librarian, Mr. Jeff Hazell look on.



PROFESSOR R.G. Neale

### PROF. NEALE

### VISITS UNI

Director-General of the Australian Archives, Professor R.G. Neale, visited the University recently.

He was invited by the Registrar, Mr. Ron Stewart, and was hosted by the History Department and University Library.

Professor Neale was successively Lecturer, Reader and Professor of History at the University of Queensland 1946-69; Editor of the Historical Documents, Department of Foreign Affairs 1969-75; and was appointed the first Director-General of the Australian Archives in 1975.

His most recent publication is Documents on Australian Foreign Policy. Professor Neale spoke to history students, and met with University staff and toured the archives.

## CALTEX OFFERS AWARD

Details of the \$70,000 Caltex Woman Graduate of the Year Scholarship have been announced.

Application forms are currently being prepared and will be available later this month.

University of Sydney deputy principal, Mr. H.G. McCredie, said that the winners would be announced early next year.

Chairman and Chief Executive Officer of the Caltex Group in Australia, Mr. Raymond Johnson, said it was proposed to award a scholarship to a woman graduate in each state and the A.C.T., selected by a committee established by the Vice-Chancellors of the Universities in each area.

The scholarship would be for a two-year period with a yearly grant of \$5,000. The scholarships will be available to females who are Australian citizens or who have continuously resided in Australia at least seven years.

Graduates of any age, who will have completed an approved University degree or diploma course this year, are eligible for consideration.

Selection of scholarship winners will be based on several factors: scholastic and literary achievements, demonstrable qualities of character and accomplishments in cultural and/or sporting/recreational activities.

The scholarship is to assist each graduate to undertake further studies in either the U.S.A., the United Kingdom, Northern Europe, or in special circumstances — Australia. The scholarships do not contain special allowances for travel, or accommodation for married graduates.

A Select Committee will have overall responsibility for the administration of the Caltex Woman Graduate Scholarships.

## Paper seeks contributions

The Sun-Herald is seeking contributions from academics for its Think Tank column.

In a letter to Philosophy Department Chairman, Professor Lauchlan Chipman, the Assistant Editor, Chris Anderson, said the paper was in the market for short (800-950 word) articles that expressed an original thought or argument.

The piece does not have to be expressly written for the paper and could be a shorter version of a paper or lecture delivered elsewhere. Professor Chipman has had an article he submitted, accepted for publication.

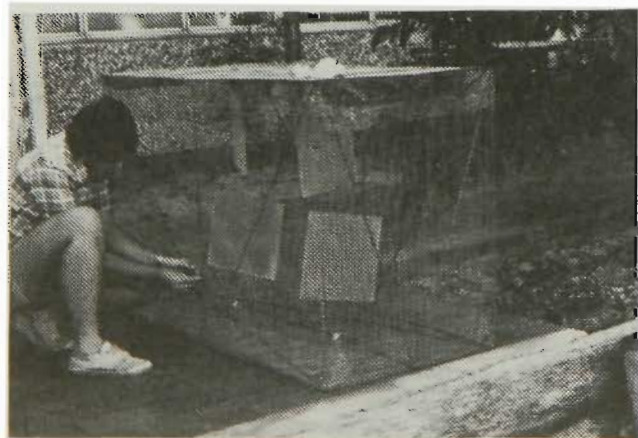


# SECRETS OF THE SEA



**MENDING** the cages is one of the constant jobs which Peter Moran undertakes when he visits the experimental cages each week.

## SPECIAL STUDIES OFF BASS POINT



**MR. Peter Moran** secures the plates into the experimental cages at the University.

Scuba diving may not be in the curriculum of any university, but it's a skill Peter Moran has had to acquire.

He has needed it in his research study this year for an Honours degree in the Department of Biology.

Once a week, Peter and his supervisor, Dr. Roger Bradbury, descend through the cool, green waters off Bass Point to monitor the progress of Peter's experiments there.

And once a week they also dive and check a complementary set of experiments on the sea floor near the entrance of the Wollongong Boat Harbour.

Peter's research project is in the field of ecology, the science of spaceship earth, and he hopes his research will help ecologists answer some perplexing problems about the balance of nature.

These problems are concerned with the ecological processes and mechanisms that permit earth's many different species, including man, to coexist.

Many species have the potential like man to multiply if uncontrolled and swamp this delicate balance and thus threaten the earth's vital life support systems.

This is an enormous problem, the stuff of many lifetimes of research, and Peter is studying only one aspect.

"One of the exciting things about any science", Peter said, "is that every scientist, from the beginning research student to the Nobel Laureate, can make a positive contribution to a problem."

Peter Moran is making his contribution in an interesting way. One of the things that has hampered ecologists is the sheer scale of their problems.

Ecological processes often take place over huge areas and take many years to complete. This is one of the reasons why ecology has for so long been a Cinderella science.

Its difficulty confined it for many years to being little more than natural history, the collecting and collating of detailed observations of the world of nature.

But new technologies, like scuba diving, now allow scientists access to hitherto forbidden environments where the same ecological processes may be observed on a smaller scale or occurring at a faster rate.

**Continued next page.**



**THE** cages are loaded onto a boat to be taken to the study area.

Continued from previous page.

And this has allowed ecologists like Peter to begin actively experimenting rather than merely passively observing — altering the environment in carefully controlled ways and mathematically analysing the effects on the natural community. As Dr. Bradbury noted "Peter Moran's research is typical of the new wave of ecological research and represents the transition of ecology from a soft to a hard science".

The experiments are on the fast growing community of encrusting marine organisms, the sorts of animals and plants that cover rocky shores, wharf pilings and, to the annoyance of their owners, yachts' bottoms.

Peter has placed specially prepared perspex plates at his underwater experimental sites. These are empty habitats which are quickly colonized by the larval forms of the encrusting community. As they settle onto the plates, these organisms form a neat, manageable, but nonetheless perfectly natural mini-community.

This community shows all the characteristics of larger communities, and so is an ideal study system for the ecologist.

"With our experimental community", Peter said, "we are able, in a few months, to duplicate conditions that might have taken many years to develop on the land."

The experiments are aimed at establishing the relative importance of two factors, predation and environmental predictability, on the makeup and stability of this underwater community.

Ecologists have long been aware that predators are beneficial in any natural community. Without predators, the population of many prey species would expand until they exhausted their food supply and starved to death.

The vast increase in numbers of kangaroos concerning many graziers in the west is now believed by ecologists to be the result of the eradication of their natural predator, the dingo.

Peter has established two sets of plates to test the effect of predation. One set is inside a fish-proof cage, fish being the major predators of this community; while the other set is fully exposed to roving fishes. On-the-spot observing and final microscopic examination in the laboratory will reveal the effects of predators on this community.

The second factor is the effect on the community of the unpredictability of the environment. The vagaries of the environment have a controversial role in ecology.

Some ecologists believe that communities are richest and most stable in the most benign environments. They point to the coral reefs and rainforests of the tropics as evidence.

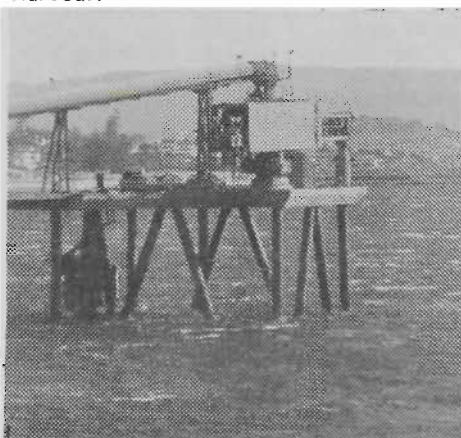
Other ecologists contend that uncertain, wild environments create robust, rich communities, and they cite the vigorous and varied growth of organisms on the wildest rocky shores. This is a particularly important controversy to Australia with its great range of environments and its legendary legacy of bushfires, drought, cyclone and flood — all unpredictable and all pervasive.

Australians need to know the importance of this variability in order to be wise stewards of their adopted land.

Peter is "building" this aspect into his study by duplicating his experiments in two environments very similar in all respects except their susceptibility to wild storms.

One site is the jetty at Bass Point, 25 km. south of the university.

Through the co-operation of the owners, the Pioneer Company, Peter has been able to locate his experiments under the jetty. This jetty runs straight out to sea and is in a very exposed location. The other experiments are located in a sheltered position near the mouth of the Wollongong Boat Harbour.



THE study area at Bass Point. The cages were lowered into the water slightly south of this jetty.

The experiments have now been going for about three months and all the plates are now covered with a healthy fur of tiny animals and plants. This fuzz replaced a fine film of microscopic marine bacteria, the initial colonizers of the empty plates. Eventually, other larger animals and plants will gain a foothold and make their presence felt on their smaller neighbours.

Peter hopes to continue regularly monitoring the experiments for another month or so before finally retrieving the plates and examining them in the laboratory.

And already the results look very interesting with some distinct species of organisms having settled. The plates exposed to natural fish predation show a much heavier and more varied growth of organisms than those artificially protected from fish, suggesting that, in the initial stages at least, predation is a positive rather than a negative factor.

But the results of the environmental predictability factor are more equivocal. The two different sites so far show very similar patterns of community growth. The answer to this probably lies in the environment itself. This year it has capriciously refused to supply any decent winter storms.

"This was just the sort of unpredictability we didn't expect", Peter said laconically. The fickle Australian environment may yet have the last laugh.

## CITY DOCTOR JOINS PSYCHOLOGY STAFF

**A Wollongong psychiatrist has been appointed an Honorary Visiting Fellow at the University.**

Dr. Gordon Davies will lecture 300-level students in Psychology of Abnormality.

He has been associated with the Department of Psychology since 1975. Dr. Davies was one of the members of the psychology-sociology-geography research group that conducted a survey of community psychopathology for the New South Wales Health Commission, Illawarra Region Directorate.

His qualifications and affiliations include Bachelor of Medicine and Bachelor of Surgery (University of Sydney, 1967); Diploma of Psychological Medicine (Royal College of Physicians and Surgeons, London, 1972); Member of the Royal College of Psychiatrists (London, 1973); and member of the Australian Psychological Society.

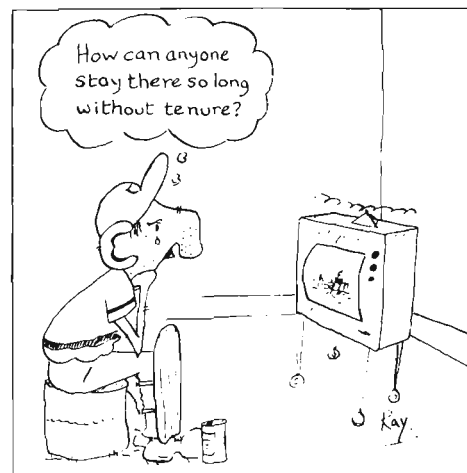
He has been working as an honors student in the department with the aim of expanding his grasp of the basic science of psychology to provide a basis for a Ph.D.

Dr. Davies said that the appointment would formalise his studies in teaching psychology.

Dr. Davies, a commercial pilot who is currently building his own plane, is also researching aviation psychology, including responses to stress and drugs.

He is a member of the Committee of Aviation Medicine of Australia and New Zealand.

Psychology Departmental Chairman, Professor Alex Clarke, said Dr. Davies' research links and his expertise in psychiatry would provide a valuable complementary contribution to the teaching of abnormal psychology at the University.





# LECTURER HEADS FOR THE 'ACTION'

One of the things which to me characterizes science in the U.S. is that sufficient resources are invested in scientific research to virtually ensure a constant level of achievement over a very wide front; the U.S. takes its scientists seriously.

Being from Australia where scientific research funding is not only at perilously low levels but also very subject to political whim, I jumped at the opportunity afforded by a period of study leave to head for the "action".

The scientific action is widely distributed geographically in the U.S. with both government laboratories and major universities making continual contributions.

Because I am a teacher, I had a natural preference for the latter class of institution and with the help of a Fulbright Scholarship I was able to arrange a visiting associateship at California Institute of Technology.

Caltech continues to rank in the top few science and engineering schools in the country and I felt from the outset that a stay there would help give me a true feeling for the way science is pursued in an environment where, though competition is fierce, resources are available to fund major scientific endeavours.

I was not disappointed in the slightest with my choice of site.

Caltech is very jealous of the reputation of its Faculty and being small in student numbers (about 800 undergraduates, about 800 graduate students) is very highly selective of students.

The potential for achievement there is realized through the substantial support, both government and private, that the faculty attracts for research.

I also attended two conferences where I delivered papers (Sanibel Island Quantum Chemistry Conference and Workshop, and the Ohio State University Molecular Spectroscopy Symposium) and a third where I just listened (Asilomar Western Spectroscopy Conference).

The Sanibel conference had the unexpected spin-off of an invitation to the University of Mexico in Mexico City, where, in addition to giving a seminar, I was involved in research consultation over three days.

With the exception of the Mexico adventure, the other activity I have so far described could be classified as "all in a day's work" for anyone having a semblance of professional interest in his work, and I was conscious that just this sort of activity was not of itself sufficient to have me feel a part of the great surge of science in the U.S.A.

How could I achieve this? Well I have become involved in two quantum chemical computing projects while there.

The first was with Vince McKoy at Caltech (on  $O_2$  photoionization cross-sections — I wanted to learn some scattering theory and learn about discrete methods for handling continuum phenomena).

I also took advantage of a stay of several weeks at the University of Colorado/JILA at Boulder to act as consultant on a computational project to predict the nature of electron scattering resonances in alkali halide molecules.

This actually involved taking a postdoc. and a Ph.D. student of Bill Reinhart's to the

## STUDY LEAVE

National Center for Atmospheric Research CDC7600 computer and computing with them morning, 'noon and night every day for 12 days.

With that sort of effort we should have, and in fact did, break the back of the problem, and though work is continuing on the resonances I'll be able to write up quite a nice little paper on the nature of the electron distribution in alkali halide molecules.

With these projects you can perhaps see I gained a feeling of participation but these were not the ways to enter the cut and thrust of scientific debate which would, in a sense, round out my experience.

However, I did indeed become involved in a little cut and thrust right at Caltech.

Ross Dooley in his Honours Thesis work at Wollongong in 1975 had begun a study of the properties of ground state ozone which indicated that not only the normal bent ozone existed but that an equilateral triangle (cyclic) form existed as a secondary



DR. Peter Burton

form which could possibly exist in thermal equilibrium with the bent form.

This suggestion had been made previously by other research groups, but the most recent study at that time was by Goddard *et al.*, who in 1975 published results of theoretical modelling of ozone which implied that the cyclic form corresponded to an excited electronic state of the same symmetry as the ground state.

Not content with this latter picture in view of published kinetics experiments of the reaction  $O + O_2$ , last year Dawn Harvey agreed to my suggestion to follow up Ross' work for her (excellent) Honours Thesis using much more sophisticated modelling techniques that I had got going at Wollongong over the 75/76 summer.

With significantly reduced errors in computed structure compared to Goddard *et al.*'s modelling, Dawn obtained results which confirmed the great stability of the cyclic form on the ground state potential surface.

When we published this work in *Nature* this April, we identified the cyclic ozone as

the first ozone precursor observed in  $O + O_2$  recombination.

With these experiments and our computed results we can now attribute a rather wide ranging significance to the cyclic ozone in the chemistry of the stratosphere, where we feel convinced that its inclusion will significantly improve overall atmospheric modelling.

As I indicated, this work generated some lively discussion at Caltech where Bill Goddard is a faculty member, partly because our results stimulated a reinvestigation of his 1975 modelling which removed some assumptions but which still had cyclic ozone just above dissociation.

Though Bill's total energies are worse than ours, he believes he has qualitative arguments to back up his prediction.

His approach to the modelling is formally very nice but restrictions in the actual computational part of his group's work lead me to think his conclusion is not necessarily correct.

Quite the contrary. In fact Fritz Schaefer at Berkeley had rattled off some rather large computations (which have yielded the currently — but temporarily! — lowest energies for each form of ozone) since he saw our results in Australia last year, and he confirms our qualitative prediction.

Fritz's calculations can be improved too, but he's happy with his results as they stand.

The technique we used at Wollongong differs from each of these others, but of the three it has, I believe, most potential as a vehicle for further refinement in the modelling.

With improved computing resources at Wollongong we can easily undertake this refinement, which will be important to resolving the precise quantitation of cyclic ozone's stability, and, not so incidentally, help serve to illustrate the best techniques in modelling even larger molecules.

While I am meanwhile cautious about the longevity of our precise quantitative estimate of cyclic ozone's stability, Fritz's confirmation of the qualitative regime of its stability along with the publication this year of three different experimental investigations of ozone and related molecules, revealing properties which either directly or indirectly support our view of the nature of the ozone molecule and its spectroscopic and reaction characteristics makes me feel sure we are on the right side of the controversy about cyclic ozone's stability.

Furthermore, our work has directly stimulated three separate experimental searches for cyclic ozone, so presumably I am not alone in this feeling; I am confident of early success.

My involvement with ozone and its properties enabled me to become embroiled in science as it is happening in the U.S.A. and I feel as a consequence that I really got from my study leave the full complement of possible benefits and experience, and this, I think, has made me much more mature scientifically.

As my science is not a separable compartment of my life, I think I benefited personally from this total involvement too, but perhaps that is for others to judge.



# ITALIAN AND MUSIC CLUBS TO PRESENT CHAMBER CHOIR

On Thursday, September 25, at 8.00 p.m., in the Union Hall, Il Circolo Italiano, in conjunction with the Music Society of Wollongong University, will be presenting the Chamber Choir of Sydney University conducted by Dr. Nicholas Routley, lecturer in music at Sydney University.

The choir has an extensive repertoire ranging from music of the thirteenth to the twentieth centuries.

The choir has broadcast for the A.B.C. on several occasions and will, later this year, present a Midday Music programme at the Opera House.

The programme being presented Wollongong will be an all Monteverdi one. will include a series of madrigals, including the famous Arianna's Lament for five part choir.

There will also be a number of solo items accompanied by a small continuo group.

Admission: Adults \$2.50; Students and pensioners \$1.00.

The next meeting of the club will be held on September 6, in the A.C.S. annexe.

Patricia Deegan,  
Publicity Organiser,  
Il Circolo Italiano

## CIVIL ENGINEERING EXPERT VISITS

Professor Shamsher Prakash, Professor Civil Engineering at the University of Roorkee, India, visited the University's Department of Civil Engineering for two weeks in August.

Professor Prakash's many outstanding achievements include awards and prizes for some of the one hundred papers and research reports he has had published.

He has been associated at the highest level with the International Society for Soil Mechanics and Foundation Engineering, has been president of the Indian Geotechnical Society, an elected member of the Council of the Institute of Engineers, India and editor of journals and bulletins in his discipline.

Professor Prakash has supervised research leading to several postgraduate degrees. He has been invited for lectures internationally.

Professor Prakash is a fellow of the Institute of Civil Engineers, London, a Fellow of the American Society of Civil Engineers and a Fellow of the Institute of Engineers, India.

Roorkee University is one of the best Universities in India in the field of civil engineering, with research dating back more than one hundred years.

# Uni. Day a success

MEMBERS of the panel for University Day included (left to right) Mrs Val Fell, District Council president of the Parents' and Citizens' Association; Mr. Julian Sheen, Child Migrant Education Centre consultant; Ms. Nance Cooper, N.S.W. Teachers' Federation research officer; Dr. Rex Meyer, Centre for Advancement of Teaching Director, Macquarie University; Mr. Michael Halls, S.R.C. president; Professor Iain Wallace, Professor of Education, Deakin University; Mr. Arnold Goodwin, Port Hacking High principal; and Professor Ron King, Chairman of the University's Education Department.



N.S.W. Higher Education Board Chairman, Mr. R.E. Parry, said there had been an enormous increase in the freedom given to teachers in recent times.

Mr. Parry said this in his University Day address at the Wollongong University Day Seminar on August 12.

The theme of the seminar, which was held in the Pentagon Lecture Theatre, was: "Teacher Training in Universities".

In my view, there has been the enormous increase in the freedom which has been accorded to teachers to determine not only the way in which they wish to perform as professional teachers in the classroom, but also the curriculum content of the courses they teach," he said.

Even though I have no doubt that teachers still consider themselves subject to irksome bureaucratic constraints in their professional decision making, most people outside the classroom see the facts as otherwise.

"Indeed, the public criticism which has recently become so strident about the nature and standards of school education indicates that a large element of our society considers that the trend to teacher autonomy has gone too far and too fast, and, that the tendency for government education authorities to issue only generalised guideline syllabuses, within which individual teachers may largely choose detailed subject matter at their own discretion, has been a failure."

About 150 people attended the seminar, which included group and panel discussion.

Mr. Parry commented on the innovative nature of the day's proceedings in that the discussions preceded the University Day address.

One of the organisers said it was general opinion that the arrangement encouraged greater participation and interest in the speaker's address.

## Academic calendar

The Academic Senate has resolved that the academic calendar for 1978 be:

### Session 1

27th February - 14th May (11 weeks)  
May recess: 15th May - 21st May (1 week)  
22nd May - 11th June (3 weeks)  
Study Recess: 12th June - 18th June (1 week)  
Examinations: 19th June - 2nd July (2 weeks)  
Mid-Year Recess: 3rd July - 23rd July (3 weeks)

### Session 2

24th July - 27th August (5 weeks)  
August Recess: 28th August - 3rd September (1 week)  
4th September - 5th November (9 weeks)  
Study Recess: 6th November - 12th November (1 week)  
Examinations: 13th November - 3rd December (3 weeks)

Senate also determined that classes for 100-level subjects offered for the Bachelor degrees may commence in the second week of Session 1, at the discretion of the relevant Departmental Chairman.

All Departmental Chairmen will be requested to advise the Registrar by October 1 this year whether or not their 100-level classes will commence in the second week of Session 1.

Senate also resolved that a working party be established to report to Senate on the structure of the Academic Calendar of dates.



# COMMEM PORTFOLIO



ONE of the competitors in the boat race scrambles through the tyre and ropes which were part of the obstacle course.

## A WEEK OF FUN



A STUDENT competing in the boat race during Commem Week.

COMMEM week would not be the same without the traditional flour fight.



## Staff changes

### APPOINTMENTS

MR. L. ABBEN		
Maintenance Assistant	Estate Division	22.7.77
MISS L.J. SMITH		
Typist/Office Assistant	Finance Office	1.8.77
MR. J.R. HAGAN		
Office Assistant	Technical Services	3.8.77
MS. M.D. EDMOND		
Library Assistant	Technical Services	8.8.77
DR. K.M. WILLIAMS		
Professional Officer	Chemistry	16.8.77
MR. C.R. FOSTER		
Programmer	Library Administration	19.8.77

### RESIGNATIONS

MISS N. BOTTOM		
Library Administration		15.7.77
MRS. A. MASON		
Central Services		29.7.77
MISS D. DAVIS		
Accountancy		12.8.77
MRS. M. HODGES		
Reader Services		26.8.77

## UNI. ADDRESS

### USE LIMITED

The Vice-Chancellor would like to remind students and staff of the University that they should take care in using the University address when they wish to comment on general issues in the community, e.g. "letters to the Editor".

If comment is made which relies on the special expertise of the person concerned, then it would be quite proper to use the University address as an indicator of the nature of the comment proffered.

However, if staff or students are writing or speaking as citizens, (i.e. not relying on special expertise), it seems reasonable that they should use their normal home address rather than the University address, which might be interpreted as lending some institutional authority to the comment.

The Vice-Chancellor recognised that this was not a clear cut matter, but he hoped that staff and students would use their judgement, and in particular protect the University's reputation for impartiality and special expertise.

### CAMPUS NEWS

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Janine Cullen . . . . . Acting Editor  
Beatrice Henderson . . Production Assistant

# Sociology provides answer to problem

Thomas Jagtenberg's appointment as a lecturer in the University's Department of Sociology has resolved a long conflict on whether he should specialise in science or arts.

Mr. Jagtenberg has been a tutor and part-time lecturer in the Departments of Sociology, History and Philosophy of Science and General Studies since his return from Manchester University, England, at the end of 1975.

He is currently the Faculty of Social Science's representative on the General Studies committees.

At Manchester's Department of Liberal



MR. Thomas Jagtenberg

Studies in Science he completed his M.Sc. His thesis was entitled: "Mission Orientation; An investigation of science as a directed activity, including a case study of solar energy research."

Last year he completed the first year of a Ph.D. degree, which he hopes to finish early in 1978.

Mr. Jagtenberg gained his B.E. (Honors first class) in Chemical Engineering and Fuel Engineering at the University of New South Wales in 1973.

His special interests are sociology of science and sociology of knowledge.

Since his appointment on July 1, he has been teaching both subjects to 300-level students.

Mr. Jagtenberg said he came to Wollongong as he knew Professor Hill was a foremost specialist in the sociology of science.

His sporting achievements range from Sportsboy of the Year at Lyneham High School in 1968, to representing the University of N.S.W. at the Inter-varsity weight-lifting competition. He currently plays A grade basketball for the University.

# ALLOWANCES INCREASED

The Minister for Education, Senator Carrick, recently announced details of increased allowances and the relaxation of means tests for Commonwealth schemes of assistance for students.

A record number of more than 167,000 students are expected to benefit in 1978 under various schemes.

Total estimated expenditure under the schemes in 1977-78 is \$224.8 million, an increase of \$37.8 million over the amount for 1976-77.

Senator Carrick said that the Government was continuing its policy of providing a comprehensive range of assistance to students to ensure all were able to achieve their maximum potential and would not be prevented from doing so by lack of financial

support.

In considering allowances for 1978 the Government had had to balance economic restraint against its concern that students should not have to face hardship, he said.

Changes had therefore been directed to students the Government believed had the greatest need: students who had to live away from home, students who were self-supporting and students with dependents.

The following increased rates will apply for 1978. Other allowances under these schemes will remain unchanged.

### TERTIARY EDUCATION ASSISTANCE SCHEME

Living Allowance:

Dependent student away from home

Independent Student

Dependent Spouse Allowance

### POSTGRADUATE AWARDS SCHEME

Living Allowance

Dependent Spouse Allowance

### ABORIGINAL STUDY GRANTS

Living Allowance:

Single students under 18

Other students

First Dependent allowance

RATE OF ALLOWANCE			
Current		1978	
p.a.	(p.w.)	p.a.	(p.w.)
\$		\$	

1,976 (38)	2,075 (39.90)
2,236 (43)	2,348 (45.15)
1,508 (29)	1,632.80 (31.40)

4,000 (76.92)	4,200 (80.77)
1,508 (29)	1,632.80 (31.40)

2,340 (45)	2,457 (47.25)
2,834 (54.50)	2,978.04 (57.27)
1,508 (29)	1,632.80 (31.40)

# Students choose two Council reps



MS. Robyn Rowland

Students Robyn Rowland and Murray Robinson have been elected to the University Council.

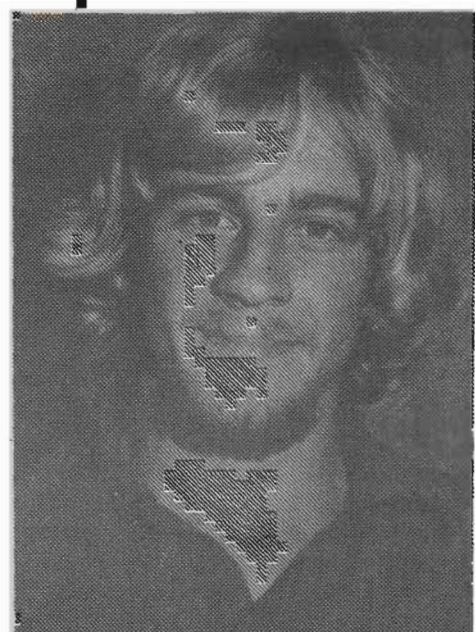
Robyn, who has been on Council for the past two years, received 287 votes, while Murray gained 191 votes.

There was a total 395 votes, including 42 informal.

Robyn is currently enrolled for a Ph.D. (Psychology). She is teaching part time.

Her activities on campus include inaugural chairperson of the Student Co-ordination Committee, member of the Psychology Departmental Committee, General Studies Committee and Women's Studies Group.

Murray is currently enrolled full-time for a Bachelor of Engineering. He is environment officer of the Students' Representative Council, president of the Engineering Society, president of the Camera Club, and a student member of Electrical Engineering Departmental Committee and Faculty of Engineering.



MR. Murray Robinson

## SPORTING NEWS

### Table Tennis

#### ILLAWARRA CLOSED CHAMPIONSHIPS

The finals night resulted in a win in the Division 3 singles (21-19, 21-12 against Max Little) by Rami Adna (Uni. 5). Rami is also the current Division 2 and 3 doubles champion with Mohammed Iqbal.

In the Division 2 singles final Steve Tomlinson (Uni. 4) lost by 14-21, 18-21 to Col Wingate. In the earlier veterans final Julian Chytil was runner up to Illawarra champion Dieter Wubbels (score 21-16, 21-14).

#### THE UNIVERSITY CHAMPIONSHIPS

These are open to all members of the Table Tennis Club as well as to all members of the University. To allow more people to win a prize the championships will be played in five divisions (as in the I.T.T.A. winter competition) and noncompetition players will generally be eligible to play in Division 5 as well as in higher divisions.

In addition there will be a handicap event for all those who lose in the first round of the lowest division they play in.

Date: Tuesday, September 27 from 7.30 p.m.

Fee: \$1 for three events

Place: Union Hall

Watch for more details on the notice boards after the August break.

#### WINTER COMPETITION TABLE

Division 1		Points	To Play
1	Lysaghts A	18	5
2	University 1	16	2
3	Beaton Park Devils	16	3
4	Beaton Park Reds	14	2
5	University 2	4	5
6	W'gong Youth A	2	4

Division 2		Points	To Play
1	TeLetechs	26	1
2	Albion Park A	18	3
3	University 3	18	1
4	Dapto Cricketers A	12	3
5	Warilla 1	8	2
6	Lysaghts B	8	1
7	University 4	6	2
8	Warilla 2	0	3

Division 3		Points	To Play
1	Beaton Park Rovers	24	1
2	University 5	14	4
3	W'gong Youth B	14	2
4	Titan Blue	12	3
5	2+1	10	2
6	Shellhbr. A	8	3
7	Figtree	6	4
8	W'gong Tech.	2	2

Division 4		Points	To Play
1	Albion Park B	24	2
2	Lake Ill.PBC	18	3
3	University 6	12	3
4	Dapto Cricketers B	12	4
5	Titan Red	12	3
6	Shellhbr. B	6	3
7	Illawarra Deaf	6	1

Division 5		Points	To Play
1	Beaton Park Family	24	3
2	University 9	22	2
3	Shellhbr Dent.School	8	3
4	University 8	6	5
5	Warilla 3	4	5
6	University 10	2	6

## VOLLEYBALL TEAM BEATS TOURISTS

University men's volleyball team won the best of five games against the touring State C.A.E. team recently.

The scores were 15-8; 13-15; 15-11; 15-12.

The University now has an official volleyball club. There are three teams, two men's and one women's, which participate in a social volleyball competition at the Institute of Education on Tuesday nights.

New members are welcome to participate in the Tuesday night competition and particularly to join in the games at lunchtime.