



SURVEYS EXPOSE TRAFFIC SPEED



Dr. D. Pearson-Kirk

Research at the University of Wollongong has shown that more than 50 per cent of commercial vehicles on Mount Ousley Road exceed the speed limit.

The research has also shown that trucks have the effect of making other traffic move faster and that road traffic noise levels at many locations are unacceptably high by current community standards.

In a paper on commercial vehicle surveys in N.S.W. presented to the 10th annual conference of the Australian Road Research Board, Dr. D. Pearson-Kirk from the Department of Civil Engineering, said his findings were based on surveys carried out between February and July 1979.

He presented his paper in Sydney on Friday, August 29, with two colleagues, Mr. G. R. Easton, a lecturer in Civil Engi-

neering at the University of N.S.W. and Mr. D. Ross, Assistant Operations Manager, B.M.I. Transport Pty. Ltd.

The paper contained a summary of the results of some of the more important commercial vehicle surveys carried out during 1979 for the Commission of Enquiry into the New South Wales Freight Industry.

Surveys were carried out by a number of groups including the Department of Motor Transport, the Department of Main Roads, the University of N.S.W. and the University of Wollongong.

Information was collected on commercial vehicle axle loads, vehicle classification data, speed and noise.

"Many of the popular arguments against heavy commercial vehicles are based on safety and environmental grounds," Dr. Pearson-Kirk said.

"Speed contributes to the number of accidents and increasing speed can result in increased severity of accidents. Increasing speed also accentuates certain environmental problems, particularly road traffic noise.

"Many submissions to the Commission of Enquiry, referred to speeds of commercial vehicles and it was thus decided to carry out surveys to determine the typical operating speeds of commercial vehicles at locations in urban and rural areas.

"The speeds of different classes of vehicles were measured at 28 locations and were determined for each direction of flow. Readings covered periods of both peak and off-peak traffic flow. The speed survey covered 19,500 vehicles, including over 5,300 commercial vehicles," Dr. Pearson-Kirk said.

He said the majority of the vehicles surveyed in the Sydney Metropolitan area were found to travel at or below the effective speed limit. But in Wollongong a significant number of commercial vehicles were found to be exceeding the speed limit.

At rural sites up to 50 per cent of medium and heavy commercial vehicles were found to be breaking the speed limit.

On Mount Ousley Road 57 per cent of trucks travelling north and south were found to be exceeding the speed limit, compared with in 1977 52 per cent travelling north and 35 per cent travelling south.

Dr. Pearson-Kirk said an interesting feature of vehicle speeds in the absence of the majority of trucks, as measured during the 'truck blockade' in April, 1979, was that the size and apparent aggressiveness of commercial vehicles had the effect of inducing car drivers to travel faster.

At each location, for each direction of travel, the mean speed of cars dropped by between eight and fifteen k.p.h. in the absence of the majority of trucks. The mean speed of the few remaining trucks also dropped but only by between three and five k.p.h.

From the findings on noise levels, Dr. Pearson-Kirk concluded that commercial vehicles had a disproportionate effect on traffic stream noise levels compared to their relative numbers. He considered that on the basis of the data presented there existed a strong case for more stringent legislative controls on both new and in-service vehicle noise levels.

Mayor hosts 1980 match

The annual "Town versus Gown" cricket match will be held on 21st October this year at Stewart Park.

The match will be hosted by the Lord Mayor, leader of last year's winning team.

The two teams will compete for the perpetual trophy (the first cricket bat used, signed with players' names and with shields mounted to be inscribed each year).

The University is picking its team at present. The names of famous Australian cricketers who will attend the match will be announced soon.

University studies of the economics of employment have ranged from computer models of the future of the Australian economy to the investigation of personal job opportunities for the students of economics themselves.

At present - in connection with careers week in the University of Wollongong - the emphasis is on actual jobs.

In fact the students are assured of employment opportunities to match their qualifications. What they make of these opportunities they are told, will be up to them; but their problem on graduation will not be lack of job opportunities.

These assurances were given by economist Philip Coyte, a director of the Careers and Appointments Board at Sydney University, who came to Wollongong as a guest of the University Counselling Centre and the Department of Economics. He was introduced to students by Professor Ken Blakey at a luncheon in the University Union. After an address and a general discussion he gave a full afternoon to discussion with individual students.

Mr. Coyte said the number of jobs offered for new graduates in economics by employers registered with his organisation continued each year to run well ahead of registrations of students expecting to graduate. Good salaries and career opportunities were offering in a wide range of activities in industry, finance, marketing, journalism, government and even education.

Government jobs - especially in Treasury, Statistics, Industry and Prime Minister's Departments - have attracted mainly economics honours graduates, but representatives from these Departments are now seeking a number of recruits among new pass economics graduates also. Each year some of these prestige appointments go to Wollongong graduates. (Last year Shane Hugo went to Treasury, Peter Taranto to the Prime Minister's Department, and Ian Fliedner to Energy Research in the Department of Industry).

Finance has attracted a large number of past graduates, and this is a field in which demand for aspiring economists is expanding rapidly. In the past many of our graduates have gone into commercial banking and some into the Reserve Bank - into both bank officer and research positions. Now the trading banks are extending their re-

Jobs for graduates on the increase

cruiting each year. Merchant banking, and related finance activity in the securities market, the foreign exchange market and commodity markets are growing even more rapidly as an opportunity area for graduate careers based on economics.

There is also a continuing expansion of demand for economics graduates in industry, particularly in production planning and marketing.

Questions to which Mr. Coyte responded at some length in the general discussion included the following:

Does the B. Com degree (economics) have any great job market advantage over a B.A. with specialisation in economics?

The answer was that there was no great advantage generally but that (a) some business people would give preference to the B. Com graduate if he had as good an academic record in economics as the B. A. graduate, and (b) the student of economics who had included basic accountancy in his course would have an advantage in banking and finance if his grades were good.

For employment purposes does the fourth year for an Honours degree pay off, even when it involves passing up a good job opportunity at the end of the third year?

Mr. Coyte was positive about the initial salary and career opportunity advantages of the honours graduate - but was not encouraging about higher degrees in the job market outside the education sector.

How does the academic record of the student rate with employers?

Generally very highly. The student with a sprinkling of credits on his record will do well, and the one with a number of failures may have problems. In the public service in particular, every applicant is given a score in which points are given for academic record, interview, and everything considered relevant, and selection is based on these points scores.

What is the advantage of job-seeking in advance through careers week contacts and the Careers and Appointments Board?

Employers who come to careers week and who register with the Board are looking for new graduates, so that prospective graduates can use the opportunity and compete with their peers. Otherwise, answering newspaper advertisements, etc., they are in competition with graduates who also have experience. Wollongong undergraduates are welcome if they wish to register with the Board and they should also consult the Wollongong Counselling Service.

The education sector has generally absorbed about 25% of its own graduate output. What are the prospects now?

The prospects are there, in spite of the cuts in expenditure, but there is a waiting period. Prospects at present are that undergraduates due to complete their qualifications who apply for jobs now will wait three years before they are appointed.

How do job interviews count compared with degree diplomas and other qualifications?

In getting started the degree certificate is very important, and if it is an honours degree it will often retain its importance for 10 years. But the interview can be crucial and it is to be approached as a top assignment worth preparing for. When asked "Why should I appoint you in preference to all the other applicants," the applicant should have his response ready - not answering the question, because he can't evaluate the other applicants, but putting in the necessary spade work on his own account. He should realise that once he has the job he can't rely on bits of paper; he must set to and learn the job and perform it effectively. At the interview the bit about ability to take over should be played down. Demonstrated ability to learn and keep on learning is a qualification employers look for in new graduates.

COMMUNITY DEVELOPMENT FORUM

A one day open forum on "Community Development in the Illawarra Region" will be held in Wollongong on Saturday, October 11.

The forum has been organised by the Interim Committee of the Illawarra Foundation for Education, Health and Community Development. The need for the forum was recognised after a meeting of representatives from the fields of health, education and welfare when it was seen that community involvement was essential for identifying community needs and finding ways to meet those needs.

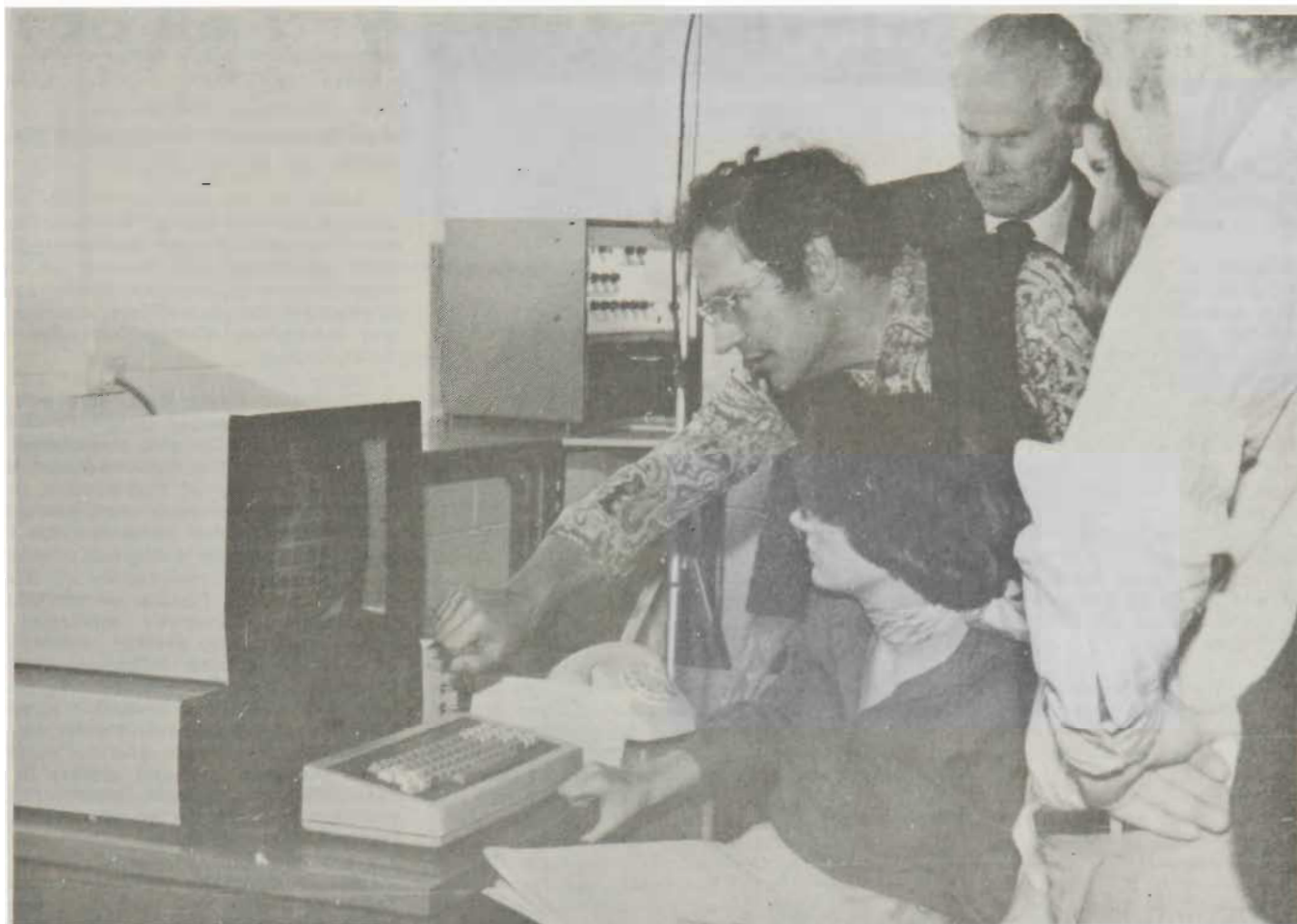
At the forum future developments in community health, community education and community welfare will be discussed and activities will include the identification of needs, the use of community resources and the exploration of other possible ways

to meet needs.

Speakers will be Head of Community Liaison Bureau, Youth and Community Services, Sue Varden, and Professor of Community Medicine, University of N.S.W. Ian Webster.

The forum will begin at 10 a.m. at the Wollongong City Council Community Centre, Stewart Street, Wollongong. All interested people are invited to attend.

RARE PAIR OF TEACHERS



ABOVE: Control Data Corporation representative Ms. Lane Blume (seated) discusses the workings of the PLATO system of learning with Computing Science Department Chairman Professor J. Reinfelds (leaning towards the computer terminal) and Deputy Vice-Chancellor Professor A. Clarke, with interested onlookers in the foreground.

It is a rare thing to find teachers who do not make mistakes, are infinitely patient, trustworthy, give praise where it is due, encouragement, correction and the occasional scold - and still manage to remain utterly lovable and captivating.

The University of Wollongong had two such visitors this month and they quickly won the hearts of both students and fellow instructors. Everyone who met them in fact, said they hoped it would be possible to have them join the staff of the University for a year at least.

A revolutionary pair, they are aptly named Speedy and Clever and are no bigger than your thumbnail. Speedy and Clever live in a computer in Minneapolis, U.S.A. but can be called across for a visit on a computer terminal in a matter of seconds. They look like tiny robots on the screen and are part of the PLATO teaching system which is rapidly transforming education, especially adult education, in the United

States. PLATO stands for Programmed Logic for Automatic Teaching Operations. It is a teaching system that uses one to one contact between student and a small computer, giving lessons in just about every conceivable subject and in lengths ranging from five or ten minute segments to courses more than 400 hours long.

Work on the PLATO system first began in 1959 at the University of Illinois. By 1965 Control Data Corporation and the National Science Foundation had come into the picture and in 1976 the system was released to the public. It now contains 30,000 hours of teaching material compiled by hundreds of experts and incorporating the feedback from the school system. It has some thousands of computer games and an abundance of graphics material.

The system was first used extensively at a base in Baltimore where it met with enormous success in teaching mature age students who needed remedial attention. The system allows them to work at their own pace in complete privacy, with only Clever or Speedy to know their moments

of embarrassment. It is now being used by colleges, public schools, businesses and industries and being marketed overseas. In Australia it will be made available early in 1981.

Head of Computing Science Department, Professor J. Reinfelds is one among many who would be delighted to have the system at the University of Wollongong next year.

"Firstly it would be excellent measuring stick of our own work in the department. And its talent for remedial teaching would meet needs here, such as providing remedial English," Professor Reinfelds said.

He said foreign students would be especially attracted when they realised they could take remedial English at their own times and pace.

Professor Reinfelds has plenty of support in his desire to secure PLATO (at a cost of \$15,000 a year), especially from all those who were thoroughly bewitched by Clever and Speedy - and that includes Campus News.

Singers present an evening with Henry Purcell

The music of Henry Purcell will be featured at a concert by The University Singers on September 23 at the University of Wollongong Union Hall.

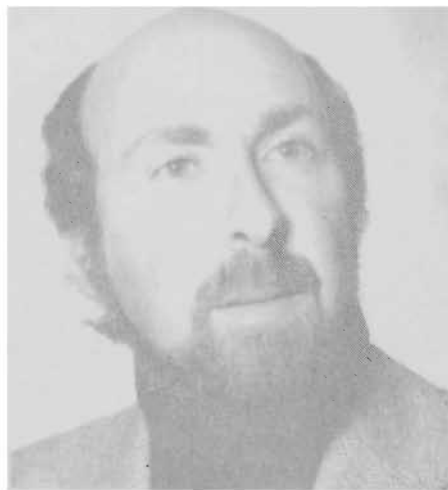
A small chamber orchestra of strings, oboes, recorders and brass will accompany the vocal music which aims to illustrate the many facets of Purcell's creative genius.

Conductor of The University Singers, David Vance said the programme would include a series of readings of poetry and prose which would serve to complement the music. He said these had been arranged by English Department Drama Lecturer Maurie Scott.

Mr Vance said the title of the programme, "Musick for a While," was taken from one of Purcell's songs. Set for male alto (Purcell himself was an alto), the song would be sung in the concert by John Collis, a young countertenor from Canberra who was currently understudying the role of Oberon in Britten's opera "A Midsummer Night's Dream" to be presented in October by The Australian Opera.

Mr. Collis, who was completing a post-graduate degree in Philosophy at the Australian National University, would also be featured as a soloist in other parts of the programme.

Mr. Vance said another guest would be Anthony Warlow, recently seen in Theatre South's production of "The Con Man" and lately heard in the title role of "Man of La Mancha." He would sing two songs and with Di Kiernan perform an excerpt



David Vance

from a Restoration play, "The Country Wife."

Purcell's short life (1659 - 1695) did not prevent him composing music for the church and the theatre, the court and the tavern. It was Playford, his publisher, who coined the phrase by which he was popularly known - Orpheus Britannicus. Purcell's greatest legacy to English Music was his ability to set the English language with poise and imagination that was unmatched for three centuries. Only Benjamin Britten (1913 - 1976) has treated the vast wealth of English poetry with a similar skill. Mr. Vance said it was through a study of Britten

that he grew to a knowledge of Purcell's music.

Music in the programme will include excerpts from the operas "The Fairy Queen" and "King Arthur," the Sombre brass and choir music for the "Funeral of Queen Mary," some ballads and bawdy catches proclaiming the joys of love, and the final and celebratory chorus from the "Ode To St. Cecilia."

Conductor David Vance is a part-time tutor in English at the University of Wollongong. A pianist and accompanist, he also teaches in the Department of Music at the University of Sydney and in the School of Musicology at the Sydney Conservatorium. He has conducted the University Singers since the group's inception in 1978 and last year conducted "Noye's Fludde" for the Festival of Wollongong. In Sydney he recently conducted The Seymour Group in premier performances of a commissioned ballet score, "The Dreamtime," by Colin Bright. His Britten studies have led to an invitation to submit his B. Mus. thesis to the Britten archive in Aldeburgh. Mr. Vance said he hoped to undertake post graduate studies in this field later. His research interests include poetry and music, the art of word setting, particularly that of Britten.

The University Singers concert begins at 8 p.m. and tickets are available at the door. \$3 adults, \$2 concession.

What is there in Wollongong for lovers of fine music?

The answer to this question is very much more positive at present than it would have been a few years ago. We are currently witnessing a dramatic growth in both the quality and quantity of musical activity in this city - once renowned mainly as a steel making centre.

The list of musical organisations at present includes:

The Wollongong Conservatorium of Music; Departments of Music at the Wollongong Institute of Education and at schools (both Government and private); studios of local music teachers; Australian Broadcasting Commission concerts; Musica Viva; Illawarra Music Club; Wollongong International Celebrity Concerts; City of Wollongong Symphony Orchestra; Illawarra Choral Society; University of Wollongong Singers; Arcadians Theatre Company; several brass bands; choirs; instrumental groups and jazz ensembles.

A few years ago, the local musical calendar was very sparse indeed and many

MUSIC

With Abe Segal
(introducing his new
monthly column in Campus News.)

local enthusiasts were compelled to travel to Sydney for tuition and concerts. Today, most aspects of tuition and a variety of musical presentations of good standard are available here in Wollongong.

The major objective of this column will be to inform readers of some of the musical events to be presented each month and to give details of the hopes and aspirations of the musical organisations that flourish on the South Coast.

Here are a few entries for your diary:

. Saturday, 20th September at 8.15p.m.
- Piano recital at the Wollongong Conservatorium by David Ward.

. Sunday, 21st September at 2.30p.m.
- Master class at Wollongong Conservatorium conducted by David Ward.

. Friday, 26th September at 8p.m. - Piano recital at the Wollongong Conservatorium by Andrew Snedden (a farewell recital before Andrew leaves to study in London.)

. Monday, 29th September at 8p.m. - Spring concert by Illawarra Choral Society in Musical Auditorium, Wollongong Institute of Education.

. Saturday, 4th October 8.15p.m. - Helen McKinnon (soprano), Gabor Reeves (clarinet), John Champ (piano) at Wollongong Town Hall for the Australian Broadcasting Commission.

. Thursday, 9th October at 8p.m. - Australian Chamber Orchestra conducted by John Harding with solo pianist David Ward in Wollongong Town Hall.

. Tuesday, 23rd October at 12.45p.m. Lunch hour concert in Union Hall at the University of Wollongong - Jazz concert.

The above list is by no means exhaustive but serves to show there is a substantial variety of musical entertainment for lovers of fine music in Wollongong.

THEATRE

Carmel Pass*

introduces her monthly Theatre column.

Wollongong's Workshop Theatre added to its already successful 1980 season with its recent production of Ray Lawler's *Summer of the Seventeenth Doll*.

Regarded by some as *The Australian Play* (and by others as another boring old play about boring old mateship), *'The Doll'* is essentially a play about the breaking up of a fragile, almost idealist world.

The world of "the lay-off season" - the five months of the year when Barney and Roo come to Melbourne on holiday - is idealised in the sense that its inhabitants believe it will exist as long as they do. When "the boys" arrive, Roo presents Olive with her seventeenth doll - one for each "lay-off" they have spent together. At the end of the play, Roo crushes the doll, acknowledging that their idealism has been shattered.

The play is made up of a network of tensions: male-female, fact-fantasy, past-present, tragedy-comedy. Its success in production depends on the ability of the cast to maintain a fine balance between the play's comic and serious elements.

The Workshop's production succeeded in capturing the colour and life of the play's surface realism, and also reflecting the far deeper emotional impact of the disillusionment of the two main characters.

Act I Scene II is the litmus test of a production. A comic scene onstage (the hilarious seduction scene between Barney and Pearl) is abruptly cut short by the entrance of Olive, who chances the focus of the scene to a conversation which, we are to believe, has occurred in another room of the house. This scene was one of the comic highlights of the production. Ray Hendley played a brilliantly mischievous Barney, waggishly displaying his tried and tested seduction technique on the coy and cautious woman Olive has chosen for him. Margaret O'Shea's jerky, birdlike movements suggest the sham which is Pearl's false gentility and pretended prudishness.

Just as Barney's irresistible charm begins to take effect, Olive enters. Ignoring what is obviously the private conversation, she gruffly tells Pearl to get ready for work. The focus switches from the brittle game-playing onto the distraught figure of Olive. She tells Barney that Roo is determined to get a job.

From the instant she entered, Shirley Whiteley had control of the scene. Her few abrupt words conveyed both the pity Olive feels for Roo, and the humiliation she feels, at having to be part of his admission of failure. In the brief pause which precedes

Continued on Page 10

EXHIBITION OF N.G. TRIBAL ART



Department of Philosophy lecturer Dr. Harry Beran is currently lending himself (and some of his New Guinea Tribal artefacts) to the Wollongong City Gallery to organise an exhibition of New Guinea Tribal Art.

The exhibition will be held from mid-October to mid-November and will include exhibits drawn from private collections in New South Wales and the Australian Capital Territory.

The exhibits have been chosen to represent a particular culture district - the Massin Culture region, the best known part of which is the Trobriand Islands.

"We're actually trying to present some-

thing different from the display in the Australian Museum in Sydney so we decided to exhibit artefacts from one culture district and by drawing on private collections we feel we will be also demonstrating the contribution made by private collectors to the preservation of works of art," Dr. Beran said.

The exhibits will include canoe prows and paddles, household implements, pottery, shields and clubs, spears, fishing equipment, wood carvings and ornaments. Most of the exhibits were collected between 1876 and 1970.

Dr. Beran began his collection while on a visit to the Trobriand Islands in 1969 as a holidaying student. Since then he has added to his collection with purchases from Australia and London.

'There is a shift now under way in the cultural valuation of scientific knowledge and technological change. Science is becoming less an example of objective truth and a guarantor of spiritual progress and more a source of problems and of uncertain troubling knowledge. The shift toward a more ambivalent view of science implies renewed attention to science as a cultural phenomenon.' - Arnold Thackray.

There are two fine 30-year-old bottles of malt whisky in the Department of History and Philosophy of Science, just waiting to be won by any enterprising person who can come up with a name which captures the essential concept of the department's role.

That role is to undertake the study of science and technology from historical, philosophical, economic, sociological and political points of view. . . . The bottles have been waiting to be claimed for a long time. The department meanwhile has resorted to the only other shortening alternative - the initials, HPS.

Department Chairman Professor Ron Johnston sees the Wollongong department as a definite part of a new and exciting movement in HPS. It is a discipline with a long and distinguished history in European and American universities but it has been undergoing a marked renaissance during the past five to ten years.

"There are a variety of reasons for, and elements of, this," Professor Johnston said. "The plea that history of science should draw more from historiography and less from science has evoked a response, evidenced by the emergence of a new breed of social historians of science.

"Historical studies of science have been dramatically transformed by models developed within the sociology of science and the sociology of knowledge. As the history of science has become more concerned with regularities than singularities, it has become a fruitful source of new models and of means to test them," Professor Johnston said.

He said the gradual decline of the image of science as true knowledge has permitted serious evaluation of social determinants of scientific knowledge. Awareness of the relationship between science and the State has opened the way for the concepts and methods of the economist and the political scientist.

"The extent to which contemporary problems are seen to have a scientific or technological basis, has placed demands on the discipline of HPS to offer insight and understanding," Professor Johnston said.

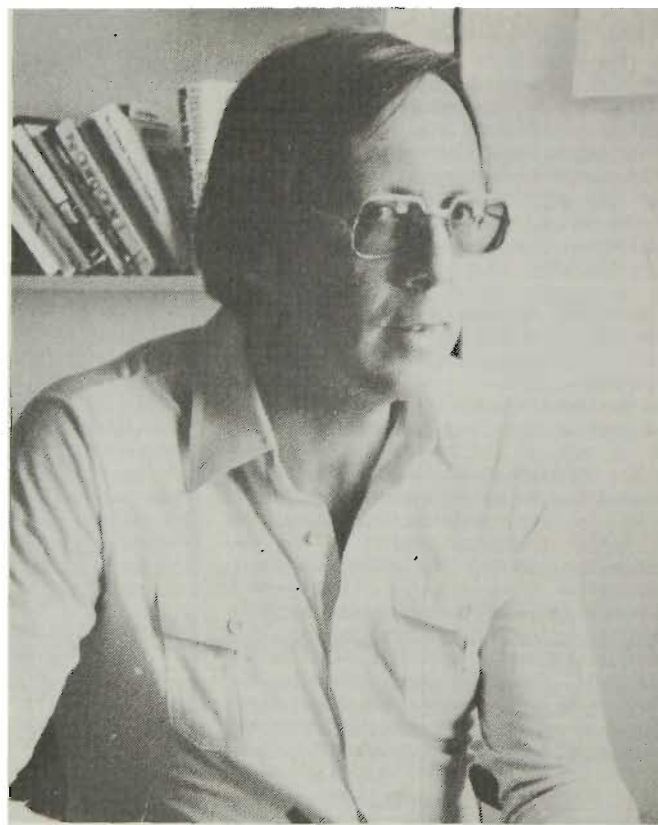
He said the shift in emphasis did not mean that traditional history of science and philosophy of science did not, or would not, continue to exist. They were both valid areas of intellectual enquiry, from which HPS should draw.

"But this new field of HPS, marked by its problem focus on the origin, nature, development and effects of science and technology is much broader in scope, draws on a wider range of humanist and social science disciplines, and is truly interdisciplinary."

Professor Johnston aims to put the Wollongong department at the forefront of the new and exciting movement. He said there was already a considerable commitment in this direction, as reflected by the breadth of interests of all members of staff and the content of the courses.

The Wollongong department was one of the earliest established in Australia - there are others at Melbourne, NSW, Griffith and

HPS RI THE PU TODAY'S



Professor Ron Johnston

Deakin - and has grown as student numbers and enthusiasm have increased. From a one-man-one-course department in 1967, the five and a half man department now has innovative courses in:

- Greek Science - the development of natural science as an intellectual discipline is traced to Greek and earlier civilisations, and explored in the context of political, social, religious and economic developments which influenced, and were in turn affected by, its progress.

- The Scientific Revolution - in the 17th century a dramatic new world view transformed man's way of thinking about the world and his (or her) place in it. The forces which set the revolution in train and its effects on society are explored.

- The Darwinian Revolution - this course examines the emergence of the idea of evolution which, linked with major social and political changes, initiated a revolution in the sciences of biology and geology and the religious and social arguments drawn from them.

- Science and Society - a study of the interaction of scientific knowledge and social values in the Enlightenment, the Industrial Revolution and today through such issues as war, technological and

GET ON ELSE OF WORLD

PICTURED BELOW: Members of the Department of History and Philosophy of Science (seated, from left) Ms Romaine Rutnam (Professional Officer), Dr. John Panter (half time lecturer), Professor Ron Johnston (Department Chairman), Dr. John Schuster (lecturer), Dr. Evelleen Richards (lecturer) and Mrs June Doyle (Ph.D. student). Standing are Dr. Jim Falk (lecturer) and Mr. Shantha Liyanage (half time research assistant and Ph.D. student).



economic growth, science policy, ethical issues in scientific progress, and 'anti-science.'

- . Historical Perspectives on Scientific Theories - a critical examination of theories in the physical and biological sciences in terms of their origin, nature, fruitfulness and limitations.

- . Scientific Change in the 20th Century - a review of the profound intellectual and social changes that science has undergone in the 20th century - new theories, growth, professionalism, changing patterns of funding, role in political decisions.

- . Scientific explanation and Scientific Understanding - a philosophical investigation of what a scientific explanation is and how it provides an understanding (and of what kind) of the scientific world.

- . The Integration of Biology and Chemistry - this course examines the way in which biology and chemistry have been linked in their mutual development and the consequences for the form each discipline has taken.

- . Knowledge and Power - the Politics of Science and Technology examines the political and economic aspects of science and tech-

nology in the modern industrial state, including such issues as social effects of technological change, scientists and political involvement, alternative technology, sociobiology.

- . Mediaeval Science - a study of mediaeval ideas about the nature of science and its relationship to mathematics through the growth of such fields as alchemy, astrology and magic.

Professor Johnston maintains that HPS is a discipline that is of great value to students (and staff) in any corner of the academic world. It provides science or engineering students with an overall perspective of their fields as well as practical knowledge on how their subject fares in the society in which they will work.

It provides Arts students with a framework within which to place their knowledge of literature, languages, history, philosophy etc.. It provides commerce students with a knowledge of the shaping of industrial development.

The department allows two streams of study - traditional HPS and HPS with the contemporary orientation. The two streams are intended to be taken together but the system does allow students to specialise or concentrate on some aspect that ties in with their

'A subject of today...'

major subjects in other fields.

Essentially, HPS is a subject of today that is vitally involved in today's world. In the Wollongong department Professor Johnston is also developing a particular emphasis on the active role HPS can play outside the academic world as well as within it. Professor Johnston says "If HPS can't say something about the modern world, who on earth can?" He sees philosophical and historical literacy as keys to the proper understanding of today's problems, in deciding whether modern problems are genuinely novel or whether they are a replay in technological and scientific dress.

Professor Johnston did his undergraduate studies at the University of NSW graduating with a Bachelor of Science degree with Chemistry honours. He studied for his Ph. D. in London and Manchester graduating in 1968. In 1969-70 he was a Research Fellow at Northwestern University (USA) and in 1970 he joined NASA for a year which is where he stopped being a chemist.

"It was a culmination of mental events, but essentially being a chemist took up only a fraction of my energy - it was limiting and frustrating so I was looking for a tangent. In the U.S. they wanted scientists to be involved in evaluating the spinoff from the space race - that was really the beginning," Professor Johnston said.

From NASA he went to the University of Manchester to the Department of Liberal Studies where he moved from Senior Fellow to Lecturer, to Senior Lecturer. In 1978-79 he was Policy Advisor, Australian Science and Technology Council and Department of Science and in 1979 he joined the University of Wollongong.

Professor Johnston's other activities demonstrate his policy of taking HPS out into society - he has been a consultant to Government departments on a number of occasions in science and technology areas and in industrial policy areas.

He is working on two major research projects at the present time. One is the study of the impact of technology on employment in the Wollongong region in the 1980's. This project has given him excellent opportunity for making contact with the people in the region, especially those connected with employment in industries and other employer groups and their employees. His research assesses the changing base of employment and also seeks to establish guidelines for the policies needed to adapt to the changes brought about by technology. Professor Johnston's second project is the study of the impact of changing funding and enrolling patterns on university research in Australia.

Professor Johnston is married with one son. Coming back to Australia has reopened up a whole world of leisure activities for him, such as sailing, surfing, walking, skiing and any other outdoor activities he can find, "all paradise after being so long in the northern hemisphere. . ." He enjoys music, especially opera, and finds Wollongong a good place to live. He'll be heading back to the northern hemisphere this month though for two weeks in Paris as the official Australian delegate to an OECD conference on Science and Technology Indicators.

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Lecturer Dr. John Panter is the "half" in the "five and a half man department" (although with secretary Lynne Hutton the department actually numbers six and a half). Dr. Panter divides his time between the Education Resources Centre (ERC) and HPS where he teaches Greek and Mediaeval Science and Philosophy. He did undergraduate studies at the University of Adelaide graduating with honours in History. Philosophy was also his subject during undergraduate and postgraduate years. His subject for Ph.D. studies at University of N.S.W., was Scientific Thought in Early 19th Century Britain. When Dr. Panter came to the University of Wollongong in 1972 he became one member of the HPS department and had a quarter of a secretary to help him out. He has watched the department grow to its present size and enjoys teaching courses in ancient and mediaeval science "which students strangely find to be amongst the most relevant of the courses they study at this University." Dr. Panter said this could be because the intellectual, social, moral, economic and political problems formulated by

Greek and Mediaeval writers still seem highly relevant today, as are many of their answers.

Supervising the somewhat complex birth of the ERC has left Dr. Panter little time to pursue research interests but he maintains that one of the most important things a university can do is teach well and that's what his work at present is all about. When he has some leisure time he enjoys bushwalking and listening to music (not, of course, at the same time. . .). One of his favourite mental games is classifying composers in terms of beverages (usually alcoholic). Mozart for instance is like champagne, Beethoven like Benedictine. . . etc. . .

* * * * *

Lecturer Dr. Evelleen Richards took a roundabout road to HPS but she says it was worth every step. Her first choice was medicine which she pursued for five years before changing to a science degree majoring in Biology. When she discovered HPS she was delighted to find it opened up the world of Arts, one she had always regarded rather wistfully from the world of science. Dr. Richards did undergraduate studies at the University of Queensland and after graduating she paid her first visit to the University of Wollongong where she worked as a tutor in an embryonic HPS department. She left to become a tutor at the University of NSW where she subsequently pursued Ph. D. studies on a Commonwealth Post-graduate Scholarship. In 1973 she was offered a lectureship with the department in Wollongong where she lectures on the Darwinian Revolution, Knowledge and Power and the Politics of Medicine and Health. Her Ph.D. research was on Embryology and Evolutionary Theory in the 19th Century.

Research covers wide field

Dr. Richards also has a vital interest in the role of women in society. She gives a course on this topic in the General Studies Department and has contributed an article, "The Sexism of Darwinism," in a book entitled "Wider Domain of Evolutionary Thought," shortly due for publication. Her article deals with Darwin's theory of the natural inferiority of females (physically and intellectually). She is also interested in the sociology of scientific thought (how social attitudes enter into scientific ideas) a modern example of which is the Vitamin C controversy of which she is doing a social analysis. This analysis also covers another field of interest - the politics and sociology of contemporary medicine and biology. At present Dr. Richards is on study leave for six months while she revises her Ph. D. thesis for publication by Cambridge University Press. In her leisure time Dr. Richards is a devotee of food and cookery, especially in the tradition established by the country housewives and women restaurateurs of the French provinces. But the birth of her triplet daughters in 1978 has ruthlessly curtailed both leisure time and the cooking of carefully composed menus a la bonne femme.

* * * * *

Dr. Jim Falk came to HPS via a science degree with first class honours in Physics and a Ph. D. in theoretical physics. He pursued all these studies at Monash University and then decided he didn't really want to do only physics.

"It was environmental research I was most interested in then and in general social questions relating to science and society," Dr. Falk said.

He worked with the Australian Conservation Foundation where his interests centred on energy. While with the Foundation he edited the booklet "Uranium - Metal of Menace." Then he taught part-time at both the Royal Melbourne Institute of Technology Environmental Design and at Swinburne College of Advanced

Education where he developed a course in Science, Technology and Society and wrote a booklet entitled "Red Light for Yellowcake." Dr. Falk was also convenor of the Movement Against Uranium Mining in Victoria in 1976-77. During 1977-78 he also lectured and tutored in HPS at Deakin University and in 1979 he spent three months as advisor to the Shadow Minister for Consumer Affairs where he worked mostly in Canberra and Sydney. It was back to the Royal Melbourne Institute then for some part time work while he pursued his own research on the politics and economics of energy, looking at the international debate over the use of nuclear power.

In January this year Dr. Falk joined the Wollongong department where he teaches Knowledge and Power, Science, Technology and Society and Science, Technology and Social Progress. Next year he intends to include courses in the Politics of Energy and Computers and Society.

As part of a funded research program Dr. Falk is studying the rapid expansion of the Australian aluminium industry which, he says, is part of a trend which could, in the long run lead to a coal shortage. He is also writing a book for Oxford University Press entitled "Global Fission - the Battle of Nuclear Power" (a tentative title at this stage) which he hopes will be published by mid-1981.

In his leisure time Dr. Falk enjoys some outdoor activities (walking, skiing), enjoys listening to music, plays the flute and is involved in environmental activities in the community. He also enjoys discovering the world with his baby daughter.

* * * * *

Dr. John Schuster joined the Wollongong HPS department in June with a background of physics and mathematics and then European History and History of Science.

He did undergraduate studies at Columbia University (U.S.A.) and then post-graduate studies to a Ph.D. level at Princeton, studying under Thomas S. Kuhn. He taught in the under graduate school at Princeton for a year before going to England to the University of Leeds where he joined a "largish" History of Science Department on a temporary lectureship. After a year there he was offered an assistant lectureship at Cambridge where he lectured in HPS for four and a half years.

"The department there was heavily weighted towards the Philosophy of Science so I became more philosophically acute and aware during that time," Dr. Schuster said.

Towards the end of this time at Cambridge Dr. Schuster and his family (a wife and two sons) found they had a problem - they wanted to leave England but were not keen on returning to the United States. Then he heard about an expanding department in Wollongong that aimed to integrate traditional HPS with the newer and more sophisticated approach to the study of science and technology.

"It sounded exciting and innovative and geographically most attractive - and here we are," Dr. Schuster said. So far Wollongong has lived up to expectations on all counts and Dr. Schuster thinks it can only get better.

His research interests lie in two directions - (1) the crucial stage

Innovative approach

of the scientific revolution in the early 17th Century and the early career of Descartes ("demystifying Descartes," Dr. Schuster calls it) and (2) Kuhn on the nature of theory change which involves the study of why certain theories are dropped and how new disciplines are formed.

In his leisure time Dr. Schuster enjoys just relaxing and reading around his field. He also takes an interest in Zen Buddhism (which is relevant to HPS he says), in 60s and 70s rock music and in 17th and 18th century music.

* * * * *

At the time of going to press, Senior Tutor and Temporary Lecturer Margaret Campbell is in hospital in Tasmania recovering from a car accident. Her injuries were extensive - both legs, shoulder blades and ribs broken, a punctured lung and facial injuries.

Margaret had taken on lecturing duties while Dr. Richards was on study leave. She is currently working on her Ph.D. researching genetics in the late 19th and early 20th centuries. Last year she travelled to the United States on study leave. Margaret is married to Senior Tutor in the Department of Biology, Jim Campbell. She met with her accident while visiting her family in Tasmania during mid-year break.

* * * * *

Departmental Secretary Lynne Hutton has been sympathising heartily with Margaret Campbell (as has the rest of the department) and her sympathy was even greater after she found herself nursing a broken arm during second session.

"It's just that I'm a devoted mother," Lynne said resignedly. Campus News agreed when Lynne explained she had broken her arm while roller skating with her family of four sons. Lynne says she rarely has a dull moment in the HPS department even doing the routine typing of research papers that can, in any department, be a long and complex task.

"I think I may be luckier than most because the research topics here are so interesting I find I become absorbed in the material most of the time," she said.

Professor Johnston finds Lynne makes an understanding contribution to the effective running and the very happy atmosphere in the department; he is especially appreciative of her ability to handle diverse situations "which arise rather often in a department which has constant contact with outside bodies."

In her leisure time, Lynne is interested in handcrafts of all kinds and likes to read historical novels and Australian history.

Womens team a winner

The University of Wollongong's Women's Basketball team distinguished itself at the Basketball Intersivity for 1980 by winning Wollongong's first Intersivity Championship.

"The Women's team was magnificent," Coach/Manager Mr. Hugh Brandon said.

"They went through the week undefeated. Probably their hardest game was

against Queensland in the semi-final when they came from 11 points down mid way through the second half to win by four points."

The Basketball Intersivity was held at Monash University in the August break.

An additional feather in Wollongong's cap was the choice of Barbara Williams as the Women's Best and Fairest Player as judged by the panel of qualified referees.

"She deserved this honour as she played well all week. Probably her best performance was the final where she scored 25 points," Mr. Brandon said.

Also for the first time, Wollongong was fortunate enough to have three players selected in the Intersivity All Star teams. There were Barbara Williams and Marina Vlasoff (Women's) and Bruce Andrews (Men's).

LOGICIANS MEET

The Australasian Association for Logic held its annual conference over the weekend of 30-31st August, under the joint sponsorship of the Mathematics and Philosophy departments.

The papers illustrated the wide interests of logicians. Some were clearly in the further reaches of pure Mathematics, such as the paper on recursion theory by D. Madan of Sydney, or the discussion on arithmetic and combinatory logics by Wollongong's Martin Bunder (retiring president of the Association).

Other logicians are interested in more familiar things: John Howes (Melb) gave a paper on the word 'if'. A third group has joined the technological revolution: Paul Thistlewaite described a computer program developed by logicians at La Trobe for testing formulae to see whether they are provable in various non-classical

logics. That at least should save work. Charles Hamblin (NSW) discussed the various notions of consistency needed to talk about imperatives or rules, and Peter Roeper (ANU) described a logic of time which avoids the need to assume that there are such things as instants. Phil Staines (NSW) attacked the fallacies committed in logic textbooks when they explain the notion of a formalisation of an argument. Ian Hinckfuss (Queensland), drawing on work on dialogue done here at Wollongong, argued that certain fallacies which had been thought to show the need for a special logic of relevance were in fact simply cases of the familiar fallacy of begging the question.

Other parts of the University contributed to the success of the Conference: the Library prepared a special display, International House accommodated the visiting logicians, and Admin provided a car to get them safely across the freeway. Mt. Keira, however, remained unfriendly, and turned on a gale during the barbeque lunch.

THEATRE

Continued from Page 5

her disclosure, it is clear that, for the first time, Olive realises that the security of her treasured ideals is threatened. It was the dramatic climax of the play.

Shirley Whiteley takes the acting honours. She was credible from the first mouthful (she managed to down two middies before the "boys" arrived). Alec Holland played a very sensitive Roo (the most difficult role in the play, to my mind). The scene between Roo and Olive displayed the tenderness of familiarity. Ray Hendley handled both comic and dramatic scenes with ease. Perhaps he bounced about a little too much, though. Margaret O'Shea excelled in the comic scenes, as did Joy Wiedersatz who played the sage and snarly Emma. Her aggravated mumbling delighted the audience, and the "sing-song" scene elicited gurgles of recognition, drawn from the depths of many an agonisingly abortive Christmas party sing along. Even the minor roles of Bubba Ryan (Caroline Deane) and Johnny Dowd (Brian Wilcock) were well done. However, Dowd was hardly portrayed as a match for Roo, and perhaps Bubba was a little too innocent. If she is just a simple girl, why should Pearl suspect that she knows "more than her prayers?"

Workshop deserves credit for assembling a cast which, in spite of minor faults, harmonised so well, in a play so dependent for its dramatic success on the comfortable interplay of character.

Caroline Devine handled the direction well. Her set radiated the warmth of Olive's personality, and the double doors and the porch feature gave the set the dimensions of a room in a house, and created a feeling of spaciousness. In the Workshop's tiny theatre, it was good fun to use real beer - the audience could smell it - but it may have

been unwise to use fake blood which they could see all too well. I'm not suggesting that the real thing would have been better, but that perhaps a more realistic effect would have been achieved without any red stuff at all. And, on the subject of colour, the contrast between the decorated room and the room stripped of the trappings of Olive's little tinsel world, may have been more vivid had the dolls been more brightly coloured.

The only scene in the production I was not comfortable with, was the scene between Roo and Johnny Dowd. On the page it is an awkward scene depicting awkwardness, and it takes something other than words - movement, gestures, mannerisms - to save the actors from looking awkward too.

The final scene is always a problem, because the playwright has not really prepared his audience for it. He wants it to come as a shock, which it invariably does. Sometimes it ruins a whole production by turning it into bathos or side-splitting melodrama. I'm sure the Workshop sometimes has occasion to regret its tiny theatre, but in this case the intimacy served to give the last scene an immediacy which was very powerful indeed. You had to wince when Roo slammed his fist into the piano.

The real judges of any performance are the people in the audience. After the performance I attended there was an absolute stillness in the audience for a minute or two. No doubt they were still recovering from the shock of the final scene, but I'm sure it was partly that they just didn't want it to end.

* Carmel works in the English Department.

Justice Staples to visit

Mr. Justice Staples from the Commonwealth Arbitration Commission will lecture on "The Working Poor" at the University of Wollongong on October 21.

The lecture has been jointly sponsored by the University's Industrial Relations Programme and the Public Questions Forum.

Justice Staples has had a distinguished, if sometimes controversial, career as Deputy President of the Commission since his appointment by the Whitlam Government. His landmark decision in the 1980 Wool Case invoked sharp criticism from the government and when his duties were confined to bench hearings following his criticism of new Government guidelines for the Commission, Justice Mary Gaudron resigned in protest over his treatment.

Justice Staples visit follows the 1979 Inaugural Lecture in International Relations at the University of Wollongong by Sir Richard Kirby, former President of the Commonwealth Arbitration Commission.

The lecture will be held at 7.30p.m. in Pentagon Lecture Theatre I. Members of the University and their friends are welcome to attend. Enquiries may be directed to Mr. R. Markey, Telephone 282938 or 297311 ext. 938.

New east road well underway

The University of Wollongong's new east road is expected to be in full operation by the end of September.

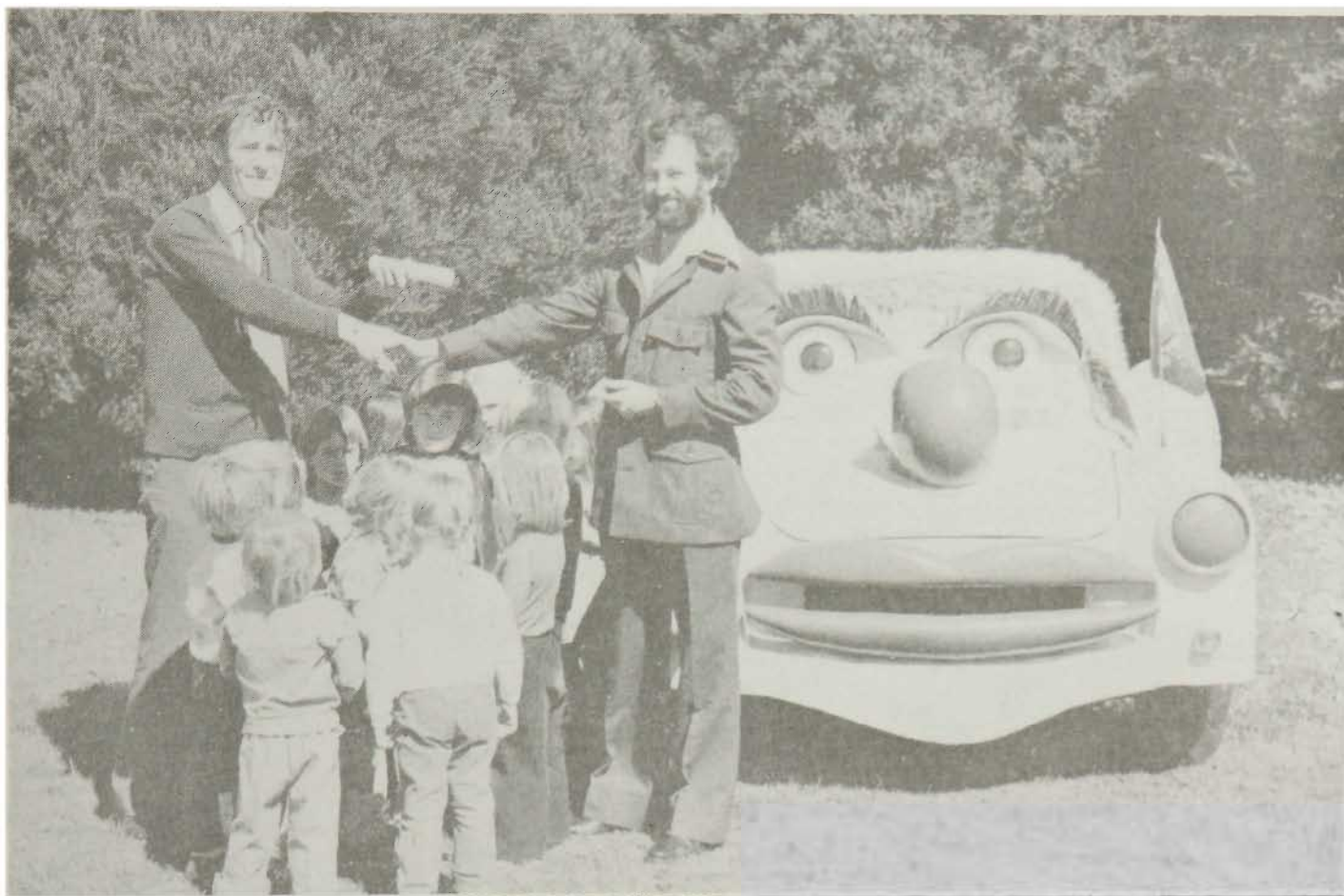
Estate Manager Mr. John Bell said the contract had gone to Cleary Bros. at the end of June and work had gone ahead smoothly.

When the road became operational most of the service traffic would use the University's eastern entrance and use the new road to gain access to the northern side of the campus.

Mr. Bell said the Union road between the Department of Civil Engineering and the maintenance compound would then be closed. The road would be incorporated into the pedestrian pathway system.

"For the first time all the buildings on campus will be within one pedestrian precinct within which only service vehicles will be permitted," Mr. Bell said.

A BUMPA OCCASION



ABOVE: Bumpa the Talking Car made a group of new friends when he visited Kids' Uni this month. His owner, Peter Bowmaker (left) is pictured receiving a reference on Bumpa's behalf from Education Department Professor Ron King. The largest talking puppet in Australia, Bumpa teaches children road safety.

Students' visit

More than 80 students doing a Bachelor of Library Science course at the Kuring-gai College of Advanced Education will visit Wollongong and the University between 30th September and 2nd October.

While in Wollongong the Students will visit the libraries of the Wollongong College of TAFE, the Institute of Education, the University of Wollongong, the City of Wollongong, Kanahooka High School, A.I. and S. and John Lysaght Australia, and they will be participating in seminars.

The students will be at the University on 1st October in the afternoon and will be addressed briefly by the Vice-Chancellor before their inspection of the library.

Take note

Continued from back page

ELECTION OF ONE STUDENT MEMBER OF THE UNIVERSITY COUNCIL.

(CASUAL VACANCY)

DECLARATION OF RESULT -

The poll to fill the position of Student member of the University Council was determined today. The votes recorded were:-

IMISIDES, G. J.	103
WATCHIRS, G.	133
Informal Papers	2
Formal Papers	236

Accordingly, I declare that the following candidate was elected to the University Council:

Watchirs, G.

K. E. Turnbull
Returning Officer

RESEARCH FUNDS

The Development and Planning Office regularly receives information about research funds available from about 30 funding organizations.

The N.H. & M.R.C. is currently calling for applications for Applied Health Sciences Research Fellowships and C.J. Martin Research Fellowships - closing date October 31, 1980.

Further information available from DPO on ext. 955.

WOLLONGONG CITY GALLERY

Exhibition by 15 Sculptors and an Installation by Melbourne Sculptor, John Davis. On show at the Gallery until October 12, 1980.

ILLAWARRA LITTLE THEATRE

The Illawarra Little Theatre will present Shakespeare's The Taming of the Shrew in the Town Hall Theatre at 8 p.m. on Friday, October 17; Saturday, October 18; Tuesday, October 21; Wednesday, October 22; Friday, October 24; Saturday, October 25. Tickets available from Town Hall Booking Office. Enquiries: Mrs. Nugent, Telephone: - 966706.



Items for "Take Note" should be forwarded to the Development and Planning Office, Room G04, The Hut (ext. 955).

SCHOLARSHIPS, FELLOWSHIPS, AWARDS, GRANTS

Details of the following items are available from the Student Enquiry Office, Ground Floor, Administration Building. Closing dates are in brackets.

ITT INTERNATIONAL FELLOWSHIP COMPETITION 1981-82, for graduate study in the U.S.A. (October 31, 1980)

1981 MOBIL FELLOWSHIP IN ARTS ADMINISTRATION (September 26, 1980)

JAMIESON AWARDS, AUSTRALIAN FEDERATION OF UNIVERSITY WOMEN (October 31, 1980)

UNIVERSITY OF TASMANIA, POST-GRADUATE RESEARCH AND COURSE-WORK STUDIES (October 31 and September 30, 1980)

WEIZMANN INSTITUTE OF SCIENCE, ISRAEL, Grants-in-aid to facilitate travel to the Institute.

JAMES COOK UNIVERSITY NORTH QUEENSLAND POSTGRADUATE STUDIES.

AUSTRALIAN FEDERATION OF UNIVERSITY WOMEN, MARY WALTERS MEMORIAL BURSARY. (12 March, 1981)

UNIVERSITY OF ADELAIDE, COMMON-WEALTH POSTGRADUATE RESEARCH AWARDS 1981. (October 31, 1980)

MONASH UNIVERSITY, MASTER OF ENVIRONMENTAL SCIENCE (September 30, 1980)

MACQUARIE UNIVERSITY, MASTER & DIPLOMA IN ENVIRONMENTAL STUDIES (November 7, 1980)

ABORIGINAL OVERSEAS STUDY AWARDS (October 17, 1980)

POSTGRADUATE DIPLOMA IN COUNSELLING, Mitchell C.A.E., (September 15, 1980)

CAMPUS NEWS - Published throughout the academic year by the Development and Planning Office for the University of Wollongong, Northfields Avenue, Wollongong, N.S.W. 2500. Distributed to students and staff, and to local, regional, state and national individuals and organisations.

CONFERENCES, SEMINARS, SYMPOSIA

Details of the following items are available from the Development and Planning Office, Room G04, The Hut (ext. 955).

CARCINOGENS & CANCER, 1st National Conference, Sydney, November 26-28, 1980.

TASMANIAN SUMMER SCHOOLS, January 1981, various subjects.

NATIONAL CONFERENCE ON COSTS AND BENEFITS OF ENVIRONMENT PROTECTION, Melbourne, October 15-16, 1980.

EDUCATION FOR THE EIGHTIES: IMPACT OF THE NEW COMMUNICATIONS TECHNOLOGY, Deakin University, November 5-7, 1980.

ANZAAS CONGRESS - Energy and Equity, Brisbane, May 11-15, 1981.

UNIVERSITY SEMINARS

Biology Department

Tuesday, September 30, 12.30p.m. Dr. H. J. Spencer, Department of Biology, University of Wollongong. "Amino Acids as transmitters in nervous tissue," Room 134, Metallurgy Building.

Tuesday, October 7, 12.30p.m. Professor H. Onishi, Kagoshima University, Japan. "Microbiology in soy-sauce fermentation and some characteristics of the salt-tolerant yeasts concerned." Room 134, Metallurgy Building.

Tuesday, October 21, 12.30p.m. Bob Faragher, N.S.W. State Fisheries, "Feeding Ecology of Two Species of Trout in Lake Eucumbene, NSW." Room 134, Metallurgy Building.

Tuesday, October 28, 12.30p.m. Peter Moran, Department of Biology, University of Wollongong. "The effect of pollution on larval settlement and succession of marine fouling communities." Room 134, Metallurgy Building.

Civil Engineering Department

Friday, September 26, 11.00a.m. Dr. R. K. Bhandari, Head Geotechnical Division, Central Building Research Institution, Roorkee, India. "Instrumentation in Foundation Engineering." Photogrammetry Room, Civil Engineering Department.

Wollongong and Sydney newspapers and magazines are now available from the Union Shop. Staff and students are also reminded of the Higher Education supplements in Wednesday's edition of The Australian, and in the National Times.

Friday, October 3, 11.00a.m. Dr. R. K. Bhandari. "Experiences with Landslides and Mudslides." Photogrammetry Room, Civil Engineering Department.

European Languages Department

Monday, September 29, 3.30p.m. Lecture Theatre Annex 1. The Italo-Australian Experience.

Speakers: Gianfranco Cresciani, "Immigrants in N.S.W. on the Eve of the Second World War." Gaetano Rando, "Language and Culture in the Italian Migrant Experience."

Philosophy Department

Friday, October 10, 10.30a.m. Room 1016, Social Sciences Building Dr. Graham Pont, University of N.S.W., "Current Developments in the Philosophy of Music."

Friday, October 17, 10.30a.m. Room 1016, Social Sciences Building Dr. J. Forge, University of N.S.W., "Scientific Explanation and the Sneed-Stegmuller View of Physical Theories."

ISBN REQUIREMENTS

Members of staff are reminded that each University publication consisting of five or more pages should be assigned an International Standard Book Number (ISBN) before it goes to the printer.

The National Library of Australia has provided the University with a series of numbers allocated to an ISBN prefix. Staff members who are preparing publications should contact Kati Johnson, Administrative Services (ext. 998) and supply, in writing, the details of each publication so that an ISBN may be allocated.

The failure in the past to allocate ISBN's for some publications has caused the National Library some concern. Staff co-operation in this matter would, therefore, be greatly appreciated.

FACILITIES FOR VISITING SCHOLARS

Corpus Christi College, Cambridge, has advised that apartments belonging to the College are set aside for the occupation of Visiting Scholars at a reasonable rental. Minimum period for a visit is one term. Details are available from the Development and Planning Office.