



A GRAND NEW NOTE



University of Wollongong graduate Andrew Snedden practising on the University's new grand piano. The piano will make its official debut at a concert in the Union Hall on September 12.

Piano makes concert debut

After five years of planning and fund raising, the University of Wollongong has finally had delivered a brand new Yamaha concert grand piano.

The piano arrived this month and a special Inaugural Concert will be held on 12th September at the Union Hall where the piano will make its debut at the hands of some of Wollongong's most promising musicians.

The planning for the piano began during University Year (1975) and the piano fund was launched from the profits of Wollongong Festival of Music held in 1975 by the Illawarra Music Club in conjunction with the University.

Illawarra Music Club President Mr. Abe Segal, said further funds were raised

from a ball held at the University and from concerts. Funds raised totalled \$2,700.88. At this stage Yamaha offered its special deal for tertiary institutions and said the piano could be purchased for \$4,795 which is virtually at half its worth. The balance of the price was then provided from the Vice Chancellor's reserves, as a loan to be repaid from concert profits.

Mrs. Val Smith of Jurgens (where the

piano was purchased) said the piano was worth \$8,740. She said Yamaha was delighted to provide tertiary institutions with top quality instruments that would be used for concerts and would attract top artists to the region.

Those performing at the Inaugural Concert include Keith Johns (piano), Helen Mandl (vocal), Rod McConchie (vocal), Janet Morris (vocal), Karen Segal (violin), Rosalie Segal (cello), Andrew Snedden (piano), Richard Tognetti (violin) and David Vance (piano).

The new piano will be used in each performance either solo or as accompaniment.

Tickets are available at the University Union Office or Jurgens Pianos and Organs, 232 Keira Street, or at the door. Admission \$6, concession \$3.

UNIVERSITIES AND THEIR COMMUNITIES

The University Day address was given this year by Mr. Evan Whitton, Editor of the National Times. The address, given on August 8th, was entitled "The Relationship Between Universities and the Communities that Support Them." The full text of Mr. Whitton's speech appears below.

Chancellor, Vice-Chancellor, Distinguished guests, ladies and gentlemen, Robert Graves opened a series of memorial lectures at, I think, Cambridge by saying: "If I say anything untoward, forgive me: I am a stranger here," I can't think of a better way of beginning.

My first task on the fifth anniversary of the founding of the university is to congratulate the Vice-Chancellor, the university, and particularly the citizens and industry of Wollongong and the Illawarra whose donations gave an initial impetus to its founding.

I have been asked in this University Day lecture to say a few words on how the university might better serve its communities, how the community can better understand what the university is doing, and the relationship between universities and their communities.

The first thing to try to decide is to what community a university belongs. Traditionally, universities have tended to see themselves as part of an international community of scholars.

I don't think that there can be any doubt that, in terms of contributions from the public purse, a university ultimately belongs to the community. And, from glancing through this university's submission to the Universities Council for the 1982-84 triennium, one can readily see that Wollongong is aware of this, as for example in the work of the Centre for Multicultural Studies which, I have no reason to doubt, is rather more useful than programs at other institutions which may be designed essentially to appease the increasingly restless natives.

It is in areas such as this that the University of Wollongong distinguishes itself, to its advantage, from older and larger universities which sail serenely on, as if we had not suddenly entered into the uncharted seas of the fourth great revolution of western times. This is the post-industrial economy, the others being the development of feudalism, the development of capitalism, and the development of industrialism and state capitalism.

A university can, and has a duty to, serve its community in many ways. In the academic field, I am inclined to take an extreme position, similar to that of the late Al Capp.

It was Capp's position that anyone ought to be able to put his name down for an examination, and if he could turn up and pass the examination, he ought to be given credit for whatever degree was going.

I note that the university has established an archives division. In first year English 30 years ago, I learned that Mr. William Shakespeare was very, very fond of putting those two great steeplechasers, Appearance and Reality, over the hedges and water jumps. And while we may think that Australia, or even Wollongong, is a fairly humdrum sort of place, where nothing much of interest ever occurs, because in short order the astonishing becomes the normal, Shakespeare would have known

Adding to knowledge a task for everyone

different: That Australia - or Wollongong - is in fact a rich and strange and curious place. To see this, all that is required is a slight mental shift: you try to see something as if it were for the first time, what is called in journalism the Man from Mars approach.

Whatever the appearance may be, we don't know how Australia, or Wollongong, or the university really works. So if I were running the History course here, I would give serious thought to buying in for the Archives the transcripts of as many Royal Commissions in Australia as I could get hold of, and establishing a degree in How The Wheels go Round, and award it to anyone who could, in a couple of hundred thousand words, make a fair fist of adding to the sum of our knowledge. Royal Commissions are, sadly, never adequately reported in the press, and indeed, on a day to day basis, are very nearly unintelligible, but I can assure you, from the couple I've looked at fairly closely, they contain a wealth of material that would blow your mind.

By the same token, if I were involved in running the industrial relations course here, I would seek to persuade the major unions and the major companies in town to insert into the archives annotated copies of

the minutes of their meetings, and offer, on the same basis as before a degree in Cross Purposes. The material, one would hope, would not be used for the purpose of recrimination - for who among us is so pure as to be able to cast the first stone - but to understand how things work. There is no doubt in my mind that each side would be staggered to find to what extent it had misunderstood and misjudged the other.

It follows of course, in terms of how the community can better understand what the university is doing, that the university too might consider inserting into the Archive the minutes of its Academic Senate and other decision-making entities.

I hope these suggestions will not be seen as altogether too shocking to contemplate. In the short run, elements of the minutes might be mildly embarrassing, but, as I think it was Maynard Keynes remarked, in the long run we are all dead, and in the meantime we are all pretty much in the soup, and anything we can do to arrest the further development of the divisiveness strikes me as being no bad thing.

In the university's submission for the 1982-84 triennium, I note that the current student load is a little over 2000 and that it is unlikely to exceed 2550 instead of the four or five thousand on which earliest planning was based. This may cause all sorts of problems of funding, but I wouldn't be the slightest bit defensive about the size of the student body, since, almost by definition, a university of this size is bound to be a better university than universities with a very large student body.

I note from the Williams Report that 4000 students is regarded there as necessary for "effective and economical operations."

I have lately been reading, with a view to excerpting some of it in The National Times, a new book called "Human Scale" by Kirkpatrick Sale. Sale's thesis is that in view of the virtually total failure of bigness, we ought to try to find, before the whole system collapses, some way to scale things down to the human size. On the face of it, he is fighting a battle that is already irrevocably lost, but if this is in fact the case, events may very well in the end force us back to his preferred mode.

Meanwhile, on universities, he says this: "They are by no means the only places to learn" - he says that for his part he learned far more in the 42nd Street library of New York than he ever did in 16 years of schooling - "and they are not necessarily suited for everybody, but if you are going to have them, they will perform best if they are small."

There is no time here to do more than glance at his argument, but I can point to some of the major points.

He notes that the great universities that kept the flame alight in the Middle Ages usually numbered between 500 and 1000 students, and as few as 100. How many students did Peter Abelard (who remains at once the great exemplar of the academic as teacher and the terrible fate that may befall the same academic who engages in, let us say, hanky panky, with one of his students) have when, in effect, he founded the University of Paris about the 1112?

The drawbacks of the big university, it is noted in Sale's book are: Lack of community, overspecialisation, bureaucracy, alienation, growthmania, or, if we can't be good we can at least be big.

Sale quotes the largest survey of higher education institutions ever made, which found that, beyond a certain point, economies of scale do not operate, that "large institutions actually spend somewhat more per student for educational purposes than small institutions."

Smaller numbers fare much better

I might also note that a university also should serve the community by standing a little apart from it, by holding fast to independence, and I must say that I was in the late 60s most impressed with the Vice-Chancellor of Monash University. At the time, quite a number of his students had got themselves - quite rightly it seems now - into quite a tizzy about the Vietnam war, and there were one or two quite ugly scenes. Despite provocation and indignities, the Vice-Chancellor resolutely insisted on enduring the lesser evil rather than risking the greater which he judged to be, in contradistinction to some of his colleagues abroad and in Australia, of letting the State, in the persons of the wallpapers - and I use the term advisedly of elements of the Melbourne police - on to the campus.

was of course eminently laudable, but in terms of the political climate of that great State, and of the university's duty to the community, I'd have thought there were tasks equally pressing to hand, and it was only by the exercise of that great sense of courtesy that one sometimes feels towards a guest that I did not rise to a point of order to inquire of the learned gentleman what, if any, obligation his, and in a manner of speaking, my, university felt in the way of seeking to persuade our political masters to get off the loud pedal in dealing with expressions of dissent, however misguided, by his students. You can imagine, however, my surprise when I later found that, in a curious reversal of roles, the chief of police appeared to have a greater concern to see that his officers did not make a practice of



The Chancellor of the University of Wollongong, Mr. Justice Hope, introducing University Day speaker, National Times editor Mr. Evan Whitton in Pentagon 1 on August 8.

Sale quotes scientists Gallant & Prothero of the University of Washington School of Medicine, who, for purely educational reasons, see the college of 500 to 1000 as the best, but concede that for economic purposes a larger university of several thousands may be beneficial. Their upper limit, however, is 10,000, about which, Gallant and Prothero claim, the only discernible advantage would be to give such a university a possible basis for an application for membership of the United Nations.

It follows from this, that, apart from everything else, the University of Wollongong, which I gather from its submission, is being bled a little in the matter of student enrolments by universities in Sydney, has the weight of the educational and economic arguments on its side when it suggests a limitation of the growth of the three metropolitan universities.

At the same time, a university has a duty to serve the community by shooting people down with their own money. I mean by this that the voice of the university ought to be heard in the face of creeping encroachments by the State on the liberty of the subject, however risky that course may be in terms of funding reprisals.

In this context, I recall attending in Sydney an alumni dinner of the University of Queensland at which the occasional address was given by the distinguished constitutional lawyer who was then Vice-Chancellor and is now titular commander-in-chief of our armed forces. His theme appeared to be that Queensland University had got its numbers up quite satisfactorily to, I seem to recall, about 18,000, so that it was then just about the biggest in the country. The task immediately in front of them, he said, was to get the quality of the students up to a similar pinnacle. This

breaking the heads of young people who thought there was something in the cause of free speech than did, apparently, some academics at the university, although of course it may be that they made some private protest. The chief of police was of course forced to resign.

The person with that sort of mind has, as I have noted, the ability to resist current, rather totalitarian, fads. He also has the ability to admit he is wrong; to admit an argument that goes against his settled conviction; and very possibly the ability to manage people whose skills are greater than their ability to get along.

Continued overleaf

Graduate seeks career in music

University of Wollongong graduate Andrew Snedden will be leaving the academic life, his home town and his country this year to pursue a career as a teacher and performer of music.

Although a keen and able scholar with majors in Philosophy and French, Andrew says he intends to concentrate on his music for the foreseeable future.

He has studied pianoforte from an early age with Nan Price from the Wollongong Conservatorium of Music and has had additional tuition from her teacher Alexander Sverjensky, from Greville Rother of Munich (assistant to Claudio Arrau), from William Primrose on chamber music and from Ronald Farren-Price of the University of Melbourne.

Andrew has given regular performances for the Wollongong Conservatorium of Music where he is a staff member, for the Illawarra Music Club, the Wollongong

Musica Viva Society, the University of Wollongong and the Sydney Conservatorium of Music.

During 1979 he completed studies for both the Teachers and Performers Diplomas of the N.S.W. State Conservatorium of Music and for the Bachelor of Arts degree from the University of Wollongong.

As a result of his performances in the 1980 Australian Broadcasting Commission Instrumental and Vocal Competition, he has been admitted as a solo artist for the A.B.C.

In October Andrew will leave for London where he will continue his music studies with Ruth Nye and he will also travel to Munich to take further tuition from Greville Rother.

On September 12 he will be performing at the University of Wollongong Union Hall at the inaugural concert for the University's new grand piano and on Friday, September 26 he will give a farewell concert at the Wollongong Conservatorium.

'BUMPA' OCCASION

Kid's Uni will have its first official visitor next month - and it's going to be a "Bumpa" show for the littlies.

As Bumpa comes chugging in to the University grounds, the children will see a mop of green hair, two great big eyes under bristly lashes, a shiny red nose and a big chattering mouth. . . and they will all belong to the biggest, fastest, talking puppet in Australia.

Wollongong Lord Mayor Alderman Frank Arkell has presented Bumpa with the key to the Illawarra and he has been dubbed the region's official mascot. On September 9 at the University he will be given a reference by Professor Ron King from the Department of Education.

Peter Bowmaker says Bumpa may also make the Book of Guinness Records. The publishers are currently finding out whether there is a bigger, faster, talking puppet in the world.



— Bumpa —

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The double-bind situation, in which the apparently correct decision produces disaster, increasingly lies in wait for us at every turn. Big businessmen, senior public servants, and even Prime Ministers have, no doubt, been known to admit that they were wrong, but you don't hear it very often. Fifteen years ago we went to war in Vietnam to stop the downward thrust of communist China; we are now encouraging communist China to make that downward thrust. One of those decisions has got to be wrong, but I don't hear anybody admitting it.

It is difficult to put a market value on that sort of mind, but I imagine if it could be inserted into the upper echelons of business, the public service or government, it would be priceless. A man who could admit he was wrong and abort a project might lose a company or the country \$50 million in the short term, but could save it a billion in the long.

Finally, if a university set up a department of Things to Do, it would probably be assailed by the proponents of utility. But by this time it must be obvious to all that we are going to have to set up a whole lot of institutions or projects just to give people something to do, if for no better reason than to stop them burning down Parliament House. I can't imagine, however, a greater service to the community than such a department.

I had proposed to say something about the press, which by comparison with universities, is something I know at least a little about, but I fear I have wearied you

sufficiently for the moment, and will leave that for the questions period, if you happen to have any.

The fore-runner of this university was specifically set up in 1951 to service the industrial needs of the area with courses in engineering, metallurgy, and science, and I have no doubt that it has discharged those obligations to the community with diligence and a proper enthusiasm.

At the same time, I trust that it remains as aware as ever that it is a part of the great tradition of its European ancestors to pursue the truth wherever it may lie, and that one of its main products is the sort of troublemaker, the gadfly, who is secure enough in his own intellectual armoury to feel able to differ substantially from conventional wisdom and current intellectual fads.

The current fad of course, and it amounts to a new intellectual tyranny, is that of Utility as the total and only gauge. This is the cry of what is called neo-conservatism, which in my view is a far cry from genuine conservatism, that everything can be judged by utility, and the main judge of utility is the market.

When attacks come on funding, the first call is: What use is it? Universities have a duty to the public to arm the recalcitrant few who resist such intellectual fads, for next year or the year after criteria of utility other than the futures market or the spot currency market may well be discovered. In terms of the quality of our

lives, of the long rather than the short view, there ought to be a component in universities' budgets designed to preserve the dissenter, however woolly-minded he may seem, in case the clear-thinking 'utility' man turns out to be wrong.

The central issue of funding is accountability, and if you come up with a novel program, you of course run the risk of exciting the ever-vigilant attention of the enemies of higher education, but accountability is no bad thing in itself since it encourages ingenuity.

As we venture into a new age, for which there is no blueprint on how to behave, the sort of mind that is developed more readily in a good, small university than in a large, mediocre one will, or should be greatly in demand.

THESE STARS ARE REACHABLE

Sancho (Peter Bates) pleads with dashing Don Quixote (Anthony Warlow) in the Conservatorium Theatre Company's production of Man of La Mancha which is on at the Wollongong Town Hall, August 22-30.

The Conservatorium Theatre Company (Wollongong Conservatorium of Music) will present Man of La Mancha at the Wollongong Town Hall on August 22-30.

The lusty musical stars Anthony Warlow as Don Quixote, Peter Bates as Sancho Panza and Lynne Williams as Aldonza. The cast will use costumes from the Elizabethan Theatre Trust. Man of La Mancha is being directed by Heather Pulsford.

Tickets are available from the Town Hall, the Conservatorium of Music and all branches of the Illawarra Mutual Building Society.

Special service

A special service will be held for the University of Wollongong and other Tertiary Institutions of Wollongong at St. Michael's Provisional Cathedral on Sunday, 14th September.

Guest speaker at the service will be The Reverend Dr. Paul Barnett, M.A., B.D., Th. Schol., Ph.D., Master of Robert Menzies College and Lecturer in The New Testament and its Time at Macquarie University.

The University Singers will sing two anthems by Henry Purcell which originally were written for the Chapel Royal. The service will begin at 7.15p.m.

Singers present Purcell

The University Singers will hold a concert featuring the music of Henry Purcell at the Union Hall on 23rd September.

All members of the group will give a solo performance during the concert. The group will perform with a small Chamber Orchestra and the programme will also include poetry and play readings. The concert, entitled "Music for a While," will begin at 8.00p.m. Tickets will be available at the Union Hall on the night.



Dr. Dayal joins team

A member of the University of Wollongong's Geography Department has been chosen to join a team of 16 people asked by the Commonwealth Geographical Bureau to prepare a publication on Natural Resources in the Tropics.

Dr. Edison Dayal's contribution to the publication will be on "Agricultural Land and Man-Land Ratio in India: An analysis of Change."

The 16 contributors were selected from

all over the Commonwealth countries on the basis of the quality of research proposals submitted. Each person will contribute a substantial paper on an approved topic and the papers will be discussed and revised in a workshop to be held at Swansea, U.K., in April, 1981. Dr. Dayal will attend the workshop.

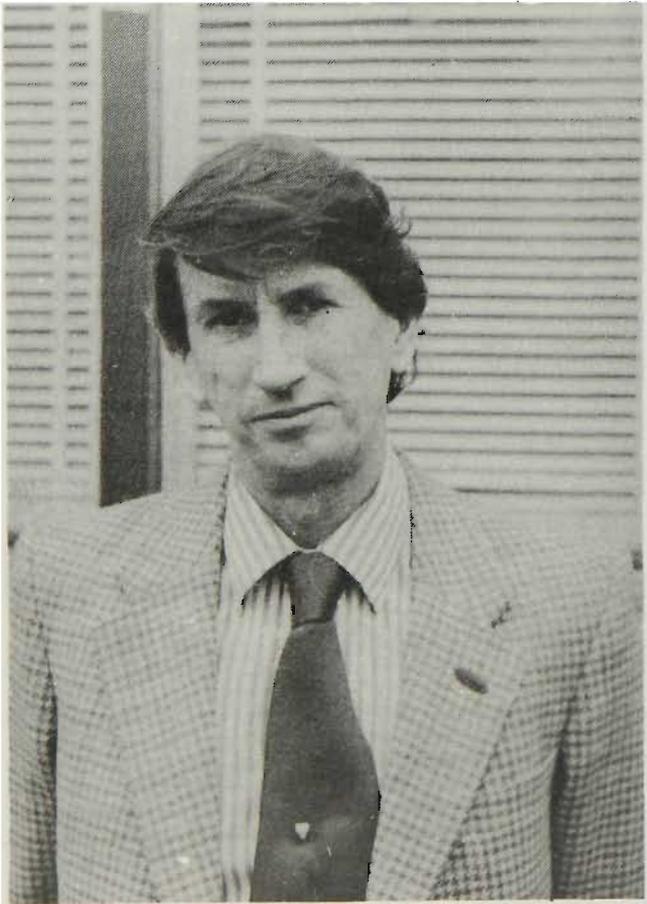
The travelling and other expenses of the participants will be met by the Commonwealth Geographical Bureau and the United Nations University.

ELECTRICAL ENGINEERS A VERSATILE GROUP OF BRIGHT SPARKS

Professional electrical engineering courses have been provided continuously in Wollongong for at least 40 years.

The present Department of Electrical Engineering, set up with the establishment of the University College, was itself a continuation of the Electrical Engineering Department, Wollongong Division, New South Wales University of Technology, housed in the Technical College Buildings. Part-time courses leading to a Bachelor of Science (Engineering) were provided by the University College from its inception until 1974 but the first full-time intake leading to a four year Bachelor of Engineering occurred in 1968. Since 1975 all students, whether part-time or full-time, have been enrolled in the Bachelor of Engineering course.

According to Department head, Professor Brian Smith, the primary responsibility of the Department of Electrical Engineering is to provide an appropriate, basic theoretical background for professional electrical engineers who, during the course of their careers, can expect to have the responsibility for the initial conception and design, the development and construction, the maintenance



Professor B. Smith.

"I had grown up among engineers and I could remember the engineers of the twenties very well indeed: their open shining intellects, their free and gentle humour, their agility and breadth of thought, the ease with which they shifted from one engineering field to another, and, for that matter, from technology to social concerns and art. Then, too, they personified good manners and delicacy of taste; well-bred speech that flowed evenly and was free of uncultured words; one of them might play a musical instrument, another dabble in painting; and their faces always bore a spiritual imprint."

From Solzhenitsyn's 'The Gulag Archipelago.'

and operation, and ultimately the general management of engineering projects. These may range from the generation and distribution of electrical energy through industrial process control, computer engineering and applications, the electronics industry generally and satellite communications to the design and manufacture of components and equipment for use within the industrial, scientific, business and domestic areas.

"Clearly it is impossible within a four year course to provide all of the theory relevant to such a broad field or to anticipate all of the likely future developments so the Department tries to stimulate its students and to produce graduates with a facility both for identifying problems correctly and for the synthesis of satisfactory solutions within any constraints imposed by the particular problem," Professor Smith said.

The extent of the spread of knowledge required by the members of the academic staff of the Department for the presentation of such a course is reflected in the spread of research topics within the Department. These activities are supported to the extent of about \$90,000 per annum by outside funds from which two professional officer positions and two scholarships are financed.

Since 1964 a group within the Department has been investigating problems associated with the electrostatic precipitation of dust particles from gases, a topic which, in addition to its general application, is of particular interest to some sections of local industry and to users of coal mined from the eastern coast of Australia. Ash from these coals has proved to be particularly difficult to remove from flue gases in power stations by electrical means. Investigation of this particular problem has led to increased understanding of the whole process of electrostatic precipitation and hence to improved performance and cleaner air. As a consequence, members of this group have been employed extensively as consultants to various authorities in the U.S.A.

Activity within the communications field is described in the section devoted to Dr. Paoloni.

As the size and complexity of equipment, special purpose industrial plants, communications networks, power generating stations (particularly nuclear), power distribution networks and the various systems which affect the quality of present day society continue to increase, the two associated problems of safety and reliability become of outstanding importance. Work undertaken within the Department in these areas, with particular reference to nuclear systems, has provided outstanding contributions both to the understanding of the problems involved and to the methods of analysis of complex systems.

BELOW: Members of the Department of Electrical Engineering (from Left), Professional Officer Mr. N. Kandasamy, Technical Officer Mr. John Buck, Laboratory Assistant Mr. Paul Raymond, Departmental Secretary Miss M. Fryer, Lecturer Dr. F. Paoloni, Associate Professor W. Charlton, Senior Lecturer Dr. Z. Herczeg, Senior Technical Officer Mr. Ron Parker, Reader, Dr. J. Kontoleon, Senior Technical Officer Mr. Peter Costigan, Lecturer Dr. T. Ng, Technical Officer Mr. J. Willis, Reader Dr. K. McLean, Senior Lecturer Dr. G. Trott.



A rather broad area of interest was that of industrial process control in which a number of members of staff have related but distinct areas of specific interest, Professor Smith said. In general whenever a task was to be performed, whether it be by an individual person or machine, by a production line, by a complete industrial plant or even by a nation there would be many different ways of actually performing the task and a wide range in the quality of the result. Many different criteria may be relevant when it came to evaluating the effectiveness of such a process and its outcome but in most cases it was desirable to accomplish the task at minimum cost with respect to time and resources whilst still maintaining the specified quality of the final result. Resources would include the energy input to the process, the cost of raw materials and the cost of labour, Professor Smith said.

In general all processes and systems may be 'identified' and represented by a mathematical model, the properties of which may be studied and optimised as described above. Implementation of the optimised system is then constrained by the limitations of the various elements within the system such as the motors and their controllers or the computers and their information gathering and processing capabilities, the study and improvement of which is a major concern within the department. Thus the Department has interests in the general areas of system identification, optimal and adaptive control, variable speed drives for application to industry and electric vehicle transmission, computer engineering and applications to control processes in industry and instrumentation generally.

Research in the Department is supported by eight full-time and 16 part-time post-graduate students. These have come here from India, Lesotho, Pakistan, Sri Lanka and a number of different Australian states and their presence makes a significant difference to the quality of life within the Department.

Both research and teaching activities require and receive the benefit and support of the skills of the eight permanent members of academic support staff.

Although now enthusiastically committed to the world of electrical engineering, Professor Smith took his time getting there. His was no smooth transition from undergraduate to postgraduate years and thence to a University niche. In fact, while doing his Master's degree at Adelaide University his life underwent an abrupt change.

"I took a three-week break to drive a tractor and stayed for nine years," Professor Smith said.

He had gone off to help things along on a family owned property, stayed to become a grazier, marry and acquire a family of three before returning to his profession. He then spent two years with the Weapons Research Establishment at Woomera (the rocket range testing area) because "the Commonwealth Government was the only employer prepared to take on an engineer with grazing experience." After that it was back to the University of Adelaide as a lecturer where he stayed to become a senior lecturer and complete his Ph. D. In 1970 he came to Wollongong as head of the Department and the sixth Professorial appointment at Wollongong University College.

The hierarchical structure inherited from the University of New South Wales and the paucity of professors ensured that for the years prior to autonomy most of the time was absorbed by meetings interspersed with hat changes as appropriate. Among the positions held by Professor Smith are the following: member of the Univ-

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Many recall the 'good old days'

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ersity Council, its predecessors and Committees from 1972-78; chairman of the Academic Senate and its predecessors from 1972-75; member of the Union Board of Management 1977; member of Council of Wollongong Institute of Education 1977; member of Promotions committee since its inception; Chairman of the Tenure Committee 1977.

His other interests include tennis, natural history and management of a grazing property at Coonabarabran while research interests include variable speed machines and static converters.

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Associate Professor Willis Charlton, who is currently enjoying study leave, has been with the Department since the mid-fifties.

He gained his B.E. and Ph. D. from the University of New South Wales. Research interests cover optimal control, variable speed machines and static converters while his current hobby appears to be the writing of a book on circuit theory. He is married with two sons.

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Dr. Kenneth McLean, Reader, is one of the Department's long-standing members. He came to the University of Wollongong in 1964 and has seen it grow from a small college to an autonomous university.

A graduate of the University of New Zealand, Christchurch (now the University of Canterbury), Dr. McLean came to Australia in 1957 to study theology. He became a Bachelor of Divinity in Melbourne and then worked for the State Electricity Commission of Victoria before coming to Wollongong. He gained his Ph. D. from the University of N.S.W.

Dr. McLean has been involved in one of the department's main research projects, Electrostatic Precipitation Solids (described above), for a number of years.

Married, with three children, Dr. McLean lists reading and music as his spare time activities.

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Greek-born Dr. John Kontoleon, Reader, is just about as single-minded an electrical engineer as one could wish for - he lists research as his hobby and admits to indulging in an occasional bit of fun solving problems with computers.

A graduate of the University of Athens (in Physics) and with a Ph. D. in Electrical and Electronics Engineering from the University of Liverpool (U.K.) Dr. Kontoleon came to the University of Wollongong at the end of 1974, just in time to see the University become fully-fledged.

His interests extended from Physics to Electronics after he had left the University of Athens, early 1967, and began three years' national service with the Greek Navy. Part of his time was spent at the Nuclear Research Centre (Electronics Department) and he dates his change in direction from there. Early in 1972 he became Head of the Reliability Group at the Research Department of the Hellenic Telecommunications Organisation.

Dr. Kontoleon is also a Research Fellow of the U.K. Atomic Energy Authority, was elected a member of the Council of the International Technical Co-operation Centre (Israel) in 1979 for three years and has been a former reviewer for an international research journal since 1975.

His present research interests include computer aided analysis and design of electronic systems, reliability and safety analysis of nuclear systems and optimal design of communications networks.

Dr. Kontoleon is married with two sons. He and his wife, who is also a physicist/electronics engineer, went through undergraduate and postgraduate studies together.

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Senior Lecturer, Dr. Zlatko Herceg graduated in Electrical Engineering from the University of Zagreb in 1953.

He was a design engineer with the Particle Accelerator Group of the Institute Ruder Boskovic in Zagreb for seven years. He worked on the RF system of a variable-energy cyclotron. Dr. Herceg was also a Scientific Officer with BICC Research Laboratories in London for two years where he worked on vacuum deposition techniques and dielectric measurements for the electronic component industry.

Dr. Herceg came to the Wollongong University College in 1964 and joined the team doing research in Electrostatic Precipitation as applied in industrial precipitators for air cleaning. He has an engineering and teaching interest in the design of electronic circuits, particularly for communication systems.

He is married and has four children. Bushwalking and reading are leisure time activities.

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Computers a major interest

Senior Lecturer Dr. Geoffrey Trott is one electrical engineer who is rarely found sitting still in his office - he's too busy with one thing or another in the workshops to find a great deal of time for the sedentary life.

A graduate from the University of Adelaide he gained his Bachelor of Science in 1965, Bachelor of Engineering in 1967 and then spent four years at the University of Alberta in Canada. He completed his Ph. D. and came to Wollongong in 1971.

Dr. Trott's research interests centre around computers, computer programming and associated software and hardware. His interests have led him to form substantial links with other departments, notably Chemistry. He has designed an interface between a quadrupole mass spectrometer and a Nova Minicomputer.

While on study leave at Swansea in 1978 he worked with Professor John Beynon on research which involved the accurate measurement of magnetic fields in order to calibrate spectrometers. Dr. Trott has also been working on a hybrid computer which combines both analog and digital computers to take advantage of the best aspects of both types to make a more powerful machine. He also engineered the link between the Univac and two Nova (mini) computers in Chemistry and Electrical Engineering.

Dr. Trott is married with three children. He plays competition squash for the University, some competition tennis and some golf (the latter when in Adelaide) and is Treasurer on the Elonera School Committee. In any time left over, he "tinkers with the car" and plays Bridge.

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Lecturer Dr. Tony Ng came to the University of Wollongong in 1977 and feels he has "sort of settled permanently."

Source of aid for industry

He is a graduate of the University of Hong Kong and the University of Newcastle (Australia) where he completed his Master's degree and Ph. D. Dr. Ng has a deep interest in computers, computing and process control and is involved in the Department's electrostatic precipitation research. His research includes finding ways to improve industrial systems by constructing mathematical models of industrial plants such as blast furnaces, designing optimal experiments for system identification and applications of optimal and adaptive control theories.

Dr. Ng is married (the wedding was in May) and lists reading, music and badminton as hobbies. This year he has also taken on a new task - he is warden of International House and says the job keeps him very busy.

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Lecturer Dr. Frank Paoloni looks as Italian as his name but says proudly that he is Australian born and bred.

A graduate of the University of Sydney he spent a year as Visiting Assistant Professor at Tech. University, Texas after he had gained his Ph. D. and then spent four years at Princeton, New Jersey. While there he worked in the Plasma Physics Laboratory and he was back there on study leave last year.

Dr. Paoloni arrived at the University of Wollongong in 1978 and is now involved in two main fields of research. The first is micro-wave holography which involves the building of a primary device to reproduce the image of a three-dimensional target on a display screen using computer techniques. Ultimately the device could be used as a scientific instrument to analyse, for example, radiation from antennae, or analyse a hidden object, such as an object embedded in plastic. A possible future use could also be the detection of deep seated tumours, an area in which medical centres have also been conducting research.

Dr. Paoloni's second research field is the building of communication systems to be used between computers or any device which generates vast amounts of data. These systems are essentially high speed data links.

Married with one child, Dr. Paoloni lists competition squash and reading as hobbies. He also flies a glider, thinks he ought to do some gardening and encourages his wife who is currently working on a Ph. D. thesis titled 'Nutritional Studies on Urban Aborigines.'

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Professional Officer Mr. N. Kandasamy (Kan) graduated from the University of Madras with a Bachelor of Science (Physics) degree and Bachelor of Engineering (Electronics Engineering) before coming to Australia in 1971.

He worked with the Commonwealth Railways and then at the Broken Hill University College, coming to Wollongong in 1978. His duties consist mainly of organising laboratory classes to ensure smooth running and some supervision of classes as well.

Mr. Kandasamy is currently working towards his Master's degree and his research is in the field of Stratospheric Aerosol Studies.

He is married with two children. Until recently he and his wife were involved with the Tamil Association in Sydney. (Tamil is the language they speak.) He works until late at night, assisting his wife, who runs a 'fish and chips' shop at North Wollongong. They specialise in authentic Madras curries. ('Curry' by the way, is a Tamil word.)

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Senior Technical Officer Mr. Ron Parker has just taken up jogging "to get fit before I turn 40," he says with a grin.

He has been with the department for 10 years (minus a month) and has had a busy time contributing to the construction and

design of research equipment. He studied at Tech. while with the PMG, has an Industrial Electronics Certificate and is qualified to service TV sets. Married, with two sons, he goes surfing and camping - and tinkers with antique clocks. At the moment he has eight clocks to get into working order. "It all began when I picked up an old clock at the dump," he said. Another interest is cooking and he claims he makes terrific pancakes. . . .

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Senior Technical Officer Mr. Peter Costigan is another jogger (also a recent enthusiast) and, with Ron Parker, tackles the oval near the workshops every lunchtime.

He has been with the department for seven years and with the University for 14 years. The first seven years he spent with Mechanical Engineering, Civil Engineering and Mining which were one department in those days. Mr. Costigan gained his Bachelor of Science (Eng.) degree in 1978 and enjoys the active team work in the department. He is concerned mainly with the construction of research and teaching equipment.

Plenty to do in workshops

He is married, has two children, enjoys spending time with his family, going to Church and skiing. He has been Treasurer of the South Coast Conservation Society for most of the past seven years and takes an interest in Local Government.

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Senior Technical Officer Mr. Jack Williams has been with the department for nine years and is in charge of the department's special nook - the Electrostatic Precipitation Laboratory.

He also helps construct equipment for research experiments for staff and post graduate students and in equipment development and design. In his spare time he is a keen amateur radio operator and tries to fit in some photography. He has a special claim to fame as far as Campus News is concerned - he is responsible for half tone photography, plate making and typesetting when Campus News first began publication.

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Senior Technical Officer Mr. John Buck has spent a contented nine years in the Departmental Workshop making and repairing equipment.

He arrived in Australia ten years ago with his wife and two teenage sons convinced that a much better future could be achieved here. His eldest son is now a qualified accountant and the younger in the RAAF. He had travelled extensively in Europe prior to coming to Australia, returned three years ago to visit aging parents and do a bit more travelling. Has visited most states in Australia and just returned from a camping holiday to North Queensland visiting the beautiful islands on the Whitsunday Passage. He is a keen organic gardener and conservationist, grows grapes and makes wine.

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Continued overleaf

A family of 'foreigners'

Continued from previous page

Laboratory Assistant Mr. Paul Raymond takes care of equipment in the Department's labs and workshops - and dreams of owning a recording studio.

In his spare time in fact, that's exactly what he is building. When he has attained this dream he may go back to study (Electrical Engineering of course) but in the meantime he'll be setting up equipment and pulling it down again for some time to come.

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Departmental Secretary, Maree Fryer, has been looking after her 'family' of engineers since mid-1976.

According to Professor Smith, she "runs the Department of course" but Maree finds herself, more often than not, acting in the role of an unofficial counsellor (especially to students) and as virtually a lone 'Wollongong' voice amongst a lot of 'foreigners.' The 'foreigners' all insist they couldn't do without her though. She has a large Dictionary of Science and Technology on her desk and knows what she's about which is essential amongst a group of esoteric engineers. In her spare time she is doing some study at the University, enjoys walking, reading, tennis and being with her 'real' family.

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Department sponsors symposium

Each year for the past ten years or so an Electrical Power Engineering Symposium has been held at one of a number of different colleges and universities throughout Australia.

It provides an opportunity for informal discussion on problems of common interest between power engineers in both educational establishments and industry.

This year it is to be held under the sponsorship of the Department of Electrical Engineering at the University of Wollongong on 25th - 27th August. Approximately 25% of the papers will be presented by engineers from local industry.

Papers to be presented cover such topics as microprocessor controlled electrical machines and processes, power system stability and protection problems, special electrical machines, power electronics and 'Intellectuals and Engineers'.

Visits have been arranged to Australian Iron & Steel Pty. Ltd., and John Lysaght (Australia) Limited in order to inspect some examples of modern process control applications.

Professor Arlett who is Chairman of the Department of Electrical and Electronic Engineering at James Cook University of North Queensland and a member of the North Queensland Electricity Board, will be visiting the Department of Electrical Engineering between 19th and 27th August, 1980.

During the first week of his visit he will deliver a series of lectures to the undergraduate students, post-graduates and staff. During the second week he will be participating in the Electrical Power Engineering Symposium.

Professional Officer Mr. Zarar Rana spends all his time doing research.

A graduate of Punjab University (Physics) and Essex University (Electronics Engineering) he is working on his Master's degree. His field of research is computer graphics and he is also currently working with the Electrostatic Precipitation team. In two weeks he will be returning to Pakistan to marry (which he says will definitely be a change from doing research) and then will be back on deck in the Department early in September. He says his future wife, an Arts graduate in Psychology from the University of Karachi is looking forward to making her home in Wollongong.

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Technical Officer Mr. John Willis says the most interesting aspect of his work is the constant variety of jobs that come his way.

A licensed electrician, he helps construct research equipment and says it beats the life of "an ordinary electrician" all the way. During any one day he might have to use a lathe, do some welding, carpentry or electrical work. He is married with three children and one grandchild with whom he likes to spend a lot of his spare time. Otherwise, he enjoys using a camera, has belonged to camera clubs and does some tenpin bowling.

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LOGICIANS' CONFERENCE

The Australasian Association for Logic Conference will be held in the Philosophy Department at the University of Wollongong this year on August 30 and 31.

The Australasian Association for Logic is rather small as academic associations go, as few universities have more than two or three logicians. For some years the AAL led an uneasy half-life, sometimes able with difficulty to stage a conference of its own, at other times becoming part of the much larger Australasian Association for Philosophy Conference.

In the mid-1970's, however, increasing interest in logic among philosophers, mathematicians, and computer-scientists enabled the AAL to begin again to hold a regular annual conference independently of the AAP. At the last annual conference at Monash, Dr. Martin Bunder of the Mathematics department, University of Wollongong, was elected President of the AAL, and it was decided to hold the 1980 Conference at Wollongong.

The Conference this year follows straight after the AAP Conference at Sydney University, at the end of August. It will be attended by people working on logic in philosophy, mathematics, computing science, and economic statistics - and, the department hopes, by undergraduates studying logic at Wollongong.

Theatre South 'alive and well'

Theatre South, the region's first professional theatre company, is alive and well and preparing for a full season next year, according to actor/director Des Davis (English Department.)

Looking back on the company's first projects, *The Con Man* and *Story-Go-Round*, Des is confident that the group will prosper.

"We succeeded in doing what we set out to do - we formed a company from Sydney and regional professionals, amateurs and students and we created a successful piece of theatre," Des said.

"On the whole, the audience and critical response was good, officers from the Premier's Department and the Australia Council were impressed and will support our request for funding - and community support was there. We got 1800 people out to see *The Con Man* as a pilot project and in the middle of winter."

In reply to the strongest criticism that a play by Moliere did not transfer well to Jamberoo, Des says that while the critical response was legitimate enough, it was important to realise that what makes Moliere universal is not the style of presentation of his plays, but the universality of characters and situations he creates.

"The adaptation was valid - here we have the autocratic father of a wealthy family conned by a sanctimonious hypocrite who fools no one else. The adaptation puts the father in Jamberoo at a time when the notion of family was important, when owning land was important and when wandering con men were not uncommon. That the play worked is a tribute to Moliere, not an insult," Des said.

"Critics might also like to note that in Australia, or any other English speaking country, all they ever see is a translation of Moliere."

Des said he had also been encouraged by the response to the children's piece, *Story-go-round*. He said the company had received excellent, personal response from their young audiences, verbal and written, and would be continuing with a young people's program next year.

He said the company would be announcing the full season for 1981 later this year.

FILM FESTIVAL

A Greek woman's relationship with the man she was brought to Australia to marry, a Turkish migrant in Germany who is driven to violence, an Italian worker's attempt to survive in Switzerland - these are just some of the powerful themes covered in a film festival on the theme of migration to be held at the University of Wollongong.

The festival has been organised by the Centre for Multicultural Studies in conjunction with the University film group and it will be held in the Union Hall on August 29 - 31.

The programme will feature films from Germany, Italy, Bolivia, Great Britain, the United States and Australia. A series of short films will also be shown, some made by migrants, dealing with many aspects of migration in Australia and in many other countries.

Multicultural Studies Centre director, Dr. A. H. Jakubowicz, said the festival would be of interest to all parts of a comm-

unity as affected by migration as Wollongong.

"But migration is an international phenomenon affecting people and countries all over the world. Films such as these will give a very broad view of the problems involved. Some of the short films are moving, or just good fun and they are very good films in their own right as well as carrying special knowledge," he said.

Tickets are available from the Centre for Multicultural Studies, 3rd Floor, MLC Building, 172 Keira Street, Wollongong, between 9.00 a.m. and 5.00 p.m. weekdays.

Prices: Subscription for full festival \$10.00
Friday Evening \$3.00
Saturday afternoon and evening \$6.00
Sunday afternoon and evening \$6.00

Light refreshments will be available, including wine, cheese and coffee, at the completion of the festival on Sunday evening.

For further details contact The Secretary, Centre for Multicultural Studies, Tel. 297311 ext. 401 or 282.401.

Take Note

UNIVERSITY SEMINARS

Biology Department

Tuesday, September 16, 1980, 12.30p.m. Room 134, Metallurgy Building. Mark McKay, Roche Research Institute of Pharmacology, Dee Why. "Osmoregulation in Blue/Green Algae."

Tuesday, September 23, 1980, 12.30p.m. Room 134, Metallurgy Building. Steve Sparks, School of Zoology, U.N.S.W. "Nitrogen Excretion in Tunicates."

Tuesday, September 30, 1980, 12.30p.m. Room 134, Metallurgy Building. Dr. H. J. Spencer, Department of Biology, University of Wollongong. "Amino Acids as transmitters in nervous tissue."

Philosophy Department

Friday, September 19, 1980, 10.30a.m., Room 1016, Social Sciences Building. Associate Professor David Stove, University of Sydney. "The Harm that Deduction has done to Recent Philosophy of Science." (This paper should be of interest to students in Science departments, as well as H.P.S. and Philosophy).

Friday, September 26, 1980, 10.30a.m. Room 1016, Social Sciences Building. Professor Chaim Perelman, Free University of Brussels and University of Sydney Law School. "Philosophy, Rhetoric and Dialectic." Professor Perelman is a highly distinguished academic and a world authority on *The New Rhetoric*.

Continued from back page

BIOLOGY FILMS

The following films will be shown at lunch times (12.30 - 1.30p.m.) in Metallurgy Building, Room 134. All interested students are welcome.

September 10 Above the Gorge: The Platypus.
September 24 Against the Escarpment: the Echidna.
October 9 At the Edge of the Salt Plain
October 22 Battling Sea Pollution: Eudyptula minor (fairy penguin).

WOLLONGONG CITY GALLERY

The Peter Stuyvesant exhibition, *RODIN AND HIS CONTEMPORARIES*, will be on show at the City Gallery, Cnr. Burelli & Keira Streets, Wollongong, until September 7.

An exhibition arranged by the Benalla Art Gallery, 15 AUSTRALIAN SCULPTORS, will commence on September 10.

CANNING ART AWARD 1980

Entries are invited in the following sections: Painting - Oils/Acrylics; Sculpture; Water Colour; Drawing; Ceramics; Pottery. Further details are available from the Development and Planning Office, Room G04, The Hut (ext. 955).



TAKE NOTE

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.

ISRAEL GOVERNMENT SCHOLARSHIPS 1981/82: for postgraduate study or research for one academic year. (October 10, 1980)

COMMONWEALTH SCHOLARSHIP & FELLOWSHIP PLAN 1981: awards tenable in the United Kingdom, Canada, Ghana, Hong Kong, India, Jamaica, Malaysia, Malta, Nigeria, Sri Lanka, Trinidad and Tobago, and Uganda. (December 1, 1980)

JAPANESE GOVERNMENT (MONBUSHO) SCHOLARSHIPS 1981: Undergraduate and research scholarships. (September 19, 1980)

SHELL POSTGRADUATE SCHOLARSHIPS IN ARTS AND SCIENCE/ENGINEERING 1981: Tenable in the United Kingdom. (September 26, 1980)

AMERICAN ASSOCIATION OF UNIVERSITY WOMEN: International Fellowships for advanced study in the U.S.A. (December 1, 1980)

AUSTRALIAN FEDERATION OF UNIVERSITY WOMEN: Bursary to facilitate work on a project which necessitates a short stay in Canberra. (September 15, 1980)

RUDI LEMBERG TRAVELLING FELLOWSHIP: in the fields of biology, biochemistry, conservation or the Australian flora. (September 30, 1980)

INTERNATIONAL RESEARCH FELLOWSHIPS: (Fogarty International Centre & U.S. Public Health Service) for work in biomedical sciences. (October 31, 1980)

SELBY FELLOWSHIP 1982: awards to enable distinguished overseas scientists to visit Australia. (September 15, 1980)

GOTTSCALK MEDAL: for research in the medical or biological sciences. (September 30, 1980)

1980 PAWSEY MEDAL: for research in experimental physics. (September 30, 1980)

GRIMWADE PRIZE IN INDUSTRIAL CHEMISTRY 1981: (March 1, 1981)

DAVID SYME RESEARCH PRIZE, 1981: for contributions to Biology, Chemistry, Geology or Physics. (March 1, 1981)

VACATION SCHOLARSHIPS, INSTITUTE OF ADVANCED STUDIES, AUSTRALIAN NATIONAL UNIVERSITY: To enable undergraduates, who will have completed the third or fourth year of a Bachelor degree course in 1980, to undertake a useful piece of research work, during the December-February period. (September 2, 1980)

NETHERLANDS GOVERNMENT SCHOLARSHIPS 1981/82: for postgraduate study. (December 15, 1980)

STEIN ROKKAN PRIZE: International Social Sciences Council. (March 31, 1981)

FRANK KNOX MEMORIAL FELLOWSHIPS 1981/82: tenable at Harvard University. (October 17, 1980)

MASTER OF ARTS IN LIBRARIANSHIP: Monash University.

ADOLF SPIVAKOVSKY SCHOLARSHIPS FOR THE COMPOSITION OF MUSIC: (October 1, 1980)

VISITING RESEARCH FELLOWSHIPS 1981/82: University of Edinburgh, Institute for Advanced Studies in the Humanities. (January 30, 1981)

CANDIDA MEDRANO DE MERLO AWARD: for work on the subject of "Hepatology and related problems." (October 20, 1981)

CANCER RESEARCH GRANTS, 1981 (August 31, 1980)

O.P.S.M. FELLOWSHIPS & RESEARCH GRANTS: to support specific projects in relation to the human eye and like fields. (September 5, 1980)

CONFERENCES, SEMINARS, SYMPOSIA

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

TRAVELLING SEMINAR ON AUSTRALIA'S MAJOR DEVELOPMENTAL PROJECTS, October 1 - 15, 1980.

RADIO RESEARCH BOARD, ARRAY BEAMFORMING & STEERING SEMINAR, Adelaide, March 3 - 4, 1981.

CREATIVITY IN THE MIDDLE AND LATER YEARS, Armidale, September 15 - 19, 1980.

Wollongong and Sydney newspapers and magazines now are 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.

SEMINAR ON COMPUTERS IN DEVELOPING NATIONS, Melbourne, October 13, 1980.

WORKSHOP: TEACHING AND LEARNING IN HIGHER EDUCATION: Factors Affecting the Learning Process, Sydney, September 1 - 4, 1980.

WORKSHOP: MICRO CHIP AND THE TEACHER, Sydney, September 2 - 5, 1980.

WORKSHOP: MICRO CHIP AND THE ADMINISTRATOR, Sydney, September 8 - 11, 1980.

POST-WAR RECONSTRUCTION SEMINAR, Canberra, August 31, 1981.

11TH STRING SUMMER SCHOOL, Hobart, January 21 - 30, 1981.

TEACHING AND LEARNING IN THE MAJOR DESCIPLINES IN HIGHER EDUCATION: HERDSA Annual Conference, Monash University, May 9 - 12, 1981.

PERFORMING ARTS - DIARY OF EVENTS

August 31 - Sept. 5. Arcadians present "GODSPELL", Wollongong Town Hall, 8p.m.

September 12. Illawarra Music Club presents AN EVENING WITH NAN PRICE, Wollongong Town Hall.

September 15. Musica Viva presents CAPPELLA CORELLI, Wollongong Town Hall.

September 29. Illawarra Choral Society SPRING CONCERT, Institute of Education Auditorium.

Sept. 29 - October 4. Lake Theatre Group presents "BUTTERFLIES ARE FREE," Wollongong Town Hall.

ECONOMICS SOCIETY

On Monday, September 8, at 8 p.m. in the Union Hall, Opposition Speaker Ralph Willis will give a public lecture on the Budget and its effects. Admission is free for society members. For non-members admission is \$1 and 50 cents for students.

CAMPUS NEWS

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