Better Life Project: from the left are 'victim' Leigh Farrell, and 'minders' Colin Atkinson and Tom Penrose

School of Health Sciences
‘Better Life’

ON FRIDAY, July 19, Professor John Bloomfield, Senior Adviser to the Minister for Sport, Recreation and Tourism, presented a cheque for $18,000 to the Vice-Chancellor of the University of Wollongong as a seeding grant for the establishment of the Illawarra Regional Institute of Sport Foundation—the first of its kind outside a capital city.

Funded by the Australian federal government initially, the foundation has been established to assist in identifying sporting potential in individuals and to help in their training with the overall aim of optimising the potential of sportsmen and sportswomen in the Illawarra.

During the day, members of the School of Health Sciences at the University subjected a number of students from local High Schools to a range of scientific tests aimed at identifying their strength, flexibility, lung capacity and aerobic capacity. Selected on the basis of their outstanding athletic ability, the students were then tested alongside employees from local industry and post-coronary patients as part of the University’s ‘Better Life’ Project.

Above are two University of Wollongong astronomers who have just recorded the basis for a first-class astronomical mystery. They have confirmed that indeed the planet Neptune has rings. In the picture are Peter Ihnat and Glen Moore, examining the printout which in part led to their conclusions.

Glen Moore’s article appears on page 2.

The University of Wollongong became ten years old on August 9. For news of the celebration please turn to page 3
The Rings of Neptune

Exciting Discovery by Wollongong University Astronomers

Glen Moore, Department of Physics

ALTHOUGH the rings of Saturn have been known since the time of Galileo, rings around other planets have been discovered only recently. The first of these other rings, a tenuous ring of Jupiter, was a surprise discovery of the Voyager program, having never been observed from the Earth. The possibility of rings around the outer planets, Uranus and Neptune, has however been suggested on several occasions over the past 200 years and there have been numerous claims of their discovery. The astronomer William Herschel, discoverer of the planet Uranus, believed he could see a ring around Uranus, which he observed many times between 1787 and 1792, but by 1792 he could no longer see the ring and its existence was explained as a defect in the optical system of his telescope. The discovery of Neptune did not take place until 1846 and almost immediately the English astronomer, William Lassell, who was a prolific discoverer of faint planetary moons, turned his 24-inch telescope to observe the planet. This was the largest reflecting telescope in England and with it he discovered Triton, the innermost moon of Neptune. He also reported seeing a ring around Neptune on many occasions, and these observations were confirmed by other noted astronomers who estimated that the ring had a diameter twice that of the planet. Subsequent observations, however, failed to verify the ring and like the ring of Uranus it faded into obscurity, classified as merely another optical defect.

Uranus and Neptune lie at the extremities of the solar system and are consequently difficult to observe, the disc of the planet when seen through even the largest telescope subtending an angle only a little larger than the extent of the atmospheric shimmering. But in 1977 a group of astronomers in the Kuiper Airborne Observatory, flying at an altitude of 12km, were attempting to measure the diameter of Uranus by observing the occultation of a star as it passed behind the planet. During the event the combined brightness of the planet and star suddenly dropped several times before and after the star was occulted by the planet. Further observations have confirmed that these so-called ‘paired ring crossings’ were due to the existence of nine tenuous rings surrounding the planet. Immediately speculation again surfaced with regard to the possible existence of rings around Neptune.

Neptune is much more difficult to observe than Uranus. It is more distant and its movement across the sky is slower, giving rise to fewer opportunities to try the occultation technique. In addition the unusual orbit of its innermost moon, Triton, would appear to make the usual ring configuration unstable. Several attempts were made between 1978 and 1985 to observe occultations of stars by the planet and several times single occultation events were observed, giving rise to speculation that small previously undiscovered moons might exist but no paired ring crossings were observed. Observations made with the University of Wollongong 45cm reflector have now produced the first convincing evidence for the rings. In 1981, G.K. Moore and P. Ihnat observed the predicted occultation of a faint star by Neptune. The observations were made under almost perfect weather conditions but the star just missed being occulted by the planet and the results were never analysed in detail. However, when single unpaired events were reported by other authors, the data, which were buried in considerable noise caused by the scintillation of the atmosphere, were re-examined. The computer prints out the line drawing accompanying this article, showing the combined brightness of the planet Neptune and star. Above Glen Moore’s head is an illustration of Saturn.
On its Tenth Birthday, Wollongong Uni Honours Distinguished Australians and Benefactors

UNIVERSITY DAY is August 9—and with it this year came the University of Wollongong's tenth birthday. To celebrate the occasion a special graduation ceremony was arranged for those who had completed the requirements for the award of a degree at the end of this year's first session.

But adding to the sense of occasion of the anniversary were rather special awards, to rather special people. Chief among them was one of Australia's most distinguished figures—Sir Roden Cutler, VC, Commander of the British Empire, Knight of the Most Venerable Order of St John of Jerusalem, Knight Commander of the Royal Victorian Order, Knight Commander of the Order of St Michael and St George, and Knight of the Order of Australia. On Sir Roden was bestowed an Honorary Degree of Doctor of Letters.

To another distinguished Australian, Mrs Thistle Stead, 83, went another Honorary Degree—that of Doctor of Science—in recognition of her long working life devoted to the preservation of Australia's natural environment.

Equally significant was the awarding of University Fellowships—the first offered by the University—to four of Wollongong's leading citizens, each of whom over the years had played a significant role in the development of the University.

The new Fellows are the Lord Mayor of Wollongong, Alderman Frank Arkell, Miss Ethel Hayton, journalist and extremely generous benefactor, Mr Laurie Kelly, Speaker of the NSW Legislative Assembly and Deputy Chancellor of the University, and Mr Merv Nixon, a director of the Technology Centre recently founded by the University, and secretary of the South Coast Labour Council.
Change and Continuity
by the Vice-Chancellor

ANY university person coming into the Union Hall in the late afternoon of Friday 9 August 1985 would instantly have felt familiar with the graduation ceremony in progress. Further, the ceremony would have been recognisable as having its roots in the long traditions of British (and American) university life.

In that ceremony The University of Wollongong was celebrating its tenth anniversary as an autonomous university. It honoured Sir Roden Cutler and Thistle Stead with honorary doctorates and was itself made the richer for their acceptance. It conferred fellowships on four outstanding Illawarra citizens who had been long-standing supporters of the University. It also conferred a variety of diplomas and first and postgraduate degrees on successful students.

These ceremonies are simple, dignified and solemn rites of passage of immense significance to those graduating. The academic gowns, the doffing of caps, and the forms of presentation of students are all manifestations of the continuity of academic life which The University of Wollongong shares with universities the world over. The rituals underscore university traditions of disinterested pursuit of truth through scholarship and research.

Yet the University is situated in a region undergoing dynamic and sometimes painful change as part of broader economic and technological changes being forced upon Australia, and the University is still in the throes of expansion from a small to a middle-size university.

The first five years of our decade as a fully fledged University could perhaps best be characterised as the years of establishment and consolidation of autonomy. In these years the basic forms of governance were debated and the academic community settled down to the task of governing itself after the years as part of the University of New South Wales.

In 1975 there were 2,135 students. The first graduation ceremonies that year saw 194 bachelor, ten master, five PhD degrees and 55 postgraduate diplomas conferred—a total of 264 awards. By 1980 the University student enrolments had grown only to 2,871 with 484 awards including 393 bachelor degrees. Hopes for major expansion and growth which had been held at the time of autonomy in 1975 had not been realised nor had the capital been provided for buildings needed, so that by 1980 there was an undercurrent of concern about long-term viability and the size of individual departments.

The second five-year phase has been one of very considerable growth, partly by amalgamation with the former Institute of Advanced Education which brought in 1,128 additional students, and partly by expansion of enrolments, especially from 1982 onwards. Thus in 1985 the University has 6,380 students and has conferred degrees and diplomas on 591 people during the year (including 31 Masters degrees and 11 PhDs). It has a new Science/Engineering Building due for completion at the end of this year, an Administration Building about to be started, a major extension to the Library due to begin in late 1986 and extensions to its student quarters are under way. Site works to develop the roads and parking system and other minor developments are also about to begin.

At the end of its first decade of life the University has greatly diversified the courses on offer, is attracting students from farther afield, particularly from southern Sydney suburbs, and is carving a name for itself as an innovative and vigorous institution. The University which has resulted from the current phase has many unique features. It can offer courses from associate diploma (two years) to PhD programs. It offers pure and applied courses; it offers both general and professional education; it is responsive to the needs and employment opportunities of the region; and it is educating and training people to the highest international standards.

By accepting and embracing the need to change with the times, the University has been able to direct the shape of at least some of the changes in ways which are favourable to the University.

The University is thus able to keep its historic mission relevant and vital. The search for truth is as arduous and difficult as ever; what formerly appeared as certain knowledge must in modern times be regarded as provisional and subject to further discoveries, whether in the sciences or humanities. Academic life requires the continuity and stability which fosters scholarship but the changes which adapt our thinking to new realities also foster scholarship and must therefore be welcomed.

Awareness of the need to balance continuity and change is one of the fundamental requirements for establishing a dynamic institution of the highest standards. At the end of the first decade there is evidence that this University has a fair measure of that balance which creates the best universities.

K. R. McKinnon

Professor of History

PROFESSOR James Hagan has been appointed to the Chair of History at the University of Wollongong. He has served the University since 1966, and became Associate Professor in 1973.

Of Professor Hagan's extensive publications, probably the best known is his History of the A.C.T.U., the largest single study of the Australian trade unions, employers' associations, and arbitration tribunals written to date.

He has also, together with another Wollongong scholar, Dr R.G. Castle, written a number of articles about employment and unemployment of Aborigines, and participated in a number of conferences, most recently in Darwin. Some of this work has been funded by the Department of Aboriginal Affairs, and by the old Department of Youth and Community Services. It includes policy advice on training and retraining schemes.

Wollongong academic for International Symposium

DR TARA CHANDRA, Senior Lecturer in the Department of Metallurgy, has been invited by the Structural Materials and Mechanical Metallurgy Committees of American Institute of Mining, Metallurgical and Petroleum Engineering (AIME) to give a keynote lecture at the International Conference on 'Phase Boundary Effects on Deformation' to be held in October in Toronto, Canada.

Dr Chandra is expected to give a lecture on the research work in the area of duplex stainless steel which is funded under the University of Wollongong research grant.

Adults with Reading/Writing Difficulties

THE University of Wollongong's Centre for Studies in Literacy can offer a course of individual instruction for adults who have severe to moderate problems with reading and writing. Instructors are trained specialist teachers using modern techniques and methods. The course continues until Wednesday, November 20. Sessions are run on a weekly basis between 5 and 7 p.m. There is no charge for the course.

Further information from Dr Brian Camburne 27 0973.
Tertiary education of nurses takes another step forward

State Minister for Health Mr Mulock opens School of Health Sciences (Nursing) at Wollongong University

WHEN the State Minister for Health and Deputy Premier Mr Ron Mulock officially opened the School of Health Sciences (Nursing) Building on Tuesday August 12 the tertiary education of nurses took another step along the way.

The building—Stage 1 of the project—was funded by both the NSW Government and the University. The State Government paid $500,000 towards the cost and the University $100,000 from its own funds.

It was good to see that such a promising start had been made. The new building is light and airy and is linked by a bridge to the 'old' administration building of the then Institute of Advanced Education, now integrated into the University structure.

Indication of the importance of the occasion was evident from the number of Very Important People present. Among them were the Vice-Chancellor Professor Ken McKinnon, the Deputy Vice-Chancellor Professor Peter Rousch, the Lord Mayor of Wollongong Alderman Frank Arkell, the Deputy Chancellor and Speaker of the NSW Legislative Assembly Mr Laurie Kelly, the Federal Member for Throsby Mr Colin Hollis, and the Federal Member for MacArthur Mr Stephen Martin, Chairman of the NSW Higher Education Board Mr Ron Parry, the architect responsible for the design of the building Mr Bruce Bowman, and the Principal Lecturer in the School of Health Sciences Mr Bruce Partridge.

The welcoming address was made by Dr Michael Hough, Acting Head of the School.

It was the Vice-Chancellor who described the raison d'être for the project—to upgrade the role and status of nursing; to increase the professionalism in nursing training; to imbue nurses with decision-making skills.

The Vice-Chancellor indicated that the initial intake at the school would be 140 student nurses. As that intake was stepped up so would the need for expansion of the School (and with expansion increased funding) have to be faced up to.

The first stage, he pointed out, was a centre for experimental education but that it was incumbent upon the University to receive out into the community, particularly in the field of health science.

It had to become involved in interaction with employers, to ensure (and to make clear) that employers were taking an interest in preventative medicine for what he called 'health wellness'.

Tertiary training for nurses would give them a conceptual grasp of theory that would enable them to make decisions—thus emphasising a point made earlier by the Vice-Chancellor—in a way that was not always possible in an 'apprenticeship' situation.

Interaction with other students in other disciplines would in itself be a contribution to the rounding-out of nursing education.
GOING UP?
A message to Wollongong—and other—graduates

WHEN you graduated, the last thing you probably ever wanted to do was further study. Getting that first degree had become the be all and end all of existence. This is especially true for part-timers. And even if you weren’t working then, you’ve probably found a job since and are getting along quite nicely. The idea of late nights in the library and lost weekends is distinctly unappealing. Doing more work than you have to may seem silly, even un-Australian. That’s how it affects most people and it is why only a tiny proportion of our population ever goes on to postgraduate study.

But if you are prepared to be inspired, stop for a moment and look at the contribution those people make to society and the level of personal satisfaction they derive in return. At the top, in any field, postgraduate qualifications are the rule rather than the exception.

All too often higher degrees are firmly linked in people’s minds with academia. Perhaps this is one of the drawbacks of doing your own training at a university. There is a tendency to assume that postgraduate work is all pure research and the realm of professors or those who aspire to emulate them. Doctorates hold no sway in the real world.

One look at the postgraduate courses on offer at the University of Wollongong should be enough to convince anyone still clinging to this way of thinking that our courses are very much geared to the workplace outside the university. Naturally, there is always the opportunity to steep yourself in a subject for the sheer love of it. That luxury, though, is not given to most of us. Earning a living is paramount. Carving out a career is on most of our minds.

That being so it makes sense to consider upgrading your qualifications. Chances are there have been vital additions to the received knowledge in your area of interest since you studied. Coming back shows your employer, your clients, your staff and above all, yourself, that you are receptive to change and prepared to accept a challenge. It demonstrates a commitment to excellence. If, along the way, it should enhance your promotion prospects and re-introduce you to the positive aspects of study—making similarly inclined friends, and the joy of receiving knowledge in your area of interest—it’s a step in the right direction.

A SPECIAL concert is to be conducted by David Vance, the University’s Music Development Officer, in Wollongong Town Hall on Saturday, October 12. The aim is to celebrate the University’s tenth anniversary by using the very considerable musical resources on campus among staff and students.

The University Singers, expanded by students from the Campus Choir, and with members of the University community, will perform as the major program item Mozart’s Requiem, conducted by David Vance.

Edward Cowie, Head of the School of Creative Arts, will conduct one of his own compositions—entitled ‘Leonardo’. Andrew Ford will conduct another segment of the program.

Bookings—for what promises to be a splendid evening—are available through the University Union.
University provides Indonesia with some blast-furnace technology

ASSOCIATE PROFESSOR Nick Standish of the Department of Metallurgy in the University of Wollongong has become involved in teaching the science of blast-furnace ironmaking in Indonesia. Earlier this year he spent ten days in the country to ensure that his work in the region was in line with that of the Australian Development Assistance Bureau (A.D.A.B.).

A.D.A.B. has an enviable reputation and Indonesia has long-term plans for the manufacturer of iron. In the light of his own experience, Professor Standish has submitted to A.D.A.B. his conclusions. He writes:

Charcoal ironmaking is a recent new development in Indonesia. The national significance of this project I discussed with the senior staff at the Mineral Technology Development Centre, the National Institute for Metallurgy, the Institute of Technology in Bandung, Java, the staff of the charcoal blast furnace plant in Lampung, Sumatra, and of the iron ore reduction plant at P.T. Krakatau Steel in Cilagon.

In addition, lectures were given on the latest theoretical and practical aspects of blast furnace operation. These lectures generated considerable interest as they highlighted a particular need in Indonesia—postgraduate studies in blast furnace operation and charcoal ironmaking.

Charcoal ironmaking generates vast employment in the timber industry as well as the ironmaking industry. The prospect of more jobs and accelerated transmigration is, therefore, of great national importance in Indonesia. Both these factors were stressed by President Suharto, at the opening of the charcoal blast furnace plant in Lampung in May 1984. Unfortunately, after only two months in operation (where the normal operating expectancy is five to seven years), this first and only blast furnace in Indonesia was forced to close for repair and modification and was to re-open in August 1985.

My interest in charcoal blast furnace operation has been sparked by the arrival of A.D.A.B.-sponsored students in 1984 to study in this area with me at Wollongong. To obtain first-hand practical experience in the successful operation of charcoal blast furnace ironmaking, I visited several installations in South America last year. This visit reconfirmed the fact that charcoal blast furnace operation is a technical business and that sustained economic and efficient ironmaking by this process is only possible where the required technical knowledge and skills are available.

There is no long-established history of ironmaking in Indonesia. Blast furnace ironmaking is in its infancy. No tradition exists for comprehensive courses in blast furnace ironmaking. No pool of Indonesian postgraduates with a knowledge of blast furnace ironmaking exists. There are, therefore, no operating or training personnel in Indonesia. Moreover, the metallurgical engineering faculty is the only branch of engineering in Indonesia with no provision for postgraduate studies.

It is my belief that this lack of local ironmaking personnel with postgraduate training must be redressed, particularly in the present formative stages of this new and urgent development in charcoal ironmaking. My views are shared by the Director (Mr Sulasmoro) and senior staff of the Mineral Development Technology Centre. (This Centre is the executive unit of the Indonesian Department of Mines and Energy with special importance in the education and training of the skilled personnel needed in the mineral processing industry.)

As a result of my discussions at the Mineral Development Technology Centre it was concluded that the present training in blast furnace processing of Indonesian ores using charcoal should be expanded. The present postgraduate program initiated in this University last year with two A.D.A.B.-sponsored students, should not only be continued, but should also be extended to provide a full range of training at various postgraduate levels in modern blast furnace theory and practice.

Our Department at Wollongong University is the only Department in Australia with a strong tradition of teaching and research in the area of blast furnace iron-
**Deputy Vice-Chancellor Appointed**

THE University of Wollongong has attracted an outstanding academic to be its Deputy Vice-Chancellor (Academic and Research). Professor Ian Chubb (41) will join other scholars of outstanding ability and reputation congregating in Wollongong, further strengthening the University's reputation for dynamism and innovation.

Ian Chubb is unusual in that he doesn't have a first degree, although he has an MSc and a DPhil from Oxford. He started as a researcher while still a technician and part-time student at Monash University. He was accepted directly into the Masters program at Oxford on the basis of his previous research papers and the research he was undertaking at the University of Ghent in Belgium.

After some years engaged in research as a Fellow at St John's College, Oxford, he returned to the Medical School at Flinders University where he was Lecturer, and subsequently Head of the University's Department of Human Physiology in the School of Medicine.

Professor Chubb has continued to be distinguished in neuroscientific research, including work leading to the development of an antenatal diagnostic test for spina bifida, a common congenital abnormality. He will continue his recent work on the molecular biology of neurons at Wollongong, which has recently established teaching and research work in the Health Sciences.

Commenting on the appointment, the Vice-Chancellor of Wollongong University, Professor Ken McKinnon, said that Professor Chubb's appointment would further strengthen the University's leadership team and its capacity in research and technology transfer. Professor Chubb is keen to develop links between industry, commerce and the academic world.

Professor McKinnon said that Professor Chubb's vigour and creative talents together with his experience in leading research and representation on national committees would stand the University in good stead throughout the current exciting developmental phase. He was delighted that the position of Deputy Vice-Chancellor would be filled by an academic of such calibre and outstanding reputation.

Professor Chubb expects to take up his appointment at the beginning of 1986.

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**Valuable gift of books made to the University**

Mr Luigi Strano, who was awarded an honorary M.A. degree by the University earlier this year, attended the 10th anniversary graduation ceremony on August 9 and brought with him a gift of two valuable books to mark the occasion. The books are Giraldo's *Dizionario di Estetica e Linguistica* and a 1582 edition of Boccaccio's *Decameron* edited by the famous Renaissance humanist and scholar Leonardo Salviati.

Both books will be placed in the library where the extremely rare edition of the *Decameron* will most certainly take pride of place in the Italian collection. An official presentation ceremony has been arranged for September 26. More about that later, . . .

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**Equity Project**

THE University of Wollongong has received $50,000 under the Participation and Equity Program to conduct a pilot project which will contribute to the longer-term improvement of access to higher education by disadvantaged groups in the Illawarra: the groups include Aboriginals, women, disabled people, ethnic groups, young people from low-income families and people living in outer metropolitan and rural areas.

The University will be conducting this investigation in conjunction with Wollongong TAFE and a working group of the Illawarra Regional Co-ordinating Committee on Education. The first task will be to conduct research into the special needs of the various groups before determining the most beneficial preparation program.

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**The Indonesian Connection**

making. As such, Wollongong University enjoys a world-wide reputation as a leading centre in this speciality. Additionally, the Department enjoys local industry cooperation. There is ready access to the blast furnaces at the B.H.P. Steel International Works at Port Kembla. Hence practical on-site aspects of blast furnace ironmaking can be readily and conveniently included in the training.

To facilitate the special training and to ensure a favourable outcome, I am prepared to develop tailored programs in these courses to meet the special needs of Indonesian students. The programs would be designed to maximise A.D.A.B.'s contribution to the new development in charcoal blast furnace ironmaking in Indonesia. My part in the program would be to enhance A.D.A.B.'s contribution to the development of blast furnace operation in Indonesia, and to provide this postgraduate training as a gesture of goodwill to our neighbours in Indonesia.

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**Arts Advisory Committee established**

RECOGNISING the importance of art, the University of Wollongong is seeking to build up a substantive collection of quality artworks which will include paintings, drawings, weaving, sculpture, pottery and other craftworks.

Given the task of overseeing the purchase of works of art and developing a policy on artwork acquisition, is a newly established Arts Advisory Committee.

Members of the committee are: Professor R. King, Mr C. Denley, Mr J. Eveleigh, Ms L. Jeneid, Mr P. Wood and Mr J. Lee.

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**In the Long Gallery**

OPEN to the public until October 4 in the Long Gallery of the School of Creative Arts at the University of Wollongong is an exciting exhibition of staff work embracing *paintings*, ceramics, sculpture, original prints, textiles and stained glass.

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