University of Newcastle scientists have made a breakthrough in cancer research. UNINEWS interviewed Professor Robert Burton and Dr Cheng Smart about their groundbreaking research. Details, Page 7.
Concern for environment
A GLOBAL ISSUE

The University of Newcastle may play a key role in the study of the environment and provide possible long-term solutions to environmental problems such as global warming and the deterioration of the ozone layer.

The Vice-Chancellor, Professor Keith Morgan, in his article on page 3, outlines the University's proposal to make the Hunter Region a centre for such studies. "The Hunter Region offers an unmatched opportunity within Australia for a practicable environmental resource base," Professor Morgan said.

"It has the most comprehensive data base on environmental, economic and social factors of any region in Australia, " Establishment of a Centre for Environmental Management at the University of Newcastle will draw on this data base, seek to combine it with the research strength already in the University and identify new areas for research priority.

"The University of Newcastle is well placed to provide valuable research in what is becoming a global trend in environmental concern and management."

Australian Geographic features students' work

Students enrolled in the plant and wildlife illustration specialisation of the Bachelor of Arts (Visual Arts) have been invited to submit their work to Australian Geographic for a poster feature in the magazine.

Ms Angela Waller, Amanda Wilson and Ms Nicole Moore (pictured left to right) are three of the students who have been selected to illustrate butterflies for the poster.

Our story, and pictures of some of the illustrations to be published in Australian Geographic, appear on pages 22 and 23.
The University of Newcastle has submitted a proposal to the Federal Government for a $5 million Centre for Environmental Management to accommodate expansion in environmental studies within the area of applied sciences and to integrate environmental programs into studies in economics and information sciences.

Here, Professor Keith Morgan, who represents the Australian Vice-Chancellors' Committee on the Committee of the Environmental Research Trust established by the NSW Minister for Environment, explains how Newcastle could become a focus of serious environmental research not only for Australia but for regions around the world.

Concern for the environment has become a pervasive global issue. It is evident at all levels of society in the developed world and is recognisable as an internationally unifying response to the impact of industrial activity. It embraces, simultaneously, an intuitive rejection of technology by people who do not understand the technology, and a rejection of the effects of ever-expanding consumption.

It accommodates equally those who reject emotionally our history of exploitation of natural resources and those who extrapolate from scientific evidence of decay.

The impact of this concern is made evident in demands that immediate, explicit action be taken - both generally and specifically - to protect the environment from damage.

Environmental concern about the behaviour of commerce and industry draws on a powerful combination of evidence and suspicion.

And history, unfortunately, provides a persuasive sequence of industrial disasters sufficient to sustain arguments against any new development, even to the extent of accepting existing practice when that practice is defective.

It is a short step to identifying virtue in simple resistance to change.

Most perversely, this attitude discourages analysis of existing major industrial hazards.

The popular response - and particularly that of young people - is to identify a culture which incorporates a full range of concern despite its inherent incompatibilities. This culture stands emotionally alongside the more rational, but still selective, philosophy of 'Green' organisations.

This means there is no single, coherent policy within the environmental lobby, and consequently government is unable to provide a rational response.

It is a recipe for frustration.

There is no short-term remedy. Arbitrary funding of instant programs is likely to be ineffective.

The effective answer must lie in a coherent program which allows considered appraisal of environmental phenomena, their interrelationships and their social and economic consequences - and not forgetting the extended periods of time which may have to pass before those consequences appear.

Formulation of such a program is itself dependent on acceptance of policies based on defensible priorities and these, in turn, require access to four enabling provisions: existence of a comprehensive data base; establishment of a co-ordinated research program; availability of effective technology for delivery; and appropriate educational programs.

At the same time, it must be appreciated that there are no boundaries to environmental effects, and awesome resources will have to be expended to mount global programs. To gain the maximum effect from the commitment of these resources, national and state governments must complement the macroscopic effort with programs which identify appropriate detail and ensure effective delivery.

The Hunter Region offers an unmatched opportunity within Australia for a practicable environmental resource base according to these criteria.

The region, of 31,000 square kilometres, possesses geographically well defined boundaries.

It contains Newcastle, the sixth largest city in Australia, and a population of 500,000.

It provides a microcosm of global environmental issues.

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It contains Newcastle, the sixth largest city in Australia, and a population of 500,000.

It provides, per capita and per hectare, the largest contribution of any region or State to the generation of wealth in Australia by manufacturing, mining and agricultural industry.

Almost 75 per cent of the electricity used in NSW is generated within the region.

It also provides a microcosm of global environmental issues.

These are reflected in the presence of the major government agencies dealing
with water resources, soil conservation, pollution control, agriculture, forestry and marine biology.

It would be difficult to find any other region in Australia which can approach this aggregation of economic and environmental factors.

In addition, the Hunter has one, unique advantage — the most comprehensive data base on environmental, economic and social factors of any region in Australia.

The Hunter Valley Research Foundation was established in 1964 precisely to establish such a data base.

Establishment of a Centre for Environmental Management at the University of Newcastle draws on this data base, seeks to combine it with the research strength already in the University and to identify new areas for research priority.

From our existing activities, six major areas of research are to be integrated through the new Centre: development of effective regional environmental models; resource engineering and management, with particular reference to coal and mineral extraction, soil erosion and rehabilitation; economics of natural resources and mineral economics; water resources, pollution control, sewage and water treatment; coal combustion and electric power generation; and the epidemiology of factors affecting environmental health.

The Centre is also to provide a focus for four major educational programs: Bachelor degree in Environmental Assessment and Management, Masters degree in Environmental Studies; Articulated programs with NSW secondary schools; and post-experience programs (existing programs include coal combustion, water resources, resource management and environmental health).

"This Centre would serve the immediate needs of the Hunter Region."

Retired Lecturers' Association

In 1971 some retired members of staff of the former Newcastle Teachers' College formed the Newcastle Retired Lecturers' Association to maintain social contact with their former colleagues and continue their interest in higher education.

The Association has flourished, growing in numbers as further retirements have occurred over the years. Its main activity is to meet four times a year for a luncheon with attendances now reaching about 70 members, spouses and friends.

Originally, members were academic and senior general staff who had retired from the Teachers' College and its successors — the Newcastle College of Advanced Education and the Hunter Institute of Higher Education — or who, after having worked in these institutions had retired from elsewhere, usually the University of Newcastle.

The Association has now extended its membership to retired academic and senior general staff members of the amalgamated institutions.

Secretary, Ray Hodgins, says annual subscription is $3 and the last luncheon for the year will be held at the Western Suburbs Leagues Club, New Lambton on Wednesday, December 12.

Former University and Conservatorium Staff who may be interested in joining the Association are invited to contact its President, Dr Jess Dyce (telephone: 522176) or Ray (telephone: 435667) for any further information or to be included on a contact list.
Amalgamation to stimulate increased research

With a much larger institution following amalgamation and a more diverse range of interests, one of the University's aims is to maximise the pursuit of research across all of its disciplines and identify and foster particular areas of strength in research and scholarship.

This is the message from Professor Geoffrey Kellerman, Dean for Research and Executive Officer of the Research Management Committee. Approximately 500 academic staff have been added to the University by virtue of amalgamation with the former Hunter Institute of Higher Education and the former Newcastle Conservatorium of Music.

Early in 1990 the University allocated $200,000 in seeding funds to promote research by staff in the Schools of Administration and Technology, Education, Health and Visual and Performing Arts, who had not previously had access to Commonwealth funding for research. The objective of the 'seeding' funding was to assist the staff to become competitive for outside monies allocated for research.

Professor Kellerman said a number of staff from the former University and Hunter Institute had commenced joint research projects and it was hoped more of this kind of research would emerge as the staff became aware of their new colleagues' interests.

The University's commitment to research has been rewarded with record funding in 1990.

Professor Kellerman said that this year had seen a 20 per cent increase in the support allocated to researchers by the Australian Research Council (ARC) and a 16 per cent rise in the grants approved by the National Health and Medical Research Council (NH&MRC) over the 1989 figure.

The ARC awarded the University a total of $1,811,182 to fund 75 applications for research projects and it was hoped more of this kind of research would emerge as the staff became aware of their new colleagues' interests.

The University's research funding also included two ARC program grants. One was for research being carried out by Professor B. Antonia and Dr L. Browne in the Department of Mechanical Engineering, investigating Transfer processes in Turbulent Shear Flows and received $102,919 per annum for three years. The second was awarded to Professor G. Goodwin, Dr R. Middleton, Professor R. Evans, Dr J. Hill and Dr C. De Souza, in the Department of Electrical and Computer Engineering. The project, Robust Control and Communication Systems, received $116,049 for 1990.

Professor R. Sanson-Fisher, in the Faculty of Medicine, has an NH&MRC Public Health Research Development Committee program grant of $132,000 per annum for three years for a project entitled, Development and Evaluation of a Women's Health Program. The NH&MRC Public Health Research Development Committee also awarded a grant of $200,000 per annum, over a five year period, to Professor R. Heller, Professor A. Dobson and Dr N. Higginbotham, for a project entitled, Prevention Program in Cardiovascular disease.

He said the University continued to support research in the Humanities and Social Sciences, and an expanding output of research from the Faculty of Economics and Commerce.

"Looking at the national figures for universities, in relation to its size, Newcastle is placed a little better than the average on the list for ARC and NH&MRC grants. There are also several large grants of other types going to principal researchers and principal departments, such as the Department of Mechanical Engineering's project in relation to bulk materials handling," he said.

Earlier in 1990, the Vice-Chancellor, Professor Keith Morgan, made a special allocation of $1 million available under the Areas of Research Excellence Scheme to lift the research profile of the University so that more large, external grants might be obtained. Seven projects valued at $586,000 have so far been selected. Professor Kellerman predicted that some of these research groups that had been successful should be able to qualify for ARC or NH&MRC program grant status within a few years.

This year the University established a special office to facilitate the research effort inside the amalgamated institution.

The Office for Research's functions include distributing information on research matters and opportunities to apply for external research funds, providing administrative support to committees that direct research activities and processing the actual research grants.

The Office for Research administers monies allocated from inside the University ($2,460,000 in 1990).
HEART STUDY ESTABLISHES WORLD REPUTATION FOR RESEARCH TEAM

A research project which commenced in 1983 has highlighted some startling facts which have implications for the health of residents of the Hunter Region and has also established a Newcastle research team as leaders in their field.

The research project, known as MONICA, was established to monitor trends and determinants of cardiovascular disease and is being conducted by the Hunter Region Heart Disease Prevention Programme at the University.

The 10-year project is part of a worldwide study in 39 countries and has been set up to monitor heart disease on a global basis. Other projects are also being conducted in Perth and Auckland in New Zealand.

The overall study is co-ordinated by the World Health Organisation, while in Australia it is sponsored by the National Health and Medical Research Council, the National Heart Foundation and local health authorities. Recently the Newcastle section of the study has received valuable support from the B.H.P. Ltd.

A team of researchers led by Chief Investigators, Professor Annette Dobson and Professor Richard Heller, and Project Manager, Mrs Hilary Alexander, has gathered a formidable amount of information about the incidence and treatment of heart attacks and heart disease risk factors in the Hunter Region.

Worldwide, the research has found that heart disease is more prevalent in industrialised countries, especially those in Eastern Europe, and can vary within a country and from region to region. It has also identified that lifestyle trends have a large bearing on the risk of heart disease.

In 1983 the project conducted an initial survey of the risk factor levels in five local government areas, Newcastle, Lake Macquarie, Maitland, Cessnock and Port Stephens. Information on these risk factors such as blood pressure, blood cholesterol and cigarette smoking was collected from 2406 men and women aged 35-65 years who were randomly selected from the electoral roll. This survey established a base line for the project.

As with the world-wide study, the variation in the risk factors was also found in the Hunter. The results showed that Cessnock, which has the highest coronary heart disease death rates in the region, also had the highest levels of blood pressure and blood cholesterol, and, for men, the highest smoking rates.

Maitland also had higher risk factor levels, while Port Stephens had the lowest levels in the region.

Chief Investigator, Professor Dobson, said that last year a second survey was completed to assess the extent of change in the community. She said that decreases in cigarette smoking and cholesterol levels were found which were small but important.

“Our research shows that people are now more aware of the risk factors in heart disease and are making changes in their lifestyles. That’s a step in the right direction,” Professor Dobson said.

A second part of the Project is being conducted with the co-operation of hospitals and doctors in the region. This involves monitoring all suspected heart attacks in the region among residents aged 25-69 years who are admitted to hospital and all heart disease deaths in this age group. Comprehensive information is sought about each case. Nurses visit hospitals daily and interview anyone who may have had a heart attack (with their written permission) collecting data including age, sex, place of residence, occupation, what medications and other treatment (for example by-pass surgery) the person has had, as well as any possible risk factors, such as cigarette smoking. The Project also monitors all deaths from heart disease, contacting relatives of the deceased for the same information as those interviewed in hospital.

Heart disease rates are high in Australia, by world standards. Comparisons between the MONICA Projects in the Hunter and in Perth have shown that our attack rates are higher. Nevertheless there has been a dramatic decline in death rates in the Hunter during the last five years.

“Even though the Australian rates are very high nationwide, there has been amazing progress since the 1960’s which has resulted in a decrease of deaths from heart disease. Some European countries such as Russia and Finland still have high rates and they are very interested to know why ours are coming down,” Professor Dobson said.

“The World Health Organization is collating all information and will be recording differences in mortality rates, heart attack rates and risk factor levels throughout the world.

“They are also interested in advances in medical care, taking into consideration how this can affect how a person recovers from a heart attack as well as new technology and procedures in coronary care,” she said.

Professor Dobson has recently returned from Lugano, Switzerland, where she attended a conference with other principle investigators involved with the project. These meetings are held about every 18 months to monitor the quality of the project and review the scientific progress. In a comparison of quality, Newcastle came out as the top research centre because of its precise measurements and laboratory procedures and overall performance.

“We performed well. I hope that the knowledge we have gained through MONICA can have a positive impact on the health of Hunter Valley people,” Professor Dobson said.
Professor Burton, Professor of Surgical Science, and Dr Smart, Chief Scientist in Surgical Science, have been researching the killer cells, called natural cytotoxic or NC cells. The NC cells, which occur in the immune system, are able to recognise certain types of cancer cells and kill them by punching a hole in the cancer cell wall.

Professor Burton said the cells can be likened to 'soldiers in the trenches' as they seek out foreign bodies such as cancer cells, to kill them, thus protecting the body.

"Our research, which has been going on in Newcastle for almost six years, is particularly concerned with locating these cells in the body, with a long term view to use them in effectively treating cancer," Professor Burton said.

"Our research has been undertaken using mice and has not been trialled on humans, however, as the immune system of mice and humans are very similar, we have no doubt that these cells perform the same function in the human body."

Professor Burton and Dr Smart are the first researchers in the world to isolate the NC cells using a monoclonal antibody, which they have produced.

The initial discovery of a similar group of cells called Natural Killer on NK cells was made by accident in 1975, when researchers found that normal mice killed cancer cells better than mice which were immunised against these cancers. Such an unusual occurrence was eventually attributed to the action of natural killing cells.

Professor Burton was involved in the discovery of NK cells in those early days, and he and Dr Smart have continued to research ways of identifying and collecting these cells.

Their research has culminated in the discovery of the antibody which provides a way to study the natural NC cells, which are a sub group of NK cells. This antibody, or reagent, has also made possible identification of different cancers which may in the future be treated by both sets of cells.

"We cannot be certain, but our research indicates that many people may have had cancer and 'cured' themselves by the existence and work of the cancer killing cells.

He said that not all cancers are able to be killed by the cells, as the cancer cells must look foreign to the killer cells before the killer cells will attack and destroy them.

Cancers which have been identified by the killer cells as 'foreigners' in mice include melanoma, fibrosarcoma (cancer of the connective tissues) and lymphoma (cancer of the defence system).

Professor Burton said the next step in the research process is to study the cells outside the body.

"We hope our research into the cells will provide us with enough information to be able to develop an effective way of treating cancer by boosting the activity of the NC and NK cells in the body.

Professor Burton and Dr Smart expect to identify and isolate those killer cells from humans in the near future, thus providing a clearer understanding of the activity of the cells in fighting cancer in humans.

Dr Smart said that although the research is yielding promising results in mice with some cancers, therapy for humans with these cancers is still a long way down the track.

"Although our research indicates a cure some time in the future, it is important to recognise that medical science has already developed ways of curing or slowing down some cancers, benefiting 50 per cent of cancer sufferers.

Professor Burton and Dr Smart said that the public's knowledge of some of the causes of cancer, such as sun exposure and cigarette smoking, was the most promising strategy for reducing the incidence of cancer.

"If everyone gave up smoking, protected their skin from too much sun, women had annual pap smears and we could better detect cancer of the breast by more widespread use of mammography, then the occurrence of cancer in humans would be reduced dramatically."
Heiko Schröder, Professor of Microelectronics in the Department of Electrical Engineering and Computer Science, has been involved in the design of parallel systems for several years and has recently joined the University.

His first project, together with Dr Bryan Beresford-Smith in the area of parallel computation, is a systolic array for image processing being carried out in the Centre of Industrial Control Sciences at the University in conjunction with the CSIRO's Division of Information Technology and the Australian Defence Force Academy. Funding of about $1,400,000 is provided by the Industry Research and Development Board.

Professor Schröder said that there is a steady increase in the demand for computing power in many areas of science and technology. Image processing and computer graphics are two such areas where robot vision and computer aided design require real-time image analysis.

He said computer engineers continually aim to satisfy these needs and over the past 40 years the available computing power has grown by a factor of 10 every five years.

"State-of-the-art technology used for design of fast computer components is VLSI (very large scale integration), where up to a million transistors can be placed on a single chip the size of a thumb nail. This technology is close to reaching its physical limits determined by the speed of light. These limitations dictate the design philosophy of future high performance machines: they must make extensive use of parallelism, use distributed memory, be restricted to local communication and be composed of few types of simple cells connected in a regular grid," Professor Schröder said.

"If speed is of the highest concern, then a special purpose machine should be designed. Thus the set of operations the individual processing element can perform and the size and kind of local memory can be tailored towards the special problem area."

The image processing machine being designed at Newcastle University incorporates these design philosophies and follows the idea of the Instruction Systolic Array. i.e. instructions are pumped through the processor array at constant speed.

"Each processing element contains all the pixel information needed for one line of an image, allowing for the efficient implementation of scan-line processes. Image processing tasks such as perspective viewing, which now take minutes of computation time, will be executable in fractions of a second. Hence, for example, simulated flight over a realistic landscape will become feasible," Professor Schröder said.

The Department of Electrical Engineering and Computer Science has employed a microelectronic engineer, Dr Edward Lo, from Hong Kong, starting in January, 1991. His experience will be directed towards helping Professor Schröder and Dr Beresford-Smith.
Soil erosion has long been a major concern in Australia. The loss of valuable topsoil represents a most serious threat to farm productivity.

The University of Newcastle, the Australian Nuclear Science and Technology Organisation (ANSTO) and the New South Wales Soil Conservation Service have been awarded a joint grant to map soil erosion throughout Australia using fallout from atmospheric nuclear weapons tests in the 1950s.

The grant was made by the Commonwealth Department of Primary Industries and Energy under the National Soil Conservation Program.

The study will use the radioisotope caesium-137 deposited as fallout, as a tracer to track soil movement and loss from pasture and farmland. The radioisotope attaches strongly to soil particles. The grant, worth $266,000 over three years, provides the first broadscale scientific measurement of recent soil loss and movement which will provide information and guidance to farmers on the rates and circumstances of erosion.

Initial work in the national reconnaissance survey began last March with 100 sites nationwide being sampled by the group. State departments of agriculture and conservation agencies are liaising with the group to nominate seriously eroded sites for the study.

A workshop at which methods of sampling the sites were discussed and approved was held at ANSTO's headquarters at Lucas Heights in September.

One of the research team, Assoc. Professor Bob Loughran, of the Department of Geography, said:

"The technique we will be using has been developed from pioneering work undertaken in the United States of America in the 1960s and 1970s by the Department of Agriculture. The method gives a rapid and scientifically-based measurement of soil loss since the 1950s," he said.

"The key results we expect from this project is information for farmers about damage to their land," Mr Brian Campbell, Principal Research Scientist in the Isotope Technology Program, ANSTO, said.

"Many farmers see soil erosion as a problem that occurs because of damage done in their father's or grandfather's time. Because we know the first caesium-137 was not laid down until 1954 we can make accurate findings about erosion in modern soils subject to modern farming methods and recent climatic conditions," Mr Campbell added.

Equally, the technique can be applied to determining the extent of siltation in river, lake and lagoon systems.

"We have surveyed Lake Macquarie near Newcastle and lagoons at Terrigal, Avoca Lake and Lindisfarne Bay, near Tasmania, by reversing the caesium-137 method to determine the build up of the isotope and, therefore, the soil it is attached to," Mr Campbell said.

"The application of this knowledge will assist local councils and shires to take steps to eliminate erosion sources upstream which are contributing to the siltation of the waterways," he said.
Along with so much of the city, the University suffered great damage though, happily, no loss of life. Many students were disrupted when they were left without accommodation and the University Village stands, along with the damaged buildings, as testimony to how much the city’s suffering was shared by the University community.

But through those confused days and weeks immediately following the quake, one group at the University worked frantically to impose some order on the chaos.

Professor Rob Melchers, Head of Civil Engineering and Surveying, was on holiday in Melbourne when he heard about the quake on the radio.

"We were getting ready to come home when I heard the news and, like everybody else we jammed the phones trying to get through to our neighbours to find out if our house was OK.

"When we did arrive back in Newcastle, I was sort of roped in with my colleague Adrian Page, to help the Newcastle City Council.

"Adrian was taking pictures of the damage and when the Council found out who he was they asked if he could help them with a few problems.

"When I arrived, he’d had a day of it already, and I went in the next day to help.

"You see, there were only about half a dozen engineers around who weren’t already tied up with insurance companies and builders and so on.

"We were doing secondary inspections. The building inspectors would go out to look at these damaged buildings and, if they needed a second opinion or if they just didn’t know what to do, they’d call us in.”

For days, Professor Melchers and Dr Page spent what was going to be their holiday period inspecting damaged buildings.

One of the great difficulties was that the emergency services, for whose staff Professor Melchers has the highest praise, were not well equipped to deal with the aftermath.

"In all fairness, the emergency services had never faced anything like this. They prepare for bushfires, flooding, train crashes and that’s a reasonable order of probability.

"There was no system for calling in expertise.

"There was no realisation that there were earthquake experts in Australia.”

"As the dust cleared, after the evacuations and the rescues and the massive efforts of individuals in so many walks of life to deal with the immediate events of December 28, it appeared that nobody knew what to do next because nobody really knew what had happened.

"When the immediate urgency was gone, I called the Institution of Engineers to try to organise a conference as soon as possible, to end some of the anguish from a professional point of view.

"The President was here - I think it was New Year’s Eve - and spoke to us about what the Institution could do, and gave us the go-ahead.

"Outside Newcastle, of course, it was holiday time. Organising almost anything had to wait.

"There were a lot of problems initially. Most of the problems were within the local community, like at Hamilton, where engineering reports were changing and conflicting. People wanted to know, why is it so difficult?

"Even within the professions there was a problem of where do we go from here.

"We had to try to calm them down and say, well, if you don’t know the answer, don’t do anything.

"Much of the difficulty stemmed from a lack of information.

"There were no traces. How did the ground move? If you want to do any structural dynamics you need to know.

"You can do mathematical modelling OK, but there were no empirical observations.

"We can do a model of the Workers’ Club, but what do we feed in as the end forces?”

No replication of the Newcastle quake was possible, but discussion among experts was.

While Dr Page continued the work of secondary inspections, Professor Melchers and his secretarial staff began organising a conference.

"I think we organised the fastest conference ever. We had to hold it by mid-February because after that it was term time again.

"We started planning for 100 people and we were worried about accommodation. Much of Newcastle’s accommodation was lost, of course.

"We planned for 150 and then, two days before we were due to begin, we had more than 200 enrolments.

"In the end, we had more than 350 people.

Organising the conference, while the daily battle to examine and if possible make safe individual buildings around the city ground on, was a mammoth task.

Professor Melchers and Dr Page were also on a steering committee of the Institution of Engineers preparing a report on the earthquake for the State Government - with a two-month deadline.

"I couldn’t have done it without my secretarial staff. They were due to have their holidays. I just rang them and said, girls, can you come in? And they did.

"The pressure was a bit much. There seemed to be too many things to do. And we had the steering committee breathing down our necks for the report.

"If you did this for a living, I suppose you’d learn to live with it. But we knew we had to return to teaching at the beginning of term.

"And we’re academics.

"If we were practising builders or engineers and the report wasn’t that good, people would say, oh, they’re only builders or engineers.

"But if we went wrong, they’d say, well, it’s very easy to throw stones at academics.

"It just seemed to me that if we were going to do it at all, we were going to do it damned well.

"And I’m very proud of it.”
First exhibition of UNIVERSITY ART COLLECTION

An Art Dinner was held at the University to mark the opening of the first exhibition of works from the University's art collection and the launching of the official catalogue.

It was an historic and successful occasion, with 110 people taking part in the evening.

The Director of the Newcastle Region Art Gallery, Mr David Bradshaw, launched the catalogue - a glossy 35-page booklet listing the 225 artworks in the collection.

The Director of the Art Gallery of New South Wales, Mr Edmund Capon was the special guest and delivered the after-dinner address.

It is hoped that the Art Dinner will become a regular highlight of the University's calendar and that additional exhibitions of works from the art collection will be held.

Both the exhibition and the catalogue were organised by the Art Advisory Group which is chaired by the Deputy Vice-Chancellor (Administration), Mr Lance Hennessy.

Mr Andrew Fergusson, former Director of the Newcastle Region Art Gallery, selected the works for the exhibition and compiled the catalogue.

Nucellous, a bronze sculpture by Marylin McGrath, is one of the artworks in the University's art collection. It was purchased by the University in 1975 and is incorporated into the native garden alongside the entrance to the Great Hall.

Ms McGrath is well-known in Newcastle, where she studied at the Art School at the Technical College, taught at the Art School and the University's Architectural School and was included in a number of exhibitions. Just before this magazine was printed, she exhibited in the Different Directions show at the von Bertouch Galleries with four painters who also have close links with Newcastle.

Nucellous is a combination of sensuous curved forms dissected by sharp edges and angular changes of direction.

One has the feeling of energy/life bursting outwards from some inner core, seeking new life of its own.

It is an extremely tactile piece of work where the bulbous forms encourage you to touch - only to be suddenly arrested by a sharp edge, or an angular change of shape.

Graham Gilchrist, Head, School of Visual and Performing Arts.
Tucked away near the East Gate entrance to the University of Newcastle is the Special Education Centre, which is not only a teaching venue, but also a community facility, with a far reaching reputation for outstanding excellence and service.

Since it was established in 1976, the Centre has achieved a national reputation for its work with children and students and is now a regular host to Australian and overseas experts in special education.

The Special Education Centre at the University is highly regarded for its provision of quality services and pursuit of research in the special education field.

The Centre's Director, Dr Phil Foreman, says the facility has three main objectives — Teacher education in Special Education Teaching, Service Delivery and Research.

It is one of only three such purpose built facilities in Australia. Originally built at a cost of $700,000 in 1976, the investment has been justified in its services to the community and its innovations in teaching.

The first objective — the training of qualified teachers in special education teaching — plays a major part in the Centre's activities. Qualified teachers undertake a course of either one year full-time or two years part-time to teach children with any form of learning or developmental problem. These problems can range from difficulties in learning to read to severe intellectual disabilities.

Once special education training has been undertaken, these teachers then take on roles such as support teachers or special class teachers in regular schools or work in a variety of settings where disabled people need educational support.

Undergraduate student teachers and qualified teachers are undertaking courses in Special Education at a number of levels — the pre-service level where undergraduate students enrolled in specific teaching specialisations at the University study at least one module of Special Education during their course, and are now able to complete their Bachelor of Education by specialising in Special Education for their fourth year; and the post-graduate level where qualified teachers undertake special education training in either of two strands, school-age or adult teaching.

The second objective — delivery of a range of special education services to the local region — is perhaps the most visible of the Centre's activities. Programs offered within these services include the Early Education Program (comprising the Baby/Toddler, Pre School and Outreach Programs), Intervention Classrooms, Community-based Outreach Program (conducted in regular schools, special schools, units and classes), the Irlen Lens Program and the Makaton Resource Centre.

This range of programs has been specially designed for children who may be experiencing learning and communication difficulties, have a behavioural problem or who have a disability or developmental problem.

The third objective — Research — involves academic research into various aspects of special education including the integration of children with disabilities into regular schools, the use of computers in special education, the use of strategy training for children with intellectual abilities or learning difficulties and the use of tinted lenses known as Irlen lenses to relieve visual strain and distortion in reading.

In line with its policy of innovation in the field of Special Education, the University's Special Education Centre pursues research activities enthusiastically.

Academic staff at the Centre have received research funding this year to the value of $100,000, made up four separate grants which will enable research in areas which previously hadn't received support.

Director of the Special Education Centre, Dr Phil Foreman, says that staff have always been involved in research, but that since amalgamation research has taken on greater importance.

“Advances over the past 20 years in Special Education have proved the value of continuing research. We must maintain our standards and keep striving towards the future,” Dr Foreman said.
Centre provides a range of special education services to the community.

The Early Education Program is designed to provide assistance for infants and pre-school children from 0 to 6 years who have a disability or developmental problem or who are considered to be at risk of developmental delay. This program encompasses activities both within the Centre and in pre-schools and clients' homes.

Babies and toddlers with a range of developmental disabilities are referred to the Centre by paediatricians, hospitals, therapists and other health professionals and sometimes parents themselves seek help. The Early Education program seeks to increase and maximise the child's ability to benefit from environmental experiences.

Director of the Special Education Centre, Dr Phil Foreman, says it is now recognised that the early years of life are vitally important in a child's development and this program aims to help children to develop to a stage that is closer to their potential. He says the program operates in co-operation with parents and that the goals are now regarded more broadly and must consider children in the context of their family.

After a comprehensive assessment, an individual program is devised for each child. This is then carried out during an individual or group session, the number of which depends on the needs of the child and family. There is also a pre-school outreach program which provides assistance in regular early childhood settings.

The program is staffed by teachers with special education/early childhood qualifications who are assisted by child care assistants. Psychology and therapy services are provided through the Developmental Disabilities Unit of the Department of Family and Community Services.

The Irlen Lens Program has operated at the Special Education Centre since 1985. It involves the use of coloured lenses to reduce visual distortions, eye soreness and fatigue reported by some people when reading or writing. These people, often have prescribed glasses, however still present the symptoms and may benefit from Irlen lenses.

The procedure developed by American researcher, Helen Irlen, uses the coloured lenses to minimise problems such as a 'perceptual schedule' which is used to identify the symptoms in detail. She calls the difficulty 'scotopic sensitivity' because of the possibility that there is some form of retinal defect which is responsible for the extreme sensitivity to certain colours and densities of light. Her full tinting procedure involves identifying sections of the light spectrum which appear to be responsible for the distortions and eye strain. The part of the spectrum causing problems varies greatly from one person to another, requiring the use of a large number of coloured filters to identify the specific problem area. The selection of the correct combination of filters is critical, with fine differences in the colour combination making a significant difference to the reported reduction in symptoms.

Special Education Senior Lecturer and leader in the research into the value of Irlen lenses, Dr Greg Robinson, says the symptoms usually become more obvious the longer reading or writing tasks are continued, thus limiting the practice time needed to become proficient in both tasks. The distortions also reduce the time available for effective study, note taking and assignment writing, as well as making such tasks much more difficult.

"The lenses do not allow a person to instantly read words they have never been able to learn. They do, however, have the potential to assist the learning and reading of words by reducing such visual distortions as blurriness, movement of print and colour sensitivity," Dr Robinson said.

MAKATON RESOURCE CENTRE

The Special Education Centre acts as a resource centre in the Hunter Region for the Revised Makaton Vocabulary, which is a complete language program using hand signing and symbols for basic communication.

Makaton not only provides basic communication, but promotes language development and where possible stimulates speech in intellectually handicapped and language handicapped children and adults.

It is a small core vocabulary of about 350 language concepts which takes the form of pictures and hand signals. It provides an essential and useful vocabulary which requires little memory and retention, and offers a specially chosen range of concepts and teaching procedures to generate the development of a language.

Generally Makaton is best known for its use with hand signs and speech, but is equally effective when used as a language program using signs and symbols, pictures or any form of communication.

Special Education lecturer and National Co-ordinator of Makaton, Dr Judith Cowley, says that positive results occur with the use of the Makaton program. These are increased eye contact, attention, sociability, vocalisation and expressive speech. She said the use of signing can stimulate rather than interfere with speech and language development.

Intervention Classrooms

In two specially designed classrooms, the Centre provides intensive programming in basic academic skills for primary school children in Years One to Six who are experiencing serious difficulties with school work.

Teachers plan and implement a program for each child.

Community Outreach Programs

Special Education teachers/students provide programs in regular and special settings for pre-school aged and primary school students experiencing learning difficulties. These can range from difficulties in basic reading or communication, mathematical problems or behavioural problems. Children receive assistance in their own schools four mornings a week for eight weeks and receive specialised guidance from Centre staff.
Sport and Recreation plans include community involvement

Planning is in the advanced stages for a major sport and recreation complex to cater for the changing needs of members of the amalgamated University and the Hunter community.

The complex, to be built next year, will include:
- A multi-purpose recreational and educational centre,
- Offices for administrative staff and a shopfront,
- A new squash centre,
- A tennis centre,
- Five sportsfields, and
- Carparking.

Provision has also been made in the site plan for an indoor, heated swimming pool.

The President of the Sports Union, Dr Bernie Curran, said that most of the necessary funds had been derived from fees paid by students.

He said the Vice-Chancellor, Professor Keith Morgan, had lent his support to the project and had formed an advisory committee to look after the advanced planning.

A feature of the concept is the wide support envisaged for community involvement in sport and recreation at the University. This is a continuation of the University's policy of participation in district competitions and encouragement of people to use its facilities whenever students and staff are not using them.

Sportsfields, tennis and squash courts, bodybuilding facilities, an indoor sports centre and other services are shared with many district sporting associations and schools.

Groups which use the facilities include district sporting associations, State and Independent Schools, Aboriginal school students, and the Hunter Academy of Sport.

The Executive Officer of the Hunter Academy of Sport, Mr Ken Clifford, said the Academy made use of the University's sport and recreation facilities quite regularly.

Leading coaches attend clinics held by the Hunter Academy of Sport and provide top-quality tuition. The cricket coaches include Rick McCosker and Robert Holland, while among the rugby instructors are Nick Farr-Jones and Topo Rodriguez.

Dr Curran said the University Sports Union, through the new complex, would continue to foster the growth of traditional University sports, such as rugby, cricket, rowing and athletics, as well as encouraging the community to make wider use of the University's facilities.

"Over the years, the concept of sport has changed and the emphasis has moved from sport and recreation to health and recreation. "The benefits of a healthy lifestyle for the individual and the University as a corporate body demand that the Sports Union promote a high degree of fitness and health awareness among students and staff."

The University's sporting facilities will be wide ranging and available to the community.

Newcastle champion tennis player, Ms Rachel McQuillan, with the Human Performance Research Group at the University, watched by postgraduate student Ms Adele Buchanan.
The formation on September 20th of the new Convocation of the University of Newcastle after amalgamation will prove to be one of the most important steps ever taken in our graduate history. With our membership now almost doubled, Convocation has never been in a stronger position to play a more active role in the growth of the university.

The new Standing Committee elected on September 20th will be doing everything possible to marshal our expanded membership resources for the benefit of the campus but we need your help. As a first step, we will be giving top priority to bring our register of graduate members up to date so if you know of a graduate of the former university, the former Hunter Institute of Higher Education or of the Conservatorium who might not be on our roll please let us know.

We are taking a number of exciting new initiatives for the amalgamated Convocation and we will need maximum input to make them work.

These new projects include a proposal to raise funds for the University by making "graduate bricks" available to our members and graduands for placement in the walls at the new entrance to be constructed at the campus. Under the scheme, graduates will be invited to have their name and graduation details stamped on a brick forming part of the attractive walls on both sides of the entrance. We have discussed the concept with the University's architects and Standing Committee has endorsed the idea.

Another pleasing development has been our move to revitalise the Convocation Foundation which is obviously the most appropriate fund raising mechanism for Convocation. As well as the "graduate brick" concept, there are a number of other exciting new fund raising possibilities we would like Foundation to consider. These include the possible establishment of an Educational Travel enterprise on campus and the introduction of a special Visa Card for Convocation members.

A new board is being appointed to the Foundation and its first meeting was held on October 23.

My congratulations also go to the newly elected Deputy Warden, Mr Brian Adamthwaite, and to the 16 members of the new Standing Committee Mr Barry Bezveville, Father James Bromley, Mr John Broughton, Ald Doug Carley, Dr. Judith Cowley, Mr Laurie Dicker, Mr Ray Hodgins, Mr John Lambert, Ms Jean McGarry, Mress Pennington, Ms Jill Scott, Ms Teryll Smith, Mrs Barbara Watson, Mr Ken Wiseman, Mr Ron Yates and Mr Grahame Hardy. There are two vacancies to be filled by Standing Committee.

Members of the new committee represent a wide cross section of the university's graduate population and will form an excellent team to handle the busy programme of upcoming events.

My congratulations also go to the three other Convocation representatives elected to the University Council, Dr. Diana Day, Dr. Peter Hendry and Mr Trevor Waring. It was particularly pleasing to see Dr Hendry, a long term, hard working member of the Convocation, elected as Deputy Chancellor. We can feel confident that Convocation's interests at Council level are also in good hands.

The existing Convocation events successfully conducted by the Interim Standing Committee included our second Careers Fair, held on August 21 in conjunction with the University's Careers and Student Employment Office. More than 50 graduates gave their time to advise an estimated 700 students. Our thanks go to Helen Parker and her team for the excellent organisation. Approximately $1800 in advertising was raised by the guide to the Fair.

The other pleasing recent achievement of Convocation was the extension of the Auchmuty Special Collection at the University Library by the purchase of the N.S.W. Colonial Secretary's Papers 1788-1825 in microform. The papers form the largest and most comprehensive collection of public records existing on the foundation years of European settlement in Australia. This new acquisition is a fitting tribute to the late Professor Auchmuty who had a deep interest in early colonial history.

Because of the lack of support for our graduation dinner dances this year, the new Standing Committee is examining a proposal from the University Union that these functions should be replaced by a Graduation Ball next year.

VIC LEVI
Warden of Convocation

Pictured are members of the Standing Committee of Convocation of The University of Newcastle.
(Back row from left) Mr Ron Yates, Mr John Broughton, Mr Vic Levi, Mr Ken Wiseman, Mr Ray Hodgins, Mr Laurie Dicker and Mr Les Pennington.
(Front from left) Ms Margaret Wells (Convocation Officer), Ms Jill Scott, Ms Teryll Smith, Ms Barbara Watson and Dr Judy Cowley.
**MINISTER’S SPECIAL INVOLVEMENT WITH UNIVERSITY**

When Virginia Anne Walls completed her studies in English and History at the Newcastle University College, she was given a choice to receive her Bachelor of Arts from the University of New South Wales, or from the University of Newcastle. She chose the latter.

Now the Hon V.A. Chadwick, she has been since July the State Minister for School Education and — despite the circumscription suggested by her title — is in fact the Minister responsible for all the universities of New South Wales, the first Newcastle graduate honoured by appointment to that position. In fact, her influence on the University extends well beyond administering the University of Newcastle.

She heads the Department which is the biggest single employer of graduates now that the University has become the major teacher training institution in the Hunter Region. State Government requirements for teachers in various disciplines, and the conditions of service for teachers, are major factors in student enrolments.

And, of course, her department shapes the Higher School Certificate, the most significant criterion for undergraduate admissions to the University in all disciplines.

Virginia Chadwick has had a special relationship with the University of Newcastle, since her undergraduate days at Tighes Hill.

"Our year was the year that had the option of either taking our degree out of (the University of) New South Wales or taking a punt on where the new University was going. I took the punt."

"I had been involved in the SRC, and I had been a student rep on the University Council. That was at the time when we had been working towards autonomy, so it was a conscious decision on my part to take my BA from Newcastle."

Mrs Chadwick says her time at University was exciting.

"Everyone, I suppose, harks back to their time at university."

"But, despite the rather bizarre physical circumstances, I think there was a tremendous spirit at the University College. Partly built out of adversity, I think, and partly out of the fact that it was a small, uncrowded college on the site of the Tech, as it then was."

"It tended to attract a lot of very competent, highly qualified people onto the academic staff and I don't think it's too unkind to say that a number of them were 'characters'. People like Harry Jones, who was a poet, and, I guess that the remaining one there that springs to mind is Godfrey (Professor Tanner)."

"I think that the University, I suspect far more than today, had a number of colourful, very highly qualified, 'characters', which gave a particular type of flavour to the University."

"There we were, cramped onto that site, with people trying to introduce traditions, to start to make small beginnings on traditions, like Throsby Creek regattas. I guess to help form things, like University Rowing Clubs, debating societies, all those sorts of things."

"It was very exciting having people there who wanted to get in and have a go and start building up some sort of tradition."

"I've always been very grateful to have been part of all that."

The young Miss Walls attended University on a Teachers' College scholarship. "That was the only way I could afford to go to University."

She married Bruce Chadwick, whom she met at University, and her teaching career began at her former school, Newcastle Girls' High.

Mrs Chadwick was elected to the Legislative Council in 1978 — in the first election in which the people of New South Wales voted directly for their members in the Upper House and returned to the University Council as the representative elected by that chamber."

"I was on the Council up until the Interim Council."

"That was an interesting and somewhat ironic time, because having been involved as a student when we were working towards autonomy, it was fascinating and ironic to go back onto Council so many years later when in fact the whole issue was the Con and HIHE and the embryonic venture into the Central Coast."

Naturally, as Minister, she has to perform her official functions with objectivity and detachment. But there is no denying her links with Newcastle — she and Bruce still live in the region, though their home in the city was severely damaged in last year's earthquake — and with the University.

"No matter how even-handed one tries to be, whether you're talking about education or other areas, when an issue comes before you and you know that place, you know the people involved, you can't help but take a keen interest in the outcome."

The development of the University is, according to Mrs Chadwick, "one of the best things that has happened to the Hunter Valley in my lifetime."

"Coming from a background, and a generation, where it was an unusual thing for people to look to tertiary education — that was whether you were male or female: it was just accentuated by the fact that females were expected to have even fewer aspirations or expectations in terms of tertiary qualification — to have our own regional University has provided, I think, an incredible stimulus to education in the broader sense."

"People in the Hunter Valley don't have to think of tertiary education as something vague that happens down in Sydney."

As well, she applauds the way the University endeavours to be, and is seen to be a part of the broader community.

"By and large, the University sees itself as being a part of the community and so, either as representing 'The University' or as individuals from the University, people are actively involved in everything from the Chamber of Commerce to various task forces, and the University is seen as being very heavily involved in all aspects of community life."

"I think that's been very good for the region as well. Instead of, you know, there's this thing anywhere else, when you get there is the rest of the community, they have in fact a good blending and that, I think, enhances the function of education and particularly tertiary education, which is sometimes seen as something on a different plane to other aspects of everyday or commerce."

"There's a sense of... not only pride, but a sense of ownership. And having a regional uni gives you a sense of continuity in terms of education.

"I think it's played a major part in opening up a whole range of, not only options, but expectations, of parents for their children and children for themselves."

"I think it has been fantastic."
A former student of the University of Newcastle has been appointed Professor and Head of the Engineering Program at the Australian National University in Canberra.

Professor Darrell Williamson took out a BSc majoring in Physics, a BE with Honours Class I and an ME in Electrical Engineering between 1968 and 1971.

His academic proficiency was matched by his performance on the sporting field. He won a Blue for rugby and represented Newcastle at New South Wales Country Championships.

Darrell Williamson was born in Waratah in 1948 and educated at Waratah Primary and the former Newcastle Boys' High School.

He spent from 1971 until 1973 as a Fulbright Scholar and Research Assistant in the Division of Engineering and Applied Physics at Harvard University in the United States, where he obtained a PhD in Applied Mathematics.

After returning to Australia he became a Lecturer, Senior Lecturer and then Associate Professor in Systems and Control at the University of New South Wales.

In 1985 he was appointed Senior Research Fellow in Systems Engineering at the Research School of Physical Sciences at the Australian National University. He has held visiting appointments at the Delft University of Technology in The Netherlands, and at the University of California and Purdue University in the United States of America.

Last year, Professor Williamson was seconded from his position in the Department of Systems Engineering in the Research School of Physical Sciences to introduce the Australian National University's new four year undergraduate engineering course. He was appointed Head of the program in June this year.

Although the Australian National University first sought to introduce undergraduate engineering in 1975, planning for the current course did not begin until 1986.

Professor Williamson said that in addition to a strong emphasis on basic science the Australian National University engineering program would integrate different aspects of engineering to produce graduates trained in tele-communications and information technologies, advanced materials, manufacturing systems, sensors and controls as well as engineering management. The program would be unique in Australia but followed developments in Europe, the United Kingdom and the United States of America. Students would graduate with a BE in Systems Engineering.

The proposed course structure was supported by the Review of Engineering in Australia chaired by Sir Bruce Williams. This review recommended a three per cent increase per year in the number of engineering graduates to the year 2000 in order to bring the number of engineers in the workforce up to the level of other developed countries.

He is married to Jan and they have four daughters — Naomi, Pia, Leigh and Zoe.
A RARE DOUBLE

Two Newcastle engineers, Mr Ian Pederson and Mr David Pavey, have been awarded the engineering industry's premier awards for excellence, in a rare double for Newcastle.

Mr Pederson, an engineer with national firm Rankine and Hill, and principal structural engineer on the University's new Administration Centre was named National Engineer of the Year by the Australian Institution of Engineers.

He received the Award principally for his work in earthquake rescue and recovery.

Mr Pavey, a graduate of the University of Newcastle and an engineer at Newcastle City Council, was named Young Engineer of the Year, by the Australian Institution of Engineers, for his work in road pavement design.

Mr Ian Pederson (left) and Mr David Pavey (second from right) accept their awards from Mr Colin Nunn (second from left), Newcastle Division Chairman of the Australian Institution of Engineers (IEA) and Dr Mike Sergeant, National President, (IEA).

WHERE ARE THEY NOW?

William Coleborne, M.A. (Hons.1), B.D., Ph.D. our first graduate, looks back over a long teaching experience which included 31 years at Maitland High School, the last 12 as Head of the Language Department, and the same period of time concurrently at St John’s College Morpeth as lecturer in New Testament Greek. He numbers among his former pupils the Pro Vice-Chancellor Dr Les Eastcott, at least one professor, one archbishop and bishops "in their shovel hats as plentiful as tabby cats" to say nothing of lesser dignitaries in church and state.

Since receiving his Ph.D. Dr Coleborne has written two books that helped to shape the course of teaching Ancient History for the HSC and more recently the Companion to the Sunday Missal, now in its second edition and on sale in six countries. This book offers a commentary on all the passages of Scripture in the Sunday Missal as used in the Catholic Church.

Remarried after the loss of his first wife and now in his 80th year, he lives quietly at Ulladulla by the sea on the far South Coast, awaiting cardiac surgery with the avowed intent of surpassing in years the other members of a family known for its longevity.

AVIATION GRADUATES REACH FOR THE SKY AT QANTAS

Two graduates of the University of Newcastle's Aviation Diploma, have been accepted by Qantas as Cadet Pilots.

Mr Gavin Jones and Ms Nicole Hannan are among only six Cadet Pilots chosen from hundreds of applicants from throughout Australia.

Professor Ross Telfer of the Institute of Aviation, said that entry to Qantas was extremely competitive and only the 'cream of the crop' were accepted.

Mr Jones and Ms Hannan are among the first graduates of the University's Aviation Diploma, and their acceptance to Qantas has reaffirmed the high standard and reputation of the course, which is only in its third year.

Professor Telfer, Director of the Institute of Aviation, said the Aviation Diploma had been designed in consultation with the major airlines operating in Australia.

The two year diploma course provides students with theory through the University of Newcastle and practical experience at the Cessnock Air Training Academy (CATA). Upon completion of the diploma, students are qualified commercial pilots.

The third year of the course provides students with advanced training and instructor skills.
Construction has begun on the new administration centre for the University of Newcastle, to be called the University Centre.

The two storey building, to be built at a cost of $6 million, and located at the heart of the University campus, is scheduled for completion in August, 1991.

It will provide office space for almost all members of the University Administration, including the Vice-Chancellor, and Deputy Vice-Chancellors.

The building, which has been designed by architects, Rodd, Hay and Craig Associates, and engineers, Rankine and Hill, features a striking curved two-storey sandstone facade.

It will also feature a sunlit atrium, designed to provide a meeting place for staff and students.

Mr Michael Craig, the building's architect, said the layout provided a great deal of natural light and maximised the advantage of the northern sun.

Mr Ian Pederson, the building's engineer, said the University Centre combined superb architectural design with a functional layout, and ready access to other buildings by a series of external pathways.

The Centre, to be 3,500 square metres, will also provide exhibition space, a complex of meeting rooms, a common room linked to a terrace and car parking for staff and visitors.

Deputy Vice-Chancellor (Administration), Mr Lance Hennessy, said that for the first time the Administration would have an identifiable home with much needed facilities.

He said the University Centre would finally bring the Administration and the Senior Executive together under one roof, making it easier for staff to interact.

Architect's impression of the University Centre. The Centre has been designed by Rodd, Hay and Craig Associates, engineered by Rankine and Hill, and constructed by Leighton Contractors.
Drug and alcohol education for student doctors

The Newcastle Medical School has developed one of the most advanced drug and alcohol education programs in the country.

After a revision of the curriculum, student doctors have been receiving tuition which will better equip them to treat people who have problems associated with drugs and alcohol.

While the drug-related teaching is concerned with providing learning about illicit drugs, such as cannabis, cocaine and heroin, it also relates to socially acceptable substances, like alcohol, tobacco and caffeine.

One of the Faculty's objectives for the medical course makes the point that most medical practitioners will regularly encounter persons with drug-related problems, as approximately 30 per cent of Australian adults smoke cigarettes, and alcohol alone has been reported to be directly responsible for between 15 and 19 per cent of acute hospital admissions.

The Faculty recognises that hazardous drug use can lead to considerable health and social problems for individuals and their families and impose a significant economic burden upon the community.

With Commonwealth funding, the Faculty last year recruited two staff members who have a strong interest in the drug and alcohol field.

Mr Raoul Walsh, previously with the Hunter Area Health Service, has the position of Lecturer in Behavioural Science and Co-ordinator of the Drug and Alcohol Teaching Program.

In addition, Dr Peter Hopkins, a general practitioner in Charlestown, who had been attached to the Alcohol and Drug Unit at Royal Newcastle Hospital, works on the program as a part-time Fellow in General Practice.

In an interview with UNINEWS, Mr Walsh described teaching of drug issues prior to his appointment as unsystematic and patchy, although he said the Faculty staff were genuinely willing and open to consider where improvements could be made. The Newcastle curriculum provided a good vehicle for integration of drug-related teaching.

Mr Walsh said the new curriculum addressed a wide range of drug-related issues, including the importance of an accurate history, the limited role of biochemical tests in identifying an alcohol problem, the National Health and Medical Research Council's guidelines for low-risk, hazardous and harmful drinking, common health problems caused by alcohol, the impact of alcohol abuse upon families and the existence of specialist agencies for referral.

Prevention of drug-related problems by community initiatives such as random breath tests, advertising bans, educational campaigns and taxation measures have also been emphasised.

“Strong emphasis has been placed on the relationship between alcohol and hypertension - an association which many GPs do not know about.

“In a segment on the role of opiates and other drugs in the management of pain, the recognition of patients 'shopping' for drugs of dependence and guidelines for methadone use are two issues discussed.”

The Faculty is promoting drug and alcohol electives among its students. After the New South Wales Health Department provided a $2,000 grant, three students took up the offer to work in the drug and alcohol field.

The skills necessary to counsel pregnant smokers have been included as one of the subjects in Reproductive Medicine and clinical training is also being provided.
UNIVERSITY PROVIDES FACILITIES FOR SIGHT IMPAIRED

In one section of the Auchmuty Library at the University of Newcastle, readers will find books which have no print or pictures, but these books are filled with information and fantasy for a group of people with a thirst for knowledge.

The books, written in braille for people with sight impairments, have been added to the University's collection, through the foresight of University Librarian, Mr Bill Linklater.

The braille collection has been taken over by the Auchmuty Library after being held for several years by the Newcastle Branch of the Royal Institute for Deaf and Blind Children.

It is the only braille collection in a university library in Australia.

Mr Linklater said the collection was offered to the University because the Institute was unable to house it in new premises.

"The Institute felt that the University library would be a fitting place for such a collection, which is available to any one in the Region," Mr Linklater said.

The braille collection, totalling 290 books in 1600 volumes, includes children's classics, university textbooks, English literature, self help books for sight impaired people and even the Canterbury Tales in 42 volumes!

The collection was developed over many years by an enthusiastic field officer of the Institute, Judy Sharman, who not only set up the collection but delivered books to sight impaired people. Her diligence and commitment is recognised as being the primary factor in the establishment and continuation of the collection.

Mr Linklater said the braille collection, like the general collection, was available to members of the general public, not just students of the University.

It forms just one part of the facilities offered specifically for sight impaired people by the Auchmuty Library.

Other facilities include a Personal Reader which reads text out loud from books placed on a special machine, and Viewpoint, an enlarging machine which makes text easier to read for sight impaired people.
THE DELICATE WORLD OF Australian Butterflies

The delicate world of Australian butterflies will soon be included in one of the nation's leading nature magazines thanks to the work of a dedicated group of University taxonomic illustration students and their lecturer.

Andrew Atkins

Australian butterflies have long intrigued our naturalists and public alike because of their vibrant colours and sizes and these qualities will be soon published in an issue of 'Australian Geographic'.

Launched only a few years ago by adventurer and environmentalist, Dick Smith, the magazine started planning earlier this year to print a comprehensive poster illustrating many of our unique species of butterflies. After investigating the time and resources available, the magazine approached University lecturer, Andrew Atkins, to co-ordinate a project that would eventually involve 13 students in months of preparation and illustration work outside their normal academic lectures.

Mr Atkins, a Lecturer in Plant and Wildlife Illustration and renowned in Australia for his taxonomic illustrations, gathered a group of students which for the past few months has been working at home and studios at the University to complete the project.

The students, enrolled in the plant and wildlife illustration specialisation of the Bachelor of Arts (Visual Arts), are in the second or third year of their studies.

"The students were selected because of their capabilities in highly detailed taxonomic illustration and each student has been involved in illustrating between two and four butterflies," Mr Atkins said.

"Australia has four families of butterflies encompassing about 380 individual species and the poster will include 45 illustrations and life histories."

The students taking part in the project are:

2nd Year — Mr Jeffrey Nagle, Ms Angela Waller, Ms Amanda Wilson, Ms Peta Edwards, Ms Karen Wooden, Ms Sandra England, Ms Nicole Moore and Ms Penelope Johanson.

3rd Year — Ms Susan Haywood, Ms Jayne Chambers, Ms Gina Ogrodnik, Mr Dean Ruddy and Ms Genevieve Wallace.

They have been working to strict deadlines to make sure the poster is completed on time. Andrew has praised their work, especially as much was completed while the students were also concentrating on submissions for their final assessments for the year.

"It's been a terrific effort as the colours and detail had to be exact to meet the guidelines set by 'Australian Geographic' and the national exposure gained by the students for their work will be one of the highlights of their studies at the University," he said.

Descriptions and information about the four butterfly families for the poster is being written by Dr Roger Kitching, a world authority on biology of butterflies who works at the University of New England.

The fold-out poster will contain a second section which is being prepared by one of the University's graduate art students, Ms Nicola Oran, who is now working in Sydney.

Her work is centred on Australian caterpillars which will eventually be sent to the Art Director for 'Australian Geographic', Mr Tony Gordon, for layout and design before printing.
Chaeocneme porphryopsis

Euschemon rafflesia (Regent skipper)

Ocypadiestes walkeri sothis (Grass skipper)

Erynnis tagges (English skipper mating)

South American skipper (male)

Croitana croites (Western Australia skipper)

South American skipper (female)
Standing Committee of Convocation has produced a range of fine quality mementoes of the University which feature the University’s Coat of Arms. By purchasing these items (see below) you will be helping to support Convocation and also the University. The items can be sent as gifts to members of families and friends if the necessary details are supplied. No charge is made for postage.

<table>
<thead>
<tr>
<th>Required</th>
<th>Glass Commemorative Plate (hand blown) $30</th>
<th>Telephone &amp; Address Book — with Pen (embossed with University name and crest) $8</th>
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<tbody>
<tr>
<td>Number</td>
<td>Glass Paperweight (hand blown) $12</td>
<td>Schaeffer Pen (embossed with University name and crest) $5</td>
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<td>Teak Wall Plaque with metal crest $35</td>
<td>Sketchbook of the University Campus (drawings by Allan Gamble) $7</td>
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<td>Champagne Flutes — set of six (embossed with University name and crest) $40</td>
<td>Greeting Cards — scenes of the University (set of six) $3</td>
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<tr>
<td></td>
<td>Desk Note Pad with Pen (embossed with University name and crest) $10</td>
<td>Academic Dress - by K.R. Dutton (origins and history of academic dress) $3</td>
</tr>
</tbody>
</table>

Please tick the memento/mementoes you wish to purchase, and give the number required. Complete the form below and either send it together with your remittance or debit the cost to your Mastercard or Bankcard. Cheques should be made payable to Convocation, and sent to Convocation Office, McMullin Building, The University of Newcastle, New South Wales, 2308.

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