National study credit scheme back on track

A national credit transfer agency is back on the higher education agenda, following a Monash initiative. The Australian Vice-Chancellors' Committee (AVCC) last month voted to go ahead with a credit transfer pilot project.

Earlier this year, the AVCC effectively put the issue of credit transfer on hold by referring it to a working party - initiated by Monash and the University of New England - to mount a pilot project.

However, faced with an independent pilot study, organised by Monash and backed by the Department of Employment, Education and Training (DEET), the AVCC has reconsidered.

The independent project would have involved a consortium of sponsoring universities on the east coast of Australia.

On 20 August the AVCC board of directors approved a series of recommendations, taking up plans for a national pilot study. The AVCC now will provide up to $50,000 for the rest of 1991 to set up the study and undertake background research, matching an initial grant from DEET.

Monash Registrar, Mr Tony Pritchard, has been instrumental in the push for a national credit transfer authority. He led the project team which formulated the initial plans for the AVCC, and then continued discussions with other higher education institutions about the independent study.

A committee to oversee the program has been appointed. Monash Senior Assistant Registrar, Mr Michael Watson, is to be seconded to the AVCC as the program's manager.

"I am pleased that the AVCC has shown itself willing to take the issue of credit transfer seriously," Mr Watson said. "It is an issue whose time has come. The decision acknowledges that the higher education sector as a whole is ready to do something.

The main objective of the project, he said, was to formulate recommendations aimed at granting appropriate credit to applicants for places in Australian higher education courses, taking into account their qualifications and other prior learning.

He said the actual pilot study probably would not get under way until next year, when the program of activities approved by the AVCC involves a detailed information-gathering phase first, he said. "This means a slower approach, but a more comprehensive one."

The working party will investigate demand for credit transfer in Australian higher education, and survey the type and extent of current activity. It also will look at industry-based training as it relates to postsecondary education and examine the incidence and extent of disrupted and incomplete postsecondary education.

Based on local and overseas experience, it will evaluate how to assess the credit value of experiential learning for higher education.

It will also consider linking and extending regional databases on accepted integrated pathways between TAFE and postsecondary education in South Australia, Victoria, New South Wales and Queensland.

The pilot project will look at the feasibility of establishing a centralised credit bank or credit banking agency, based on successful overseas models, to serve all member institutions of the unified national system.

A national credit transfer authority would determine what level of credit a university applicant should receive for previous study at another university, TAFE college or in work experience.

French champagne toasts Clayton clay

A clay mug and an empty magnum of French champagne are just two of the artefacts exhume for an exhibition on the university's beginnings.

The Making of Monash University 1961-91, an exhibition of books, pictures, documents and curios, is on display on the first floor of the main library, Clayton campus, until 22 September.

The mug was made by Mrs Audrey Matheson, wife of the first Vice-Chancellor, Sir Louis Matheson, from clay excavated from the site of the first building on the Clayton campus. The label on the champagne magnum bears the signatures of the official party at the opening ceremony.

The program for the ceremony is on display as well as a photograph of the university's first recorded student prank - a skeleton wearing scholarly robes atop one of the science buildings. Another photograph shows students gathering in small groups at 9 am on the first day of term in 1961.

The exhibition includes aerial photographs of the university site in 1960, when it was mainly farmland. Another from 1965 shows the half-completed Menzies Building. Greater Monash is represented with archival material showing the development of the Caulfield and Frankston campuses from their origins as technical colleges.

An early exam paper is on show, along with the first Lot's Wife, dated 24 June 1964, its predecessor Chaos, and the first publication, simply entitled Student Newspaper Vol. 1 No. 1, Nameless, Priceless. A copy of Wat's Life, a 1968 parody, and other student magazines are displayed; the editorial staff of one Lot's Wife includes Peter Steedman, later a Federal MP. One display is devoted to the student demonstrations of the late 1960s and early 1970s.
A tender has been let for the $5.5 million extension to the Gippsland campus. See page 9 for more details.

The database special interest group and the Pearcey Centre for Computing, of the Faculty of Computing and Information Technology, recently conducted a seminar on object oriented database systems.

The seminar included speakers from Monash, Telecom Research Laboratories, the CSIRO, and sponsors Simplicity Bowles and Associates. It was designed to provide computing professionals with an overview of the relevant theory behind this new form of database technology and to share industry experience.

Pictured above (from left to right) are Mr Peter Richardson, Telecom Research Laboratories; Dr John Smith, CSIRO; Dr Geoff Martin, Computer Technology department; Mr Jim Murphy, Simplicity Bowles and Associates; Ms Graeme Shanks, Information Systems department; Professor Phillip Steele and Mr Noel Craike, Computer Technology.

The Chief Justice, The Honourable Sir John Young, addressed a dinner held by the Law School, Foundation at Mierta’s last month.

The dinner was attended by the Vice-Chancellor, Professor Mal Logan, Faculty of Law staff, representatives of Melbourne’s major law firms and other supporters of the faculty.

The foundation raises funds for the faculty from outside organisations.

Ms Virginia Robinson has been named Senior Scholar for 1991 by the National Aborigines’ and Islanders’ Day Observance Committee of Victoria.

Ms Robinson, of the Monash Orientation Scheme for Aborigines, has completed a bachelor of arts and now is completing a law degree.

She was presented with her award at the Aboriginal Advance League last week.

Professor Alan Trounson has been appointed to a Personal Chair in Obstetrics and Gynaecology/Paediatrics.

His first appointment at Monash was in 1973 as a senior research fellow in the Department of Obstetrics and Gynaecology. He was later promoted to lecturer in 1975, senior lecturer in 1981 and reader in 1984.

In 1985 he was appointed Director of the Centre for Early Human Development in the Faculty of Medicine.

He also is deputy director of the Monash Institute for Reproduction and Development, and executive director of the Monash Centre for Agricultural Biotechnology.

In 1979, Professor Trounson joined the human IVF project and explored the use of superovulation for collection of human oocytes.

This research was followed in 1988 by the successful preservation of frozen human spare embryos. The technique is now used worldwide.

Professor Trounson also reported the first successful pregnancy with epididymal sperm in 1988.

Two years later the first successful fertilisation of human eggs after microinjection of human sperm under the zona pellucida was reported.

Professor Trounson’s current research is the development of ovine and bovine embryonic stem cell lines.
Open day crowds reflect career concerns

Australia's biggest university open day last month attracted a crowd estimated at 40,000 across Monash's metropolitan campuses.

The Vice-Chancellor, Professor Malcolm Logan, said the high attendance figure reflected concern amongst school-leavers about the state of the economy. As well, it showed a growing need by parents and students to assess courses and careers more fully.

"The job market's becoming increasingly complex, as is the diversity of courses," Professor Logan said. "This year we've made a major effort not only to better understand the needs of the professions and students, but also to provide a higher standard of information and assistance to the community."

The Open Day was designed to give prospective students and their parents first-hand experience of course and career options with a full day of displays, lectures and interviews.

Professor Logan said parents and students now faced a wider choice in higher education as leading institutions increasingly geared their courses to market demands. He said Monash now offered the most diverse range in Australia, with combined degrees proving increasingly popular.

Monash's three metropolitan campuses - Caulfield, Clayton and Frankston - were open from 10.30 am to 4.30 pm.

International research project to combat SIDS

Monash is to lead an international research effort to uncover the causes of sudden infant death syndrome (SIDS), which kills 20,000 babies worldwide every year. The National SIDS Council has given $850,000 to a three-year, multicentre research project involving four universities.

The research will support the establishment of Australia's first full-time SIDS research facility, the National SIDS Council Research Group, to be based at the Monash Medical Centre.

The project involves researchers from the University of Melbourne's Department of Psychology, the University of Western Australia's Department of Physiology, the University of Calgary, Canada, and Monash's Department of Paediatrics and Centre for Early Human Development.

Led by Associate Professor Adrian Walker, they will investigate the failure of cardiorespiratory control in infancy, study infants' protective mechanisms in sleep and the effects of stress.

"If we knew how SIDS happened, the medical community would be able to make recommendations based on a true understanding of the problem," Dr Walker said.

"We need more information on lung volume and oxygen stores. We need to know how sleep affects oxygen storage and use, and how oxygen stores might be altered by a mild infection." Researchers already have isolated many factors which may contribute to SIDS.

The Monash team believes that the syndrome is the fatal result of a series of events beginning with an episode of unstable breathing - a common event in sleep.

The project will look at factors which could circumvent or disrupt mechanisms for natural arousal and self-resuscitation.

These factors include depressed breathing, low oxygen levels, airway obstruction and irritability, increasing ambient temperature and infection.

The Monash group will contribute information on the effects of preemies in infants, high body temperature and infection. It also will monitor babies in sleep and record key elements of cardiorespiratory performance.

The information will be used in a new computer model of an infant's breathing control system, developed at the Centre for Early Human Development.

Two-thirds of SIDS cases are associated with sleep and temperature; one-fifth are linked to infections. The latest SIDS research also advises parents not to let babies get too hot, to keep them in a smoke-free environment and feed them breast milk if possible.

Funding for the project follows a public appeal by Sudden Infant Death foundations around Australia, which last year raised about $4.3 million.

Letters to the Editor

In an effort to stimulate greater discussion of issues affecting Monash - and higher education in general - Montage plans to introduce a regular Letters to the Editor section.

Letters should be around 300-400 words and must be signed, with the writer's name clearly written. Please include a contact phone number for verification. Contributions may be edited for reasons of space.

Write to the Editor, Montage, Clayton Public Affairs Office, Gallery Building, Clayton campus.

Hay appointed VC at Deakin University

Professor John Hay has been appointed as the next Vice-Chancellor of Deakin University.

The Deputy Vice-Chancellor of Monash (Academic) replaces Professor Malcolm Skilbeck, who resigned last December. Professor Hay has been appointed for a seven-year term and will take up his position in January 1992.

He played a key role in the planning and implementation of Monash's merger with the former Gippsland and Chisholm institutes. At Deakin, he will finalise the merger with Victoria College.

Educated at the University of Western Australia and Cambridge, Professor Hay has held academic appointments at UWA, including a professorship of English.

He was appointed dean of the Faculty of Arts at Monash in 1987 and became Deputy Vice-Chancellor in 1989.
Educational standards not satisfactory: survey

Universities and secondary schools need to raise their standards, according to leading business and education leaders.

In a survey by the Business – Higher Education Round Table, both groups identified secondary education standards as their biggest concern.

Standards of literacy and numeracy, knowledge and problem solving needed to be improved, they said. The selection of staff, qualifications and supervision of teachers also were matters of considerable concern.

They also agreed that higher education standards "fell well short of satisfactory". The quality of university teaching was rated as an issue requiring attention.

The report, 'Aiming Higher', prepared for the round table group by Professor Ken Sinclair of Sydney University, found other important concerns included:

- attracting and retaining high-quality teaching and academic staff;
- finding ways for business and education to work together more closely;
- communication and numeracy skills at all levels of education;
- the respect and priority given to teaching science and technology;
- improving research collaboration between business and universities.

President of the Business – Higher Education Round Table, Mr Eric Mayer, said members were concerned that standards in Australia's education system were not appropriate to take the country into the 21st century. Current reforms would not eliminate problems perceived with the secondary education system.

A separate survey asked round table members and other business and university leaders about educational beliefs and attitudes.

"There was a high level of agreement on the characteristics desired of university graduates, and their current standards," Mr Mayer said.

"They believed strongly in the need for professionals to be educated – at least in their first degree – with theoretical knowledge in the professional field and general skills for applying that knowledge, rather than narrow training in specific work skills."

Respondents agreed that current standards achieved in producing graduates with most of the desired characteristics were unsatisfactory.

"They believed there should be a broad general secondary education followed by a profession-oriented tertiary education," Mr Mayer said.

"At both levels there should be a very strong concentration on the development of skills in communication, thinking, decision-making and teamwork."

The Round Table, a forum of 41 chief executive and 19 vice-chancellors, was formed last year to promote closer links between business and universities.

The report showed support for increased cooperation including work experience programs for university students and staff, guest lecturers, sponsorship of cooperative education projects and staff exchange programs.

Universities could help business with company research and development, business education programs, professional development courses and access to library services.

Launching the report, the Minister for Higher Education, Mr Peter Baldwin, said there was agreement on the need to improve professional skills so Australia could maintain and improve its international competitiveness.

Business and law courses commended

Monash has been commended among Australia's best higher education institutions for its business and law courses.

In a survey of the 43 universities and institutions which offer undergraduate courses in business and law, Monash was listed as a 'best buy' in both disciplines.

The Independent Monthly Good Universities Guide to Business and Law recommends nine business courses and four law courses in 10 institutions. Monash also rated highly in the newspaper's overall guide to higher education, released in July.

According to the new survey, the Monash Law School delivers 'thoughtful understanding of law and legal processes plus excellent preparation for legal work'. In business, it says the big strengths of Monash degrees are their prestige and their variety.

The Registrar, Mr Tony Pritchard, said conversion of old course and subject databases to the new Monash University Student Information System (MUNIS) already had begun, allowing faculties to maintain their course and subject files.

"With future development in 1992 this technology will facilitate the production of class and exam lists of students' names and faces," he said.

Mr Pritchard said a review of the equipment and data communications network needed to implement the system also was well under way.

"This matter is under review with the aim being to allocate additional resources where necessary," he said.

The business and law boom

An extensive redevelopment of the university's student information system is under way to cope with the demands of the greater Monash.

The business and law boom

Student information system redeveloped

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Computing is X rated

Help is at hand for Monash researchers struggling with the SPSS computer program.

A senior lecturer in anthropology and sociology, Dr Peter Hiller, and PhD student Ms Kristin Diemer have worked together to develop a computer course and monograph to help frustrated computer users come to grips with the statistical data program.

Represented largely through the Faculty of Arts research initiative fund, they have coproduced The joy of X: A research lover’s introduction to SPSS as a teach-yourself guide.

Written in what its authors call a "really light-hearted, fun sort of way", the guide aims to help computer users overcome their apprehensions about the program.

"It's the sort of terror and frustration that's involved when you make mistakes, that we really home in on; partly by dealing with the whole thing with a sense of humour and partly because we place an emphasis on making mistakes," Dr Hiller said.

"As soon as we've got people to do something very simple that actually shows you that getting the whole program up and running is quite easy, the next thing we make them do is make a whole lot of mistakes, because you actually learn from those in a way that you don't when you get things right.

Dr Hiller received many calls for help from university staff and students. "Between February and May this year I put in over 400 hours helping people. So one of my ulcer-type moles in the whole thing is to get people off my back a little," he said.

Dr Hiller and Ms Diemer now plan to market their program guide outside the university. "Potentially there is a world market for these monographs because there is very little literature available," Ms Diemer said.

For further information on either the program guide or information courses, please contact Dr Peter Hiller on extn 75 2988.

Road accident research gains new sponsorship

A new sponsorship deal has given added impetus to road safety research at Monash.

The Accident Research Centre has gained valuable research funds through a co-sponsorship agreement with the Royal Automobile Club of Victoria (RACV) and the Australian Road Research Board (ARRB).

The RACV will contribute $100,000 this financial year while the ARRB will make in-kind contributions of about the same value. Both organisations were supporters of the university's application late last year to the Federal Government to establish a Cooperative Research Centre for Accident Research at Monash.

When this application failed, the RACV and the ARRB agreed to become joint sponsors of the existing centre. Representatives of both groups joined the ARC's board of management in July.

The Centre's director, Dr Peter Vulcan, said the agreement gave the centre an important link to road users, with the RACV, and the eight state and territory road authorities and the Federal Department of Transport and Communications, through their involvement with the ARRB.

The ARRB's sponsorship of the ARC would ensure that duplication of road safety research was avoided and that there was mutual support for the two groups' research.

He said the ARC conducted baseline research valued at about $600,000 for its five major sponsors. Research contracts for Federal and state agencies, including those in the health sector, were also carried out by the ARC.

"We've had a major study funded by the Federal Office of Road Safety which looks at ways to improve protection of car occupants in a crash," he said.

Vulcan said the study, involving an inspection of 300 crashed cars where at least one occupant was admitted to participating hospitals, now has been extended to 500 vehicles.

"We have already reported on protection in frontal crashes and we're now going to report over the next year on protection in side crashes, in rear-enders and roll-overs," he said. In addition to road safety research, the ARC also works in areas such as children's injuries, injuries in the home and falls of the elderly.

Scribbling for posterity on the walls of antiquity

Graffiti is often thought of as a modern phenomenon - but it isn't, in fact, as old as writing itself.

The Department of Classical Studies is running an exhibition entitled The eternal graffito which aims to introduce a new insight into writing and to get rid of old-fashioned ideas about the classics. The display, organised by the department's Dr Alba Romano and Associate Professor Gavin Betts, shows the continuity and similarity of practices of graffiti around the world.

"We are trying to show students that people in antiquity were not much different from us," Dr Romano, who has researched epigraphy (the study of inscriptions), said. "Graffiti are just spontaneous and anonymous inscriptions. The display shows the light-hearted side of epigraphy."

The oldest graffiti on display are from Egypt, written in ancient Egyptian (hieroglyphic and hieratic) and Greek. All of the examples of Roman graffiti on display come from Pompeii, including this timely inscription:"

O wall, I am astonished that you have not fallen, since you hold up the boring scribbles of so many writers.

Another quip:

I peed in bed. My guilt - I hide it not.

You ask me why? There was no chamber pot.

The ancient subjects included political advertising, joy at the victory of a favourite gladiator, social comment, abuse, sexual innuendos against others, and even personal messages addressed to a particular individual. Most are written in what is called Vulgar Latin, the language of the uneducated.

The exhibition, in Room S617 of the Menzies Building, will be on display until 15 September.

September 1991
The computer mightier than pen and paper: classroom study

While computers have become increasingly common in the nation’s classrooms over the past 10 years, little research has been done into their effect on students’ writing ability.

However, in the first Australian study of its kind, a Monash lecturer has recently spent eight months at a Melbourne girls’ school examining the effect of computers in the classroom.

She has found that students using computers write more effectively than those using pen and paper.

In addition, the computer changes the nature of the classroom, helping create an atmosphere where students cooperate more and concentrate more on their work.

Dr Ilana Snyder, a lecturer in the Faculty of Education, is reluctant to extrapolate her findings to the general population.

However, she admits that it seems computers are helping children to write better by giving them access to a powerful and liberating tool. By eliminating the need to recopy, the students have more time to improve their texts.

For her study, Dr Snyder chose two groups of Year 8 students with equivalent academic ability. One class spent an average of two lessons per week in the school’s computer rooms while the other spent an equal amount of time using pen and paper.

Students were given the same lessons by the same teacher with the emphasis on three main types of writing - narration, argument and report. They were tested at the beginning and end of the project and their written work marked by experienced teachers.

The essays were then typed and graded so the markers could not tell which students had originally handwritten their work and which had not.

The length, complexity of sentences and precision of each student’s writing were then calculated and the general quality assessed. The teachers awarded the computer students higher marks than the pen students.

“This is strong evidence word processing is very effective in promoting quality for all three genres investigated in the study,” Dr Snyder said.

In addition to increasing the quality of the work submitted, students said working with word processors made writing less laborious and consequently more enjoyable.

“I enjoy writing with the word processor because it is easy to work with,” one student taking part in the study wrote.

“Writing with a word processor is exciting. These days I find writing with a pen dull. I used to hate these mechanical things. Now I find them fun,” another remarked.

Dr Snyder has received a $10,000 ARC grant to undertake further investigations into the computer’s impact on students’ writing and learning. Her next study will focus on writing for all students in the curriculum, rather than just English.

She adds that her research must, at present, be carried out in private schools because their State counterpart parts do not have the necessary computer facilities.

Funds accelerate car pooling scheme

Car pooling at Monash was given a boost last month with an $8000 grant from the Victorian Government.

The Minister for Planning and Housing, Mr Andrew McCutcheon (left) is pictured with the Monash Association of Students’ (MAS) transport officer, Mr Jim Black, before the cheque presentation.

The money, given under the auspices of the Government’s Area Improvement Program, will be used to promote the car-pool scheme on campus, assist Vicroads in developing a special computer program, and cover the salary of a part-time coordinator.

Also present at the ceremony was the MLA for Clayton, Dr Gerard Vaughan, who commended MAS, the Deputy Vice-Chancellor, Professor Geoff Vaughan, and the university’s public transport working parties for their initiative.

Mr Black can be contacted each lunchtime at the rear of the Union Building, Clayton campus or on ext 73 3138.

Female enrolments rise

Growth in female enrolments has continued to outpace that of males, according to recent Department of Employment, Education and Training statistics.

In 1990 females represented 53 per cent of the total higher education student population, compared with 45 per cent in 1980 and 51 per cent in 1988.

Female enrolments are highest in arts and education, although their share of total female enrolments has fallen from 72 per cent in 1979 to 50 per cent in 1990.

Last year, female students accounted for about 70 per cent of education, health and arts students but only 10 per cent of engineering students. However, females’ share of engineering enrolments has risen over previous years.

Women’s share of postgraduate enrolments is lower than their share of undergraduate enrolments in all broad fields of study.

The statistics also show a slowing in growth rates for both male and female students in 1989, partly attributed to the introduction of the Higher Education Contribution Scheme.

In 1989 male enrolments rose by three per cent, compared with five per cent the previous year, while for female students the growth rate fell from nine per cent to seven per cent.

The growth rate for female enrolments in 1990 was 11.3 per cent and for male enrolments, 8.6 per cent.

The graph below shows the increase in female lawyers as a percentage of all lawyers since 1911.

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Connecting science and your society

The social context of science is to be examined in a series of lunchtime seminars, Science, society and yourself.

The seminars aim to focus on the wider issues of science not covered as part of formal university education, and to present a broader view of what science is and how it works.

Organised by second year physics student Roger Sharp with the support of the Faculty of Science, the series follows the success of a similar program last year.

“We are often told that in this technological world we need science-literate people and a science-literate society,” he said.

“Our aims extend to the importance of having people- and society-literate scientists.”

Mr Sharp said a diverse group of guest speakers would consider the place of science in society, including economic, political, ethical, environmental and personal aspects.

“By addressing these issues the series will not only be valuable to all science students but also to all concerned individuals,” he said.

Last month’s speakers were CSIRO head John Stocker and Alan Roberts, a former Monash physicist and now theoretical ecologist at the Graduate School of Environmental Science.

Forthcoming speakers include the director of the Science Policy Research Centre at Griffith University, Ian Lowe, and Freya Matthews, head of the Women’s Studies Centre at La Trobe University.

Dr Peter Singer, head of the Bioethics department and world-renowned author of Animal Liberation, will present a seminar later this year.

The series of Science, society and yourself seminars are held in Science Lecture Theatre 54 at 1.10 pm. For details check the weekly diary in Eureka.
People seem to need less sleep as they grow older, and also become more prone to sleep disturbances. Dr Jenny Redman, of the Department of Psychology, suspects that the change in sleep patterns results from changes in the body’s inner timekeeper, and that these changes may actually speed the ageing process.

Dr Redman was a pioneer in studies of the mammalian body clock. As a PhD student at La Trobe University in 1983 she produced the first evidence that the hormone melatonin, secreted by the pineal gland, regulates circadian rhythms - the natural changes that occur in behaviour and body functions during the day-night cycle.

Until her seminal discovery, biologists believed that while melatonin was involved in regulating the annual reproductive cycle in seasonally breeding animals, it had no obvious role in non-seasonal breeding mammals such as laboratory rats and humans.

It is now clear that melatonin does much more. It actively regulates the body clock, and through it, a wide range of physiological and neurological phenomena.

Disturbances in melatonin levels in the brain can account for such phenomena as jet lag, a form of depression called seasonal affective disorder (SAD), that suggested melatonin might also be involved in regulating the annual reproductive cycle in seasonally breeding animals, such as birds and some rodent species. Dr Redman’s work has shown that melatonin is also secreted by the pineal gland of many non-photoreceptive species, including marine mammals and reptiles.

In 1987 a Swiss research team published a remarkable research finding that suggested melatonin might also be involved in regulating the annual reproductive cycle in seasonally breeding animals, such as birds and some rodent species. Dr Redman’s work has shown that melatonin is also secreted by the pineal gland of many non-photoreceptive species, including marine mammals and reptiles.

In younger individuals, melatonin levels change markedly during the day, depending on light levels in the individual’s environment. Dr Redman says that as people age, the daily melatonin cycle tends to flatten out and the pattern of variation becomes more erratic.

To understand how this might have more general effects on the body, it is necessary to describe melatonin’s primary role, which is to regulate the body clock. Dr Redman says the body’s main timekeeper is thought to reside in the suprachiasmatic nuclei (SCN), which sit just above the point where the optic nerves cross over en route between the eye and the brain.

Light falling on the retina at the back of the eye causes impulses to travel along the optic nerves to the brain. However, another pathway - the retino-hypothalamic tract - transmits photic information from the retina to the SCN.

The SCN monitors the amount of light entering the eyes and informs the pineal gland, which produces melatonin. The SCN is studded with receptors for melatonin, and responds to the output of the pineal gland. The body clock thus regulates itself through a feedback loop, which is tied to the day-night cycle.

When the SCN senses less light entering the eyes, it instructs the pineal to produce more melatonin, turning down metabolic activity and preparing the body for sleep. Around 5 am, melatonin levels fall and the body begins to emerge from sleep; light entering the eyes when the person wakes halts melatonin production and the person becomes alert and ready for the day’s activities.

But the overall regulation of the body’s rhythms is more complex than this simple picture would suggest.

There is an opposing theory that says while the SCN is the principal body clock, there are other clocks controlling separate cycles,” Dr Redman said. “In human beings there are at least two clocks, which are normally coupled or phase-locked together. Many animals have a ‘temperature clock’, also regulated by the pineal gland. Dr Redman says the pineal monitors internal temperatures that serve as cues for reproduction. The temperature clock may be particularly important for Australian animals, who need to synchronise their breeding with seasonal changes in temperature and food availability.

Humans may also retain some vestige of a light- and temperature-controlled breeding clock; not without reason do poets exalt the arrival of spring, with its warmer, longer days.

Dr Redman says that while the various body clocks tend to be phase-locked to some extent, they are capable of being disturbed - sleep disorders, seasonal affective disorder and jet lag are all manifestations of such disturbances.

Her own research group, along with Dr Armstrong’s research group at La Trobe University, has been attempting to perturb the clocks using various drug and light regimes, and by studying animals that have had the pineal gland removed.

Dr Redman says that normally, the removal of any organ in the body has profound effects, but pinealectomised animals seem to continue behaving quite normally. What makes Dr Redman and Dr Armstrong think that the immune system hypothesis advanced by the Swiss researchers is too limited is that melatonin and the pineal also affect aging earlier in life, in the context of development and sexual maturation, and there is no evidence that the immune system is involved in these processes.

It is more likely, they believe, that the slow decay of circadian rhythms with age leads to an inner somatopleuric disorder, which may lead to disease.

As people grow older, alterations in pineal melatonin secretion and decreases in the sensitivity of their retina to bright light, may reduce the amplitude of their circadian rhythms, as measured by the difference between maximum and minimum melatonin levels over 24 hours.

Dr Redman believes that while melatonin may play a role in the development of neurological disorders such as Alzheimer’s disease, the hormone may also be involved in the development of certain types of cancer. Melatonin, she suggests, may have a role in the prevention of cancer by suppressing the growth of tumours.

Melatonin can also be used to help people adjust to changes in their body clock, such as when they travel across time zones. It is often prescribed to help people who suffer from jet lag or other sleep disorders.

Dr Redman is currently investigating the role of melatonin in the development of cancer and its potential as a treatment for neurological disorders.

SUPPLEMENT TO MONTAGE SEPTEMBER 1991

Dr Jenny Redman.

RESEARCH MONASH

Shedding new light on ageing

The body’s daily clock regulates sleep patterns in response to changes in light and temperature. Evidence now is emerging that this internal mechanism may regulate life span as well. Dr Jenny Redman is investigating the role of the hormone melatonin in ageing.
Detecting a dangerous microbe

Footrot costs Australian sheep farmers tens of millions of dollars in lost production every year. Research student Ms Sharon La Fontaine is developing a new test to diagnose it reliably and, in the process, has given a new identity to the microbe which causes the disease.

Footrot is a complicated disease caused by a microbe that has had something of an identity crisis during the past three decades.

This debilitating disease affects cloven-hoofed animals, including sheep, goats, cattle and horses, with millions of infections in the region where the hard material of the hoof connects with the underlying soft tissues. In extreme cases the hoof may separate from the soft tissues, crippling the animal and requiring it to be destroyed.

Originally the microbe was called Fusiformis nodosus, but 25 years ago it was reassigned to a new genus, to become Bacteroides nodosus. It has recently undergone a third incarnation, thanks largely to research by Monash University PhD student Sharon La Fontaine and her supervisor, Dr Julian Rood, reader in the Department of Microbiology.

The footrot microbe will now be known as Dickelobacter nodosus.

Behind the name change is an interesting story that illustrates the revolutionary and pervasive impact of molecular biology in the biological sciences.

In their successful search for a more reliable and sensitive method of diagnosing footrot, Ms La Fontaine and Dr Rood found themselves making an important contribution to the field of bacterial taxonomy.

The Department of Microbiology has a substantial research program into footrot, one of the most costly diseases of sheep in the world, affecting 30 per cent of the world's wool. The footrot microbe is an obligate parasite. It thrives in warm, wet conditions, and is most common in the wetter areas of Australia after rains in spring and early summer.

D. nodosus is a strict anaerobe; its requirement for an oxygen-free environment compounds the problems of culturing it in special media in the laboratory, which in the past has been an essential step in diagnosis. It takes four or five days to grow recognisable colonies from samples of infected tissue.

In certain regions, grazing properties where footrot has been detected must, by law, be quarantined to prevent the spread of infection. It typically takes two to three weeks to confirm a diagnosis, and to identify whether the property is infected by a virulent, intermediate or avirulent footrot microbe, but which show no clinical signs of infection. These carrier animals can carry D. nodosus over the summer and reinfect a property that had been cleared of infection during the previous year.

She decided to develop detection techniques based on gene probes. Gene probes are based on distinctive DNA sequences that occur in every living organism—sequences that constitute a unique genetic signature that distinguishes the organism from all others, even closely related species.

The scientist makes a copy of the DNA sequence, and then labels it with a highly radioactive isotope of phosphorus. The labelled sequence is used to search for any sequence with the same code in DNA isolated from the sample under test.

If the sequence is present, the complementary strands of DNA pair up or ‘hybridise’. The DNA sample is then washed; if there is no match, the radioactive probe is washed away. But if the probe has found a matching sequence, it makes a dark spot on a photographic negative laid over the sample.

Ms La Fontaine identified several DNA sequences in the genetic blueprint of D. nodosus and showed that probes derived from these sequences could successfully signal the presence of the microbe. But the test was not sufficiently sensitive. If there were fewer than about 10,000 bacterial cells in the sample, they did not provide enough DNA to make a positive identification.

In the mid-1980s, a revolutionary new technology called the polymerase chain reaction (PCR) became available for amplifying minute quantities of DNA. Forensic scientists have used it to multiply and identify DNA sequences from biological samples as small as a single blood or hair-root cell.

Ms La Fontaine decided to use her existing gene probes as the basis of a PCR test to identify D. nodosus. The PCR technique involves separating the two DNA strands from each other using heat, then attaching DNA ‘primers’ at two points along each strand.

A special heat-resistant enzyme, called DNA-polymerase, then shuttles between the primers, constructing a second strand that complements the original. Two double-stranded DNA sequences are created from the original.

With repeated cycles, the two sequences become four, four become eight, and so on. The exponential rate of duplication means that millions of copies of the original DNA sequence between the two primers can be generated within half a day, providing enough DNA to be detected and analysed.

For footrot, it is enough just to confirm the presence or absence of the genetic signature of D. nodosus, without actually analysing the DNA. The university has filed a provisional patent on the use of Ms La Fontaine's DNA probes to detect footrot. She says the PCR test using these probes can detect D. nodosus in samples containing fewer than 10 bacterial cells.

Ms La Fontaine is now working to adapt the test so that it can be used to detect D. nodosus directly in clinical samples, avoiding the delays involved in culturing the organism.

The test actually focuses on bacterial DNA (deoxyribonucleic acid) which codes for a form of single-stranded ribonucleic acid (RNA) - ribosomal RNA - that is present in multiple copies in bacterial cells. The genes which encode the ribosomal RNA are also present in multiple copies, and therefore should provide the basis for a sensitive test.

When a gene is active, its genetic instructions are copied into a single-stranded RNA molecule. A structure called a ribosome then travels down the RNA molecule, processing its instructions and assembling the encoded proteins.

The ribosome is itself constructed from a special form of RNA, called ribosomal RNA. As might be expected for an organelle with such a basic and crucial function in the cell, its accurate function depends on the RNA being free from errors induced by mutation. A single mutation in a critical region of the molecule might impair or destroy its function, which would be fatal to the cell.

However, ribosomal RNA does accumulate non-lethal mutations in less critical regions of their genetic code as they evolve. Closely related organisms diverging from a single ancestor will have slightly different ribosomal RNA codes; the differences become more marked in distantly related microbes.

Ms La Fontaine began her analysis of the ribosomal RNA of the footrot microbe during her honours year. At the time, the bacteria was still included in the genus Bacteroides, under the name B. nodosus.

The Monash research group had learned that two researchers in Boston, Dr Floyd Dewhurst and Dr Bruce Paster, of the Forsyth Dental Institute, were studying the ribosomal RNA of several other unusual bacteria, with a view to reclassifying them. Ms La Fontaine's analysis confirmed that B. nodosus was misplaced in the genus Bacteroides. It was not even closely related to other species in the genus, sharing only 77 per cent of its ribosomal RNA sequence with them. It was more closely related to the common gut-dwelling bacterium Escherichia coli, with which it shares 85 per cent of its genetic code.

However, its closest relatives are the two obscure microbes that Dr Floyd and Dr Paster were studying, Cardiobacterium hominis (92 per cent similarity) and Suttonella indologenes (94 per cent).

Even these relationships are not sufficiently close to include the three microbes in the same genus, so a new genus was established.

At the time the decision was made, Dr Rood was in the United States on sabbatical leave. He sought out experts in Latin and ancient Greek at the Virginia Commonwealth University and Virginia Polytechnic Institute — Dr Robert Cromey and Emeritus Professor Thomas MacAdoo — asking for a name that would reflect the microbe's parasitic nature in cloven-hoofed animals.

The name Dickelobacter was chosen. ‘Dickie’ is an old-fashioned name meaning 'codger', a nickname for an old man.

Dickelobacter was not included in the 1980s taxonomic classification of bacteria. It was placed with the Staphylococcus genus. In the 1990s, researchers added it to the 1990s taxonomic system.

The name Dichelobacterium was chosen.
Flowing against the current

Australia has long neglected the ecosystems of its rivers and streams. Stream ecologist Dr Sam Lake has been examining how these systems work. What he has found challenges the prevailing scientific view with a different way of looking at natural communities.

The idea of stability and balance in ecosystems has dominated debate over environmental issues for the past two decades. Conservation is concerned with maintaining this perceived stability, or with restoring the 'natural balance' of ecosystems disturbed or degraded by human activity.

Stream ecologist Dr Sam Lake, of the Department of Ecology and Evolutionary Biology and the Centre for Stream Ecology, says that while these concepts may hold true for some ecosystems, they do not apply universally. They certainly do not hold true for Australian rivers and streams.

Dr Lake, his colleague Dr Barbara Downes, and several graduate students, are providing new insights into the workings of southern hemisphere stream ecosystems, through long-term studies of two rivers in the Melbourne region, the Acheron and the Lerderderg.

Dr Lake has studied freshwater ecosystems for much of his research career. He worked initially on rivers in Tasmania and south-eastern Australia that are still contaminated by heavy metals from mines that ceased production early in this century.

"I came to the realisation that in Australia we had little understanding of how our streams work," Dr Lake said. "Prior to the 1980s we had acquired empirical knowledge about how to foul streams up, but we knew very little about how natural stream communities were structured or how they functioned. In a world context, stream ecology had been a neglected area of ecology.

"Most of the work we did on dammed rivers was descriptive. We'd take basic chemical measurements, or measure metal contamination, but we did no work on basic ecological processes that allow streams to work normally.

"In the late 1970s, I decided that we should study some of Melbourne's local streams, like the Acheron River. When we looked at these stream communities, we found that they were very different from the stream communities described in the scientific literature.

"The literature described equilibrium systems: the sort of predictable, very structured 'balance-of-nature' communities that vary predictably with the seasons.

"We now know that Australian streams are not like this. They are highly dynamic entities - what we would call non-equilibrium systems. One system changes rapidly with the seasons and with natural disturbances. It was a totally different way of thinking about natural communities for that native.

"Ironically, it was from woodland stream studies in North America in the 1970s that the view of stream ecosystems as stable and predictable entities emerged. This helped to form conservationists' imperative to restore disturbed ecosystems to their original 'natural' balance.

"These studies produced the River Continuum Concept. It was foisted upon the world by a small group of stream workers in North America. Many northern hemisphere streams do tend to be very predictable, and they made generalisations to apply for the rest of the world," Dr Lake said.

"But here in Australia and in New Zealand, some - including our group - disagreed with the concept. It did not apply to our streams. Even North Americans never considered in their models the idea of stochastic non-seasonal variation in flow. Along with southern Africa, Australia has some of the most variable streams in the world.

"Our streams also have some of the most diverse and dynamic of natural communities in the world. You take samples over an extended period of time, you get different species at different times of year, and the communities have a structure not seen in the perennial streams of North America.

"The species change rapidly, yet there are no large or rapid changes in the actual number of species. This implies that there are processes that regulate community structure, even though the communities vary continuously in composition.

"Dr Lake's group began studying the source of this variability and community structure, focusing on episodic events such as floods and droughts, which deplete freshwater plants and animals. They have found that in the wake of flood or drought, some parts of the system recover quickly, while others recover much more slowly. Dr Lake believes disturbance, not stability, is the most important determinant of the structure and diversity of many stream ecosystems.

"Paradoxically, Australian stream communities seem to have very low resistance to floods, and suffer severe depletion as organisms either leave their stretch of a river or are swept downstream.

"Up to 70 per cent of the organisms may be lost in a flood. But within a few weeks - at most a month - of the water subsiding, they're back. The question is: where do they go when the flood hits?" Dr Lake asked.

"Rapid colonisation, not rapid reproduction, seems to be the explanation, because even organisms that have only one generation per year come back rapidly. When a 50 year flood broke the 1983 drought, the worst in eastern Australia this century, it swept the bed of the Lerderderg River clean. Everything was back within a month.

"They've got adaptations we don't understand," Dr Lake said. "Some may sense flood coming and go down into the hyporheic zone - the sediments below the surface of the stream bed. British stream ecologists favour the idea of dead-water zones that become refuges when flood hits. The organisms take shelter behind logs and stones, or retreat into backwaters to ride out floods."

"Even in North America, home of the River Continuum Concept, ecologists studying desert streams in Arizona have found similar patterns of loss and rapid recovery, and have concluded that rapid recruitment was primarily responsible, abetted by high water temperatures that favour rapid growth."

"The Monash ecologists have been delighted by the diversity of life in Australian streams. Dr Lake says that in the Acheron, which is disturbed more often by flooding than drought, his research group has recorded a total species pool of over 500 invertebrates: insects, a few crustaceans, molluscs and worms."

"That diversity probably is one of the highest in literature of any river system in the world at that size - obviously there is greater diversity in large rivers like the Amazon, but they're much bigger systems," Dr Lake said.

"The latitudinal species diversity gradient assumes that species composition becomes more diverse as you move from the temperate zone towards the equator. But sitting on Melbourne's doorstep, in the warm temperate zone, one of the Amazon, La Trobe and the Mitchell have a diversity of life equal to that reported for tropical streams."

"How is this diversity regulated? Dr Lake says he and his colleagues realised that the high level of disturbance, overlain marked seasonal change, constantly throws up a mosaic of habitats.

Dr Sam Lake collecting samples in the Acheron River.
Streams colonised rapidly

From Research Monash 3

"One of the ways the species-area relationship may be generated is through increased resource diversity," she said. "Larger stones supply more food and living space. This is a much simpler idea than invoking equilibrium communities where diversity is controlled by competition between individuals.

In Australian streams, vacant stones are rapidly colonised after flood or drought, but competition only develops well after the initial colonisation and utilisation of resources."

The beauty of working with rapidly-changing stream communities, Dr Lake says, is that it is possible to obtain answers very quickly. To obtain answers to the same questions by studying forest communities, or intertidal communities, would take a lifetime.

"The wheel turns very quickly, respond very quickly to new vacant patches." Colonisation occurs in days rather than weeks, so we can do a large number of manipulations and replicated experiments in a single summer," he said.

Dr Downes says the research group has found that there are things that cause a mosaic of habitats, ripe for colonisation by whatever species arrive first. Some species are opportunists while others employ a smash-and-grab strategy.

Dr Downes says mobility is a very valuable characteristic in a frequently disturbed environment. With so many stream species being mobile, it is possible to perform experiments encompassing scores of species that would be impossible to do in a terrestrial ecosystem.

"One problem with community ecology is that so many experiments have been done on sessile species, or research has been limited simply to observing mobile species like fish. Moving in and out of the study area, she says."

"Marine ecologists have done some nice experiments on sessile species like sponges and tunicates, but streams really are a great place to test ideas and develop general models for ecosystems with mobile animals."

Among the species Dr Downes and Dr Lake have studied in greater detail are blackfly larvae. These larvae (at left) are filter feeders, feeding up the current to strain particles as small as bacteria out of the water column with fan-like structures on their heads.

In some stretches of river blackfly larvae reach very high densities. "If you scrub a stone clean and put it back in the stream, blackfly larvae will colonise it very quickly and will reach high densities in two to four days," Dr Downes said.

"Then we did experiments to test whether the blackfly larvae were both fugitives, we found that one is and one isn't. They had quite different patterns of behaviour," Dr Downes said."

"A torrentium is a fugitive: when you give it clean surfaces, it moves in quickly but then declines rapidly with time. With A. victoriae, numbers built up slowly and stabilised. We were surprised, because they are ecologically similar in all other ways. Then we found exactly the same thing with two caddisflies in the same gene, Amicrodea, well known to fly fishermen. These species are similar, if not identical, in many ways but differ in forms of mobility and patch utilisation."

Dr Lake says his research group greatly values the Acheron River but it is increasingly being abused as population pressures in Melbourne bring increasing numbers of visitors to the area.

His group has collected 12 years' worth of data from the river, "but has already seen one invaluable study site lost when the Department of Conservation and the Environment approved the establishment of a trout farm."

The Acheron catchment is deteriorating because of a combination of forestry activities, the movement of wheel drive vehicles, and pollution by nutrients from pastures, sewage and trout farms. In its lower levels the river has finally become very dirty due to bank erosion.

The Monash group moved to the Steavenson River this year to establish a three-year project. The group is seeking greater protection for the Acheron river system, which is already on the register of the National Estate.

Footrot microbe

From Research Monash 2

They take up special stains, and their growth being misclassified.

Dr Rood says he has no intention of becoming a bacterial taxonomist and instead is looking for a way to use these microorganisms to their advantage.

"I think it is from animal research that the stability of the circadian system may be important for longevity, but the larger the amplitude the more resistant the system is to perturbations." Dr Downes says.

In some stretches of river blackfly larvae are very quickly and will reach high densities.

Footrot microbe: filter feeders.

"The various patterns of mobility may be a key to how they exist. Some may come in and occupy a territory, others may be fast-moving and stealthy," she said. "They might eat a hole in a patch of algae but, as soon as they are detected, move on - and on the odds, they will find another patch of algae and repeat the process.

"No stream animal is totally sessile, like a limpet. That's a deadly strategy in streams, because any rock eventually is going to be turned over. But some animals may live semipermanently in cracks, while others may move every 24 hours."

"Many of our experiments have been on sessile species, or research has been limited simply to observing mobile species like fish. Moving in and out of the study area, she said."

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The body's clock may regulate life span

From Research Monash 1

It is known from animal research that the stability of the circadian system is positively correlated with its amplitude; the larger the amplitude the more resistant the system is to perturbations.

If animals are given melatonin at the right time of day, it can resynchronise body rhythms; Dr Redman says it functions as a chronobiologist.

"A circadian rhythm is a substance that can act as a synchroniser or zeitgeber to reset the phase of biological rhythms, so that it can be used therapeutically to reentrain circadian rhythms that have been desynchronised or disrupted by environmental insults like shift work, or jet lag induced by international flights across time zones."

"The body's clock may regulate life span and the duration of exposure to natural sunlight may counter these disturbances."

In situations where bright light is unavailable or the retinal system has degenerated too far to capitalise on bright light, evening oral administration of melatonin would be an ideal medication."

Dr Redman and a PhD student, Heles Jarvis, are attempting to replicate the findings of the Swiss researchers by administering melatonin to mice - humans are too long-lived to be suitable experimental subjects. Even mice are sufficiently long-lived to make such studies very slow, so Dr Redman and Ms Jarvis are looking instead for an increase in heart rate, or a decrease in hormone levels that accompany ageing.

In a joint experiment with Dr Armstrong, Dr Redman is attempting to see whether melatonin delays the age-induced suppression of the oestrus cycle in female mice.

They also are monitoring the effects of melatonin on levels of particular hormones in the body, to see if melatonin influences their level of expression, and how such changes in hormones levels may feed back to influence the function of the SCN body clock.

"Footrot microbe: filter feeders."

"The various patterns of mobility may be a key to how they exist. Some may come in and occupy a territory, others may be fast-moving and stealthy," she said. "They might eat a hole in a patch of algae but, as soon as they are detected, move on - and on the odds, they will find another patch of algae and repeat the process.

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Food: Questions and answers in something of the nutritional equivalent of that old Woody Allen classic, Everything you always wanted to know about sex (but were afraid to ask).

Co-written by Professor Mark Wahlqvist, Monash University's professor of Human Nutrition at Deakin University, this handy paper-back separates the unhealthy dress from the nutritional gold. The authors do not seek to alarm, although their dispelling of numerous misconceptions about food will have that precise effect. (Can vitamin C help prevent colds? No. Liquid diets are more effective for weight reduction. False. Sugar causes behavioural problems. Probably not.) Rather they inform through carefully presented arguments backed by research.

"It is becoming apparent that the major health problems of industrialised nations such as Australia are related to the way we eat," Professor Wahlqvist said. These problems include coronary heart disease, most diabetes, obesity, osteoporosis and certain cancers.

"Added to that is the fact that there are still problems of malnutrition in Australia. For example, in hospital patients, people with eating disorders and wasting diseases, and in people with bizarre food beliefs that are most pre­carious.

"Oddly enough, Australians today are eating about the same in calories as they were at the beginning of the century. But with the advent of mechanised transport, physical activity has declined and waistlines have expanded.

What has helped keep most of the Australian population out of hospital is our great food diversification, Professor Wahlqvist says. In fact, the abundant variety of cereals, seafood, meats and vegetables has even accounted for gains in our health.

"The potential to improve health is quite large. For example, there are a number of ways that food can affect favourably the possibility of a heart attack. It is possible to change the composition of the heart membrane cells by the way we eat, and to alter the sickness of blood platelets that can block arteries and cause a thrombosis."

Professor Wahlqvist has some firm thoughts on diets, the not-so-healthy bread and butter of many women's magazines. "The business about diets is a mixed blessing. On one hand, the exploitation of new ideas is very important. They generate new awareness and new ideas. This exploration is good for change, and the magazines provide an opportunity to develop our pluralistic food culture."

"On the other hand, diets can basically fix one in a perpetual dieting mode. "But the greater problems come with the exploitation of women. What is required of them today often is unrealistic and unattractive."

"To alter body shapes so that women return to a prepubescent form is mischievous. It denies the range of human body shapes within and between ethnic groups and with age. The best illustrations are those diets that are meant to trim thighs and reduce 'cel­lulite'. Unlike fat around the middle, fat around the hips is not a health hazard."

Professor Wahlqvist believes that losing weight is not principally a food issue, rather one that also involves more exercise, no tobacco, and modest alcohol consumption.

Food production techniques of the future are sure to test our personal choice-makers. Our present quest for convenience food has not yet destroyed our basic food skills, but who knows what will happen when we are faced with contrived food? (Also known as functional food or food analogues, contrived food is exactly as it sounds: it may look like fish or meat, but its ingredients are all totally processed.)

"Sadly, there is going to be a polarisation of society. Those with knowledge about food will be decidedly advantaged. We need to learn to make better choices, to inquire about food and its quality, to pick and choose. Informa­tion about food, particularly processed food, needs to be readily available at the point of purchase."

"It also is fundamentally important for all of us to be involved in food production and food preparation. In the past, the food skills we grew up with were enough, now we need to develop new skills to make intelligent decisions. Unless we question, unless we sort the facts from the fads, and are prepared to live with a degree of uncertainty, we are going to be in strife."

Koorie plant guide cultivates knowledge

On which plants would you find leaves, pods, roots and stems to relieve headaches, cure fevers, supply protein and satisfy a sweet tooth?

This information and more may be found in a new book, Victorian Koorie plants, written by Dr Beth Gott of Monash's Department of Ecology and Evolutionary Biology, and illustrated by Dr John Conran of the University of Adelaide.

The book is a comprehensive guide to plants used by Koorie people for food, medicine and tools. Published by the Hamilton Aboriginal Keeping Place, it was launched in Hamilton last month.

"Many of the plants featured in the book are found in the Hamilton district. Dr Gott said more than 700 species of Victorian plants had been used by Koorie people and 50 of the most interesting had been presented in the book."

"I regard the information in this book as information that belongs to Koorie communities. I have just recovered it from places that are difficult to get at if you are not a botanist," Dr Gott said.

"The research has taken me back to primary sources as much as possible and a good deal of work is from documents, manuscripts and early books."

Dr Gott has studied the use of plants for 12 years. Now an honorary research associate in the Department of Ecology and Evolutionary Biology, she has given courses on Aboriginal ethnobotany (the study of relationships between plants and people).

She has tried most of the plants herself. "Testing is absolutely essential," she said. "You can't just rely on what the books say; you must search for, dig up and try the plants yourself. In doing this you learn a lot more about the materials and how they were used."

Many of the plants included in the book are being cultivated in the Aboriginal garden in front of the Biology building, Clayton campus.

Dr Gott now is working on extending her database on Koorie plants to cover the whole of southeastern Australia. The book, financed by the Victorian Ministry of the Arts and the Victorian Koorie Heritage Trust, is aimed at the general public and schools. It is on sale for $10 at Monash bookshops.
Scholarships and fellowships

Vacation scholarships

The Heart Foundation is offering undergraduate and postgraduate scholarships to students completing at least three years of study and returning to university in 1992. There is no restriction on the field of study.

Sugar research scholarships

The Sugar Research and Development Corporation is offering postgraduate scholarships to permanent residents or Australian citizens holding first or upper second class degrees and interested in a career in the sugar industry. The scholarship is tenable for three years. The host institution is to cover expenses. 30 September.

Academic links and interchange scheme

Australian postgraduates and postdoctorates preferably in the fields of science, technology and engineering are invited to participate for one or two terms in the Academic Links & Interchange scheme involving British institutions. Applications must be submitted at least three months prior to expected departure.

Commonwealth scholarship and fellowship plan awards

Applications are invited for these awards normally tenable in the United Kingdom, Canada, Hong Kong, India, Jamaica, Malaysia, Malta, Nigeria, Sri Lanka, Trinidad and Tobago. 27 September.

The Sir Robert Menzies allied health award

The Sir Robert Menzies Memorial Foundation supports graduates in allied health sciences who are undertaking a project in the field of study. 20 September.

Fullbright awards

Professionals in the visual and performing arts may apply for the postgraduate student award. PhD holders are eligible for the postdoctoral fellow award. The professional scholarship is open to professionals in business management and industrial relations. 30 September.

The Sir James McNeill Foundation 1992

The Sir James McNeill Foundation Postgraduate Scholarship has been established in memory of the late Sir James McNeill who had a long association with Monash University. The scholarship will be awarded annually to enable a PhD scholar to pursue a full-time program of research which is both environmentally responsible and socially beneficial to the community. The award shall be made in the field of engineering, medicine, music or science and will be awarded on the basis of outstanding merit.

NH&MRC biomedical postgraduate scholarships

Australian graduates or permanent residents not benefiting from CSIRO equivalent awards may apply for the biomedical postgraduate scholarships to pursue medical research in any Australian institution. 20 September.

Publications for perennial

The following publications are available for consultation at the Higher Degrees and Scholarships Section:

The Royal Society of Victoria medal

The Royal Society of Victoria is offering junior postdoctoral fellowships for research projects concerned with the preservation of indigenous mammals and birds, particularly those with habits in Victoria. 25 September.

ALS motor neurone disease

Applications are invited from graduates in medicine or the biological sciences for grants-in-aid to conduct research in fields related to amyotrophic lateral sclerosis. 20 September.

1992 Fulbright award: postdoctoral fellow

This award is for those who have recently completed, or are about to complete, a PhD and who plan to pursue postdoctoral study at an American institution. 20 September.

MA Ingram Trust

The MA Ingram Trust provides support for research projects concerned with the preservation of indigenous mammals and birds, particularly those with habits in Victoria. 25 September.

RE Ross Trust

The trust invites applications for projects concerned with social welfare and the education of disadvantaged young people. 20 September.

Tapes of talks

Tapes of the talks held on 25 and 30 July by representatives of the British Council and Australian-American Educational Foundation respectively on the opportunities for study in UK and USA can be borrowed from the Higher Degrees and Scholarships Section. US information service

An excellent library with information on study in the USA is located at the United States Information Service, 6th floor, 555 St Kilda Road, Melbourne. Visitors should first contact the service on 526 9500 to make an appointment.

For further information, contact the Higher Degrees and Scholarships Section on ext 79 3069.

DFTAC International Conference Support Scheme

Applications are invited from organizers of major international science, technological or engineering conferences to be held in Australia. 13 September.

Janssen-Cilag Travelling Fellowships

The objective for the fellowship is to provide the opportunity for the recipient(s) to attend an international meeting on Cystic Fibrosis or visit leading Cystic Fibrosis Centres in other countries or recognised institutions involved in research in the field. 13 September.

ARC Australian research fellowships (industry)

Applications for 1992 fellowships are now invited from researchers in fields of science, mathematics, engineering and social sciences. Work will be for between three and twelve months on at least a half-time basis in an industrial or commercial environment on a project at any stage from fundamental research to experimental development or commercialisation. 14 September.

Dairy Research and Development Corporation

The Corporation (part of the Commonwealth Competitive Grants Scheme) invites preliminary submissions from applicants for research in the following areas: soils and pastures, animal health, farm management, animal nutrition, genetics and reproduction, and dissemination and application of farm research. 16 September.

The Australia prize

The Australia Prize is an international award of $250,000 given by the Government of the Commonwealth of Australia for outstanding specific achievement in physical sciences related to mining or processing of mineral resources. The prize may be awarded to an individual or awarded to up to four persons. 4 October.

The Gottschalk Medal

The Gottschalk Medal recognises distinguished research in the medical or biological sciences by younger scientists. 13 September.

Grants for researchers not currently in receipt of research grants

The Australia Postdoctoral Fellowship Scheme invites applications from experienced postdoctoral researchers who have held a postdoctoral fellowship in the past five years. Applicants must be Australian citizens or permanent residents. 19 September.

Robert Menzies Foundation

The Foundation is offering postgraduate scholarships in all fields of study. 30 September.

Bureau of Immigration and Citizenship

Applications are invited from organisations not benefiting from the Rural Development and Dissemination Grants Scheme or other Commonwealth Competitive Grants schemes involving British institutions. 15 October.

Postgraduate Scholarships in Canada

Canada is offering postgraduate scholarships to Australian citizens and permanent residents as well as the residents of New Zealand, the United States of America, the United Kingdom, Canada, Hong Kong, India, Jamaica, Malaysia, Malta, Nigeria, Sri Lanka, Trinidad and Tobago. 19 September.

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Computing and information technology dean appointed

Professor Cliff Bellamy has been appointed Dean of the Faculty of Computing and Information Technology. He graduated B.Civ with first class honours from the University of New South Wales in 1965. In 1966 he was the first candidate to be awarded a PhD in civil engineering from Sydney University.

Professor Bellamy joined Monash in 1963 as a senior lecturer in mathematics. The following year he was appointed director of the Computer Centre, a position he held until July 1990 when he became dean of the newly-formed faculty for a one year term.

He has worked for the Burroughs Corporation in California while on study leave on two occasions, managing the design automation department and doing research and development.

His contributions in the field of computer technology include the design of hardware and supervision of Monet, the Monash computer network. It is one of the few computer hardware programs in Australian universities which has been put to practical use.

He directed and managed the Monash University Education Computer System (MONACS), used widely in universities and secondary schools, and researched and developed computer-based systems for hospital administration, and laboratory and medical services. This latter work led to the formation of a large health computing service and consulting company, now based at the Monash industrial park.

He also has been a consultant to other universities on computing.

Since 1965, he has advised organisations including the Victorian Government, totalisator agency boards, insurance companies, hospitals, private medical laboratories, registered clubs in NSW and the Victorian Universities Schools and Examinations Board.

The work, known for its driving rhythms, combines pagan hedonism, mediaeval tragedy, Bavarian peasant life and Christian mystery.

Partners of Melbourne's seven largest law firms have joined forces with Monash to fund the Sir Keith Aicken Chair of Company Law. Dr Sam Richeton, a world authority on copyright law, will take up the chair in December.

The firms - Arthur Robinson & Helldorvists, Blake Dawson Waldoen, Clayton Utz, Corrs Chambers Westgarth, Freshfill Hollingdale & Page, Malleons Stephen Jaques, and Minster Ellison - have pledged $500,000 over the next 10 years. It is the first time in Victoria that a chair has been funded jointly by the legal profession and a university.

The union building also will be expanded, funded by a student union contribution.

Chief executive of the University College, Professor Tom Kennedy, said tenders had been received from seven Victorian construction firms. The successful tenderer was Kane Constructions (Vic) Pty Ltd.

The building will be completed in stages, with the final section due to open in May 1993.

88 Press cuttings

The following is a selection of Monash print media coverage over the past month.

5 August The Australian - Professor Ian Rae, Science: White can be black if you're green.

2 August The Age - Professor Margaret Plant, Visual Arts: At last, artists turn the tables on their critics.


4 August The Sunday Age - Graeme Macmillan, History: Our suburbs are heading for the hills.

5 August The Bendigo Advertiser - Professor Adrian Walker, Centre for Early Human Development: Government offers funds for research.

Wigston, Niblock, Nowell and Heat - Guy Verwer, Ecology and Evolutionary Biology: Sea greens find a place at the table.

6 August Herald-Sun - Professor Roger Short, Reproducible New Biol: NIB does a dual purpose.

6 August Sandringham Brighton Advertiser - Professor Maureen Biddle, Health Studies: Lessons for life.

6 August Sandringham Brighton Advertiser - Dr Lisa Harris, Community Medicine: Doctors under examination.

8 August The West Australian - Dr Robert Burrell, Sociology: New arrivals struggle for work.
NOTES & DIARY

SEPTEMBER


Religious Centre Lunchtime Concerts Harppichord recital – Bach’s Partita No 6 in E, BWV 830, by Elizabeth Anderson. Religious Centre. 1.10 pm.

Afternoon Concert Waverley Music Eisteddfod School Choral Competitions. Robert Blackwood Hall. 4.50–7 pm.

Mechanical Engineering Seminar Towards advanced control for building energy management systems (BEMS), by Dr Dennis Lovelady, Loughborough University of Technology. Mechanical Engineering Meeting Room, Room 205, Engineering Building 9.45 am.

Southeast Asian Studies Seminar Islam, politics and society in Indonesia, by Abdelrahad Wahid, President, Nahdlatul Ulama. Room 515, Menzies Building. 11 am.

Ecology and Evolutionary Biology Seminar Hormones and bell minnows, by Aldo Poiani, La Trobe University. SS. 1 pm.

Accounting and Finance Seminar The effect of variation of information load on information selection and processing by, Mr Roger Simnett, University of New South Wales. Room 954, Menzies Building. 9.15 am.

Evening Concert The Victorian Boys’ Choir, Robert Blackwood Hall. 8 pm.

Librarianship, Archives and Records Seminar Future directions for the PRO/Archival Heritage Project, by Ross Gilbs, Archival Heritage Program. Room 405, Menzies Building. 2.15 pm.

English Seminar Body narratives and professional secrets, by Dr John Wiltshire and Ray Tornley, La Trobe University. Departmental Library, Menzies Building. 12.10 pm.

History and Philosophy of Science Lecture Griffith Taylor and Australia Unlimted! Environmental population controversies in the interwar period, by Dr Joe Powell. Senior Common Room, Mannix College. 9.15 am.

English Seminar Peter Porter reading his poetry. R3. 1.10 pm.


Diary

11 Environmental Science Forum. The incompatibility of free market economics and the information age: is there an environmentally sustainable solution? by Graeme Pryor, Australian Democrats. R6. 1.5 pm.

Genetics and Developmental Biology Seminar Molecular aspects of a parasitic nematode, by Dr Keith Savin, Calgene Pacific. Room 662, Biology Building. 4.15 pm.


Southeast Asian Studies Seminar Modern Indonesian Culture, by Professor Umar Kayani, Gadjah Mada University. Room 515, Menzies Building. 11.15 am.

Ecology and Evolutionary Biology Seminar Food web structure and stability, by Gerry Glasc. SS. 1 pm.

Religious Centre Lunchtime Concerts Leading original instrument ensemble, by Elysium Ensemble. Religious Centre. 1.10 pm.

14 Evening Concert Off’s Carmina Burana, by the Monash University Choral Society. Robert Blackwood Hall. 8 pm.

Evening Concert Monash Symphony Orchestra. Toorak Union Church. 8 pm.

Librarianship, Archives and Records Seminar Determining the format of British books of the 18th century gathered in tasman by Pam Pyde and Cartographic collections in public libraries of Melbourne, by Colleen Downes. Room 405, Menzies Building. 2.15 pm.

16 Environmental Science Forum The campaign to save Australia’s native water birds, by Mr Laurie Levy, Animal Liberation. R6. 1.5 pm.

General and Comparative Literature Seminar Noise and sound; fiction; Shusaku Endo’s postmodernist, by Associate Professor Marie MacLean. Room 809, Menzies Building. 3–3.15 pm.

Genetics and Developmental Biology Seminar Closing the Duschene muscular dystrophy gene by reverse genetics: An overview, by Dr Sharon Bodrug, Walter and Eliza Hall Medical Research Institute. Room 662, Biology Building. 4.15 pm.

19 Koorie Studies Lecture Koorie and the law, by Ms Greta Bird. R6. 1–2 pm.

Accounting Seminar Staff staff research program, by Dr David Tweedie, UK Accounting Standards Board. 4th level, C Block, Caulfield campus. 11 am.

Southeast Asian Studies Seminar Working in marshy territory: Studying the intelligence state in Indonesia, by Associate Professor Lrita Abato, Kpuito Selaka University. Room 515, Menzies Building. 11.15 am.

Ecology and Evolutionary Biology Seminar On the variation in avian abundance in some woodlands of central Victoria, by Dr Ralph MacNally. SS. 1 pm.

Notes

Reference systems seminar

The Graduate Department of Librarianship, Archives and Records and Meninfo will present a seminar on Reference advisory systems on Thursday 19 September. The seminar will cover the use of hypertext, expert systems and authoring packages. The seminar, to be held in the Menzies Room, Menzies Building, from 8.45 am to 2.15 pm, will cost $95 ($75 for MLA members and $60 for Monash staff and students). For further information, contact Mary Lou Maroney on ext 752999.

Holiday arts and crafts

The Arts, Crafts and Tuition Centre is offering a Children’s Holidays Program during the September/October school holidays. The courses, from 23 September to 3 October, include pottery, electronics, guitar and photography. Enrolment will take place up to the start of the program. There is a 15 per cent discount for Monash students and staff. For further information, contact Teresa Mora on ext 751380.

1991 ANZAAS Congress

Eminent British film maker and natural historian, Sir David Attenborough, will present the 1991 ANZAAS Lecture at the Adelaide Festival Theatre at 8 pm on 30 September.

The theme of the illustrated presentation is the way natural history films are made and issues of veracity, distortion and morality. The 66th annual ANZAAS Congress, with the theme ‘Reproduction and Renewal’, will be held in Adelaide from 1 to 5 October.

Registration for the full-three-day program costs $145 (full members) and $220 (non-members). Day registration costs $95 and $115, respectively. Tickets to the public lecture are on sale from 23 September and $20 (adults) and $10 (children). To register or reserve tickets, phone your local store or register by phone. For further information, contact ext 752450.

English production

Students of the new first year English course, The language of performance will present The good person of Setzuan, by Bertolt Brecht this month. The production, in the Gay Monash Room on the ground floor, Menzies Building, is on 5, 9, 10, 12 and 13 September at 7.30 pm, and 6 September at 1.30 pm. Tickets – $8 and $5 concession – are available from the Student Theatre Office (extn 755164), the English Department or in front of the Union between 1 and 2 pm daily.

Postgraduate budget lunch

The Monash Postgraduate Association will again cater lunch for postgraduate students on Friday 15 September from 1 to 2 pm in Studios 1 and 2 in the Arts and Crafts Centre, Clayton Campus. The meat will be given to the runners-up, but if the barbecue is also missed out last time. Those interested must book a free lunch voucher by 9 September. For further information, contact extn 753197.

Music Research & Work-in-Progress Seminar Tuning and transposition styles for the guitar passacalles of Santiago de Castilla (c. 1683–1749), by Nina Teriakidze. R607. 9.30 am.

Religious Centre Lunchtime Concert An all Mozart program of music, by Jeremy Fagin-Francou, for Centre, Zoe Black and Anthony Di Giannomasso. Religious Centre. 1.10 pm.

Monsoo Seminar Reference advisory systems, a seminar on developing reference systems using hypertext, expert systems and authoring packages. Monash Rooms, Menzies Building. 8.45–5.15 pm. $95/$75/$40. Inquiries: Mary Lou Maroney. ext 752999.

Accounting Seminar Staff staff research program, by Professor Joseph Oriani, California State University. 4th level, C Block, Caulfield campus. 11 am.

Accounting and Finance Seminar Post-completion audits, managerial learning, environmental uncertainty and performance, by Professor Robert Chenhall. Room 954, Menzies Building. 2.15 pm.

Afternoon Concert Young Voices of Melbourne – International Concert, directed by Mark Horsley. Robert Blackwood Hall. 2 pm.

Lunchtime Concert The Big Brass, by the Royal Australian Navy – the third military district band. Frank Blackwood Hall. 1 pm.

Genetics and Developmental Biology Seminar Plant hormone mutants in tomato and Arabidopsis, by Dr Maarten Koornneef, Agricultural University, The Netherlands. Room 662, Biology Building. 4.15 pm.

Australian Studies Seminar Archaeology, heritage and the media, by Hilary de Cruys, NCAS Meeting Room. 10–11.30 am.

Business Seminar Staff staff research program, by Dr Ken Milman. La Trobe University. Clayton Field, Caulfield campus. 11 am.

Reproductive Biology Annual Lecture Sex, Science and Society. Main speaker: Dr Harold Hawk. Alexander Theatre. 7.30 pm.

Religious Centre Lunchtime Concert Conrad H. Nilsson – featuring the marimba in an exciting Brazilian program. Religious Centre. 1.10 pm.

Accounting Seminar Staff staff research program, by Professor Mike Scott, University of Stirling. 4th level, C Block, Caulfield. 11 am.

Business Seminar Staff staff research program, by Professor Mike Scott, University of Stirling. 4th level, C Block, Caulfield. 11 am.

Lectures to students

The incompatibility of free market economics and the information age: is there an environmentally sustainable solution? by Graeme Pryor, Australian Democrats. R6. 1.5 pm.

Genetics and Developmental Biology Seminar Molecular and genetic analysis of flower development in Arabidopsis, by Dr Elliot Meyerowitz, Caltech, USA. Room 662, Biology Building. 4.15 pm.

Southeast Asian Studies Seminar Arms Race: On the construction of an Indonesian national identity in the second half of the 20th century, by Professor Armijn Pane. Room 515, Menzies Building. 11.15 am.

Evening Concert Il Trio della Sola, by Balli Taormina Organisation. Robert Blackwood Hall. 7 pm.

Law and literature

The Faculty of Law, in conjunction with the Law and Literature Association of Australia and the University of Sydney, will present a three-day conference entitled Law and literature from 20 to 22 September.

The conference will provide an opportunity to seek literary insights into the law, and legal insights into literature. It will cover topics such as Tides of gothic horror and the criminal court room – Queensland’s vampire murder, The law in Australia, Dickens and the law, and Sex, lies and defamation: The bush lawyer of Western Australia. For information about services and registration, contact the Office of Continuing Education on extn 73 2804. For additional information contact the Faculty of Law on extn 75 3331, 75 3308 or 75 3333.

Lloyd Rees lecture

The Australian Academy of Science will present a memorial lecture to mark the second anniversary of the death of distinguished Australian chemist, Dr
Subversive stitches sewn

The subversive stitch, an exhibition of works which use craft-type materials, is showing at the University Gallery until 28 September.

The show has been put together by Ms Natalie King, a postgraduate student in the Department of Visual Arts. It concentrates on 10 young artists whose work reworks and subverts some modernist art practices.

The artists — working in Melbourne, Sydney and Paris — explore the decorative realm, generally within the abstract framework. They employ different textures and materials such as felt, hessian, denim and acrylic fur.

The group employs these materials, as well as replication, parody and repetition to undermine the authority of the singular art work. The exhibition shows irreverence towards traditional techniques and the tradition of the well-crafted painting.

Most of the artists have received little commercial exposure; the Melbourne artists mainly exhibit in a small, independent space in Prahran, Store 5.

The exhibition was opened on 29 August by the associate director of Tolarno Galleries, Ms Jan Minchin, 3 previous curator of 20th century Australian art at the National Gallery of Victoria.

The Monash Gallery is open from 10 am to 5 pm, Tuesday to Friday, and from 1 to 5 pm Saturday. Phone ext 75 4217 for more information.

University orchestra plays in church

The Monash University Orchestra at a recent performance.

The Monash University Orchestra (est. 1982) is to hold its first full-length concert this month.

The concert will be held at the Toorak Uniting Church on 14 September at 8 pm. The program consists of two Mussorgsky's Pictures at an exhibition, Barber's Adagio for strings and Overture to the Barber of Seville by Rossini.

Beginning as a string ensemble, the student orchestra has grown into a full-sized symphony orchestra. Its repertoire includes works from Bach to Debussy, with emphasis on the Romantic period.

The orchestra's conductors have included composer David Adams and current New Monash Orchestra leader Warwick Stengards. At present, it is conducted by Richard Green.

Tickets cost $10 and $7 (concession) and are available at the door.

Notes

Lloyd Rees. The lecture will be delivered by Professor John Cowley, Professor of Physics at the University of Arizona. The lecture will be held at the Alexander Theatre on Thursday 19 September at 5 pm.

Librarianship now open

The Graduate Department of Librarianship and Records will hold an opening day at its headquarters in the Menzies Building on Tuesday 10 September from 9.30 am to 5 pm. Courses leading to a professional qualification in librarianship, or archives and records management are available to graduands with a good pass degree. For further information, contact the department on ext 75 5959.

Booking a theatre

The Alexander Theatre Bookings Committee is now compiling a schedule of bookings for 1992. In accordance with established policy, it is calling first on university groups to lodge bookings for 1992. To assist with the preparation of a program, applicants are asked to supply a number of alternatives for each booking. Requests in writing should be sent to the Director, University Theatres, Alexander Theatre, Clayton campus, by Friday 15 September.

Engineering continued

The Department of Civil Engineering will run one threeday workshop for professional staff entitled Traffic engineering practice from 23 to 25 September. The workshop aims to provide the practicing traffic engineer with some of the techniques necessary to tackle traffic problems. For additional information about the course itself, contact Associate Professor Ken Oglen, ext 75 4975, or Dr Robyn Underwood, ext 75 2399.

The Department of Mechanical Engineering, in conjunction with the Department of Civil Engineering, will run a five-day intensive short course on Finite element method from 30 September to 4 October. For further information about the course, contact Dr Y. Lam, ext 75 3521.

The Monash Offshore Engineering Program will run two intensive short courses in coming weeks. A five-day course entitled Steel jacket structures will be held from 23 to 27 September and a two-day course on Offshore foundations will be held from 30 September to 1 October.

Both courses provide a comprehensive coverage of the significant aspects of design, fabrication and installation of steel jacket structures. For further information about the course, contact Associate Professor Paul Grundy on ext 75 4966.

For further information about services and registration, contact the Office of Continuing Education, ext 75 2804.

Study abroad

Staff and students are invited to join the ninth consecutive study abroad program organised by Monash in conjunction with the University of Auckland. The Princeps de Asturias study abroad program organised by Monash University Gallery from 10 am to 4 pm on Saturday 21 September. The cost is $20, including lunch. Concessions are available. For information, contact the Monash Medical Centre on 78 2338.

Notes & diary

Send contributions to the Editor, Montage, Public Affairs Office, Gallery Building, Clayton campus, by the last Friday of the month prior to publication. Ext 75 2067, fax 75 2097.
A project (not theory) of deconstruction has since become the most controversial critical movement a restless domain. Already we are witnessing major transformations in the study of literature and culture in Australian universities. Even the less philosophical and textually aligned disciplines such as geography have not escaped from this powerful intellectual movement. The project of deconstruction is subversive to the extent that traditional scholarship in the arts, humanities and sciences is being seriously questioned. The critical position of deconstruction is premised on the need to deconstruct the rational basis of scientific progress and renounce categories of perception that delude us to study the world from the virtue of objectification.

The goal, therefore, is to move beyond scientific and philosophical certainties, the modernist confidence that positivism and what postmodern eras are shaking the foundations of scholarly construction and making the realm of dialogue and debate a redundant domain.

This is not surprising when one considers the influence of such thinkers as Foucault, Derrida, Lacan and Lyotard on a variety of disciplines, from sociology and politics to philosophy, aesthetics and literary theory. Scepticism has been replaced with radical doubt. The emphasis on radical is appropriate for the recognition of the enormous implications of deconstruction on campus life. We are witness to stunning transformations in the study of literature and culture in Australian universities. Even the less philosophical and textually aligned disciplines such as geography have not escaped from this powerful intellectual movement.

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