

MONTAGE

NEWS AND VIEWS FROM MONASH UNIVERSITY

Teaching top quality

Monash University is ranked among Australia's top tertiary institutions for the quality of its undergraduate teaching and learning programs.

The Committee for Quality Assurance in Higher Education last month released the findings of its second round of university assessments, placing Monash in the first of three bands.

As a result, Monash will receive an extra \$4.85 million in Federal Government funding, in recognition of its high standards of teaching and learning.

Being named in the top band means the university receives more dollars per government-funded equivalent full-time student units (EFTSU) than institutions in the second and third categories.

Monash's allocation was part of \$71.3 million distributed among 36 Australian universities according to the quality assurance committee's findings.

Monash was joined by only two other Victorian universities in the top band – Deakin University (\$2.993 million) and the University of Melbourne (\$4.557 million).

Vice-chancellor Professor Mal Logan said the committee's decision to place Monash in the top grouping reflected the university's on-going commitment to excellence in teaching and learning.

"The independent quality assessment found that Australian universities generally

are of a high quality by world standards," Professor Logan said.

"Contrary to the views expressed by some, it is now clear that the growth in university enrolments over the past decade has not been at the expense of quality."

He said the third round of quality assessments was expected to take place later this year, with review teams focusing on community service, overall research output, policies for improving research, and teaching and learning.

"This will be another important round of assessment for the university, and I trust every assistance will be given to those preparing our next quality assessment portfolio, with particular emphasis on our research programs," Professor Logan said.

The quality assurance committee's independent review team visited Monash University on 5 September last year and met with almost 90 staff and students.

The team which came to Monash was led by Associate Professor Jane Morrison (pro vice-chancellor, University of New South Wales) and included Professor Brian Wilson (vice-chancellor, University of Queensland), Mr Bruce Irwin (Australian Quality Council), Professor Carrick Martin (deputy vice-chancellor, Macquarie University), and Mr Ken Gray (Quality Consultant).

Before the visit, the university lodged a detailed portfolio outlining its overall

mission and objectives and emphasising quality assurance processes and innovations in the areas of teaching and learning.

In its quality review report, the team said the mission, goals and objectives of Monash University were clearly understood within the institution.

"There were regular discussions between senior academic management and the deans on developments within the context of those goals and objectives," the team reported.

A key element of Monash's portfolio was the development last year of the Education Policy, which is considered a cornerstone of the university's teaching and learning programs.

The Education Policy covers areas such as the development of objectives for courses and subjects, principles of assessment, supervision of research students, establishment of student workloads, student representation and consultation, grievance and appeal procedures, review procedures, and course and subject approval methods.

The review team said the policy was "comprehensive and well focused".

"In line with its university-wide goals, Monash is committed to providing an internal environment that encourages demonstrable excellence in teaching," the team concluded.

Continued on Montage 2

- Special IVF research feature (8 – 10) • More on teaching excellence at Monash (7)
- A look at the folklife of a rural town (6) • Savant: Can men be equal too? (16)



Spike

Ready, aim, fire!

Monash publications reach every corner of the globe, obviously with an earth-shattering reputation. Recently, a copy of *Montage* was returned from Teheran, a location with a volatile reputation of its own, bearing the postie's warning emblazoned in red ink: IMPORTANT! SUBMERGE IN WATER BEFORE OPENING.

Cream of the crop

It is interesting to discover which clubs attract our academic youth. During O-Week, the biggest crowd was not to be found at the Shorji Kempo Club, Third World Action Group or even at the Politics Association, but hovering around the Monash Chocolate Advocacy Club.

Politically correct and sociable

Speaking of student organisations, the variety of clubs and societies is amazing. Along with the predictable sporting and political groups, there is also the Fellowship of the Middle Earth, Feminist Legal Issues Collective, Home Brewers Society, Rural Practice Association, Wargames Society and Human Life Support Club.

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NOW & THEN

25 Years Ago

The Consulate General of the United States in Melbourne has presented to the Library a collection of 82 volumes in the fields of history, political science, economics and literature. This is the most useful kind of gift the Library can get: a sizeable and skilfully chosen collection of books in related subjects, all bearing on a single broad theme of first-rate academic importance.

15 Years Ago

A proposal to set up a Centre to study the social and ethical aspects of research into human biology has been made by a group of Monash academics.

Commenting on the move, Associate Professor Walters said recent developments in human biological research had raised ethical and social problems. "For instance it is now possible to fertilise human eggs outside the body and re-implant the developing embryo into the egg donor's womb," he said.

"It may also soon be possible to re-implant the egg into the womb of a surrogate mother who will act as a human incubator.

"This would raise questions about who is to be considered the 'real mother'."

5 Years Ago

Indonesians regard Australians as friendlier than other foreign tourists but have more difficulty in understanding our accent, according to a survey conducted by the 1989-90 Valleyjo Gantner Memorial travel grant recipient, Sheryl Paget.

Sheryl, who is a third year Economics and Politics student at Monash, travelled for more than two months through Sumatra, Java and Bali, conducting the survey of young people aged from 15 to 25 years old about the effects of tourism in Indonesia.

This Month Last Year

Modern epidemiological studies suggest that moderate, regular consumption of wine – especially red wine – offers some protection against cardiovascular disease.

Certain types of antioxidants, including vitamins A, C and E, appear to protect the human body against dangerous reactive molecules called free radicals, which can damage the DNA of genes and impair vital enzyme reactions.

Antioxidant in red wine may be a 'friendly' free radical.

Teaching top quality

From *Montage* 1

They reported that interviews revealed "strong evidence of support from both staff and students for the leadership exercised by the senior academic management".

The review team said feedback from students reflected an improvement in the way the aims and objectives of courses had been communicated during the past two academic years.

There was also a general understanding among staff of the expectations for course development and an acceptance that "course offerings were university offerings rather than courses owned by a faculty or school".

"The direction the university is taking in the area of curriculum design is positive, and once fully operational, the Education Policy will strengthen teaching and learning," the team reported.

The reviewers also commended Monash's commitment to access and equity for students, noting that this was specifically mentioned in the Education Policy.

Another innovation praised by the reviewers was the Senior Women's Advancement Scheme.

Monash's enhancement of postgraduate services and supervision was also noted.

"Staff and students spoke of a very active and supportive research environment," the review team observed.

In its concluding remarks, the team said the Education Policy set clear targets for improving the university's teaching and learning programs.

"The review team's impression is of an institution undergoing a major change, led by senior management, to the formal structures and processes to promote and support teaching and learning."

Technology to watch over you

While technology is moving ahead in leaps and bounds, it often leaves disabled people behind, according to the head of Monash's Centre for Biomedical Engineering, Professor Ian Brown.

But electronics and computer systems student David Gold has been adapting the most up-to-date technology with disabled people in mind.

In conjunction with the Centre for Biomedical Engineering, Mr Gold has developed a push-button system that allows wheelchair users to transmit a distress signal while also conveying the user's location.

Professor Brown said the project was initiated by Monash librarian Mrs Joan Streitberg-Hodgson, who has been confined

to a wheelchair since having a stroke at the age of 14.

"Joan is a professional woman who needs to be independent," Professor Brown explained.

The technology developed by Mr Gold was designed to provide security for Mrs Streitberg-Hodgson when out shopping or in transit between home and work or university buildings.

At first Mrs Streitberg-Hodgson felt she needed an adapted house alarm with a screecher or flashing light for when she was out.

"But a major shortfall of house alarms was that they didn't work outside the home," Mr Gold said. "I suggested a more advanced system that offered additional

security for Mrs Streitberg-Hodgson when she was out."

Mr Gold said the original idea of a screecher or flashing light worked well when there was someone within hearing or visual distance, but not when the person was alone and in trouble.

The system that Mr Gold subsequently developed allows the user to press a button that automatically transmits a message to an emergency service or nominated person.

Mr Gold's device uses a Motorola mobile telephone, a Redycard PCM modem equipped with auto-dial capabilities that passes information to a central telephone, and a computer.

The user's location is communicated via a GPS system — a satellite navigation system. When the button is pushed, the satellite tracking system works out exactly where the user is and conveys that information through the telephone using the auto-dialler. A computer sends the location details through the modem, into the mobile network, and to a receiving phone and modem. A help message and a precise position and Melways reference can then be printed out via computer.

Although the device would be built into wheelchairs initially, Mr Gold said it could eventually be made small enough to be carried in a pocket or purse.

Professor Brown said the system could also be used to transmit different messages: "There could be five buttons to push. One might transmit the message that there is an emergency and the user needs to be picked up immediately, and another could transmit the message that the user needs to be picked up after work."

Although the concept was only at the prototype stage, Professor Brown said there were a number of possible applications for this kind of technology.

"The device was designed specifically for a stroke patient, but it could also be used as a tracking device for Alzheimer's sufferers and the elderly," he said.

"There are also several possible commercial applications. The device could be placed into automobiles, industrial containers and equipment to keep track of them."

The centre is currently looking for commercial partners to market and produce the device.

By JULIET RYAN



Mrs Joan Streitberg-Hodgson and Mr David Gold display the prototype of the device, which is temporarily assembled in a backgammon case.



Health hits FM

Monash University academics have tuned into the radio air waves to promote awareness of community and general health issues.

Dr Leon Pitterman from the university's Department of Community Medicine in East Bentleigh is chief presenter and creator of the program *Health Watch*, which airs on community radio station Southern FM every Wednesday.

Dr Pitterman and fellow presenter Dr Stephen Trumble, also from the Department of Community Medicine, decided to take the role of the GP out of the surgery and onto the air waves, to raise the health awareness of thousands of Victorians.

"The average GP talks to one person at a time," Dr Trumble explained. "To be able to reach thousands of people at once is a great way of passing on any number of preventive health messages."

Dr Pitterman said the program had two aims: the first was to provide up-to-date medical information in terms that people could understand. "We are extending the role of the GP into a community education role rather than just a one-to-one patient role," he said.

"The second aim, in keeping with the university's general mission statement of having a broader educational goal, is to identify Monash as an institution working to educate the public as well as students and staff.

"While Monash is an international university, it is also seen as the university belonging to the southern part of Melbourne. People around the area consider Monash as their university."

Although the program presenters are the first to admit they have little experience on the technical side of the radio business, the medical expertise they offer to listeners covers a range of topics from asthma to women's health. The program also gives the doctors the opportunity to emphasise topical health issues such as safe sex or the dangers of too much sun.

Academic staff from Community Medicine work in four-week blocks and design their programs to fit in with general health promotion activities in the community.

"This is a new concept in medicine, both for the presenters and the listening audience," Dr Trumble explained. "Listeners are encouraged to ring the program for talk-back. We would also like to think that the

program is prompting people to go and ask questions of their own GP, if they hear something on the show that interests them."

Because Community Medicine is a general practice teaching department with a range of expertise, many of the radio program's guest speakers are drawn from its own resources.

Areas that the show has covered recently include acupuncture, stress management, back pain, sexually transmitted diseases, breast cancer, meditation, nutrition for sports people and student health.

"We hope the program gets people thinking about health issues they may not have previously considered," Dr Trumble said.

Dr Pitterman would like to see other university departments use radio as a means of communicating with the community. "There are lots of things that the university does which go beyond its four walls. Law, accounting, economics and history could all use radio to make an impact on the general public and give them some idea of what is going on within the university," he said.

Health Watch can be heard at 11 am every Wednesday on Radio 88.3 FM.

BY JULIE RYAN

Mr Keith Bower (centre) shows Monash doctors, Dr Leon Pitterman and Dr Steven Sommers, how to access Melbourne's radio waves.

Polluted cities, dire outcomes

High pollution levels in South-East Asia last year contributed to a series of international disasters and caused considerable health problems in the area, according to Monash researchers.

Associate Professor Martin Hooper from the Centre for Environmental Science, Gippsland campus, and Associate Professor Nigel Tapper from the Department of Geography and Environmental Science, Clayton, are monitoring pollution levels and analysing the sources of pollution in four South-East Asian cities – Seoul, Hong Kong, Jakarta, Bangkok – and Melbourne.

According to Dr Tapper, an aeroplane smash into a mountain in South-East Asia, a collision of ships in the South China Sea and the closure of international airports were partly caused by the pollution in the region.

He said last year's accidents were caused by haze in the atmosphere resulting from the large numbers of rural fires that were exacerbated by the particularly bad droughts of recent years.

Dr Hooper, an environmental chemist, is examining the composition and morphology of the organic and inorganic material in the samples, while Dr Tapper, an environmental climatologist, is studying the effects of weather on pollution levels in the five cities.

Collaborative partners in the five cities collect samples of particles with teflon-coated glass fibre filter paper and high volume air samplers every six days. The partners, which include universities, environment protection authorities and meteorological institutes, send the samples to Monash's Gippsland campus, where they are analysed by Dr Hooper, assisted by post-graduate students. Those involved in this project included Nita Ginting and Nurhayati from the Clayton campus and Barbara Panther and Linda Zou from the Gippsland campus.



They examine the particles for organic materials such as Polycyclic Aromatic Hydrocarbons (PAHs), for a range of inorganic elements including lead, and for various ionic species to determine the composition and possible sources of air pollutants in the various cities.

The researchers said Jakarta had by far the biggest pollution problems of the five cities, and often generated filter papers that were completely black after the 24-hour sampling period. And while Melbourne had by far the lowest Total Suspended Particulate (TSP) levels, they said the city's air had relatively high levels of lead.

Researchers have attributed this largely to the high quantity of lead still in petrol in Australia.

Part of the on-going project is to look at the sources of pollution in the five cities, including diesel-driven motor vehicles, agricultural, biomass and refuse burning, and local factories and industry.

According to Dr Hooper, cars are by far the biggest contributor to pollution and he recommended that people re-examine the way they travelled. The cities with the worst

public transport systems – Bangkok and Jakarta – also experienced the biggest pollution problems.

He said air quality in the region had been particularly hard to manage because of the rapid population growth in some of Asia's mega-cities over recent years.

The researchers have also begun looking at not only the types of particles in the air but also the size of the particles to assess the health implications of pollution in some cities.

Dr Hooper said fine particles (2.5 microns or less) posed the greatest risk because they penetrated deep into the lungs. If toxic heavy metals or carcinogenic organic compounds are found in the particles, they can be carried into the blood stream.

The research is also expanding to look more closely at rural, as opposed to urban, sources of pollution and will include four new sampling sites – two in Brunei, one in Darwin and another in Kakadu National Park.

BY GEORGIE ALLEN

Telling folktales

"Folklife is the living culture of everyday life. It is the customs, beliefs, crafts, music, dance, celebrations, foods, pastimes and games which are learned informally and practised within groups of people."

— Dr Gwenda Davey

A unique project coordinated at Monash University's National Centre for Australian Studies will document the living folk culture of one of Australia's small rural towns.

Six research assistants from the City of Moe in the Latrobe Valley have been appointed to map the folklife of the town.

The centre's project coordinator, Dr Gwenda Davey, said it was important to use local people because they best understood the town's customs and rituals.

"It is essential to use locals because folklife, which is sometimes referred to as the 'hidden' or 'underground' culture, has a lot to do with the subtleties of life in a small town.

"People living in the community have the necessary local knowledge and local networks," she added.

It is also a condition of the \$50,000 funding the project has so far attracted from the National Library and Australian Cultural Development that it provide local employment and training.

The research assistants vary in age from 18 to 63 and include former nurses, teachers, a poet and a recent school leaver.

The school leaver will look at children's playground games because, according to Dr Davey, such games involve many interesting rituals and customs and are often best studied by younger researchers.

The other areas to be examined are handcraft, music and dance, customs,

celebrations and special events, foodways and storytelling (oral history), including occupational folklore.

It is the first time that such a project has been undertaken in Australia, and is modelled on research conducted in America through the American Folklife Centre at the Library of Congress.

Dr Davey said Moe was the ideal spot for such a project: "It has a history in Victorian agriculture and gold discovery, and a more recent history in the state's brown coal and electricity projects. Its industrial heritage is one of Moe's greatest assets."

Moe has a culturally diverse population with a majority of Anglo-Australians and substantial immigrant groups who came originally from a wide range of countries including Britain, Holland, Germany, Malta, Italy, Greece, the Ukraine and Serbia.

Although the research will examine the identity of Moe in its historical context, Dr Davey said it was not about the past: "We are not looking at the past, but at a contemporary, current culture that has a traditional base."

The project is also designed to help find new ways for the town to generate income and address its economic decline over recent years.

"Moe has suffered greatly because of economic depression and extensive restructuring in brown coal mining and electricity generation," Dr Davey said. Local estimates rate the city's unemployment at 25 per cent, with 45 per cent of the population on some form of government benefits.

She said Moe was "a town struggling to find a new focus and a redefinition of its roles", partly as a result of restructuring of local councils.

"Nothing could be more appropriate at this time than a study which will help to significantly identify the grassroots culture of its everyday life — its folklife," she added.

The research will also build on the cultural mapping project conducted by the Australian Cultural Development Office in the Latrobe Valley.

It has attracted support from local groups such as the Moe Development Group, Skillshare and the media.

Dr Davey is also a consultant in Australian folklife to the National Library of Australia and co-editor of the *Oxford Companion to Australian Folklore*.

BY GEORGIE ALLEN



Moe's folk museum, located at the Old Gippsland Pioneer Village, contains many old relocated buildings and is used for various community events.

More than apples for Monash teachers



The Federal Government has recently recognised the high quality of teaching at Monash, but three academics have already received more personal feedback.

Ms Sue Elsom, Professor Richard Fox and Associate Professor Sue McNicol were the winners of the 1994 Vice-Chancellor's Awards for Distinguished Teaching.

Ms Elsom from the School of Nursing and Professor Fox and Ms McNicol from the Law faculty each won \$5000 grants to further their teaching interests after gaining support from six nominators, including at least two colleagues and two current or former students.

Mrs Jane Nottingham, a final-year nursing student, nominated Ms Elsom for the 1994 awards because she said it was "a rare chance to give something back to teachers who constantly make an extra effort".

"We make some unofficial presentations to staff as a way of saying 'thank you', but it's really just for a bit of a joke. It was nice for Sue to get some official recognition," Mrs Nottingham said.

Asked what made Ms Elsom's teaching exceptional, Mrs Nottingham highlighted the teaching initiatives the nursing lecturer had organised to give students greater experience working with the disabled.

In one such program, nursing and medicine students were 'buddied' with a disabled person for a week's holiday camp.

"It was a very down-to-earth experience," Mrs Nottingham said. "There were people at the camp with a wide range of disabilities, and it was valuable to compare the different approaches of students from nursing and medicine backgrounds.

"It was also a good social experience. Living with a disabled client for a week has given me a much greater appreciation of what their families deal with day to day."

She said Ms Elsom's project exposed her to difficult situations she would face in her nursing career but did so within a supportive team environment.

It was the ability to successfully tread the fine line between challenging students and intimidating them that also impressed one of Professor Fox's nominators, Mr David Maddocks.

Now doing his final year, Mr Maddocks was taught by Professor Fox and said the law lecturer was adept at demanding thoughtful responses from his classes within the limits of their knowledge and experience.

Mr Maddocks said Professor Fox had kept classes "fairly structured" in first year for students who were used to secondary school teaching styles, but he had expected all students to think independently by the end of their course.

"Professor Fox used to call his teaching methods 'unlearning'. In a stimulating way, he would make you question your initial beliefs and look at different perspectives," said Mr Maddocks.

"His style exposes the fact that you've walked into his class with so many preconceived ideas.

"Once you realise this, it allows you to question where the law is and where it could go."

Professor Fox kept his subjects 'alive' by applying legal concepts to current issues, making the course relevant to everyday topics of conversation.

Mr Maddocks said it was usual to leave Professor Fox's classes in animated discussion, and friends from other faculties asked to attend purely out of interest.

Dr Eleanor Long from the Professional Development Centre said the awards had uncovered many other examples of fine teaching during the three years they had been offered.

Last year's winners were selected from a field of 18 candidates, and Dr Long described their submissions as being of an "extremely high standard".

Following this success, Monash will introduce a similar award this year for supervisors of higher degree students. Nomination forms and details will be distributed in the same way as the distinguished teaching award leaflets.

The Professional Development Centre is about to call for nominations for this year's Vice-Chancellor's Awards for Distinguished Teaching, and leaflets containing nomination forms and award details will be distributed directly to academic staff and students via the student unions.

People have until the end of first semester to put forward the names of outstanding teachers, after which nominees will present written evidence of the scope and quality of their work.

Dr Long acknowledged that some teachers might feel uncomfortable arguing their own case for the award, but she encouraged them to put modesty aside.

"Teachers often don't like blowing their own trumpet, but a lot of them are doing exceptional jobs and may not realise it until they sit down and think about what they are achieving," she said.

Dr Long said her centre could provide advice to nominated staff about preparing their written dossiers. Anyone wanting more information should contact Ms Judy Collins on extn 53275.

BY GARY SPINK

Freezing our future fauna

The opening of a gene storage centre will help IVF scientists breed rare and endangered species in the laboratory. Sue Hobbs reports.

Reproductive tissues from endangered animals are being preserved in Australia for future breeding programs as part of a scientific campaign to rescue the world's rapidly diminishing biodiversity.

Sperm, eggs and embryos will be stored and catalogued by the new Animal Gene Storage Resource Centre of Australia, a joint initiative between Monash University's Institute of Reproduction and Development and the Zoological Parks Board of New South Wales (ZPB).

Monash vice-chancellor Professor Mal Logan and ZPB director and chief executive Dr John Kelly signed a landmark agreement in Melbourne last month to establish the gene storage centre.

The centre will be jointly operated by the institute and the ZPB, which runs Sydney's Taronga Zoo and Western Plains Zoo at Dubbo. It will be based at the institute's laboratories in the Monash Medical Centre, with facilities at both zoos.

The centre aims to contribute to the efficient and cost-effective preservation of rare and endangered wild species, and to the genetic diversity of both wild and valuable domestic animals, by preserving reproductive tissue.

The cryogenically preserved tissue will be used, via in vitro fertilisation, to establish breeding colonies to help repopulate the endangered animal species.

Native Australasian species given priority for inclusion in the new gene storage bank include the northern hairy-nosed wombat, the long-footed potoroo, the numbat, the bilby, the eastern barred bandicoot, the bush-tailed rock wallaby, the bri-

dled nail-tailed wallaby, the Leadbeater's possum, the mallee fowl, the mountain pygmy possum, the New Guinea echidna and the rufous hare-wallaby.

Exotic animals such as the African black rhinoceros, the Sumatran tiger, the golden lion tamarin and the clouded leopard will also be genetically preserved.

At a global level, the main threat to most wildlife species is loss of habitat due to human intrusion. The human population keeps growing and, through its increasing demand for resources, destroying more wildlife habitat and creating more pollution.

"Storing reproductive tissue allows an animal, as an embryo, egg or sperm, to be kept in a refrigerator at very low cost, compared to keeping a fully developed animal in an enclosure."

And as society becomes more 'globalised', many traditional cultures which in the past had protected specific animal species are breaking down. As a result, non-sustainable levels of harvesting of wildlife for food and high-value products such as

ivory and rhinoceros horn are threatening individual species.

In 1991, the chairman of the US-based Conservation Breeding Specialist Group, Dr Ulysses S. Seal, reported that about 15 per cent of taxa (animal species) were in critical danger of extinction and a further 15 per cent were endangered.

This meant that between 3000 and 5000 non-fish vertebrates faced a significant risk of extinction in the next 10 to 50 years.

About one-third of all recorded mammal extinctions since 1800 have been Australian mammals. It is generally accepted that 20 species are now extinct, with many more greatly reduced in numbers and distribution, in far too many cases due to the presence of introduced predators, particularly foxes.

Unfortunately, attempts to reintroduce many of these threatened species back into the wild after captive breeding programs have failed, mostly due to the introduced predators.

One aim of the gene storage bank is to preserve the genetic diversity of these species and enable captive breeding to continue, until the predators and other threats to their existence in the wild have been removed.

The institute's deputy director, Professor Alan Trounson, is leading the scientific research for the new gene storage centre, which he described as "an incredibly exciting challenge".

Although most of the endangered animals could be bred in captivity, the cost of holding and caring for such large numbers of captive animals was enormous, Professor Trounson explained. There was also a danger that many years in captivity would lead to inbreeding, genetic drift and domestication.

"Storing reproductive tissue allows an animal, as an embryo, egg or sperm, to be kept in a refrigerator at very low cost, compared to keeping a fully developed animal in an enclosure," he said. "This way, we can maintain very large numbers of animals in 'captivity' for a very long time, while also keeping genetic variability at a high level."

However, the task of developing IVF techniques for wild animals is expected to take considerable time and resources.

"Until recently, we have only used in vitro fertilisation on humans and some domestic animals such as sheep, goats and cattle," he explained.

"Each species of wild animal has a different anatomy and physiology, and some species, marsupials for example, are extremely different from humans and other animals we have worked on."

Professor Trounson said the reproductive tissues of different animals also had to be stored according to their specific needs.

"We have storage techniques for human tissues and for most domestic animal species, which are all eutherian mammals," Professor Trounson explained.

But techniques have yet to be developed for monotremes (platypus and echidnas), marsupials, and for many species not closely related to domestic animals.

"Now we even have the technology to store the sperm cells from dead animals, and to redevelop them at a later stage."

Dr Ian Gunn, a senior research fellow assisting Professor Trounson, said the establishment of the animal gene storage centre would enable Australia to take a proactive role in the genetic storage of endangered species, to bring it in line with developments overseas.

"Now we even have the technology to store the sperm cells from dead animals, and to redevelop them at a later stage," Dr Gunn said.

"The basic technology is there, we just have to develop it to suit different species."

He said that if the genomes (sperm, eggs and embryos) of animals of a high genetic importance were preserved, they could be used in the breeding population of a species long after the death of the donor animals.

IVF technology could therefore be used to preserve the genetic health of each species, overcoming problems such as inbreeding and genetic drift, which occur when the population of a particular animal is diminished or limited to small, isolated communities.

Some of the 'high priority' endangered animals which would benefit from inclusion in the animal gene storage centre of Australia:



African black rhinoceros – It is little wonder the African black rhinoceros is a highly stressed animal. Not only is it running out

of suitable sexual partners (rhino numbers throughout Africa in 1995 are less than 10 per cent of the estimated population in 1970), but it is under constant threat from poachers seeking the high rewards offered for rhino horns.

Black rhinos are so prone to stress that an average of 40 per cent die during or as a result of long distance movements. This is one of the main reasons the black rhino has featured in the Australian gene storage centre initiative. Sperm from the testes of a dead rhino will be used to assist in the black rhinoceros conservation program already underway at Dubbo's Western Plains Zoo.



New Guinea echidna – This species is also critically threatened with extinction due to hunting. The echidna is a highly valued traditional meat animal in Papua New Guinea, and changing technology and cultural values have effectively negated any traditional controls that existed on echidna harvesting and trading.



Bilby – This beautiful member of the Bandicoot family was once widespread in inland Australia, but now survives in only a couple of pockets of Western Australia, the Northern Territory and Queensland. Introduced predators are the major threat to the species and attempts at reintroduction into the wild have had limited success.



Northern hairy-nosed wombat – fewer than 80 wombats are left in a small area of central Queensland. Without captive breeding support, the species remains under grave threat.



Mallee fowl – Once widespread, this extraordinary mound-incubating bird now numbers only a few hundred adult birds in its

entire habitat of semi-arid Australia. Studies have shown that fox predation of young birds is the main threat to the mallee fowl's survival. Where foxes are present, about 80 per cent of hatchlings have been killed within a few weeks. The remainder are usually killed by feral cats and natural predators of the species.



Numbat – Arguably the most beautiful of the marsupials, the numbat survives only in the south-west of Western Australia.

Fox predation is the major threat to the numbat's continued survival. The wild population of the numbat is being helped by intensive fox control campaigns, but still needs support to ensure its ultimate survival and to conserve its genetic variability.



Rufous hare-wallaby – This wallaby was once common and widespread throughout most of arid and semi-arid parts of Australia. Aborigines hunted it for food, and as recently as the 1930s the wallaby was still present in the Gibson and Great Sandy deserts. It is now restricted to small pockets of Western Australia and the Northern Territory.

New technique promises to alleviate IVF distress

A simple new technique is having a dramatic effect on traditional IVF procedures and has already resulted in the birth of two baby girls in Australia. Tim Thwaites reports.

Researchers and clinical staff at Monash IVF are refining a new technique that dramatically reduces the cost and strain of IVF and has already resulted in five successful births – two in Melbourne and three in Göteborg, Sweden.

Using the new technique, the cost of IVF treatment could drop by up to 80 per cent, according to Professor Alan Trounson, deputy head of the Institute of Reproduction and Development based at Monash Medical Centre.

The secret is simple. Whereas IVF depends on harvesting mature eggs from the mother's ovary, the new technique takes immature eggs and matures them in the laboratory. And while the difference may seem trivial, the consequences are vast.

To mature eggs in the ovary, a woman must submit to two weeks of daily injections of fertility drugs, which can cause side effects ranging from nausea and mood swings to abdominal pain and bloating. At the same time, the IVF patient must undergo daily blood tests and ultrasound to determine the right time to harvest the eggs.

In contrast, immature eggs can be collected any time during the first two weeks of the menstrual cycle by a relatively simple procedure involving ultrasound and a local anaesthetic. From that time until the embryo is implanted back in the womb, no more treatment or testing is necessary. The woman is spared not only the strain of IVF therapy but also the cost of constant medical attention.

The new technique, known provisionally as immature oocyte collection, also sidesteps some of the ethical implications of the present IVF procedure. For instance, because collecting eggs demands a great deal of the patient

and there is only one chance in four that implanted IVF embryos will result in a baby's birth, six or more eggs are matured, collected and fertilised at a time. Usually, one to three embryos are transferred to the patient, and any left over are frozen. But what to do with any surplus embryos after IVF treatment becomes a difficult decision.

Because immature oocyte collection requires fewer resources and is much less wearing for the patient, eggs can be collected and used more or less at will. This method reduces the chance of surplus embryos being created.

Professor Trounson said cattle breeders had been using immature oocyte collection for the past four to five years, with better results than standard IVF treatment.

But while about 30 per cent of implanted cattle embryos result in births, Professor Trounson admits that the human figures are nowhere near as good. The two births in Australia resulted from more than 100 treatments, and the three in Sweden from about 40. "We're still very much in the research phase. Now that we've got the procedure working, it needs fine-tuning," Professor Trounson said.

But the new technique is already a result of some fine-tuning in two significant areas – ultrasound monitoring and tissue culture – rather than of one spectacular breakthrough.

Professor Trounson said that until recently, researchers had great difficulty maturing immature eggs in the laboratory, partly because so much of the reproductive research had been carried out on mice – "a poor model for the human".

Mouse eggs mature by themselves. It was only recently recognised that immature eggs in almost all other mammal species only mature in proximity to the other cells in their follicle. These follicular cells play an important role in creating the right environment within which the egg can mature.

Professor Trounson and his team then set out to recreate this kind of environment in the laboratory: "We had to get the temperature exactly right, the nutrients right and the balance of hormones right."

The researchers found that immature eggs tended to stick to standard laboratory containers, upsetting the maturing process. This problem was solved by using containers made of the right plastic and by judicious shaking.

At the same time, improvements were being made in ultrasound detection. Professor Trounson's former IVF partner Professor Carl Wood, who was working in the Department of Obstetrics and Gynaecology, recognised that the latest ultrasound devices had the capacity to detect follicles containing immature eggs only a couple of millimetres in diameter. Professor Wood developed a technique to gather eggs from these follicles using a specially designed needle.

These two pieces of research provided clinicians with a basis from which to develop immature oocyte collection methods. More research is needed, however, before the procedure becomes routine.

"We are getting good development to the stage where the embryo is right for implantation in the womb, but then no pregnancy," Professor Trounson said. One possible explanation is that because the immature oocyte collection involves a minimum of hormonal disturbance in the potential mother, the womb is not properly prepared to receive the embryo, and does not provide the right environment for growth when the embryo is implanted.

If this hypothesis is correct, Professor Trounson believes it may be rectified using standard hormone therapy.

Muslim life flourishes down under

Australia's Muslim population has undergone massive growth in the past 20 years, increasing by 92 per cent since 1975.

A study by Monash University anthropology and sociology lecturer Professor Gary Bouma, *Mosques and Muslim Settlement in Australia*, reveals the extent of the Muslim presence in contemporary Australia.

Muslims make up about one per cent of the country's population and more than 2 per cent of the population in Melbourne and Sydney. Of the 150,000 Muslims in Australia, 35 per cent were born here with more than 50 per cent under the age of 25.

Professor Bouma predicts the Muslim community in Australia will continue to grow because of the relative youth of its members, its strong family orientation and its tendency to have large families. Muslims have the highest rate of marriage in Australia, the lowest rate of divorce and the lowest number of women without children.

"It is a young, vibrant and growing population that is here to stay," Professor Bouma said.

The report, recently released by the Bureau of Immigration and Population Research and conducted in association with the World Conference on Religion and Peace, used basic demographic data combined with in-depth interviews of 81 Muslim immigrants.

Interviews were conducted in native languages, and in collaboration with members of the Muslim community to ensure the correct interpretations were made from the information.

The report highlights the importance of religion in the settlement of Muslims in

Australia. It found most Muslims needed to "settle religiously", ie to find a way to express their religion in their new homeland.

In some instances Islamic communities brought out religious leaders (Imams) from their homelands when establishing mosques. These mosques became the symbolic focus of Muslims' identity, a place to meet and pray with like-minded people.

Today there are 57 mosques in Australia, the first built in 1890 outside Adelaide by Afghan camel drivers. The Auburn mosque, now being built for the Turkish community in New South Wales, will accommodate 5000 people.

The report seeks to redress the misunderstandings and lack of knowledge among the mainstream community regarding Muslim communities in Australia.

Professor Bouma said Muslims' status as a minority religious group with beliefs and practices unfamiliar to many Australians had led to some discrimination and harassment.

"There has been some community resistance to building mosques, and individual incidents of mistreatment, intimidation and denial of opportunity."

In some cases, discrimination has gone as far as to prompt city councils to declare themselves 'mosque-free zones'.

However, he believes that the Gulf War, while inciting some discrimination, brought Muslims in Australia out in the open.



"People began to be aware of Muslims in Australia and realised there were legitimate differences between groups," he said.

"The settlement of this religious group is one chapter in the success story of Australia's transition to becoming a multicultural society, including becoming religiously plural," Professor Bouma said.

The issue for a society that receives immigrants is how much diversity it can tolerate, and how much it demands its new citizens adopt 'normal' modes of dress and behaviour.

And Professor Bouma said a major issue for immigrants was to determine how much of their traditions and customs to maintain in a new homeland.

He believes Muslims in Australia are working in creative ways to express their religious practice and identity in a new society.

BY GEORGIE ALLEN

Shaking off our cultural shackles

Australian culture is more than a set of assumptions imposed on us by dead English writers, according to Associate Professor Andrew Milner, writing in a recently published collection of essays, *Australian Civilisation*.

Dr Milner, director of Monash's Centre for General and Comparative Literature, argues that there are as many Australian cultures as there are opinions on what it means to be Australian.

But, he says, in the past this diversity was often lost "in a struggle between two simplistic models", both claiming to explain Australian ideals and values.

According to Dr Milner, the idea of defining a nation by the characteristics of its culture was entrenched in the 19th-century English state-sponsored education system.

English literature, he argues, "justified itself as a discipline essentially in terms of its contribution to the maintenance of a unitary English culture".

And where this state-sponsored ideal of 'Englishness' (translated into British imperialism) led, colonial Australia followed.

In fact, the idea that literary culture provided a snap-shot of the perceived national psyche established the context for the debate over Australian culture for the better part of a century.

At one extreme, ideologically deracinated scholars assumed that the "holy texts of Englishness" defined universal values applicable to Australian-Britons as well as the English.

Dr Milner says the teaching of British-Australian culture through texts as an exercise in Australian nationalism was implicit in the way school students were assessed until the 1970s. What this means, he says, is that "Australian university English departments have remained one of the last important British garrisons east of Suez".

Naturally, some intellectuals disputed the idea that the portrayal of English culture and ideals through fiction was relevant to Australian life. They created their own canon which relocated the national community "away from an imperial past and towards a liberal-democratic or even socialistic future, away from England and towards Australia".

The battle between the two is now effectively over, with the radical nationalist approach enjoying "the official patronage" of Labor governments and shaping the republican debate.

However, the only thing that has really changed is the establishment of new cultural sources and assumptions – the idea that a uniform national culture can be defined by a set of ideals replicated in creative texts is still with us.

According to Professor Milner, this idea ignores the fact that there are many ways of examining Australian cultures and identities. He devotes most of his essay to exploring how even newer theories of culture and identity have reshaped the terms of the debate on culture.

He points to "western Marxism, structuralism, post-structuralism and post-colonial theory, second-wave feminism and 'ethnic' multiculturalism" as having "consistently over-shadowed in recent years ... the radical nationalist challenge to literary studies".

And Professor Milner argues that it is important for the debate to continue. He believes discussions about culture are vital as they not only define ideals which are shared throughout a society but also create "standards against which to measure the actual deficiencies of our culture and our society".

Australian Civilisation

Edited by Richard Nile

Published by Oxford University Press

RRP \$24.95

The Moral Problem

By Michael Smith

Published by Blackwell

RRP \$34.95

The Moral Problem will appeal to those with an interest in the philosophical foundations of ethics.

Topics include realist vs. anti-realist accounts of moral truth; cognitive vs. expressivist accounts of moral judgement; internalist vs. externalist accounts of the relation between moral judgement and the will; Humean vs. anti-Humean theories of motivation; and the debate between those who think that morality is a system of hypothetical imperatives and those who think that moral requirements are categorical imperatives.

Mr Michael Smith is a reader in philosophy at Monash University.

Slaves of Chic: An A-Z of Consumer Pleasures

By Joanne Finkelstein

Published by Minerva

RRP \$16.95

Slaves of Chic provides an alphabetical listing of consumer pleasures starting with advertising and including fashion, make-up, beauty and shoes. It follows in the footsteps of the cultural analysis outlined in Dr Finkelstein's two previous books, *Dining Out* and *The Fashioned Self*.

Dr Joanne Finkelstein is a senior lecturer in Monash University's Department of Anthropology and Sociology.

Discrete Mathematics for Computing

By Peter Grossman

Published by Macmillan Education Australia

RRP \$34.95

This text introduces a number of mathematical topics related to computing and information systems including number systems, logic, relations, functions, induction, recursion, Boolean algebra, combinatorics, graph theory and number theory. The book features algorithms written in pseudocode in many examples throughout the text.

Dr Peter Grossman is a lecturer in Monash's Department of Mathematics and director of Mathematics for Computing at Caulfield campus.

Art inspired by God

When Christopher-John Bingley visits church it doesn't mean a day of rest, it means more work.

The Monash art lecturer divides his time between teaching drawing at the Peninsula campus and undertaking regular commissions for churches.

He is one of a handful of Australian artists specialising in religious work. Most of his creations are stained glass windows, and his latest piece is believed to be the largest in Melbourne.

The recently completed 84 square metre window at the St Francis of Assisi church in Mill Park features a frieze, with 12 painted scenes depicting the life of the famous saint, within an abstract solar pattern radiating from a central sun motif.

It was inspired by St Francis's *Canticle of the Sun*, a poem in which the founder of the Franciscan order describes all nature as a mirror of God and refers to 'Brother Sun' and 'Sister Moon'.

Mr Bingley said the abstract element of the poem also gave the impression of the 'cosmic Christ', something beyond the

image of God as a spiritual leader in human form.

"Christ isn't simply something embodied in a single man that belongs to our world. Christ existed as a principle in the universe before the birth of Jesus."

St Francis earned a reputation as the 'people's priest', content to live a life of poverty while leading the church reform movement of the early 13th century.

The frieze traces the life of this sociable son of a wealthy Italian merchant, through his religious conversion and rejection of material goods, to his peaceful audience with the Muslim sultan of Egypt during the Christian Crusades and finally his death at the now-famous chapel of St Mary of the Angels at Assisi, which he had dedicated part of his early life to restoring.

Mr Bingley spent 18 months designing and building the window, laying out his original sketches on a basketball court.

"It was the only place I could think of with the space to design the cartoon for the window," he said.

Mr Bingley's work requires meticulous planning and extensive religious research, which he said was a major incentive for pursuing such commissions.

He is not a 'church-goer' or a follower of any particular denomination, but he does believe in a spiritual God and is an avid reader of theology and religious philosophy.

His next commission is a stained glass window for a Maitreya Theosophy temple at Daylesford.

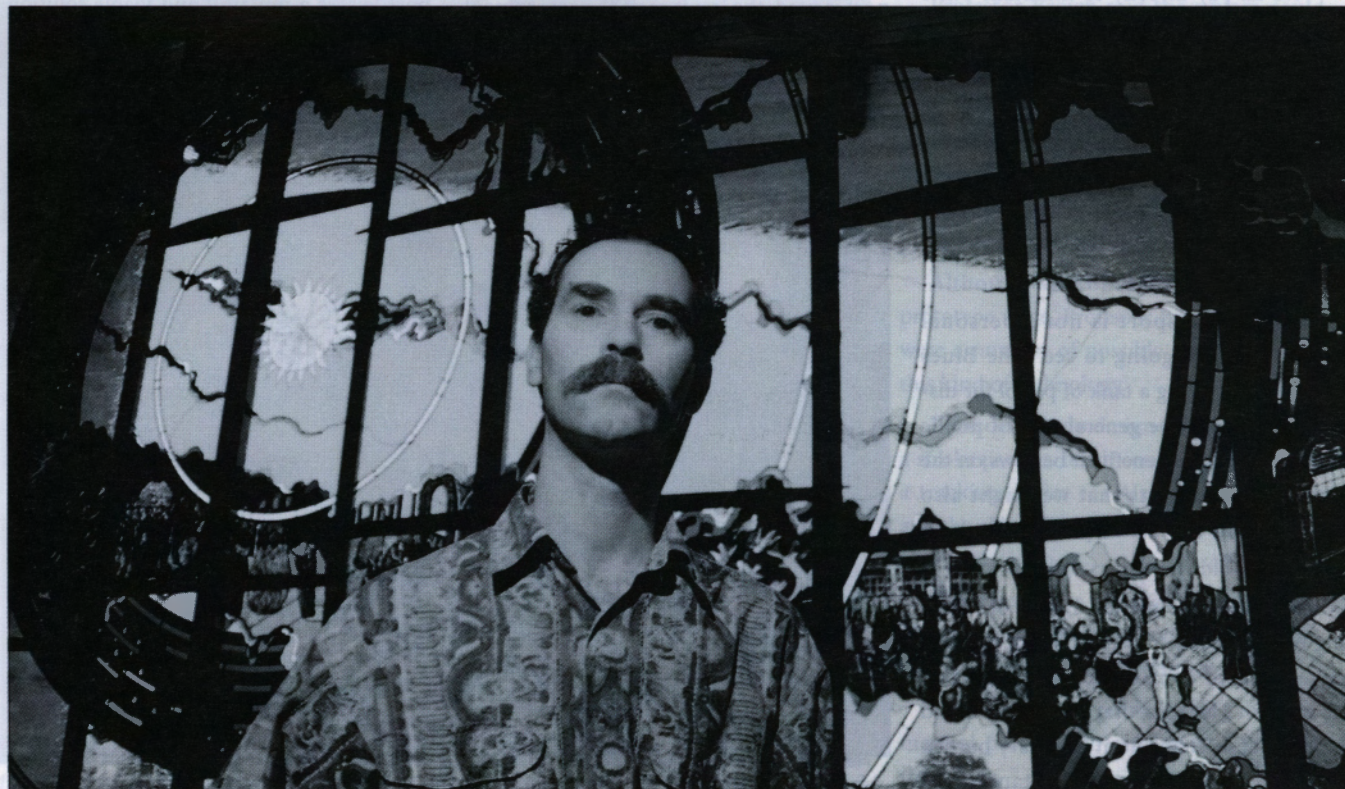
Maitreya Theosophy encompasses aspects of Buddhism and Christianity, and gives equal recognition to Jesus, Buddha and Buddha's wife.

The window will depict naturalistic images of all three, and has required Mr Bingley to do a 'crash course' in Buddhist iconography.

"This kind of project is a long way from doing decorative glass work for boardrooms and bathrooms," he said.

"I enjoy the freedom to put my own interpretations into projects with substance and meaning."

BY GARY SPINK



Christopher-John Bingley's artworks require meticulous planning and research.

Academic pushes for transport levy

A prominent Monash academic has written to the state transport minister, Mr Alan Brown, with a radical new proposal to encourage more commuters to use Victoria's public transport system. Stephen Matchett reports.

Free rides for everybody on trams and trains makes good social and economic sense, according to policy director at Monash University's Graduate School of Environmental Science Mr Frank Fisher.

In a letter written recently to the state government, Mr Fisher argued that instead of paying fares, the community should be charged a levy, similar to the medicare levy, to support the public transport infrastructure.

"We all pay directly to maintain other universal community services such as water and energy, and the community should similarly contribute to the upkeep of the public transport system," he wrote.

Mr Fisher argued that public transport was a fundamental pillar of society and a resource which benefited everybody, whether or not they used it regularly.

"Public transport is not a personal indulgence like going to see 'The Blues Brothers' or buying a tank of petrol for discretionary use. The general role of public transport and the benefits it bestows on the community suggests that we might also charge for it, at least in part, through an annual levy."

He believes the present system of charging to use public transport, when the revenue is soaked up in collecting fares, makes no sense: "The idea that each trip should cover its costs stems from the heavy burden of nineteenth-century understanding of transport policy.

"Generations of politicians and bureaucrats have looked at public transport as a commodity rather than as infrastructure."

He argued that the usual complaint that public transport services were running at a loss because they did not cover their operating costs was true only in the narrowest sense.

"The existing public transport system can be used by many more people at insignificant extra cost, which is definitely not the case for private cars."

He believes that the more public transport is used, the less it costs the government and the smaller the impact on the environment: "Every extra single-person car-trip, on the other hand, creates pollution and congestion."

"Car commuting in Melbourne accounts for 25 per cent of our contribution to the greenhouse effect and creates most of our urban atmospheric pollution," he wrote.

Mr Fisher argued that the view that private transport was more cost-effective, even in a strictly cash sense, was equally invalid: "In fact those motorists driving alone to work are also being subsidised by the community and in a far less socially responsible way."

He believes most of the costs of car commuting are debited to the community's social and environmental account, through the cost of building and maintaining roads, health costs due to pollution and road accidents.

"Those who use individual transport also benefit directly from public transport through less congested motoring and reduced competition for parking and road space."

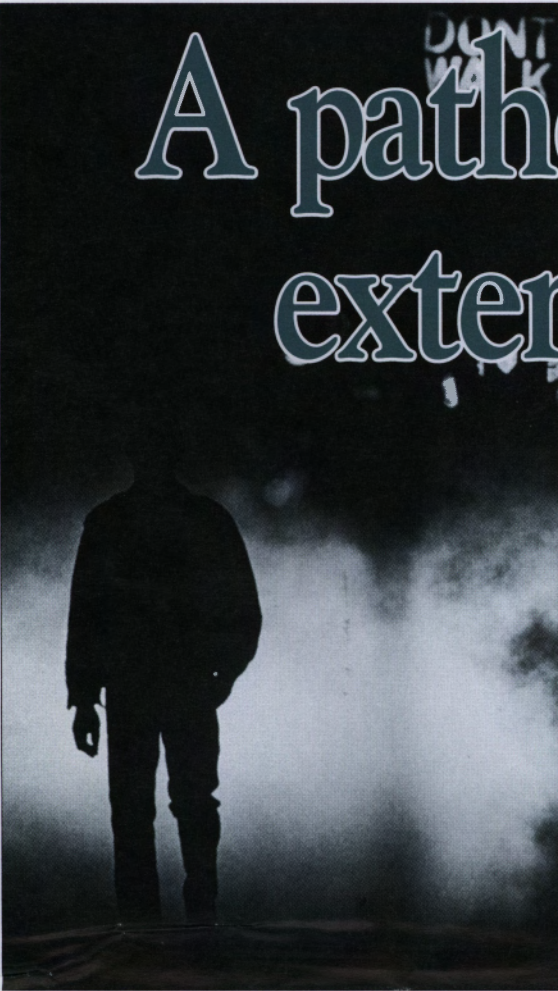
In fact, total costs of private individual transport are probably far higher than the community realises. Mr Fisher points to the infrastructure requirements imposed by increasing traffic flows and the impact of pollution as obvious examples of how the community pays for private transport.

"But you never hear a public transport user complaining about the subsidy they pay to support the car commuter!"

According to Mr Fisher, a public transport levy is a practical and viable solution to a major problem of urban life – all it takes is the political and community will to look at an old problem in a new, creative way.



Mr Frank Fisher rides his bike and catches a train to work every day as part of his campaign to reduce the number of motorists on the roads.



A pathological extension of love

'noticed' that his covert attempts at communication through the blips on the telephone increased up to 150 times a day.

Katherine was one of 16 patients, treated by two doctors between 1990-93, who became the focus of a study examining the psychology of stalkers.

The report, *The Pathological Extensions of Love*, was written by professor of psychiatry at Monash University Professor Paul Mullen and the Forensic Psychiatry Centre's Dr Michele Pathe and was published in the *British Journal of Psychiatry*.

It aims to increase awareness among health professionals and the community of erotomania, or, as it is more commonly known, stalking.

Symptomatic or secondary pathologies of love most often appear as part of other psychiatric conditions, while pure or primary pathologies of love are unrelated to other mental conditions.

As in Katherine's case, pure pathologies of love often correspond with lack of fulfilment in an intimate relationship. They can also be triggered by a perceived loss, whether of a job or a friendship, or perceived failure to obtain a promotion.

The report found that pathologies of love usually involved a mixture of morbid infatuation and a morbid belief in being loved.

One of the 16 patients in the study believed a woman he saw in the bus loved him because of the way she tapped her handbag, and another believed her boss communicated his love for her through his complaints about the traffic on the way to work.

Professor Mullen said erotomania was often characterised by the sexual rather

than the sentimental aspect of love. Four of the 16 patients made sexual advances on their victims, ranging from indecent assault to attempted rape.

The consequences of erotomania can be extreme, with one of the researchers' patients eventually murdering his victim, a popular singer, after she announced her engagement to another man.

However, Professor Mullen said this was an unusual outcome, with the usual consequences being fear and distress, assault and disruption of work and family life for the victim, and embarrassment for both stalker and stalked. Often the cases ended with the victim moving interstate.

Medication and therapy were often effective means to ending the stalking. After she started taking four milligrams of pimozone each day, Katherine stopped calling the clergyman, and her marriage improved. However, her symptoms returned rapidly when she stopped taking the medication.

Professor Mullen said that while male stalkers were motivated by the physical appearance of their victims, female stalkers were more often attracted to men with social status.

BY GEORGIE ALLEN

The only child of elderly and unsupportive parents, 'Katherine' grew up lonely and intensely self-conscious. Her marriage to her first and only boyfriend was sexually and emotionally unfulfilling. Katherine's only satisfaction and social interaction came from her job as a receptionist. When she lost her job, she started to become suspicious of others and felt she was always being watched.

One day she noticed the local clergyman driving past her house and began to suspect that at night he would climb the tree beside her house to watch her undress. Then Katherine 'heard' him communicating to her through the barely audible blips that came from the telephone, when the receiver was in place as well as when it was lifted. At first she felt uncomfortable until she 'realised' he was just a shy man in love with her.

She began to return the clergyman's 'calls', and when he denied having rung her, she 'realised' he was playing a friendly game designed to entice her into a relationship. She continued to call him and finally declared her love for him.

Even after the clergyman obtained a restraining order against Katherine, she remained convinced that he loved her, and

Can men be equal too?

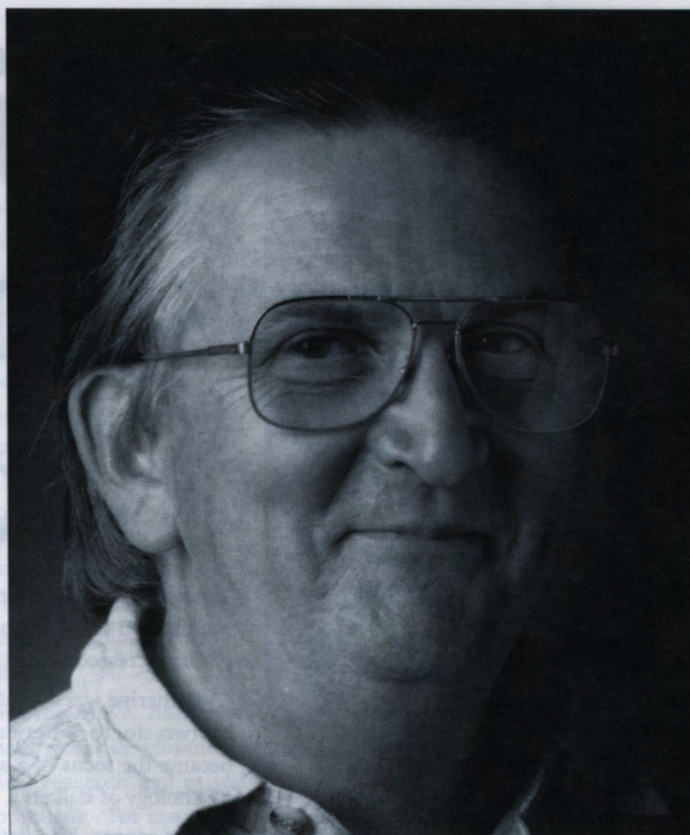
From Montage 16

men need to "catch up" to the changes that have occurred, or that they need to "adjust to social reality", to cite recent examples from Australian social commentators. An inevitable progress towards equality is assumed; any deviation from this path is seen as a deviation from social logic. But there is no sociological law which requires society to progress uniformly towards equality.

The second issue of *New Man* did not appear. Most similar attempts to address 'new' men have also failed. In fact, women make up the main audience for discussions of men and change. This is not all that surprising, when one asks who benefits from change: do men have as much to gain as women, or do men have something to lose? Power does confer benefits, a point which bland discussions about 'gender roles' tend to obscure.

Can men be equal too?

Dr Anthony McMahon from Monash University's Department of Anthropology and Sociology specialises in issues of men, masculinity, and relationships with women. In the following piece, he takes a look at the on-going gender role debate from a rather unexpected angle.



A few years ago, the magazine *New Woman* launched a 'brother' publication, *New Man*. In the first issue, the editor justified the need for a magazine for 'new' men by arguing that change in women's lives posed a problem for men: "The new woman is assertive, self-confident and knows what she wants from life. Great, but what does it all mean for the modern male?"

Until recently, most discussions of gender and social change have concerned issues facing women, but men are now receiving increasing attention. This trend is noticeable in the mass media and popular culture, in the social sciences, and in the rise of various branches of the 'men's movement'.

Discussions about men and change often begin with the question: "How are men coping with changes in gender roles?" Not particularly well, we are often told, with men experiencing 'role confusion', or even a 'crisis in masculinity'.

The underlying assumption, of course, is that roles have changed for men. This is widely believed to be the case. For example, Bettina Arndt, a frequent commentator on Australian masculinity, wrote recently of the male double-burden: "The days when a man could expect to come home to a pipe and slippers and a snooze in the easy chair are well and truly over. Now, whether they like it or not, when the paid working day is over, the second shift awaits them."

Whether or not we accept *New Man's* depiction of the assertive, self-confident modern woman, it is indisputable that women's lives have changed considerably in the past decades. Take, for example, women's higher levels of paid employment, ready access to divorce, and control of reproductive capacities. On the other hand, men's lives have not changed as much as is often claimed.

Women's increasing participation in paid work has meant that men and women increasingly compete for jobs. Nevertheless, the average female wage is 80 per cent of the average male wage, reflecting men's continued domination of higher paying occupations and of senior positions. In particular, career success still often requires a level of commitment which women with family responsibilities find hard to give.

Increasing female employment, combined with a reduction in real wages, has seen a rapid decline of the sole male breadwinner family. This is a significant change, but it has not fundamentally altered the male expectation of working for life. Men still feel they are ultimately responsible for financial support; the male breadwinner ethic has not disappeared. Indeed, some men continue to rationalise their wives' employment in terms of the need for "little extras".

Men are now quite likely to experience divorce, which is more commonly initiated

by women. But most divorced men remarry, and do so more readily than their ex-partners, often marrying younger women who have not previously been married. So, while men have experienced some reduction in their ability to maintain a particular marriage, marriage in general remains open to them.

Paid employment of women with family responsibilities creates an obvious need for men to perform more housework and childcare. But Arndt's idea that men and women now share a "second shift" reveals a degree of wishful thinking. In double-income marriages men have significantly higher levels of leisure time than do women, and corresponding lower levels of responsibility for routine daily life. A revealing point is that domestic work is one of the most fertile grounds for marital disputes.

This suggests that, despite the changes in the lives of women, men have resisted change to a significant extent. The idea that 'gender roles' have changed is seriously misleading, since it takes for granted that men's and women's lives have been equally subject to change. This can lead to rather absurd formulations when commentators try to reconcile their belief in changed gender roles with the kind of evidence I have just mentioned. We are told, for example, that

Continued on Montage 15