

ANU Reporter

First, to learn the nature of things

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Bacteria may be key to boosting rice production

ANU scientists are using the intimate relationship between plants and bacteria to attack the world's growing food problem.

Professor Barry Rolfe and his team at the Research School of Biological Sciences have been researching the symbiosis between nitrogen-fixing bacteria *Rhizobium* and legumes for the past 25 years.

"This research is addressing a fundamental problem that we have on earth — will we be able to effectively feed the human population as it continues to grow at an alarming rate?" Prof Rolfe said.

"With present trends, this will be 8 billion by the year 2020 of which 4.8 billion people will need to be fed with

an amount of rice equalling 760 million tons."

Prof Rolfe said that, to meet the future demand, the rice supply would need to be increased by 2 per cent a year. "Given the scarce land resources this means that increasing land productivity is essential to avoid food shortage."

"Rice crop production can currently be increased by the application of nitrogen as a nitrogen fertiliser," Prof Rolfe said. "To meet the needs of 2020 this would amount to an enormous increase in the use of nitrogen fertiliser, which is a by-product of the petroleum industry."

"If we can come up with an alternative strategy for nitrogen supply or

production, such as the use of nitrogen-fixing bacteria, we might be able to create a sustainable rice agriculture."

In 1973 the tropical elm *Parasponia*, a non-legume, was found to have nodules. This opened up the possibility that non-legumes could be manipulated to fix nitrogen.

"This showed us that the nexus between the legume and non-legume can be broken in nature — and the question arose — can we do this in the laboratory?" Prof Rolfe said.

Nitrogen fixation usually occurs during the relationship between a legume plant and nitrogen-fixing bacteria. To investigate this association in more detail, two organisms have been chosen as international

model systems — *Medicago truncatula*, commonly called barrel medic, and *Sinorhizobium meliloti* the bacterium. Rice and *Parasponia* have been used as the model non-legumes as they can be easily grown in the laboratory and can be regenerated and manipulated.

"The genomes of *Rhizobium* and rice are currently being sequenced and will be completed soon, which will give us a greater insight into how they talk to each other," Prof Rolfe said. "Our contribution to the *Rhizobium*-legume program is the use of the powerful post genomics technology — Proteomics — which has enabled us to identify gene products".

"By understanding the genetics

of these species, we can begin to understand the hormonal changes that occur in a plant, and how a nodule is set up on a legume when it is invaded by the *Rhizobium*," Prof Rolfe said. "What is of particular interest is the recent finding that some of the signal pathways found in legumes have now been found in rice and they can be triggered also by *Rhizobium*".

"We want to be able to harness what takes place in the rhizosphere and in the roots of plants," Prof Rolfe said. "At the moment we are just scratching the surface, but there is great potential for this research to contribute to the future of a sustainable environment and food production."

TERESA BELCHER

The British aren't coming

Census results show drop in UK-born residents

By SHELLY SIMONDS

The British have always had a significant presence in Australia but it may be winding down, according to one ANU academic.

Dr David Lucas, of the Demography Program in the Research School of Social Sciences, has recently completed a community profile of UK-born Australian residents based on data from the 1996 census.

His report showed that the British population in Australia has begun a decline that is expected to continue as the UK-born population gets older.

Britons have traditionally been the biggest immigrant group to Australia — numbering more than one million people in the 1996 census. However, in 1996 the UK-born population was significantly down for the first time since the 1947 census with three per cent fewer people than in 1991.

Dr Lucas also found the UK-born population was getting older. In 1996, 22 per cent of the population was aged over 65 compared to 19 per cent in 1991.

As the British population aged they often moved back to the UK, he said, and this also contributed to the decreasing numbers.

Ageing Britons also lacked community support structures enjoyed by members of other ethnic communities, such as Greeks and Italians, he said.

"I think the English, because they were the dominant group for two centuries, really haven't organised themselves into clubs and groups that could provide support."

Dr Lucas believes British cultural

influence is also in decline and points to recent questions about whether the Queen of England should be the Queen of Australia during the Republican debate; Pentecostals overtaking Anglicans and Methodists in terms of protestant Church attendance; and the loss of British dominance in sports like cricket and rugby.

"They invented the rules to all these games yet they can't win anything anymore," he said.

While the UK-born's influence in Australia is waning; the numbers of New Zealanders, South Africans and Americans are growing.

South African- and US-born immigrants are taking over as the fastest growing English speaking migrant groups. The populations of both groups were up by 13 per cent in the 1996 census over 1991.

The UK-born community profile is one of 20 ethnic community profiles compiled by demographers at the ANU. Coordinated by Dr Siew-Ean Khoo in the Demography Program, the community reports were completed as part of a major grant from the Department of Immigration and Multicultural Affairs.

Other profiles for European-born immigrants detected similar trends as those seen for UK-born groups in Australia.

According to the author of the reports on Central European migrants, Dr Thomas Schindlmayr, populations of people born in Germany were down by 1.4 per cent and those born in The Netherlands had declined by over 7 per cent between the 1991 and 1996 censuses.

Artists explore a green palette



Photo: John Reid, CSA

This tree will feature in ITA's Open Day program as the focus of a major event connected with the exhibition. It will be the site of a sculpture (Candy Tanaka, Exchange student from Canada) and improvisation music work by the CSM Contemporary Music Ensemble. It was shown to the Field Studies group by Ken Johnson (Geography) as an example of resilience in the face of environmental change/stress. The tree is estimated to be up to 200 years old.

A group of students and staff from the Canberra School of Art (CSA) are attempting to raise awareness of environmental issues on the University's campus through art.

They have mounted an exhibition — A Thousand Colours: Visual Art for a Green ANU — in collaboration with the Environmental Management Planning Committee.

Environmental issues such as energy and water conservation, waste management and biodiversity were outlined by the ANU in its recent Environmental Management Plan. To make the plan work members of the environment committee called on artists to help encourage support. This led to the participation of students in the Field Studies Program at the CSA now exhibiting their work.

Field Studies Convener and exhibition curator John Reid said artists

had an important role to play in communicating the message of environmental conservation.

"The data scientists come up with may be shocking, but we need artists to inspire people to act," he said. "We've tried to personalise the environmental issues on campus through art, which is a medium that can forward a powerful aesthetic message to the brain by way of the heart."

To prepare for their projects students met with ANU environmental scientists and professionals from Facilities and Services including Bart Meehan, a member of the Environmental Management Planning Committee. In addition to students in Field Studies, a number of CSA staff and community members have contributed to the exhibition.

"From the outset the project was infectious," Mr Reid said. "So many

people expressed interest that in the end an invitation to participate was extended to the whole school."

A drawing class, coordinated by Wendy Teakel in the Sculpture Workshop, focused its work on environmental issues. Members of an informal performance art group also got involved. One student even scuba-dived in Sullivans Creek to document with a camera the secrets of its murky depths.

The exhibition explores the ANU environment through a number of media including photomedia, painting, glass, drawing, sculpture, print-making, performance art, environmental improvisation works by the Canberra School of Music Contemporary Music Ensemble. Many of these events will take place tomorrow during ANU Open Day.

SHELLY SIMONDS

Seminar examines value of PhD

As more PhD graduates find jobs outside academia than in it (according to the latest Department of Education, Training and Youth Affairs white paper) many research students are asking: "What does my PhD qualification say to non-academic employers about me?"

This was the topic of a seminar hosted by the Committee on Post-graduate Training at the Research School of Social Sciences (RSSS). Seminar Chair Declan Roche, of the Law Program in RSSS, invited two prominent employers to give their views on what a PhD qualification meant outside the university environment.

The speakers were Dr Allan Hawke, Secretary of the Department of Defence, and Mr Ian Hansen, National Director of Government Recruiting for Morgan & Banks.

Mr Hansen said that when he saw PhD on a resume it told him that the candidate was hard working, achievement oriented, numerate, literate, mature, and dedicated. However he said looking good on paper was only half the battle in the job search.

"Your IQ may get you on the short list but it's your EQ that will get you appointed and promoted," he said.

EQ was something all job seekers should be aware of if they weren't already, Mr Hansen said. It meant emotional intelligence and encompassed a number of qualities such as: motivation; empathy; creativity; flexibility; openness; ability to cope with adversity; self-awareness and even a sense of humor.

Although a PhD helped establish intellectual qualifications, the challenge for graduates would be to communicate their people skills in an interview situation.

Mr Hansen said there was a power shift in the job market away from employers and toward jobseekers. The next few decades would see "a war for talent" as employers vied to replace retiring baby boomers with skilled graduates.

Dr Hawke, who graduated with a science PhD from ANU in 1976, said his career with the public service allowed him to switch from being a specialist to a generalist.

He said doctorates were valued in the public service and that six of the government's 16 department heads had PhD degrees.

Both Dr Hawke and Mr Hansen agreed that networking was key to today's job market.

Almost 80 per cent of all jobs filled in Australia last year were not advertised Mr Hansen said. Joining professional associations was important in getting a foot in the door.

It was also important for jobseekers to consider what an organisation could do for them in the way of learning and professional development.

These employers also had advice on how to answer the most dreaded of all interview questions — "What is your greatest weakness?"

They suggested turning the question back on the employer in terms of professional development.

For instance, if a person hasn't had a lot of leadership experience, acknowledge that and ask what kind of opportunities an employer can provide.

SHELLY SIMONDS

EVENTS

Federal Health Minister Dr Michael Wooldridge will launch a video program aimed at raising corporate sponsorship for the Master of Applied Epidemiology (Indigenous Health) next Thursday, 7 September, at Parliament House. The degree is run by the National Centre for Epidemiology and Population Health.

The 25th anniversary of Papua New Guinea's independence will be commemorated at the ANU with the PNG Silver Jubilee Seminar and PNG Update on 15 September 2000 at the Haydon Allen Tank. Speakers will include His Excellency, the High Commissioner for Papua New Guinea, Renagi Lohia; PNG Minister for Planning and Implementation Moi Avei, MP; and Deputy Director General, Pacific, Humanitarian and International Division, AusAID Charles Tapp. For details call 02 6279 8258 or email: <debra.grogan@anu.edu.au>.

The Indonesia Update 2000 conference, "Indonesia: 20th Century History and the Future", will be held on 6-7 October 2000. The conference will include political and economic reviews and look at the future progress of Indonesia. To register, contact the Indonesia Project office on 02 6249 3794 or the conference website: <<http://economics.anu.edu.au/ip/pdate2000.htm>> before 8 September.

The Humanities Research Centre (HRC) will hold a seminar, "Gender, Law and the State in Early Modern Southeast Asia" on Friday, 15 September at the Theatre, Old Canberra House. The seminar will be conducted by Professor Barbara Andaya of the School of Hawaiian, Asian and Pacific Studies, University of Hawaii.

VC's VIEW

What the doctor ordered

The announcement by the Minister for Health and Aged Care, the Hon Dr Wooldridge, of 25 new medical school places in the ACT opens major new opportunities for Canberra to realise its potential as a provider of high-quality medical training for a rapidly growing region. It demonstrates a strong personal commitment to public health and medical research and opens significant new possibilities in two of the most challenging areas of public health, indigenous and rural medical services.

The ANU welcomes the initiative and is enthusiastic about this vision for Canberra and regional Australia.

The review of medical school training arrangements in Canberra will enable medium and long-term planning for medical education and training for the whole region, including the South Coast. The ANU has a strong commitment to the extension of education services, including medical education, to the surrounding region. I explained the University's vision for an extensive outreach through the growth of broadband services to the Regional Leaders' Forum hosted at University House last year and cited medical services as one of the key elements in this.

TransACT, a broadband network, is now being rolled out progressively to households and small to medium businesses in the ACT. With Southtel, a proposed consortium of the South Coast councils and the University of Wollongong, it makes this vision realisable in the short term. Southtel, is under design and will loop to the ACT and back to Sydney, creating the start of a broadband network that will eventually extend south to Melbourne.

With a clinical school at the centre of this network, getting doctors who have been appropriately trained in rural medicine into the bush and coastal areas is achievable. They will have access to expert support and be

able to participate fully in the ongoing educational services and diagnostic facilities that the school would provide. It will also provide a focus for students from the ACT and the regional and rural areas, giving a strong practical training in rural medicine.

A high-quality clinical school in Canberra would be located in a high-quality teaching and research environment, ensuring the highest quality graduates for rural Australia who will be able to pursue research in their locality.

The ACT is ideal for a medical school with a unique balance between urban and rural training in the one setting and it will also lift the standards of health care in the ACT, with follow-through improvements for the surrounding region.

There is already a strong base for the Government's investment.

The John Curtin School of Medical Research was recognised by the Minister in his media release as bringing an already established strong medical research capacity that is internationally renowned. Such facilities are essential to making the marriage of practical rural medicine and research viable.

The teaching and research strengths of ANU in basic and clinical sciences and its long and proud history of achievement in medical research bring unique strengths to the realisation of the Minister's vision.

They will contribute to a scenario in which the school could facilitate increased participation in quality care such as clinical trials, bringing increased activity and prospects to Canberra and the region as well as enhancing the attraction of top-quality staff who are interested in both practice and research.

The ANU brings a great history of achievement to the vision.

The names Eccles, Fenner, Doherty and Zinkernagel stand as

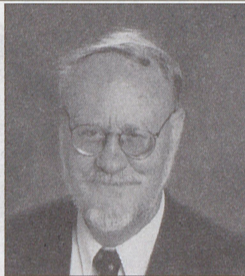
part of that history. Their contributions in neurophysiology, microbiology and immunology are legendary. The Nobel laureates Eccles, Doherty and Zinkernagel are a source of great pride, as is the recently announced award of the Albert Einstein Medal and Prize to Fenner (see page 8).

The current medical capacity of the ANU embraces specialist fields including psychology, biochemistry, molecular biology, biotechnology, microbiology, immunology, neuroscience, human genetics and epidemiology. There are two former Commonwealth Chief Medical Officers on the staff and medical researchers working at the highest levels in fields such as high blood pressure, asthma, cancer, diabetes, HIV/AIDS and hepatitis.

There are also recent initiatives in academic courses at the ANU that would bring ready synergies. One of these is the Bachelor of Medical Science, a three-year course that provides an opportunity for students to specialise in the study of medical sciences, including options in psychology, medical chemistry and neuroscience among the standard medical science courses. Another is the Bachelor of Biotechnology, a three-year degree designed for students interested in the application of biology to the maintenance of high living standards, such as detection and treatment of disease and recycling of waste products.

That is a very strong foundation to bring to a venture seeking to ensure that rural medicine is a first-rate area of study, giving regional Australia excellent medical services supported on an on-going basis by a teaching and research facility of the highest quality.

Deane Terrell



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ACADEMY OF THE SOCIAL SCIENCES

EXECUTIVE DIRECTOR

The Academy seeks an EXECUTIVE DIRECTOR to support its activities. The position requires a person capable of providing strong intellectual leadership and one who has the capacity to interact at the highest level with policy makers, Fellows, international associations and other distinguished scholars. The Executive Director will also be responsible for the effective functioning of the Academy's office, which currently has five other staff. The Executive Director will also be expected to support the President and the members of the various committees in their voluntary work of promoting the social sciences at all levels.

It is preferable that the appointee be full-time but other arrangements are possible. This is a challenging and exciting opportunity for a social scientist to interact with Fellows to build programmes of vital importance to Australian society. The position has been held by several distinguished scholars in the past.

The position is available for an initial period of three years with a six-month probationary period. The commencement date envisaged is 1 February 2001.

The Academy reserves the right to appoint by invitation.

Salary range: \$48,696 to \$59,076 per annum depending upon qualifications and experience. Superannuation and other benefits are negotiable.

Closing date: 8 September 2000.

For further information, phone Professor Gavin Jones on 02-6249 2306. To obtain a copy of the selection criteria, phone 02-6249 1788 or email: <ASSA.Secretariat@anu.edu.au>.

Applications should be addressed to:

The President
Academy of the Social Sciences in Australia
GPO Box 956
Canberra ACT 2601

French started fight against flab

IN BRIEF

If you think pumping iron and slimming down are only recent obsessions for men, think again. Today's fixation on the well-built male began at least 100 years ago, according to one ANU historian.

Dr Christopher Forth, of the School of Humanities in the Faculty of Arts, is currently studying issues of obesity and masculinity in France at the turn of the century.

He said late-19th century France

Men's health issues date back to 19th century

saw a number of social changes that redefined masculinity in terms of slim muscular bodies as opposed to the prosperously plump figures fashionable among successful men in past centuries.

For men, achieving these trim forms required physical exercise and self-discipline, giving rise to a self-improvement movement

led by physicians.

A number of anxieties about modern life contributed to the vilification of obesity around this time in western countries such as France, Britain and the United States.

Among these were concerns about sedentary lifestyles and nervousness among professional men, anxieties about an increasingly cerebral culture and the need to use self-control to resist the many seductions of urban life, Dr Forth said.

"The decline of the fat man or, more specifically, the emerging idea that manhood and obesity were mutually exclusive qualities, must be understood within the tangle of these cultural anxieties," he said.

At this time obesity became a medical problem as well as an aesthetic one. Doctors advertised diets, exercises and health-spa treatments as cures for the disease. There was also a thriving self-help philosophy in fashion, embodied in the phrase "educating the

will", which implied that improving the body was a means to combat nervous disorder and improve moral character.

However the campaign to control the body through will power was targeted at men not women, who were seen as too weak-minded to be able to control themselves.

"Although unfortunate and perhaps even embarrassing, lapses of the female will ultimately testified to what most men considered the natural weakness of women, which meant that nervous and weak-willed women were still safely within the parameters of their sex," Dr Forth said.

A real man on the other hand was expected to be capable of self-control. To be unable to do so brought his very masculinity into question.

"For all the scorn heaped upon her, a weak-willed woman still qualified as feminine, while a weak-willed man was no man at all," Dr Forth said.

SHELLY SIMONDS

Ceremonial debut

When the ANU community gathers for two formal occasions next week, it will witness for the first time the full complement of ceremonial items.

The special conferring of former South African president Nelson Mandela at Llewellyn Hall on Wednesday will see the debut of two staves for Deputy Marshalls in the Chancellor's procession. The staves are the work of George Ingham (below), head of the Canberra School of Art's Wood Workshop, and complete a suite of works that includes the Chancellor's chair, mace stand and Marshall's staff.

The two new staves are shorter, less ornate versions of the Marshall's

staff and are made of the same native wood — *Casuarina tarulosa*.

"I chose it because, although it is a difficult wood to work with, it is strong and has a beautiful, patterned finish," Mr Ingham said.

The special conferring for Mr Mandela is followed on Friday by the Conferring of Degrees ceremonies. The ceremonies will include the presentation of the first Masters of Applied Epidemiology (Indigenous Health). The Director of the National Gallery of Australia, Dr Brian Kennedy, and former Ambassador to Japan, John Menadue, will address the graduands.



Big money: The Banker, a late 19th-century illustration by Honore Daumier.

Mites may indicate state of forests' health

Foresters may soon be able to use dirt-dwelling insects to check on the health of their trees, following the work of one ANU scientist.

M.Phil student Geir Fokstuen, who is co-supervised by ANU Forestry and CSIRO Entomology, has been investigating the effect of different effluent irrigation levels and trees species on the mite community structure in soils.

Mr Fokstuen has been working at an existing CSIRO plantation site near Wagga Wagga, NSW, that was set up to study effluent nutrient effects on the fast growing tree species *Pinus radiata* and *Eucalyptus grandis* (flooded gum).

The two tree species received three different nutrient loads of secondary treated effluent in water — light, medium and heavy — as well as nutrient-depleted bore water.

"Prior to my work, no one had looked at the effect of effluent nutrient levels on the forest soil ecology," Mr Fokstuen said.

"I found that the different water loads had a significant effect on the abundance and species diversity."

After extracting, sorting and slide mounting for taxonomic identification, Mr Fokstuen identified 5,000 mites — some of which were new or undescribed — in a total of 18,000 soil animals.

The results revealed tree-specific functional groups of mites," Mr Fokstuen said.

"The presence of particular types of mites was also found to be very dependent on what types of nutrients are present.

"This means that mites can be used as indicators — indicating if there is more nitrogen or more phosphorus in the soil, or the presence of particular minerals."

Mr Fokstuen said that an analysis of the mite community would give foresters an idea of the soil chemistry of a plantation.

"You could go into a forest or plantation and expect to find certain species of mites to be present — if particular mites are not present, then something is wrong."

"This would indicate a time for intervention and the addition of minerals — by the time a tree shows physical stress, it is usually too late to rectify the problem."

Analysis of the existing mite population would also give foresters an idea of whether there is a need to prepare soil prior to planting seedlings.

The results from this study have implications for commercial ventures involving sustainable agroforestry and farm forestry.

TERESA BELCHER



Photo: Stuart Hay, ANU Photography

Australia's first academic position in Turkish Language and Culture will be established at the ANU following an agreement with the Government of Turkey. The post will be established with an initial donation from the Turkish Government of \$400,000 and will be matched by the University from its Endowment for Excellence fund. It is hoped that further donations will enable the establishment of a centre for Turkish Studies.

The Centre for the Study of the Chinese Southern Diaspora (CSCSD) is offering a prize of \$500 to the best essay on a topic related to the Chinese diaspora in Australia. Eligible entrants must be enrolled in an undergraduate course at an Australian tertiary institution. The closing date for entries is 1 December 2000. For details phone 02 6249 3105 or email <cscsd@coombs.anu.edu.au>.

More than 100 people remembered the life of Sir Mark Oliphant at a commemoration ceremony at University House last Friday, 25 August. The service was attended by prominent politicians and academics including Governor General Sir William Deane; Sir Mark's grandson, Michael Wilson; ANU Chancellor Peter Baume; Australian Academy of Science President, Professor Brian Anderson; and the Director of the Research School of Physical Sciences and Engineering, Professor Erich Weigold. Sir Mark was remembered by various speakers as "outspoken during his lifetime", but "gregarious" with "a great laugh".

PEOPLE

Former Japanese financial official Dr Eisuke Sakakibara, the man nicknamed "Mr Yen" by financial markets, will speak at a lunchtime seminar at the Coombs Theatre next Monday, 4 September. The public seminar, "East Asian Financial Cooperation: Which Way Forward?" will include a panel discussion with Professor Ross Garnaut, Founding Director of the Asia Pacific School of Economics and Management (APSEM); Dr Stephen Grenville, Deputy Director of the Reserve Bank of Australia; and Dr Sakakibara.

Professor John C. Harsanyi, winner of the 1994 Nobel Memorial Prize in Economic Sciences and long-time Professor at the Haas School of Business, University of California, Berkeley, has died at the age of 80. After spending time in a labour camp during the Second World War in Hungary, he emigrated to Australia with his wife Anne. He taught economics at the ANU from 1958 to 1961, moving to UC Berkeley in 1964.

The winners of the 1999 J.G. Crawford prizes were announced recently. Ping Koy Lam from the Faculty of Science's Department of Physics and Theoretical Physics was awarded the PhD prize (Group A); Fiona Wheeler, from the Law Program in the Research School of Social Sciences won the PhD (Group B) prize and Christine Phillips, from the Department of Archaeology and Anthropology in the Faculty of Arts, won the Master prize.

Graduate survey to aid plans for future

Graduates of the University are being encouraged to help the ANU assess and maintain the quality of its teaching and student support services by filling in a survey after their graduation.

The Graduate Destination Survey (GDS) seeks information on the type of work, further study or other activities of recent graduates.

Careers advisers, higher education institutions, students and employers all use the information, which is published in summary format in national publications.

The ANU is also planning to make ANU specific information more accessible to the university community through the ANU web page.

The survey is accompanied by a Course Experience Questionnaire (CEQ), which is the only time graduates of the University are asked to evaluate their whole course.

The ANU's Policy and Planning Division has recently taken over the management of the survey and questionnaire, which used to be managed by the Careers Centre.

Claire Atkinson, of the Planning Unit, said up to 2,000 surveys were sent in April and 600-700 in October.

She said the unit was hoping to boost the number of graduates responding to the survey and had recently introduced an online format.

"Included when we send out the information is a flyer pointing graduates towards the online survey, which is accessible through the Alumni page, and encouraging graduates to fill out the survey online and the response we have had has been very positive," Ms Atkinson said.

Careers Centre manager, Colleen Cunningham, said the response rate for ANU graduates had fluctuated over recent years from just over 51 per cent to just over 75 per cent.

"It varies from year to year, sometimes for no apparent reason, one faculty one year will have a really high response rate and then the next year a really low one," Ms Cunningham said.

Ms Atkinson said the data was published by the Graduate Careers Council of Australia (GCCA), but only universities with a response rate of more than 50 per cent were included.

She said the ANU had always had a response high enough to be included in the GCCA's report, but the Planning Unit was still looking to boost the number of responses to improve the information available.

The online survey is available from the ANU Alumni webpage at: <<http://www.anu.edu.au/pad/alumni>>.

SEAN DALY

Detective work in China solves mystery over 'lost' species

By SHELLY SIMONDS

Scientists have confirmed the existence of an unknown species of mammal, after the discovery of specimens that lay uncatalogued in Chinese museums for over 100 years.

Sus bucculentus — a species of pig from Vietnam — was first described by a French naturalist living in China in 1891. Although his findings were published, the original skeletal material used to identify the species (the "type specimen") was lost and *Sus bucculentus* never gained credibility as a legitimate species.

An international team of scientists, headed by the ANU's Dr Colin Groves, in the School of Archaeology and Anthropology, recently found the *Sus bucculentus* type specimen in dusty, unmarked crates in the Beijing Institute of Zoology. Other type specimens were found in the Natural History Museum in Shanghai.

The two collections included hundreds of mammal specimens collected by amateur naturalist and Jesuit missionary, Pierre Marie Heude, during the last half of the 19th century. He gathered some during expeditions to the Philippines, Indonesia, Japan and Indochina, but many pieces were sent to him by contacts in other countries.

"Although he was supposed to be spreading the Catholic faith in these regions, it seems he had more enthusiasm for collecting than for saving souls," Dr Groves said.

Dr Groves began the search for the missing specimens 20 years ago, after seeing Heude's collections referenced in several books and wondering what had become of them. He began asking colleagues in China if anyone knew the whereabouts of Heude's specimens.

"A scientist from the Institute of Zoology had a vague recollection of some crates being received some 20 years earlier," he said. "The crates were



Photo: Colin Groves

Skeleton crew: Members of the international team catalogue the Pierre Heude collection.

still in the basement of the Institute and no one could identify what was in them."

Dr Groves believed those crates might contain Heude's collection. In 1997 he got the chance to look at the contents of the crates with Chinese zoologists from the Institute.

Dr Groves said the feeling of brushing the dust off the specimens to reveal old labels written in Heude's own hand was "indescribable".

"It's rare to rediscover a single type specimen but finding 100 lost type specimens is unprecedented," he said.

Dr Groves won a small ARC grant to return to China to study the collection more closely with an international team. The non-Chinese members of the team returned from cataloguing and labeling the mammal skulls of the Heude collection in May and are writing up the results of their research.

"The task was formidable and challenging, both because of the sheer size of the collection and because of its condition," Dr Groves said. "Only a few specimens had labels, and even then some of the labels were torn in half or illegible. Fortunately identifying data or in some cases just acronyms, were written on many of the skulls in an indelible material such as Indian ink or paint, but it was often necessary to wash off thick dust and dirt before the writing became visible."

Heude had published detailed notes in a journal he founded, *Memoires Concernant l'Histoire Naturelle de l'Empire Chinois*, on each item in the collection along with excellent lithographs made by his Chinese associates. With the help of Mark Elvin and the ANU Library, Dr Groves was able to obtain copies of these journals and, from these, identify specimens.

The team found a number of surprises in the collection. A type specimen was discovered for *Bubalus mindorernsis*, a rare dwarf species of buffalo. This is an important find for natural historians in the Philippines, where the animal is now close to extinction.

Another type specimen was found for *Sus cebifrons*, a species of pig from the Philippines. This specimen provided proof that Heude had been the first to identify the species.

A mysterious specimen was also

uncovered, *Sikelaphus soloensis*, a deer from Jolo in the Philippines, which appeared to be a relative of the sika deer of Japan and Eastern Asia. Dr Groves said it was unexpected to find a sika deer in a tropical region. One other example of this species is held in the American Museum of Natural History in New York but no one believed in its existence. Now it will be possible to identify whether this is a different species from sika.

A stroke of luck made the confirmation of *Sus bucculentus* as a genuine species possible. Another sample of the rare pig was recently discovered by scientist and adventurer George Schaller in the remote Annamite Range in Laos. The distinctiveness of *Sus bucculentus* as a species was confirmed by DNA analysis.

For years Heude has been roundly dismissed by zoologists as being one of history's most extreme "splitters" of species.

"Where most taxonomists saw one species, Heude would see 12. From regions such as the Bataan Peninsula on Luzon in the Philippines, the numbers of species of pig and deer that he described was simply astonishing."

However, Dr Groves defended Heude by noting he was not the only 19th-century naturalist to make this mistake — at the time, European scientists had little understanding of variability within a species and therefore lacked the perspective to make informed classifications.

Greenhouse accounting research centre opens

The CRC for Greenhouse Accounting has opened its national headquarters at the ANU. The Centre's new offices, located in the Research School of Biological Sciences (RSBS), were officially opened last week by the Vice-Chancellor Deane Terrell.

Joint venture partners in the CRC include ANU, NSW State Forests, NSW Land and Water Conservation, Australian Greenhouse Office, CSIRO, Queensland Departments of Natural Resources and Primary Industries, and Conservation and Land Management Western Australia.

RSBS Professors Ian Noble and Graham Farquhar won a CRC grant earlier this year to set up the Centre, which focuses on the science and policy of the release and uptake of greenhouse gases by soils and vegetation — known as carbon sinks.

The launch of the new headquarters was part of a four-day Annual Science Meeting for more than 50 research members of the

CRC and their industry partners.

Senator Lyn Allison, Chair of the Senate Inquiry into Global Warming, and several senior members of the Australian Greenhouse Office addressed the meeting, as did Prof Noble, the CRC Chief Executive Officer.

"As we head into the new century all Australians must accept responsibility both for their natural environment and their economic desires and move this greenhouse debate along," Prof Noble said. "In opening up some of our working sessions to practical, non-adversarial discussion of greenhouse issues, we help our members understand the wider context in which they work. This can only be beneficial to Australia's progress in the long run."

The new Greenhouse CRC offices feature a series of photographs entitled "Landscapes of South-Eastern Australia" by John Reid, a lecturer in the Canberra School of Art.

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Why Institutions matter — setting the scene

In this first lecture of the series, my aim is to set the scene by asking why institutions matter and by attempting to show how institutional choices have shaped and continue to reshape Australian society.

The simplest answer to the why institutions matter question is definitional. Institutions are necessarily important because they may be seen as consisting of sets of rules — prescriptions and proscriptions — established by conscious choice or accretion over time, which provide the context of human behaviour in a wide range of social arenas — government, business, the labour market, the welfare state, criminal justice, the family, gender relations and so on.

Viewing institutions as sets of prescriptions and proscriptions immediately suggests that “the existence of institutions makes certain things easier to do and other things harder to do”. Hence, to the extent that we can make genuine choices about the rules governing human behaviour, institutions will be important, because different sets of rules will almost inevitably lead to different kinds of outcomes.

To describe Australia as a democracy tells us something about the basic ground rules of Australian political life and something about the broad parameters of the Australian political process. Amongst other things, it tells us that elections occur at quite frequent intervals, that there is more than one party to choose from and that there is some genuine prospect that parties will alternate in office. However, because democracy can accommodate a wide range of institutional variation, that description tells us very little about specifics. To fashion a democratic constitution for Australia, the Fathers of Federation had to fill in a great deal of detail on what their institutions would look like and how they would operate.

One way of understanding the

Professor Frank Castles, of Political Science in the Research School of Social Sciences recently gave a lecture at Parliament House to celebrate the Centenary of Federation. An extract of his talk, sponsored by the Parliamentary Library and the Reshaping Australian Institutions Project (RSSS), appears below.

choices they made is to look at our institutions in comparative perspective. We attempt to do that by locating Australia on the conceptual map of democracy presented in Arend Lijphart's book, *Patterns of Democracy* (1999). His analysis starts from a distinction between what he calls “majoritarian” and “consensus” models of democracy, arguing that “the majoritarian model concentrates political power in the hands of a bare majority ... whereas the consensus model tries to share, disperse and limit power in a variety of ways”. The differences between the models can be seen as resulting from the different answers democratic political communities give to the question: for whom does the government govern? What all democrats have in common is a belief that government for the people is incompatible with government on behalf of a minority. They may legitimately disagree, however, on whether the aim of popular sovereignty is to represent the will of the majority or to find a basis for consensus amongst as large a proportion of the people as humanly possible. Lijphart argues that the political arrangements required to realise these distinct conceptions of democratic rule are quite different in kind.

Lijphart looks at the impact of Federalism on democratic institutions and finds that countries in which the central government is hedged around with constitutional limitations appear to differ little from more unitary states in respect of the quality of democratic participation or in respect of kinder, gentler policy outcomes. His only statistically significant result relates to an aspect of the effectiveness of economic

performance, with a strong and inverse relationship with inflation pointing to the greater monetary stability of nations with strong institutional safeguards against unfettered central authority. Lijphart does not regard this latter finding as particularly surprising, given that central bank independence is a key component of the “federal-unitary” dimension, and that this factor has been shown in many studies to be associated with favourable monetary policy outcomes.

My own work in this area suggests that it is not just monetary policy outcomes, but also economic growth, which seem to benefit from decentralised institutions. This research differs from Lijphart's in two significant respects. First, rather than being concerned exclusively with political institutions, I focus on the degree to which the tax collection system is decentralised. Second, rather than relying on simple measures, I seek to incorporate my measures of tax decentralisation into fully elaborated economic models, which satisfactorily account for a large degree of the cross-national variation in economic performance. Interestingly, my findings also suggest that, once one takes account of the tax decentralisation impact on inflation, there is no evidence of an additional bank independence effect. A possible mechanism accounting for the link between tax decentralisation and lower rates of inflation are limitations in using deficit spending as a technique of demand management in federal nations. Since such techniques are seen by many economists as a potent source of inflation, it can be argued that federal arrangements have an in-built bias

against inflation.

The fact that Lijphart only tests for simple relationships, together, perhaps, with a reluctance to entertain the idea that not all aspects of consensus government may be so favourable to compassionate policy outcomes, probably explains why he fails to comment on what the literature suggests is the single most significant impact of federalism: its effect in reducing spending on the welfare state. Recent studies suggest that the combined effect of institutional arrangements such as federalism, presidentialism, bicameralism, referendum procedures and single-member constituencies is strongly and negatively associated with spending on social security transfers, total spending on welfare and government revenue as a percentage of GDP. Other research has shown that such institutional arrangements are also associated with gender inequality and lower expenditures on labour market programs.

The mechanisms which translate institutional constraints on central government into a lesser propensity for public spending follow more or less directly from differences in the rules by which federal and unitary politics are conducted. A major obstacle to new spending departures in federal systems are provisions for a particular division of powers between federal and state governments and the requirement of extraordinary majorities to alter those provisions. Another obstacle to spending initiatives in federal systems is the proliferation of political levers available to those who seek to frustrate the growth of the state. Federalism aids those who oppose the aggrandisement of central power, because it offers them so many institutional platforms — strong upper houses, state parliaments, processes of judicial review and referendum campaigns — from which to conduct their battles to preserve the status quo. It is sometimes argued that the diversity of federal jurisdictions allows for social and other kinds of experimentation to

occur in individual states prior to adoption more generally and at the federal level. There is no evidence, however, that the rate of reform innovation is higher in federal nations and it is certain that the possibility of individual states opting out of reform initiatives always leaves open the possibility of patchier, less universal adoption — a fatal flaw, when the object of the reform is to enhance supposedly equal rights of citizenship.

Locating the Australian experience in terms of Lijphart's analysis of the variety of democratic institutions helps us to understand the broader context of Australian public policy development.

The choice of democratic institutions rather than authoritarian ones confers major advantages both in terms of popular liberties and gains in material well-being. Democracy itself enhances the “quality” of political participation and produces a gentler, kinder sort of political system.

But, within the democratic context on which they were agreed, the Fathers of Federation also opted for institutional arrangements which, if this analysis is correct, limited the probability of a particular type: ones that were majoritarian on the “executive-parties” dimension and federal on the “federal-unitary” dimension. If the analysis here is correct, both were choices limiting the extent of public intervention to secure compassionate policy goals. This does not mean that politicians wanting to achieve such goals have always been on the losing side in Australian politics, but it does mean that they have often had to work against the grain of the system.

To say that institutions matter is not to say that the outcomes of the political process are predetermined.

Two avenues remain for reformist politicians with the necessary talents. One is to find a creative route around the road blocks provided by entrenched institutions. The other is to build the coalitions of popular support required to reshape the institutions that frustrate their policy goals. That institutions matter should not be an excuse for political inactivity, but rather a spur to more political creativity.

WHO WROTE IT?

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From the french window I walked out under a kind of pergola, covered in part by a climbing rose tree, in part by laths, one inch wide with half an inch of space between them. The sun was shining and the shadow of the laths made a zebra-like pattern on the ground and across the back of a garden chair, which was standing at this end of the pergola. That chair shall I ever forget it? Where the shadows fell on the canvas upholstery, stripes of a deep but glowing indigo alternated with stripes of an incandescence so intensely bright that it was hard to believe that they could be made of anything but blue fire. For what seemed an immensely long time I gazed without knowing, even without wishing to know what it was that confronted me. At any other time I would have seen a chair barred with alternate light and shade. The event was this succession of furnace-doors separated by gulfs of unfathomable gentian. It was inexpressibly wonderful, wonderful to the point, almost, of being terrifying. And suddenly I had an inkling of what it must feel like to be mad.

The first entry to identify the author of the above piece, drawn after the close of entries on Wednesday 20 September, will receive a \$30 voucher from University House. Entries should be emailed or sent to the Editor (see page 2 for contact details).

The Who Wrote It? of 4 August was won by Robert Soria of the Mullard Space Science Laboratory, Dorking, UK. The text was from *Wuthering Heights* by Emily Bronte.

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E&D launches online course

By VICKI RAM*

The ANU's Equity and Diversity Unit (E&D) has purchased a new on-line training program for all staff.

The program runs for three hours with a test at the end, and gives users a better understanding of their rights and responsibilities in the workplace. It also covers current laws and the University's equal opportunity policies and procedures.

Robin Austin from E&D described the program as “exciting and easily accessible”. It is self paced and interactive, and E&D believe most people will finish the entire program within three months.

Participants will work through case studies, answer questions, learn about relevant legal terms and test their knowledge.

Once a satisfactory score has been achieved participants will be given a certificate. This can be used in both work and performance reviews and promotions processes.

“The ANU is the first university to take up such an efficient and current software package with the University of Sydney, UNSW, UTS and UWS following suit,” Ms Austin said.

The program will not replace any current equal opportunity program. Instead it will complement the existing work of the E&D unit.

“The goal posts have changed in regards to what an organisation needs to do to prevent and educate about harassment,” Ms Austin said.

“When more people are aware of their legal and workplace obligations we expect to receive fewer complaints about workplace discrimination.”

Sexual harassment contact officers and E&D Consultative Group are currently using the training program.

Staff who wish to access the training should contact the equity unit.

*Vicki Ram is a student at the Canberra Institute of Technology.

Evolving role in the welfare of the ANU's students

The ANU was the first Australian university to appoint a Dean of Students. The post was created in the mid-1960s following a review of student welfare by a committee appointed by the ANU Council and chaired by one of its members, Mr B. W. Hone. The Hone Committee also recommended the establishment of a permanent counselling centre, a student health service, and a financial assistance scheme for students.

It was proposed that the Dean of Students "should be the Vice-Chancellor's delegate" with respect to: the "coordinated functioning and development" of the new counselling and health services, and of university halls of residence; "responsible for maintaining liaison with student activities", such as the University Union, the students' associations,

and the University chaplains; for "matters pertaining to the welfare of undergraduate students"; and for "disciplinary matters with respect to undergraduates". The Dean was to be a member of both academic boards.

The responsibilities of the Dean of Students have evolved over the years in response to student demands and university requirements. The Dean continues to take a general overview of student welfare, including both the academic and personal welfare of undergraduate and postgraduate students. More specifically, the Dean nowadays serves as a student ombudsman, advising students regarding unresolved problems and grievances, and assisting students by providing information concerning university rules, regulations and procedures. Often, members of both the academic and general staff seek the Dean's advice on is-

suues relating to particular student problems.

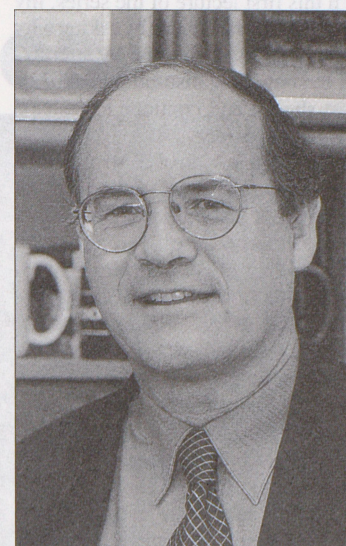
In recent years the Dean's role as ombudsman has been elevated as students' requests for assistance have multiplied. The Office of the Dean of Students has become more formalised, with permanent office accommodation provided in the Chancery Annex. Annual Reports to Council are now prepared and statistical information relating to student requests for assistance are collected and reproduced for the benefit of the University community. A Dean of Students web page has been developed and information about the functions and responsibilities of the Dean of Students is distributed through university and student publications. And the Dean reports to the Deputy Vice-Chancellor every fortnight on current student issues.

As well as serving as an ombuds-

man to students, the Dean is a member of several committees, including the Board of the Faculties and its Steering Committee, the Committee of Deans and Directors, the University Teaching and Learning Committee, the Admissions Committee, the Academic Progress Appeals Committee, and Chairs the Educational Services Advisory Committee, the University Awards Committee, and the Undergraduate Handbook Committee.

Frequent contact is made with the Directors of Student Administration and Support Services and Student Recruitment and International Education.

Regular meetings are held with the Presidents of the ANU Students Association, the Postgraduate and Research Students Association, and the International Students Society of the ANU. The Dean is also Adviser



to the ANU Chapter of the Golden Key National Honour Society.
Selwyn Cornish
Dean of Students

Ombudsman duties increasing for Dean

Deans of Students in Australian universities have an increasing role not only in ensuring student welfare, but also in advising their institutions on student-related matters, ANU Dean of Students, Selwyn Cornish said.

Mr Cornish, who recently attended a meeting with other Deans of Students from Australian Universities, said the role was not just one of an ombudsman responding to students' complaints.

He said that, although most Australian universities now had someone doing an ombudsman's duties, in many cases the role was semi-official or had no official title.

"Roughly half the people doing my job are called Student Ombudsmen and half are Deans of Students. The roles are not necessarily exactly the same, I think there is overlap but I think generally the Student Ombudsman is a narrower role.

"Their responsibility is, primarily, to assist students with grievances and problems that they have. That is a key function of the Dean of Students, but generally the Dean of Students has a broader role. For example they are on academic boards, so it is an advisory role to the university on student matters."

Mr Cornish said the role of the ANU's Dean of Students had changed dramatically from its original brief.

"When the position was set up in the mid-60s, the Dean of Students was meant to have responsibility for the counselling service, health service and other student support services. Somewhere along the line that dropped out. Responsibility for those services now falls to the Director of Student Administration and Support Services.

"I think it probably got too big and the purely administrative details, staffing and appointments, was too much for a Dean of Students who is only in a 50 per cent time position.

"Also, interestingly, the Dean of Students had responsibility for the University halls of residence and that dropped out too. I think the heads of halls probably wanted to chair their own committees and that is understandable."

As Dean of Students at the ANU,

Mr Cornish is also involved in many advisory roles and been involved in reviews of most of the student support services. He is also chair of the Education Services Advisory Committee (ESAC), which includes the Director of Student Administration and Support Services, Student Recruitment and International Education, academic representatives of the Faculties, Institute of Advanced Studies and Institute of the Arts, heads of the student support services and student representatives.

Mr Cornish said a survey of first-year students conducted by the Centre for Educational Development and Academic Methods and supported by ESAC, had yielded some interesting responses about the transition to university. ESAC will be working through some of those issues in the near future.

He said it was apparent from discussions with similar office holders in other universities, that there were similar problems facing students around the country.

"We've just set up a national organisation [of Deans of Students and Student Ombudsmen]. It's not done in a grand manner because there are only 20 or so of us, but it is a mechanism for us to get together every two or three years and discuss issues of mutual concern."

This year Mr Cornish also attended an international conference in San Francisco of more than 400 ombudsmen from throughout the world, including several from Australia. He said there were many similarities between the University ombudsman role and those in government or the private sector but also significant differences. One of the major differences was in the authority that their respective recommendations carried. Mr Cornish said government and private sector ombudsmen often made recommendations or rulings that were widely reported and hard for governments or industry to ignore.

"Our recommendations are really advisory recommendations, we don't have any real power. It is only through our personal persuasion."

SEAN DALY

Golden Key tree project growing in importance

By SIMON NASH*

Dryland salinity and soil degradation are two of the biggest and most dire environmental problems facing Australia.

Recently students and staff from the ANU assisted Greening Australia in its battle against these problems by taking part in a national day of tree planting.

The "Plant a Tree" event is organised jointly by Greening Australia and the Golden Key Honour Society and takes place on the last Sunday in August every year at Universities across Australia.

This year's tree planting aided the work Greening Australia has been undertaking in the Gunning-Gundaroo region northeast of Canberra on a property located at Belmont Forest.

"Greening Australia has been working in the area to rehabilitate an erosion gully showing signs of salinity, by using a variety of tree species established as forestry trials," Brian Cumberland, Program Manager for Greening Australia ACT and southeast New South Wales, said.

Prior to the tree planting Greening Australia had already planted 1,800 trees in the area and had about 800 to go to complete the task.

"Anyone interested in the potential for productively utilising a disaster area would be impressed with developments so far," Mr Cumberland said.

On the day about 400 trees were planted with the remaining to be planted on another tree planting day which will be held in early October — just after the Semester break.

The trees planted on the day contributed towards the realisation of Greening Australia's vision of developing a sustainable resource for the Gunning and Gundaroo communities, which could support a local furniture industry in the area in years to come.

*Simon Nash is a member of the ANU Chapter of Golden Key.



Green day: ANU Chapter Vice-President, Emma O'Brien, does her bit for the environment.

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Golden Key chapter continues to win international recognition

Awards to recognise campus life

The Australian National University's Golden Key chapter has become the most awarded in southeast Asia, after collecting two more awards at this year's international Golden Key Convention in Los Angeles.

The international scholarship program began as an honour society in the US in 1977. It involves students who place in the top 15 per cent of their course, encouraging them to do volunteer work on campus and in the community.

In just six years, the ANU has registered close to 1,500 members who undertake voluntary tutoring programs and are involved in organisations such as Amnesty International.

This year, the ANU received the inaugural Asia Pacific Golden Key Award from a field of 22 chapters in Australia, Malaysia and New Zealand. The University also won another honourable mention in the Key Chapter award.

ANU Dean of Students, Selwyn Cornish, said the chapter had a remarkable record.

"Although the University is the smallest chapter in the Asia Pacific region, it continues to collect the most Golden Key awards," he said.

"The program expands the horizons of promising students because it unlocks opportunities. Through volunteer work, students learn some things they would not experience in the classroom."

ANU anthropology student Zoe Greenwood, the recipient of the 2000 Asia-Pacific Golden Key Scholar Award, joined students from around the world at the awards in LA from 3-6 August. Ms Greenwood collected the scholarship worth US\$10,000 (AU\$15,900).

Ms Greenwood, a first-class



Photos: ANU Golden Key chapter

Golden moments: Images of recent club activities. Above, delegates to the Golden Key Asia Pacific Conference in front of Parliament House last February. The conference was hosted by the ANU chapter. Right, Golden Key members work as guides for last year's Open Day.



honours student, was selected as an Australian Youth Ambassador under the federal government's program, and has worked in Cambodia for the past 12 months on an aid project. The focus of Ms Greenwood's volunteer work was an HIV/AIDS awareness project with CARE Australia.

LOREN HACKETT

Dean recalls 'baptism of fire' as University Marshall

Current Dean of Students, Selwyn Cornish, is also the University Marshall, under an arrangement begun about four years ago.

"As Dean of Students it has been important for me to attend all graduation ceremonies, which I have done, and when the previous Marshall retired from the University and they were looking for another Marshall, somebody said: 'Well, you come to all the ceremonies, you may as well do something other than just sit there and clap.' So that is how it began," Mr Cornish recalled.

However, his first official graduation ceremony as Marshall was far from normal.

"The first time I did it actually was the 50th Anniversary ceremony, which was a baptism of fire for me because the students ran down and stopped the ceremony. I think it was about government funding cuts. All Australian Vice-Chancellors, and several Chancellors were there and the Prime Minister had been invited but had pulled out at the last moment and [then Education Minister] Amanda Vanstone was there, so it was a big occasion.

"The ceremony was under way and things were going along quite smoothly when suddenly the top doors of Llewellyn Hall were flung

open and a group of students raced down the steps shouting — it took about 10 minutes to get it back to normal."

As Dean of Students, Mr Cornish has seen his fair share of conferring ceremonies.

"Since I have been Dean of Students I have probably attended over 60 consecutive graduation ceremonies. Those ceremonies are very important for the students and their families, partners and so on and I think the University puts on a pretty good show actually.

"From a Dean of Students point of view it is important to be there when students are leaving the University. I officially welcome them to the University with the Vice-Chancellor so it is important to be there at the beginning and important to be there at the end as well."

As Marshall at the conferring of degrees ceremonies, Mr Cornish's main duty is to assemble the Chancellor's party, make sure that they are in the procession and that they are in the right position. He also ensures that they are fully briefed on where they are sitting so there is no confusion when the procession reaches the stage. He leads the procession into the hall and up to the stage and leads everyone off after the

ceremony has finished.

"I also seem to sit next to the speaker; I'm not sure if this is to hold their hand or just make sure they know when they are supposed to talk."

During conferring of honorary degrees, the Marshall sits beside the receiver of the degree — a position that sometimes requires a little tact and diplomacy.

"Particularly with honorary conferrings, it is a bit tricky because what happens is the orator says lots of good things about what the person has done and so on, and the honorary graduand at that stage has to stand while the orator is going through this. Sometimes there is a bit of confusion and the person doesn't know to stand and you have to whisper: 'You need to get up, now'. There is also a bit of confusion sometimes about at what point they have to walk around and stand in front of the Chancellor to receive their degree."

Mr Cornish is not expecting any of these problems at next week's special conferring for former South African President Nelson Mandela.

"He is pretty used to doing these things so, even if he is not sure exactly what to do, he won't be in a position where he panics."



All dressed up: Dean of Students, Selwyn Cornish, in the robes he wears as Marshall at Conferring of Degrees ceremonies.

Fenner warns of smallpox weapons threat

The man who played an important role in the worldwide eradication of the deadly disease Smallpox, ANU's Professor Frank Fenner, has been recognised with an international award for his pioneering work in the field of viruses.

The "Albert Einstein World Award for Science" presented by the World Cultural Council, an international organisation based in Mexico, was created as a means of recognition, and as an incentive to scientific and technological research and development. It takes into special consideration those researchers who have brought true benefit and well-being to mankind. The recipient of the award is elected by the Interdisciplinary Committee, made up of world-renowned scientists. The award consists of a diploma, a commemorative medal, and US\$10,000.

The Council presents three awards: science ("Albert Einstein" Award); education, ("José Vasconcelos" Award) and art, ("Leonardo da Vinci" Award). Only the award for science is presented every year.

Prof Fenner will receive his award at a presentation ceremony in Johannesburg on 1 November 2000 and will be accompanied by his daughter. He has been asked to talk to students at the University of Witwatersrand.

Prof Fenner said he was looking forward to visiting South Africa again. "The last time I was there was in the late 1970s, where I spent two weeks travelling around to make sure

As Emeritus Professor Frank Fenner prepares to receive another international award for his work to eradicate smallpox, he talks to **Teresa Belcher** about the renewed threat of the disease.

that smallpox had been eradicated," he said.

Over the past few years, there has been considerable debate about the two remaining collections of samples of smallpox virus — held in medical facilities in Atlanta, USA and Koltsovo, in the Russian Federation. The last recorded case of smallpox was in 1977 in Somalia, although in 1978, escape from a lab in Britain led to the death of a photographer and the establishment of strict worldwide controls on the storage of the remaining samples of smallpox virus.

In December last year Prof Fenner attended a four-day conference at the World Health Organisation in Geneva, held after US President Bill Clinton reversed the decision for the destruction of the smallpox samples at a meeting of the World Health Assembly in May.

"There had been rumours that the Russians were developing a smallpox virus for biological warfare on a large scale," Prof Fenner said. "The Assembly agreed to defer the sample destruction until 2002, to give the time for the US to try out drugs against smallpox.

"I believe the formal destruction of the remaining samples will emphasise the sort of condemnation the whole world would have if someone used such biological warfare."

Prof Fenner warned that such a

biological weapon would be very dangerous because smallpox vaccination ceased in the 1980s. "Mortality would be 25 per cent in unvaccinated people," he said. "However, if biological warfare with smallpox virus were contemplated we would get warning because there would be a need to vaccinate troops who would need to deploy the virus."

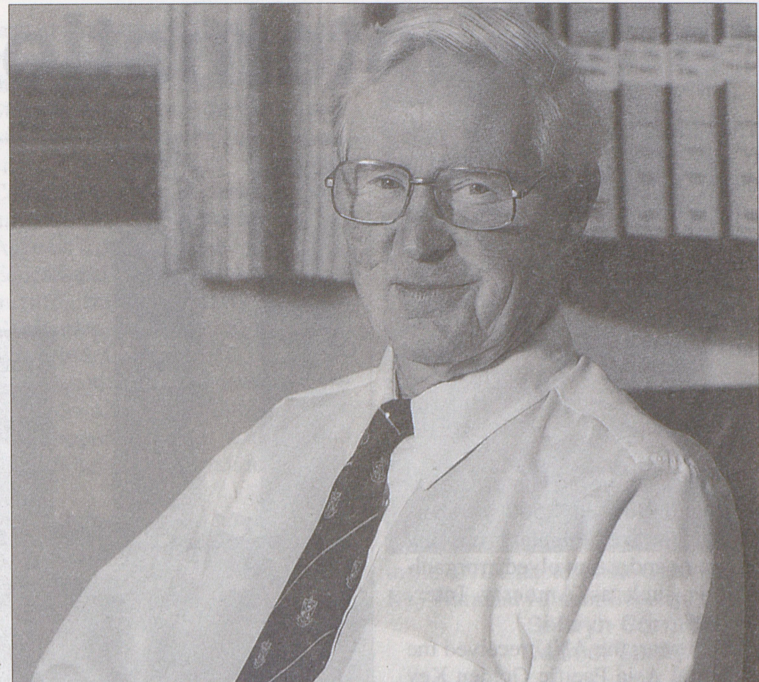
"It would need a good deal of sophistication to undertake such an attack," Prof Fenner said. "However, clever people can do silly things."

Prof Fenner was the founding Professor of Microbiology at the John Curtin School of Medical Research (JCSMR) and was Director of JCSMR from 1967 to 1973.

During the 1950s he worked on the rabbit disease, myxomatosis — then in epidemic proportions throughout Australia — and traced the effect of the myxoma virus on the wild rabbit population.

"Myxomatosis was a wonderful natural experiment, but myxoma virus, which is a pox virus, was difficult to study in the lab, and I wanted to work out the basis of virulence. So I turned to the "model" pox virus, Jenner's vaccinia virus, and from 1956 worked on vaccinia virus genetics side by side with the work on myxomatosis."

As a result, in 1969 Prof Fenner was invited to join a WHO expert panel on pox viruses and was ap-



Frank talker: Prof Fenner wants the last smallpox samples destroyed.

pointed as adviser and then chair of the Global Commission for the Certification of Smallpox Eradication.

Prof Fenner and his colleagues' work on smallpox led to the official declaration of its eradication at the World Health Assembly in 1980. This is still regarded as the greatest achievement in international public health.

In 1973, Prof Fenner sidestepped his medical career to become the first Director of the ANU's Centre for Resource and Environmental Science (CRES). Prof Fenner stayed at CRES until his official retirement in 1979,

when he returned to JCSMR as a University Fellow for three years and then as a Visiting Fellow, where the 85-year old is still a regular in the labs.

Since his retirement he has spent most of his time writing, completing a number of history books including: a history of the eradication of smallpox; the story of microbiology in Australia; a history of the Australian Academy of Science; and in 1999 a history of myxomatosis. He is currently working with Professor David Curtis on a history of the JCSMR.

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BACKPACK: North Face, purple/black/green, used one, \$150.00; contact Ines on 0417 029 939 work or home.

FORD LASER: 1989 immaculate condition, \$5250; contact Nicki Bramley on 6249 5112 work or 6262 7382 home.

TELEVISION: colour TV set — AKAI, 40 cm screen w.remote, used one year, \$250.00; contact Ines on 0417 029 939

CAPE: blue, pure wool, fully lined; two different hoods, snazzy neck clasp. Worn once. Cost \$330; now \$230; contact Barbara Dawson on 6249 2676 work or 6254 4761 home.

PRINTER: Fujitsu DL1100 dot matrix printer. Colour & mono cartridges. Box of continuous paper., \$50.00; contact Glennis Tranent on 62494000 work or 62555773 home.

MACINTOSH: LC475 computer, colour monitor, and laser printer., \$600 ono; contact Tom on 6208 5141 work or 6253 9964 home.

SHELVES: Storage shelves / book shelves, 12 units, galvanised steel, \$90 the lot; contact Tom on 6208 5141 work or 6253 9964 home.

ACADEMIC GOWN: black, vgc, \$50; contact Peter D. Cooper on work or 6291-8670 home.

POLAROID: instant camera \$40, Peter 6291-8670, \$40; contact Peter D. Cooper on work or 6291-8670 home.

BICYCLES: (mens) \$60, Bicycle(woman) \$50, all in good conditions, contact Teddy on 0401322632 work or 62628194 home.

BEDS: 2 single beds+mattresses in good conditions

\$50 ea. and 1 biro desk \$30, neg.; contact Teddy on 0401322632 work or 62628194 home.

CHAIRS: 1 set of chairs (4), washing machine (working), \$15; contact Teddy on 0401322632 work or 62628194 home.

COOKTOP: Electric Simpson glass with four cooking plates, excellent condition. Inner cutout 86cm x 35cm, outer 93cm x 44.5cm, \$280.00; contact Tanya on 0417 218304 work or 6287 7742 home.

TOYTA: Corona 1986. Mechanically excellent., \$3,000 ono; contact Sue Todd on 6249 2442 work or 6241 8534 home.

MICROBUS: VW 1975 Kombi microbus 1600 engine, registered, \$2800 ono; contact Mark Helmers on 6247 6910 work or 6247 6910 home.

MAGNA: Mitsubishi Magna SE 1986, Automatic, Power Steering, AC, 210,000 Km, One Owner, \$2,200 ono; contact Mrs Rashmi Jain on Mb: 0412-636 045 work or 6258 2536 home.

FILING CABINET: 3 drs, one filing drawer, \$35 pb 6247 8868 Karen, \$35; contact Karen on 6247 8868 work or 6247 8868 home.

BREAD MAKER: still in box \$95pb 6247 8868 Karen, \$95; contact Karen on work or 6247 8868 home.

MITSUBISHI SIGMA: 1985 Rego 11 months, good condition low Ks, powersteering, airconditioning, \$2500 ONO; contact Julie Manley on 6249 2742 work or 6257 1752 home.

MATTRESS: queen size, orthopedic, excellent condition and wooden base, \$200; contact Siggi on 62492647 work or 62815770 home.

RADIO/CASSETTE PLAYER: \$40; contact Siggi on 62492647 work or 62815770 home.

TOYOTA: Corona stn wagon, auto, mechanically excellent, \$3000 ono; contact sue todd on 6249 2442 work or 6241 8534 home.

PRINTER: Canon 255SP Colour Bubble Jet for PC, as new, \$75; contact Tom on 62539964.

WANTED TO BUY

PLAYMOBIL TOYS: Contact Helen on 6249 5462 work or home.

PAVERS AND TILES: Zen Oxygenator machine; aerofit exerciser ; Contact Karen on 6247 8868.

CASSETTE: for taping lectures, Pavers and tiles, Bike lock; Contact Karen on 6247 8868.

REELS: 4" diameter fortaperacorder; Contact C. Fadden on work or canenglish@hotmail.com

TAPE RECORDER: with speed control (slow); Contact C. Fadden on work or canenglish@hotmail.com

TO LET

O'CONNOR: Sunny 3 bedroom home close to ANU, civic. Carport, big yard., \$225pw. Contact Adam Michael

on 62798291 work or 62477730 home.

CHIFLEY: u/f Room in a furnished 2br/t/hse, BIR, own b/r, opposite woden plaza, \$72.50. Contact Raja on 62465328 work or 62604401 or 0416033307 home.

BRADDON: "The Fullerton" - new 2br ensuite unit to share with 1 female. Great heating, secure car space, 10 min walk to ANU., \$120 pw. Contact Sally Cowling on 6277 3883 work or 6257 0971 home.

DOWNER: 4 Bdr, ensuite, plus study. Gas central heating, Dbl Carport., \$395. Contact BRIAN O'MALLEY on 6241 7031 home.

O'CONNOR: within walking distance to ANU : house with garden, one or two persons to share; negotiable. Contact Susan on 6247 8868.

WANTED TO LET

LIBRARIAN: from University of Adelaide seeks furnished house/apartment within walking or cycling distance of the National Library during period of fellowship at National Library, February-May 2000, to \$300/week. Contact Susan Woodburn (email susan.woodburn@adelaide.edu.au on 08 8303 5224 work or 08 8223 4108 home.

INNER NORTH/LYNEHAM/GIRALANG: NZ visitor Oct-April ff 3 B'room Sabbatical visitor , 150-250/week. Contact Rod King on 62465235.

CLOSE TO ANU: Belconnen; Dickson or Civic; Fully furnished room. PhD mature migrant student, quiet and very polite., \$95/week. Contact Dino (d.camacho@student.canberra.edu.au) on 6201 5782 work or 6257 2198 home.

NOTICES

BOOKFAIR: Lifeline Spring Bookfair 13th 14th 15th October. 80,000 pre loved books for sale. Coorong Pavilion Exhibition Park, Mitchell. from 10am daily; contact Ric Bennett on 6247 0655.

MI TIERRA: Latin band will be playing for the grand opening of the Salsa Tango Social Club on Sat. 9 Sept. 8 - 12 midnight in the Polish Club, David St. Opp. O' Connor Shops. Four hours of exciting dancing in a friendly environment, \$10.

REAL ESTATE FOR SALE

MOSSY POINT: NSW: 3 bed + loft, garage + dble cl'port, full length verandahs, large bush block, short stroll to beach & Tomaga river, 135,000.00 neg. Contact Ian Armstrong on 6243 3186 work or 6241 6897 home.

SERVICES REQUIRED

CLEANER: Reliable and enthusiastic cleaner required for family house in Narrabundah, four hours or more per week.; contact Helen Watchirs on 6249 5462

HOLIDAY RENTALS

WINDSOR: Historic Windsor area, short distance to Olympics, fully self-contained unit accommodates 4-5 people, bush setting. From \$75 per night. Ph 02 4579 9297 (ah).

AVOCA BEACH: Modern 2-bedroom unit, 30 seconds from surf, sleeps 4-6; Contact Tony Adams on 6249 5616 work or 6288 5065 home.

BAWLEY POINT: Holiday cottage, secluded bush setting, short walk to beach; Contact Pat Walker on 6251 3136 home.

BEACH COTTAGE: Rosedale, NSW, with sea views, native bush, verandah, 2-bd, sc, sleeps 4, non-smokers only; Contact Roma Fisher on 6295 9067.

BROULEE HEADLANDS: Studio + two bedrooms, 2 baths, sleeps 8. Bush and garden setting, secluded; Contact Kate Jacobs on (02) 6943 2551.

LONG BEACH: Holiday house, easy access to beach, sleeps 6, \$250-\$400/wk seasonal; Contact Gillian Malbon on 6288 4998 work or 6249 4617 home.

MALUA BAY: 2 Bedrooms, 5 minutes from beach and shops, \$450/wk; Contact John on 6241 9971 home.

MYSTERY BAY: Narooma/Tilba region, 2-storey house, close to beach, beside National Park, 3br/2 bath, Dec-Jan, \$550/wk, other times \$375/wk; Contact 6251 1467.

SOUTH DURRAS: Two-storey beachfront house, sleeps 7, walks to Murrarung National Park, Durras Lake, State Forest; Contact Leonie on 6249 3533 work or 6241 6801 home.

SURF BEACH: Unit 11 Breakaway Lodge, right on beach, great views; Contact Wendy and Dave on 6249 4460 work or (02) 4471 3522 home.

SERVICES

INDEXING: Need your thesis, monograph or website indexed, proofread or edited?; contact Unwin Editorial <sunwin@vtown.com.au> on 6294 2039.

SANSKRIT: Learn 'the Language of Nature' for pleasure and profit. Tuition available on campus, Wed. lunchtimes. Experienced tutor. Satisfaction guaranteed. Novices welcome.; contact McComas on 6247 6315 (home).

SPANISH: conversation group. Meets Tuesdays, 5:30-7pm, Univ. house cellar bar, all levels welcome.; contact Maribelle Young; email: Maribelle.Young@anu.edu.au on 6249-5943

CHINESE TUTOR: Native Chinese speaker, standard Mandarin and other dialects. Offer help for native English speakers with oral/writing, assignment and Chinese culture (classical literature and Beijing Opera). It's free! Contact Lei Luo on <luolei@hotmail.com> or 62674573.

SAVE MONEY: The secrets to Saving Money in Canberra revealed! For more information, contact Fiona Lipsey Miser Extraordinaire on <canberrasavings@bigpond.com>.

SPEECHCRAFT: Training Course: For more information, contact Yvonne Heslop on 6249 3787.

HOUSE CLEANING: Trustworthy, efficient, professional cleaner with 20 years experience. Phone Haydee's Cleaning Service on 0413732961.

ACTOR TRAINING: Enhance creativity, career, charisma through intuition. Spolin techniques; adult workshops; individual coaching; corporate training; Contact Margaret Forster on 6249 2278.

RESUMES: Get results! Fast, accurate, with impact. Reasonable rates; Contact Sue Kennedy on 6287 1390.

ENGLISH LANGUAGE TUTORING: Improve your English language skills, gain help with oral and written English, essay and report preparation; Contact Evan Roche on 6278 6085 work.

STATS AND COMMERCE TUTOR: Tutor in STATS1006 and COMM 1010, private and group tutoring, experienced tutor; Contact 6267 4371 home or email <s3194444@student.anu.edu.au>.

RUSSIAN TUTOR: Russian native speaker, editing and assignments (Russian software available), instruction and assistance for visiting Russia; Contact Leonid A. Petrov on email: <petrov@coombs.anu.edu.au> or 6249 3172 work or 6230 1610 home.

FRENCH TUTOR: Conversation and writing, individual or group, rates negotiable. Email <s3194444@student.anu.edu.au> or phone 6267 4371 work.

HINDI AND BENGALI TUTOR: Conversation and writing, individual or group, rate negotiable; Contact Farah T. Khan on email: <ft_khan@hotmail.com> or 6257 4553.

EDITING/TYPING/WORD PROCESSING: Fast, accurate typing services available at reasonable rates, editing and proof-reading services also available. Contact Jillian Green on email: <jilliangreen@hotmail.com> or 0404 887 297 (message bank) mobile.

EDITING/PROOFREADING: Contact Lisa Curtin on 0408 650 765 mobile or email <lisac@tekn.net.au>.

IS YOUR CHILD DYSLEXIC? Experienced, specialised tutoring for primary and secondary children who have persistent difficulties with reading, spelling and writing, personal references for satisfied parents available. Contact Penny Mullbacher on 6282 1770 work.

LATIN AMERICAN SPANISH CLASSES: Conversation and writing, individual or group lessons by Argentinian native; Contact Mariana di Tada on email <mliditada@hotmail.com> or 6284 7471 home.

SPANISH TUTOR: Individual tutoring and conversation classes, rates negotiable; Contact Ana L. Galvez on email <agalvez@hotmail.com> or 6279 9070 work.