The Shell Questacon Science Circus doesn't feature clowns, elephants and trapeze artists. It does, however, offer "magic" shows, educational exhibits and tremendous enjoyment for children and adults alike.

Questacon is the National Science and Technology Centre in Canberra and is a joint Australia and Japan Bicentennial project. Established by Dr Mike Gore, from the Australian National University's Department of Physics, it was Australia's first "hands-on" Science Centre. The University of Newcastle's Associate Professor Tim Roberts set-up Super­nova four years after the establishment of Questacon, making it Australia's second "hands-on" Science Centre. Since then, similar science centres have been established in nearly every capital city of Australia.

Once Questacon was established, Dr Gore dreamed of taking his show on-the-road. He went about miniaturising the exhibits and bought a semi-trailer to carry the now travelling Science Centre, or "Science Circus", as it is now known.

In order to function, however, the circus needs "explainers", trained staff to present science shows and assist visitors in optimising their understanding of the "hands-on" exhibits.

A one-year Graduate Diploma in Scientific Communication has thus been introduced by the National Science and Technology Centre and the Australian National University. Competition for entry into the Diploma course is tough.

According to Professor Roberts, a chemistry graduate from this University was one of the first "explainers" to join the Science Circus. "That girl is now the Deputy Director of a Science Centre in South Australia, called The Investigator." As far as Professor Roberts knows, she is the only Newcastle graduate to have worked with the Science Circus.

Efforts are underway to change that and a meeting was held on May 22 at this University for all science students interested in the Science Circus. The lunch-time meeting was, in itself, an extraordinary event, bringing together for the first time, the four science student societies - Biology, Chemistry, Geology and Physics. The 38 students who attended were treated to a stimulating talk with questions from two 1992 scholars Kate Langford and Adam Sellinger.

Working with the Science Circus will offer a challenge to anyone wanting to test their initiative, challenge their creativity and extend their horizons. Professor Roberts is of the opinion that it is very much for people who are good communicators.

"Scholars encounter many and varied challenges throughout the year. An informal atmosphere is maintained and it is important that scholars remain flexible and be committed to maximising their communication experiences," Professor Roberts said.

During the 12 months, scholars undertake coursework in Canberra which covers topics such as social research techniques, survey design, statistical analysis, media studies, presentation skills and preparation of a science show. Scholars also spend 18 weeks on tour with the Science Circus - an intensive and stimulating learning experience.

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The Shell Questacon Science Circus tours different regional centres of Australia for 18 weeks each year. The 1991 Science Circus toured the Gippsland and Pilbara regions, south-east Queensland, the western satellite cities of Sydney and northern New South Wales.

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DEMAND FOR UNI PLACES STILL STRONG

Demand for an undergraduate place at an Australian university is still running strongly, the Australian Vice-Chancellors' Committee has announced, despite the Federal Government funding about 5,000 additional places in 1992.

In issuing its 1992 Survey of Applicants for Undergraduate Higher Education Courses, AVCC President, Professor Ken McKinnon, said it had been estimated that between 34,000 and 49,700 eligible applicants failed to gain a place at university.

In 1991, the range was 19,700 and 29,100 - which was an increase of more than 40 per cent in the 'unmet demand' figure of 1990.

"Demand continues to grow," Professor McKinnon said. "This is a result of more students aspiring to a university education, tight economic circumstances making university education more attractive to increase later employability and a downturn in the number of first-year places available in 1992, due to the 1991 over-enrolment 'pipeline' effect and increased retention rates in later university years.

Professor McKinnon said the AVCC was not calling on the Federal Government to fund places for all applicants.

"The AVCC believes that the Australian university system should be allowed to continue to grow at a steady rate. It would be impossible to meet all 'unmet demand' without creating additional universities, which in turn would require massive capital investment - unlikely in the current economic situation."

Professor McKinnon said the AVCC was sympathetic to those who have missed out on a place at university this year - particularly those who have repeated courses after failing to gain places in previous years.

"Competition for places has increased markedly, with higher entrance scores being demanded by many universities. It is unlikely this situation will ease in the short term as the over-enrolment of 1991 has yet to work its way out of the system."

"However, the Federal Government has enhanced the Technical and Further Education sector, and the AVCC supports this provided it is not to the detriment of the Australian university system. Many students who missed out on university this year will find their vocation through TAFE."

Professor McKinnon said the AVCC survey methodology was endorsed by the Department of Employment, Education and Training and had been conducted annually for many years. The data was collected from tertiary admission centres and institutions and covered all rounds of offers of places made by the end of March 1992.

The survey was conservatively based, with strong discounting for factors such as Multi-State applications by some students and elimination of 'narrow' applications, where students applied only for a specific course at a particular institution.

Professor McKinnon said that on a State basis 'unmet demand' was greatest in Victoria (13,000 to 18,700) and Queensland (9,700 to 14,200), consistent with 1991 results.

In Victoria, between 22.2 per cent and 32 per cent of eligible applicants failed to gain a place. In Queensland, the range was between 17.1 per cent and 25.1 per cent.

All States registered increases in the absolute number of eligible applicants and those not receiving an offer.

1992 SRC President Elected

Twenty year-old Tina Bubutievski has been elected the 1992 Student Representative Council President, having been an active member of the SRC for the past two years.

Tina's association with the SRC started in 1990 when she held the position of Economics Representative. In 1991 Tina, having had a taste of the activities of the SRC, was elected Social Action Officer. Later that year she became Vice-President and in 1992 won the position of Presidency.

Tina's ambition was clear.

"It was suggested 18 months ago that I was going to be President and have been working towards that goal ever since," she said.

Tina gave up full-time study this year in an effort to carry out her role as President more effectively, however, will continue with third year economics on a part-time basis.

As President, Tina is spokesperson of the Students' Association and will concentrate her efforts on both student and community matters. She is available for individual student consultation at anytime, regarding matters of, for example, unfair treatment.

"We can support a student's case by throwing the weight of the SRC behind them," she said.

Tina will be focussing on special projects such as bus routes and train lines to the University - both hot issues at present. She is also interested in lobbying for extra child care places on campus for students of the University. Of particular importance, she says, is that child care facilities are kept open longer, so that part-time students attending evening lectures are able to make full use of the facilities.

Tina, who knows the difficulties experienced by students trying to make ends meet whilst living on a meagre AUSTUDY income, will also be dealing with issues surrounding student allowances.

"I think that the AUSTUDY independent age should be dropped to 18 and that the amount of money able to be earned be increased to $8,000 before students lose any of their AUSTUDY benefits," she said.

"AUSTUDY should be increased to at least the level of the Unemployment Benefit. At present, the minimum level of the dole is higher than the maximum benefit provided by AUSTUDY," she added.

The 1992 SRC Executive is:

President, Tina Bubutievski; Vice-President, Andrew Plunkett; Treasurer, Derek Bromley; Honorary Secretary, Sarah Johnson; Education Officer, Greg Baines; Clubs & Societies, Wayne McCrea and Media Officers, Linda Drummond, Matt Cantrill and Michael Jameson.

The SRC Office is located in the Shortland Union and the telephone numbers are 68 1281 and 21 6006.
Professor Brian English, speaking on behalf of the Vice-Chancellor, Professor Keith Morgan, issued an official University welcome to Senores Manuel Montero and Agustin Lopez of the Central Organisation of Cuban Trade Unions on Thursday morning, May 14.

Senor Montero and Senor Lopez, who is also the National Secretary of the Cuban Communications Workers Union, are part of an official Cuban delegation in Australia for five weeks. During that time delegation members will visit all States to speak to Politicians, Unions, Churches, Community Groups and at public meetings to explain conditions in Cuba today. They will also draw attention to the impact of the economic blockade on the people of Cuba.

An International Campaign to provide essential goods for Cuba is currently underway and is gaining considerable momentum, with more than 27 countries now involved in this humanitarian gesture. Already a French ship has reached Cuba, donating approximately 200 tons of printing supplies.

The Australian "Ship for Cuba" campaign has to date raised $20,000, of a target of $100,000 to purchase wheat flour and milk powder to be sent to Cuba.

Professor English, in welcoming Senores Montero and Lopez, said that the University is committed to promoting full and frank discussions about political, economic and social issues in Australia and overseas. He drew special attention to the opportunity provided by this visit for students to meet and to question people directly involved in political activity directed at bringing about social and economic change in another country, and to challenge and be challenged by these people.

During their visit to the University, the Cuban Trade Union officials conducted a seminar in the Faculty of Social Science on "Conditions in Cuba under the Economic Blockade" and addressed a public forum on the topic of "Health Care and Education in Cuba Today". They also met with interested groups and societies in the University.

Mental Health Nursing

Three members of the Department of Community Health Nursing have published a comprehensive and innovative book which they describe as a "guide for practice".

The book entitled, Mental Health Nursing, Strategies for Working with the Difficult Client, written by David Arthur, Jeff Dowling and Ron Sharkey, deals with difficult behaviours of patients as nominated by practising nurses.

"In an attempt to provide a book that could be used as a guide for practice, we asked practicing nurses, what they perceived as difficult behaviours."

The authors have organised the difficult behaviour types into "clusters" based on the similarity of management strategies.

"This provides a structure which is a practical and easily accessible guide to care," they said.

The book is intended for Nursing Bachelor and Diploma programs where mental health nursing is a compulsory stream, however the authors say that it is also useful for practicing nurses, social workers, community nurses, and rehabilitation workers.

According to the authors, the book is written with the general nurse in mind as much as the psychiatric specialist.

5th Meeting of the Australia-New Zealand Geomorphology Research Group

Approximately 150 delegates from every state and Territory in Australia, and New Zealand recently attended a Geomorphology Research Group meeting held at the beautiful Sea Acres Rainforest Centre in Port Macquarie.

Geomorphology is concerned with the study of landforms and landforming processes, and delegates discussed issues such as long-term control on river evolution; coastal evolution; river management; landforms of Australia; limestone landforms; the evolution, pollution and erosion of sediments and soils and the form, process and evolution of river styles.

The meeting proved to be extremely interesting for all delegates with much discussion on the above issues taking place.

The University of Newcastle was represented by Dr Garry Willgoose (Civil Engineering), Dr Colin Murray-Wallace (Geology), Professor Eric Colhoun, Associate Professor Robert Loughran, Ms Susan Curtis, Mr Damian Gore, Mr Michael Saynor and Mrs Barbara Whitelock (all associated with the Department of Geography), all of who presented papers at the meeting.

Ms Linda Peady, Mr Garry Worth and recent honours students, Mr David Edward and Mr Kevin Roberts, from the Department of Geography also contributed to the conference.

Geomorphology Research Group
THE UNPOPULAR CHILD’S VIEW OF ITS SOCIAL WORLD

A study conducted by Master of Psychology (Educational) graduate, Mark Toner, under the expert supervision of Dr Don Munro, has indicated that unpopular children are more likely to perceive their social world in a way that is self-defeating. The study examined children's thinking about interactions with their peers. The children’s thought patterns were related to their level of popularity, a reliable measure of a child's social adjustment.

The study focused upon children’s explanations (or attributions) for their social interactions (both successful and unsuccessful). A large amount of research has been undertaken to investigate children’s social thinking, however only a few studies have investigated the relationship between children’s social explanations (or attributions) and popularity.

“Earlier studies have suggested a relationship, however various problems in method cast doubt upon their findings,” Mark said.

Mark's study was designed to overcome the problems of the earlier studies. In addition to attributions, the extent to which children saw themselves as controlling social interactions, as well as their expectations for social success were assessed. These two factors, if related, are closely related to an individual’s attributions.

The 89 respondents for the study came from three Year Six classes in Hunter schools. Each respondent was taken through a structured 30-minute interview in which the respondent was presented with a series of 12 social scenarios.

“Half of the scenarios portrayed a social situation which involved the respondent receiving some form of acceptance or inclusion by peers, and the other half had outcomes which involved a social rebuff or humiliation of some sort,” Mark explained.

“For example: "Three girls you don’t know are talking about television shows. You try to tell them about a show you saw but they ignore you and another girl talks over the top of you."

After each scenario respondents were asked to rate whether the event happened because of something about themselves (internal), some other reason (external) or a combination of internal and external causes.

They also rated whether the reason for the event would persist (stable), change (unstable), or possibly change. Respondents then indicated the extent to which they saw themselves as having control of the outcome in that type of situation.

This rating was also made on a three-point scale (no control-some control-a lot of control). Finally, respondents were asked to come up with a reason (or reasons) for the particular social event.

The popularity of each student was measured by asking them which of their peers they would choose to “hang around with” and who they would “prefer not to hang around with”. Mark explained that the peer nominations were made in the privacy of the interview situation to avoid embarrassment to the more unpopular children. The respondents later filled out a questionnaire which assessed whether various social situations would have positive outcomes.

According to Mark, some very clear relationships were found. The clearest being that unpopular children tend not to take credit for positive social events, instead they attribute them to “external” factors. “In doing so they are apparently not ‘rewarding’ themselves for behaviour that brings about social success. “To make matters worse it seems that unpopular children are more likely to attribute negative events to themselves and to believe that the reasons for such events are persistent (or stable),” he said.

In addition, it was found that unpopular children are inclined to see themselves as not having much control of social situations. “It is therefore not surprising that they also have lower expectations for social success,” he added.

“Unpopular children appear to explain social events in a way which leads to both "helplessness" and "hopelessness" in social situations. Such negative thinking does not promote learning of good social skills and therefore tends to perpetuate unpopularity,” Mark said.

Previous research has linked childhood unpopularity with a greater risk of maladjustment later in life. Mark completed the Master of Psychology (Educational) at Newcastle University to become a school counsellor and graduated on May 8. He currently works as a school counsellor in the Campbelltown area in South-Western Sydney. School counsellors often work with students who are unpopular and who are having difficulties with their peer relationships.

Mark hopes that knowledge gained from his and other studies can be used to "develop programs which help change negative social thinking to thinking that helps children to become more socially adjusted".

RED POMPONS OF THE FRENCH NAVY ON CAMPUS

Mr Mike Connon and Dr Marie Ramsland from the Department of Modern Languages welcomes the French sailors to the campus.

The French Section of the Department of Modern Languages took full advantage of the presence in Newcastle Harbour of the Commandant Birot, a frigate of the French Navy. On April 27, several of the crew were welcomed in various French classes: both the students and the sailors were surprised to find how easily they could communicate. Real live people were found to be rather easier to understand than those on video and audio tapes that students are constantly exposed to. It is rumoured that informal communication became even more effective much later in the day.

During the vessel’s goodwill visit the Vice-Chancellor was included in a small group of civic leaders invited to lunch with the Captain. In the Vice-Chancellor’s absence Mr Connon,

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At the age of five, Otto Marchi, a well known Swiss author who recently visited the University's German Section, bored a hole through his world globe because he was told that Australia and New Zealand were on the other side of the world.

He believed that if he dug a hole in his back yard, and kept digging, he would eventually end up in Australia. Mr Marchi assured us however that he had arrived in Australia by air and without a shovel in hand. Once in Australia, his mission was clear. To inform the public about life in Switzerland in the 1990's.

In an extremely interesting and thought provoking lecture, Mr Marchi outlined the current political situation in his country, comparing this to the common belief that foreigners held about Switzerland.

"People know us for our yodeling, our cheese, chocolate and cuckoo clocks," he said. "But what is wrong with this view?" he asked.

Mr Marchi informed listeners that cuckoo clocks were made in Germany, however with all irony aside, said that foreigners had a somewhat idyllic view of life in Switzerland.

"Few scandals had hit world news and post-war Switzerland was seen to be a dream-land," he said.

However the harsh realities of life in Switzerland have now been revealed. During his lecture, entitled Melting Moments of a Chocolate Republic he vividly illustrated what life had really been like. The title of his lecture he says, was borrowed from a German newspaper, published during the 700th Anniversary Celebrations of Switzerland in August, last year.

Otto Marchi explained that politicians who had wanted to celebrate the Anniversary with great festivities. Few people came to the celebrations, which were, to a large extent, boycotted by academics and business communities.

How did this situation arise? Mr Marchi believes it was largely due to an identity crisis existing in Switzerland, the biggest identity crisis of the 20th century, he says.

An identity crisis which Otto Marchi believes to be due to three factors.

Firstly, the majority of the population had been shocked to find out about major political scandals which had taken place within Switzerland. The country was considered as peaceful and serene with its green undulating country, its cobble-stone streets and small villages and its superb alpine countryside.

"Idyllic indeed.

Secret police had, for the past 30 years, been "spying" on one fifth of the population, Mr Marchi told listeners. "That is almost 1 million people!" he said. Innocent people were held in suspicion for having left wing political views, for protesting against nuclear power or against the establishment of Military Training Camps on nature reserves. Even, Mr Marchi pointed out, for going on holidays to former Eastern Block countries. "They were all held under suspicion of being communist", he said.

A further shock came when people found out about a secret army which had existed in Switzerland, an army which, Mr Marchi said, had a huge arms store. Secret was the army, that even the government knew nothing of its existence (or so they said). Secret files were kept on anyone suspected of being a communist.

The second factor leading to the identity crisis was that for the first time in its 700 year history politicians have announced their wish to join the European Economic Community (EEC). This is of course, subject to a referendum, however according to Mr Marchi, a referendum now would result in a 60% "No" vote.

"People are scared to surrender their neutral stand. After all, neutrality saw them safely through two world wars," Mr Marchi said. "They are scared to give up their independence and scared that their 'political island' will be swamped," he explained.

With this sort of mind-set, it is hardly surprising that the symbol for Switzerland was (and, for some, still is) a hedgehog.

According to Mr Marchi, the Swiss people will be forced to change their views of the EEC. "They will have to accept that in economic terms, Switzerland has no choice but to join the EEC," he said.

The final reason for Switzerland's identity crisis came with the "collapse", on November 9, 1989, of the Berlin wall and the subsequent end of the Cold War. Suddenly, the reason for Switzerland's neutral and independent stance was gone.

"Enemy Number One of the western world, the USSR had disappeared," Mr Marchi said.

The fear associated with a communist Europe had been erased with the destruction of the wall. And with it, the post war ideology of Switzerland was crumbling also.

"The scandals previously considered illegal, are now considered to be laughable," Mr Marchi said.

"The glacier that was the cold war is now beginning to melt," he added.

With this, changes are taking place in Switzerland. "Like every crisis, this is also a time for change," Mr Marchi said optimistically, adding that new opportunities are now arising in Switzerland which simply were not possible 30 years ago.

Mr Marchi revealed a surprising fact that women in Switzerland did not obtain voting rights until 1971, nearly 60 years after Australian women obtained that right. Even more astounding is the fact that women in the Canton of Appenzell, were only given the right to vote last year! "Just imagine," Mr Marchi said, "even the eskimo women had voting rights long before that."

As hard to believe as this may seem, politicians in Appenzell continued to make excuses which denied women the right to vote.

More changes will certainly take place as the new Switzerland finds its feet within a large and powerful Europe.
The "NESCAFE Big Break" is back again - bigger and better than ever before! This year NESCAFE is giving away $20,000 to EIGHT young Australians to turn their big ideas into a happening thing. That's two more awards than last year and a massive $160,000 all up!

If you are a young Australian aged between 16 and 21 with a.
THE SOUND OF LIGHT

You're outdoors, caught in a thunderstorm. A lightning bolt flashes nearby and simultaneously you hear a sharp click that precedes the thunder. For years, physicists have chalked up that clicking sound to the strong electric field that often develops during severe weather. Two of the more popular theories posit that an electric field either elicits noisy sparks from objects near a lightning strike, or that it stimulates "electrophonic hearing"—the firing of an observer's auditory neurons. But an Australian physicist has now cooked up experiments in which a sharp click that precedes the thunder.

Rather than being a product of the electric field, the click might arise from very low frequency (VLF) radio waves streaming from the lightning bolt that are transduced by nearby objects into sound waves, says Associate Professor Colin Keay, from the Department of Physics. Associate Professor Keay bases his theory on experiments in which everyday objects, from aluminum foil to sprigs of casuarina pine, produced sounds ranging from 40 to 60 decibels when subjected to electric fields of about 400 kilovolts per meter.

Some physicists are skeptical of Professor Keay's theory. "He may actually be getting the sounds from sparks coming from objects that are stronger than the electric field," says Arthur Few, a thunder expert at Rice University. Professor Keay counters that the electric fields used in his experiments are "well below the threshold for electrical breakdown," meaning that the fields aren't triggering sparks. Besides, he says, his electrophonic theory, first published in Science in 1980 as an explanation for anomalous sounds that sometimes accompany bolides (large, bright meteors) as they enter the atmosphere, got some electrifying experimental support in 1988 when Japanese researchers published VLF radio signals that they recorded during the fall of a bolide over Japan. Professor Keay, who has catalogued about 200 reports of anomalous sounds so far, says the electrophonic effect might even explain strange sounds that accompany auroral displays. The basic message, he says, "is that the ability of mundane objects to respond to VLF radiation is an unexplored field."

But this raises a question: If lightning strikes a tree in a forest when nobody's around, does it make an electrophonic sound?

IT CAME IN THROUGH THE WINDOW

A major removalist exercise was undertaken in the Department of Physics last month with the arrival of a "Vibration Isolation Table". This table, weighing in the vicinity of 550 kg, was lifted by crane into a first floor window of the Physics Building. Careful manoeuvring by the crane driver and expert guidance by workers and onlookers resulted in its safe arrival.

The table is part of a new quarter-of-a-million dollar Laser system which has been funded from an ARC Large Equipment Grant awarded to Ron MacDonald, John O'Connor, Bruce King and Ellak von Nagy-Felsobuki. The Laser will arrive from America in June this year, and according to Dr O'Connor is one of the most powerful Lasers in the country.

The Laser is capable of emitting a 10 nanosecond pulse, which contains more than 1 Jule of energy. This corresponds to a peak power of 100 M watts. This energy is produced at a wavelength of 1064 nm which is in the infrared.

By using doubling and tripling optics, and a tunable dye laser, and further doubling the output, it is possible to obtain wavelengths as low as 200 nm which is in the ultraviolet.

So what can this remarkable piece of equipment actually do?

With it, the Surface Physics Group will be able to carry out multiphoton ionisation of atoms. That small fraction which are ions can be easily extracted, accelerated and analysed using electrostatic and magnetic techniques.

The atoms however, are more difficult to manipulate and analyse. The Laser will be used to both resonantly and non-resonantly ionise the atoms so they can be better collected and analysed.

It is from the scattering of particles from the surface, and the removal of the target material, that the structure and the composition of surfaces can be ascertained.

In the case of resonance ionisation, it will be possible to tune the Laser to a particular element and very sensitively measure the amount of that material in a surface.

In other experiments it will be important to ionise everything coming away from a surface and that will be achieved by non-resonant processes. In both cases more than one photon has to be absorbed by the atom to become an ion. It is for this reason that an extremely high intensity laser is required.

Why study surfaces?

The surface of any material is an important interface to its environment. The composition and structure of a surface may be different to that of the bulk, and this strongly affects the way it interacts with its environment. Thus to properly understand corrosion and catalysis, and to ascertain how the surface structure of semiconductors affects its electronic properties, it is important to know the detail of the surface down to an atomic level.

Even with a relatively simple and common surface such as Aluminium, the process of oxidation is not completely understood.

In other surface studies currently in progress the structure of III-V and II-VI compounds in the form of Gallium Arsenite and Cadmium Telluride are being determined.

Continued p16
AISC Steel Design Award Winner

It seems that the engineers at The University of Newcastle keep on winning awards and not only are the honours going to academics.

Civil Engineering student, Michael Evans, was recently presented with the Australian Institute of Steel Construction (AISC) Award, which is given in recognition of excellence in steel related subjects of third year engineering students. Michael's top marks in structural steel design won him the much sought after award.

Michael was presented with a $200 cheque and a certificate by AISC Senior Engineer, Mr Jose Zaragoza at a small ceremony held recently in the Faculty of Engineering.

The award will also allow Michael the opportunity to compete for an AISC graduate award in his fourth year, which offers an overseas trip for work experience.

Michael is not only studying for a degree in Civil Engineering at this University, but is combining his engineering studies with a degree in Natural Resources from the University of New England. He ultimately hopes to work in environmental engineering and sees the combination of these two degrees as the best way to qualify for this occupation.

"This is an award in recognition of excellence and Michael's work certainly deserved the award," Mr Zaragoza said.

"The Australian Institute of Steel Construction congratulates Michael on his achievement and wishes him the best for the future," he said.

YAOGEN SHEN - AWARDED PhD

Yaogen Shen completed his thesis and was subsequently awarded a PhD in 1992. His work was supervised by Professor R.J. MacDonald and Associate Professor D.J. O'Connor, within the Ion Surface Interaction Group in the Department of Physics. His research work was primarily focussed on the study of the surface structure of the alloy Ni<sub>3</sub>Al and the effect of oxidation on that structure. This alloy is extremely interesting because its structure is an ordered arrangement of Ni and Al atoms rather than the disordered arrangement typical of a binary alloy. The alloy is also one of a limited class of materials which actually get stronger as they get hotter. For this reason, Ni<sub>3</sub>Al is a major component in such items as turbine engines which must work at high temperature in a corrosive atmosphere.

Yaogen Shen successfully determined the clean surface structure of the Ni<sub>3</sub>Al and then demonstrated that oxygen adsorption causes a major rearrangement at the surface, forcing Al atoms to segregate to the surface to form an aluminium oxide layer which is not ordered in the same way as the Ni<sub>3</sub>Al. All the evidence suggests the oxide grows as islands, which are probably very disordered at least randomly oriented. The existence of the aluminium island is probably responsible for the resistance to the corrosion demonstrated by this alloy. Once a thin layer of the oxide is formed, subsequent growth of an oxide layer is limited to a very slow process.

It is interesting to note that this work has led directly to international collaboration. A group from the University of Bonn has worked with the alloy Ni<sub>3</sub>Al and have obtained similar results except that in this case the oxide layer is ordered with respect to the substrate. As a direct result of this work, a student from Bonn, Mr Ekke zur Mühlen, is working with the Ion Surface Interaction Group for one year. His supervisor, Professor Wandelt, will join the study for two months. One associate of the Bonn group, Dr Niehues of KFA, Julich, is currently spending two months working with the Ion Surface Interaction Group on a similar alloy.

Yaogen Shen went overseas to work with Professor Lau in the Surface Science Laboratory in the University of Western Ontario, Canada immediately after submitting his thesis. There he has been studying Chemical processes resulting from ion bombardment at low energies, as well as the growth of hard, diamond-like carbon films. A few weeks ago Dr Shen was offered and accepted a three year postdoctoral position with the Ion Surface Interaction Group here in Newcastle. A measure of the esteem of the Group internationally, and of Dr Shen's own ability, is that he was chosen from over thirty applicants, including several who were very highly regarded by their referees.

LONG-SERVING VOLUNTEERS TO 'RETIRE'.

After 14 years of presenting the Polish Program on Newcastle Community Radio Station - 2NUR, husband and wife team, Frank and Hanna Burnog of Argenton will 'retire' on May 29.

The final Polish program produced and presented by the Burnogs will be broadcast on Friday, May 29 at 6.30pm.

Hanna and Frank have been involved with 2NUR before it commenced broadcasting on March 17, 1978. "The Burnogs have been extremely dedicated volunteers", stated 2NUR Station Manager, Mr Brett Gleeson.

During the past 14 years Frank and Hanna have been involved in presenting the Young At Heart program and Papertalk - a service program for the print handicapped, in addition to the Polish Program. "The Burnogs have not just presented programs on 2NUR they have been actively involved in promoting the station to the regional community". Mr Gleeson said.

'It's such a pity to lose good people - but I understand that on-one can go on forever and 2NUR is very grateful for the contribution the Burnogs have made, not just to the Polish Program but to the station as a whole'. Mr Gleeson added.

THANK-YOU
Pat Bannister would like to thank those members of staff who very kindly donated to her farewell, and to all those people who sent cards and to those who called and wished her well in her retirement as their kindness was very much appreciated.

Continued p9
LONG-SERVICE... Cont from p8

Unfortunately the Polish program will cease when the Burnogs retire on Friday despite many months of requests for someone to produce the program on behalf of the polish community. In the short term, the Tongan program will be broadcast on Friday nights in place of the Polish program.

The Burnogs pre-recorded their program each Wednesday morning between 8.30 and 10 am. A special morning tea was held to mark the retirement of Frank and Hanna at the 2NUR Studios.

THE FIRST STAGE : NEW PLAYWRIGHTS AT WORK IN THE HUNTER

On the evening of Sunday May 24 a group buzzing from three days of intensive workshopping staggered home from the Great Hall. They had all taken part in the first playwrights conference to be held at Newcastle University.

On each of the three days a different play was workshopped by actors from university and the Newcastle community. This was the culmination of several months of dramaturgical work with the writers by the director/dramaturg Caroline Stacey - currently completing her Master of Theatre Arts in Directing.

Friday’s play Anna, a Theatre-in-Education piece about Anorexia by Michael Crogan of Maitland, was worked on in terms of structure and characterization. Michael’s understanding of theatre was extended as he watched actors physicalize imagery implicit in the script.

“I found it extremely rewarding for myself and was struck by how positive and constructive everyone’s input was. My only disappointment was that there wasn’t enough time to work on the whole play. But a wonderful outcome.”

Letting Go by Margaret Watts of Soldiers Point - Co-directed by production manager, Barbara McEwen, focused on the cultural character of Mary Foster, a grandmother faced with the possibility of separation from her grandson she has been caring for. Margaret completely re-worked Act 2 in the course of the workshop as well as developing the subtext. She was thrilled to see actors realise the emotional potential of her script. “It added another dimension to my writing. Plays on paper are two-dimensional, but during the day the actors made it three-dimensional and fleshed things out. I developed a much greater insight,” Margaret said.

Mark Crowley, an MA Student in English, saw ‘Look’ become a dynamic montage of action as actors tackled his anti-naturalistic play in the style of Sam Shepard and Joseph Chaikin. This fast-paced piece entailed actors learning how to clean windows as well as becoming life savers, weathermen, corpses, beach girls, lovers, city-workers, swimmers, all with script in hand.

Mark was particularly challenging, and the actors and audience were helped by Patricia White creating a percussion base to enhance the play.

Throughout the conference the audience of mainly writers and actors were encouraged by the Director, Caroline Stacey to respond and they provided constructive feedback, as well as gaining a new understanding of script writing. This was also true of the actors and they found it particularly exciting to be able to question the writer directly.

The subject of this Forum, chaired by Victor Emeljanow, which rounded off the conference was ‘Strategies for Playwrights in the Hunter Region,’ and the discussion touched on possible outlets for writers in the area. Bryan Joyce of ‘Freewheels Theatre Company’ spoke of the work done by Youth and Theatre in Education groups, while Brent McGregor explained the position of the Hunter Valley Theatre Company as far as the development of new writers is concerned. Playwrights Tony Giles and John O’Donoghue spoke of their experiences as developing writers and of the workshopping process.

For all involved the Conference has been a success,” says Caroline Stacey. “It’s been great to focus on developing writers in the Hunter, as there are many who deserve attention. I hope the Conference has provided a spring-board for this type of work in the region.”

SCIENCE CIRCUS... Cont from p1

“The Science Circus offers a link between science and drama,” he says and encourages anyone interested to apply for a scholarship.

Dr Gore from Questacon will be visiting Newcastle in June and will present a public lecture at Jesmond High School from 7 to 9 pm on Tuesday, June 23.

The lecture promises to be highly entertaining and thought provoking. A must for science students and academics.

Tickets for the public lecture cost $5 for adults and $2.50 for children and can be purchased from any Newcastle Permanent Building Society Office.
ANYONE FOR TENNIS?

TENNIS

Four new “Everten” synthetic grass surfaced tennis courts were recently completed by Daracon Engineering Pty. Ltd. and handed over to the Sports Union.

The Tennis Complex is situated on the hill overlooking No. 1 Oval and adjacent to the residential college, Evatt House.

The new courts are now available for hire, together with the existing four all-weather hardcourts which were resurfaced with “Plexipave” in late 1990. Unfortunately, the new courts are presently available only in daylight hours as some delay has occurred with installation of the lighting system. It is anticipated that the courts will become available for night play in late June.

Hire charges for the courts are:

<table>
<thead>
<tr>
<th>Hardcourts</th>
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<tr>
<td>Non-members</td>
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<tr>
<td>Members &amp; non-members</td>
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<th>Grasscourts</th>
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<td>Members</td>
<td>$6 per court per hour</td>
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<tr>
<td>Non-members</td>
<td>$8 per court per hour</td>
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<tr>
<td>Members &amp; non-members</td>
<td>$7 per hour per court</td>
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</table>

Use of lights:
Add $2 to the above charges for non-members and $1 for members.

Hire of Racquets:
$2 per hour.

Bookings may be made at the Squash Complex, telephone 68 1199.

SURFRIDING

A recent visit to the Gold Coast to compete in the Australian Universities Surfing Championships underlined the supremacy of Newcastle Uni students in intervarsity surfing competition. Congratulations to team members who surfed so well and won the Teams Championship for an unprecedented eighth time in succession.

The whole team performed admirably with a brilliant individual performance coming from Luke Mahoney to win the men's individual event and a fine performance securing third place in the women's individual event for Laura Saperstein. Luke, who has a University Blue for Surfing, has now won the men's championship on three occasions. Mention must also be made of Richard McGarry and Simon Bishop who placed equal 10th against very strong competition in the men's individual event.

AEROBICS

Step Reebok classes have been introduced and are held at the Auchmuty Sports Centre and Hunter Gymnasium at the following times. Cost to members is $2.50/session and to non-members $4.50/session.

Step is a low impact Aerobic workout which is ideal for all fitness levels - good for weight control, fitness and improvement of body tone.

Be early for classes - only 30 steps are available and classes are proving popular! More steps will be provided if growth in demand continues.

BASKETBALL

The men's and women's basketball teams which recently competed at the Eastern Conference Basketball Championships hosted by the University of New South Wales have qualified to compete at the Australian University Games to be held in Melbourne in July.
REDUCE THE RISK OF HEART DISEASE - DEVELOP HEALTHY EATING PATTERNS

About two in five Australians have elevated cholesterol levels.

The National Heart Foundation recommends that all Australians should aim for a level of 5.5 mmol/L or less. While cholesterol is essential to normal bodily function, too much cholesterol in the blood causes a build-up of fatty deposits in the walls of our arteries leading to their narrowing and consequent restriction of blood flow, increasing the risk of heart disease.

This build up begins in childhood and adolescence and is linked to the consumption of high fat diets. To lower and is linked to the consumption of high fat diets. To lower and is linked to the consumption of high fat diets. To lower cholesterol, it is essential that saturated fats are significantly reduced and healthy eating patterns are established. Sources of saturated fats include: butter, meat/poultry fat, cheese, milk fat, biscuits, cakes, chocolate.

GUIDELINES FOR HEALTH
- Maintain a healthy weight range,
- reduce your total fat intake and dietary cholesterol,
- eat less salt,
- increase dietary fibre intake (choose wholemeal and wholegrain products),
- use alcohol in moderation,
- drink plenty of water.

How to make healthy food selections?

Make a selection each day from the five main food groups:
- fruit and vegetables,
- cereal and grain products e.g. bread, breakfast cereals, rice, spaghetti/pasta,
- fish, lean meat/poultry, dried beans, peas and lentils,
- low fat dairy products,
- polyunsaturated fats and oils (but only in small amounts).

Have a look at what you are eating now. There is probably room for some improvement. Often the following changes are all that are necessary:
- choose lean meat and poultry, trim excess fat and discard fat and skin off chicken,
- eat more fish and vegetarian dishes based on dried peas, beans and lentils,
- use low fat dairy products instead of full cream varieties,
- limit high cholesterol foods such as egg yolk, offal meats, prawns, squid and fish roe,
- eat less high fat foods such as fried foods (grill or steam instead), fatty take away foods, cakes, biscuits, pastries, ice-cream, chocolate, salad dressings and sauces, select either polyunsaturated (sunflower, safflower) or mono saturated (olive) oil and low fat margarine. Use these sparingly as an alternative to butter.
- when shopping check the label on food items. If fat, oil or shortening are high on the list of ingredients, look for an alternative.

Make gradual changes in your diet. One of the simplest ways to change your eating habits is to change one meal at a time. If you don’t know your cholesterol level, ask your doctor for a blood test.

Further information and cholesterol testing are available at the University Health Service, Level 1, Shortland Union, Phone 216000.

NURSING STAFF BOUND FOR KOREA

Four staff from the Faculty of Nursing will head to Seoul, Korea, to teach nursing students at the EWHA Women’s University.

The students will be completing an intensive 12 month course which they started in Australia last year. The program, set up jointly by the University of Newcastle and the EWHA Women’s University will enable Korean nursing students, who have completed a three year Diploma course, to obtain a degree in nursing without having to undertake a further four years of study in their country. Upon completion of the 12 month course, they will be able to undertake studies towards higher degrees.

Ms Beth O’Donogue is co-ordinating the program and says that it has been an exchange of both nursing information and nursing culture.

“The Korean students were intrigued by the level of responsibility that Australian nurses have. Their own culture is so different,” she said.

Their level of patient care however, is very similar to our own and their visit provided a good opportunity to exchange ideas.”

Ms O’Donogue says that she is certainly looking forward to the trip to Korea.

“I am very interested to see how the students have developed and to see if they were able to apply what they learnt in Australia.”

The program is unique within the nursing faculty and plans are underway to extend on current ideas.

“We hope that some of their teaching staff will eventually come here for the first semester and that our staff will go there for the Second semester,” Ms O’Donogue said.

The faculty was very happy with the first exchange of students, 13 in all, and although they did struggle with language barriers, Ms O’Donogue says that their enthusiasm and willingness to learn was remarkable. She says that more allowances for their cultural differences will have to be made prior to their next visit.

“We hope that the 1993/94 group of students will be less isolated in terms of contact with other nursing students,” Ms O’Donogue said.

And although Australian students will not go to Korea, they will gain by meeting foreign students in Australia.

Beth O’Donogue and Kim Usher will leave for Korea on June 20. Ann Williams and Ron Sharkey will teach the second session beginning on July 18.
HELP WITH THE COSTS OF EDUCATION FOR THE CHILDREN OF VIETNAM VETERANS

Are you the child of a Vietnam veteran? Are you thinking about enrolling or re-enrolling in full-time higher education next year? If money is a bit of a problem, then read this. It may make your life easier.

The Australian Vietnam War Veterans Trust is running a scheme called the Vietnam Veterans Education Assistance Scheme (VVTES), which provides help with the costs of post secondary education for the eligible applicants.

The Trust makes a limited number of grants of $3,500 each year across Australia. Of this amount, $750 in total is to be paid in two lump sums, with the rest paid in fortnightly instalments throughout the academic year. This financial assistance will continue for the duration of the student's course providing they meet certain conditions.

To be eligible to apply you must be:

a. The child of a Vietnam veteran and under the age of 25.

b. Enrolled, or planning to enrol, in a full-time post secondary course up to first qualification level at TAFE, University, Business College, etc.

c. Be within the means test. The Trust is using the general rules of the Commonwealth Government's means test for Austudy. If you receive any amount of Austudy or the financial circumstances would enable you to receive Austudy, you have met the means test.

Obviously, with many potentially eligible applicants and only a limited number of grants there have to be other criteria for selection. Those selected to receive VVTES will be the most deserving candidates of merit. The Trust is encouraging courses which will help Veterans' children to gain satisfying employment or to enter a rewarding career.

Applications will open on September 1 and close on October 31. Forms will be available from the Trust's Regional Officers, (the numbers are in the phone book under "A").

ENCOUNTER THE CLASSICAL WORLD

The Department of Community Programmes, which provides a wide variety of services to the people of the Hunter region including the organisation and conduct of educational tours, has recently announced a new and exciting addition to its travel catalogue.

A study tour to Greece and Italy, entitled "Encounter the Classical World", is planned for November 30 to December 18 of this year. This 19 day tour aims to explore the culture and remains of the ancient civilisations of Greece and Rome.

Many of the most famous sites in ancient history will be visited by the tour group. In Greece, the Acropolis of Athens with its spectacular array of temples - including the Parthenon and the Erechtheum - will be a highlight, along with many others such as ancient Corinth, Agamemnon's Mycenae, the theatre of Epidaurus, Olympia (home of the ancient Olympic Games) and Delphi. Tour participants will also be treated to a day long cruise of the Greek Islands, visiting Aegina, Hydra and Poros.

In Italy, the eternal city itself will be the centre of attention, with the impressive remains of Imperial Rome - the Colosseum, the Forum, the triumphal arches - sharing the spotlight with St Peter's Basilica, the Vatican Museums and the Sistine Chapel. Day trips will be conducted to the ancient city of Pompeii, the Villa of the Roman Emperor Hadrian, and the beautiful city of Florence. There will also be time to enjoy the restaurants and shopping delights of Rome.

The tour has been designed for those with an interest in classical civilization, and will be led by Mr Ron Newton, a part-time lecturer in the Community Programmes and Classics Departments. A brochure, listing details such as dates, itinerary, cost and tour inclusions, has been produced and is available from the Department of Community Programmes in the McMullin Building. Telephone enquiries can be made on extensions 5558 or 5551.

ARC COLLABORATIVE RESEARCH GRANTS AWARDED

The University of Newcastle has been awarded three ARC Collaborative Research Grants in the first round of this highly competitive scheme. The program was introduced by the Australian Research Council to encourage research collaboration between higher education institutions and industry and public sector users of research. It aims to bring support for researchers who wish to bring advanced knowledge and techniques to bear in any field of research other than clinical medicine and dentistry, on problems or opportunities in order to obtain economic or social benefits for Australia.

Over $2 million was available for allocation in this round. Three of the five applications submitted by the University were funded by the ARC, totalling $120,000. Funds are provided on a matching dollar for dollar basis with industry.

The projects which were funded are:

"Cathode Optimisation in Alkaline Batteries", Dr RA Fredlein and Associate Professor GA Lawrence, from the Department of Chemistry, in collaboration with Australian Manganese Company Limited and Duracell Australia:

The project aims to determine the important factors which control cathode performance in commercial alkaline primary batteries. By measuring cathode performance using a high power potentiostat and impedance measuring equipment, to analyse the performance limiting processes in detail. The resulting improved level of understanding will allow the participating industry partners to improve their export levels through the production of better performance EMDs (AMCL) and batteries (Duracell)."Feedback of Bulk Solids", Professor AW Roberts and Associate Professor AJ Chambers, from the Department of Mechanical Engineering, in collaboration with Merz Australia Pty Ltd:

This project is concerned with the design and performance of plate and apron feeders in the mining and mineral processing industries. Such feeders are usually of large size...
Environmental Education courses in the Department of Education have been steadily growing in strength since they were instituted in 1986. This year, the Bachelor - Master of Educational Studies first semester unit has a record enrolment of 50 students, 28 at the Callaghan Campus and 22 at the Ourimbah campus, where the unit was introduced for the first time in 1992.

The unit caters for postgraduate students from Education, who are to a large extent, involved in some form of teaching.

The unit is also being used as a support course in the Master of Environmental Studies, which will enable people from a range of industries such as forestry, mining, the Hunter Water Corporation and local government councils to interact with the teachers.

Lecturers for the courses are Associate Professor Max Maddock (Newcastle) and Mr Denis Mahoney (Ourimbah).

On Saturday April 4, the Ourimbah and Newcastle classes combined for a visit to the Rumbalara Field Studies Centre at Gosford. They investigated the structure and operations of a Field Study Centre and its role in formal and non-formal environmental education. The Principal of the Centre, Mr Neil Duffy, gave an introduction to the history and mode of operation of Rumbalara and the groups were invited to view an audio visual on forest conservation prepared by the Wilderness Society.

The group then analysed to what degree the presentation included bias or propaganda and discussed its appropriateness as a vehicle for environmental education. The Principal of the Centre, Mr Neil Duffy, gave an introduction to the history and mode of operation of Rumbalara and the groups were invited to view an audio visual on forest conservation prepared by the Wilderness Society.

The excursion concluded with a visit to the Carawah Reserve on the foreshore where the group was confronted instead with an example of the problems of foreshore development in an urban setting which emphasised the need for environmental education for community and local government.

Access to the mangrove boardwalk had been cut off by cyclone fencing and the foreshore complex of sports fields was jammed with people and traffic.
The Centre for Language Studies has available, a "Brownbuilt" compactus unit.

The unit when expanded measures approximately 10.5 feet long x 3 feet wide x 6.5 feet high, and features 8 bays of shelving.

The unit can be inspected in room G28 (F) McMullin Building.

The unit is available to any department requiring such storage facilities. Costs involved would be approximately $900 to $1,000 to disassemble, transport and re-erect. These arrangements would be undertaken by Physical Planning and Estates, and charged to the receiving department.

Contact Property Services Branch (ext 6662) for further details.

1983 Toyota High Ace Long Wheel Base Van.

Reconditioned Gearbox and Radiator - Registered until August 1992. $62500.00. Ring Ext 5815 or 516297 after 5 pm.

Sigma Sedan 1980

5 speed, air cond., reliable near new tyres, rego: $2295 ono - Phone 753443 - J.A. Kenworthy

Ibanez Roadstar 11 - Electric guitar in hard case with lead and 5 watt practice AMP. $300 O.N.O. the lot. Phone Ext. 5204 or 516743 A.H.


The Health Service has for sale the following equipment:

1 x COMPUTER: Macintosh Plus 2.5MB RAM, with standard keyboard, mouse, purchased in 1989, S/N E91238K Plus 2MB Upgrade 1 x Printer Stand, Dataflex DF3

Tenders close Friday 3rd July, 1992 at 11am and should be addressed to:-

The Purchasing officer, Purchasing Dept.

For more information or for an inspection, please call Evelyn Read on ext 6002

The University reserves the right to reject any or all tenders.

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Academic Hood (black with red lining) on Saturday, May 2 - between the Union and the Medical Sciences Building car park. Please telephone 215643.

On Wednesday, May 27, outside Auckmuth Sports Centre a rip curl bag (red, yellow and green) containing wallet, jeans, shoes, black shirt, shorts & watch. Reward Offered. Please telephone 57 5720.

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Research Grants for 1992

Information on the following grants is available from the Office for Research - Telephone 21 5305

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<thead>
<tr>
<th>Grant Type</th>
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<tr>
<td>Australian Kidney Foundation</td>
<td>5 June 1992</td>
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<tr>
<td>Cancer Council Research Project Grants</td>
<td>8 June 1992</td>
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<tr>
<td>Department of Prime Minister &amp; Cabinet Co-operative Research Centres Program (Round 3)</td>
<td>17 June 1992</td>
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<tr>
<td>Australian Tobacco Research Foundation Research Grants</td>
<td>19 June 1992</td>
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<td>The Apex Foundation for Autism</td>
<td>22 June 1992</td>
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<td>RV Franklin - Ship Time Available - National Facility</td>
<td>22 June 1992</td>
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<tr>
<td>Clive &amp; Vera Ramaciotti Foundations</td>
<td>22 June 1992</td>
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<tr>
<td>AIDS Research Training Awards: Research Traineeships</td>
<td>24 June 1992</td>
</tr>
<tr>
<td>AIDS Research Training Awards: Training Development Awards</td>
<td>24 June 1992</td>
</tr>
<tr>
<td>Scientific Exchanges with the UK - 1993 Australian Academy of Science</td>
<td>24 June 1992</td>
</tr>
<tr>
<td>Arthritis Foundation of Australia - Ten research grant schemes are administered by the Arthritis Foundation, ranging from seed grants to grants in specific areas, eg osteoporosis, lupus, Pagets Disease.</td>
<td>24 June 1992</td>
</tr>
<tr>
<td>Rhone-Poulenc Fellow - Grant for Scientific Visit to France-1993. Under the Bede Morris Fellowship Scheme.</td>
<td>24 July 1992</td>
</tr>
</tbody>
</table>

FELLOWSHIPS, CONFERENCES & PRIZES

ARC Reciprocal Research Fellowships with the Federal Republic of Germany.
Recipients are nominated by eminent scholars in the host country. The research areas for this award are the natural sciences or engineering, humanities and social sciences.

ARC Reciprocal Research Fellowships with Korea
The research areas for this award are the natural sciences or engineering.

Rothmans Foundation Fellowships
Open to graduates of any University for the specific purpose of postdoctoral research.

1993 AIDS Research Training Awards: Postdoctoral Fellowships
Awarded to applicants who have recently completed or will shortly complete a doctorate and wish to gain further research training. Awards for up to 3 years & proposal for overseas institutions considered.

Arthritis Foundation of Australia - Five types of fellowships available, tenable in Australia, USA, Canada, UK. Also three scholarships available.
UNIVERSITY RECYCLING PROGRAM INTRODUCED

The University Union has implemented a comprehensive recycling program which involves improving the existing recycling facilities and expanding into new areas of recycling.

Colour-coded recycling bins, set-up into recycling centres, will be placed around the Union buildings. Glass and cardboard (and hopefully plastics) will soon be recyclable, however staff and students of the University will have to lend a hand to make the program work.

Kent Gillman, the University Union Environment Officer, says that by being aware how the recycling program works, we can all help the Union and ourselves to recycle our rubbish instead of throwing it away.

What can you do to help?
- Use the colour-coded bins provided
- Inform others of the recycling program
- Assist students with the use of the bins
- Offer help or advice on how to improve the recycling program

For more information contact the Union's publicity office on Extension 6013 or 6354.

MUSIC APPRECIATION GROUP

Classical music lovers are invited to join a daytime music appreciation group at the Newcastle Conservatorium.

Meetings will be held from 10.30am until 12.30pm in room 118 on the last Thursday of each month.

According to John Allen, a member of the group, the meetings will be "very democratic."

"We hope to cover a broad range of music styles and periods through group discussion," he said.

The group hopes to listen to and discuss music through the ages; as well as discussing a series of instruments; musical forms; aspects of composition; composers; performers; and the difficulties faced with modern music.

Mr Allen indicated that the group has full facilities to play CD's, records and tapes. "We even have a piano!" he said.

The meetings will be held on Thursday to enable attendees to enjoy the lunch-time Conservatorium concerts which will take place immediately following the meeting.

A minimal cover charge of $4 or $2 concession will be charged for the concert.

For further information contact John Allen on 497421

IT CAME IN... Cont'from p7

The surface structures have an important part to play in the electrical properties of semiconductors and in the crystal growth which is part of their manufacture. These particular semiconductors are important as infrared detectors.

Dr O'Connor and Mr Cleary, also from the Department of Physics, recently spent four days at a training course in Mountain View, California, to learn how to operate the Laser. They were both impressed with the Laser system.

Whilst in America, they visited the Argonne National Laboratory, to meet with experts in the field of multiphoton ionisation. Dr von Nagy-Felsobuki plans to spend his Sabbatical Leave in that laboratory next year. Mr Cleary, who is on long-service leave, will remain in the U.S. for some weeks and will visit several other laboratories with experience with such lasers.

Although there are similar lasers in Australia, that installed at Newcastle will be one of the most powerful in terms of peak power. The team in the Department of Physics will be the only group applying the Laser to multiphoton ionisation for surface studies.

"THE HUNTER CONSORT OF VOICES"

The Singleton Arts and Music Society will present The Hunter Consort of Voices at the Singleton Civic Centre on Tuesday June 9 at 8.00pm.

Tickets are available from Grays Music Shop (telephone 721611) at a cost of $14 for adults, $12 for SAMS members and $8 for students.

Champagne and wine tasting is included in the price.

CRIME FILE REOPENED

Blood on the line, running shoes sabotage, the Fine Cotton substitution and the case of the 'Lesbian Vampire'... a series of historic crime files are soon to be reopened.

A national conference on notable crimes in Australia and overseas will be held in Melbourne on June 20 and 21 at the Victoria Hotel in Little Collins Street.

It will be attended by researchers investigating how the public perceives - and preoccupations in the community with - exceptional crimes and extraordinary trials. The conference is organised by Deakin University Professor of Australian Studies, David Walker.

It would be a crime for interested people to miss this inaugural event. Please register as soon as possible.

Papers given at the 1992 conference will form the basis of the 1995 issue of the international journal Australian Cultural History. Previous journals have dealt with Australian perceptions of Asia (1990); Travellers, journeys and tourists (1991); Books, readers and reading (1992).

For further information contact Professor Walker at Deakin University in Victoria on (052) 272687, or 271364.

THE BULLETIN

The BULLETIN is the main organ of communication within The University of Newcastle.

Published on a fortnightly basis, the publication disseminates campus news not only to staff and students of the University but also to graduates, community leaders and members of the media.

Copies are also supplied to students of the University Conservatorium of Music and the Central Coast Campus.

The BULLETIN is produced by the Information and Public Relations Unit using PageMaker, Corel Draw and Wordperfect applications.

Letters to the Editor (no longer than 300 words and signed), reports on outstanding and unusual research, advertisements and news stories are particularly welcome.

The BULLETIN is edited by Sonja Duncan. Please contact either Sonja or Ms Rosemary Roohan on Extensions 6440 or 6463.