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INSIDE THIS ISSUE

WILLIAMS: Professor Bruce Williams, who headed the committee which reported to Federal Parliament recently on education, training and employment, addressed a Monash staff meeting recently. A report of that meeting is on page 4. Some reactions to the committee's report appear on page 5.

ALSO:

Spiders, wasps under scrutiny

Tests demonstrate super strength of spider web fibre

Considerable advances have been made in the development of strong synthetic fibres, such as fibre-glass, re-inforced plastic and alumina fibres, but it seems there is still something to be learned from Nature.

One natural fibre — spider's web — has long enjoyed a reputation for its apparent strength.

However, when **Dr John Griffiths,** a senior lecturer in the department of Materials Engineering, and **Mr Vince Salanitri,** a senior technical officer in the Zoology department at Monash, asked just how strong a spider's web was, they found that the answer was not readily available.

Says Dr Griffiths: "I thought that it would be a relatively simple task to track down technical literature on the subject but, apart from a couple of oblique and contradictory references, surprisingly little is known on the subject.

Dr Griffiths and Mr Salanitri then set out to measure web silk strength with the unsuspecting co-operation of **Nephila maculata** — the bird-catching spider of Queensland and northern NSW — and a smaller species, **Nephila pelipes,** commonly known as the Victorian golden orb weaver.

The bird-catching spider is famous for the size of its webs, which can be more than five metres across, and are strong enough to trap small birds such as wrens and silvereyes.

Indeed, bird-catcher webs have been put to contrasting uses by man. In some Pacific islands, for instance, webs are used to make fishing snares, and, in the New Hebrides, they have been used to make masks to smother the guilty party in adultery cases.

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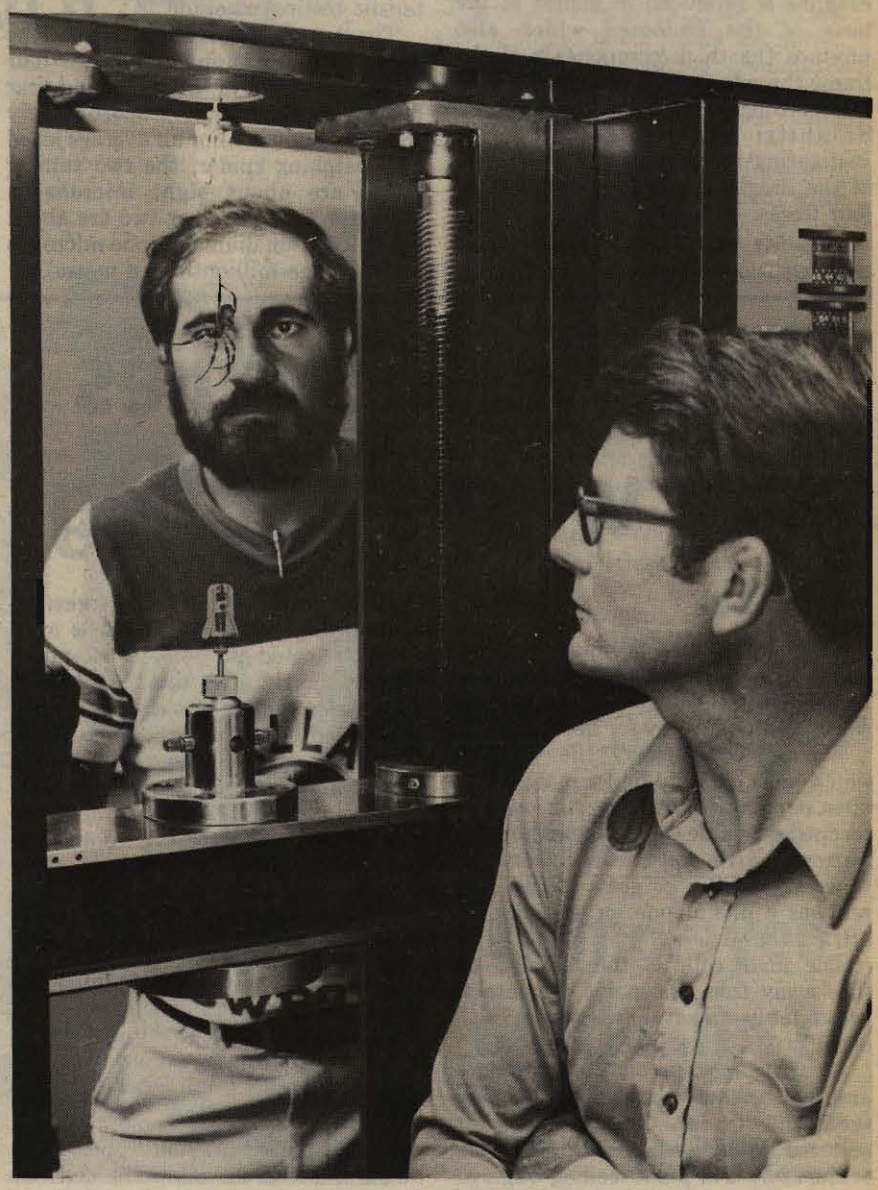

Mr Vince Salanitri (left) and Dr John Griffiths (right) watch the Victorian golden orb weaver spider spinning a web in preparation for measurement of the silk's strength in an Instron tensile testing machine. The golden orb weaver has a related species in Queensland and Northern NSW — the bird catching spider — on which extensive tests were carried out to determine the strength of the spider's 'dragline'. Photo: Ms. Julie Fraser.

Entomologists do it, lookers-on do it, even wasps down in Cranbourne do it

For the last 10 months American academic Dr John Alcock has been observing Australian wasps mate.

And while Dr Alcock, a visiting lecturer in the Monash Zoology department from Arizona State University, concedes that not everyone might share his enthusiasm for such a task, he insists it has scientific value.

He says: "As an evolutionary biologist I am interested in observing differences in behaviour, including mating, and explaining those differences in terms of environment.

"Studying wasps and other insects rather than, say, mammals is more rewarding for me because of the amazing diversity to be found in this life form."

Dr Alcock's study has taken him from Cranbourne near Melbourne, to Wyperfeld National Park in the north-west of Victoria, to Wingan Inlet National Park in the east of the state, to Pearl Beach north of Sydney and the Warrumbungles in northern NSW.

He paints a delightful picture of the curiosity-induced public involvement his field studies have attracted, like passersby leaving their cars and joining him at his roadside observation point at Pearl Beach to watch resin wasps go through their mating procedure.

Dr Alcock has been looking at such aspects in a variety of species as how males locate females, how often they copulate, whether the females take more than one partner, whether males establish territorial rights and whether either partner exercises selectivity in mate choice.

He has examined the behaviour of specific wasps after capturing and marking them with distinctive fast-drying enamel paints.

Some of the most interesting wasps he has observed — chiefly at Cranbourne reserve — belong to the tiphiid family. The males of species in this group (and there are some 400 recorded species, illustrating Dr Alcock's point about diversity) are winged; the females are not. The females rely on the males for feeding.

Dr Alcock says a group of tiphiids is peculiar to Australia, New Zealand and Chile. He adds that some theorists on the formation of the continents might argue that this pan-Pacific link was evidence that South America and Australia were once part of the same land mass.

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Web strength rivals steel wire

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Mr Salanitri says female bird-catching spiders are impressive creatures. They have a body about six centimetres long and legs about ten centimetres long. The male, however, is about one centimetre long, and according to Mr Salanitri, is not part of the female's diet.

"She probably thinks he wouldn't make a decent meal," he comments.

Mr Salanitri says that although all spider silk is basically composed of proteins, spiders spin several kinds of silk, depending on the function required. Cocoon silk, for instance, is quite different from the "dragline" — the spider's lifeline which she leaves behind her when she moves about. The dragline is produced in glands at the base of the abdomen which also produce the thick components of the frame threads and the radii of the web.

Accordingly, Dr Griffiths and Mr Salanitri concentrated on investigating the mechanical properties of the dragline, which is extruded as four fibres.

Says Mr Salanitri: "The process of silk extrusion is thought to be largely passive — the silk is left behind attached to some point as the spider moves about, or it can even be drawn out by the wind.

"In a breeze, the fibres float at different levels, apparently to give the spider a choice of different anchor points for building."

The two researchers tried several methods of collecting the silk, including winding it off on a motor-driven spool from an anaesthetised spider. However, the most successful way was to put the spider on the laboratory bench: the spider would fix an "attachment disc" to the bench and then extrude the fibre dragline as she walked.

The dragline could then be cut into suitable lengths for use in an Instron tensile testing machine.

The tensile tests showed that the dragline could support three to four times the weight of the spider and that heavier spiders spun proportionately thicker draglines. For an average sized bird catching spider, the two thicker fibres are about eight microns in diameter and the other two are about five microns in diameter (one micron is equal to one-millionth of a metre).

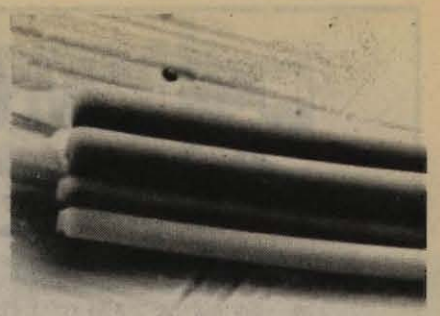
The tests revealed that the four fibres did not break at once when the dragline was stretched.

Says Dr Griffiths: "The thicker pair broke at about 40 per cent extension and the thinner pair at about 50 per cent. However, tests on separated fibres showed no differences in extensibility and it may be that the spider deliberately slackens the thinner pair when spinning the dragline so that they can act as a safety system."

The fracture stress of the dragline, calculated by dividing the fracture load by the cross-sectional area of the fibres, was 1100 Megapascals (MPa) or 70 tonnes per square inch.

If allowance is made for the reduction in cross-sectional area as the silk is stretched, then the fracture stress is 1800 MPa, or 115 tonnes per square inch.

Says Dr Griffiths: "These figures are comparable to the performance of high-strength steel wire such as is used in pre-stressed concrete, and they can scarcely be equalled by the best man-made polymer fibres, although the strongest materials known, such as alumina fibres, are two or three times stronger even than these.



The electron micrograph (above) shows the four strands of a spider's dragline (magnified about 1000 times).

"A few tests have also been made on the draglines of other spider species, and the results suggest that strength is fairly uniform.

"The possibly unique combination of strength and extensibility, is, of course, ideally adapted to the web's natural function which is to absorb the impact of flying insects.

"Furthermore, spiders are models of efficiency in that they eat silk for which they have no further use and recycle it through their spinnerettes."

"All-in-all the extraordinary reputation that is enjoyed by spider's silk has been amply vindicated by the work," the researchers add.

American studies our wasps mating

● From page 1

The female wasp is unusual in her winglessness, a trait probably related to her habit of burrowing through the soil in search of prey for her offspring.

The male "patrols" the area in which he is likely to find a mate — an open stretch with little vegetation. The receptive female remains within her burrow or exits and crawls a short distance up bushes or grass stems. She releases a pheromone, or sex odor, to attract the male.

The male collects the female and flies away from the point of contact, presumably to avoid disputes with other males.

At their new perch they copulate and, at the same time, the male may feed the female regurgitated or secreted liquid — the nectar of flowers or the excreta of plant feeding bugs. In some species the male does not feed the female but transports her to a site where they can gather nectar simultaneously.

Afterwards, the male flies the female to what appears to be a likely spot for prey and she is "dropped off". She burrows beneath the soil to lay her egg — on a beetle grub. The larva lives off the grub, growing to an adult wasp and then digging towards the surface; the male to fly off, the female to wait.

Tiphiid wasps are thought to live for about a month. The male mates many times in its life (one was observed to mate several times a day); the female is thought to mate about four or five times in her life.

Says Dr Alcock: "There is evidence of both male and female selectivity in mate choice.

"I have 24 records in which a male and female made contact but no copulation resulted. In six cases, the male made a prolonged but unsuccessful attempt to mate, suggesting female rejection. In 16 cases the male clearly rejected the female, abandoning her shortly after touching her. In two cases a female was either dropped or released her grip on the male as the pair had begun to fly away. Eight of the females involved in these interactions were observed to continue to attract males and were eventually carried away."

Dr Alcock observed the mating behaviour of the resin wasp at the Crommellin Field Research Station run by Sydney University at Pearl Beach. His study there follows that of **Andrew Smith,** a graduate student at Monash, who conducted observations, chiefly of female nesting behaviour, in 1975.

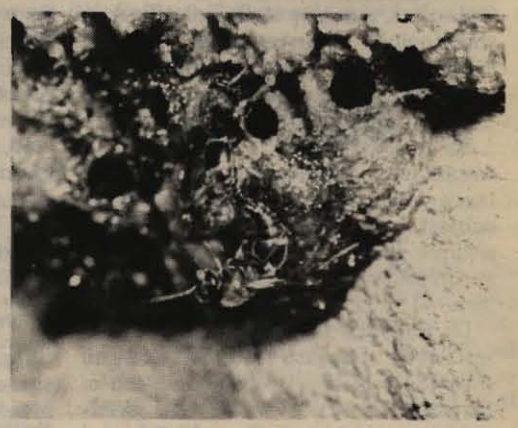
The resin wasp is so called because it builds its cluster of brood cells on sheltered rock faces from the resin of eucalyptus trees.

The male wasp establishes territorial rights over a cluster of brood cells awaiting the emergence of receptive virgin females.

Dr Alcock describes the behaviour of an observed male in protecting his territory: "Visiting males which flew under the rock overhang often failed to come close to the cluster in which case they were ignored by the resident. However, those that came within a few centimetres usually elicited an orientation response, with the territory holder nimbly turning to face the intruder.

"This was generally sufficient to send the visitor on his way but occasionally the resident flew out from his resting point; this always resulted in the prompt departure of the intruder."

Occasional physical combats have been observed.



Top: A winged male and wingless female tiphiid wasp photographed by Dr Alcock.
Left: Dr Alcock Right: Resin wasps.

The territorial male obviously has the reproductive advantage over the non-territorial one but the latter is not necessarily "left out in the cold."

"Not all females emerging from their brood cells were detected by males and not all females that were grasped permitted the male to copulate, but struggled free and disappeared, probably to be mated by non-territorial males," Dr Alcock says.

He adds that it would seem that the female of this species is monogamous.

Another Australian wasp Dr Alcock has observed — in the Warrumbungles — is the species **Abispa ephippium.**

The male of this species patrols the edge of a body of water in order to locate a mate. The female comes to standing water to collect a "crop full" of water with which she makes mud suitable for nest construction. The nest consists of a multi-chambered sphere built of mud plaster and suspended from the roof of a rock overhang.

Of this species, Dr Alcock says: "It seems probable that females, like males, mate more than once. Although occasionally females appeared to fly evasively when approached in the air by a pursuing male, I never saw a female resist a male that succeeded in grasping her."

Dr Alcock attempts to explain why — as he does with other differences noted among the species — in terms of the pressures of the particular environment.

He says: "It is possible that multiple mating has evolved because, over evolutionary time, water supplies have usually been so concentrated spatially that male control has been the rule rather than the exception.

"It may be that the three to four minutes spent copulating per visit would be less costly in time and energy for the female than efforts to find an unmonitored site where she could drink unmolested."

Green light on pool for Monash

The Union Board has given the green light for construction of a heated, indoor swimming pool at Monash.

The Board's recommendation is now to go before the University's finance committee.

The pool was proposed early this year by the Deputy Warden of the Union, **Mr Doug Ellis.**

It has been conceived as a heated indoor complex providing for general recreation and competitive swimming and teaching of swimming (in that order of priority), to be built on land north of the Sports and Recreation Centre.

The recommendation is that the complex be funded primarily from the sale of 24 acres of the Bodley Street property owned by the Union. The cost of construction is estimated to be about $800,000.

The proposal is for a pool in two sections — a six or eight lane section suitable for training and club level competitive swimming, 25 metres long by 15 to 21 metres wide and 1 to 1.8 metres deep; and a free form, general use section safe for non-swimmers and beginners.

It has been recommended that the pool be open to the general public at specific times under certain conditions to boost revenue.

A chance for Peter to apply dazzling concept

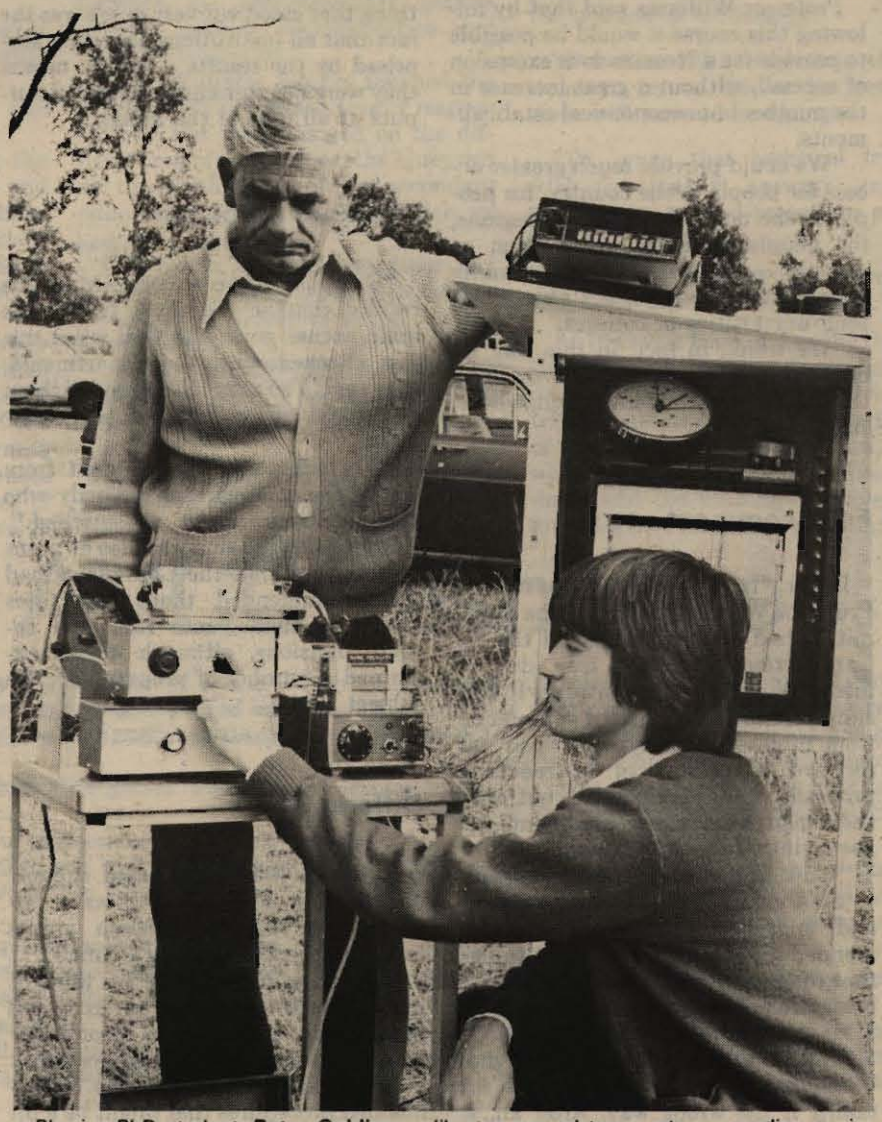
For Physics PhD student, Peter Golding, the go-ahead on plans for a swimming pool at Monash couldn't have come at a more opportune time.

During the last two years Peter has been doing research work, under the supervision of **Dr Logan Francey,** on cost efficient ways of using solar energy to heat swimming pools, particularly community pools.

Now the proposed Monash pool may give him the opportunity to apply his research in a major project. Peter will consult with the pool designer, **Mr Alan Scott.**

The Deputy Warden of the Union, **Mr Doug Ellis,** in his original pool proposal, said that natural gas would seem to be the most appropriate primary heat source, but he suggested that this be supplemented "as much as possible" by solar heating. Mr Ellis said last week that the use of solar heating as a booster could cut heating expenditure by up to 40 per cent.

The Monash pool is believed to be the first community pool in Australia in which solar heating specifications will be incorporated from the planning stage. Other pools, such as that at Melbourne University, have had solar systems fitted after they have been built.



Physics PhD student, **Peter Golding,** calibrates ground temperature recording equipment at the experimental station he has established on the proposed pool site. Dr Logan Francey, his supervisor, looks on. Photo: **Bob Bryant.**

Oil heating out

Peter's study on solar heating of swimming pools, which he expects will take a further 18 months, will be important for the swimming pool industry as a whole, particularly in view of legislation which forbids the construction of oil heated pools.

The main thrust of Peter's work has been to gain a clear picture of the way in which solar energy may be utilised and, once collected in a thermal store, how heat is lost (through the ground and to the air, for example).

As Peter says: "The less heat you lose, the less heat you have to put in."

As a first step in understanding these flows of heat Peter has been analysing data gathered from tests conducted with small pools installed in a rooftop laboratory on campus.

Now he has established a second test location — on the site of the proposed Monash pool, north of the Sports and Recreation Centre.

Here he has set up a Stevenson's Screen from which he is gathering data on such phenomena as the amount of sunlight reaching the surface, air temperature and rainfall. A second piece of equipment is enabling him to probe temperature variations beneath the surface of the earth.

The temperature probes have been located at regular intervals down a six metre deep borehole which Peter began drilling with a hand auger last August. Recordings started at the beginning of the year.

The probes allow Peter to "view" the daily, weekly and seasonal variations in the temperature gradients.

Peter explains: "The work is aimed at locating the optimum position for the location of the heated pool itself, which is effectively a large thermal heat store. The way in which such stores lose heat to the ground, heat via the ground to the surrounding air and the extent to which the ground may add to the thermal capacity of the system are results which will come out of 12 months of data collection and analysis on the site."

- Have you ever given a thought to what is under your feet at Monash?

Peter Golding's recent drilling to a depth of six metres north of the Sports and Recreation Centre confirms earlier descriptions of the composition of what is below.

The Geological Survey Map indicates that the campus is located on surface deposits of marine and non-marine sands, clays and ferruginous sandstones and gravels.

Site investigations carried out before the building of Robert Blackwood Hall confirmed this. An interesting feature is that no water table was found even at bore depths of 50 feet.

Similar results were found at the sites for the Science North and South blocks and the Medical building. All revealed the presence of "stiff clays and sandy clays overlying sands at depth".

New signs delineate 'no go' areas for bicycles

More than 20 signs will be erected around Monash University campus to delineate areas where bicycles should not be ridden.

The signs, which feature a bicycle painted on a light background painted across with an oblique red stroke, will be sited, in general, at points where sealed roads stop and access to University buildings is via paved footpaths.

The University Safety Committee said a major part of the problem lay with non-University people using paths as bicycle routes.

Students and staff were requested to ask offending riders to dismount while within the designated areas.

The move to erect the signs follows a Safety Committee recommendation that "in the interests of safety, riding of bicycles be prohibited within the University, except on sealed roads."

The Safety Committee said the inner campus area "bristled" with blind corners where pedestrians were placed at risk by bicycle riders. This danger was more likely to increase rather than decrease as bicycles became a more popular means of transportation.

The Safety Committee said it believed the move had widespread support from students and staff.

There had already been instances when a cyclist had hit, or almost hit, a pedestrian, and it requested the co-operation of the University community on the matter before a serious accident occurred.

Centre for unemployed graduates?

The concept of a resource centre for unemployed graduates has been floated by the Acting Careers and Appointments Officer at Monash, Mr Lionel Parrott.

Writing in **Careers Weekly,** Mr Parrott has offered the support of his office in establishing such a centre which he suggests could be done at little cost.

He says that one of the aims of a resource centre would be to encourage graduates to continue to use the University and its facilities as well as advise them on the full extent of outside resources.

An important feature of the centre would be a meeting room.

"Providing scope for discussion of the common experiences shared by unemployed persons is an essential prerequisite to self help", he says.

These are some of the other useful services he suggests a resource centre might provide:

- Solicit volunteer work to maintain and develop job skills.
- Provide video facilities for analysis of interview sessions.
- Organise counselling in self management, particularly budgeting.

In the wake of the Williams Report

'Our recommendations could achieve Open University access': Williams

By implementing certain of the recommendations of the Williams Committee, the Australian tertiary system could achieve everything that the Open University achieves in Britain.

That is the view of the Committee's chairman, **Professor Bruce Williams,** who came to Monash on March 30 to address a Staff Association seminar on the implications of the Committee's Report.

More than 200 staff members attended the seminar, the latest in a series planned by SAMU to examine topics of particular importance to universities and academics.

Professor Williams said that one of the critical questions considered by the Committee was the relationship between the three tertiary sectors.

"We came out quite strongly in favor of maintaining the three post-secondary sectors as an essential part of providing variety in education; we provided for a growth, up to the end of the century, of 10 per cent in full-time equivalent students in universities, 30 per cent in the colleges, and 33-45 per cent in TAFE.

"In the case of universities, we said the growth should be small for two reasons: one, that attrition rates are still too high; and two, that universities are not as well placed to deal with marginal students as the colleges, which can provide diplomas as well as degrees. Universities should, in any case, be concentrating more on postgraduate activities and research."

On the question of providing access to post-secondary education, Professor Williams said the Committee believed that a tight specialisation between the sectors would create impediments to access outside the main centres of population.

"To overcome that problem we introduced the concept of **contracting** between the sectors. Now this, in fact, is not new — we simply generalised certain things that have been happening ... for instance, in Queensland and in this state in particular, some of the large colleges of advanced education are contracted by state departments of education to provide TAFE courses.

"We gave the concept a wider significance, particularly when we associated it with the concept of providing for mixed modes of study, internal and external, and combining it also with an Australia-wide program of external courses."

Professor Williams said that by following this course it would be possible to provide for a "tremendous extension of access", without a great increase in the number of uneconomical establishments.

"We could provide much greater access for people in the country, for people in the outer metropolitan regions, for people who for one reason or another — physical disability or family responsibilities — are not able to attend universities or colleges.

"We think, in fact, in this way we can achieve in Australia everything that the Open University achieves in Britain."

Fees comment

Later, in answer to questions, Professor Williams said that the Committee had not recommended the re-introduction of tuition fees, despite media reports to the contrary. It had simply commented upon a submission from Professor Blandy which had put forward a number of far-reaching proposals and had pointed out that there had been many arguments for the re-introduction of fees.

"We said that it would be necessary to do a great deal of further analysis and appraisal ... and we recommended that this was one of the things that the Centre for the Study of Higher Education should take on board.

"It didn't go further than that.

"But one journalist said to me: 'Well, you mustn't blame people for taking it the wrong way. After all, it was towards the end of the report — it must have been important'."

In answer to a question about accountability, Professor Williams said that the Committee had recommended that, in the case of universities, there should be a much closer study and a much more detailed publication of attrition rates than there was at present.

"We did studies in all universities, and we found in some the attrition rates were 50 per cent — a bit staggering.

"We did this also in a sample of colleges of advanced education, and one thing that stood out very much was the fact that all institutions were very surprised by the results — which means they were not thinking in terms of outputs at all, but of the inputs.

Phantom enrolment

"One college was so appalled by the results that it withdrew them; the main excuse given was that when this was checked with the departments, they said 'You may have enrolled them in central office, but we never saw them'.

"We had a further comment from one of the colleges that anybody who made a phone inquiry was enrolled."

Professor Williams was also at pains to point out that the Committee had not recommended that universities should be divided into 'first' and 'second' divisions, although it had examined a number of proposals on the subject.

Differentiation

However, it had expressed support for the first movement towards differentiation in the research grants made by the Universities Council.

"We made it clear that we thought that procedure should be extended particularly through the second tier research grants. So, although we didn't recommend two divisions, we recommended procedures that might be a bit like that."

On the question of education linked to manpower requirements, Professor Williams said:

"We took the view, based on experience in a dozen and one countries, that to produce or recommend the production of the great manpower plan would be idiotic.

"For two reasons: One — nobody has yet found ways of predicting manpower needs. Two — if you work in terms of a manpower plan, the basic assumption is you are producing education according to some employment needs.

"We rejected that notion, and the rejection was at the basis of the very important chapter on credentials."

Professor Williams said there had been a great deal of criticism of 'credentialism' — but without much careful specification of what was meant by the term.

It was possible, he said, for a professional or para-professional association to jack-up entrance requirements as a way of protecting entry; but there had not been much of that so far in Australia.

There were, however, acceptable forms of 'credentialism' — where, for instance, there was an increase in educational requirements because the nature of a job had changed, and there was a need for a higher level of education simply so that people could do the job.

"There is another form of credentialism that comes about because educational opportunity had been extended," Professor Williams said.

"There was a time when employers could get able, ambitious, energetic young men and girls from the fifth form. You can't any longer, because they are not there. They go on to sixth form ... they go on to universities and colleges. Inevitably, to recruit the sort of person you recruited before, you have to do it at a later stage.

"A major part of what's often referred to as 'credentialism' is simply a reflection of the great increase in post-secondary education.

"We said that if you are going to take a tough line on credentialism you are, in effect, saying we want to cut down access to higher education, and we warn strongly against that."

Exhibition traces the history of early French photography

An exhibition on the history of French photography from 1816 to 1920 is being held now at Monash.

The exhibition, in the Visual Arts exhibition gallery on the seventh floor of the Menzies Building, closes on May 19.

It traces the origins of photography to a period well in advance of 1816 — to the 11th century, in fact, when a "dark room" was mentioned for the first time by the Arab mathematician Al-Hazen.

The first photographic impressions were made in 1816 by the French officer Nicephone Niepce.

The exhibition focuses on the major contributions to the development of the art over the next hundred years and features early photographs of Paris by Daguerre, Baldus and Bisson, photographs of Egypt and Syria by Maxime du Camp, and of Jerusalem by Auguste Salzmann.

Also in the exhibition are photographs of work in progress on the first Paris metro line (1899), portraits by Nadar, early color photos by Louis Ducos du Hauron and the Dufay Dioptichrome color photos of 1908.

The exhibition has been organised by the French Foreign Affairs Ministry and the French Museum of Photography, Paris, and is presented in Melbourne by the Alliance Francaise de Victoria.

The gallery is open weekdays from 10 a.m. to 5 p.m.

Bookshop discounts

Monash University Bookshop will introduce a new discount policy on June 1.

From that date, a 10 per cent discount will apply to all **cash** book purchases (excluding those books marked 'net') where the total transaction exceeds $4.99.

In the case of **credit** sales, a 10 per cent discount on each book transaction (as above) will be allowed only on accounts **paid within 30 days.**

No discount is allowed on stationery, calculators and books marked 'net'.

A week after Professor Williams's visit, the Federal Opposition Leader, **Mr Hayden,** spoke at a dinner in the Monash University Club — and accused the Williams Committee of having "fudged on the difficult task of laying down the blueprint for the development of post-secondary education to the year 2000 which we had been promised". Here, Monash Reporter summarises the main points of Mr Hayden's speech . . .

HAYDEN URGES REDEFINITION OF EDUCATION SYSTEM'S AIMS

"Education is now in its most uncertain and least confident state of any period since 1945."

The Federal Opposition Leader, **Mr Hayden,** said this at a dinner in the Monash University Club on Friday, April 6.

The present mood, he said, was in distinct contrast to the high economic growth and almost boundless optimism that surrounded the education debate of the late '60s, a period when "verities sprouted forth as though they were eternal".

Somewhere, said Mr Hayden, things had gone wrong.

"We now work in a far tougher public domain when we seek to justify spending programs.

"The period of no-growth has winded public confidence."

Mr Hayden said that despite the tremendous growth in university and college places (one in five Australians between 17 and 22 now go on to tertiary education compared with one in 40 in 1947), 'privilege' still predominated in the university scene.

Last year, only one in five university entrants were the children of unskilled or semi-skilled workers, who made up half the total male population. On the other hand, 20 per cent of entrants came from professional families, whose fathers constituted only 8 per cent of the male population, and another 27 per cent came from an employer-managerial background, whose fathers constituted 15 per cent of the male population.

Mr Hayden said it was essential that the objectives of the education system should be redefined in terms of the sort of workforce the country would need in the future, and the sort of economy that would be needed to support the community.

In the area of higher education, he said, it was absolutely essential that the Tertiary Education Commission should examine the relationship between all post-secondary sectors with a view to rationalisation and cross-accreditation.

"The Williams Inquiry touched the edges of this important area of responsibility, but really fudged on the difficult task of laying down the blueprint for the development of post-secondary education to the year 2000 which we had been promised.

"Of course, we must recognise and support the developments of achieving standards of excellence in our tertiary institutions.

"But it is equally clear that all of the institutions cannot be excellent in all of the areas in which they wish to function.

"Nor, indeed, will they be **able** to function in all of the areas they would wish to choose."

Mr Hayden said there were obvious areas where broad economic planning could underpin the educational processes of the tertiary institutions.

"For example, an expanded commitment to energy research and development; the development of new industries based on the 200-mile exclusive offshore economic zone; the fact that if we are to hold living standards in an increasingly competitive world then our best investment will be in people whose skills and professionalism will allow us to exploit comparative international advantages at the top end of technology.

"But it would be foolish in the extreme to try to ignore the fact that there will have to be changes . . .

"To ignore that technical training will inevitably assume greater significance in post-secondary education . . .

"To ignore that the role of some institutions will have to contract."

At the same time, it was the Opposition's basic belief that Australia must develop an environment, involving the tertiary institutions in the leadership of new national endeavours, that would "guarantee the role, the standards and the funding of universities for as far into the future as we can see."

The AVCC response

The Williams Report has made a number of recommendations with implications for the universities and on the methods by which governments handle tertiary education matters.

The Australian Vice-Chancellors Committee strongly supports the following proposals:

- That co-ordination of the work of universities continue to be a Commonwealth responsibility and that universities should make submissions direct to the Tertiary Education Commission.
- That, where they exist, state government co-ordinating authorities should have much wider responsibility for the activities of colleges of advanced education and colleges for technical and further education.
- That there be restoration of full triennial funding of universities and colleges of advanced education by the Commonwealth government.
- That there be additional government support for special research grants to build up postgraduate centres in universities.
- That there be increased funds for the Australian Research Grants Committee and the National Health and Medical Research Council.
- That the number of Commonwealth Postgraduate Awards be restored to the levels prevailing in 1975 and 1976.
- That inter-disciplinary research projects with limited life should qualify for grants to enable universities to develop concentrations of postgraduate students and staff for the contracting of educational work between colleges of advanced education and universities to enable increased access to higher education, especially in outer suburban areas and country centres. The AVCC observes that some such arrangements already exist and are working well, and it supports an extension where appropriate of the contracting system.

The AVCC has been aware of comments which have been made to the Williams Committee about the structure of the Australian university system. It notes that a suggestion had been made to the committee that universities be divided into two groups.

Some time ago the AVCC drew attention to the fact that all Australian universities share unique responsibilities for combining scholarship, research and teaching in a variety of disciplines and that their ability to discharge these responsibilities, which they all accept, is conditional upon having equivalent opportunities to argue and to have examined on a common basis their cases for support in the light of their particular historical, geographical and educational circumstances.

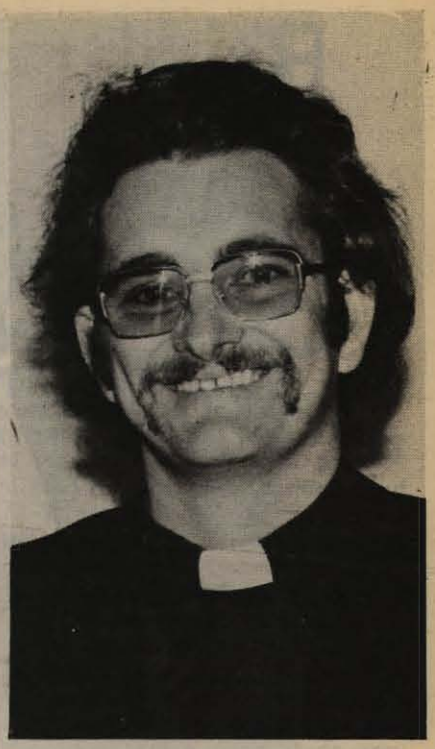
The AVCC welcomes the recommendation of the Williams Committee that the universities' responsibilities are such as to justify the preservation of the existing unitary system of universities in Australia.

The Williams Report provides for universities a blueprint for action and for development. The AVCC observes that a number of suggestions for action by universities and the AVCC are already in train but it welcomes the support lent by the Williams Committee to the need for more work on such matters as:

- Flexibility and innovation in staffing arrangements, particularly with regard to schemes for retirement, secondment, granting of tenure, annual appointments and redundancy.
- Arrangements for secondments and exchanges between university staff and staff in the public service, CSIRO, industry and other educational institutions.
- The provision of further assistance with special programs for people with handicaps.
- The development of diversity and different patterns of education to meet the needs of people who enter higher education later than is normal.
- The extension of provisions for credit transfer between educational institutions.

The AVCC has noted with special interest the committee's comments on library matters. It supports the recommendation that developments in technology of relevance to library services should be kept under view and that where possible schemes for rationalisation and the sharing of cataloguing be developed.

The AVCC shares with the Williams Committee its belief that the Australian higher education system has considerable strengths and the view that more is to be gained from continuing gradual reform than from sweeping structural change.



Jim chooses future in priesthood

For Monash Bachelor of Science student, Jim Acreman, May 26 will have greater significance than being just halfway through the term break.

On that day Jim, who is doing a major in genetics, will be ordained a Salesian priest. The Salesian Order is dedicated to helping children.

Jim's ordination marks the end of 10 years of preparation.

The ordination will be performed by Bishop Rada of Ecuador. Bishop Rada founded the Fondo Ecuatorian Populorum Progressio, an organisation aimed at helping the desperately poor farmers of Ecuador help themselves.

Jim's ordination is by no means the final step; in fact, he says, it is just the beginning. Upon graduation he hopes to head back to teaching.

Work for disabled?

Chadstone Community Health Centre has established a work centre in Malvern to provide occupation for disabled, unemployed or otherwise disadvantaged members of the community.

The centre, in the Centenary Hall, 432 Waverley Road, invites other community groups to provide work for its clients.

A representative of the centre, **Mrs Annette Robins,** says that people attending the centre can, for the most part, undertake only simple, repetitive jobs such as collating, stapling, folding, packaging, wrapping, stamping, copying, labelling and the like.

They could not, she says, take on work that is subject to strict deadlines.

The work generally would be performed on a voluntary basis, although donations would be readily accepted.

Any University departments or groups able to assist the centre in its work should contact Mrs Robins (tel. 568 2599 or 560 1387) or **Jane Lee,** the Health Centre's occupational therapist, on 568 2599.

Bright future — if we maintain our confidence

A distinguished lawyer, company chairman and former member of Monash Council, Sir James Forrest, has sounded an optimistic note on the future of Australia — if the country retains confidence in itself.

Sir James was speaking at a recent Monash science and law graduation ceremony at which he received an honorary Doctor of Laws degree.

Sir James said: "Given commonsense and steadiness on the part of governments I am sure that over the years ahead we, in Australia, can look forward to a considerable upturn in job prospects but, of course, with changing demands in particular areas and types of work."

But, he stressed: "It is a basic truth that human beings whether considered as individuals or viewed collectively as an organised nation, cannot or will not achieve anything worthwhile without confidence."

He continued: "In maintaining confidence, it is important to observe and understand changes in social outlook. I am inclined to believe that some, but by no means all, of the changes in values and events in our society are likely to be permanent, or at least long lasting.

Resource conservation

"Conservation of the world's resources of forest, water and fuel on a scale to which we are not yet accustomed is likely to be one such change.

"However, I think that parallel with such conservation will come new ways of using and modifying our resources."

Sir James said that he believed new scientific technology would advance our material standards of life.

He said: "Recently, there has been discussion about the advance of technology as a major factor likely to eliminate many employment opportunities over the longer term. For example, some people fear the ultimate elimination of clerical workers.

"Anything really new has always attracted vigorous criticism. The replacement of animal or human physical labour by machines or the replacement of machines by better machines, has been the basis of the world's economic growth and development.

"It is the means of releasing people to do new things, to engage in new activities, thereby increasing vastly and constantly the variety of goods and services available and the amount of leisure that can be enjoyed.

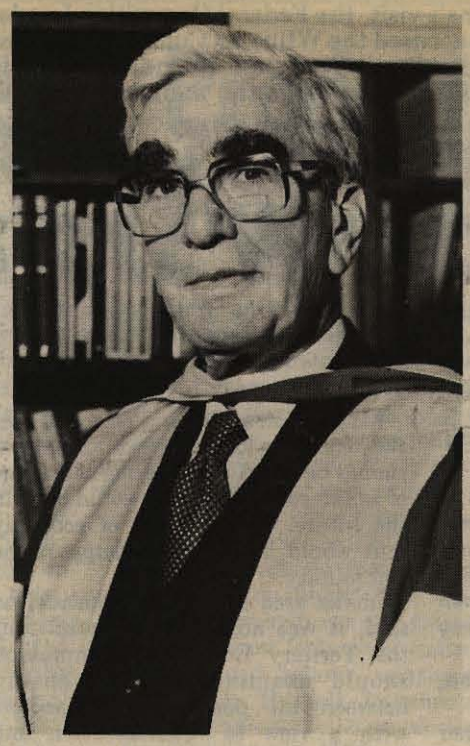
"I believe that scientific technology will continue to advance at a fast rate and with it our material standards of life.

"More importantly, only in this way can the world afford to enter into a vast range of new enterprises unknown today while at the same time overcoming the problems which at present we term shortage of resources and pollution."

● **Sir James Forrest** was a member of Monash University Council for 10 years from 1961 during which time he contributed a great deal to the development of the University, particularly the Law faculty.

Sir James was a member of the legal firm Hedderwick Fookes and Alston from 1933 to 1970 and has been chairman of a number of public companies including the National Bank of Australia Ltd., Australian Consolidated Industries Ltd., and Alcoa Australia Ltd.

In addition, he has served on the governing body of such organisations as Boy Scouts of Australia, Scotch College, the Victorian Law Foundation and the Royal Children's Hospital.



● Sir James Forrest

First congratulations

At least one member of the audience at the March 30 graduation ceremony can claim to heve had a life-long interest in the career of the honorery graduate, **Professor Emeritus Sir Lance Townsend.**

The reason is simple: She wes the first baby Sir Lance ever delivered — right at the beginning of an illustrious career as an obstetrician.

That was in 1934.

The baby was **Aileen Margaret Kingdom** — and she's never forgotten the man who brought her into the world.

Now Mrs Aileen Edgington, she sought Sir Lance's help when her own children were born — **Barbara Jean** (now Mrs Rawlings) in 1953, and **Terence William** in 1958.

Mrs Edgington and Terence attended the graduation at the invitation of the Dean of Medicine, **Professor Greame Schofield,** who said in his citetion for the ewsrd of an honorary LL.D. to Sir Lance:

"The warm relationship between Mrs Edgington and her family and their physician characterises best, I think, the continuing interest and concern that Sir Lance hss shown for those who sought his advice as a practising obstetrician."

● Our picture shows Mrs Edgington and Sir Lance Townsend swapping reminiscences after the greduation.

Clearin museum

To most people a museum is a buil passes the dust settles more thickly and the cap sinks lower over the ey

But, according to a professor of Zoology at Monash, **Professor J.W. Warren,** the myth of the motionless museum is as far removed from reality as Phar Lap's hide is from his heart.

In an address at a recent Science graduation ceremony, Professor Warren said that the activity of museums, in fact, reflected the adage spoken by the Red Queen to Alice during her adventures behind the looking glass: "You have to run as fast as you can just to stay in the same place."

He added: "Museums are not even staying in the same place. They are regressing and what they are giving up are the important activities that lead to public involvement and make national collections the centres of activity, of public research and of public education that they used to be."

Professor Warren said that museums

At re gradua

A famil

Three generations of the Martin family w when the Vice-Chancellor's eldest son Leon Science. Here Leon accepts the congratulat and Professor Martin after the ceremony. University of Melbourne, Sir Leslie Martin sities Commisaion from 1959 to 1966, and sent tertiary education structure, developed Report in the '60s.

cobwebs on misconceptions

aught in time: as each year clocks and stuffed animals he sleeping attendant.

their current plight because most e were unaware of what went on d the public display galleries.
said: "Because of that some nments have not seen the need to ain museums as the vital public tional institutions they once

said that almost all of museums' resources went into the storage onservation of the irreplaceable of scientific and cultural ge — the delicate manuscripts, al history specimens and the like. nservative estimate of the tary value of materials in alian museums in 1975 was $2000 n, a "somewhat meaningless as unique material cannot be chased."
f Warren said that the itude of museums' custodian role

was not generally appreciated.

He said: "In the major museums in Australia only about five per cent of the collections are on public display, and the conditions under which the remaining 95 per cent is kept are frequently grounds for concern because of lack of staff and space.

"To single out a local example, the National Museum of Victoria, founded in 1854, holds the largest collections in Australia in many fields, totalling tens of thousands of catalogued items.

"They are able to employ only a single person to see to the conservation of delicate items; they have closed two public display galleries in the last 10 years to provide safe accommodation for precious items that cannot be displayed because of lack of staff; and they have recently moved three of their large departments to an old factory in Abbotsford, several kilometres from the centre of their activities in Russell Street.

"In spite of annual requests to the State Government for improved staffing, the National Museum of Victoria has received only three additional curatorial positions in 31 years."

Rational collecting?

He continued: "It is fair to ask, are these space and staffing problems self-inflicted? Do the acquisition policies of museums lead to all things that are now outside museums being taken inside until there remains nothing to collect? Are museums rational in their collecting procedures?

"My answer is, yes they are, but there is a catch and it is that museums are obliged to accept materials from other agencies that have need for reference items for their scientific work.

"For example, in Victoria the Department of Minerals and Energy, the Division of Fisheries and Wildlife, the Archaeological Survey, the newly formed Victorian Institute of Marine Science and the universities all expect the National Museum of Victoria to house and care for specimens they need in their work and which they collect and hand over to the Museum and, so, the number of items increases quite out of proportion to finance and staff, and quite out of the control of the Museum itself.

"The result is that the Museum is forced to turn away from public display and educational activities in order to nurse the growing collections."

affair

he Science graduation on April 11 warded the degree of Bachelor of his grandfather, Sir Leslie Martin, mer professor of physics at the hairman of the Australian Univer- the principal architects of the pre- the lines suggested by the Martin

Honorary degree for woman mineralogist

A woman with what has been described as "a remarkable understanding and knowledge of mineralogy" has been awarded an honorary Master of Science degree by Monash.

Miss Ruth Coulsell, a retired secondary school teacher and inspector, received her honorary degree at a Science graduation ceremony last month.

The Dean of Science, **Professor J.M. Swan,** presented Miss Coulsell for the degree.

Professor Swan said: "Miss Coulsell has been collecting minerals for at least 50 years and has assembled one of the best collections in Australia.

"This has not just been the activity of an amateur; the collection is a professional and scientifically accurate piece of work. Each specimen is carefully documented as to its occurrence and, in many instances, sophisticated electron microprobe chemical analyses and X-ray diffraction data are available.

"Above all, the specimens are carefully classified according to the Dana Scheme, making it an invaluable research and teaching collection.

"Miss Coulsell has maintained exchange systems with collectors all over the world, so that her material is representative of most of the classical mineral localities in the world.

"The collection by itself is a major scholarly work.

"Miss Coulsell has recently donated a large part of her collection to our Earth Sciences department and it has already proved of benefit to our teaching and research activities.

"Miss Coulsell has a remarkable understanding and knowledge of mineralogy. I would venture to suggest that there are few professional mineralogists with as wide a knowledge of the overtly recognisable properties of minerals. Because of this she has been able to give excellent series of lectures on mineralogy to the Gemmological Association in Victoria and the Mineralogical Society of Victoria. She can be considered an authority on Victorian minerals and mineral occurrences."

Professor Swan said that Miss Coulsell, since her retirement, had given voluntarily of her time and talents to several organisations, particularly to the Mineralogical Society (the newsletter of which she edits) and the National Museum of Victoria.

Professor Swan said: "She is much respected and greatly beloved by all those who have been her students. Her knowledge of mineralogy is considerable and her views concerning the more practical aspects of the science are often sought even by the professional mineralogists."

● In an interview in **Monash Reporter** in March, 1977, Miss Coulsell explained the motivation for her interest in minerals.

"In minerals I find a dream world," she said.

"I love their color and texture. My father was an artist. I have no artistic ability but I think I have inherited his love of color.

"I can be exhausted, frustrated, sick to death with things, but when I get among my minerals I unwind totally.

"It's like the gardener who relaxes merely by having his fingers in the soil."

Firmly in their place

Like all those other great pursuits in life, that of scientific knowledge is fine . . . in moderation.

Professor J. Warren, of Zoology, implored graduates at a recent graduation ceremony "not to lose sight of the household of men" and to maintain a perspective between their interest in science and other concerns.

In so doing he used the words of George Bernard Shaw who, upon meeting biological scientists, remarked:

"They tell me there are leucocytes in my blood and sodium and carbon in my flesh. I thank them for the information and tell them that there are black beetles in my kitchen, washing soda in my laundry and coal in my cellar. I do not deny their existence, but I keep them in their proper place."

New Monash library course for graduates

The Monash Graduate School of Librarianship next year will offer a new course leading to a Master of Arts degree aimed at honours graduates from any discipline who wish to become librarians.

The M.A. will be done by course work and minor thesis or research papers. It will be a two year, full-time course designed to produce graduate professional librarians with a strong background in a special subject field. It is the first course in Australia to offer a two year Masters degree at this level.

At present the school offers a higher degree in librarianship (the Master of Librarianship) which is open to graduate professional librarians.

The pre-requisite for entry to the new course is the same for all M.A. degrees in the Arts faculty — an honours degree at IIA level. But honours graduates from all other faculties will be eligible for admission.

The course will cover librarianship and information science and will require the student to relate his major subject discipline to these subjects.

Most courses offered in the first year will be compulsory for all students but will contain some internal choices. In the second year students will be able to choose from courses within the School and, if appropriate, from other departments and faculties.

A few examples

These are just a few examples of how a student's major study may be related to librarianship:

- A student with a B.Sc. honours degree in computer science may choose the courses Computer Assisted Information Services and Economic Environment of Libraries and write a minor thesis or research papers on computer-based indexing systems or on a specific aspect of computer networks for Australia.
- A student in German may be interested in International and Comparative Librarianship or Library Services to Migrants and on writing on the provision of research collections in German in Australian libraries.
- A law student might be interested in the study of legal information systems, including computer-based systems.
- Engineers may be interested in relationships between telecommunications technology and physical access to information.
- An economics student may wish to study and write on the Economic Environment of Libraries or perhaps the place of libraries in the total communications industry.

The School plans to restrict enrolment to about 20 full-time students in 1980.

Inquiries about the course should be made to the Secretary, Graduate School of Librarianship, Room S408 of the Menzies Building (541 2957).

Universal Product Code to bring a retail revolution

The next few years will see the checkout or sales point function in Australian stores — from supermarkets to local milk bars — revolutionised by the introduction of the computer-linked Universal Product Code.

Harbinger of the new system in Australia is a lecturer in marketing at Monash, **Dr Robin Shaw** who, in the last few months, has written articles on it for the general and specialist press. He claims that the automated checkout system made possible by the UPC's zebra-striped symbol "is the biggest innovation since the introduction of self-service and centralised pay-and-wrap facilities." The system is being widely used now in the US, Europe and Japan.

Dr Shaw has studied closely the impact of UPC in the US. He did his Ph.D. in the department of agricultural economics at Cornell University on **Universal Product Code Scanning Systems: The Retail Experience 1974-1976.**

The system has similarities to the Plessey loans system now operating in the Main Library.

It involves printing bar symbols on the labels or packages of all consumer goods. These symbols uniquely identify each item as to manufacturer and product specifications. They do not identify a uniform retail price, however.

The bar codes are used in association with scanning systems consisting of a code reader, electronic cash register and in-store computer.

At the counter, the shop assistant draws a coded article across the path of an optical scanner which interprets the symbol. This code is transmitted to the computer which identifies the product assigned that code.

The computer instantaneously transmits the price and item description, which it has had keyed by the store on file, to the cash register and receipt printer and to a display screen visible to the customer.

This item information is processed to compile a completed order record which is then available to the shopper as a detailed receipt (more detailed than present day dockets in that it records the item alongside the price) and to store management as data in computer memory.

Worldwide standardisation

A move has been made to standardise the system of product symbols worldwide. To this end the European Article Number (EAN) headquarters was established in Brussels in 1974. Now Australia is to join in.

Following a seminar at Monash last year the Australian Product Number (APN) Association was formed to manage the introduction of an internationally compatible local version.

The APN governing body, the Council, is widely based. As well as business groups such as the Australian Retailers Association and Grocery Manufacturers of Australia, it includes representatives from the ACTU, the Australian Federation of Consumer Organisations, the Department of Business and Consumer Affairs, the Standards Association of Australia and state consumer affairs bureaux.

Dr Shaw believes that the wide representation should circumvent problems which arose, chiefly through misunderstanding, with unions and consumer groups when the system was first introduced in the US.

The APN Council has also commissioned studies on the impact of the new system on employment and consumer relations. Senior lecturer in industrial sociology and labour relations at Monash, **Dr Russell Lansbury,** is conducting the study on employment.

Dr Shaw says the APN scanning will benefit all sectors of the market place — shoppers, sales assistants, retailers and manufacturers.

For the shopper, less time (30 per cent less it has been estimated) will be spent at the checkout, the error encountered with keying-in of prices will be eliminated, and shelves should be always stocked — as retailers will have accurate comprehensive records of all items sold.

Benefits for employees

For the employee, the new equipment will be quieter and the frustration of hunting around for a smudged price will be eliminated.

Dr Shaw says that retailers will benefit from fewer errors at the checkout, automatic reordering, simplified checker training, better management information and the flexibility to convert some of the savings into more attractive price specials for customers.

He says that manufacturers will be the chief beneficiaries of the "information explosion" generated by APN.

Their market research will be enhanced by access to the data they need on the same day it is requested rather than, say, in three months time as may now be the case.

Dr Shaw says: "Scanning data have the potential to affect decision making regarding the entire formulation of marketing strategy. Promotional expenditures such as media advertising or consumer promotion can be evaluated on a 'day after' basis. The sensitivity of sales to price specials and competitive actions can be tracked while local tastes and preferences can be clearly identified and desired products offered.

"Distribution patterns can be analysed to ensure the delivery of optimal customer service levels and experimentation in packaging and labelling will be facilitated."

As to when Australian shoppers might expect to encounter the new scanning system in stores, Dr Shaw replies that the retail industry is faced with a classic "chicken and egg" situation.

Retailers are delaying installation of the new equipment until there is a high level of source marking by manufacturers of their products. Manufacturers are reluctant to include APN symbols on their labels until there are sufficient retailers with scanners to justify the change.

But he predicts the situation will quickly be resolved in favor of APN labelling. Many retailers — and not only the big chains — are eager to introduce the new system and will be exerting pressure on manufacturers to comply.

How good are our medical graduates?

Judged on the results of examinations conducted in the United States, Monash medical graduates are among the world's best.

In exams set by the Educational Commission for Foreign Medical Graduates, the Monash candidates from the 1977 and 1978 graduations turned in almost flawless performances, with a 100 per cent pass rate in each year.

All foreign medical graduates must obtain ECFMG certification before they can enter accredited residency training programs in the United States. Success in the examination also facilitates the obtaining of a licence to practise medicine in most states of the USA.

Last year, medical schools in 72 foreign countries entered 8039 candidates for the ECFMG examinations. In 1977 there were 9974 applicants.

The Monash contingents — 61 in 1977 and 17 in 1978 — achieved remarkable results, as these figures show:

1977

	Number of candidates	Average score	Score range	Percent below 75	Percent 75 plus
MONASH	61	81.3	75-89	.0%	100.0%
ALL SCHOOLS	9974	71.3	44-90	65.3%	34.7%

Of 100 schools that entered 25 or more candidates in 1977, only two achieved an average score of 81 or better.

Monash was one of them.

The 1978 figures are less comprehensive, but they show that, while only 37.4% of all foreign candidates passed the exam, again all of the Monash entrants passed.

The Monash graduates achieved scores within the range 79-86, this time with an average score of 82.3.

Practising their e acutes over a cuppa

A diverse group of people meet at Monash every Wednesday lunchtime to discuss the weather, their work and their lives away from work. So what's new? The members converse not in their mother tongue but in French. The Centre for Continuing Education is conducting the conversation class for those who want to brush up their second language skills informally. Our photo shows the class tutor, **Dr Marguerite Van Der Borght** (right) with participants **Dr Jack McDonell** (CCE Director) and **Mrs Annette James** (Staff Branch). A few vacancies still exist in the class. Those interested in joining should contact **Barbara Brewer** on ext. 3719. (Photo: **R. Crompton**).

New director sees hopeful signs for interdisciplinary research

One recommendation of the Williams Committee in particular has been welcomed by the new research director of the Monash Centre of Southeast Asian Studies, Dr David Chandler.

It is the Committee's strong support for increased funds for university research and its recognition of the important role of interdisciplinary centres as a base for certain research projects.

Dr Chandler, formerly a senior lecturer in History at Monash, believes that the Centre of Southeast Asian Studies is one of the country's leading such bases.

Established in 1964 to promote postgraduate and staff research on the region, the Centre functions primarily as an umbrella organisation, servicing the various departments which have students working for higher degrees on Southeast Asian topics. Currently there are about 60 such students at Monash.

The Centre acts as a resource pool, helping to meet the special needs of students in such a research area — the need for language training and field work, for example, and the need to gain an understanding of a very different social and cultural background.

Six years ago the Centre embarked on a program of publications and now has an extensive list of monographs and papers to its credit. It also arranges a vigorous seminar program throughout the year.

The growing strength of study on Southeast Asian topics in Australian universities is in contrast to the trend overseas, particularly in the US.

Dr Chandler says that in the last few years students there had tended to "follow the ball" away from Southeast Asian study on to such areas as ecology and life sciences.

But he does not see Southeast Asian study being a "fad" in Australia.

He says: "The chief reason is our location. We're never going to change our neighbors."

He believes that in a relatively short time Australia has built itself a reputation for excellence in study on the area and predicts this reputation will continue to grow. Monash's Centre, as the oldest and largest of its kind in Australia, is acknowledged as a leader.

Dr Chandler says that the Centre's interests in the future will, as before, be directly determined by the interests of students associated with it.

There are initiatives he would like to see the Centre take to consolidate its strength. And here he looks hopefully at the Williams Committee's recommendations — and toward the possibility of increased funding.

He believes the Centre would benefit greatly if it could initiate a program of research associateships, attracting to the Centre for a few months or a year distinguished people with a close knowledge of Southeast Asia.

Dr Chandler would also like to see the Centre have the capability to attract top ranking scholars to seminars here and to support greater liaison between Monash and Southeast Asian universities.

New York-born, Dr Chandler worked from 1958 to 1965 as a Foreign Service Officer in the US State Department, holding posts in Phnom Penh, Cambodia, and in Bogota and Cali, Columbia. He then served a year as director of Southeast Asian Area Studies at the Foreign Service Institute.

From 1968 to 1972, he studied at the University of Michigan, Cornell University and in Bangkok, Phnom Penh and Paris. He joined Monash in 1972. In 1976, while on study leave, he was a research associate with the East Asian Research Centre at Harvard.

His publications include **The Land and the People of Cambodia** (1972) and (trans.) **Favourite Stories from Cambodia** (1978) as well as more than 20 scholarly articles and contributions.

Dr Chandler's appointment as research director was approved by Council in March. He had been acting research director after the departure last year of **Mr J. A. C. Mackie**, the founding research director, who has been appointed to the newly created chair of political and social change at ANU's Research School of Pacific Studies.

Science defended strongly

The Vice-Chancellor, Professor Ray Martin, launched a strong defence of science recently in the face of critics who argued that it was responsible for many of the "crises" facing society.

Delivering the occasional address at a University of New South Wales graduation ceremony, Professor Martin said: "Technology is not intrinsically bad. What is bad is bad technology!"

He said: "Curiosity about natural phenomena and the desire to put knowledge to practical use are innate characteristics of man. Knowledge of nature gives man the power either to make earth a better place on which to live or a place of fear and desolation.

"The application of scientific knowledge which we call technology gives us the capability to do things which were not previously possible. Through technology we have achieved some degree of control over our environment. Even in prehistoric times rudimentary stone age technology was a necessary condition for the survival of megalithic man."

He told the graduates: "Every scientific discovery contains the seeds of good or evil, and as scientists you will have to share increasingly in the heavy responsibility for ensuring that only those applications that are beneficial to mankind are encouraged."

Earlier in his address, Professor Martin said that the explosion in the growth of new knowledge meant that the situation was rapidly approaching where it would be beyond the capacity of the undergraduate — and the teacher — to master the vast mass of detail.

He said: "The problem inherent in the knowledge explosion is that pedagogical and mechanical techniques will be devised to cram masses of information into the student's memory circuits without the thinking circuits being activated.

"There is only one solution in these circumstances. Detail must be replaced by methodology; ephemeral trivia must be replaced by durable principles."

He continued: "If our country's vast resources are to be used wisely then it is of the utmost importance that we should work towards the situation where, within governments and their bureaucracies, there is a better understanding of science and its relevance to everyday living.

"Our objective must be to achieve a community literate in science, as well as in the traditional humane values."

'Farewell'

Rob Wilde, Monash's first apprentice electrician, has asked **Monash Reporter** to convey his farewell and good wishes to the many people he knew on campus.

Rob, who joined Monash in 1968, has taken a position as electrician at the Mt Hotham ski resort.

As well as through his work with Maintenance, Rob met a cross section of people at the University when he served on the Monash Club committee.

Dean urges early decision on transport fuel switch

The Dean of Engineering at Monash, Professor Lance Endersbee, has urged that early investment decisions be made on substitute transport fuels, ensuring a smooth transition from major dependence on oil to increasing dependence on substitutes.

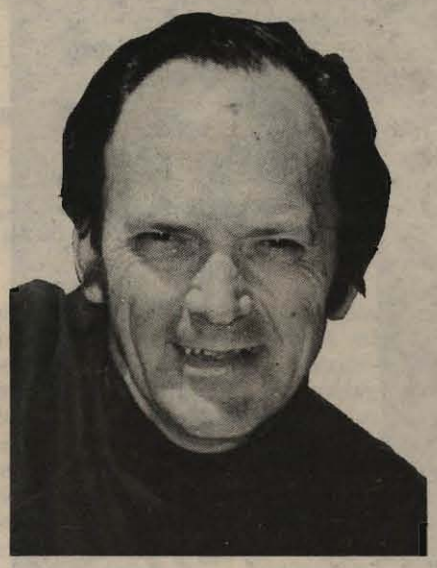
Professor Endersbee says that the coal and oil shale resources of Australia favor the early development of synthetic fuel plants.

He says: " There seems to be a need for new approaches in federal-state relations to ensure appropriate government support and participation in these new energy initiatives in collaboration with private enterprise."

He predicts that if these decisions are made, and if there is no dislocation of the international oil market by problems such as trade embargoes, the pattern of transportation in Australia will be able to continue along present lines, albeit with greater emphasis on fuel economy.

Professor Endersbee has published an article on "The Transport Fuel Dilemma" in a recent issue of **Search,** the journal of the Australian and New Zealand Association for the Advancement of Science. Early this month he gave a public lecture on "The Development of Australia's Energy Resources" as part of the Swinburne College Extension Lecture Series.

Professor Endersbee says that as motor cars and small buses seem likely to continue to meet the greater part of our urban transport needs for some time, attention must be focused on the present problems of traffic congestion in our cities.



Professor Lance Endersbee

He says: "The prospective increasing cost of traffic congestion should be taken into account by public authorities in planning improvements to road and freeway systems and in planning extensions to our public transport systems.

"There are many cases in our cities of part-completed freeways which cause particular problems in traffic congestion."

In the **Search** article, Professor Endersbee looks at the possible future use of alternative fuels such as LPG, alcohol, diesel, and electricity.

He predicts that within a decade the major motor car manufacturers will be including electric cars within their normal production range. This is assuming the development of more advanced types of batteries than the present-day lead-acid ones.

Professor Endersbee also comments on what appears to be competing claims for greater fuel economy and tighter exhaust emission standards.

He says: "The first stage of motor vehicle exhaust emission standards led to an increase in fuel consumption estimated to be seven per cent or more on the heavier, larger cars. In addition, it entailed increased fuel consumption in the refining process, as more energy is required to produce super grade fuel at the same octane number but with a lower lead content.

"The introduction of fuel economy targets for motor vehicles provides an opportunity to review this question and to study the whole system of 'motor car, refinery, environment' and work towards a more rational solution overall.

"It is recognised, for example, that there may be a need to limit lead levels in the major urban centres but not necessarily throughout most of Australia."

Academics to debate the Press with the Press

"That the Press has had its day" will be the subject of a public debate on Thursday, May 10, in Robert Blackwood Hall at 8 p.m.

Senior staff members of **The Age, Mr Ben Hills, Mr Peter Smark** and **Mr Peter Cole-Adams,** will oppose a team of Victorian academics, comprising **Charles Sampford** and **Roger Douglas** (La Trobe University) and **Paul Elliott,** a part-time tutor in Law at Monash.

The debate will be chaired by Monash Law graduate, **Mr Campbell McComas.** There will be an opportunity for members of the audience to question the speakers.

Admission is free to Monash students and staff on production of ID cards. For others, the admission charge is $1. All proceeds will assist the Royal Victorian Institute for the Blind.

Caltex Woman Graduate award applications close Sept. 30

The Caltex Woman Graduate of the Year Scholarship will be open for competition later this year, with a closing date of September 30.

Last year, the scholarship, awarded for a maximum of two years at $5000 per annum, was won by **Miss Wendy Watts,** a Monash science graduate.

Although the precise conditions of the scholarship will not be received from the Selection Committee until July or August, they are expected to be similar to, if not identical with, the 1978 conditions.

The scholarship is open to women who are Australian citizens or who have resided continuously in Australia for seven years, and who are completing a degree or diploma course at a Victorian tertiary institution. In selection, preference will normally be given to women completing a first degree or diploma.

The scholarship is tenable at a university or other tertiary institution in Europe (including the UK and Ireland), the United States or Canada, or at an approved tertiary institution in any other country.

In appropriate circumstances, the scholarship may be tenable at an Australian tertiary institution.

One award is made in each of the Australian states and one in the ACT.

A successful applicant is responsible for arranging subsequent enrolment in the tertiary institution of her choice.

The selection will be made on consideration of the following: high scholastic attainment; the ability to communicate ideas verbally and in writing; social awareness; achievements other than academic (for example, in sport, culture, innovatory enterprise); sense of purpose; and potentiality for future influence on the Australian community.

Early in September, intending applicants in Victoria should telephone the Academic Services Officer at Monash (**Mrs J. Dawson,** telephone ext. 3011) to discuss their eligibility. For those who are eligible, an interview will be arranged with **Mr J. D. Butchart,** Academic Registrar, Monash University, who is Honorary Secretary to the Caltex Selection Committee for Victoria.

Mr Butchart will discuss each applicant's prospective candidature and advise her on the method of application.

Year of Child conference

An International Year of the Child Conference — related to the development of young children — will be held at Monash University on August 23, 24 and 25.

Two of the major participants will be **Professor John** and **Dr Elizabeth Newson,** co-directors of the Child Development Research Unit at the University of Nottingham.

The conference is expected to attract professional workers and researchers in educational and clinical psychology, special, primary and teacher education, social work, paediatrics, general practice and related fields.

Enquiries about the conference should be made to **Mr J. A. Fyfield,** Chairman, Elwyn Morey Child Study Centre, Faculty of Education.

Award for chemical engineering student

A third year student in the department of chemical engineering at Monash, Shane MacLaren, has been awarded a 1979 Aluminium Development Council Undergraduate Scholarship, valued at $600.

The scholarships are awarded in open competition throughout Australian universities and colleges of advanced education.

Two previous Monash recipients of the scholarship were **Mr Ramli Wan Daud** (Chemical Engineering) and **Richard Schodde** (Materials Engineering).

Both recently graduated with first-class honours degrees.

Applications called for scholarships

Applications are being called for awards in 1980 under the Harkness Fellowship scheme.

The fellowship is for travel and research in the United States for a period of from 12 to 21 months. Fares and a living allowance are covered.

The scheme is open to students under 30 on September 1, 1980.

Applications close at Monash on July 20. For further information contact the Graduate Scholarships Office on the ground floor of the University Offices on ext. 3055.

● Applications close on May 24 for research internships at the East-West Centre in Hawaii. The internships are open to Arts, ECOPS and Education graduate students for research and activities on projects nominated by the Centre. The tenure is from October 1979 to September 1980 and benefits include travel costs and a stipend of $380 a month.

The Graduate Scholarships Office has more details.

Indonesia: the study of an Army's power

The Army and Politics in Indonesia. H. Crouch. Cornell University Press. 1978.
The author is a former staff member at Monash, and is currently at the University of Malaysia.
The reviewer is a Masters student in the department of politics.

This book, which is "a contraction and an expansion" of a Monash Ph.D. thesis in politics, is something of a goldmine.

It offers a wealth of data which should prove useful to anyone with an interest in Indonesian politics or in a case study of the rise of the military and its strengths and weaknesses for the "development" of a poor nation. For those whose interest in Southeast Asian politics is limited to assessing its consequences for Australian security the Crouch book offers significant insights into how the Indonesian army provides "stability", the character of that "stability" and its costs.

Crouch divides his treatment of the Indonesian army's political role into three sections.

The first part of the book deals with the expansion of the army's political and economic activity from its formation in 1945 to October, 1965 (the date of the announcement of what has been labelled an unsuccessful coup attempt in which several senior army officers were killed).

Sukarno neutralised

The second section describes in some detail the transition phase — between October 1, 1965 and March 1967 — during which the PKI (Indonesian Communist Party) leadership was annihilated and President Sukarno was neutralised and then removed from office.

The third section (from 1967 to 1976) examines President Suharto's efforts to consolidate his control over the military and the bureaucracy (and improve their performance) and to thwart or co-opt potential opponents from the political parties and the urban middle class.

Crouch depicts the pre-1965 expansion of the army's political role as occurring "gradually and almost inadvertently as the weaknesses of successive political systems provided opportunities that military leaders exploited."

He points to a significant difference between the officer corps in Indonesia and in other "countries where the military has taken power suddenly in a coup against a civilian government." That is that many Indonesian officers had become adept politicians and bureaucrats at almost every level of government and in nearly all the state enterprises. In these years they formed strong extramilitary loyalties. When, after 1965, they took complete control of the government they were more concerned with advancing existing interests than carrying out major reforms.

Crouch's description of the growing tension in Jakarta (and in the regions) in the days preceding the October 1, 1965 "coup attempt", of the events of the coup, and of the massacres that followed is not new but it does provide a vivid picture.

Alternative theories of what the coup was aiming to do, whether, and to what extent, the PKI and Sukarno were involved in the coup and whether the coup was an attempt to pre-empt a planned coup by a "Council of Generals" are all presented and evidence marshalled both for and against.

Crouch's description of Wertheim's coup theory as "following the method of a detective story" seems a bit harsh. Indeed anyone trying to make sense of the coup is forced to "play detective", both to assess the credibility of conflicting testimony and to explicate the motivations of those involved. The prior knowledge, actions, and intentions of President Sukarno, General Suharto and General Nasution require further explanation at least as much as does the behaviour of the known "coup" participants and we are unlikely to be offered conclusive explanations.

Crouch's description of Suharto's handling of the removal of President Sukarno from office gives us something of a feeling for Suharto's aptitude for conspiratorial politics. Faced with demands for Sukarno's trial from one side and, from the other, with significant support for Sukarno within the armed forces, Suharto found a way, first, to assume President Sukarno's powers and, later, dismiss him from office without triggering a civil war.

By avoiding vindictive action against Sukarno, General Suharto "made it possible for the President's supporters to accept a compromise which was in fact a defeat."

The economy

This method of demonstrating overwhelming force against an opponent and then offering something to make defeat seem less terrible has been visible in Suharto's handling of most of his military adversaries but not in his treatment of less well-connected opposition.

The chapter on "The Army's Economic Interests" includes sections on the "irregular" fund-raising methods of the army, the private financial interests of army officers (with entertaining examples from the family of President Suharto and Ibnu Sutowe, the former head of Pertamina, the Indonesian National Oil Company), corruption as viewed by the government and its critics, and a brief and equivocal discussion of whether the army has become part of a comprador class.

The book might have benefited from a more explicit attempt to fit the data into a theoretical framework that explains past directions in the army's political and economic activity and predicts how those policies and activities might give rise to new demands upon the military and new cleavages within it.

Crouch's work hints at many of those possibilities but its hallmark is in the careful exposition of day-to-day political activity. The book should invoke humility in anyone who dares to theorise in a grand fashion about the future of Indonesian politics or the role of armies in the politics of underdeveloped nations.

It is a model of scholarly study of a very complex phenomena — the rise and persistence of the Indonesian army

J. Schiller
Department of Politics

How a leaflet helps history

Are you tired of having leaflets dropped in your letterbox or handed to you in the street?

Rather than throwing them away and snarling at the distributor next time give a thought to the leaflets' historical context!

This is the request of the State Library which has a collection devoted to ephemera.

The Riley and Ephemera collections, which are housed in the La Trobe wing of the State Library, are ever-growing collections of leaflets, pamphlets and handouts of all types — political, religious, poetic and crackpot. These ephemera will eventually be a valuable historic resource and the collections need your donations to keep growing, especially during elections.

So, if your organisation has leaflets, either current or old and gathering dust, they would be most welcome in the Riley collection. The library will arrange to collect donations if necessary, or material can be posted to: State Library, (Riley and Ephemera collections), 328 Swanston Street, Melbourne. 3000.

Material may also be left at the inquiry desks in the State Library.

MAY DIARY

7-19: **EXHIBITION** — "A History of French Photography 1816-1920." Pres. by Alliance Francaise de Victoria in conjunction with the French Foreign Affairs Ministry, the French Museum of Photography, Paris, and Monash Department of Visual Arts. 10 a.m.-5 p.m. **Exhibition Gallery, Menzies Building.** Admission free. Inquiries: ext. 2117.

7-19: **MUSICAL** — "Guys and Dolls", presented by Cheltenham Light Opera Company. Nightly at 8 p.m. Saturday matinee, May 12 at 2 p.m. **Alex. Theatre.** Admission: adults $4, children $2.

7: **LUNCHTIME CONCERT** — Philip Miechel, clarinet; Margaret Schofield, piano. Works by Reger and Poulenc. 1.15 p.m. **RBH.** Admission free.

MIGRANT STUDIES SEMINAR — "Jewish Education and Jewish Identity", by Ms Rosalie Simai; "The Adaptation of Soviet Jews in Victoria", by Ms Elka Steinkalk. Pres. by Monash Centre for Migrant Studies. 7.30 p.m. **Lecture Theatre R3.** Admission free. Inquiries: ext. 2925.

8: **ABORIGINAL STUDIES LECTURE** — "Contemporary Culture: Urban Social Organisation and its Relationship to the Traditional", by Mr Ken Colbung. Pres. by Monash Centre for Research into Aboriginal Affairs. 1 p.m. **Lecture Theatre R6.** Admission free. Inquiries: ext. 3335.

8: **CONCERT** — City of Dandenong Band with the Linken Fielding Big Band and Michael Cormick. 8 p.m. **RBH.** Admission: adults $3.50, pensioners $1.50, children $1.

10: **DEBATE** — "That the Press has had Its Day", Age Newspaper vs. Victorian Academics. Presented by Monash Debating Society. 8 p.m. Tickets available from offices of Statewide Building Society at $1 each. **RBH.**

11: **CONCERT AND LECTURE** — "Bharata Natyam", South Indian classical dance. Demonstration by Chandrabhanu. Pres. by Monash Department of Music. 1.15 p.m. **Music Department Auditorium, Menzies Building.** Admission free.

12: **CONCERT** — ABC Gold Series No. 1, The Melbourne Symphony Orchestra. Conductor — Hiroyuki Iwaki, with Cecile Ousset — piano. Works by Roussel, Weber, Nielsen. 8 p.m. **RBH.** Admission: A. Res. $7.20, B. Res. $5.80, C. Res. $4.40.

13: **CONCERT** — Melbourne Symphony Orchestra. Conductor — Hiroyuki Iwaki, soloist — Vernon Hill. Works by Rossini, Vivaldi, Tchaikovsky, Bizet, Faure, Monti, Dvorak. 3.30 p.m. **RBH.** Admission free. Entree cards at ABC, 10 Queen Street, Melbourne, or Robert Blackwood Hall.

14-18: **COURSE** — "Introduction to Operations Research", pres. by Monash Department of Econometrics and Operations Research. Other courses offered by the department. **MAY 21-25:** "Production Management Computer Workshop"; **MAY 23-25:** "Critical Path Scheduling Workshop"; **MAY 28-JUNE 1:** "Interactive Computing for Management"; **MAY 31-JUNE 1:** "Decision Networks for Management". For further information on all these courses contact Mrs Dorothy Jones, ext. 2441.

14-26: **SCHOOL HOLIDAY ATTRACTION** — "Merry Tales from Anderson and Grimm", presented by Victorian Arts Council. Daily at 10.30 a.m. and 2 p.m. Saturdays 2 p.m. only. **Alex. Theatre.** Admission: adults $4.50, children $2.75.

18-21: **CONFERENCE** — 3rd National Conference of Musicological Society of Australia. **Music Department, Menzies Building.** Registration fee: $20 (students $10). Concerts to be held during conference: **MAY 19:** "Music of the Spheres", by Ars Nova. 1 p.m.; **MAY 20:** "Hear Music Now", contemporary music. 2 p.m.; **MAY 21:** "Gamelan" concert led by Poedijono. 1 p.m. All concerts in **Music Auditorium, Menzies Building.** Admission free. Further information, ext. 3235.

19: **CONCERT** — May Music Camp featuring "Night on Bald Mountain" by Moussorgsky and "Capriccio Espagnol" by Tchaikovsky. Conductors — John Curro and Ronald Woodcock. 8 p.m. **RBH.** Admission: adults $2.50, children $1.

21: **CONCERT** — Guarneri Quartet presented by Musica Viva Australia. Works by Mozart, Bartok and Schumann. 8.15 p.m. **RBH.** Tickets available at BASS agencies.

22: **CONCERT** — State final of the ABC Instrumental and Vocal competition. **RBH.** 7.30 p.m. Entree cards at ABC, 10 Queen Street, Melbourne, or Robert Blackwood Hall.

24-June 2: **MUSICAL** — "Finian's Rainbow", presented by Heritage Musical Company of Waverley. Nightly at 8 p.m. Saturday matinee, June 2 at 2 p.m. No performances May 27, 28, 29. **Alex. Theatre.** Admission: adults $4, children $2.75. Bookings: 560 8085. Vacancies still available for 1979 **Alex. Theatre** Saturday Club Series — a perfect introduction to live theatre for children. Red Series — 5-8 year-olds, Blue Series — 8-13 year-olds.

30: **CONCERT** — Yamaha Electone regional finals presented by Waverley Music Centre. Compere — Philip Burns, guest artist — John Adamson. 7.30 p.m. **RBH.** Admission: adults $3, children under 16 $1.

30-June 1: **CONFERENCE** — "First National Conference on Rheology" co-sponsored by the British Society of Rheology (Australian Branch) and the Monash Faculty of Engineering. For further information contact Dr C. Tiu, ext. 3423.

31: **CONCERT** — ABC Gold Series No. 2, The Melbourne Symphony Orchestra. Conductor — Elyakum Shapirra, with Roger Woodward — piano. Works by Richard Meale, Bartok, Walton. 8 p.m. **RBH.** Admission: A. Res. $7.20, B. Res. $5.80, C. Res. $4.40.

CONTINUING EDUCATION

The Monash Centre for Continuing Education is offering the following courses and workshops for the month of May; **21-25:** "Mosses and Liverworts", five-day bryophyte identification course; **21-25:** "Microprocessors for Instrumentation", five-day intensive course for professional staff; **28-31:** "Structural Design of Steel Portal Frames", four-day intensive course; **28-June 1:** "Noise and its Control", an intensive five-day course for professional staff; **29:** "Continuing Education Services for Country Professionals", one-day workshop for people involved in the design and organisation of such programs; **30-June 1:** "Traffic Engineering Practice", three-day workshop for professional staff. Further information on courses and workshops, ext. 3718 (a.h. 541 3718).

Musicologists come to Monash 'to cast a wider net'

The news on a radio current affairs program recently that "musicologists are busy studying the effects of Muzak on the buying habits of shoppers in supermarkets" came as a surprise to reader in Music at Monash, Dr Margaret Kartomi.

As president of the Musicological Society of Australia, Margaret Kartomi concedes that such a study may indeed be going on, but she emphasises that musicology casts a somewhat wider net.

She says: "Musicology is the study of music in all its aspects throughout the world."

She believes that the study suffers an "image problem" in Australia with many people seeing musicologists as the poor cousins of practical musicians and composers.

She says: "Some think that musicologists are, indeed, failed performers and composers. They are prejudiced in favor of the creators of sound as opposed to the scholars of sound."

The seeds are being sown for greater general and academic recognition of the study, however.

More than 60 of these scholars of sound and people generally interested in the study of the phenomenon of music will gather at Monash this month for the third national conference of MSA. The conference will be held from May 18 to 21 in the Music department.

As **Jill Stubington,** MSA treasurer and Monash PhD graduand, points out, the Society has grown in strength over the last few years and now has seven chapters in Australia and New Zealand.

There are other signs of growing recognition of the discipline. Fifteen years ago little musicology was taught in Australian universities; today, most departments teach what aspects of it they can, she says.

A new publication, **Australian Directory of Music Research,** contains abstracts of hundreds of recent articles in musicology.

And, in September, the third symposium of the International Musicological Society will be held at Adelaide University.

The Monash conference has been organised by Margaret Kartomi, Jill Stubington, and MSA secretary **Carol Williams,** a lecturer in Music at Monash.

In format the conference will embrace discussion sessions based on pre-circulated papers, displays and concerts. The public has been invited to attend the latter, which are free.

One of the most important sessions — on May 20 — will explore the new ground broken in investigations into just how the brain "processes" music. This session is to be chaired by **Max Cooke,** of Melbourne University, and will be addressed by **Anne Gates,** a Monash PhD graduate now at Melbourne University, who is working in the new research area of neuromusicology; **Michael Kassler,** a musicologist from Sydney; and **J. Barrie Morley,** a neurosurgeon.

The speakers will be looking at such questions as how specific levels of musical structure (such as melody and harmony) are processed. Research with patients suffering from amusia — an inability due to illness to hear specific musical elements — has aided the understanding of this "processing".

In another session, papers on music therapy will investigate how music is used in the treatment of stroke patients and those suffering from psychotic breakdowns and drug addiction.

A lively session — in which opposing camps will have performers on hand to illustrate their points — will deal with inconsistencies found in musical scores, for example, in the baroque period. Such inconsistencies have been explained as mistakes and have been "corrected" by musicologists for the performer. Now a new school of thought contends that these inconsistencies are reflections of life and humanity and are based on a desire to avoid inhuman precision and boring sameness, and should not be "corrected".

Members of the Monash Music department (from left) **Margaret Kartomi, Gregory Hurworth, Reis Flora** and **Jill Stubington** show some of the shawms which will be featured in a Musicological Society conference display. Photo: **Herve Alleaume.**

Aboriginal music session

A session on Australian Aboriginal music will be given by **Stephen Wild,** ethnomusicologist with the Australian Institute of Aboriginal Studies in Canberra, and Jill Stubington. Another session will look at the music of the Pacific and Southeast Asia.

The relationship between dance and musical form in 1600 will be explored by Monash graduate, **Paul Maloney,** with music played by **Harold Love, John Griffiths** and **Ros Brandt** and appropriate dances performed by **Rosalind Smith** and company.

Conference displays will feature:

- Intercultural Shawms. Monash lecturer, **Reis Flora,** and tutor, **Gregory Hurworth,** will mount a display of shawms (double reed wind instruments) including ones from India, Indonesia and China and a set of six Renaissance shawms recently purchased for Monash by **Professor Trevor Jones.**
- Music of the Spheres. Carol Williams is organising a display on the musical and extramusical connotations of Music of the Spheres. (Medieval man believed that sounds were produced by the rotation of the planets, producing beautiful music that was nevertheless unheard because of human imperfection.)
- Recent Australian publications in musicology.

In conjunction with the conference the rare books librarian, **Mrs Susan Radvansky,** has organised a rare music books exhibition in the Main Library. This exhibition will feature books from the Monash and Victorian state libraries and private collections on 18th century music in the theatre.

Among the concerts are:

- Music of the Spheres, performed by Ars Nova led by **Bevan Leviston,** on Saturday, May 19 at 1 p.m.
- Recent American chamber works performed by Hear Music Now, on May 20 at 2 p.m.
- A Javanese gamelan concert led by **Poedijono** and featuring dance and puppetry, on May 21 at 1 p.m.

All concerts are to be held in the Music department auditorium on the eighth floor of the Humanities Building.

Chandrabhanu to dance

Chandrabhanu, considered the best male dancer in Malaysia, will give a concert followed by a lecture/demonstration in the Music department auditorium in the Menzies Building on May 11, starting at 1.15 p.m.

Chandrabhanu has studied a number of Indian classical dance styles and is an internationally recognised exponent of the Bharata Natyam, the great temple dance of India.

He has performed with the Malaysian national dance company, lectured in the performing arts at the University of Penang, and last year performed at the World Congress of the International Society for Education Through the Arts in Adelaide.

His Monash concert is being supported by the Vera Moore Fund.

MONASH REPORTER

The next issue of Monash Reporter will be puslished in the first week of June, 1979.

Copy deadline is Friday, May 25.

Contributions (letters, articles, photos) and suggestions should be addressed to the editor, (ext. 2003) c/- the information office, ground floor, University Offices.