

# Monash scientists eclipsed twice — by moon and clouds



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The frustrating cloud cover and approaching totality produce an eerie effect as the physics team at Mt. Burnett make last minute equipment checks, hoping for a break in the near-overcast. But their luck was out. — Picture by Melbourne "Sun" photographer John Clasper.



### MAGIC MOMENTS

Tania and Angela, from Middlefield Primary School, were clearly delighted with their first experience of university life.

For the story behind the picture, see page 6.

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Cloud cover defeated the Monash physics department in its various efforts to make scientific observations of the October 23 eclipse.

Projects set up at three locations — Mt. Burnett, Pyalong, and Monash itself — were all "greyed out" at the crucial time.

"Unfortunately all our projects relied on clear weather," explains senior lecturer and project co-ordinator Dr Denis Coates.

He and fellow senior lecturer Dr Keith Thompson, together with fourth year student Michael Dale, part-time M.Sc. student John Robinson, and four astronomy 205 students, were ready at Mt Burnett for the big non-event.

There they had a camera loaded with special film attached to the university's Jeffree telescope to capture a photometric record of the sun's corona. This is a means of measuring the intensity of light in different waveband lengths.

A battery of other telescope/camera hook-ups were poised in vain nearby (see picture above).

The Mt Burnett group, as well as a team of students stationed on a rooftop at Monash, were also hoping to make observations of the shadow bands which move across the earth im-

## Our roving correspondents — 1

Italy's university students have to put up with conditions that would surely make a rebel out of the most docile Monash scholar, says a Monash historian.

Stewart Broadhead, senior lecturer, contributes this picture of the Italian university scene after visiting that country on study leave:

# WE'VE NEVER HAD IT SO GOOD ...

With so much controversy over teaching programs going on at Monash, the itinerant academic is bound to keep an eye open for comparable problems abroad, and he doesn't always find much to take home with him here.

Perhaps Australian universities place too much emphasis on the paraphernalia of learning — the meticulous reading-guides and the long rows of multiple-copies, the course committees and the glasses of sherry, the breakdown services and the visual aids.

However that may be, it is certainly the case that most European universities don't bother with so much paternalism.

Consider what students in Italy, cradle of western civilisation (roughly and birthplace of the modern university (precisely), have to put up with.

Most of the following facts are extracted from a detailed survey of Italy's universities carried out by the Rome-based national weekly *L'Espresso* and published during August to assist new students to choose their universities and courses for the approaching academic year.

**Orientation.** There is none. *L'Espresso's* investigators naturally hoped to locate readily available information on such matters as enrolment procedures, course structures, library facilities etc. for their survey, but found they had to fend for themselves.

"We looked in vain for centres of orientation . . . university administrations did not understand our problem . . . at the Ministry of Public Instruction they congratulated us on taking up a jolly good idea."

**Faculties.** Italy now has 44 universities and nearly one million student enrolments. The 'meal-ticket' mentality is widespread among students, especially in the poorer regions to the south, and because quotas are politically unpopular and practically unknown, enrolments commonly exceed teaching capacity by startling amounts.

This despite an energetic expansion program which has increased the

number of universities from 27 in 1951 to the present 44.

At Turin, for example, 20,000 arts students jostle for space in a faculty designed for 5000, while at Naples, to switch abruptly to the south, the 7000-strong literature courses have only five rooms at their disposal.

A solid drift to the bigger universities produces the worst cases of overcrowding, sending enrolments at Rome (State) to the unmanageable figure of 135,000 and at Naples and Milan to 90,000 each.

True, there's a safety-valve here. *L'Espresso's* inquiries revealed that only about 28 per cent of students attend their universities at all regularly — possibly an indication that overcrowding is a condition which tends to cure itself, or perhaps reassuring evidence that most of the enrolments are frivolous and only the serious students survive.

The average staff-student ratio? One in 58.

**Teaching facilities.** Libraries and laboratories, to pick on two essential teaching facilities, fall below acceptable standards in nearly half the universities and, in the case of the laboratories, are not always accessible to undergraduates anyway. Well-equipped laboratories are usually reserved for research work, sometimes in collaboration with industry.

Insufficient staff and out-of-date texts are the main library problems. At Naples lack of space in the humanities library stopped acquisitions years ago, with the faculty of law being the least adversely affected. It added the last volumes to its collection in 1968.

**General facilities.** Perhaps most disconcerting to Australian students would be the average Italian university's indifference to all those amenities — social, cultural, recreational — which make un-

## When 'STOP' means 'GO'

Here's a warning for Monash people driving out of the university by the exit at the intersection of Howleys and Normanby Roads in the north-east corner of the campus.

If you are turning right into Normanby Road, you do NOT have right of way over any oncoming (southbound) traffic in Howleys Road.

Some confusion has been arising because this oncoming traffic faces a "Stop" sign.

Some northbound drivers believe that this "Stop" sign means that they have priority even while turning right.

Not so. The regulations now in force in Victoria mean that motorists leaving the university and making a right-hand turn must give way to the Howleys Road traffic.

However, cars turning left from Normanby Road into the University do have right-of-way over southbound traffic halted at the Howleys Road "Stop" sign.

# Top Soviet scientist on visit

One of the Soviet Union's leading scientists has been visiting Monash to study research being done here in comparative physiology.

Professor Alexander Shapovalov works in Leningrad, where he heads an Academy of Science research institute.

His research interest centres on the study of evolutionary processes in the physiology of nervous systems in animals.

During a three-week visit to Monash last month, he examined progress in research being done with marsupials and other animals by Professor Robert Porter and fellow members of the Monash Department of Physiology.

He later went to Canberra to study work being carried out at the Australian National University before returning to the Soviet Union.

Professor Shapovalov, whose wife is also a distinguished Soviet research scientist, said in an interview with the Reporter that he had been greatly impressed with the research facilities available at Monash and with the quality of the work being done here.

Comparative physiologists in many parts of the world, he said, were interested in studying these evolutionary processes as a means towards achieving a better understanding of the ways in which man's brain and nervous system operated.

"By studying the ways that brain and nerve cells operate in animals which have reached different stages in the evolutionary process we can come to some better understanding of how this machinery works," he said.

In turn, this was going to be of long-term importance in the improved understanding of diseases of the brain and nervous system in man.



● Professor Shapovalov

The machinery itself must be understood more fully if treatment of human patients were to be significantly advanced.

Professor Shapovalov, who speaks fluent English, said that at home in Leningrad he was involved only with research and had no teaching duties.

The linking of research and teaching functions at a university such as Monash had surprised him.

Universities and institutes such as his own operated quite independently of each other in the Soviet Union.

"I can see advantages and disadvantages in both systems," he said.

"In my country, research scientists obviously have greater time and freedom to concentrate on research problems alone. The Australian system, on the other hand, does bring young students into contact with research processes at an earlier stage in their careers."

dergraduate life tolerable.

The theatre or playing field, conference room or club-room provided by the university itself is a rarity, and student initiatives to organise these things for themselves are necessarily limited and lead a precarious existence as enthusiastic students and borrowed facilities (usually civic) come and go.

At Rome, sporting facilities run to one football field and a gymnasium for those 135,000 students, and among other activities only the theatre club's program for securing visits from celebrities in the entertainment world seems to be prospering.

Elsewhere the level of student activity and 'involvement' tends to rise and fall with the fortunes of the political clubs. Branches of the Italian Communist Party are active in many universities, organising conferences and discussions, though in the far south the neo-fascists, currently declining at Catania but holding their own at Messina, sometimes make the running.

Are conditions as uniformly depressing as this brief report suggests?

Well, there are some "privileged" institutions, notably Pisa's Scuola Normale Superiore and, trailing a fair way behind but still superior bodies, Rome's Catholic University and Milan's Bocconi.

But these are small, specialised universities whose existence has no bearing on the prospects for the student

masses. For the rest, it is a matter of some universities having a higher number of "strong" faculties than others, notably in Feltre, Modena, Cosenza and a number of towns on the northern plains.

A tough educational philosophy prevails and will almost certainly persist long after Naples has up-dated its texts.

When Enrico Berlinguer, leader of the Communist Party, talks about the universities, he is less concerned to expose them as typical examples of bourgeois decadence and political mismanagement than he is to exhort students to work harder and make the most of them.

In short, life is struggle, study mainly a matter of individual application and universities primarily research and examining bodies.

Am I suggesting that we could do with a dash of these old-fashioned ideas at Monash? Perish the thought. Our tradition is different.

It begins with the assumption that every administrator is bad and every academic a more or less incompetent teacher, and proceeds from there.

But perhaps we ought to bear in mind that if any Monash student put in time at a university over here, he would probably hurry back to Clayton as soon as he decently could, recommending a knighthood for the Vice-Chancellor and salary rises for the deans.

Roving Correspondent No. 2 reports on page 4



**RBH**

# will be on record

The Melbourne Symphony Orchestra took over Robert Blackwood Hall last month for a three-day recording session.

And the ABC is delighted with the results.

"They're probably the best recordings we've ever made," says Mr Peter Rorke, the ABC's Victorian supervisor of music.

"Acoustically, Robert Blackwood Hall is the finest hall in Melbourne — for concerts or recording."

Mr Rorke said the ABC hoped to release the fruits of last month's session on a commercial LP disc. Major

works on it would be Stravinsky's *Petrushka* and Handel's *Water Music Suite*.

The Melbourne Symphony Orchestra was conducted — for the last time this year — by the popular, and outstandingly successful, Japanese conductor **Hiroyuki Iwaki**.

Herve Alleaume's photograph was taken towards the end of the recording session.

Soon after, Mr Iwaki flew off to Japan to prepare for a round of conducting engagements in the US and Europe. He will return to Melbourne next April to begin a new term as chief conductor of the MSO.

Robert Blackwood Hall again will be the venue for the ABC's Gold Series concerts in 1977.

Besides Iwaki, conductors engaged for the series will include Charles Dutoit, Elyakum Shapirra, Frank Shipway, and Moshe Atzmon. Soloists during the season will be Barry Tuckwell (horn), Michel Block (piano), Gwenneth Pryor (piano), Kyung Wha Chung (violin), Anna Reynolds (mezzo), and Edith Peinemann (violin).

Other highlights planned for Robert Blackwood Hall in 1977 include:

- ★ Eight concerts by Musica Viva (two more than this year).

- ★ A series of concerts by the Melbourne Chorale.

- ★ The national final of the organ festivals sponsored by the Yamaha Foundation.

The manager of the Hall, Mr Don Vincent, says that, following the installation of a new TV lighting batten, there is a strong likelihood that some of the Gold Series concerts (and others) will be televised.

Commercial TV channels had also expressed interest in using the Hall for "specials."

Mr Vincent said the Hall was also looking at the possibility of increasing the number of jazz concerts in 1977, following the success of performances held there this year.

would construct the pitch.

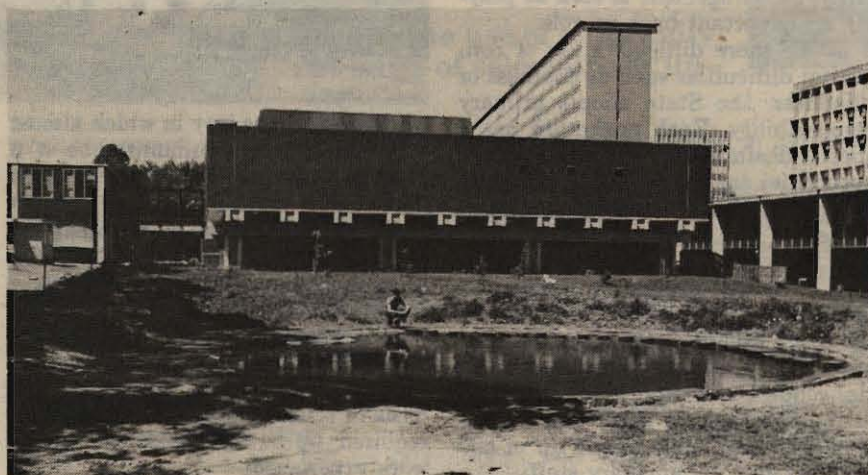
Herve Alleaume's photograph shows the polypropylene sheet, known as "Nylex Turf", being laid on Hardie's compressed sheet.

Latest report indicate that the pitch is playing well.

The process has aroused a great deal of interest, as it's thought to be eminently suitable for use in school playgrounds.

On making inquiries about materials Doug and Les discovered that Jack Potter, the Victorian cricket coach, was already working on a similar project with Peter Unkles, of Nylex Corporation.

As it seemed sensible to combine their efforts, they approached Nylex and James Hardie & Co. Pty. Ltd., who agreed to donate the materials if the Sports and Recreation Association



**New quiet spot to relax . . .**

## System garden is on the way

The botany department's system garden is taking shape in what was once a littered builders' yard.

The site, bounded by the science, science south and medicine buildings, has been levelled with the addition of more than 200 tonnes of soil, and a 40 ft. diameter pond built.

The pond (seen here in Bruce Fuhrer's picture, with curator Graeme McGregor beside it) is a major feature of the garden, and will contain a variety of aquatic and swamp plants.

Planting began this spring, and already more than 100 plants are growing in the south-eastern section.

### Largest collection

A labelling program is under way and it is expected that eventually the garden will hold the most comprehensive labelled collection of plants in the southern hemisphere.

Most of the species planted this year have been grown from seed obtained from botanical gardens overseas — where possible, from places where the species is indigenous.

The most recent addition is a limestone rockery, consisting of 20 tonnes of Lilydale rock. This will be planted with limestone plants from many parts of the world.

### TALK ON JOBS

The Monash Graduates Association is planning an "informal discussion session" to study the problems of unemployment among graduates.

MGA president, **Glenis Davey**, says it is hoped that as many graduates as possible — unemployed or otherwise — would take part.

The Monash Careers and Appointments Office had agreed to send a representative, and the Chamber of Manufactures was also likely to participate.

Miss Davey said that no firm date had yet been fixed, but it was hoped the session would take place on a Sunday afternoon later this month.

Meanwhile, the Association has been seeking information on the number of unemployed graduates and other relevant material.

The flat area between the rockery and the pond will be sown to lawn soon, and mounds will be completed early next year, following completion of the road to the Biomedical Library. A bed of New Zealand trees and shrubs

will be planted near the zoology building.

The final, and most ambitious, project will be the construction of a fern gully between the biology building and the road to the library.

## Here's news for the "carpet-bowlers"

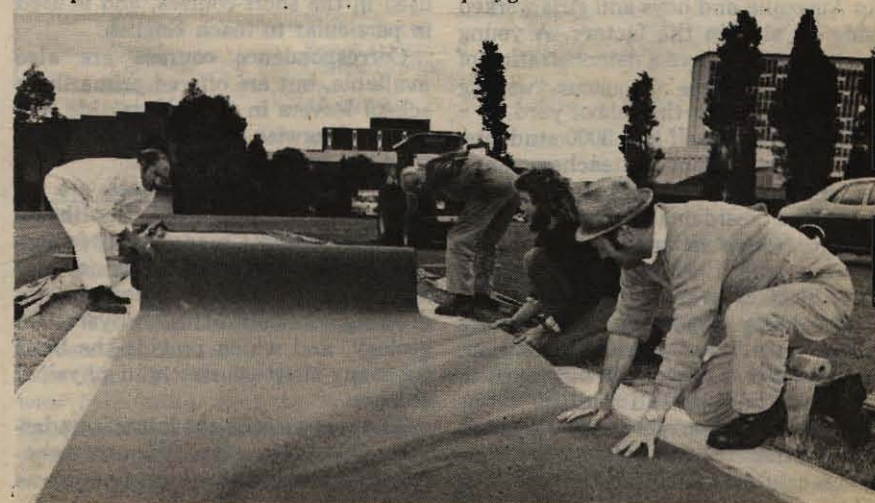
Monash has a new, removable cricket pitch for the 1976-77 season. And it's made of carpet.

The pitch grew out of an idea by Doug Ellis, Deputy Warden of the Union, and Les Hudson, Sports Ground Superintendent.

Doug says that, for some time, the Sports and Recreation Association had wanted to provide an all-weather pitch in the centre of the rugby field. The pitch would have to be suitable for both competitive and social matches, but would need to be designed so that it could be taken up in winter and relaid in spring.

"The usual practice is to pour a concrete strip on which coconut matting or some synthetic material is laid for cricket, and then during winter to cover the concrete with a layer of sand or dirt," he said. "This not only provides a poor playing surface, but can also represent a significant safety hazard for body contact sports such as football and rugby."

"So Les and I thought of laying down removable strips of fibreglass or compressed cement sheet and covering these with some suitable material."



In China, the needs of society come first. Personal needs and requirements run behind. What are the practical effects of this in the field of education? Here, Belinda Lamb, student adviser in the Monash Faculty of Arts, writes of her recent three-week study tour of China as member of a group organised by the Australia-China Society, of which there is now a branch on the Monash campus.

# A CHINESE BLEND OF POLITICS AND REALISM

Education in China today is essentially pragmatic, in an attempt to prepare the Chinese both politically and vocationally for the role they must play in the future development of their nation.

From primary through to tertiary level, education appears based on a philosophy, clearly shared by the vast majority of the people, that blends politics with social realism.

Fundamental to an acceptance of this selflessness in pursuit of a common cause is the acceptance of Mao's dictum that "politics should be placed in command"; the realisation that each job no matter how menial and undesirable it might appear in Australian eyes, is seen to be as important as the job demanding high professional qualifications.

The most striking initial impressions of our group of 24 (and in a three-week tour reactions can be little more than impressionistic) were those of a people willing and enthusiastic to work for the betterment of their society and seeing education as one key to this betterment.

Education and employment are necessarily interrelated. This is the case not only in Australia, a developed nation with its population of 13½ million, but also in China, a developing nation with a population of 800 million.

## Work experience

In China at the middle school level, work-experience forms a vital part of the study program. The curricula of many schools bear a resemblance to the technical schools of our own system, as the larger schools often had their own workshops or small factories working in close co-operation with local factories.

While in Yangchow, a small provincial town north of Nanking, we visited the local middle school. Although it was summer, and holiday-time, the school was a hive of activity.

A one-week recreational school had been organised, providing a wide range of activities, from table-tennis, chess and story-telling, to a machine repairshop, and truck parts factory (this continued throughout the school year, and the parts made were bought by the local motor and repair factory).

There was no evidence of the sex-typing of roles one has come to expect in Australia and boys and girls worked side by side in the factory. A young girl, about 14, gave a demonstration of driving one of the ubiquitous "walking tractors" around the school yard.

The school itself had 3000 students, with a total staff of 200 teachers, many of whom were housed in specially provided residential quarters. The library, which in pre-Liberation days housed only 1000 volumes, now has over 80,000.

Our hosts spoke proudly of the fact that, since the Cultural Revolution, "the gate of the school is wide open to workers, peasants and soldiers."

The Chinese place great emphasis on this concept of the "worker/peasant/soldier/student" in

the belief that a background of work-experience both as an integral part of secondary education, then as a precondition for entry to tertiary studies, produces graduates far better equipped to apply theoretical knowledge in any subsequent work-situation.

This is a concept only just taking root in Australia, with the development of a belief in education as an ongoing, lifelong process.

The Chinese are, it appears, well aware of the problems faced by those students with what we term "special learning difficulties." Emphasis is given to special coaching by teachers, where such cases are discovered; peer-group encouragement is seen as playing an important back-up role.

In the more difficult areas of congenital difficulties such as deafness or blindness, the State adopts primary responsibility. Each prefecture has a special deafmute school, although the authorities are less far advanced in the creation of special provisions for blind students.

In Hangchow, a pretty coastal town, once a holiday resort for diplomatic personnel, and wealthy Chinese, we spent an evening with several senior members of the academic staff from Hangchow University, which has a student population of 2700, and a staff membership of 1500, made up of 800 teachers and 700 ancillary staff.

"Short-courses" usually of a three-month duration are a highlight of the offerings at this and many other universities. These courses are especially tailored to meet the needs of teachers who are not fully qualified; or of technicians or commune workers working in particular fields such as hydro-electrics, or optics.

## Coming and going

The short-courses offered by Hangchow University were of four types.

"Going out" courses were those where teachers and students go out into the counties and prefectures to train middle-school teachers. As part of the "Coming in" program, worker/peasant/soldier/students are selected from among the workforce to enrol in courses such as optics, aerometeorology, where the expertise or "refresher-knowledge" thus required the student's return to his work-place.

Radio-teaching is a third method used in the short-courses, and is used in particular to teach English.

Correspondence courses are also available, but are offered primarily to school leavers in the countryside who might otherwise find it difficult to attend the university.

Three-year degree courses are offered in three main areas: the liberal arts, including Chinese, and foreign languages; political science and history; the natural sciences, including mathematics, physics or geology, and which provide the basis for many short-courses; and physical culture.

The emphasis on the latter is understandable, given the Chinese preoccupation with physical fitness as



Children operate a "walking tractor" at Yangchow Middle School.

evidenced by the way in which almost everyone in the community, be it a rural or urban setting, could be seen shortly after sunrise either in a courtyard, or, in the case of Shanghai, on the waterfront embankment, doing basic gymnastics or shadow boxing.

Following the Cultural Revolution, a new system of selection was introduced. Students were not selected straight from middle school on the basis of school performance, but were required to have had several year's work-experience.

Thus, intellectual excellence gave way to political suitability, as the criterion for selection.

The Chinese clearly believe, as is now being borne out in many instances in Australian tertiary institutions, that a background of work-experience enables students to better analyse and solve problems on their own and that such students tend to progress faster through their degree course.

The term "dropout" is now almost non-existent in China.

Intending students apply to their local commune or neighbourhood authorities if they wish to pursue tertiary studies. A mass meeting of their peers then decides whether the application is to be forwarded to the local Revolutionary Committee (ruling authority).

The final decision rests with the department or school concerned.

Requirements at Hangchow Univer-

sity include that the student be no more than 25 years old, usually single; had to have attained at least the level of junior-middle school; to have had two to three years practical experience, and be physically fit.

Preference for entrance into medical schools is now being given to the young "barefoot doctors," usually six-month trained school leavers who work for several years in a commune or neighbourhood clinic, and deal with minor medical matters.

Postgraduate research has been de-emphasised since the Cultural Revolution. Scientific research is being carried out mainly in the universities in the major cities such as Shanghai and Peking.

Every tertiary level student, no matter what course he is attempting, spends a certain proportion of his time out in the community.

Despite the differing political philosophies of the two countries, the Chinese approach to education, especially in its emphasis on work-experience and the social and vocational relevance of its secondary and tertiary courses appears not unlike the approach at present being contemplated and in some cases introduced by educational authorities in Australia.

## To the Editor:

# Bring back exchange scheme

Sir: While Professor Alexander Shapovalov's recent visit to Monash (see page 2) was not in any sense part of an "exchange scheme," it was heartening to see some small sign of the re-establishment of links with Russian research institutes.

Is it not time now to re-activate the Leningrad Exchange Scheme that operated at Monash from 1968 to 1970?

The argument that the money "saved" in not re-activating it can be put to better use in quite spurious.

For example, as a result of a visit to the Lebedev Institute in Moscow during my exchange period in 1969, the

direction of our antiferromagnetic resonance research changed, and an absolutely first class publication resulted. Can this kind of thing be evaluated in terms of dollars?

Besides, the Leningrad Exchange Scheme is, I believe, the only official exchange scheme we have had with any university in the world. I am sure that rather more members of the University than my exchange scholar colleagues agree about re-activating the scheme.

Gordon Troup,  
Reader in Physics.

# HSC: THE GREAT DEBATE

In October, the Reporter published arguments in favour of retaining the HSC. Professor Owen Potter, chairman of the Monash department of chemical engineering, maintained that a survey of the world education scene revealed no alternative that would justify scrapping this exam as the sole tertiary selection method.

Miss Ann Smurthwaite, a research assistant with the Higher Education Advisory and

Research Unit (HEARU) at Monash has a counter view. She argues in this article that there are several strong arguments — including the failure of the HSC in several areas — for changes in university selection procedures.

Both papers appeared originally in the HEARU publication "Notes on Higher Education."



● Ann Smurthwaite

## There ARE alternatives to Higher School Certificate

Over many years there has been much written about the use of externally examined final year secondary school results as the basis of selection for university.

For the most part British and Australian universities, while recognising the disadvantages of the Higher School Certificate (HSC) or its equivalent, have clung to its use on the grounds that it is the best means of selection available.

The threatened boycott of the HSC by a section of Victorian secondary teachers and its mooted abolition after 1978 suggest that the search for an alternative has grown more immediate and practical.

Arguments about the HSC have long centred around three major areas —

- The efficiency of HSC as a predictor of success at university.
- The influence of HSC on educational aims and secondary school curricula.
- HSC as a means of increasing equality of opportunity to enter university.

### Efficiency of HSC Score as a Means of Selection

In view of the tenacious attitude in the universities towards external examinations it is worth reiterating some of the evidence about the efficiency of HSC as a selection device.

There have been countless studies in Australia, New Zealand and Britain examining the relationship between performance in final year secondary school and first year university results. (A recent review of this literature may be found in McDonnell (1975), and also in Anderson (1970) and Miller (1970).)

The most usual way of expressing this relationship has been to correlate HSC selection score (in Victoria various Anderson scores formulae) and aggregate results in first year university examinations.

The correlation co-efficients derived consistently range between 0.30 and 0.50. For example, an Australian wide study conducted in 1961 produced coefficients chiefly in the order of 0.30 and 0.40 (Monash University 0.34, University of Melbourne 0.29) (The 1961 Study, 1971.)

A recent study at Monash of the 1972 intake produced an overall correlation of 0.41 (Bainbridge, et al., 1974.)

When correlations are calculated separately by faculty they tend to be higher for sciences than humanities

(with the exception of Medicine which draws from a particularly truncated population.) Table 1 sets out a comparison by faculty of the correlation coefficients calculated by Bainbridge et al., (1974) and Biggs (1967) for the 1972 and 1966 Monash intakes, respectively.

Faculty	1966	1972
Arts	0.38	0.36
Ecops	0.42	0.35
Engineering	0.49	0.47
Medicine	0.35	0.29
Science	0.58	0.53
Law	0.47	—

Anderson (1970) and Miller (1970) in reviewing a number of studies, concluded that HSC mark and performance in an 'equivalent' first year university subject provided little improvement in the level of correlation, over aggregate measures.

For an example of the correlation levels that can be expected in this regard see the last column of Table 3.

There is no improvement when HSC English is used to predict performance in subjects at university (Bainbridge et al., 1974.)

What then is the significance of these results? The examples given above were chosen for their relevance to Monash, but they are typical of numerous studies that could have been cited.

A correlation coefficient of 0.50 is about the highest that can be expected under present examining procedures. That is performance in HSC explains, at best, about 25 percent of the variation that occurs in the criterion — first year university examination performance.

It should be emphasised, too, that we have been dealing here only with first year university results; beyond that the level of predictability drops away further.

Now there are attempts to explain the low correlation in terms of error in the measuring instruments — e.g. marking and examining procedures both at HSC and university admit much uncontrolled variation.

(It is noteworthy that efforts, at least at HSC level, to cut down on marker variability and to standardise subject

results have not resulted in improved prediction.)

It has also been pointed out that high correlation cannot be expected in a population already curtailed in terms of scholastic achievement, intelligence and social background.

Even if one explains the low correlation on these grounds, nevertheless an overall measure obscures both the strength of association between high HSC score and university examinations, and the lack of association between low HSC score and university performance.

High entrance score correlates fairly well with success at university, but low score does not correlate well with poor university performance. That is, HSC score fails to select efficiently precisely in the region where it is required to do so — at the lower end of the HSC range.

There is ample evidence to demonstrate that this is so. Anderson (1970) makes the point accurately — "The difference between the university results of those in the lowest and second lowest quarter of matriculation performance is very slight. Only in the highest levels of matriculation can we predict with some confidence the outcome of university studies; and even here there is doubt." p.74

West and Slamowicz (1976) in a study of the 1970 Engineering intake at Monash have demonstrated the way in which an overall measure of correlation can mask the failure of HSC score to select efficiently around the cut off point.

They correlated HSC scores for groups above and below the median and first and final year university results. Table 2 sets out their findings.

HSC Score	1st Year	Final Year
Below median	0.05	0.00
Above median	0.52	0.40
Total group	0.44	0.39

In order to see whether this absence of association held true in other areas of study correlations were calculated for a number of first year university subjects and similar findings arrived at. (See Table 3)

HSC Subject 1971	Monash Subject 1972	Below Median HSC	Above Median HSC	Total Group
Eng. Literature	English 41101	0.01	0.36	0.32
French	French 44101	-0.01	0.41	0.38
Chemistry	Chemistry 26100	-0.01	0.44	0.39
Physics	Physics 84101	0.27	0.37	0.49
Pure Maths (new syllabus)	Maths 64150	-0.14	0.28	0.13
Pure Maths (old syllabus)	Maths 64150	0.20	0.39	0.49

There have been other studies illustrating in a different way the failure to find any association between a low entry score and the level of success at university.

In The 1961 Study (1971, p.37) it was calculated that to achieve a hypothetical graduation rate of 80 percent, the percentage of entrants who would have been rejected at different

Australian universities ranged from 47 percent to 69 percent.

The graduation rate of these 'rejected' students ranged from 45 percent to 60 percent.

West and Slamowicz (1976) in their study of the 1970 faculty of Engineering entrants at Monash demonstrated that the overall graduation rate was 56

Continued on page 8

# Summer School offers choice of 61 subjects

Thirteen new courses, including one on the controversial theme of nuclear industry, are being offered in the 1976-77 program of the Monash Summer School.

In all, students will have a choice of 61 different subjects.

With some courses being divided into two or more separate classes, there will be an overall total of 99 classes available.

The 13 courses added since 1975-76 are Sri Lankan dance, mask and movement, Hebrew, graphics design, renaissance and baroque lute, classical guitar, papermaking, native birds, public speaking, self-defence for women, the media, the nuclear industry, and the trade unions.

Classes begin late in November, and the school continues through until

## Overseas 'invasion' of genetics dept.

Three leading overseas scientists are at present working as visiting academics in the Monash genetics department.

They are here to do research on aspects of microbial genetics, in particular those of the bacterium *Pseudomonas aeruginosa*, in collaboration with the chairman of the department, Professor Bruce Holloway.

The visitors are Professor Larry Bryan, Professor of Medical Microbiology, The Medical School, University of Alberta, Edmonton, Canada; Associate Professor Jack Leary, an Associate Professor in plant pathology at the University of California, Riverside; and Dr. Dieter Haas, from the Federal Technical Institute in Zurich, Switzerland, who is on a Swiss National Foundation postdoctoral Fellowship.

Professor Holloway is a world authority on *Pseudomonas aeruginosa*, which can cause serious human infections, particularly of the urinary tract or after burns and in association with illnesses such as cancer and cystic fibrosis.

At the same time, it is very resistant to many commonly-used antibiotics, making such infections difficult to cure.

## HEALTH CENTRE PRAISED

Prahan's Fawcner Park Community Health Centre, which has formal links with Monash, is making increasingly valuable contributions to local health services.

Professor Basil Hetzel, former Professor of Social and Preventive Medicine at Monash and a past president of the centre's board of management, says this in a recently-published annual report.

Monash became involved with the setting up of the centre through the Department of Social and Preventive Medicine, and a formal affiliation was announced last December.

It was planned that the centre would have an important teaching role, and medical students, nurses, social work students, speech therapists and occupational therapists from Monash

March, though individual courses themselves cover shorter periods.

Activities Officer, Neil Wentworth, reports that enrolments for Monash staff and students, and members of the public, have been opened by the Clubs and Societies Office.

The school's brochure about courses is available from that office (ext. 3180 and 3144).

With more subjects available, the 1975-76 enrolment of around 1800 is expected to be increased during 1976-77, Mr Wentworth says.

## Language classes

Languages available, apart from Hebrew, will be French at intermediate standard, and Italian and German for beginners and advanced students in each case.

In the performing arts section, there will be five dance courses, a theatre

workshop for beginners, an acting course, two mime courses, and a mask and movement workshop.

Poetry will be covered by a workshop course, and film by a festival of Australian cinema.

The arts and crafts section — the school's largest — will include 19 separate courses, covering such subjects as weaving, spinning, pottery, painting, embroidery, picture framing, stained glass, furniture and paper-making.

Music courses will include jazz improvisation, and the sports section will include archery and aikido.

Typing, motor maintenance, computer programming, beekeeping, oral communication and first aid are among courses in the "practical" division.

Photography, chess and yoga will also be taught.

Speakers will include Sir Philip Baxter, former Chairman of the Australian Atomic Energy Commission, who will argue the case for a nuclear industry. Several prominent trade union leaders are expected to take part in the course on trade unions. A number of visiting experts from overseas are also expected to lecture.

Fees for classes will range from \$10 to \$55.



It's an opportunity to learn about things as varied as pottery (above) and pistons (below).



# School children say to their student teachers

For the past three years, students in the Monash department of German have been teaching German to children in primary schools near Monash.

Last month, they saw some of the fruits of their efforts when nearly 200 of their pupils came to the University to stage a concert.

The children, aged from six to nine, sang, acted playlets and recited poetry — all in German.

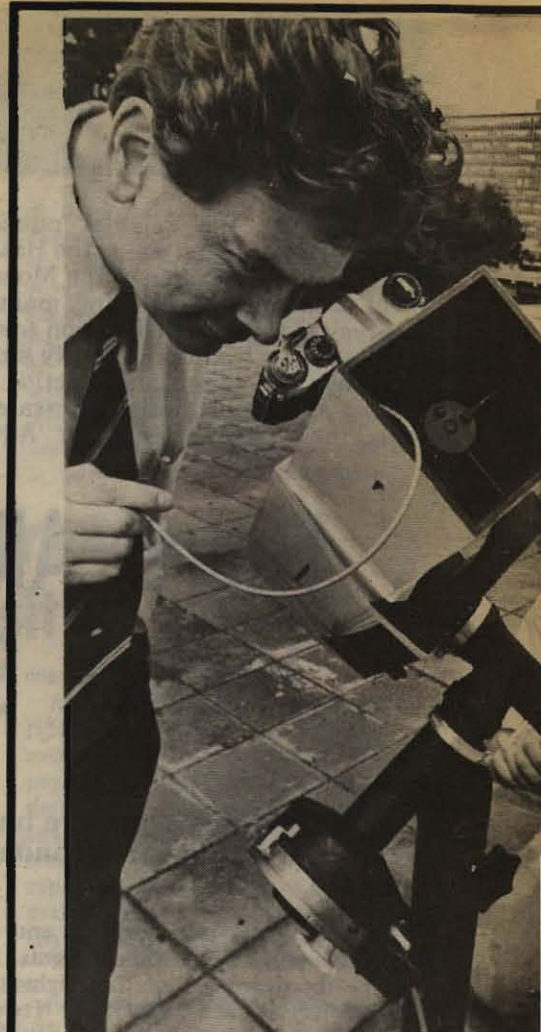
Associate Professor Michael Clyne, organiser of the FLES (Foreign Languages in Elementary Schools) project, said later that, although some of the children had been learning German for only a year, he found it difficult to distinguish between those who had a German family background and those who had had no previous contact with the language.

The children taking part in the concert came from four schools: East Bentleigh, Mount Waverley, Syndal North and Middlefield Primary Schools.

In this picture, by Herve Alleaume, grade 3 pupils from East Bentleigh are singing "Fuchs, du hast die Gans gestohlen" ("Fox, you have stolen the goose").

Their appreciative audience on page one are first-graders from Middlefield.

The East Bentleigh children attend two classes a week, conducted by Monash student Karl Granitzer. Karin Zilko takes the Middlefield children for one lesson a week. Karin and Karl are both third year honors students in German.



Physics senior lecturer Dr Keith Thompson (left) Paul Davies check photometer equipment on the



## NOVEMBER DIARY

8-12: "The World of Mime" presented by the Canadian Mime Theatre, touring under the auspices of the Australian Elizabethan Theatre Trust Alexander. Performances at 1.30 p.m. on November 8, and 10.30 a.m. and 1.30 p.m. on the following four days. Admission: school children 90c, accompanying teachers free. An extra performance will be given at 2.30 p.m. on Saturday, November 13, as part of the Alexander Theatre's 'Saturday Club' program. For this, admission will be: adults \$2.50, children \$1.75.

8: SEMINAR "Microwave Measurements". Science Lecture Theatre S1. Admission free. Inquiries: 89 6351, ext. 232.

# ALL WAS READY FOR AN ECLIPSE BUT THE WEATHER...

continued from front page

mediately before and after the short period of total eclipse.

The Monash-based students were hoping to capture the appearance of the bands on movie film, as well as making visual observations. The intention was to record and measure their movement, speed and dimensions.

Astronomy students who went to Pyalong, near Seymour, were hoping to photograph the corona. But like the other physics teams, their hopes were eclipsed by the weather.

While the physics department had a bad day, the director of the university's Centre for Continuing Education, Dr Jack McDonnell, expects to have some eclipse findings to announce soon.

But then he was working with a much bigger and more widely scattered team of observers — thousands of schoolchildren throughout the state.

The Centre co-ordinated "Operation Blackout", in which more than 200 schools took part. Their teachers and pupils organised a variety of eclipse studies ranging from bird and animal behaviour to surveying people's recollections of what they experienced.

Results are now being collected and collated.

PICTURES BY "SUN" PHOTOGRAPHER JOHN CLASPER



Sue Aylward, of the physics department drawing office, was only joking when she joined the "ban the eclipse" movement for this picture. But . . .



Senior technical officer Leo Wells assembles huge discs specially constructed to record the "shadow bands" expected — but obscured by cloud — before and after the short period of total eclipse.



Dr Denis Coates makes a final inspection of recording equipment that, like the rest, could not be brought into action.



And here's what it was all about: the total eclipse — but photographed from many miles away from the Monash locations.

## Vintage color TV camera given to museum

The Audio Visual Aids Section at Monash has donated a rare early color TV camera to the Victorian Museum of Applied Science.

It is believed that only six of the cameras were produced in 1958 by Marconi Ltd. in England. They were among the first electronic color cameras ever made.

Three went to the BBC for color test transmissions, two were supplied in a mobile television unit for the pharmaceutical company Smith, Kline and French, and one was retained by Marconi Ltd.

They operated to a particular combination of British and American television standards.

The camera was donated to Monash in 1971 by Smith, Kline and French but is no longer used because of difficulty in obtaining parts to keep it in operating order and the amount of attention needed to monitor it during operation.

Curator of the museum's electronics section, Mr D. Turner, took delivery of the camera — and associated equipment — for future public display.



Audio Visual Aids Officer Mr Ted Snell (standing) points out a feature of the camera to Mr Turner.

The Audio Visual Aids Section also helped Mr Turner obtain obsolete equipment from local television stations.

The museum will now have an almost complete representation of commercially-produced TV cameras from the time of the introduction of the medium to Australia.

thanks  
ners



15-19: LECTURES — "Engineering of Chemical and Metallurgical Reactions" — an intensive course of lectures, tutorials and laboratory work, arranged by Monash Department of Chemical Engineering. 9 a.m. - 5.30 p.m. daily. Fee: \$230 (incl. meals, lecture notes, etc.). Inquiries: ext. 3420.

18-19: SEMINAR — "Politics, Nationalism and Education in Modern Burma". Presented by Monash Centre of Southeast Asian Studies. 2.15 p.m. - 5.15 p.m. Room 503, Menzies Building. Admission free. Inquiries: ext. 2197.

18: CONCERT — ABC Gold Series. Conductor Walter Susskind; soloists Janos Starker (cello), Paul O'Brien (viola). Works by Dvorak, Tchaikovsky, R. Strauss. RBH. 8 p.m. Admission: A. Res. \$5.10, B. Res. \$3.80, C. Res. \$2.60.

19-21: Retreat on Dominican Spirituality, at

Mannix College. Application forms and information available at Chaplain's office or at Mannix College (544 8895).

22-26: "NOISE AND ITS CONTROL" — an intensive 5-day course for engineers and architects in industry and private practice. Fee: \$180. Further information: Centre for Continuing Education, ext. 3718, 3719.

26-28: "WORKSHOP — "Indonesian Studies at Tertiary Level". Eight sessions for teachers at tertiary institutions to examine new ideas for study and teaching about Indonesian Society. Fee: \$6. Further information: Centre for Continuing Education, ext. 3718, 3717.

29: CONCERT — Dandenong City Brass Band. Compere and vocalist George Hegan; Margaret Nesbit (soprano), Leslie Miers (piano), Maroondah Singers with Kelvin McMillan (solo saxophone). 8 p.m. Admission: adults \$3, children \$1.

# HSC: THE GREAT DEBATE

Continued from page 5

percent. When the lowest 25 percent of HSC scorers was removed the pass rate only rose to 59 percent; for the lowest 25 percent of HSC scorers the overall graduation rate was 47 percent.

These figures are not untypical. Anderson (1965) in looking at three years of entrants to the University of Melbourne (1957-59) calculated that to increase the first year pass rate from 64 to 74 percent, 30 percent of applicants would have been rejected — 43 percent of whom passed first year. Fensham (1971) points out—

"A conservative estimate of the error in the best three scores near the minimum point would be  $\pm 15$ , and when such a band of scores is designated (Region II) about the present cut off score, we find 30 percent of students involved, or nearly 50 percent of those who passed the whole exam ... It seems likely that any combination of students from this band (Region II), together with those from Region I (those in the highest scoring bracket\*) could be used to make up the University's quota without markedly affecting the predictive success of the selection."

(\*phrase in parenthesis added.)

**Selection on the basis of HSC of the lowest scoring 50 percent of entrants is grossly inefficient.** It is also unjust for those in the lower range of the 'lottery' with equal chance of success who miss out.

## Influence of HSC on Secondary School Education

Though the case for the retention of HSC is frequently argued in terms of prediction one suspects that this has not been the most influential reason underlying the universities' support for its continuation.

Certainly there has been little official sympathy for the schools' case that HSC casts an unacceptable shadow over secondary education.

An externally examined syllabus based on university prerequisites imposes constraints not only on what is taught at sixth form but also on the nature and sequence of courses in the junior forms.

HSC serves as an extrinsic goal of secondary education whose appropriateness is remote for the majority of students not intending to go on to tertiary institutions.

Moreover there is a good argument for claiming that the goal of success in a number of examinations is a distraction from aims designed to encourage individual interests and to allow for different rates of development. The competitiveness encouraged by external examinations is at odds with self-generated aims.

The universities are partially to blame for upholding an educational system in which students adapt themselves to the universities' requirements, where parrot-learned chemistry and a superficial fluency in English are substituted for a genuine interest in knowledge.

The universities' reluctance to give up their influence over secondary education is apparently founded on a fear of the consequences of abolishing HSC.

Public examinations are sometimes defended on the grounds that they

provide an objective standard of basic educational skills in the community.

Again, underlying this argument is the assumption that people can only reach certain standards under the pressure of competition or for external recognition, the sort of argument advanced by Cox (1973) —

"The new fashionable anarchy flies in the face of human nature, for it holds that children and students will work from natural inclination rather than desire for reward." p.5  
While external rewards may be a necessary part of early education, such a method implies that ultimately knowledge is worthwhile for its own sake.

There must be a gradual withdrawal of these externally motivated props rather than their reinforcement in the final year of schooling. It is sometimes claimed in defence of public examinations that they nurture important social virtues. Cox argues —

"A student must submit himself to a period of self-discipline and preparation extending over a length of time ... He is given a precise objective and can succeed only by hard work, concentration, self-knowledge, and careful development of the rational faculties." p.10

Even if there were evidence of these inarguably admirable qualities at play in the HSC year there is still the underlying assumption that such virtues can be cultivated only under the whip of externally imposed motivation.

Such a system encourages dependent rather than self-directed learning, and is at basis unprincipled.

Moreover when the evidence about the unreliability and invalidity of examinations is realised (see Cox, 1967) such shifting standards are risky grounds on which to build a student's confidence in his own understanding.

It is also argued that public examinations have been responsible for maintaining educational standards by providing a basis of comparison of individual, school and regional attainments, over a period of time.

## Some see decline

Some upholders of the present system have identified a decline in educational standards with a decrease in examinations (some to the extent of ruing the passing of the Eleven-plus in Britain.) Burt is quoted in Cox (1973)

"Judged by tests applied and standardised in 1913-14, the average attainments in reading, spelling, mechanical and problem arithmetic are now appreciably lower than they were 55 years ago." p.5

It is difficult to know to what extent populations and tests can be compared or standardised over a period of 55 years to make much sense of such research. Certainly there are opinions contrary to Burt's.

But the real fallacy behind this argument is to equate examinations with disciplined learning. One can have doubts about some of the directions in which secondary schooling is moving without being a supporter of externally prescribed examinations.

Too often opponents of public examinations are identified as "progressives," as purveyors of "pop" culture or as selling out the virtues of disciplined scholasticism.

Moreover there seems to be a blind faith that by imposing prescribed syl-

labi on schools that that will ensure the preservation of the best in our cultural tradition.

A syllabus taught by a reluctant teacher is unlikely to communicate knowledge of any value.

Oddly enough what is rarely discussed in these arguments is the capacity of the universities to instill values, which they claim to honour, in their students. Shakespeare is less likely to be lost to school students if English teachers leave university enriched by

## Equality of opportunity to enter university

Another major argument levelled at the HSC is that it is biased in favour of the socially privileged.

Despite an increase in the percentage of students staying on to complete secondary school (between 1962 and 1972 the percentage has risen from 19 to 33 percent of the first form intake) there is little evidence that universities of Melbourne and Monash have grown more socially representative of the

community.

Although the percentage share of HSC enrolments in high schools has increased from 49 percent in 1962 to 58 percent in 1972 their representation at university has not kept pace. Table 4 sets out percentage representation of entrants at Monash from different types of schools. Lee Dow et al. (1972) makes a similar observation of University of Melbourne intakes.

TABLE 4  
Percentage distribution by type of school — HSC enrolment (1973), Monash entrants (1970-75)

State	HSC enrolment					
	1970	1971	1972	1973	1974	1975
Catholic	51	50	50	50	49	52
Independent	17	16	20	21	21	21
Other	30	30	29	28	29	26
	2	4	1	1	1	1

Measured according to father's occupation there is no indication that intakes at Monash and Melbourne un-

iversities are growing more representative of the total population. (See Lee Dow et al., 1972 and Table 5 below.)

TABLE 5  
Percentage distribution Monash entrants (1970-75), by father's occupation, and classification by occupation of Victorian male workforce (1971)

	Vic. male workforce					
	1970	1971	1972	1973	1974	1975
1. Professional, technical and related	27.0	23.7	32.7	24.8	31.8	27.1
2. Administrative, executive and managerial	22.6	23.1	19.6	22.8	23.8	24.3
3. Craftsmen, production process and labourers	17.5	18.2	16.4	19.2	17.6	18.5
4. Sales	11.2	11.5	10.8	10.7	8.4	8.8
5. Clerical	7.4	9.8	8.3	10.4	4.9	8.8
6. Farmers, fishermen, hunters and related	7.7	7.6	6.0	6.1	6.8	6.8
7. Transport and communication	3.2	3.3	3.3	3.1	3.6	4.1
8. Service, sport and recreation	2.5	2.1	2.5	2.0	2.9	2.5
9. Other	0.9	0.7	0.4	0.9	0.4	1.1

Apart from the discrepancy between HSC enrolments and entrance to university a number of writers (e.g. Selby Smith, 1969) have drawn attention to the loss of talent earlier in the secondary school years.

**What responsibility does the university have to open its doors to a wider section of the population?**

Monash has acknowledged a small commitment to greater equality of opportunity to enter university in the **Disadvantaged and Early Leavers Scheme**.

Though the number of students involved is few and only the faculties of Arts, Law and Economics, in practice, prepared to support the scheme, the performance of these students has been highly successful.

Reports from the University of New South Wales (Barrett, 1976) and Britain (Walker, 1975) have indicated

that similar schemes have been equally successful. **Flexibility of entry need not result in a lowering of standards.**

## An alternative means of selection

This paper has argued the need for changing selection procedures on the grounds —

- the failure of HSC to predict success at university efficiently, particularly around the cut off point;
- the harmful effects of HSC on secondary education; and
- the failure of HSC to facilitate greater equality of access to university.

There are several other pressures likely to influence changes in selection procedures. There is a slackening both in the overall growth in population and



in the percentage of the form one intake staying on till form six.

This may be accompanied by a weakened interest at sixth form level in entering university as the link between a degree and job opportunity becomes more tenuous. (There are likely to be a few exceptions — e.g. Medicine).

At the same time there is increasing interest in a university education among 'mature' age people. This trend has been emerging at Monash at least since 1970. In 1975 over 25 percent of entrants to Arts at Monash was 25 years or older.

The trend is apparent to a lesser extent in the faculties of Economics and Law. Some other Australian universities have reported a similar trend at least over the last two years.

A policy of favouring entry to the university of larger numbers of older students would have a number of advantages. It would weaken the nexus between sixth form and entrance to university.

It could provide greater equality of opportunity for university education for able students prevented from entering university earlier. Since older students are likely to be more self-selective and clearer about their motivation for attempting university studies some of the fears about 'open entry' could be allayed.

(At Monash, for example, only about 50 percent of students who defer entry for a year, in fact take up their place).

**Bearing in mind these factors the following is offered as an alternative basis of selection —**

(i) phasing out of HSC by reducing external assessment requirements and replacing it with moderated teacher assessment. Permanent retention of even a minimum externally assessed requirement is likely to emphasise that part at the expense of the internally assessed component. Internal assessment could be modified by an aptitude test. (This is the basis of Queensland's present selection procedures).

(ii) 50 percent of places to be offered solely on the basis of sixth form internal assessment and aptitude test score.

(iii) 50 percent of places to be divided between other groups:

— students for whom a weighting added to sixth form assessment for work experience

— students for whom a weighting added for age plus sixth form assessment

— students for whom a weighting added for age plus aptitude test score in the case of those who had not completed secondary school.

These criteria might necessitate provision of some bridging courses particularly in the sciences.

Schemes comprising some of these characteristics are now operating in Sweden and Denmark.

## A STATISTICIAN'S REPLY

To the Editor:-

Sir: One of the points made by Ann Smurthwaite, is that the HSC scores of students close to the cut-off mark for university selection correlate poorly with their university performance as assessed one year later.

I wish to point out that this is likely to be true also for the correlation between university performance and any selection score, including the alternatives to HSC suggested by Miss Smurthwaite. The effect noticed by Miss Smurthwaite is therefore not sound evidence against HSC as a selection criterion. It is actually irrelevant.

Suppose that we have decided on some method of arriving at selection scores, and these scores have a certain correlation with university performance scores. (I shall also assume that the pairs of scores have a bivariate normal distribution, for purposes of illustration.)

In the accompanying table, I give three hypothetical cases. Case A corresponds to a selection score which correlates reasonably well with university performance, whereas cases B and C are progressively less well correlated.

	Correlation between selection score and university performance score		
	A	B	C
Whole population	0.75	0.50	0.25
Top Half	0.56	0.33	0.15
Top quarter	0.48	0.27	0.13
Second quarter	0.21	0.11	0.05

Consider, for instance, case A. If the whole population were allowed into the university, the 0.75 correlation would be achieved. If only the top half of the population, as judged by their selection scores, were admitted to the university, the correlation of their scores with their university performance must drop to 0.56. The correlation drops still further, to 0.48, if we calculate it only for the top half of admitted students, that is, for the top quarter of the whole population. The correlation falls dramatically, to 0.21, if we limit it to the bottom half of admitted students, the second quarter of the population.

This reduction in correlation is no fault of the method of selection of students into the university; it occurs automatically if we calculate correlations for a relatively homogeneous group of students. Miss Smurthwaite does just that.

The most important point of all is that in spite of the drop in correlation for the borderline group of students, their selection scores are just as accurate predictors of their university scores as for any other students. The

variance of a student's university score about the prediction is constant over the whole population, and it is the whole population correlation which is relevant to gauge the accuracy of predictions, whether for students near the cut-off score or for those in the top 1%. (Recall that I assume bivariate normality for the scores.)

Naturally, we would like to offer our limited resources to those students most likely to benefit from them. I believe that for selection of students into technical and/or cumulative discipline such as the sciences, engineering, medicine, economics, and languages, we have selection procedures which are worth retaining, or modifying to the extent of requiring specific prerequisites for specific courses. For other areas of study, there may well be no satisfactory selection procedure. If this is so, I wonder whether these areas are worth examining at either secondary or tertiary level. Perhaps we could open them to all comers, via television or other media.

G.A. Watterson,  
Reader, Mathematical Statistics.

## Bonus system would help, says economist

The selection of students likely to do well in first-year studies could be improved by the use of a formula incorporating bonuses for specific skills, a Monash economist has proposed.

Miss Beverley Downes, principal tutor in the department of Econometrics and operations research, gives details of her proposed model in the September issue of "The Australian University."

The model provides a measure of a student's expected performance in first year by adding the values for special skills to a measure of general ability calculated from marks obtained at public examinations or from tests of the TEEP or ASAT variety.

The special skills would be those defined as important by the faculty of the student's choice, and would vary from faculty to faculty.

Miss Downes reports that tests of the model's predictive power had already been carried out using sample groups of students who had entered the Faculty of Economics and Politics at

Monash under the conventional scoring system.

It was found that when bonus points for their HSC passes in economics and mathematics were added to their aggregate mark for all HSC subjects, the result gave a significantly better indication of the ranking achieved in their Monash studies.

Miss Downes comments: "On academic grounds, bonuses for selected subjects could be used to include a desirable set of subjects for study at secondary school, without the disadvantages of rigidly enforced prerequisites.

"The latter would unnecessarily limit the choice of faculty available to students well able to succeed without a secondary school background in the particular subjects involved."

The model also promised an improvement in the ability to select students most likely to perform well in first year in faculties of universities.

However, the validity of claims for it still needed to be tested in other faculties and universities.

## SCHOLARSHIPS

The Academic Registrar's department has been advised of the following scholarships. The Reporter presents a precis of the details. More information can be obtained from the Graduate Scholarships Office, Ground Floor, University Offices, Extension 3055.

**The Richard Claude Mankin Scholarship**  
Available to graduates for full-time research related to water conservation at the University of Sydney. Stipend: Postdoctoral \$11,321 to \$12,691 p.a. or postgraduate \$3,250 p.a. Closes: November 30.

**Swiss Government Scholarships 1977/78**  
Open to postgraduate students for one year with a possible further year's extension. Value: within the range of \$A261 to \$A310 per month plus allowances. Applications close November 19.

**Lady Davis Fellowship Trust 1977/78**  
For study, research or teaching at graduate, post-doctoral or professional levels at the Hebrew University, Jerusalem, for one to three years. Applications close January 1, 1977.

**Royal Commission for the Exhibition of 1851 Science Research Scholarships Offered to Overseas Universities**

Nine scholarships are available to postgraduate students for two to three years full-time research in pure or applied science at a Commonwealth university. Benefits: 1,800 pounds p.a. Applications close at Graduate Scholarships Office on February 25, 1977.

**The Rutherford Scholarship**  
For graduates of exceptional promise and ability to undertake research in the natural sciences for three years. Value 1,850 pounds p.a. Applications close at the Graduate Scholarships Office on February 25, 1977.

## ... and a HEARU rejoinder

Sir: Dr Geoff Watterson questions the relevance of part of the evidence submitted by Ann Smurthwaite against the use of HSC as a selection criterion.

Even in the light of Dr Watterson's figures, the differences quoted are unexpectedly large, and added to the other evidence presented still, in my opinion, support Miss Smurthwaite's argument.

I think she effectively explodes the common myth that the removal of HSC as a selector would lead to huge drops in standards and/or vast increases in failure rates.

Mrs Grace Kirby wishes to extend her heartfelt thanks to all Bill's friends for their expressions of sympathy, and a special 'thank you' to all members of central services for their help.

(Bill Kirby, former coordinator of the University's transport service, died on September 13.)

Her evidence shows that a change over to some other selection procedure may not be much worse with respect to standards and/or failure rates than using HSC as a selector.

In this case the decision about which selection procedure to use should be based on other criteria — the backlash effect on secondary education, or equality of opportunity (to raise two of those criteria that were discussed by Miss Smurthwaite).

My principal disagreement with Dr. Watterson lies in his premise, "Naturally we would like to offer our limited resources to those students most likely to benefit from them." I believe we have to count both the benefits and the costs.

If the "cost" of an alternative selection procedure with respect to student pass rates is trivial, then the "benefits" become much more compelling factors — and Miss Smurthwaite's strong case against HSC on these grounds has not been answered.

— Leo West  
(Higher Education Advisory and Research Unit.)

# ARGC GRANTS, 1977

## HUMANITIES AND SOCIAL SCIENCES

New Projects		\$
Dr. L. F. Brakel	The impact of traditional Malay literature in Sumatra	1,700
Dr L. J. Bryson, Mr R. Baker and Dr N. W. H. Blaikie	Consumer, agency and policy: Perspectives on the services	5,300
Professor P. J. Fensham	Comparative study of two research paradigms for curricular adoption	5,000
Dr M. J. Kartomi	The traditional music of Sumatra	3,000
Dr F. W. Kent	A brief biography of Giovanni Rucellai (1403-81), Florentine banker and patron of the arts	800
Professor J. D. Legge	Western educated intellectuals in Indonesia	3,718
Associate Professor E. Daniel Potts	Australian-American contacts during World War Two	500
Dr J. M. Powell	Conservation and environmental management in Australia, 1914-1945	1,243
Dr R. C. Rice	Foreign trade policy and employment in Indonesia	4,000
Dr A. G. Serle	Biography of General Sir John Monash	10,500
Dr I. Veit-Brause	Nature and origins of German federalism, 19th and 20th century	2,750
Associate Professor J. S. Whitelaw, and Mr J. McKay	Induced migration within large private and Government organisations	1,000
<b>Continuing Projects</b>		
Dr J. L. Bradshaw, and Mr N. C. Nettleton	Human information processing: Determinants & correlates of performance	8,440
Dr C. S. Chen	Induction of audiogenic seizure susceptibility in normally seizure-resistant mice	8,090
Associate Professor M. G. Clyne	Multilingual communication and cross-cultural conflict in Australia	5,000
Professor R. H. Day	Human movement perception: The basis of induced movement	6,949
Dr K. I. Förster	Visual processing of sentences	11,289
Dr D. M. Thomson	Studies in episodic memory	9,870

## PHYSICAL SCIENCES

New Projects		\$
Dr J. A. Barclay	Magnetic refrigeration	4,470
Dr P. E. Clark	Physical properties of composite materials	2,240
Dr T. J. Hicks	Polarization analysis of diffuse neutron scattering	14,347
<b>Continuing Projects</b>		
Dr J. D. Cashion and Dr J. A. Barclay	Studies of solids at low temperature and high magnetic fields	20,150
Dr T. R. Finlayson and Dr T. F. Smith	The study of superconducting transition metal alloys and compounds	8,475
Dr R. J. Fleming	Charge transport mechanisms and alternating current electrical conductivity in some simple organic polymers	5,753
Dr L. J. Gleeson	Cosmic-ray propagation in the solar system	1,680
Dr P. R. W. Hudson and Dr T. F. Smith	Measurements of the thermal properties associated with solid state transitions	13,886
Dr J. R. Pilbrow	Electron spin resonance in crystals and complexes	13,351
Associate Professor J. H. Smith	Magnetic properties of some micromagnetic alloys and the metamagnetic compound Au <sub>2</sub> Mn	5,150
Dr R. A. de Szoek and Dr A. F. Bennett	Mixed-layer dynamics	6,000
Dr G. J. Troup	Antiferromagnetic resonance studies of doped haematite structures	2,500
Professor R. Van der Borgh	Finite amplitude convection in compressible fluids and its application to astronomical problems	10,498
Professor K. C. Westfold and Dr L. J. Gleeson	Synchrotron radiation in planetary atmospheres	4,000

## CHEMICAL SCIENCES

New Projects		\$
Professor R. D. Brown, Dr P. D. Godfrey and Dr G. L. Blackman	Rotational spectra of ions	39,160
Dr G. B. Deacon	Elimination reactions in organometallic synthesis	1,600
<b>Continuing Projects</b>		
Dr D. St. C. Black	Methods of synthesis based on nitrene cycloaddition reactions	9,448
Professor R. D. Brown, Professor W. R. Jackson, Professor B. O. West and Dr S. Middleton	Mass spectra of organic and inorganic compounds	105,230
Professor R. D. Brown, Dr P. D. Godfrey and Dr G. L. Blackman	Molecules in space	18,386
Dr R. F. C. Brown and Dr F. W. Eastwood	Methyleneketenes and methylenecarbenes	12,260
Dr F. R. Burden	Simulation studies of atmospheric reactions	3,040
Dr D. J. Collins, Dr F. W. Eastwood and Professor J. M. Swan	Chemical studies of Solanum alkaloids	900
Dr G. B. Deacon	Lanthanide and actinide organometallics	12,710
Associate Professor R. S. Dickson	Organometallic intermediates in the transition metal assisted reactions of substituted alkynes	1,800
Dr B. M. Gatehouse	Crystal chemistry of the solid state	14,504
Dr R. K. Haynes	Lewis acid catalysed oxygenation of olefins and aromatic compounds	6,846
Professor W. R. Jackson	Asymmetric addition reactions of hydrogen cyanide. A potential new route to resolved amino acids	12,897
Professor W. R. Jackson	Reactions of organic compounds over supported metal catalysts	600
Dr J. E. Kent	Photochemical studies of benzene and benzene isomers	1,500
Dr F. P. Larkins	Chemisorption and catalytic studies on oxide systems	1,750
Dr F. P. Larkins	Theoretical studies in X-ray and in electron spectroscopy	400
Dr I. R. McKinnon, Dr J. G. Mathieson and Dr I. R. Wilson	Chemistry of the lower stratosphere	1,900

Dr K. S. Murray	Single crystal magnetic and spectral studies of inorganic and bioinorganic compounds	1,200
Dr K. S. Murray	Biological iron compounds	1,600
Dr M. F. O'Dwyer, Dr J. E. Kent and Dr R. J. Shaw	Perturbations in the lowest excited singlet state of sulphur dioxide	2,500
Dr A. D.E. Pullin and Dr J. G. Mathieson	Inert gas matrix isolation studies	1,600
Professor B. O. West and Dr K. S. Murray	Synthesis, chemistry and electrochemistry of organometallic and metallo derivatives of some transition elements	1,500
Dr J. K. Yandell	Mechanisms of the reactions of electron transfer enzymes	1,500

## BIOLOGICAL SCIENCES Plant and animal biology

New Projects		\$
Dr B. G. Cragg	Measurement of neuronal metabolism and signalling by autoradiography	1,370
Dr S. A. Crossley	Behaviour genetic studies of naturally occurring populations of <i>Drosophila melanogaster</i>	600
Professor J. M. Cullen	Behavioural aspects of foraging in birds	6,845
Dr F. E. Curry and Dr I. R. McDonald	Transport of water and solutes across the walls of capillary blood vessels	1,893
Dr A. C. Lawrie	Studies on native Australian legumes	5,200
Professor A. K. McIntyre, Professor R. Porter and Dr U. Proske	Role of joint receptors in proprioception and the control of muscles	20,700
Dr T. P. O'Brien	Cell biology of grasses with special emphasis on cereals	6,250
Dr U. Proske	Responses of tendon organs during contraction of single motor units	2,603
<b>Continuing Projects</b>		
Dr M. N. Clayton	Studies on the variability of the Dicotylophytales (Phaeophyta)	4,900
Dr D. F. Gaff	Desiccation tolerant plants particularly grasses	8,622
Dr C. L. Gibbs and Dr D. Loisel	Resting metabolism (heat production) of isolated papillary muscle	1,000
Dr W. R. Gibson	Endocrine factors which influence lipid deposition in chickens	900
Dr N. D. Hallam	Fine structure of plants adapted to desiccation	11,723
Dr G. D. Hirst and Professor M. E. Holman	The properties and synaptic connections of the nerve cells of the intestine	9,647
Professor M. E. Holman	Innervation of smooth muscle	22,418
Dr D. R. Irvine	Studies of acoustic input to single cells in non-specific, polysensory cortical and sub-cortical areas	1,100
Dr B. G. Livett	Role of membrane fusion in the release of neurotransmitters	6,250
Dr I. R. McDonald	Adrenal function in the Australian monotremes and marsupials	25,761
Professor A. K. McIntyre and Dr U. Proske	Role of deep receptors in control of skeletal muscle	16,815
Professor R. Porter	Factors involved in dynamic control of movement	12,493
Dr S. J. Redman	The application of electrical circuit models of neurones to the analysis of junctional mechanisms	10,425
Dr G. S. Taylor and Professor M. E. Holman	Cellular physiology of the sphincters of the gastrointestinal tract	5,900
Dr W. R. Webster	Single unit studies of the cochlear nucleus of the awake cat and the awake rabbit	8,783
Dr R. A. Westerman	Mammalian nerve-muscle interactions	12,371

## BIOLOGICAL SCIENCES (Molecular biology and cell metabolism)

New Projects		\$
Dr R. M. Hall and Professor A. W. Linnane	The influence of the mitochondrion on the expression of the nuclear genome	2,500
Dr V. Krishnapillai	Genetics of transfer of <i>Pseudomonas aeruginosa</i> R factors	2,500
Dr S. Marzuki and Professor A. W. Linnane	The effects of altered biochemical function on the structure and function of mitochondrial membranes	11,821
<b>Continuing Projects</b>		
Dr J. McD. Armstrong	Regulation of phosphoprotein phosphatases of mammalian tissue	1,750
Dr L. Austin and Dr C. Kwok	The role of the cell body in the renewal of axonal and synaptic components	6,000
Dr J. Baldwin	Role of octopine dehydrogenase in energy metabolism of molluscs	2,350
Dr R. C. Bayly	Evolutionary relatedness of enzymes of meta fission degradative pathways	8,737
Professor M. J. Canny	Diffusion-analogue properties of translocation	8,500
Professor B. W. Holloway	A genetic approach to the study of the bacterial membrane	12,840
Professor B. W. Holloway, et al	Genetic organisation of <i>Pseudomonas aeruginosa</i>	10,023

Continued next page

# Dr Stone: 8000 miles to gather one moss

Photographed at the Melbourne launching of the new book are, from left: Mrs Celia Rosser, Professor John Turner and Dr Ilma Stone (both of the University of Melbourne), and Professor M. J. Canny, chairman of the Monash department of Botany.



## BOOKS

### New look at occupation

A recently-published book by Dr Lincoln Li, Monash lecturer in history, has been hailed as an important contribution to the study of Japanese wartime occupations of Asian territories.

The book analyses problems of the consolidation of power and control by the Japanese Army during the first four years of its occupation of North China, 1937-41.

A review in "Monumenta Nipponica," a leading journal on Japanese studies, published in Tokyo, has said the book adds to understanding of "one of the most momentous and yet understudied conflicts of modern times."

The reviewer, Mark Peattie, of Pennsylvania State University, added that Dr Li's study also provoked sober reflection on America's own recent military presence on the Asian continent.

Although some too facile comparisons between Japan's war in China and America's war in Vietnam had been made in recent years, Dr Li's significant contribution confirmed that the similarities were too close for comfort.

Dr Li carried out research in Japan and in Canberra.

The book, "The Japanese Army in North China, 1937-41: Problems of Political and Economic Control," is published by the Oxford University Press (Tokyo) and is now available in Melbourne.

inclusion, and these lists are then circulated and discussed until final selections are made for each volume.

(The latest volume — Australian Dictionary of Biography, Volume 6, general editor Bede Nairn — is published by Melbourne University Press; recommended price \$25.)

Mrs Celia Rosser was a commercial artist specialising in fashion work until her teacher husband was transferred to the bush.

As things turned out, that was a move that set her on a path to the Monash Botany Department and also helped to put her name on the cover of the world's first manual of Australian mosses, recently published in London.

Mrs Rosser drew the 86 plates that illustrate the book, whose text was written by Dr George Scott, Monash senior lecturer in Botany, and Dr Ilma Stone, a research fellow at Melbourne University.

"With no commercial work to do in the bush, I began painting flowers to keep myself amused," recalls Mrs Rosser, a mother of four.

That led eventually to an exhibition of her nature paintings, and to commissions for scientific work.

When the book on mosses was being planned, Mrs Rosser was staff artist with the Monash Faculty of Science, involved mainly in the preparation of graphs and the like.

But the Botany Department's knowledge of her interest in nature painting brought her a special assignment to help with the book.

It was a beginning of some four years of exacting, painstaking work as she struggled first to master the complex art of drawing from under a microscope rather than from life, and then to complete the plates.

Around two weeks' work went into each plate, illustrating both the mosses themselves and the structures of their cells.

All the drawings were done in pencil — "I used every type of pencil from a 2H to a 6B" — because this allowed the inclusion of finer detail than a pen sketch would permit.

Publication of the book, "The Mosses of Southern Australia," means that Australian botanists will for the first time have an Australian manual from which to work in identifying mosses.

Previously, for texts and illustrations, they had to rely on handbooks of



New Zealand, South African and British mosses, supplemented by a range of mostly out-of-date papers.

The new book covers non-tropical flora — most mosses found south of a line from Sydney across to Geraldton.

Dr Stone and Dr Scott (now in Britain on sabbatical leave) travelled many thousands of miles to gather the specimens classified and illustrated in the book.

## Six down: six to go

Australia's national dictionary of biography is a step nearer completion with the publication in October of the sixth book in the proposed 12-volume set.

The latest volume, with 495 entries (R-Z), is the last of four covering the period 1851-1890.

Dr Geoffrey Serle, Monash Reader in History, was joint section editor for this period, and has also since been appointed joint general editor to bring out the six volumes scheduled to cover 1891-1939.

Entries in the latest volume have been contributed by 286 authors,

about half of whom are members of university staffs.

Preparation of the dictionary is a complex national project in which historians, librarians, archivists, other local experts, research assistants, and even overseas correspondents, have all been taking a share.

Headquarters staff are located at the Australian National University, and there is a national committee made up of representatives of Australian university history departments to determine policy.

Working parties in the States prepare provisional lists of names for

Dr P. L. Jeffrey and Dr L. Austin	Turnover of synaptic components	8,000	Dr A. P. Kershaw	The vegetation history of north-east Queensland	4,755
Professor A. W. Linnane and Associate Professor H. B. Lukins	Biogenesis of mitochondria	21,000	Dr A. C. McLaren and Professor B. E. Hobbs	Applications of the ion beam spectrochemical analyser in mineralogy, petrology and deformation studies	11,000
Professor D. A. Lowther and Dr W. H. Murphy	The biochemistry of cartilage glycoproteins	2,000	Dr I. A. Nicholls	The origin of potassium-rich volcanic rocks in island arc and continental margin environments	6,880
Professor D. A. Lowther, et al	Regulation of matrix formation as an expression of the differentiated state of chondrocytes cultured in vitro	8,100	Dr I. A. Nicholls and Mr V. J. Wall	Crystallization and origin of the aluminous granitic magmas	4,250
Professor D. A. Lowther, and Dr H. C. Robinson	Structural studies of connective tissues including factors involved in the maintenance of cartilage	12,813	Dr P. P. Phakey	Transmission electron microscopy of shocked deformed rocks and certain exsolved minerals	3,000
Dr S. W. McKechnie and Dr P. D. Morgan	An elucidation of biochemical and genetic factors which maintain enzyme polymorphisms in <i>Drosophila melanogaster</i>	4,135	Mr V. J. Wall	Experimental and thermodynamic studies of subsolidus relations in the system Ca-Mg-Fe-Si-C-O-H	6,100
Dr P. Nagley and Professor A. W. Linnane	Informational macromolecules in nucleocytoplasmic interactions	10,465	<b>ENGINEERING AND APPLIED SCIENCES</b>		
Dr B. N. Preston	Physico-chemical studies on model connective tissue systems	5,500	<b>New Projects</b>		
Dr D. R. Smyth	Location of DNA synthesized in meiotic cells of <i>Lilium</i>	1,250	Associate Professor J. B. Agnew	Dynamic studies of heterogeneous reaction systems	16,750
Dr M. Weiss	Biogenesis of steroids by the adrenal tissue of the Australian monotremes and marsupials	2,000	Dr D. V. Boger, and Dr C. Tiu	Accelerating and decelerating flows of viscoelastic fluids	13,952
Dr J. Youatt	Ultrastructure and chemical changes in the developing sporangia of <i>Allomyces</i>	5,700	Dr K. E. Forward	Anodized GaAs and Al films and their application to field effect devices	1,400
<b>EARTH SCIENCES</b>			Professor O. E. Potter and Dr W. E. Olbrich	Modelling the blast furnace	700
<b>New Projects</b>	Direct observation and identification of crystal defects and their role in the mechanisms of crystallization and deformation of minerals and rocks	3,500	Dr G. I. N. Rozvany	Optimization of structural layouts of analytical methods	11,123
Dr A. C. McLaren			<b>Continuing Projects</b>		
<b>Continuing Projects</b>			Dr J. B. Hinwood	Cellular structure in a turbulent shear flow	4,530
Dr L. A. Frakes	Sedimentation in Corner Inlet, Victoria	8,600	Associate Professor F. Lawson	Study of the kinetics and mechanism of cementation reactions	2,000
Professor B. E. Hobbs and Dr M. A. Etheridge	An experimental investigation of the influence of phase transformations on the mechanical properties of rocks	9,820	Professor W. H. Melbourne	Aerodynamic loading and response of bluff bodies in a turbulent flow	5894
			Professor O. E. Potter	Mass transfer in the oxidation of cyclohexane	7,853
			Professor O. E. Potter and Mr A. B. Whitehead	Similarity in fluidization	19,797



John Rickard (left), retiring director of the Alexander Theatre, poses some challenging questions in this review of his two-year term of office ...

# Theatre at Monash: Why do we bother?

## How serious are we about making Monash a cultural centre for the south-eastern suburbs?

Most of us dislike the desolation of a nine-to-five campus, and moan from time to time about the lack of a "Carlton environment".

That, of course, is the challenge. Can the University provide a focal point for cultural growth in the area, a growth that encompasses not just the formal events of music and theatre, but places to meet, eat and drink — in short, the facilities and feeling of a real community?

It is not surprising that I should be posing this question. I have just completed two years as director of the Alexander Theatre, and it has been in many ways a frustrating time.

We have been trying, among other things, to bring professional theatre to Monash, both through our own Alexander Theatre Company and visiting companies.

But the problems are immense. In terms of professional theatre the Alexander is run on a shoestring. A manager, a secretary and two technicians have to do virtually everything, and, while it is amazing what Phil A'Vard and his staff achieve, servicing the professional company is only one of their responsibilities.

Subsidies from the Victorian Ministry for the Arts and the Australia Council have helped us to survive: but our 1976 grants, totalling some \$15,000 are a mere fleabite compared with the Melbourne Theatre Company's (in excess of \$500,000) and even the Pram Factory's (\$172,000).

Yet in spite of the limitations imposed on us, we have in 1976 run a Play Competition, staged six professional productions ourselves (four adult, two for children), acted as

entrepreneur for other professional productions and run our own Saturday Club series.

A season which has included plays by Beckett, Osborne and Orton, plus a new Australian play by Bill Reed, is in the circumstances no mean achievement.

All this has been done without the services of a full time Artistic Director: policy initiatives have had to come from a part-time Director (myself) and the Alexander Theatre Committee.

It is worth noting here the different demands made by theatre and concert promotion. The increasing recognition of Robert Blackwood Hall as a major concert venue has been an exciting development; but hiring a hall out to concert users does not require the same preparation and work as the production of a play.

If the difficulties in putting on professional theatre are so great, you may be tempted to ask — why bother at all?

## The philistines

There are those who give the impression of having no time for theatre in the first place (even the University is not without its philistines): how can one convince these sceptics that theatre means communication, immediacy, a shared experience?

Yet, as a believer, I am certain that everyone is capable of entering into the theatrical experience; indeed, to deny this is to deny our humanity, for the essence of theatre is that it is a living medium. (The draft report of the I.A.C. on assistance to the arts argues for more emphasis on the use of electronic resources to reach a wider audience — a worthy suggestion in itself, but in so far as theatre is concerned, irrelevant.)

Now, if Monash is to attract audiences from the neighbouring community, some sort of professional theatre on the campus is necessary. Student theatre is essential, but it looks more specifically to the university audience.

## Bridging the gap

The challenge facing professional theatre is to bridge the gap between community and university.

Furthermore, it can be argued that, in the absence of a Drama Department, professional theatre is needed in order to stimulate and assist student theatre itself. Contact with the discipline of professional theatre can only be of benefit to students.

I think we are now beginning to recognise the enormous potential that a professional company offers in providing students with tools and techniques which they can apply to their own ends.



Many students appreciate that a successful professional company on the campus is in their theatrical interests. I am sure that in the future professional and student theatre have a lot to learn from each other, banal though that sentiment may sound.

We do not, of course, want the Alexander Theatre Company to become another MTC. Apart from the sheer financial impossibility of such an idea, it would not be desirable. The MTC now has only a nominal relationship to Melbourne University, whereas we want our professional company to be an integral part of Monash and its life — indeed, Monash being where it is, that is basic to the project.

Moreover the Company cannot monopolise the Alexander Theatre, which must be made available to student groups (and the staff group, too, if it should ever be moved to rise from the dead.)

## Winter Festival?

We have been thinking of concentrating the Company's adult theatre activities in one Winter Season (dare one even apply that over-used label, Festival?) which would occupy most of Second Term. Such a Season would be identified as an annual event, and would be an economic use of the resources at our disposal. A director of standing would be engaged to supervise the season, plan the program, engage the company, etc.

The University has in many ways been benevolent to the Alexander, but it is a benevolence that does not always appreciate the nature of the problems encountered. Theatre is very hard work. Nor is it always easy to explain to the casual observer why it is so, without taking him through the entire process of planning and organising that is required to put a show on.

As a part-time Director of the Alexander, I have often felt that I have been unable to do enough — yet it is the heavy demand that the directorship has made on my time that forces me to quit now.

I think the University needs professional theatre, but it is unreasonable to expect a very ad hoc committee and a part-time director to satisfy this need.

Which brings me back to my original question — how serious are we about making Monash a cultural centre for the district? Professional theatre is a necessary part of such a plan, and a little more recognition by the University might make the world of difference. The element of risk in theatre cannot be obviated, but it should be our aim to devise a structure which will produce a more coherent policy, tailored to the needs of Monash and the community.

**FOOTLIGHT:** At present, an ad hoc working party appointed by Council to inquire into Theatre at Monash is formulating its recommendations. It hopes to submit a report early in 1977. This article is not intended to influence its findings; rather, it seeks to extend the discussion to the wider University community. — J.R.

## The mimers are coming ...



One of the world's leading mime companies, The Canadian Mime Theatre, will perform a five-day season at the Alexander Theatre next week.

Touring under the auspices of the Australian Elizabethan Theatre Trust, the group has designed its program to appeal principally to children aged nine to 13, and special school performances have been planned for November 8-12.

The company, formed in Niagara-on-the-Lake, Ontario, in 1969, consists of three men and two women: Adrian Pechold (director), Harro Maskow, Paulette Hallich, Robyn Patterson and Larry Lefebvre.

It made its first overseas tour, to Europe, in 1974. Already on its Australian visit its work has been favorably compared with the acknowledged master of mime, Marcel Marceau.

The Alexander Theatre season will be the group's only Melbourne appearance. Its program will consist of a series of vignettes, including "The Tightrope Walker," "Painless Dentistry," and "The Novice Skin Diver," and a number of solo items.

Performances will be given at 1.30 p.m. on Monday, November 8, and at 10.30 a.m. and 1.30 p.m. on each of the following four days. Admission for school children will be 90c (accompanying teachers free.)

An extra performance will be given at 2.30 p.m. on Saturday, November 13, as part of the Alexander Theatre's 'Saturday Club' program. For this, admission will be: adults \$2.50, children \$1.75.