Monash scientists eclipsed twice—by moon and clouds

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 "Son" photographer John Casper.

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.

Also in this issue:

- "We've never had it so good" (compared with Italy): top Soviet scientist on visit.............. 2
- Blackwood Hall on the record; New-style cricket pitch .............. 3
- A Chinese blend of politics and realism ........................................ 4
- HSC: The Great Debate (part 2) .............. 5
- Summer School starts soon ......................... 6
- ARGIC Grants, 1977 ......................... 10
- Book Reviews ......................... 11
- Theatre News ......................... 12

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 wavebands.

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-

Continued on page 7
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 Melbourne correspondent.

Prof. 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 students jostling for space in overcrowded faculties of learning — the At Turin, for example, 20,000 arts enrolments place too much emphasis on the to the present 44.

Italy’s universities don’t bother with so much patronising crowding, sending enrolments at Rome long rows of multiple-copies, the university’s indifference to all those volumes to its collection in 1968.

I taly now has only about 28 per cent of students attending universities at all regularly — possibly an indication that overcrowding, if it doesn’t cure itself, or perhaps reassuring evidence that most of the enrolments are frivous and only the serious students survive.

The average staff-student ratio? One in 28.

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 teaching equipment, main library problems. A 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 undergraduate life tolerable.

The theatre or playing field, conference room or club-room provided by some universities primarily research scientists. Branches of the Italian Communist Party are active in many and universities primarily research scientists, organising conferences and examining bodies. And nervous system.

Excluding the whole 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 decimating Catania, but holding their own at Messina, sometimes make the running.

Are conditions as uniformly depressing as this brief report suggests? Not so. There are signs of hope. A Stockholm study of students, for example, found that students are not always as cynical and disillusioned as the media would have us believe. The prospects for the student

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.

There was a “Stop” sign means that they have priority even while turning right.

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

But perhaps we ought to bear in mind that if any Monash student put in time at a university over here, he would probably be more concerned to expose them as typical examples of bourgeois decadence and political mismanagement than he is to extort 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 scientists 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.
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.

**New quiet spot to relax**

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**TALK ON JOBS**

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

MGA president, Glenis Davy, 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 Davy 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.

**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 in such a way 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."

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 would construct the pitch.

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

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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, Belda Lamb, student adviser in the Monash Faculty of Arts, writes of her recent three-week sojourn in the country visited by a group sponsored by the Australia-China Society, of which there is now a branch on the Monash campus.

Our roving correspondents - 2

A CHINESE BLEND OF POLITICS AND REALISM

Education in China today is essentially pragmatic, in an attempt to prevent the philosophical, theoretically and vocationally for the role they must play in the future development of the 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 the "broadest and most far-reaching base would be education as one key to this better desirable it might appear in Australian qualifications.

The nationalised system, as the larger schools often had each job no matter how menial and unimportant, is seen to be as important as the belief that a background of work-experience both as an integral part of the education, the provision of 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.

In Hangchow, a pretty coastal town, once a holiday resort for diplomatic visitors, now a centre of intense activity, a young girl, about 14, gave a demonstration of her learning. In the more difficult areas of computation difficulties such as of deafness, the State adopts primary responsibility. Each prefecture has a special institute which can provide blind students. A school is opened for the first time, and a student 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 subjects bear a resemblance to the technical schools of our own system, as the larger schools often have their own workshops or small factories working in close co-operation with local factories.

In Hangchow, 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 in operation, 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 factories). 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 tractor" on 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 900 volumes, now has over 80,000.

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Our hosts spoke proudly of the fact that the students in pre-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/pastoral/soldier/student" in the belief that a background of work-experience both as an integral part of the education, the provision of 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.

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Coming and going

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

1. "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/pastoral/soldier/students are selected from among the workforce to enrol in courses such as optics, aeromechanics, where the expertise or "refresher-knowledge" thus required the student's return to his work-place.

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

3. 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; the social and political sciences and history; the natural sciences, including mathematics, physics or chemistry, and which provide the background for many short-courses; and physical education.

The emphasis on the latter is understandable, given the Chinese preoccupation with physical fitness as evidenced by the way in which almost all individuals in 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 University...
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.

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 value 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 university 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 five 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 university year results. (A recent review of this literature may be found in McDonell (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 and 1976 intakes produced an overall correlation of 0.41 (Beirnidge 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 co-efficients calculated by Bainbridge et al. (1974) and Biggs (1967) for the 1972 and 1966 Monash intakes, respectively.

TABLE 1

<table>
<thead>
<tr>
<th>Subject</th>
<th>1966</th>
<th>1972</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>0.29</td>
<td>0.32</td>
</tr>
<tr>
<td>Law</td>
<td>0.39</td>
<td>0.47</td>
</tr>
<tr>
<td>Medicine</td>
<td>0.35</td>
<td>0.39</td>
</tr>
<tr>
<td>Engineering</td>
<td>0.30</td>
<td>0.39</td>
</tr>
<tr>
<td>Equine</td>
<td>0.38</td>
<td>0.42</td>
</tr>
<tr>
<td>English</td>
<td>0.40</td>
<td>0.49</td>
</tr>
<tr>
<td>HSC Score</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>

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 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 0.80 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.

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 quartile 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 there there is doubt.

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 university year results. Table 2 sets out their findings.

TABLE 2

<table>
<thead>
<tr>
<th>HSC Score</th>
<th>1st Year</th>
<th>Final Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below median</td>
<td>0.92</td>
<td>0.59</td>
</tr>
<tr>
<td>Above median</td>
<td>0.44</td>
<td>0.39</td>
</tr>
</tbody>
</table>

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)

TABLE 3

<table>
<thead>
<tr>
<th>Subject</th>
<th>Median</th>
<th>Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSC Score</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1975</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physics</td>
<td>0.27</td>
<td>0.37</td>
</tr>
<tr>
<td>Chemistry</td>
<td>0.25</td>
<td>0.40</td>
</tr>
<tr>
<td>French</td>
<td>0.58</td>
<td>0.32</td>
</tr>
<tr>
<td>English</td>
<td>0.94</td>
<td>0.41</td>
</tr>
<tr>
<td>Mathematics</td>
<td>0.61</td>
<td>0.29</td>
</tr>
<tr>
<td>Science</td>
<td>0.40</td>
<td>0.29</td>
</tr>
<tr>
<td>History</td>
<td>0.21</td>
<td>0.49</td>
</tr>
<tr>
<td>HSC</td>
<td>0.43</td>
<td>0.43</td>
</tr>
</tbody>
</table>

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 50 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 percent.

There is no alternative that would justify scrapping this exam as the sole tertiary selection method.
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 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, remarriage 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 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 1976-76 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.

Two classes, a 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 alikido.

Typing, motor maintenance, computer programming, bookkeeping, 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.

School children say to their student teacher

For the past three years, students in the Monash department of Genetics 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 last month 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 Alleaune, grade 3 pupils from East Bentleigh are singing "Fuchs, du hast die Gans gestohlen" ("Fox, you have stolen the goose").

Also on the programme were dance classes performed by East Bentleigh students and a concert of classical music performed by Monash student Karl Granitzer.

The 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 section of the course, and film by a festival of Australian cinema.

Health Centre praised

Prahran's Fawkner Park Community Health Centre, which has formal links with Monash, is making increasingly valuable contributions to local health care.

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 arranged in late 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 and other institutions have already taken part in programs there.

Professor Hetzel, now chief of the CSIRO Division of Human Nutrition in South Australia, says that the future for the centre is "full of promise."

The centre's relationship with the local community still required much more development, but local representation on the management board was increasing and was expected to increase still further.

There was also evidence of increasing acceptance and use by general practitioners "after initial hostility."

The centre's integrated teaching role was also developing significantly.

Statistics covering services given by the centre showed that the more than half the patients receiving help were over 60 years of age.
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 Fyshwick, near Seymour, were hoping to photograph the corona. But like the other physics teams, their hopes were dashed by the weather.

While the physics department had a bad day, the director of the university's Centre for Continuing Education, Dr Jack McDonell, 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

Vintage color TV camera given to museum

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. 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.

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The camera was donated to Monash in 1971 by Smith, Kline and French but is no longer used because of difficulties 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.

NOVEMBER, 1978

MONASH REPORTER
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 the overall graduation rate was 47 percent. These figures are not untypical. And when looking at three years of entrants to the University of Melbourne (1957-59) calculated that to increase the pass rate from 64 to 74 percent, 30 percent of applicants would have been rejected — 45 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 ± 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 region (Region II), together with those from Region I (those in the highest scoring bracket) could be used to pass the University's quota without markedly affecting the predictive success of the selection."

Selection on the basis of HSC of the lowest scoring 30 percent of entrants is inefficient. It is also unjust for those in the lower range of the 'lottery' 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 it. 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 but also on the nature and sequence of courses in the junior forms.

The 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 the creation of a system in which students adapt themselves to the universities' requirements rather than develop in their own terms, and a superficial fluency in English is substituted for a genuine interest in knowledge.

The universities' reluctance to give up their influence over secondary education is 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 interpersonal skills in the community.

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

"The new fashionable anarchy fleet in the face of human nature, for it holds that children can learn and will work from natural inclination rather than desire for reward."

p 5

It seems likely that the external rewards which are 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 goals 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."

Yes even if there were evidence of these irreplaceable admirable qualities at play in HSC year there is 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 odds with the basic unspoken assumptions.

Moreover when the evidence about the unreliability and invalidity of examinations is realised (see Cox, 1987) 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 individuals, 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 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 56 years ago."

p 5

Structure

Apart from the discrepancy between HSC enrolments and entrance to universities a number of writers (e.g. Selby and Smith, 1989) 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 Underrepresented and Early Leavers Scheme.

Though the number of students in under-represented examination faculties of Arts, Law and Economics, in practice, prepared to support the scheme, the funds available to students have been highly successful.

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

the harmful effects of HSC on secondary education; and

the failure of HSC to facilitate greater equality of access to universities.

There are several other pressures likely to influence changes in selection procedures. There is a slackening both in the overall growth in population...
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 pursuing university, due to the link between a degree and job opportunity becoming 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 1973, when 12% 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 rising trend at least over the last two years. A policy of favouring entry to the university has not only increased the number of students entering, but it 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 and incentives 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, more of those from 'open entry' could apply themselves.

(At Monash, for example, only about 50% of students were in their first year, in fact, take up their place.)

**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 departments of Economics and Operations Research, has reported the following details of her proposed model in the September issue of "The Australian" newspaper:

The model provides a measure of a student's expected performance in first-year studies, enabling the selection of special skills to a measure of a general ability calculated from marks obtained at previous testing, as well as 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's still needed to be tested in other faculties and universities.

**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 very poorly with their university performance as assessed one year later.

I point out that this is likely to be true also for the correlation between university performance and any selection score, including the two 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.

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 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 that is relevant to the issue. It is relevant to gauge the accuracy of predictions, whether for students near the cut-off of the distribution in the top 1%. (Recall that I assume bivariate normality for the scores.)

Naturalistically, we would not 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. Watteoons, Reader, Mathematical Statistics.

**and a HEARU rejoinder**

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.

Her evidence shows that a change over to some other university selection process 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. Waterton 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 the alternative selection procedure with respect to student pass rates is trivial, then the "benefits" can be measured by the two compensating factors — and Miss Smurthwaite's strong case against HSC on these grounds has not been answered.

Leo West
(Higher Education Advisory and Research Unit)

**Correlation between selection score and university performance score**

<table>
<thead>
<tr>
<th>Score Category</th>
<th>Whole Population</th>
<th>Top Half</th>
<th>Top Quartile</th>
<th>Second Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>0.75</td>
<td>0.50</td>
<td>0.25</td>
<td>0.48</td>
</tr>
<tr>
<td>Bonus Points</td>
<td>0.13</td>
<td>0.06</td>
<td>0.15</td>
<td>0.08</td>
</tr>
</tbody>
</table>

**SIR:** Dr Geoff Waterson 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. Waterson's figures, the differences quoted are unexpectedly large, and added to the other evidence presented, still, in my opinion, shows Miss Smurthwaite's argument.

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

**Mr 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.**

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**To the Editor:**

Miss Smurthwaite suggests that some method of selecting students to the University of Melbourne is likely to be more successful in its current form than that assessed by a Commonwealth university benefit: 1,800 p.a. Applications close at the Graduate Scholarships Office on February 28, 1977.

The Burschard Scholarship

Placed emphasis on the range of $4,500 to $6,500 per annum plus allowances. Applications close November 19.
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The impact of traditional Malay literature on education 1,700

Dr. L. Jones, Mr. R. Baker, and N. W. D. outline
Consumer, agency and policy: Pampas
on the services 5,300

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Traditional music of Thailand 3,718

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American contacts during World War Two 1,243

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Biography of General Sir John Monash 10,500

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Continuing Projects

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Induction of autologous multiple sclerosis 5,090

Associate Professor M. G. O. Day
Multilingual communication and cross-cultural conflict in Australia 5,000

Dr. R. H. Day
Human movement perception: The basis of induced motion 6,940

Dr. R. D. F. Peters
Visual processing of sentences 11,238

Dr. D. A. Thomson
Studies in visual memory 9,670

PHYSICAL SCIENCES

New Projects

Dr. J. A. Needs
Physical properties of composite materials 2,340

Dr. T. J. Hicks
Magnetic resonance imaging 4,470

Physical properties of complex materials 14,347

Polarization analysis of diffus neuton scattering

Associate Professor J. J. Smith
Studies of solids at low temperatures and high magnetic fields 20,150

Dr. R. A. Finlayson and Dr. T. P. Smith
The study of superconducting transition metal alloys and compounds 8,476

Dr. D. J. Fleming
Charge transfer mechanisms and alternating current electrical conductivity in some single crystal polymers 5,753

Dr. L. J. Glennon
Cosmic-ray propagation in the solar system 1,980

Dr. R. W. Hudson and Dr. T. P. Smith
Measurements of the thermal properties associated with solid state transitions 13,860

Dr. R. J. Price
Spin resonance in crystals and complexes 13,351

Dr. R. A. de Sussk and Dr. A. F. Bennett
Magnetic properties of some inorganic compounds 5,150

Dr. G. J. Troop
Aferochemical resonance studies of biological molecules 6,000

Professor R. Van der Bergh
Finite amplitude convection in compressible fluid and its application to astronomical problems 10,498

Professor K. C. Westfold and Dr. L. J. Glennon,
Synchronic radiation in planetary atmosphere 4,000

CHEMICAL SCIENCES

New Projects

Professor R. D. Brown, P. D. Godfrey and Dr. G. L. Blackman
Chemical syntheses and organic and inorganic compounds 16,252

Dr. R. D. Brown, Professor R. G. War and M. D. Hilditch
Methane and methanol 18,286

Professor R. D. Brown, Dr. P. D. Godfrey and Dr. G. L. Blackman
Simulation studies of atmospheric reactions 12,260

Dr. B. F. Brown, and Dr. R. F. Eastwood
Chemical studies of Solanum xanthocarpum 7,600

Professor R. D. Brown and R. D. Dickson
Laccase and adetinde organosoluble 12,713

Chemical intermediates in the transpor-
Organic material associated with the degradation of substituted aromatics 1,100

Chemical syntheses of Solanum xanthocarpum 600

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Laccase and adetinde organosoluble 12,713

Chemical studies of Solanum xanthocarpum 600

Associate Professor R. D. Dickson
Organic material associated with the degradation of substituted aromatics 1,100

Chemical syntheses of Solanum xanthocarpum 600

Dr. R. D. Gatehouse
Laccase and adetinde organosoluble 12,713

Chemical studies of Solanum xanthocarpum 600

Dr. R. R. Haynes
Lewis acid catalyzed oxygenation of olefins and aromatic compounds 14,504

Asymmetric addition reactions of hydroxy cyanide 12,897

Professor W. R. Jackson
Methane and methanol 18,286

Professor W. R. Jackson
Simulation studies of atmospheric reactions 12,260

Dr. J. E. Kent
Reactions of organic compounds over supported metal catalysts 800

Professor W. R. Jackson
Photochemical studies of benzene and benzene isomers 1,500

Dr. F. P. Kirkins
Chemical syntheses and complex studies on oxide systems 1,750

Dr. F. P. Kirkins
Photochemical studies in X-ray and electron spectroscopy 400

Dr. J. R. McGuire, Dr. J. G. Matheson and Dr. R. E. Wilson
Chemical syntheses of complex systems 1,900

Dr. K. S. Murray
Single crystal magnetic and spectral studies of inorganic and organometallic compounds 1,200

Dr. M. O. O'Dwyer, Dr. J. E. Kent and Dr. J. F. Blythe
Optical and vibrational studies of selected millimeter wave transitions of molecules 1,800

Professor R. W. Holloway, et al
Mechanisms of the reactions of electron transfer enzymes 1,500

Continuing Projects

Dr. J. E. Armstrong
Regulation of phosphoglycerate kinase 1,700

Dr. M. A. Austin and Dr. C. K. Okwu
Regulation of phosphoglycerate kinase 1,700

Dr. J. Baldwin
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Professor M. J. Canty
Diffusion-analog of the study of the bacterial membrane 8,500

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General mechanism of phosphoglycerate
10,023
Mrs Celia Rosser was a commercial artist specializing 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 Stone, 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 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 Melbourne University) on identifying mosses.

Previously, for texts and illustrations, they had to rely on handbooks by such authors as D. A. Lowther and W. B. Murphy, Professor A. W. Linnane and Associate Professor B. H. Linkie, Professor A. J. C. McLaren and Dr P. D. Morgan, Dr P. Nagley and Professor A. W. Linnane, Dr B. Preston, Dr D. R. Smyth, Dr M. Weiss, and Dr J. Youatt.

New Projects
Dr A. C. McLennan

Continuing Projects
Dr L. A. Frakes Professor B. E. Hobbs and Dr M. A. Edieedge

Dr A. P. Kendrew
Dr A. C. McLennan and Professor B. E. Hobbs
Dr J. A. Nicholls
Dr I. A. Nicholls and Mr V. J. Wall

Dr P. Phakey
Mr V. J. Wall

As the book on mosses was being prepared, study organizing and identifying mosses was carried out by Dr Stone and Dr Scott (now in Britain) on a Sydney specimen since around 1840. "Finally, after travelling across the Nullarbor and up as far as Geraldton, I found one down near Esperance."

"On one expedition, I had to travel some 7000-8000 miles before I located the specimen I particularly wanted to locate," recalls Dr Stone. "This was the Ecteinascidia pulchellum. As far as I knew, no botanist had recorded finding a fruiting specimen since around 1840."

"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 496 entries (R-Z), is the last of four covering the period 1851-1890.

Dr Geoffrey Searle, 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 1891-1919.

As the book adds to understanding of history departments to determine the 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.)

ENGINEERING AND APPLIED SCIENCES

New Projects
Professor J. E. Asmussen

Dr D. V. Bager, and Dr C. T. Liu

Professor O. E. Potter and Dr W. E. Chitty

Dr G. I. N. Reaney

Continuing Projects
Dr B. R. Howden

Associate Professor F. Lawton

Professor W. H. Melbourne

Professor O. E. Potter

Professor O. E. Potter and Mr A. B. Whitehead

Photographed at the Melbourne launch 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. Carty, chairman of the Monash Department of Botany.

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 consensus 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."

Although some too facile comparisons between Japan's war in China and America's 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," was published by the Oxford University Press (Tokyo) and is now available in Melbourne.
Theatre at Monash: Why do we bother?

How serious are we about centre for the south-eastern

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

The mimes 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 Pechkold (director), Harro Maskow, Paulette Hellich, 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 9c (accompanied by 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 $1.50, children $1.75.

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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. Contact with the discipline of professional theatre can only be of benefit to students.

I think we are now beginning to appreciate 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 both 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 too many friends in Melbourne University, whereas we want our professional company to be another MTC. Apart from the financial impossibility of such an idea, it would not be desirable.