

1983 Graduates' Issue



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This issue of **Reporter** is being mailed to some 26,000 Monash graduates in a bid to keep them in touch with University affairs.

Both in the November newspapers and in the **Year in Review** section (with stories selected from past **Reporters** and **Monash Review**), we aim to present a 'slice of life' picture of Monash people and their work in 1983.

We hope we are more favorably received than advertising dodgers, real estate agents' cards and windowed envelopes in your mail box!



Fire — key to survival for mallee species

At an inhospitable site on the edge of Victoria's Big Desert, biologists have been piecing together the jigsaw of life in a typical mallee area.

They have gained insight on a seeming paradox: the key to the long-term survival of mallee is fire. Without fire there would be no "recruitment" of the vegetation. As it is, recruitment is widely spaced in time giving a steady-state appearance to mallee populations.

The research, which is based in Monash's Botany department, has also pinpointed the significant role of ants in the population dynamics of the mallee.

And it has allowed observation of rare botanical events — the triggering by fire into flower of plants (whose beauty is downgraded by the term "fireweeds"), the seeds of which can lie in the ground for decades before germination.

Members of the team, which has been working at the site near Lake Albacutya since 1979, include **Dr Terry O'Brien**, Reader in Botany; **Dr Bruce Wellington**, who completed his Ph.D. thesis on the population dynamics of the mallee species, *Eucalyptus incrassata*, at ANU in 1981; **Dr Alan Yen**, now at the Museum of Victoria; and **Mr Alan Andersen**, formerly at Monash and now at Melbourne University's Botany School.

Dr O'Brien says that the work "got off the ground" with an \$80,000 untied grant from the Westpac Bank (then CBA).

The site the team chose, in the western

extension of Wyperfeld National Park, offered ideal research conditions. On one side of a bulldozer-width corridor was an area burnt by wildfire in 1977; on the other side an area unburnt in 80 or so years. A massive wildfire burnt the whole area in 1981 allowing the researchers to study a newly-burnt area and another "re-burnt" in a very short period.

The area is characterised by steep sand dunes, some up to 30m high, divided by wide swales.

Its predominant vegetation is mallee, the multi-stemmed, stunted form of Eucalypt found across southern Australia. Typical of the 200-500mm rainfall region, it forms a transition between the more common Eucalypt forests of wetter areas and the Acacia shrublands of the truly arid centre.

There are three mallee Eucalypt species in the study area: *Eucalyptus incrassata*, *E. dumosa* and *E. foecunda*.

Mallee has adapted clearly to the hot, dry environment in which it lives.

Above ground, the plant is a series of poles or branches, two to 10m high, each capped with a crown of leaves and carrying a mass of woody fruits from previous flowering seasons.

Below ground is the plant's huge regenerative organ, the lignotuber — or mallee root as it is commonly called.

The lignotuber is partially fire-resistant. Although fire kills the above-ground poles of the mallee, it stimulates the production of an abundance of young buds and shoots — coppice — from this underground storage organ. Carbon dating has shown lignotubers to be 250 to 400 years old.

The most significant feature of the unburnt mallee area is that there is little growth of new mallee plants — despite a light intermittent seed rain from fruits in the canopies of adult trees.

Most of the newly-fallen seeds, the team observed, fall victim to predatory ants — and very rapidly.



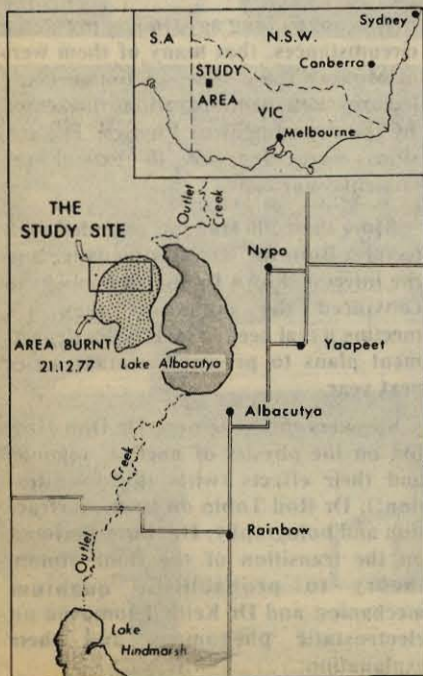
● Predators at work: In unburnt conditions, ants remove most of the seeds dropped in an intermittent light rain from the canopy of mature mallees.



● After fire, there is a massive seed rain — too much for the ants to transport. This allows seed banks to establish and new plants to grow (above).



● The process is aided by reduced competition from adult plants, themselves knocked by fire and in the process of regrowth (right).



● Continued Page 2

Inside: a six-page Year in Review feature

Monash musicologist wins record prize

A Monash Reader in Music has won a German Record Critics Prize for a disc she has made of the music of the Mandailing people of North Sumatra.

The disc (plus accompanying musical notes, transcriptions and analyses) is one of a pair recorded in the field by Dr Margaret Kartomi and her husband, Dris. The other is of music of the Angkola people (neighbors to the Mandailing).

They are the first commercially-issued records to give a complete sample of a Sumatran traditional music. Released by the West German company Musicaphon, the records form part of an anthology of Southeast Asian music published by the Institute of Musicology of the University of Basle.

Dr Kartomi says that the discs were made from hundreds of hours of tapes she has recorded of Sumatran music over the last 12 years.

Her research on Sumatran music has been supported by an ARGC grant since 1973. She has lectured widely in the US, Europe and elsewhere and published numerous papers.

Dr Kartomi says that there is bewildering variety in the musical styles, forms and instruments of this large island.

A major division can be made between music of coastal and inland areas. Among the many ethnic groups in the interior, traditional ensembles of drums, gongs, winds or fiddles coexist with a later "stratum" of music associated with Islam or Christianity.

Along the coast a third layer of music exists — influenced by Indian, Portu-

guese, other Southeast Asian and Chinese traders and colonists operating there over the last 1000 years or more.

The Mandailing and Angkola peoples inhabit the southwest corner of North Sumatra.

Their ceremonial music, says Dr Kartomi, belongs to a tradition which developed before the Muslim religion and Dutch colonists entered the area.

Muslim Padri forces from Minangkabau to the south invaded from about 1821 and the whole area was eventually converted to Islam with a few small Christian and pele begu ("animist") pockets.

The Dutch military first entered the area in 1821 and took administrative power from 1835.

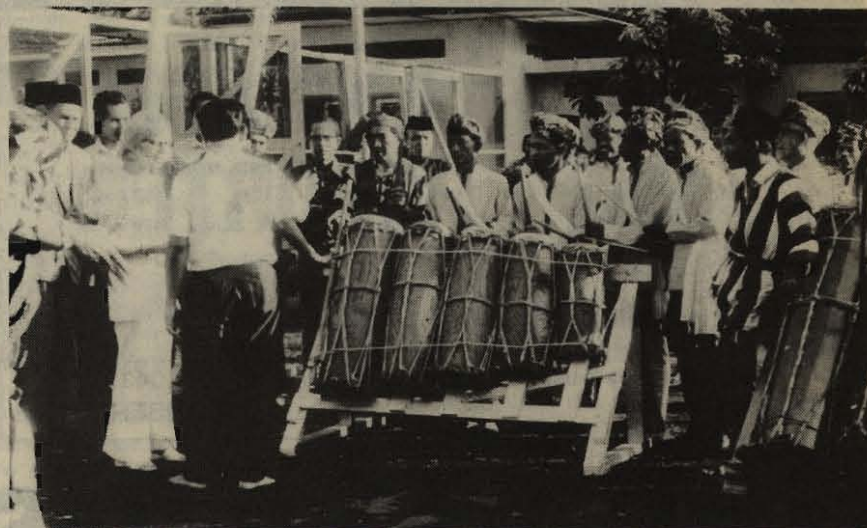
Before that, petty chieftains (raja) ruled over complexes of hamlets which were inhabited by various clans.

"Shamans" controlled the system of rituals which served to honor, above all, the supernatural beings, the raja and clan leaders.

Dr Kartomi says that vestiges of these rituals and beliefs are still apparent among many of the Mandailing and Angkola — especially on ceremonial occasions such as weddings and funerals.

Associated with these ceremonies is the traditional music which is usually performed by orchestras in an open-sided pavilion in which dancers perform before a descendant of a raja, seated on a raised platform.

Dr Kartomi says that there are three types of ensemble in Mandailing music and two in Angkola, distinguished by their drum component.



Dr Margaret Kartomi in a Mandailing village — pictured here is the rare five-drum ensemble, the gordang lima.

The largest of the ensembles, common to both, consists of nine drums, graded in size. In traditional practice, this ensemble was reserved for ceremonies given by the raja or, more recently, his descendants — and only after at least one buffalo had been sacrificed.

A five-drum ensemble exists in only a few Mandailing areas. Used in the past by the shaman at ceremonies held in front of his house, its music assisted him to enter a state of trance in which he could contact the spirits.

The third ensemble has a two-drum component and is associated with ceremonies of the "commoners", or non-raja families.

Despite its low social status, says Dr Kartomi, it produces the most elegant

balance of ensemble sound.

All three ensembles have bronze gongs and a wind instrument — but pieces can also be played on bamboo percussion or xylophone.

Dr Kartomi says that research into Sumatran music has been a neglected subject despite its rich diversity. Twelve years ago, she was the first musicologist to carry out extensive fieldwork in the area. Now two Monash postgraduate students and others are working on the music of single ethnic groups and a Monash student wrote a Ph.D. thesis on the music of one area in 1979.

Dr Kartomi has helped the University of North Sumatra in Medan establish a department of ethnomusicology — the only one in an Indonesian university.

Fire — vital to mallee survival

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In fact, more than 90 per cent of seeds are removed in a matter of weeks, preventing the development of any seed bank in the soil.

Seed harvesting activities were found to vary from area to area over only short distances, so there were areas of low or no seed removal.

In such areas seed germination did take place in the cooler months but none of the seedlings which were monitored survived to the beginning of summer. The competition from adult plants for scarce nourishment is too great.

Fire affects this typical no-growth pattern in three ways, says Dr O'Brien.

First, it stimulates a massive increase in the rate of seed release from the canopy — about 300 times as much seed rains on to the ground.

It is more than the ants can carry away. Some seeds, then, find a "safe site" underground for germination.

Secondly, fire-induced changes to the soil — the presence of ash and the effects of heat — have a stimulatory effect on germination.

And, thirdly, fire kills some adults outright and also reduces temporarily the competition on soil nutrients and moisture resources from the surviving adults by forcing them to regrow from coppice.

If conditions are favorable, a forest of seedlings will appear in the first winter following a fire — about 10,000 seedlings per ha have been recorded compared with 100 per ha in an unburnt area.

Of this vast number of seedlings only about 10 per cent will survive, however.

"This is a harsh, arid environment,"

says Dr O'Brien. "Adults cope because of their massive root system: our studies show that horizontal roots can stretch 30m from the lignotuber and estimates put the vertical roots at 10 to 30m.

"Seedlings have to cope with the root systems they can make in that first winter and spring.

"Nevertheless some do survive — and the species carries on. And it's all been due to fire."

Fireweeds

The team observed equally striking fire-associated behaviour in other species at the site.

One such is the "fireweed" *Exocarpos sparteus*, also known as the desert cherry, which germinates after fire from long-lived seed reserves in the soil.

It is thought that fire gases break the seeds' dormancy, initiating germination.

The desert cherry is a root parasite, developing an extraordinary root system that hooks on to the roots of coppicing mallees and taps their nutrient reserves.

It seems that the mallee learns to reject the parasite but not before the plant has gone through its life cycle and seeded. Its next appearance may be 40 or more years away.

Ant study

Mr Andersen's study on ants at the site has revealed a remarkable abundance and richness of species.

A total of 86 species from 27 genera

were recorded from two 50m x 25m plots within 25m of each other. Even over such a short distance there were pronounced site differences in species composition.

The ants also exhibited marked seasonality: activity was highest in summer and lowest in winter. There was a high turnover of species in time, resulting in pronounced seasonal differences in species composition.

The ants were found to forage mostly at night during summer but almost exclusively during the day in winter.

And it was noticed that there were some patches of ground from which ants never removed seed — only metres away from patches where foraging was frenetic. This is possibly explained by volatile substances in the soil.

For sale

The Botany department has the following items for sale:

• **Wildflowers of Victoria** — a first ever poster. \$2.

• **Banksias of Victoria** by Celia Rosser. Set of six unsigned prints \$60, signed \$180.

• **Saltmarsh Plants of Southern Australia** by Bridgewater, Rosser and de Corona, including pen and ink drawings by Celia Rosser. \$5.

• **The Mosses of Southern Australia**, by Scott, Stone and Rosser, with pen and ink drawings by Celia Rosser. Hardcover \$30; softcover \$15.

NEXT REPORTER

This is the last Monash Reporter for 1983. The next will be published in March 1984.

Contributions and suggestions should be addressed to the editor (ext. 2003) c/- the Information Office, ground floor, University Offices.

HSC Physics lectures

HSC Physics students are facing "the big test" about right now.

It is not so long ago, in less pressured circumstances, that many of them were at Monash for a series of four evening lectures and demonstrations presented by the department of Physics. The sessions were designed to extend the students' horizons.

More than 200 students attended each lecture. Both the size of attendance and the interest shown by the students have convinced the organisers they are meeting a real need. The Physics department plans to present a similar series next year.

Speakers this year were Dr Don Hutton on the physics of nuclear weapons and their effects (without demonstration!); Dr Rod Tobin on lasers, diffraction and holography; Dr Harry Perlman on the transition of the Bohr atomic theory to probabilistic quantum mechanics; and Dr Keith Thompson on electrostatic phenomena and their explanation.

Hospital moves one stage closer

THIS was the view last week from the south-west corner of the new South Eastern Medical Complex site in Clayton Road, Clayton. In the distance (just a mile or so away) is the Monash campus — and the Menzies Building.



TWENTY-FIVE years on, and a dream begins to take shape — though not, perhaps, in the precise location that Monash's founding fathers originally envisaged.

Last week the Victorian Premier, Mr John Cain, unveiled the foundation plaque for the new South Eastern Medical Centre — officially, the Queen Victoria Medical Centre Relocation Project — in Clayton Road, a short distance from the University.

When the master plan for Monash was drawn up, back in 1958, it was proposed that a teaching hospital should occupy the south-western corner of the campus. Many plans and schemes were considered — and discarded — as political battles raged over the proposal.

Finally the decision was made: Queen Victoria Medical Centre would be transferred to the site of McCulloch House convalescent home in Clayton.

Now the five-storey, 350-bed hospital, incorporating the Monash teaching departments of paediatrics and obstetrics and gynaecology, is appearing above ground. The \$91 million project is due for completion in November 1986.

Speaking at the unveiling ceremony last week, the Vice-Chancellor, Professor Ray Martin, said that the University, along with the City of Oakleigh and surrounding communities, welcomed the government's determination to press ahead with the new hospital.

Professor Martin said that it was with "a sense of great relief and enormous satisfaction" it was now possible to say that the decision of the University's interim council to locate the University in Clayton had — at last — been vindicated.

Summer jobs:

Prospects are a lot brighter

There are hopeful signs on the summer vacation job front for students.

This is according to Monash's Student Employment Officer, Irmgard Good, who says that a revival appears to be underway in manufacturing industries.

"August was the turning point," says Irmgard. "Firms I hadn't heard from for two or more years started contacting me and indicated they would have casual employment this summer."

The Student Employment Office, which offers a free service to employers and students, is gearing up for its busiest time in a busy year.

It has mailed thousands of brochures to potential employers in the metropolitan area — chiefly the eastern and southern suburbs, including the Peninsula. It will also place a series of advertisements in Melbourne papers and, in a bid to foster jobs for country students, the "Weekly Times".

The targets are labour-intensive industries, such as food, beverage, paint and plastics manufacturers, retail stores, petrol stations, hotels, construction companies, hospitals and municipal councils.

The brochure lists a wide range of areas that Monash students could work in.

These include: clerical, labouring, gardening, table or bar service, data processing, storework, engineering, accounting, driving, sales, childminding, tutoring, fruit picking, and interpreting and translating in a large number of foreign languages.

EMPLOYERS with jobs should contact Irmgard or her assistants Robyn Best and Kerryn Hare on 541 0811 ext. 3097 or 3297. An after-hours answering service — 541 3097 — will ensure that no job opportunity is lost.

FOR STUDENTS — Irmgard suggests they register with her Office as soon as they finish exams. Vacancies will be placed on the notice board outside Careers and Appointments, on the first floor of the Union, as they come to hand. There are nearby rooms in which students can wait.

These are her other tips:

- Use your initiative. Tell friends, relatives and local businesses that you are looking for work. Register with the CES and study newspaper — both daily and suburban — advertisements.

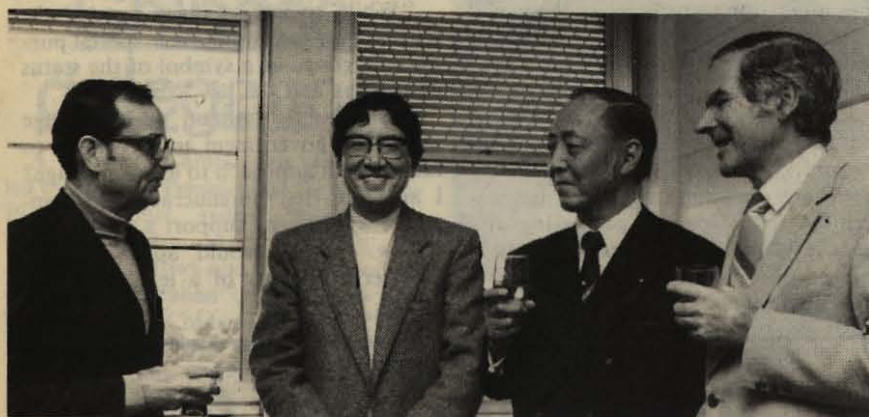
- Start job hunting early in the day and go armed with a street directory and coins for phones.

- Look for work as soon as exams finish rather than after a holiday. Many businesses step up production before Christmas and shut down in January. Also, shops, hotels, restaurants and entertainment venues are at their busiest in December.

- Don't wait for the perfect job. Anything is better than nothing and a short-term job well performed can often lead to a longer one.

ANOTHER addition to the University scene is the new home of the Japanese Studies Centre, left. Designed by University architect Alan Scott, and incorporating many Japanese architectural features, the building is now ready for the official opening, due to take place soon. Construction of the centre was made possible by substantial donations from the Japanese car firm, Toyota, the Commemorative Association for the Japan World Exposition, the Australia-Japan Foundation and other local bodies.

Hail — and farewell



IT TOOK 30 months — but finally Professor Rokuro Hidaka made it to Australia.

Banned by the former government for alleged dealings with the Japanese Red Army, Professor Hidaka was cleared for admission by the Hawke government earlier this year and eventually arrived for a crowded three-week lecture/seminar visit in late September.

A relieved Professor Hidaka was entertained at an end-of-tour party in the Monash department of Japanese.

Here, Professor Hidaka (second from left) is seen with Professor Jiri Neustupny, chairman of Japanese, the Japanese Consul-General in Melbourne, Mr Kazuo Kaneko, and the Vice-Chancellor, Professor Ray Martin.



Reformer argues case on plain English law

The language of the law is failing to meet the needs of Australians and reform has been delayed too long, according to a Monash senior lecturer in Law.

Such reform must be more than a cosmetic job of dropping the "heretofores" and "whereins", says Dr Guy Powles.

It must tackle the issue of plain legal English at a conceptual level, bearing in mind the audience for which the communication is intended.

It must be based on proper linguistic research.

And it must involve all those groups which initiate use of legal English — the legal profession (including judges and law draftsmen), parliamentarians, government departments and commercial institutions.

For too long, says Dr Powles, one or other of these groups has turned aside proposals for reform by saying it can't act out of step.

The areas requiring attention, in both written and spoken English, include:

- Legislation of Federal, State and local governments; and documents, notices and forms used by governments and courts.
- Commercial documents — particularly conditions of sale, hire-purchase agreements, loan contracts, insurance policies, leases and conveyancing documents.
- The legal language used in and around courts and tribunals.
- Communication between officials and citizens, lawyers and clients.

Earlier this year Dr Powles urged the establishment of a national task force on legal English reform in a submission to the Senate Inquiry into a National Language Policy — an inquiry now in its final stages.

In it he made the point that native English speakers are often nearly as disadvantaged by incomprehensible legal documents as non-English speakers.

Speaking to *Reporter*, Dr Powles said that there is a dangerously widening gap between public perceptions of what is needed and what is possible in legal language reform, and the attitude of lawyers "who continue to deny they have lost control over their words".

Some hoary justifications — precision and permanency of meaning — are advanced to support no change.

"Yet the amount of legal language which is actually required in order to convey precise meaning is relatively small and legal 'terms of art' are needed far less frequently than is commonly supposed," he says. "Plain English can achieve precision in the great majority of situations with which the public is concerned."

Threat to monopoly

Dr Powles believes that the underlying reason for a lack of enthusiasm for reform could be economic.

"It could be argued that lawyers encourage and connive in the preservation of a 'special purpose' English as a way of preserving their monopoly over competence in dealing with the law," he says.

That monopoly has been challenged in recent years by development of the "self help" approach in areas such as divorce and conveyancing, and by a growing community awareness of the law, fostered by legal studies courses in schools and community legal education programs.

"Some sections of the legal profession are on the defensive and wish to hold the boundaries."

Dr Powles suggests that in some instances legal English is used to obscure meaning and even to deceive.

Despite the "vested interest", a few efforts have been made in Australia towards reform but they have been piecemeal.

Moves for change

Dr Powles says that the most consistent and compelling voice (among the few) to be heard in legal and government circles over the past five years has been that of the Australian Law Reform Commissioner, **Justice Michael Kirby**. His Commission has no specific reference to deal with the subject, however.

Several insurance companies have produced "plain English" motor vehicle policies. The RACV was the pioneer in Victoria and others have followed, making their endeavours a selling point.

There have also been good intentions . . . with little result.

For example, in 1977 the Victorian Attorney-General set up a committee to advise on "the ways in which the preparation, formulation, expression, printing and distribution of the law can be improved" in order to promote "greater simplicity, brevity and clarity in the written law". Six years later the committee has not reported.

In 1980, the then Federal Attorney-General proposed that, in the case of selected Bills, explanations of the general purpose of the legislation should be written as simply as possible in a memorandum approved by Parliament. No example has yet appeared.

The Victorian Credit Act 1981, says Dr Powles, contains a major step in the regulation of the terminology and layout of credit contracts — but it has not yet been proclaimed.

When (or if) it comes into force, the Act will create an offence for a "credit provider" to use a document which fails to meet the statutory definition of "readily legible" or which the proposed Credit Tribunal has examined and declared to be "expressed in language that is not readily comprehensible".

This Act is only part way along the legislative path on the use of language in insurance policies and other commercial contracts pioneered in the US.

One or both of two approaches have been adopted in several States there. One is to impose a "readability" standard which tests the relationship between difficulty of comprehension and method of presentation. The most wide-

ly used standard is based on the Flesch Reading Ease Index which awards a score derived from measuring the length of words and sentences. Usually, the relevant statutes also set requirements on layout, including print and paragraph sizes.

The second approach imposes a "comprehensibility" test aimed at "coherence" and the use of words with "common and everyday meanings". Such tests are obviously vague and hard to apply.

Dr Powles says that such legislation has had a stormy history — and a large number of the Bills has not been proceeded with.

The "fresh initiatives" he believes are needed in Australia would begin with a clear appreciation of the general and specific purposes of legal communication.

One of the problems has been that the language is strained to fulfil two functions — the first to enable specialists to converse with each other efficiently and,

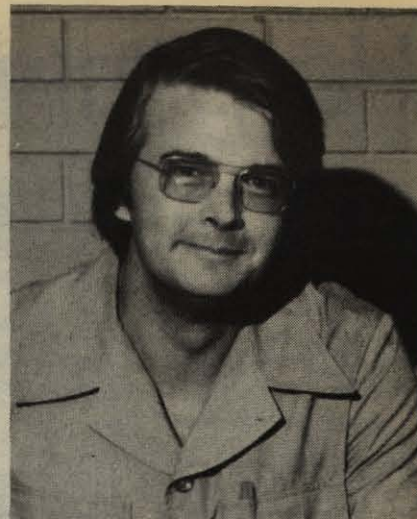
secondly, to provide communication with the lay person.

"The interests of the people at both 'ends' of legal communication need to be better understood and, where possible, reconciled.

"Assuming there is to be a category of communications written or spoken solely by and for people with the same specialised level of comprehension, as in legal argument in court, the difficulty is to determine what types of communication should fall within this privileged category.

"Where communication will be between groups of people possessing different levels of comprehension, study is required of their respective levels.

"Whole areas of statute law and



● Dr Guy Powles

regulation may have to be rethought, as part of a long-term strategy, and guidelines laid down for law draftsmen."

Dr Powles says that a purging of legalese and jargon must be at the heart of reform, as is the need to identify — and explain — that "hard core" legal language which must carry "special" meaning — words whose meaning has, for certain purposes, been determined by the courts, statute or usage.

Where unusual words are being used which have an adequate, common counterpart then the latter should be preferred: for "recognizance" read "undertaking"; for "demise" read "death".

The use of special purpose language in English law has its origin in the use of Latin and French by the educated elite in early England, says Dr Powles.

The law, language

The key to its persistence lies in the all-powerful position the courts attained in the British system over centuries. The significance of precedent in the common law system means also that lawyers are constantly referring to texts, and the language, of the past.

"While society changed around the courts, they held on to their special purpose language as a symbol of the status of lawyers and the law," he says.

"Will public opinion at last oblige lawyers — government and private — to take a fresh approach to legal language? I am sure that bureaucracy and commerce would now support a substantial review — and would appreciate the long-term benefits of a legal language policy."

An active year for Monash Law Alumni

The Monash University Law Alumni, which now has more than 400 members, had a successful year in 1983.

One of its major projects has been publication of a directory of Monash law graduates. The directory gives the names, addresses, occupation, professional and cultural interests of members who wished to be included.

Christmas cocktails

The Alumni's next function is a Christmas cocktail party to be held on Thursday, December 8 at 5.30 p.m. Those wishing to attend — or to join the Alumni — should contact Mrs Irene Thavarajah on 541 3307.

Earlier in the year, the Alumni held its first annual dinner. Professor J. Fleming, author of *The Law of Torts*, was guest speaker at the function on April 21.

The first Monash University Law Alumni Undergraduate Award was presented — to Mary Amerena, who completed her course in 1982.

At the annual general meeting, which preceded the dinner, the following office-bearers and committee members were elected:

President, Jack Hammond; Vice-President, Marilyn Pittard; Secretary, Tom May; Treasurer, Malcolm McComas.

Committee: Peter Garrison, Christopher Jessup, Joan Miller, Stephen Newman, David Phillips, Murray Raff, Harry Reicher and Roger Rothfield.

The letters of the law open doors on humanity

Perry Mason always got his man — but, strictly speaking legally, he shouldn't have.

It is one instance in which telling a good story took priority over getting it right on matters such as rules of evidence.

The homegrown "Carson's Law", which ranks among its advisers Don Dunstan QC, fares much better in the courtroom authenticity stakes. And, of course, it would be a brave person to cross-examine John Mortimer on points of law in "Rumpole of the Bailey".

Such programs are part of a long and close relationship between the law and literature and the performing arts. Indeed the first trial scene in literature is generally accredited to the Greek playwright Aeschylus in "The Eumenides". Many playwrights and novelists since have drawn on the "theatre" of the trial — with its rich opportunities for surprise, rhetoric and catharsis (without need for scene change).

For every Perry Mason "fudge", there is a Dostoevsky who in novels such as "The Brothers Karamazov", "Crime and Punishment" and "The Idiot" is spot on in raising still pertinent issues in law, says Neville Turner, senior lecturer in Law.

And there is a Shakespeare who in plays such as "Measure for Measure" and "The Merchant of Venice" gives a textbook study on the distinction between law and equity.

Or there is a Dickens who, by raising the consciousness of a nation on law reform issues in his stories, had a profound effect on the development of English law last century.

Or a Trollope, Thackeray, Galsworthy, C. P. Snow — or a W. S. Gilbert, for that matter, who brilliantly satirises the jury in a breach of promise case in "Trial by Jury".

And a Balzac, Anatole France, Maupassant, Tolstoy, Turgenev, Schiller or von Kleist.

Some of these writers were legally trained. Others like Dostoevsky were on the receiving end of the law: he had a five-minutes-to-midnight reprieve from execution on a sedition charge and was also sued for libel.

All of them were able to put law in its human context — and that is something that today's lawyers tend to lose sight of, says Mr Turner.

That's why he would like to see the law in literature taught in university courses — "to get law students thinking beyond technicalities to humanity".

Mr Turner has just published in the US a paper on Dostoevsky and the judicial process, looking particularly at "The Brothers Karamazov". His interest in the study was fostered by another Dostoevsky student, Dr Bobba Vladiv, senior tutor in Slavic Languages.

The novel concerns a man's wrongful conviction on a charge of murdering his father. The prosecutor's case is based entirely on circumstantial evidence.

It was written in 1878 but set a decade earlier — just three years after the great Judicial Reforms in Russia which saw introduction of trial by jury.

Mr Turner says that Dostoevsky was able to pinpoint with great perspicacity the factors that can lead to an error of justice in the course of a trial — factors which make a trial more of a lottery than a search for truth.

"Dostoevsky's acute criticisms have a timeless quality. The doubts raised on the trial process are ignored by the conservative and narcissistic legal profession even today, although there are signs of disquiet," he says.

Ultimately, Dostoevsky's criticisms, he adds, lead to questions which lawyers might prefer not to face about the judging of human affairs: Is it ever possible to know the truth? Can a human court ever be justified in coming to a conclusion?

Mr Turner analyses Dostoevsky's critique of the trial process, relating points raised to the views of other creative writers, and to modern legal



● Neville Turner

studies such as that of Sir Richard Eggleston in "Evidence, Proof and Probability" (the second edition of which is reviewed elsewhere in this Reporter).

He examines, for example, the effect on justice of the lack of legal representation, unequal legal representation, the role of the judge, and the admissibility of evidence, including the failure to produce admissible evidence.

He looks too at the role of the jury as a potential source of injustice.

"The rationale of using juries is that they constitute the ordinary conscience of society, as opposed to lawyer/judges, who may be technically-minded, remote and untrustworthy characters. That is the theory," Mr Turner says.

"In practice, the jury may be confronted with a case which is beyond their intellectual capacity."

This is becoming particularly evident in cases of white-collar crime, he says.

Related to this issue is the problem of the evidence of experts. In "The Brothers Karamazov", Dostoevsky points to problems of evidence by psychiatrists and psychologists.

There is a further complication in common law countries where the adversary system of court procedure compels the expert to be a partisan for the side that calls him as a witness. It is a defect shown up sharply in the Chamberlain case.

Mr Turner says that another possible source of error in justice, strongly hinted at in "The Brothers Karamazov", is the artificiality of the trial setting itself.

The intimidating and unnatural environment can make people behave in an abnormal way — or at least not give of their best.

Says Mr Turner: "The result may be that truthful witnesses appear to be untrustworthy, or, conversely, that liars appear to be convincing.

"Sir Richard Eggleston, a judge of many years' experience, makes the startling point more than once in his book that 'Most witnesses will lie if the motive is strong enough and many will lie merely to save lengthy explanations about matters that they think have nothing to do with the case.'"

A more informal setting would help, he says. So too would more patient, less arrogant lawyers.

● In quite a different area, Mr Turner has recently co-authored a book in German on English family law (*Englisches Familienrecht*). It is intended primarily for German lawyers advising clients who have married across nationality.

... and literature

Visit by Chinese delegation

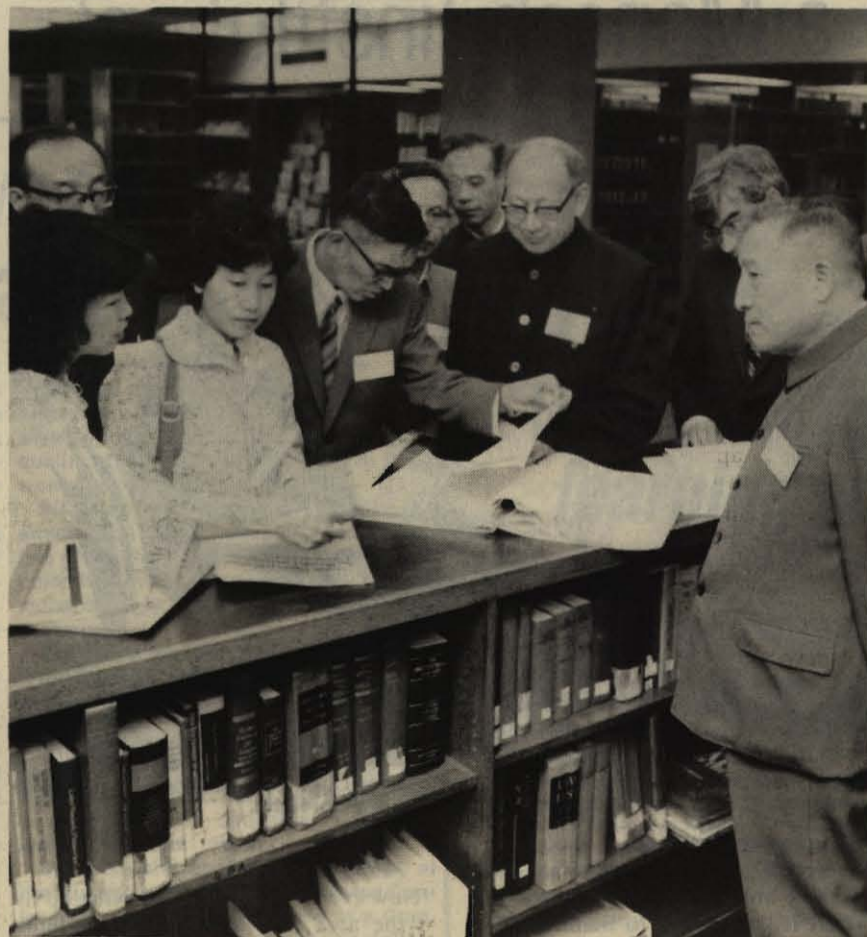
A top-level Chinese law delegation, led by the Vice-President of the Supreme People's Court, visited Monash last month.

The visit follows one by a team of experts on Australian criminal law and procedure to China last year. That group included two Monash lawyers, Professor Louis Waller (currently Law Reform Commissioner of Victoria) and Mr Richard Fox, and was headed by Mr Justice McGarvie of the Supreme Court of Victoria.

The Chinese delegation consisted of Mr Wang Zhanping, the leader; Mr Zheng Xiwen, Vice Minister of Justice; Mr Wang Qi, Chief Judge of the Economic Division of the Supreme People's Court; Mr Wei Yaorong, Chief of the Economic Law Research Department of the Legislative Committee, National People's Congress Standing Committee; Mr Lu Jian, Deputy Director of the Office, Ministry of Justice; Mr Huang Jie, Deputy Director of the Research Department, Ministry of Justice; Mr Xu Jingfeng, Deputy Director of the Department of Foreign Affairs, Ministry of Justice; Ms Feng Xiumei, interpreter.

Their visit, organised by the Australian Government, included Melbourne, Canberra and Sydney.

While in Melbourne the delegation met with the Chief Justice of Victoria



● Members of the Chinese law delegation tour Monash's Law Library. Photo: Rick Crompton.

and other judges and members of the legal profession, observed criminal trials, visited various correctional agencies and attended seminars at Monash and Melbourne universities.

The seminars at Monash included one on domestic violence, led by Ms

Maureen Tehan of the Springvale Legal Service and Ms Renata Alexander of the Legal Aid Commission, and one on family law, led by Professor Henry Finlay. Family Court judge and Chairman of the Family Law Council, Mr Justice Fogarty, also participated.

A self-help approach to Third World health

A Monash medical graduate has helped pioneer a new approach to health care for refugees in several Third World countries.

Dr Michael Toole, who graduated in 1971, says that primary health care departs from the "fire-fighting" mentality with which aid organisations have traditionally approached refugee medicine.

After dealing with emergency problems, it emphasises preventive rather than curative medicine and seeks community involvement in programs by training refugees themselves as health workers. It is designed to lessen dependency.

Dr Toole has worked in camps in Thailand, along the border with Laos, and most recently in Somalia.

The Horn of Africa, he says, is possibly the area of greatest need in the world. Yet there are fears that the Australian Government may turn its back on it and other such areas by moving from needs-based foreign aid to exclusively region-based.

This year Dr Toole has been working with Community Aid Abroad as primary health care adviser, involved mainly in a Somali project to which the Government has committed \$2.5m over five years.

He first went to Somalia in 1981 as senior medical adviser in its Refugee Health Unit. The country had just inherited the world's most serious refugee emergency at the time, following the loss of a war with Ethiopia.

It was fought over the Ogaden, an area given to Ethiopia by the British but peopled by ethnic Somalis — long a disputed claim.

Somalia had attracted Soviet Union support since its revolution in 1969 but mid-war found its ally cross sides as US influence in Ethiopia waned.

The result was disastrous; one million people fled to Somalia.

Idealistic Somali doctors and nurses spearheaded the new approach to health care of these refugees, says Dr Toole. They were determined that international agencies should work to their ideas.

The first task was to tackle urgent medical matters. Malnutrition was attacked by selective supplementary feeding for children at risk, with mothers encouraged to prepare the food. An immunisation program was implemented in the first year to combat diseases such as measles, whooping cough and TB.

At the same time, the medical teams started training health workers selected from among the refugees. Natural candidates for this task included traditional midwives and bone setters.

These people were taught literacy and the basics of preventive medicine — the significance of sanitation, for instance, and clean water and immunisation. They were also trained in the diagnosis and treatment of common diseases. The group of drugs used was limited and standardised.

This procedure, says Dr Toole, meant that the health workers were taking primary responsibility for their communities, referring only difficult cases to medical staff. In turn, the doctors and nurses had time to train more primary workers and conduct health education more widely.

He says that by 1982 some 90 per cent of work was being performed by health



workers.

Such was the success of the program that the Somali Government decided to apply the model to the country as a whole: In the camps infant mortality before the age of one was one in 25; in Somalia generally it was one in five.

Community Aid Abroad, which had responsibility for one of the 35 refugee camps, agreed to conduct a feasibility study of extending primary health care to the remote, nomadic region of Sanaag.

It is this program on which Dr Toole has been chiefly working.

On his most recent visit to Africa he also entered, via the Sudan, Eritrea — another area of conflict in Ethiopia.

Post-war, the United Nations "federated" Ethiopia and Eritrea. In reality the latter was swallowed up by the former. An Eritrean People's Liberation Front fights for independence.

There are severe famine conditions in the whole area, says Dr Toole. Ethiopia claims that it is distributing international aid to all its provinces including Eritrea.

"This is simply not true," says Dr Toole. "I have travelled throughout the area and to one of the fronts."

"No aid is coming from Ethiopia, and Eritrea is getting no assistance from any other source because it is not recognised as a political entity."

Farewell to a Monash 'institution'

Thirteen years in the job, Cathy-behind-the-Union-Desk has become, for want of a better word, a Monash "institution".

A sullen day outside, late in the afternoon — her cheerfulness seems indefatigable.

Early next year Cathy is to leave the University to go to what she calls the next phase of her career — motherhood. The Toscanos' first child is due in April.

When Cathy Celona (as she then was) came to Monash in February 1971 she was fresh out of Sacred Heart Girls' College, Oakleigh. The nuns warned her of the dangers of working in a hotbed of revolution.

She wasn't paralysed by fear.

If anything, she recalls, in a whole span in which there's never been a dull moment, the early '70s were more carefree.

"Students seemed to have more fun then. There wasn't the job pressure, for example," she says.

The Union Desk has always had a special relationship with members of the University, Cathy believes.

"I think we're seen as not part of the bureaucracy. It's the sort of place people can ask an ordinary question, even a dumb one, and not feel an idiot.

"There's great satisfaction in doing your best to get an answer to a question — to let nothing win you."

Without doubt the most asked question is: Is this the inquiry desk? Not all



● Cathy (second from left) is leaving — but the Union Desk team tradition carries on with Rosemary Hill (seated), Barbara Helper and Carolyn Horvath.

queries are answered so easily. Just recently a phone inquirer asked Cathy how long the journey would take from Monash to Bethlehem.

Caught unaware she asked if the caller would be travelling by donkey or camel.

It was, in fact, a serious request. As we talk about Monash (the University) he was assuming ready recognition of Bethlehem (the hospital).

Another recent caller was tracking down

her 18th century ancestor — at Monash.

"Now even I know from growing up in the area that Monash wasn't built then," says Cathy. She expressed appreciation to the office of the Registrar of Births, Deaths and Marriages who had "referred" the call.

Cathy says that she'll miss her "family" at Monash — "even the whackers" — but knows that the Union Desk team tradition will carry on.

Cricket club reunion

The Monash University Cricket Club comes of age this season.

It is 21 and to celebrate the occasion a dinner has been arranged for Saturday, February 25 in Deakin Hall.

The club is anxious to attract as many past players, their wives and friends as possible to the function.

Guests will include the Vice-Chancellor, Professor Ray Martin, and Mrs Martin, together with the President of the Victorian Cricket Association, Mr Ray Steele, and Mrs Steele.

It is expected that the all-inclusive cost of the dinner will be \$20 a head. For further information contact the Club President, Ken Ward, at the Halls of Residence on ext. 2900.

Volunteers sought

Volunteers are being sought for a research project in the German department.

The study is on bilingual children. Researcher Susanne Dopke is seeking children aged from two to four years who have no older brothers or sisters. One parent should speak German to the child and the other English.

Interested families should contact Susanne on ext. 2239 or 543 6094 (home).

Graduate: 'hero to a nation'

"Investigations into the performance of a 12 metre yacht sail".

That is the title of a fourth year Mechanical Engineering thesis submitted in 1969 by a young man whom Professor Bill Melbourne, project supervisor, remembers as being unassuming but quietly confident and determined.

The description "a person who knew where he was going" crops up without exception among those at Monash who remember our most public graduate of recent months: John Bertrand, captain, helmsman and sail designer of Australia II, the America's Cup winner.

Not only was John's technological interest in yachting fostered in Mechanical Engineering's wind tunnel. Practising his skills on the University's behalf, he represented Monash in intervarsity sailing events in 1967 and 1968, skippering a Sharpe class boat.

And the Sports and Recreation Association recognised a great sportsman in the making by awarding John a Full Blue in its 1968 sporting awards. It is the first and only time the Association has made this award for yachting.

In the same year he was president of the Monash Sailing Club.

John Bertrand's years at Monash were 1966 to 1969. The year after, he travelled to the United States where he began a Master's degree in ocean engineering at Massachusetts Institute of Technology — and joined the crew of Gretel II in his first America's Cup challenge. He sailed with Southern Cross in 1974 and Australia in 1980 also.

By the time he enrolled at Monash he was already an Australian sailing champ — at age 16, in the VJ class.

There was common ground with Professor Melbourne who had been part of Warwick Hood's design team for Dame Pattie, the 1967 challenger.

Professor Melbourne says that the two often used to joke that an Australian yacht wouldn't win an America's Cup "until it had an engineer at the helm".

"And that is precisely John's strength," he says. "He combines two talents — a natural talent as a yachtsman with that of a top-rate engineer who understands the



● THE VICTORS — John Bertrand (left), skipper of the America's Cup winner, Australia II, and syndicate head, Alan Bond. Photo: The Sun.

mechanics involved in a yacht's performance. It's a point on which America has had the edge over its competitors for years.

"First and foremost, though, John is a great yachting." Professor Melbourne says that it was quite clear John "would be the one to get there".

"Everything he has done has been quite deliberate — part of a grand plan perhaps. Yet he was always a pleasant and unassuming person and, you can tell when you see him on television, he's no different now."

ALSO part of the Australia II crew was another Monash graduate — Will Baillieu, who graduated in Economics in 1976.

In 1972 Will was awarded a Full Blue by Monash for rowing. He was stroke on the University team which won the Oxford-Cambridge intervarsity boat race held on the Manning River, Taree, NSW, in that same year. He also represented Australia in rowing at the '72 Olympics.

A third member of the crew, Brian Richardson, rowed for Monash in local events in the early 1970s although he was not a student at the University.

MGA to new graduates: 'Give us a thought'

The Monash Graduates Association is a major organisation created to serve the needs of ALL Monash graduates. The MGA is broadly based and therefore is able to represent all graduates and co-ordinate graduate contribution to the community.

The "graduates association" consists of every graduate of this University but it is really the financial members who comprise the MGA and give it its strength.

On graduation, those students now completing courses will have an opportunity to join either on an annual or life member basis. But, that is for the future.

By the way, there's a pleasant surprise in store on how little it costs to be a member. Our brochure — which you'll receive next year at graduation — will give the details.

Some disciplines such as medicine and law have their own graduate organisations and these cover the technical and professional needs of their members.

MGA does not have such objectives — how could we with so many disciplines? But we do work harmoniously with the other groups.

The MGA aims to be the focal point for graduate contributions to the service of the community and to the promotion of OUR University.

We want people to know that graduates are not a privileged class with no concern for others. We want members who appreciate the chance to use their qualifications and their status in their workplace to assist others.

We want members who recognise the advantages their university education has given them and who are prepared to commit themselves to using their professional skills to enhance the wealth of the community.

But there are some material benefits from membership. For example, members receive copies of MONASH REPORTER, have concessional use of sporting facilities and the library. Travel concessions can also be arranged. The University Careers and Appointments counsellors are available to assist members.

Members are represented nationally at the Australian University Graduates Conference and have the support of a Committee involved in furthering the collective interests of graduates and graduate students.

So spare us a few thoughts between now and your degree conferral day.

We would really like you to join.

Further information is available from Vicki Thomson in the University Offices, ext. 2002.



We're still learning

Monash's motto, Ancora Imparo ("I am still learning"), is a saying attributed to Michelangelo.

At least that's what we've been saying for close on a quarter of a century.

But now Monash professor of Visual Arts, Professor Margaret Plant, says that, "in all scholarly honesty", there is no evidence that Michelangelo uttered the words. If he did, he was not voicing an original thought.

Professor Plant says that the words were a cliché of the time, attributed in various Latin versions to Plato and Seneca.

But she suggests that it would be entirely appropriate for Michelangelo to have uttered the words.

His genius would make a process of learning seem to have been mastered in the cradle.

"And yet it is the giants that first declare that the educational process is ongoing and unending," Professor Plant says.



Monash's year in review

Signs of job market slump

A survey conducted by Monash's Careers and Appointments Service points towards a marked deterioration in the employment of graduates in the private sector over the last year.

The annual survey is conducted primarily to obtain information on graduate starting salaries.

But this year it has yielded these indicators of the state of the job market:

- In 1982, some 88 private employers participating in the survey had recruited a total of 1371 graduates. In 1983, some 85 employers accounted for only 716 graduates.

- Last year six of the companies recruited 50 or more graduates. This year there was only one employer in this category.

- A total of 34 of this year's survey group recruited no graduates at all. In 1982 the figure was 17.

On starting salaries as at April 30 this year, the survey shows up little movement over 12 months — demonstrating the effectiveness of the wage freeze.

The top earners are chemical engineers whose starting salary on average is \$17,700. Materials engineers are not far behind on \$17,650, with other engineering graduates in the \$17,000s.

Law/Arts graduates and Law/Science graduates employed in industry (as opposed to the profession) had average starting salaries in the low \$17,000s, with Law/Economics graduates some \$700 below that. The irony is that these last graduates are keenly sought in industry, mainly for taxation work. But the chartered accounting profession generally is positioned at the bottom of the salary range and this has a spin-off for Economics/Law graduates. They are still substantially better off than if they were employed as articled clerks, however.

Graduate surveys

Science graduates start work in the private sector at around \$16,000 on average. Computer science graduates have been in demand but there are signs that employment growth in this area is starting to slow.

The "poor cousins" in private industry are Arts and accounting graduates whose salaries are in the mid-\$15,000s. Economics graduates majoring in economics fare better at about \$16,300.

And how does the private sector compare with the public?

In the Australian Public Service, graduates with three-year degrees have a starting salary of \$14,650; four-year degrees \$15,120; second class honours \$15,600; and first class honours \$16,080.

In the Victorian secondary teaching service, the salary for a recruit with a three-year degree and a Dip.Ed. is \$15,760.

Another survey scotches the commonly held view that graduates turn to teaching careers with low motivation — "because there's nothing better to do".

The survey was conducted among 131 people who completed the Diploma in Education at Monash in 1981 by the Careers and Appointments Service.

It also reveals little evidence of unemployment among the diplomates.

A report on the findings says that most respondents were highly motivated towards a teaching career with 70% listing it as their main ambition. Some 58% of these said that they had wanted to be teachers for five or more years.

"Relatively few have seen the Dip.Ed. as an option of last resort, with only 11.5%

even bothering to apply for alternative courses," the report adds.

Many of the diplomates (83%) believed that teaching offered high job satisfaction.

Only one of the respondents was unemployed as at April 30, 1982. Some 14 were emergency teachers and seeking permanent employment.

Monash's Master of Administration course has received a ringing endorsement from its graduates.

A report on a survey conducted among 1970-81 M. Admin. graduates says that, from their perspective, the course appears to be highly successful.

The report says that the success of a course can be inferred both from what graduates say about its value to them, and from what has happened to them since graduation.

To gauge changes in this second area, the questionnaire sought information on such aspects as nature of work, seniority and responsibility.

The report notes "significant job advancement" in the years following graduation according to all criteria surveyed.

The survey found among respondents:

- A substantial move from specialist occupations (engineering, accountancy and the like) into management.
- Marked advances in seniority level — 45% increased their level while 52% remained constant.
- Considerable increases in responsibility — both direct (as expressed by the number of people for whom the graduate is directly responsible) and ultimate (a qualitatively judged category).



• Sir George Lush

New Monash Chancellor

Sir George Lush this year took up the position of Monash University's fourth Chancellor.

Last month Sir George retired as a Justice of the Supreme Court of Victoria — a post he had held since 1966.

At Monash he replaced as Chancellor Sir Richard Eggleston, also a retired judge.

Along with Sir Douglas Menzies, that makes three out of four of Monash's Chancellors who have been judicial figures (the first, Sir Robert Blackwood, was an engineer).

Reporter asked Sir George earlier in the year what special skills a judge was likely to possess which were well-suited to the task of Chancellor.

"The art of listening," he replied. "a judge you have some training in keeping your mouth shut until you've got something to say!"

On the role of a Chancellor he made these comments:

"In a modern university, essential management rests with the Vice-Chancellor, under Council itself. The Chancellor should be available for consultation when outside views are required. Needless to say he's got to know what he's talking about."

Monash chemists succeed in making new carbon compound

Researchers in the Monash Chemistry department have manufactured a new carbon oxide.

The new oxide is tricarbon monoxide, made up of three carbon atoms and one oxygen atom. It is represented by the chemical symbols C_3O .

The Monash team believes tricarbon monoxide will take its place beside the well-known carbon oxides — carbon monoxide (CO) and carbon dioxide (CO₂) — and the lesser-known carbon suboxide (C₃O₂).

The manufacture of tricarbon monoxide came as a corollary to the team's work examining the molecules which exist in space.

Professor Ron Brown said that carbon suboxide — the "big brother" of carbon dioxide — had been known since 1907.

"Yet peculiarly, although that oxide has



• The jubilant team — from left, Dr Peter Godfrey, Dr Patricia Elmes, Dr Frank Eastwood and Professor Ron Brown.

been known for a long time, no one has ever thought about the corresponding big brother of carbon monoxide — C_3O .

"Chemically it is intriguing that chemists have known all this century of only three major oxides of carbon. This made me feel we ought to try to see if it was possible to make the big brother of carbon monoxide."

Dr Frank Eastwood, Reader in Chemistry, Dr Patricia Elmes, a professional officer, and Dr Peter Godfrey, senior lecturer, worked with Professor Brown. A graduate student, Mr Ed Rice, developed the theoretical framework for the experiment.

The team used a relatively new chemical technique of building a very large, but unstable, molecule which, when heated, would break down, leaving the hoped-for tricarbon monoxide.

Dr Eastwood devised a molecule of 12 carbon atoms, 12 hydrogen atoms and eight oxygen atoms — $C_{12}H_{12}O_8$.

And after long hours in the laboratory the team found they had the desired result — the molecule broke down, leaving acetone, carbon dioxide and the new oxide.

Professor Brown said that tricarbon monoxide had proved to be a peculiar compound — although it "lived" for only a fraction of a second it was, in chemical terms, reasonably stable.

And, unlike the other carbon oxides, it was a polar molecule — with a positive electrical charge at the oxygen end and a negative charge at the other. In the other oxides the charge is spread uniformly along the chain of atoms.

Nation must grasp 'hi-tech' opportunities

High technology both poses a threat and provides an opportunity.

If Australia shrinks before the threat and fails to embrace the opportunity, manufacturing industry must continue to decline, according to Professor Ian Polmear, of the department of Materials Engineering.

Technical change, says Professor Polmear, will accelerate the decline of some older industries and traditional occupations.

But so-called "hi-tech" industries also provide a means of gaining a competitive advantage in trade and new sources of employment to counter the loss of jobs as large, "smoke-stack" industries diminish in importance.

He says: "Any attempt to slow technological change will result in the loss of both old and new industries because such changes are being embraced by other nations such as Japan, Germany, Sweden and Singapore".

Professor Polmear believes that government and industry collaboration is needed to redirect Australia along the "hi-tech" path.

"The philosophy of relying on the marketplace will do little to stimulate such industries in this country with its small population and geographic isolation," he says. "The necessary venture capital must come with government intervention as has been recommended by the Espie Committee of the Australian Academy of Technological Sciences."

He says that Australia should take stock of its location in the world and greatly increase attempts to identify opportunities in regional markets.

Mercury pollution legacy of gold mining technique

Nearly 2500 tonnes of gold were produced in Victoria from 1867 to 1973.

About 950 tonnes of it came from quartz reef mining, which, traditionally, involved the use of mercury in the gold recovery process.

Ninety per cent of the quartz reef gold was mined in the heady days of the gold rush — from 1867 to 1914. More than half came from Bendigo.

Using historical records which show that about one ounce of mercury was "lost" for every one ounce of gold recovered, Monash senior lecturer in Chemistry, **Dr Bruce Collier** and Master of Science student **Rodney Hall** estimate that, as a result, Victoria's soil, rivers and streams have received about 950 tonnes of mercury.

"This makes gold mining by far the major source of mercury pollution in inland Victoria, if not in Port Phillip Bay," Dr Collier says.

Dr Glen Deacon, Reader in Chemistry, and Dr Collier are investigating the extent of mercury pollution in Victoria from gold mining.

With **Dr Tim Ealey** and students from the Graduate School of Environmental Science, they have also completed a study (funded by the EPA) of two small goldfields in the Upper Goulburn catchment which were operating until recently — the A-1 mine at Raspberry Creek and the Morning Star mine at Woods Point.

With **Dr Sam Lake** and **Mr David Coleman** of the Monash Zoology department, and **Mr B. M. Bycroft**, now with Carlton and United Breweries, they have also completed a study of mercury levels in water, sediments and fish from the Lerderberg River for the Ministry of Conservation.



● **Dr Glen Deacon** (left) and **Dr Bruce Collier** examine an amalgamation barrel from an old Victorian goldmine.

Gold mining operations using the mercury stamp mill amalgamation process were carried out in the Lerderberg River catchment area until 50 years ago.

The Monash team found high mercury levels — up to 27 micrograms per gram (27

parts per million) — in Lerderberg sediments which they traced to gold mine wastes at the old Blackwood-Trentham goldfield which contained over 100 micrograms per gram.

The A-1 mine at Raspberry Creek, subject of the more detailed study, operated until 1976 and produced about 12 tonnes of gold.

The Monash team found high levels of mercury in sediments near the battery outlet of the A-1 mine. Levels of 50-150 micrograms per gram were frequently found, and in one case the mercury level was as high as 1900 micrograms per gram. Contamination (1-10 micrograms per gram) was also present in sediments further downstream in Raspberry Creek and Gaffneys Creek and the Goulburn River.

Elevated levels of mercury were found in the roots and leaves of plants, in algae (a food source of invertebrate animals), in invertebrate larvae (a major food source for fish) and in trout and redfin.

Much of the mercury in the fish was in the highly toxic organic form, methylmercury.

Dr Collier and Dr Deacon have clear evidence from their Raspberry Creek and Morning Star studies that formation of methylmercury compounds from inorganic mercury occurs in the sediments, probably as a result of microbiological activity.

A job for yabbies

MEANWHILE, in Zoology, researchers have found that the humble yabby — a part of Australian folklore if less celebrated than the koala, kangaroo or Billy Tea — shows promise as a biological monitor of water quality.

A study by **Dr Sam Lake** and **Anthony Sokol**, graduate researcher, indicates that the common yabby, **Cherax destructor**, might be particularly useful in the detection of mercury contamination. It shows less promise as an indicator of lead contamination.

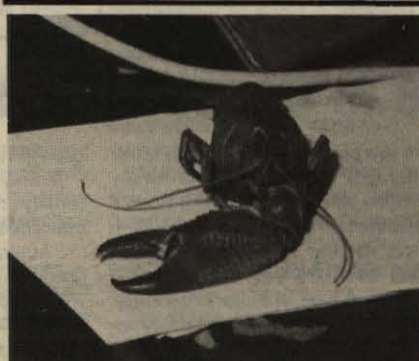
This is because the yabby takes up — bioconcentrates — mercury in its muscles, particularly its abdominal muscle. But lead was found to accumulate in the exoskeleton which the yabby sheds when it moults.

A search promoted by bodies such as the Australian Water Resources Council has been going on for some time for Australian animals useful in water quality management.

organisation and should not be seen as an "extension of any academic institution or government laboratory".

However, because of its long-term research role and its need for access to the highly sophisticated equipment needed in this type of research, the panel believes the Centre should be located close to a high technology institution with an interest in corrosion. Only in that way, it is said, could the benefits be optimised.

The report does not make a firm recommendation on the question of location. Locations close to the University of NSW and to Monash are suggested as suitable sites; on balance, the report favors Monash because of its activity in the area of corrosion. The final decision, if the Centre is established, will be made at the ministerial level.



The humble yabby... an important scientific role? ▶

Science and technology

Centre could save \$2b. a year on corrosion bill

A feasibility study released by the department of Materials Engineering recommends the establishment of a national centre to fight the ravages of corrosion.

The study, funded by the Federal Government and conducted by **Associate Professor Brian Cherry** and **Dr Brian Skerry**, with the assistance of a panel of corrosion engineers and other experts, estimates that such a centre could save the community as much as \$2000 million a year.

The corrosion problem is not just a question of rust on motor cars and galvanised iron, the report points out. The direct and indirect costs of corrosion to industry are enormous and the results, both socially and economically, can be alarming. Corrosion can cause pipelines to rupture, industrial plant to fail, buildings to deteriorate and aircraft to crash.

The feasibility report says the proposed National Centre for Corrosion Prevention and Control should be funded, at least partially, by the Federal Government. It should have consultative, research and educational facilities, but it should not "supplant nor displace" pre-existing corrosion mitigation facilities.

It would act as a first point of reference for corrosion inquiries from both the general public and industry. It would provide independent consulting services only when the facilities were not available elsewhere. A charge would be made for such services.

The report stresses that the National Corrosion Centre should be free of either internal or external commercial bias. It should have no links with any commercial



Experilearn

Been to the newly re-organised Museum of Victoria of late?

It has a major new "interactive" science display which is arousing the curiosity and interest of adults as much as children.

The \$100,000 project **Experilearn** is a joint venture of the Museum and Monash's Education faculty and Physics department.

The display marks a significant departure for the Museum in exhibition content and style of presentation.

It provides an entertaining introduction to basic scientific principles by inviting visitors to interact with displays — there are nearly 30 of them — which demonstrate those principles simply and vividly.

The do-it-yourself, bare-facts style of exposition contrasts with the historical approach the Museum has generally taken towards subjects in the past.

The display is modelled on ventures overseas such as the Exploratorium in San Francisco.

New approach on machine maintenance

Research by a Monash Mechanical Engineering team on monitoring the condition of industrial machines is aimed at reducing the cost of their maintenance and improving productivity through less "downtime" — the time equipment is out of action during repair.

The team — which includes senior lecturers **Robin Alfredson**, **Jack Stecki** and **Bruce Kuhnell** — has produced an inventory of techniques which can be used to identify a maintenance need.

Application of the new techniques to date has been on equipment used in mineral processing. Equipment maintenance as a percentage of operating costs has risen sharply in the mining industry in recent years.

Dr Alfredson says that there are two approaches that have been taken traditionally to equipment maintenance. Both have drawbacks.

One has been to maintain machines on a regular basis. But this can lead to under- or over-servicing and faults can be introduced as well as eliminated in any maintenance procedure.

The second approach is to allow equipment to run until it breaks down and then repair it. Unexpected breakdowns can cause great loss in production.

The new approach is to maintain equipment when its condition indicates that maintenance is required.

The Monash team has developed three tests for determining this:

- Examining wear debris in lubricating oil samples taken from the machines.
- Monitoring changes in the machine's vibration levels.
- Measuring the temperature of bearings.

From the initial area of problem detection, the researchers have moved on to improved methods of diagnosis and prognosis.



• Val Maxwell

Recession not main cause of job-shedding

Early findings of a survey of some of Australia's largest companies pinpoint reasons other than the recession for labour-shedding programs.

Among the other more significant causes are company restructuring through mergers, improved management methods and the like, and the introduction of new technology.

The survey, which is planned to embrace 60 of the nation's top companies by market capitalisation, identifies voluntary early retirement as the preferred tool in implementing manpower policies.

But a question has been raised as to whether the new, higher rate of superannuation lump sum taxation will put the skids under early retirement schemes.

While much attention is focused on the problems of youth in relation to jobs, it is in fact older workers — whose expectation is that they will be in a job until age 65 — who are "bearing the brunt" of the labour market revolution, says Mrs Val Maxwell, tutor in Administrative Studies at Monash.

Mrs Maxwell points out that her finding on the relative impact of the recession on job

shedding is based on companies at the "rock solid" end of the scale. Her study, too, is yet to extend to the automobile and textile industries. It does include several large public employers.

She says that voluntary early retirement — wrapped up in an attractive "package deal" — is the preferred means of labour shedding because it is the least visible.

The "harder options" are involuntary retirement and retrenchment of younger workers — moves which can stir up a hornet's nest in industrial relations and tarnish a company's public image.

Mrs Maxwell identifies several characteristics which are common to many early retirement package deals. First, they are usually promoted as limited time, never-to-be-repeated offers. Quite often, indeed, they are repeated if manpower planning dictates.

Secondly, acceptance of the deals is often based on an appeal to the altruism of older workers. They are reminded of their fair innings and of the need to give younger people a go in changing times.



• John Hill

The banking career path 'shortchanged'

Traditionally banking has provided a well-defined and secure career path for employees, males in particular.

The last few years have seen profound changes in banking, a chief effect of which has been the elimination of career paths for the majority of bank employees.

The changing labour market in the banking industry is the subject of an inquiry conducted by two Monash academics — Dr John Hill, lecturer in Administrative Studies, and Dr Bob Birrell, senior lecturer in Sociology.

Dr Hill says that what has emerged in the banking industry is a "dual labour market".

At the top end is a small sector, the members of which have well-paid, satisfying jobs. Increasingly, entry to this primary labour market is not via "the ranks" but through "body-snatching" of qualified employees from other firms or directly from tertiary education.

The balance of the banking labour force — the secondary labour market — is a pool of semi-skilled operatives whose employment the banks are quite satisfied to see as short-term and part-time.

Why the change?

One of the driving factors in recent years, says Dr Hill, has been the Australian banks' realisation that they must run a tighter, more profitable operation in the face of both domestic competition from non-bank financial institutions and foreign competition foreshadowed by the Campbell Inquiry. This has led to the mergers and an examination of the emphasis of operations and their labour-intensiveness.

Branch banking has been restructured along regional lines, with key branches handling a region's "significant" business, supplemented by smaller "cash shops". At the same time, the private banks have been redirecting their energies away from consumer banking into the more profitable "wholesale" end — that of corporate finance and merchant banking.

Dr Hill says that there are some negative implications for the banks in the emergence of the dual labour market.

One concerns their "bastions of the establishment" image.

"The banks are very conscious of their public profile and may not want to be seen as introducing a 'fast food' mentality to an industry long viewed as a desirable avenue of employment," he says.

PM's Office role 'political'

From the Whitlam years on, the private office of the Prime Minister, staffed largely by personally-appointed policy advisers, has developed as a significant, self-contained unit within administration.

Its growth recognises the Prime Minister's need for support in his political function — something in which his Public Service Department cannot easily — or properly — assist, says Professor David Kemp, chairman of the Politics department at Monash.

Professor Kemp was a senior adviser on Mr Fraser's staff in his first two years as Prime Minister and was director of the PM's office in 1981.

In the time since, Professor Kemp has been researching the elevation of the PM's and other Ministers' offices to ones with a capital "O" and developing a concept of their role in the system. Such a development has also occurred in Britain, Canada and other countries whose government is based on the Westminster system.

At its heart, says Professor Kemp, is awareness that politics and government are not separate and that good government involves competent performance of the political function.

There has been a tendency in the past to view politics negatively, as disruptive of

government, and to downplay its significance by loading the whole of the political role on one man, the Prime Minister or Minister.

In essence, he says, the political job is a leadership function. It involves the identification of philosophy and values underlying decision-making, the establishment of priorities, definition of task and the integration of information and ideas from many sources "into a coherent function".

"Political judgment is a major part of a Prime Minister's role and one which, it is now acknowledged, requires assistance. With the increasing complexity of government it would require a superhuman effort of one man to do it without staff support," he says.

No clear-cut remedies to problems of Untouchables

Experts on development in third world countries have argued cause and effect between an increase in the level of education of women, along with improved standards of living, and a reduction in population growth.

But how much education is needed to achieve this effect?

It is one of the questions Monash economic historian, Dr Marika Vicziany, hopes to answer in a study on fertility and the family life of Untouchables — or to use Gandhi's term, Harijans — in India. It is a project with clear policy implications.

Dr Vicziany has been conducting an interviewing program among Harijans in a village in the State of Bihar.

Her conclusions point towards a link between improved female literacy and reduced population growth that is not as clear cut and immediately achievable as might be first thought.

"It appears that the amount of education required to achieve the predicted effect is 'a lot' — much more than just a few years at school," she says. "We might have to accept rapid population growth in some areas for quite a long time."

Geographer tracks change in what Australians call 'home'

Australians move house more often than one would think. And in most cases the change of residence is made within the city in which the person is living at the time of the move.

A study by Monash geographer Dr Chris Maher of 10 Australian cities shows that within the five-year period (1971-76) between 40 and 50 per cent of the population in most of the cities moved to another place of residence.

The figure varied from a low of 37 per

cent in Newcastle to a high of 57 per cent in Canberra.

The two major cities, Sydney and Melbourne, both experienced turnover rates of around 43 per cent. Three-quarters of this population change related to moves within the particular city.

Dr Maher's study, which was prepared for the Australian Bureau of Statistics, is based on the 1976 Census, which, for the first time, made possible a study of intra-urban mobility.

No grievous decline in Christianity: sociologist

There has been no grievous decline in Christianity in Australia and there never was a "golden age" of full churches.

These are the facts, according to Dr Gary Bouma, senior lecturer in the sociology of religion at Monash.

Dr Bouma, who is also assistant curate at St John's Anglican Church, Toorak, says the statistics simply do not support the myths about Christianity in Australia.

"People have a sense that there was a

golden age in the past — whether they think it was last century or the 1930s — when almost everybody went to church but I can't find it statistically.

"Attendance varying around the 25 per cent mark has been the rule for Australia since about 1860. A look at historical trends reveals a pattern of remarkable stability in the percentage attending."

But the relative strengths of the major Christian groups are changing — the Anglican church had one of the lowest

growth rates of 1.6 per cent in recent years. Mainly as a result of immigration and of fertility rates the Catholic and Orthodox churches are growing more rapidly.

"Australian Christians are no longer predominantly Anglican. By 1986 Anglicans will have to cede first place to Roman Catholics. The small religious groups will continue to grow in number and proportion," Dr Bouma says.

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The Humanities

Tributes for two Deans

Two retired Monash Deans died in 1983.

They were Professor Don Cochrane, founding Dean of the faculty of Economics and Politics, and Emeritus Professor Guy Manton, the first full-time Dean of Arts.

Sir Louis Matheson, Monash's founding Vice-Chancellor, spoke at the memorial services for both men.

Don Cochrane, he said, had given 20 productive years to Monash, building a "marvellous" faculty in the process.

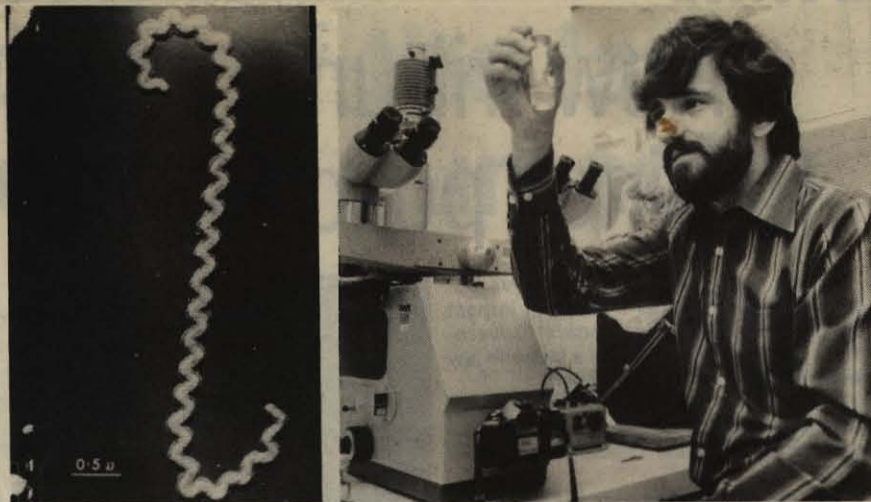
"I remember thinking that Don Cochrane might indeed be the best man in the world for our particular chair — and I believe he was," Sir Louis said.

The Arts faculty had "flourished mightily" under Guy Manton's guidance, he said.

"He knew and loved the Arts in the widest sense — from the classics, his own field, to literature and drama and languages and history."

"He was a cultivated man, well read and deeply sympathetic to the values of his faculty."

Test on farm disease vaccine



● Monash microbiologist Dr Ben Adler examines a culture of Leptospira. The spiral-shaped organism pictured left causes the serious disease, leptospirosis.

Monash microbiologists, in collaboration with the Commonwealth Serum Laboratories, are conducting a pilot trial of a promising new vaccine to protect dairy farmers and abattoir workers against the serious occupational disease, leptospirosis.

Leptospirosis is caused by a spirochete, a spiral-shaped bacterium, which, in southern Australia, is usually transmitted to humans through the urine of infected cattle and pigs. It is almost exclusively a disease of dairy farmers, abattoir workers and veterinarians.

It varies in severity from a mild influenza-like illness to a severe infection involving liver and reversible kidney damage.

There is no reliable information on the prevalence of the disease in Australia, but it is believed to be comparable to that in New Zealand, where about three per cent of

dairy farmers are infected in any one year.

As there are two common and two less common strains of the disease in Australia, and natural immunity lasts only five to 10 years, a farmer can contract the disease several times in his working life.

Dr Ben Adler, a lecturer in the Monash Microbiology department, who is working on the vaccine with Professor Solly Faine and M.Sc. student Wayne Christopher, says the Monash trial, if successful, may be followed by a large-scale field trial in Northland, New Zealand, involving about 3000 dairy farmers.

Dr Adler says that, at present, there are

no human leptospirosis vaccines licensed in Australia.

Vaccines have been prepared in the past from spirochetes cultured in a growth medium containing animal protein or serum, he says, but they have been unsuitable for human use because of their toxic side-effects. The foreign protein in the growth medium may trigger a severe allergic reaction in the person immunised.

"The big advantage of our vaccine," Dr Adler says, "is that, for the first time, we have been able to grow the organisms in a protein-free medium. And we have been able to grow them in sufficiently large numbers to make a commercial vaccine feasible."



Medicine

Sleep clue on lung disease treatment

Recent research into the physiology of sleep is leading to dramatic changes in the treatment of patients with severe lung disease.

The new treatment, which involves giving patients with respiratory conditions small amounts of oxygen during sleep, is already in use in North America and is being introduced experimentally at the Alfred Hospital.

It is to be used there in the treatment of young adults with cystic fibrosis.

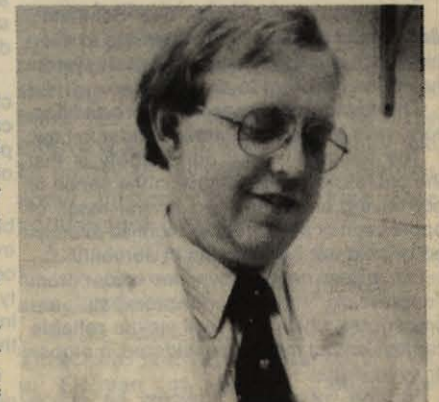
The treatment is being pioneered in Melbourne by Dr Glenn Bowes, an NH&MRC fellow in the department of Medicine at the Alfred Hospital, who has returned from Canada, where he spent more than three years at the Hospital for Sick Children in Toronto and the Toronto General Hospital.

Dr Bowes says research on both animals and human patients has shown that the pattern of breathing changes dramatically during sleep, particularly during REM (rapid-eye-movement) sleep, a sleep stage usually associated with dreaming.

"In REM sleep breathing becomes irregular," he says. "Indeed, we have periods of 10 or 15 seconds when we actually stop breathing. The amount of oxygen or carbon dioxide in the blood can vary quite widely during the various stages of sleep, at times outside the normal range."

"This variation in oxygen levels doesn't matter in people with normal lungs. The changes are relatively minor. But for people with severe respiratory conditions, such as emphysema, chronic bronchitis and cystic fibrosis, the changes can be serious. Oxygen levels can become dangerously low."

"We now recognise that we have to treat such patients during sleep with oxygen and other therapies to counter the drastic falls in oxygen levels that occur in the blood at night."



● Dr Glenn Bowes

New lead in muscular dystrophy research

Monash biochemists have identified what they believe could be the primary metabolic defect involved in the devastating wasting disease, Duchenne muscular dystrophy.

The disease, which is inevitably fatal, affects only boys and is inherited as a sex-linked recessive trait. The incidence is about one case in 3000 to 4000 births.

The Monash team, Dr Lawrie Austin, Dr Peter Jeffrey, Dr Helen Arthur and professional officer Michael de Niese have "strong circumstantial evidence" that the primary defect is a defective plasma lipoprotein component.

The protein, known as Apoprotein B, normally takes up Vitamin E and transports it to the tissues.

If the transport system is defective, as appears to be the case in Duchenne muscular dystrophy, the muscle membranes are deprived of Vitamin E, which is essential for their proper functioning.

"If the membranes are not functioning properly," Dr Austin says, "there may be many consequences, including a leakage of calcium, and this in turn can lead either to excessive muscle breakdown, or to an inefficient repair mechanism."

Although the Monash findings have no immediate therapeutic application, Dr Austin says, they could lead to improved methods of screening for carriers of the disease and, more importantly, to some way of controlling the disease by supplying the affected tissues with Vitamin E.

Attempts were made some years ago, he says, to treat Duchenne muscular dystrophy patients with massive doses of Vitamin E, but the trials were unsuccessful.

"If we are correct, the reason for the failure of Vitamin E treatment is obvious," he says. "The Vitamin E could not be delivered to the muscle membranes because of the defective transport system."

The Monash finding was made during a study into the way in which membranes are maintained in a healthy state.

Dr Arthur was studying lipoprotein blood fractions from muscular dystrophy patients, carriers of the disease, and controls (people who neither had the disease, nor were carriers of it). The lipoprotein fractions have a distinctive colour which can be seen when they are separated by centrifugation from blood samples. The colour is due partly to substances called carotenoids, and partly to Vitamin E, which the lipoproteins transport to tissue membranes.

When examining the lipoprotein fractions she noticed that the colour of one lipoprotein band (low density lipoprotein) was much less intense in Duchenne patients than in controls.

Colour intensity

The team developed a method of measuring the colour intensity and found that in the Duchenne patients it was only a third to a half of that in controls. In the case of carriers it was greater than in muscular dystrophy patients but significantly less than in controls.

The low density lipoprotein (LDL) fraction is one of the major carriers of Vitamin E.

Subsequent tests of red blood cell membranes from Duchenne patients and controls (12 age-matched subjects in each group) showed that the Vitamin E content of the muscular dystrophy patient membranes was significantly lower than in the controls.

Educationist spells out schools reform need

A Monash professor of Education has argued for the reorganisation of schools in ways which pay heed to recent research on successful strategies for learning with understanding.

As it is, says Professor Richard White, schools organisation is based on a 19th century view of learning — that the mind is a bucket which can be filled by dropping facts into it.

He says that research at Monash and elsewhere shows that teaching is not a simple matter of poking one fact after another into heads. People have to learn how to learn. It has also identified suitable strategies for learning with understanding.

The capacity to sit through a course of instruction and pass examinations of the expected sort, he points out, is no guarantee of having acquired such "useful understanding".

Professor White says that the new research is related to constructivist theories of learning.

The basic tenet of these theories is that learners construct their own meaning for each experience, whether it occurs in a formal educational setting or outside, by relating it to prior knowledge; learners must be active and are responsible for their own progress.

"Even when teachers strive to work in accord with those principles, the organisation of the school defeats them," says Professor White.

Powerful learning strategies take time and a consistent approach to form.

He says: "The organisation of the school determines the nature of the curriculum and both together limit the acts of teachers."

"Faced with an array of teachers, all promoting acquisition of subject matter, and with no models of older children to follow, the learner has little chance of finding out how to learn."

"The wonder is not that so few do, but that any ever did."

Law

Nationality

law for MPs needs review

A Monash lawyer has urged reform of Constitutional provisions on nationality qualifications and disqualifications for members of Federal Parliament.

Dr Michael Pryles, Reader in Law, says that reforms proposed by the Senate Standing Committee on Constitutional and Legal Affairs do not go far enough.

These are some of the absurd situations — possible under present law — they do not clear up.

Take, for example, the case of an MP, Australian-born, who as a rabid anti-communist conducts a vehement anti-Soviet campaign. A backdoor method of "neutralising" his voice in the House may be for the Soviet Union to confer on him Russian citizenship.

(Under the rule of private international law, possession of a foreign nationality is determined in accordance with the law of the foreign country concerned.)

Under disqualification provisions of the Constitution, it would seem that the MP's seat would become vacant, even though he did not seek the citizenship of the foreign state and would not be basking in the glory of it.

A second area where qualification provisions could operate unjustly concerns prospective members with dual citizenship, says Dr Pryles.

Here, take the case of a person who is an Australian citizen by birth and a British subject under the Australian Citizenship Act.

His parents, however, were born in a southern European country and under the law of that country cannot divest themselves of that nationality. Further, their children also acquire their nationality irrespective of the place of birth.

It would appear that Constitutional provisions would preclude that Australian-born person from standing for Federal Parliament.

New tribunal can overturn Cabinet policy — law lecturer

A new non-judicial administrative appeals body may make a startling impact on the development of Federal Government policies, according to a Monash law lecturer, Mrs Jennifer Sharpe.

Mrs Sharpe has spent the past three years studying the workings of the Administrative Appeals Tribunal, set up in 1975.

The tribunal has the power in some areas to overturn Ministerial and Cabinet policy.

"This turns the whole idea of ministerial responsibility upside down.

"In the policy review area the tribunal has more power than the High Court. Where a department exercises discretionary powers, the Court can say a decision is legally wrong or was improperly exercised, but it cannot override the Minister's discretion or decide on the merits of a particular policy.

"The tribunal can," Mrs Sharpe says.

The major fields covered at the moment are social security — for example when benefits have been refused — and the deportation of aliens and immigrants convicted of serious criminal offences.

The tribunal has recently been given the



• Mrs Jennifer Sharpe

power to review departmental decisions to withhold information under the Commonwealth Freedom of Information Act.

Mrs Sharpe says the tribunal has proceeded cautiously, but well, since its establishment.

One of its most controversial activities has been involvement in the review of government policy on deportation.

"In the past, government policy on deportation has not made any clear distinction between marijuana users and serious drug offenders; the AAT in its decisions has made a big distinction between different types of drug offences, and its views have been largely accepted by the Labor Government and incorporated into its new deportation policy," she says.

"The AAT has indicated that if the individual has been willing to help the police in their investigations, the tribunal will be less willing to deport him. The Ministerial policy did not make any distinction between offenders who assisted the police and offenders who refused to co-operate.

"The tribunal has also been much more influenced by the interests of other people — the deportee's family — than the government has."

Share for Aborigines in ocean mining profits?

Australian Aborigines may have a stake in the profits of deep seabed mining under the new United Nations Convention on the Law of the Sea according to a Monash expert in international law.

Mr Harry Reicher, senior lecturer in Law, has urged Aborigines to carefully monitor establishment of the International Seabed Authority and to seek recognition before it as a group which may benefit from activities within its jurisdiction.

The fruit of a decade's work, the Convention on the Law of the Sea is a massive document which deals with every aspect of the earth's oceans and their uses.

Mr Reicher says that the section which raises "interesting possibilities" for

Aborigines is Part XI which deals with the recovery of mineral resources from depths which have come only recently within the reach of technology. The resource causing great interest is manganese nodules — oddly-shaped clusters of various minerals which exist in large quantities and, remarkably, are self-generating.

Under Part XI, the International Seabed Authority is to be set up as trustee of the area. All activities (meaning, in particular, mining) are to be carried out "for the benefit of mankind as a whole".

Mr Reicher says that the Convention contemplates two arms of mining on the deep seabed. On the one hand, individual states (and private companies) will be able to mine, with approval from the Authority — and at a cost. Also, the Authority will have its own mining operation, to be called "the Enterprise".

"The potential revenues to be earned by the Authority in this fashion are huge," he says.

How they are to be distributed is laid down in Article 140(1) of the Convention which stipulates "particular consideration (of) the interests and needs of developing states and of peoples who have not attained full independence or other self-governing status recognised by the United Nations in accordance with General Assembly resolution 1514 (XV) and other relevant General Assembly resolutions."

Revenue distribution

Notions such as "self-determination" raise vexed questions in international law, says Mr Reicher. The upshot is that decisions on the sharing of profits will not necessarily be made on the basis of strictly "legal" considerations.

"The point is that self-determination has two dimensions: the legal and the political or moral," he says.

"By appreciating how the system will operate and who will make the relevant decisions, it may be possible for Aborigines to sidestep the legal complications of self-determination and address themselves directly to the political and moral dimensions."

Innovation

Orientation scheme for Aborigines

Monash University will next year launch an Orientation Scheme for Aborigines (MOSA) — the first of its type in an Australian university.

The Scheme aims to open up access for adult Aborigines to university qualifications, thereby increasing Aboriginal participation in the professions, public service, management and community leadership, and contributing to Aboriginal self-management.

The chairman of the Professorial Board committee responsible for MOSA, Professor Merle Ricklefs, says that the scheme will offer Aboriginal people "special support needed to break a cycle of disadvantage at university level".

Professor Ricklefs says that MOSA will improve mature Aboriginal students' prospects of successfully completing undergraduate degrees through both "bridging" and "enclave" functions.

"It will offer a full academic year of specific preparation for university study, thus bridging the educational and cultural gap which frequently exists between aspiring Aboriginal undergraduates and matriculants from other communities.

"It will improve the likelihood of Aboriginal students ultimately gaining university degrees by ensuring good study skills, by accustoming intending undergraduates to the procedures, styles and expectations of a university, by giving them confidence in their abilities, and by providing on-going support facilities."

Students who complete the Orientation year — achieving a standard at least equal to HSC — will be guaranteed admission to the Monash faculties of Arts and Law. Other faculties may wish also to accept successful MOSA students.

For further information about MOSA contact Professor Ricklefs on ext. 2160 or Ms Eve Fesl, Director of the Aboriginal Research Centre, on ext. 3346.

True confessions — but at what price?

Do trial judges have a role in "checking" police behaviour . . .

. . . By, say, rejecting in some circumstances a confession which is legally admissible but obtained by improper or illegal methods?

The Australian system, like Scotland's and Ireland's, gives judges the nod to exercise such a discretion. The English system has been reluctant to do the same.

The Australian approach is more satisfactory, says Mr Bob Williams, Reader in Law.

The requirement for admissibility is that the confession be voluntary in the sense of not having been obtained as the result of oppression or of a threat or promise exercised or held out by a person in authority.

But a few rungs down the ladder from "oppression, threats and promises" are procedures which may well yield a reliable confession but may be considered improper or even illegal.

For the most part it would be police behaviour in breach of the so-called Judges' Rules — the term used to describe

the rules laid down to govern police in their interrogation of suspects.

They cover such aspects as cautioning a suspect; questioning a suspect after he has been cautioned or charged; access to a solicitor; use of information received and statements by co-accused; and unlawful detention and the use of holding charges.

Where police impropriety reaches a sufficiently grave level, says Mr Williams, then a consideration of competing requirements of public policy may properly result in rejection of a confession.

"What is involved is an attempt to balance the desirability of placing cogent evidence tending to show guilt before the court on the one hand, and the undesirability of judicial approval or encouragement being given to unlawful conduct on the part of the police, on the other," he says.

"At a certain point the evil of acquitting a guilty accused becomes less than the evil of tolerating lawlessness on the part of the authorities."

ARGS grants: New projects

Monash researchers will receive a total of \$4.2m next year from the two major funding sources, the Australian Research Grants Scheme (ARGS) and the National Health and Medical Research Council (NH & MRC).

The ARGS grants total \$1.8m of which \$527,511 goes towards funding 41 new projects:
These are the new projects.

ARTS		SCIENCE	
English		Physiology	neurotransmitters and gonadal hormones 13,000
Miss B. M. Niall	Biography of Martin Boyd 6,000	Dr W. R. Gibson	Role of ovarian nerves in mediating ovulatory compensation after unilateral ovariectomy 10,200
French		Botany	
Prof. J. R. Garagnon	17th and 18th Century French utopias 1,000	Dr D. J. O'Dowd	The evolutionary significance of extrafloral nectar production by <i>Acacia pycnantha</i> 12,552
Geography		Chemistry	
Dr J. A. Peterson	Quaternary history of Macquarie Island — phase II 9,018	Dr R. F. C. Brown	Synthesis of oxygen heterocycles 6,300
History		Dr R. F. C. Brown	Pyrolytic generation of transient organic molecules 17,500
Dr M. Aveling	Australians in 1838 13,300	Dr F. W. Eastwood	Syntheses of organometallics and organoamidometal compounds by decarboxylation reactions 12,400
Dr A. Atkinson		Dr G. B. Deacon	Binuclear metal complexes — versatile centres for organic synthesis 13,500
Dr F. W. Kent	Florence in the time of Lorenzo D' Medici 5,000	A/Prof. R. S. Dickson	Chemical matrix isolation studies 9,839
Slavic Languages		Dr A. D. E. Pullin	Syntheses and redox properties of metalloprotein models 11,500
Prof G. J. Marvan	Theoretical framework of Slavic inflection 9,000	Dr. J. K. Yandell	
		Dr. D. G. Hewitt	
		Computer Science	Capability-based multiprocessor 22,000
		Prof. C. S. Wallace	
		Dr D. Abramson	
		Earth Sciences	
		Dr R. A. F. Cas	The tectonic style and significance of the Ordovician system, Eastern Victoria 30,558
		Dr D. R. Gray	Palaeovolcanology, stratigraphy and sedimentology: the lower Devonian Snowy River volcanics, Eastern Victoria 27,040
		Prof. B. E. Hobbs	
		Dr R. A. F. Cas	
		Dr D. R. Gray	The analysis of strain and incremental strain history in the Ordovician-Silurian rocks of Victoria — implications for tectonic development 18,150
		Dr R. T. Gregory	Stable isotope studies of Archean hydrothermal systems, Pilbara block, Western Australia 21,050
		Dr I. A. Nicholls	Partitioning of rare earth elements between clinopyroxenes and basaltic liquids as a function of pyroxene composition 3,400
		Genetics	
		Dr D. R. Smyth	Dispersed repeated sequences in the genomes of <i>Lilium</i> species 8,900
		Mathematics	
		Dr T. E. Hall	Automata, languages, machines and inverse semi-groups 7,500
		Dr R. K. Smith	Morning glory wind squalls 16,428
		Physics	
		Dr R. J. Fleming	Electrical properties of quartz — implications for defect chemistry 11,600
		Prof. B. E. Hobbs	
		Dr A. C. McLaren	Transmission electron microscope study of the structure and properties of grain-boundaries in rocks 8,734
		Dr A. C. McLaren	
		Psychology	
		Prof. R. H. Day	Perceptual processes involved in visual illusions 19,532
		Dr K. I. Forster	Visual processing of sentences 21,360
		Mr B. J. O'Loughlin	Interaction between excitation and suppression in the auditory periphery 5,005
		Zoology	
		Dr G. Ettershank	Age pigment accumulation as an ecological tool — baseline studies on <i>Daphnia carinata</i> (crustacea) 14,000
		Dr B. Roberts	The nature of PTH synthesis and release in flesh flies 10,000

Students organise management seminar

A group of Monash Economics students is organising a management development seminar at the Hilton Hotel on December 8.

The students belong to the Monash branch of the International Association of Economics and Commerce Students (AIESEC).

Several leading figures in the personnel field will speak at the seminar which is entitled "Management Development:

Where to from here?"

They include:

- Mr John Elliott, managing director of Elders IXL.
- Dr Roy Gilbert, director of the Victorian Ministry of Housing.
- Dr Ion Macgregor and Mr David Hume, management consultants.
- Mr Peter Wale, sales training manager, Honeywell Information Systems.

Chairing the sessions will be Dr Sharon Dickman of Footscray Institute of Technology.

Among topics to be discussed are the need for change in the attitudes of Australian business toward management development techniques, the inadequacies of present management courses, and trends overseas.

For further information contact the AIESEC office at Monash on ext. 3084.

Second edition extends the use of probability theory

THIS SECOND edition of Sir Richard Eggleston's pioneering book is not just an amended and polished version of the first edition. The new edition is about a third longer than the earlier edition, many chapters have been substantially modified, and there are about 80 additional interesting cases cited to support the argument.

The changes made are partly in reaction to the reception to the first edition. They include a much more thorough-going attempt to provide an explanation of the foundations of probability theory and its use in inference, with special emphasis on Bayes' Theorem, and a considerably amplified argument for a more extended use in the courts, and by lawyers generally, of the methods of thinking that stem from an understanding of classical probability theory.

The book is addressed both to lawyers and non-lawyers. The exposition of both the law and the mathematics has an easy clarity. The long argument is presented forcefully and sustained by an understated wit and copious and apt citations.

The broad thrust of the book is to show "that even where quantities are not available, useful results can be obtained by applying the reasoning of classical theory to factual problems".

A priori, I would have judged that this thesis must entertain universal approval. The large number of

In Review

Evidence, Proof and Probability, Sir Richard Eggleston, second edition, 1983, published by Weidenfeld and Nicolson, London.

cases cited by Sir Richard which run counter to the dictates of sound probabilistic reasoning show that a considerable reform, perhaps only to be achieved at the stage of the early education of lawyers, is necessary, however.

Not all would agree that reform is so needed. In 1977, while the first edition of Sir Richard's book was in the press, L. Jonathan Cohen, fellow of Queen's College, and lecturer in philosophy at Oxford University, published his book **The Probable and the Provable** (OUP). This book is also concerned with proof in the courts and asks what is the appropriate theoretical framework to describe such proof.

Cohen's book is in places much more mathematical than Sir Richard's and is embedded in a philosophical

jargon that no attempt is made to explain. For example, the standard and basic mathematical terms 'function' and 'functor' are used in a way different from that of the mathematicians, and Cohen makes no attempt to elucidate his meanings. Again, it is difficult to understand precisely what Cohen means by a relative frequency concept of probability.

The appearance of Cohen's book has led Sir Richard to expand his book to include a refutation of Cohen's conclusions. This polemical ingredient of the second edition adds an extra piquancy to the reader's enjoyment.

Roughly speaking, the difference between Sir Richard's and Jonathan Cohen's points of view is that Cohen takes a much less critical approach to the arguments and procedures of the courts. His view seems frequently to be that, here is a set of principles and accepted rules of argument, evidence, and inference and that it is his job to accept these procedures as valid and to find the correct theoretical framework for them.

In my mind Sir Richard wins the debate hands down. The matter is an important one because it affects us all, and should be discussed widely.

Professor Gordon Preston
Mathematics

Statistics show decline in Christianity

SIR: Dr Gary Bouma, senior lecturer in the sociology of religion at Monash, states (**Reporter 8-83**) that there has been no grievous decline in Christianity in Australia.

He waves aside the increasing number of people indicating on census forms that they have no religion as largely due to an increase in honesty.

It may come as a surprise to Dr Bouma that there are other statistics which clearly show a decline in Christianity.

The participation in the religious rites of marriage, baptism and funerals are all clearly decreasing. In 1949 over 90 per cent of marriages took place in a church, now it is just over 50 per cent and declining rapidly. Our members who are civil marriage celebrants are struggling to keep up with the demand and we estimate within 10 years civil marriages will be in the majority.

The Uniting Church is honest enough to release reliable statistics on baptisms and confirmations. Their 1980 figures showed 1,314 confirmations and 3,382 baptisms — a steady decline from previous years.

While detailed statistics on the number of people becoming ministers, nuns and priests are not available, all the major churches report a massive decline in this area. Young people taking up full-time religious positions are more likely to be joining Eastern religions than Christian Churches.

Hundreds of nuns and priests and ministers have left the Christian religion. Many convents have been closed and the property sold. Many mainstream Christian Churches have been sold and converted into restaurants, private dwellings, art galleries, discotheques and coffee shops.

The churches have reported a decline



in religious teachers. This month the Catholic Education Office in Queensland released figures showing that 50 years ago there were no lay teachers in their schools in Queensland. Ten years ago there were about 40 per cent. Today lay teachers make up 85 per cent, numbering around 3,600 out of 4,200 full-time and 500 part-time. Five per cent of Queensland's 283 Catholic schools have no brothers or sisters on the teaching staff.

Sunday schools are becoming a thing of the past. Many churches have ceased Sunday schools, attendances are declining and churches are finding difficulty obtaining Sunday school teachers.

There has also been a measurable

decrease in the adherence to religious teachings. Many who are nominal Catholic practise responsible parenthood through birth control. In the past most people followed church rulings on divorce, staying in unhappy marriages. Divorce statistics clearly show people are not following church teachings on divorce.

I challenge Dr Bouma to debate this topic at Monash any lunch hour at a convenient date.

Mark Plummer
National President
Australian Humanists
(Monash student 1973-76)

Scholarships

The 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.

AINSE Postgraduate Research Studentship — 1984

For research into nuclear science and engineering. The scholar is required to spend part of his time at Lucas Heights. The stipend is \$9,163 p.a. Applications close at Monash on November 4.

Holiday accommodation

Seeking holiday accommodation interstate over summer?

The Women's College, University of Sydney, and St George's College, University of Western Australia, could have the answer.

The Women's College is offering flats, single and twin study bedrooms "at very reasonable rates" from

November 26 to February 20. For further information contact the manager on (02) 51 1195 or 51 3761.

St George's is offering twin and single accommodation at "budget prices" — \$10.50 a head, bed and breakfast — from November 25 to February 14. For further information contact the College's house manager on (09) 386 1425.



A new videotape editing suite has been installed in the Educational Technology Section, providing a professional quality editing facility not previously available on campus.

The suite is based around the Sony BVU three-quarter inch U-matic format. The equipment was purchased with funds from the University's equipment grant and from ETS's outside

earnings.

Mr Alan Wilson, of the Medical Faculty mechanical workshop, constructed the framework supporting the suite — a complicated and intricate welding operation.

Says senior lecturer in charge of ETS, Mr Ian Thomas:

"We are hoping to add some refinements to the system in 1984

which will make the facility at the same time more available to users across the campus and to present a more polished final product.

"ETS is pleased to offer editing services for existing videotape material or for the production of new TV programs for teaching and research purposes." For further information contact ext. 3880.

Coming to grips with the bomb culture

THIS BOOK, by a member of the Monash Politics department and his wife, is not really an attempt to anatomise the world, but, as the subtitle says, to discuss the impact of the atom on Australia and the World.

And the authors do this.

The book does not contain any new or startling revelations, nor insights into the human condition or the meaning of the meaning of life which we had not encountered. Nor does it seem likely that the writers intended such things.

What they have done is to provide a longish interpretation of post-1945 world history in the context of the arms race, the nuclear competition, the Soviet-American rivalry which has spread or tried to spread into every corner of the world and every aspect of political, social and economic life; and the psychological damage which this 40 year old Bomb Culture has inflicted upon us all.

The second section of their book — 'The World Comes to Australia' — is about Australia and the Bomb, Australian foreign policy since World War II, and 'our present predicament'. The third and final section of their volume discusses how we won the war and lost the peace (viz. we have allowed ourselves to drift

In Review

Anatomy of the World: The Impact of the Atom on Australia and the World, Harry and Jill Redner, Fontana Collins, 1983. RRP \$8.95.

into a situation more dangerous and more insecure than in the late 1930s).

Coming out of this and what went before, the Redners analyse the peace movements which have waxed and waned in the West since Hiroshima, including those in Australia.

Finally, after discussing possible future tactics for checking the rush to war, the writers call for a new language to discuss power, international relations and, even, the symbology upon which groups rely to make their world, and the actions of their groups, intelligible and acceptable.

The Redners do not hesitate to put the military-industrial-scientific complex at the centre of things — for they do not believe that the USA and USSR have them, but, rather, are military-industrial-scientific

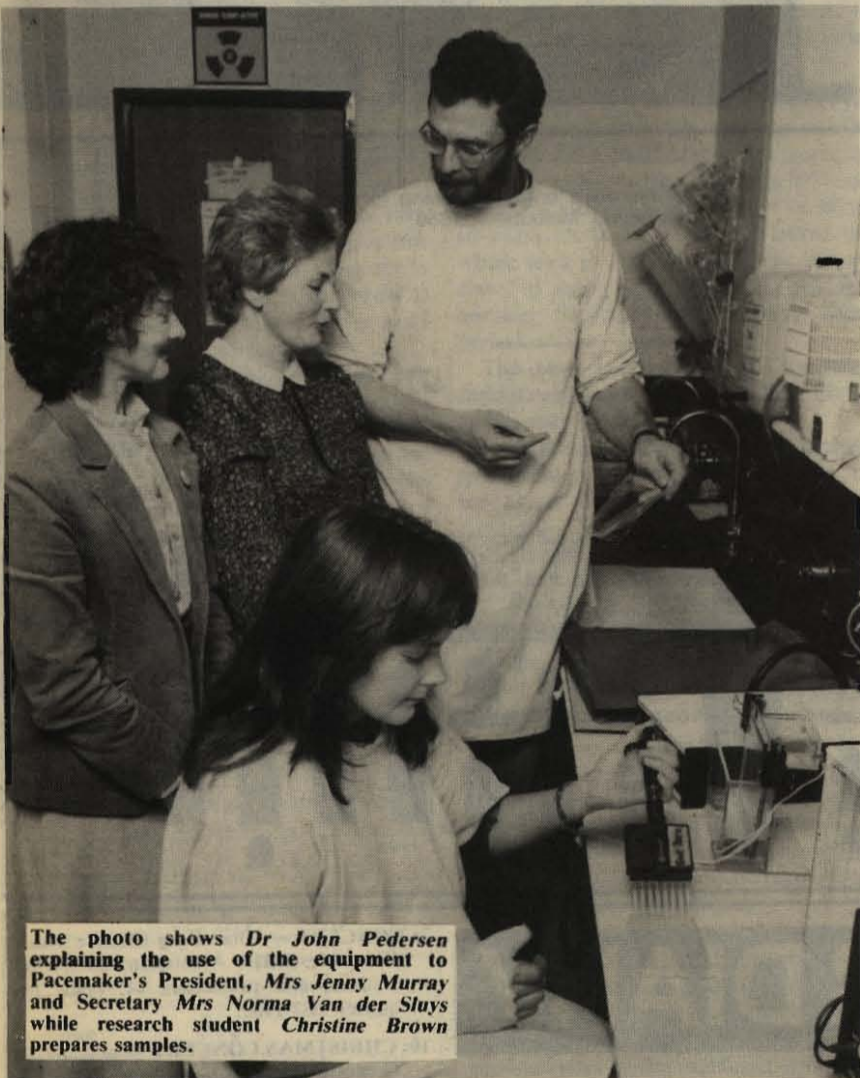
complexes. The arms complex is the flywheel around which everything else revolves. So much so that the task of changing this state of affairs, either from inside or outside, is daunting indeed.

The writers can only suggest selected pressures upon different links in the Great Chain of War, using now scientists, now doctors, now military men or ex-statesmen, now the population itself in public demonstrations (those not too apathetic to care or move), and so on. The Redners are not over-optimistic — for even the ruling elites are entrapped — but they are just not prepared to lie down and let it happen.

This book, which is most reasonably priced, will be of considerable value to those trying to approach the depressing and multitudinous complexities of modern war and peace for the first time; while even we old bottle-scarred, battle-scarred veterans of the anti-Vietnam movement, or even the British CND of the '50s, can pick up a few wrinkles by reading this book. Things one had forgotten, things one didn't know at the time, some interesting ways of talking about the mass of material; and some fresh ideas on how to bell the cat. It's all here.

Max Teichmann
Department of Politics

Charity group aids medical research



The photo shows Dr John Pedersen explaining the use of the equipment to Pacemaker's President, Mrs Jenny Murray and Secretary Mrs Norma Van der Sluys while research student Christine Brown prepares samples.

Support from a Moorabbin fund-raising group, the Pacemaker Set, has enabled the Monash department of Pathology and Immunology at the Alfred Hospital to buy important equipment.

More than \$2000 has been provided by the Pacemakers towards purchase of a number of items for gel electrophoresis which could not have been bought from normal funds.

The equipment is being used by lecturer Dr John Pederson and research students in their investigations into auto-immune diseases, particularly multiple sclerosis.

From its name, the charitable group sounds as if it is concerned exclusively with heart pacemaker implants. In fact the name refers to the ladies' aim to "set the pace" for other charitable organisations.

This year the group has given more than \$8500 — raised in social activities — to some 14 organisations including the City Mission, Kidney Foundation, Deaf, Blind and Rubella Children's Association, and Monash University.

The Pacemaker Set prefers to provide "concrete" items such as goods or equipment rather than simply cash.

Academics win Peace prize

Two Monash academics have been awarded a United Nations Media Peace Prize.

Foreign Affairs Minister Bill Hayden last month presented the award to Kevin Fewster, senior tutor in History, and Belinda Probert, lecturer in Sociology.

In February this year Dr Fewster and Dr Probert organised a "Stop the

Drop" rock concert at the Myer Music Bowl.

The concert was recorded and together with interviews with band members and actors such as Bruce Spence was "simulcast" on ATV10 and 3EON-FM.

Andrew McVitty and Tony Leach, who made the video, also shared the prize.

Library workers take their Ambulance certificates



Sixteen Library staff members were recently awarded St. John Ambulance Certificates to mark successful completion of first aid training courses. Five of them finished advanced courses.

In the photo above, instructor Mandy Gipps watches youngest 'graduate' Tony Sammut go through resuscitation procedures with a Chief Librarian obviously in need of resuscitating!

Wardell — grand legacy from colonial controversy

When William Wilkinson Wardell stepped off the boat in Melbourne in 1858 Australia could boast its first Fellow of the Royal Institute of British Architects.

In the next 41 years before his death — the first 20 in Melbourne and the remainder in Sydney — Wardell gave the colony some of its finest buildings in the Gothic and Renaissance Revival styles.

Among his projects in Melbourne were St Patrick's Cathedral, the ANZ Bank (formerly ES&A) on the corner of Collins and Queen Streets, the Treasury building and Government House. In Sydney his projects included St Mary's Cathedral and St John's College, Sydney University.

The first major exhibition of Wardell's work is on show in the Monash Exhibition Gallery until November 11. Early in the new year it moves to Sydney.

The exhibition has been assembled by Ursula de Jong, who is writing a Ph.D. thesis in the department of Visual Arts on Wardell.

On show are memorabilia, photographs (chiefly by Adrian Featherston), and original drawings which Mrs de Jong says "provide additional insight into the architect's design process, revealing more cogently his vision".

Accompanying the exhibition is publication of an illustrated book/catalogue on Wardell's life and work.

Mrs de Jong says that Wardell was a figure of controversy, particularly during his time in Victoria. He was eventually dismissed from his post as head of the Victorian Public Works Department, a position he held for 20 years.

Born in London in 1823, he was a convert to Catholicism at age 20. In his formative years, architecturally, he was influenced by the ideas of Pugin who held that "there should be no features about a building which are not necessary for convenience, construction or propriety; and that all ornament should consist of enrichment of the essential construction of the building".

Wardell had constructed more than 30 Gothic Revival churches in Britain, mainly London, before departing for Australia.

In Melbourne he was immediately employed by the Catholic Church to design the new cathedral and won, by

competition, his position as Clerk of Works and Chief Architect with the Government. Three years later he was promoted to Inspector General of Public Works in Victoria with the right to private practice.

Mrs de Jong points out: "His arrival and assimilation into Melbourne society were not quite as simple as these facts would suggest.

"The press of the day argued vehemently as to his merits and his 'right' to take up a public position.

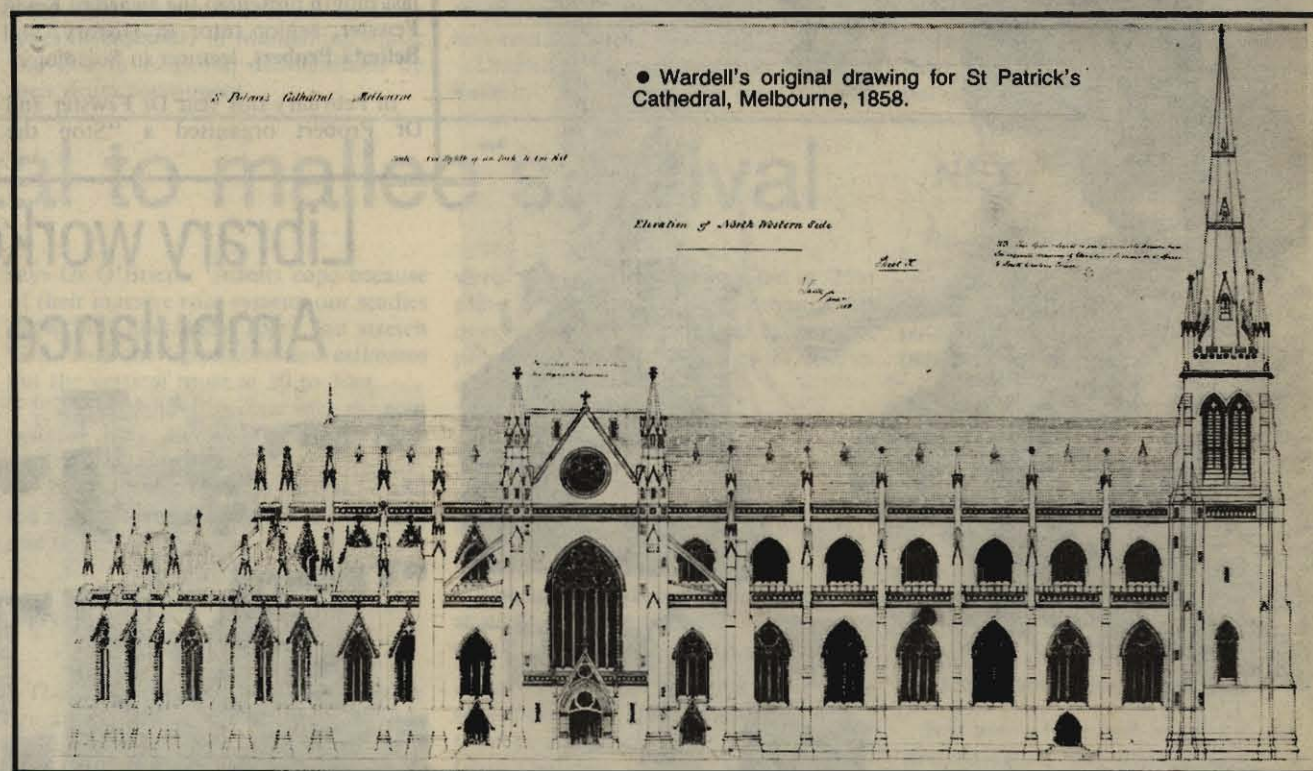
"The Irish-dominated Catholic community looked with suspicion upon this English convert who presented them with plans for a Cathedral of enormous proportions."

Mrs de Jong says that Wardell looked at architecture from an architect/engineer's point of view rather than purely from an historian's or a devout Christian's stance.

"His approach was neither solely scholarly nor fanatically religious. He was able to combine practicality with aesthetic intuitiveness."

The gallery is on the seventh floor of the Menzies building and is open 10 a.m. to 5 p.m. weekdays and to 6 p.m. on Wednesdays.

RIGHT: Portrait sketch of W. W. Wardell, 1850, by Clarkson Stanfield. BELOW: His grandchildren, at Monash for the exhibition opening — Mr Vincent Wardell, Mrs Clare Tarlton-Rayment and Miss Teresa Wardell (right).



● Wardell's original drawing for St Patrick's Cathedral, Melbourne, 1858.

The events listed below are open to the public. "RBH" throughout stands for Robert Blackwood Hall. There is a BASS ticketing outlet on campus at the Alexander Theatre.

NOV. 3-11: EXHIBITION "William Wilkinson Wardell: His Life and Work". Pres. by department of Visual Arts. Monday-Friday, 10am-5pm; Wednesdays, 10am-6pm. **Exhibition Gallery**, 7th floor Menzies Building. Admission free. Inquiries: ext. 2117.

3.5: MUSICAL COMEDY — "Orpheus in the Underworld", pres. by Cheltenham Light Opera Company. Nightly at 8pm. Matinee at 2pm on November 5. **Alex. Theatre**. Admission: adults \$8.50; pensioners and tertiary students \$6.50; children \$4.50. Bookings: 288 8438.

3-30: 1984 SUMMER SCHOOL — Enrolments now being accepted for courses in motor maintenance;

dance/drama/mime; languages; Australian native plants; interior decorating; arts and crafts; music; typing; photography; study skills. Inquiries and free brochure: ext. 3096, 3180.

16: WORKSHOP — "Shaping the Future in Child Welfare", a workshop on the Child Welfare Practices Legislation Review Committee's discussion paper. Pres. by Centre for Continuing Education. Inquiries and enrolments: exts. 3718, 3717.

22: ENVIRONMENTAL SCIENCE CONFERENCE — "Conservation Strategy

and the Role of Demand Management", co-sponsored by the Ministry of Environment and Planning and Graduate School of Environmental Science. 9.30am-1pm. **Lecture Theatre 1**. Admission free. Inquiries: Dr Peter Cock, ext. 3837.

25: CONFERENCE — "Distributive Justice and the Australian Medical Care System", pres. by Centre of Policy Studies and Centre for Human Bioethics. 9.20am-6pm. Inquiries: ext. 2427.

DEC. 2: "Starlight Revue", pres. by Dawn Lois Dancing School. 7.45pm. **RBH**. Inquiries: 547 2027.

3: CONCERT — Chao Feng Chinese Music Ensemble. **RBH**. Admission: adults \$6, students and pensioners \$4. 8pm. Inquiries: 662 1980.

10: CHRISTMAS CONCERT — pres. by St. Gregorius Dutch Choir. 8pm. **RBH**. Inquiries: 762 1326.

CHRISTMAS CONCERT — pres. by Monash University Choral Society. **Religious Centre**. Admission free. Inquiries: Chaplaincy, ext. 3160.

12: CHRISTMAS CONCERT — "Festive Music for Christmas", pres. by Prahran Parish Mission. 8 pm. **RBH**. Admission: \$15, \$10, \$5. Inquiries: 51 1315.

17: CHRISTMAS CONCERT — pres. by National Boys' Choir. **RBH**. 8pm.

EARLY 1984: PANTOMIME — "Peter Pan", pres. by Rainbow Management and the Alexander Theatre. Begins early January. Bookings open December. **Alex. Theatre**. Inquiries: 543 2255.