Lead on rapid diagnosis of Legionnaires' Disease

A Monash microbiologist has suggested a simple, rapid technique, capable of widespread laboratory use, for diagnosing Legionnaires' Disease.

Professor Solomon Faine, chairman of the Microbiology department, describes the technique in a paper to be published this month in the US-based Journal of Clinical Microbiology.

It involves the gathering of information on bacteria present in a suspected sample, by staining (i.e., staining with silver nitrate) a sample of his exudate (spit, for example). This staining process enables the microbiologist to identify tissue details.

Professor Faine says it is a "presumptive" method of diagnosis. That is, results from the tests can strongly suggest presence of the disease rather than positively identify it. The advantage of the method is that it can be done speedily and without expensive equipment and will point to Legionnaires' Disease in all its local strains.

The procedure is new as such other than in its application to the diagnosis of Legionnaires' Disease. It was developed by Professor Faine a number of years ago in work on another research project in which he sought to stain spirochetes — spiral bacteria — in tissues.

Complex methods

Professor Faine says that the chief method of diagnosing the disease at the moment is by means of immunofluorescence. This method calls for sophisticated equipment and is not always available in diagnostic laboratories especially in smaller centres and developing countries. It also requires the use of reagents effective for each of the strains. Local strains anywhere may be different from those already recognised for which reagents are available.

Professor Faine spent part of his study leave last year in the US working on diagnostic techniques for Legionnaires' Disease with a group in Infectious Diseases at the Wadsworth Veterans Hospital. As a result of his interest and involvement in the subject he was invited to Atlanta, Georgia, in November to participate in an international symposium on Legionnaires' Disease.

To date about six deaths are thought to have been caused by the disease in Australia.

"Three days after what is urgently needed in this country as an early warning against an outbreak of not only Legionnaires' but any other infectious disease, is a sound epidemiological reporting service for surveillance.

The Federal Health Department provides an embryonic service along these lines but it is not in the same class as the Morbidity and Mortality Weekly Report published by the Center for Disease Control in Atlanta.

"At the moment we could have an epidemic of Legionnaires Disease in Australia without really knowing about it," he says.

Legionnaires' Disease is a severe respiratory disease — a progressive pneumonia — which was first recognised in an epidemic when 182 people fell victim to a congress of the American Legion (an organisation similar to the RSL) in Philadelphia in July 1976. Twenty-nine of the patients died.

Other epidemics have occurred there have been about 12 in the US — and the one among members of the American Legion was not the first. Because of the nature of that body, however, attention was focused on the epidemic there.

Medical knowledge of the disease has increased considerably in the last three years.

The bacterium which causes the disease, Legionella pneumophila, has been identified and grown. It is believed that the bacterium lives in soil, probably moist soil. It is a new microorganism. Searchers believe that it has been in existence but unrecognised for a long time and that a particular set of circumstances has enabled it now to produce a recognisable disease.

These are some aspects research has revealed about the disease:

- It has an attack rate of about 2 to 2.5 per cent.
- Data suggests that it might account for up to 4 per cent of undiagnosed cases of pneumonia.

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It has been suggested that an air conditioner may trap contaminated dust or dirt in which the bacterium lives. The temperature and humidity may encourage the persistence or the growth of the organism, particularly in the cooling water of evaporators.

Legionnaires' Disease attacks the lungs primarily but can also attack the kidneys and liver. When diagnosed, it can be effectively treated with the drug, erythromycin.
Open Day is almost here.

On Saturday, August 4, a general invitation is extended to members of the public and intending students to visit Monash University's Parkville campus (between 10 a.m. and 5 p.m.) to find out a little bit about how a university works.

Planning for the range of activities offered is now entering final stages, and a full program will be available shortly.

This program will include course and careers counselling, as well as departmental and club displays and exhibitions, films and tours of various University facilities.

Open Day Director, Rick Belshaw, pointed out that, as in previous years, the emphasis will be to introduce secondary school students to the University. He is particularly keen to see students from nearby schools taking the opportunity to come to Monash. Nearly 70 departments and organisations and more than 30 clubs and societies will be taking part in Open Day — Monash's 12th.

Marvel, mystery: Einstein's work had all that

"The most beautiful experience
Whoever does not know it and
Whoever does not know it
Is good as dead, and his eyes are dimmed."

So wrote Albert Einstein, who revolutionised physics and our understanding of the Universe with his Special and General Relativity theories.

Professor William H. McCrea, professor emeritus in the Astronomy Centre, University of Sydney, who organised the Royal Society's Albert Einstein centenary celebrations and a world authority on relativity and cosmology, recently visited Monash University at the invitation of Dr Andrew Prentice to give a series of lectures to coincide with the centenary of Einstein's birth.

Professor McCrea, is well known also for his own work, on the origin of the Solar System and his theory that climatic changes, such as the great Ice Ages of the past, could have been triggered by the passage of the Solar System through dust clouds in the spiralling "arms" of our Galaxy.

Professor McCrea told a Science Faculty audience at Monash that Einstein took as his ideas "kindness, beauty and truth".

The world, he said, can still reverence the memory of a very great man whom it sadly had to live without.

Einstein's first paper on light quanta or photons, he said, determined the way in which every physicist thinks about radiation — light, heat, radio, x-rays and gamma rays.

It laid the foundation for the quantum theory, the greatest ever revolution in physics.

Einstein's first paper on Brownian motion — the random motion of a particle suspended in a fluid, caused by the action of invisible atoms or molecules—established the way in which every physicist thinks quantitatively about the constitution of matter.

His third paper on the dynamics of moving bodies, summed up in 1905 in the famous equation E=mc², which stated the equivalence of mass and energy, became "a sort of call-sign of relativity."

"The third paper and its sequel control the form of every calculation that physicists make about every single phenomenon involving anything that moves at speed comparable with light-speed", Professor McCrea said.

"Together those papers settled the basic form of physical science from that time forth. They were the immediate outcome of one year's work by a 26-year-old patent-officer clerk working on his own in his spare time."

"Any good physicist at the time might have done any of these things — and some actually had done much more than Einstein appreciated."

"What is so miraculous is that one young man, who had scarcely yet earned the name of physicist, did the lot."

"It was rather as though some young fellow from nowhere had climbed Everest, swum the Channel, and beaten the 4-minute mile all in the same season."

Einstein's paper on General Relativity, published in 1916, in which he argued that gravity is caused not by a force but by the warping of four-dimensional space-time by matter, is regarded as the starting point of the modern science of mathematical cosmology.

"The subsequent development of relativistic cosmology over the past 60 years has produced fundamental insights into the physical history of the Universe, and of the nature of physical science itself."

"The route to this theory was "arduous, roundabout and frankly lucky", Professor McCrea said.

"It was triggered by Einstein's inability to bring Newton's theory of gravitation, with its concepts of 3-dimensional space and universal time, into special relativity theory, with its ideas of four-dimensional space-time."

With the help of some sophisticated mathematics developed by Minkowski and Riemann, Einstein "stumbled upon equations that presented him with an entirely novel mathematical treatment of gravitation."

As well as explaining planetary motion, he said, Einstein's theory predicted gravitational redshift (the shift of light to the red end of the spectrum in an intense gravitational field) and the bending of light in a gravitational field, for example, as it passes the Sun.

"For Einstein himself, those marvellous years 1905 and 1916 were followed by no third most marvellous year", Professor McCrea said.

"From about 1928 until his death Einstein devoted himself almost exclusively to the fruitless quest for a unified field theory — an attempt to reconcile relativity with the rest of physics."

"Certain developments in basic physics in very recent years seem to be in the spirit — if not in the footsteps — of Einstein's dedicated search", Professor McCrea said.

"But anyone who did for Einsteinian physics anything comparable to what Einstein did for Newtonian physics will be such a colossus that we may have to wait a thousand, not just another hundred, years before we see him."

Space talk

Senior lecturer in Mathematics, Dr Andrew Prentice, will give a public lecture on Thursday, July 5 on "Jupiter's Rocky Rings".

The rings are of particular interest to Dr Prentice. In connection with his work on developing a theory about the beginnings of our solar system he predicted several years ago that Jupiter had a rocky satellite belt. Such a belt was detected by the Voyager I probe early this year.

Dr Prentice has predicted that future space probes will reveal two new satellite belts around Uranus and a new ring around Saturn.

His lecture, organised by the Astronomical Society, will be held in lecture theatre 8B starting at 3.15 p.m.

The Astronomical Society will mark the 10th anniversary of man's first voyage to the Moon, aboard Apollo 11, with a free space films evening. The films will be screened in lecture theatre H4 on Tuesday, July 17 at 8 p.m.
A new look at some ancient Australian birds

Probably the largest bird ever to roam the surface of the earth — it could not fly — was unique to Australia.

The extinct bird, remains of which have been found in the Northern Territory, could have stood more than three metres high and tipped the scales at more than half a tonne, making it more massive than the Malagasy Elephant Bird.

The giant bird, Dromornis stirtoni, was a member of the Dromornithidae, a family which ranged in size down to a form slightly bigger than the present day emu. In appearance members of the group probably resembled the emu.

But Dr Pat Rich, lecturer in the Earth Sciences department at Monash, points out that the birds (also known as mihirungs, from an Aboriginal reference) were not merely giants.

Last month the Bureau of National Resources, Geology and Geophysics within the Federal Department of National Development published a 195-page bulletin by Dr Rich on The Dromornithidae. In it she gives a systematic scientific description of the family and describes for the first time six new forms, including three new genera.

Dr Rich says that emus and dromornithids probably came from common ancestral stock. "More ponderous" than the emu.

But, she adds: "Even the smallest mihirung were not as slender as the emu and most dromornithids were apparently much more ponderous birds."

She says that fossil evidence indicates the birds existed 20 million years ago and as recently as 26,000 years ago but these dates are not the definitive limits of their existence.

She says: "In fact it might be that the birds went extinct much more recently."

"We know there was none when European settlers arrived."

"But traditions have been noted among the Tjapwurong Aboriginal tribe in western Victoria concerning 'mihirung paring mal' or giant emus which are said to have lived 'long ago' when the volcanic hills of that region were in eruption. Volcanic flows are known to have occurred there as recently as six or seven thousand years ago."

Dr Rich says that our knowledge of dromornithids stems mainly from bones which have been recovered from scattered fossil sites throughout Australia (including, close to home, Lancefield), from footprints discovered in Tasmania and Victoria, and possibly from an egg the size of a football found in the sand dunes near the Scott River in Western Australia, as well as fragments of an egg shell found in South Australia. While the bones have been positively identified as belonging to dromornithide a question mark hangs over the footprints.

The first convincing evidence of the former presence of giant ground birds in Australia resulted from Major Mitchell's exploration and survey work in the Wellington Valley of New South Wales in the 1830s. He recovered a very large bone (now lost but most likely a dromornithid as suggested by size and shape depicted in a drawing in his account) from a limestone cave. The bone gave way after a member of his party attached a rope to it believing it to be a projecting portion of rock.

The most significant dromornithid find occurred at Lake Callabonna in South Australia at the end of last century. Bones were first discovered there in 1892 and the area excavated by a team from the South Australian Museum later in the decade.

The site yielded articulated remains of animals which had come to the lake to drink. This had obviously become bogged in the mud and their remains had not been greatly disturbed.

The best dromornithid material excavated was of the medium-sized species, Genyornis newtoni, of which today there is the most complete skeleton, including a partial skull, of any member of the family. Such a skeleton, reconstructed by Dr Rich and K. K. Kelley, has been placed on display at the National Museum of Victoria recently.

Joint US-Australian team resumes search

No further work was carried out at Lake Callabonna until the 1950s when Dr R. A. Stirton, from the University of California (Berkeley), led a team of Australian and American palaeontologists there.

"(Dr Rich was a student of Dr Stirton who kindled her interest in dromornithids.)"

Co-operative efforts by museums and university departments in several states have discovered other material since.

Dr Rich says that what has been found enables a clear reconstruction of what mihirungs were like from the neck down. She says that what is needed now is good cranial material which would give real insight into the relationship of this group to other large ground birds such as emus and ostriches.

She speculates that the dromornithids were herbivorous or, possibly, omnivores: they did not have hooked claws on their feet or a hook on their beaks as do many carnivorous birds.

She speculates, too, as to why they died out.

She says: "A debate goes on about the effect of man compared with the effect of climate."

"I don't think that man would have been the primary reason for the bird's extinction. He may have played an important role by killing off some once the numbers had begun to dwindle although we have no direct evidence of this. Climatic changes, which saw the gradual dessication of central Australia, would seem to have been the trigger."

The central Australia that dromornithids were known to have inhabited 20 million years ago was a wetter and more thickly vegetated place than it is today.

Dr Rich says: "Australia, which is believed to have been part of the Antarctic land mass until about 50 to 65 million years ago, was at that time further south than it is positioned today. Rainfall in the central area was more dependable than with enough rain even in the worst seasons to guarantee a water supply in permanent lakes."
A STEP forward in education planning

"As our society becomes more complicated and technologically based, more and more good levels of numeracy will be required," writes Shell Company executive Mr Alan Willsher in his foreword to STEP, the education survey which has just been published by Monash.

STEP, the Secondary-Tertiary Education Planning Survey, which began in the Careers and Appointments Office at Monash five years ago, explores such questions as:

Has there been a decline in the quality and flexibility of secondary education? Is there a need for a core curriculum? Are entrance requirements for tertiary institutions unfair and unreal?

The preliminary STEP report covering secondary education for the years 1975-77 has now been published and is being distributed to secondary schools, Government departments and industry.

Publication of the report has been funded by the Shell Company of Australia Ltd.

Mr Wilkinson, the company's Personnel and Public Affairs Director, makes the point in his foreword that if the present swing away from rigorous studies in mathematics and the physical sciences continues, we may soon experience a shortage of men and women needed to maintain a high technology economy. "It is especially disturbing to find that girls display a greater movement away from maths and science than boys," he says.

"This trend must inevitably result in an inequality of opportunity for the sexes, not because of any prejudice on the part of employers but because of educational shortcomings among girls presenting themselves for employment."

Much of the research in the STEP report was carried out by Mr Barry Walsh, a Monash careers counsellor, with Mr Warren Mann, who was Careers and Appointments Officer at Monash until his retirement earlier this year.

They have had help and cooperation from a number of different sources including the Victorian Education Department's Planning Services Division, the Commonwealth Public Service Board, Professor W. D. Borrie of the National Population Inquiry, the Victorian Universities and Schools Examinations Board, the Victorian Universities Admissions Committees, the Schools Commission and individual academics and educators.

The Computer Centre at Monash assisted with the compilation and analysis of data.

According to Mr Walsh, the STEP project grew out of an awareness of the lack of data needed for co-ordinated planning at the secondary and tertiary levels of education and for understanding the relationship between education and employment.

Monash professor of history, Professor A. G. L. Shaw, said this while delivering the occasional address at a recent Arts and Education graduation ceremony.

Professor Shaw warned that if Australia allowed a "brain drain" of its ablest scholars to research establishments overseas the nation's future development would be affected adversely and it would be impossible intellectually.

He urged the graduates to be vigilant against financial threats to intellectual activities, manifested in such actions as cuts to research funding and the recently proposed, then abandoned, tax on imported books and periodicals.

Professor Shaw said: "According to the latest figures that are available, amounting to day-by-day dependence on research in Australia per head of population was less than half that of the USA and significantly less than that of Germany, Sweden, France and the Netherlands; as a percentage of national income, it was barely half that of the USA, UK and Germany, and significantly less than that on France, the Netherlands and Japan.

"Since that time, as far as can be estimated, government expenditure on research in this country - and that includes payments for research to universities and similar institutions - has been reduced by about a quarter, and 'private' research expenditure, which companies and such like has fallen, in real terms, by about 40 per cent.

"At Monash, the number of graduate research scholarships has fallen proportionately. "That the quality of our research is high is generally conceded, but the quantity is too small. Due course this will necessarily result in a greater reliance on imported technology and an increasing brain drain as our ablest scholars proceed overseas to carry out research programs for which they cannot get funding and an inability in the universities to train their best graduates in research techniques, which will in turn naturally lead to poorer research in the next generation.

"Materially, this will adversely affect our future development and it will, of course, also impoverish us intellectually. It would be unfortunate if we were to return to the situation that existed not so very long ago that Australians virtually had no overseas if they wished to undertake graduate work. Though this is certainly unlikely it remains true that our graduate schools are at the moment suffering severely. The Williams report on education and training lamented this.

"Professor Shaw continued: "On a personal note, I recently attended a conference on how we might use science and technology to help the 'undeveloped nations' - a preliminary to an international intergovernment conference to be held at Vienna. Needless to say we cannot offer any assistance to those countries unless we ourselves are equipped with the science and technology that is not being kept up to date by research."

Memorial to Ian Turner

The Monash History department will establish a Prize as a memorial to Associate Professor Ian Turner who died on December 27 last year.

The department hopes that sufficient funds will be collected to allow a $100 prize to be awarded annually for the best thesis by a student sitting for final examinations for a BA with honours in History or for the MA Preliminary examination in History.

The department says the award will be a reminder of Ian's great interest in the teaching and writing of history and the high standard he looked for in all aspects of students' work.

Contributions, which must be made payable to Monash University, and which will be tax deductible if shown in tax returns as being made to The Ian Turner Memorial Prize, may be sent to the Chairman of the History department, Professor A. G. L. Shaw. It is important to specify that the donation is for the Ian Turner Memorial Prize and that the signature should be legible or the name of the donor printed underneath.

His work goes ahead

The major project on which Ian Turner was working at the time of his death - a history of sport in Australia - will be completed for publication by others.

The work will be finished by two people associated with Ian Turner on the project, with the aid of a $1500 grant made in the second round of special research grant allocations recently announced.

The emphasis of the work is on a history of Australasian Rules football, a sport that the late associate professor of History at Monash, Ian Turner, who suffered a heart attack while playing his favourite game last year, is probably remembered by the general public for his series of Barasai Memorial Lectures and for his newspaper articles on Austral Rules. As well as a keen interest in the here-and-now of the game, Ian had a scholarly interest in it as part of popular culture.

The two people who will be completing the work are Terry King, Ian's research assistant during last year, and Mary Brady, his research worker "in the field", as it were, as wife of a former captain of the team.

They will be adding to his partly finished manuscript. Tom the notes and other documents he left. Their work is expected to take about two months.

The grant is one of 71 made to departments throughout the University in the second round of allocations.
Two Monash economists have challenged Federal Government criticisms of 1974 wages as a chief cause of unemployment.

They say that during the past four years of the Commonwealth Government's wage policy, it has asserted incessantly that the marked shift in the distribution of national income which occurred in 1974 was the chief cause of the current economic recession.

They say that the proponents of this position, in their haste to attribute blame, have failed to consider just how such a dramatic shift in the wage share came about.

They suggest it is simplistic to equate rapid money wage increases with a greater share of wages in the national income.

The two economists say that, in fact, it was a "very rare event" for the wage share in 1974 to manifest themselves in a higher wage share.

They add that it is vital to appreciate that the wage increases occurred in conjunction with other factors operating in the product market to constrain price increases.

The London Economic Review of 13th April quotes "The Camerons" of their paper's title as Clyde Cameron, Minister for Employment, and Brian Peacock, of the Department of Economics, Dr P. A. Riach, and lecturer, Dr G. M. Richards, in the Australian Economic Papers.

They argue their paper is a "very rare event" for the wage share to manifest in a higher wage share.

They continue: "It is a very rare event for such a rapid money wage increase to manifest itself in a higher wage share, that is, the 'dreaded' real wage overhang."

"Theoretical" this is so because it is to be expected usually that when economic conditions favor business in the labor market they also favor price increases in the product market.

"The historical record for many capitalist economies provides little, if any, evidence that rapid money wage increases are associated with increases in the wage share."

"The most frequent occasion when political-economic engineering failed to shift the distribution of income toward labor occurred in France in 1930/37. In what has become known as the Blum Experiment, the Popular Front Government of Leon Blum, by direct initiative and encouragement of trade union activity, generated a 60 per cent increase in hourly wage costs within a 12 month period.

"This did not produce a higher share of wages in national income, however. Industrialists were able to raise their prices, by a comparable percentage."

"Dr Riach and Richards acknowledge that there was an increase in both unemployment and the wage share in the mid '70s."

"But it does not necessarily follow that there was a simple causal connection as the Commonwealth Government asserts," they say.

"The more fundamental issue to investigate is the circumstances which enabled such an increase in the wage share."

"They argue that the increased wage share resulted from a rare conjunction of strong institutional pressures by government and trade unions in the hard product market and what is termed a "hard product market environment" which acted to prevent firms fully passing on wage increases in the form of higher prices.

"This hard product market environment was generated by government policies, which increased competition and depressed product demand."

"Among these policies were:

- Appreciation of the exchange rate.
- Tariff reduction.
- Strengthening of trade practices legislation.
- Establishment of the Prices Justification Tribunal.
- A severe contraction of the money supply.

"They say: "While any one of these factors alone is likely to have impeded a firm in raising prices to maintain profit margins in the face of severe cost increases, the combined effects of all of them appear undeniable."

"The Monash economists claim that these very factors operating in the product market to constrain price increases simultaneously depressed the level of economic activity and created unemployment."

"They say there are clear policy implications in this alternative interpretation."

"Government action confined to the labor market, in the form of pressure on the Arbitration Commission to adopt partial indexation, will prove quite ineffective as a means of restoring the level of employment."

"We are particularly critical of the Commonwealth's argument that real wage reduction would induce more labor intensive practices, that is, more employment for any given level of output."

"They argue, instead, that as depressed conditions in the product market were an essential ingredient in the joint creation of unemployment and an increased wage share some moderate stimulus to the product market is called for in their reversal."

"They continue: "It is recognized that principal opposition to such stimulus comes from those who fear that inflationary consequences would flow from the restoration of trade union bargaining power."

"However, if this is a reason for not expanding demand now it is a reason for never expanding demand and accepting permanently high levels of unemployment."

The two economists acknowledge the need for policies which would moderate any inflationary impact of demand expansion.

Indexation the most promising procedure

They argue that wage indexation is the most promising procedure available to achieve this end but that Australia's multiunit system of wage determination is inconsistent with the rationale of indexation.

They say: "We would recommend that consideration be given to industrial relations reform aimed at minimising the ability of unions to have two bites of the cherry - obtaining wage increases by both arbitration and collective bargaining."

"However, sensible modifications in industrial relations systems come only slowly and evolve out of discussion and mutual trust rather than unilaterally by the state."

Dr Riach and Richards also advocate an active labor market policy aimed at minimising the emergence of structural bottlenecks during an economic recovery.

Now ... a lecture series for HSC students

A series of free lectures on key economic topics for HSC students will be given by members of the Economics department at Monash on Sunday, August 5.

The lectures will begin at 9.45 and end at 4.30 p.m. and will be held in Robert Blackwood Hall.

The program for the day is: 9.45 a.m., Economic Systems: Capitalism and Socialism, Dr L Ward; 11.15 a.m., Economic Growth and Economic Welfare, Dr M. Watt; 12.15 p.m., Economic Problems of the Third World, Dr D. Lim; 2.30 p.m., Inflation and Unemployment: Some Current Controversies, Mr L. McGregor; 3.30 p.m., The Market Mechanism in Australia, Mr G. Hoghin.

Members of the department's lecturing staff will be available for informal discussion during the lunch break.

Last year the Economics lecture series was given on a Sunday for the first time and attracted about 1000 people.

For further information contact Mrs B. Jorgensen-Dahl on ext. 2337 or Dr G. M. Richards on ext. 2306.
The later painting has been towards simplification. The corps de ballet has been reduced by one to 13 and the choreography is different. But they have been strongly modelled in tone to give them a sharper reality and the onward thrust of the dance movement has been emphasised by a closer linking of the rhythms.

Violet Teague 1872-1951
The Boy with the Palette. 1911
Oil on canvas 175.5 x 108.5 cm.
Born in 1872 Violet Teague began her art studies at the National Gallery School, Melbourne in 1895, then at the Melbourne Art School under Emanuel Phillips Fox before continuing her studies in Brussels and at Herkomer's School in England.

The Boy with the Palette is painted in an academic style with very little trace of the Art Nouveau that is often found in her work. It was awarded a Silver Medal at the Paris Salon in 1920 and exhibited at the Royal Academy the following year.

The painting came to the National Collection as a gift of U.S. Teague.

Sydney Long 1878-1955
The Spirit of the Plains (2nd Version). 1914
Oil on canvas 76.8 x 153.7 cm.
Sydney Long tended to populate the Australian bush with figures derived from the pastoral myths of Ancient Greece; and as time went by a strong influence from the Art Nouveau style caused him to transform the visual realities of the landscape into graceful, sinuous and rhythmic decorations. The first version of "The Spirit of the Plains", painted in 1897 shows how powerfully the Art Nouveau style had influenced him.

Seventeen years later, he painted a second version and the variations, though interesting, are sufficiently minor to show that he had not abandoned the style. The main tendency in the later painting has been towards simplification. The corps de ballet has been reduced by one to 13 and the choreography is different, but they have been strongly modelled in tone to give them a sharper reality and the onward thrust of the dance movement has been emphasised by a closer linking of the rhythms.

Margaret Preston
Watermelon, 1919
Oil on canvas 46 x 36 cm.
Born in Adelaide and studied at the Sydney Technical College and the Melbourne National Gallery School, Bernard Hall, and design is always her work is easy but like all artists, the backbone of her study and keen eye.
Works from the Australian Gallery on show at Monash

A touring exhibition of works from the collection of the Australian National Gallery, titled Aspects of Australian Art 1900-1940, is being held currently in the Visual Arts exhibition gallery on campus.

The exhibition does not claim to be a definitive survey of the period but "aims at bringing together a group of works that will demonstrate the main line development and principal characteristics of the time".

There are 80 works in the exhibition which is on a tour of cities as far flung as Darwin, Fremantle and Devonport.

Artists represented

Among the artists represented are Max Meldrum, Hugh Ramsay, Bernard Hall, Frederick McCubbin, Rupert Bunny, Sir Hans Heysen, William Aitken, William Frater, Roy de Maistre, Grace Crowley and Sidney Nolan.

The visiting curator of Australian art at the Australian National Gallery, James Gleeson, says that the 40 year period covered by the exhibition has generally been regarded as a trough in Australian art, standing between the peaks of the Heidelberg School and the Australian form of Impressionism, and the emergent modernism, the "heroic" years of Australian art.

Gleeson says: "From another point of view the 'trough' can be interpreted as an hiatus between two distinct but different forms of nationalism."

"The nationalism of the '90s was a conscious artistic objective. It was ruralistic, orientated, confidently extroverted, innovative in its recognition and acceptance of specifically Australian characteristics, and it expressed the feeling of independence that led up to the proclamation of the Commonwealth in 1901."

Hugh Ramsay 1877-1906
"Portrait of Miss Nellie Patterson
Oil on canvas 137.5 x 107 cm

When Hugh Ramsay died in 1906 at the age of 29, Australia lost a first-rate artist. Ramsay's strength lay in his ability to assess the character of his sitter and to express it by virtue of a masterly technique."

"The portrait of Nellie Patterson, the brush has been used with a flourish and a virtuosity very close to that of Sargent. Nellie Patterson was a niece of the singer Dame Nellie Melba and in a letter she wrote: "The frock was made in Paris under instructions from my Aunt Melba. The chair is interesting as it was one of many made especially for the Vice Regal Party in the Melbourne Town Hall on the occasion of Melba's homecoming concert, after her initial success abroad."
**Energy for the future**

**Vic. coal to oil plant by '90s**

A Monash chemist has said it is realistic to expect that Victoria will have a brown coal-to-liquid fuel conversion plant producing 30,000 barrels a day by the early 1990s.

But senior lecturer, Dr Frank Larkins, told a meeting of Victorian science teachers at Monash recently that considerable chemical and technological problems remained to be solved before such a plant could be set up.

Dr Larkins said: "Following increased research activity in this field in recent years, significant progress has been made towards evaluating the potential of Australia's coal resources for liquefaction purposes. Much more research remains to be done."

He said that of three possible coal conversion technologies, direct catalysed hydrogenation appeared to be the most economically favorable for Victorian-brown coal deposits.

He said that the demand for coal and the effect of this new technology on the environment would be significant.

A plant producing 30,000 barrels a day would require at least 10 million tonnes of coal a year and cost hundreds of millions of dollars to build.

"Such a plant would satisfy about one-sixth of Victoria's current daily consumption of petroleum products," he said.

"If half of Victoria's current consumption was produced this way (that is, 90,000 barrels a day) a mining operation equal to the current one for electricity generation would be required."

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**SOLAR ENERGY PIONEERS BUT WE ARE NOW BEHIND**

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**Great challenge**

Dr Larkins made his comments on coal liquefaction as part of a survey of energy production in Victoria and discussed the potential of future alternative technologies. He said that the provision of adequate transport fuel was one of the great scientific and engineering challenges of the next decade.

For electricity generation, the real alternatives in the foreseeable future were nuclear, solar and wind processes while in the longer term fusion and wave technologies had much promise, he said.

But Dr Larkins said that much research was needed to overcome problems associated with each of these methods. And he urged a greater government commitment.

In the case of solar energy he said that the chemical as well as physical technologies of solar radiation collection and storage must be pursued with much greater vigor.

"Increased government spending in Victoria beyond the $0.5 to 1 million per year currently invested is required, he said.

He urged, too, that the Government give incentive for the use of solar devices in the home, industry and commerce to make them economically competitive.

**Is travel by trolley the economic answer?**

Are electric trolley buses the answer to what is generally acknowledged as Australian cities' inadequate public transport systems? The Dean of Engineering at Monash, Professor L. Endersbee, believes that they might be.

In a recent article in *Search* magazine, Professor Endersbee echoes a recommendation of the Institution of Engineers' 1977 Task Force on Energy that trolley buses might be an efficient form of "feeder" transport to existing rail networks, cheaper to install than extension of the rail services themselves.

Professor Endersbee says: "The trolley bus was once highly regarded as a public transport vehicle; it became unpopular because of its complicated overhead network and the greater flexibility and lower cost of diesel powered buses."

"With rising fuel costs and problems of air pollution, the trolley bus is now being reconsidered and further developed for medium density routes overseas, particularly in Europe."

"Most of the new urban development in Australian cities since the Second World War has been in areas away from fixed rail transport; the rail systems were mostly completed in their present form by the time of the First World War."

"For the past few decades urban rail transport in Australia has been running at substantial losses and governments have not been encouraged to commit funds for further development."

"However, the prospects for improvement of urban transport through the use of electric trolley buses on feeder services may justify demonstration routes for them in one or more of our major cities."

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**MONASH REPORTER**

**July, 1979**
Initiative engineers its own rewards

Garry wins Dodds Medal

A now well-established tradition was kept up in the department of Mechanical Engineering last month when Garry Flanagan was awarded the J. W. Dodds Memorial Medal for 1978.

The award, made annually to the most outstanding student in Mechanical Engineering, honors the memory of Mr Jim Dodds, whose family founded one of the very early engineering establishments in Australia. Riley Dodds (now Clyde-Riley Dodds).

The medal is awarded on the basis of three criteria: scholastic achievement, potential as a practitioner, and insights and understanding of mechanical engineering in Australia.

The citation for Garry's award noted the "rapid and profound insights into engineering and industrial practice that he had gained in a very short time."

Our photo shows Garry (who now works with Australian Synthetic Rubber at Altona) receiving the medal from Mr Gordon Page, acting general manager of Clyde-Riley Dodds.

An innovation this year was the unveiling by Professor W. A. G. Scott, Acting Vice-Chancellor, of a new honor board recording the names of the Medal winners.

Communications—any ANZAAS papers?

The Program Committee for ANZAAS Section 33, Communications, is seeking papers for next year's Jubilee ANZAAS Congress in Adelaide.

The Congress will be held from May 12-16.

The Section theme for the Congress is "Communications for a Sustainable Society."

The Section program will concentrate on communication in science and technology, including tele and satellite communications; and on communication in society, including the media, questions of access and privacy, and communications related to science and the media.

A special session will be devoted to communication as a discipline.

Papers are being sought on topics under the following broad headings:

- Communication as a Discipline?
- Communication in Science and the Media
- Communication and Information Services in Australia
- Mass Communications and the Social Environment
- Communication: Access and Privacy
- Communication for the Learning Society

The Committee hopes that papers will concentrate on fundamental issues confronting science, technology and society to the year 2000 and will explore ways of solving these problems.

Further information can be obtained from Mr D. Murray, secretary, Section 33 Program Committee, Educational Resources Branch, Department of Further Education, G.P.O. Box 2362, Adelaide, 5001.

Kindergarten enrolments open

The Monash kindergarten within the Education faculty, is now accepting enrolments for 1980.

The kindergarten — which has two trained teachers among its staff — is able to take 50 children. Of this number there are about 10 places for children with special needs.

The children attend the kindergarten in two groups of 25 for 4 half-days a week.

Children eligible for the 1980 intake should have been born between July 1975 and June 30, 1976. Applications are invited from both Monash parents and the general public.

For application forms contact Mrs Sinclair on ext. 2029. Forms should be returned by July 11.
A brave show of kilt — on the campus outskirts

"Two pipers pierced the air with "Scotland the Brave".

There was no mist hugging the moor and no heather on the hill.

It was, however, more or less overcast and it is not beyond the bounds of possibility that heather grows among the countless plants in the Botany experimental area in the far north-west of the campus.

Such was the setting of the first meeting recently of the Monash Pipers' Society.

The Society has been formed by enthusiasts Graeme McGregor, Australian-born but of Scottish ancestry, and Indian-born Keith Wilkins.

The pair teamed up after a Maintenance man alerted Keith, who was a fan of the bagpipes. Keith plays with Frankston City and Graeme with Moorabbin City.

Top Muslim and Christian scholars explore common themes at conference

Preparations are underway for a conference on Islam and Christianity — the first of its kind in Australia — to be held at Mannix College from August 28 to 31.

Among the topics the conference will discuss are common themes in Islam and Christianity, the Bible and the Qur'an, and Islam in our region of the world.

Guest speaker will be Father Georges Anawati, director of the Dominican Institute of Oriental Studies in Cairo.

Two eminent Muslim scholars will be coming from Saudi Arabia: Professor A. Farid Moustapha, Dean of the College of Architecture and Planning at King Faisal University in Damman, and Dr H. Bajouda, of the faculty of Sharia, King Abdul Aziz University in Meca.

Other speakers will be Professor A. H. Johns, Dean of Asian Studies at ANU and Dr M. A. El-Brijian, head of the department of Cultural Studies at Goulburn College of Advanced Education.

Students who expect to complete their degree this year — either bachelor or higher — have been reminded that it is their responsibility to apply to have it conferred.

Final year bachelor degree students who expect to qualify at the 1979 annual examinations should complete and lodge their forms at the Student Records counter in the University Office by Monday, September 3. Application forms are now available from Student Records.

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Aboriginal material catalogued

Work is proceeding on establishment of an Aboriginal resource centre at Monash with funds raised by the Elizabeth Eggleston Memorial Appeal. A total of $34,800 was donated to the Appeal established two years ago to honor the late Dr Eggleston, director of the Centre for Research into Aboriginal Affairs from 1971 to 1978. As a first step a librarian, Mr Julie Whiting, has been employed to catalogue the books bequested to the Centre by Dr Eggleston as well as the other written and taped materials donated and acquired in recent times. The director of CRAA, Mr Colin Bourke says that the collection, which should be fully accessible to the public by mid-year, is perhaps the most comprehensive in Australia on contemporary issues as they relate to Aboriginals.

Mr Bourke says that the collection's particular strength is in its pamphlets and unpublished papers. He says that the library resource is matched by CRAA's human resource in the specialised skills of its members.

But in its annual report to Professorial Board, the Board of the Centre for Research into Aboriginal Affairs commented that one of the difficulties the Centre faces is inadequate accommodation. The director of CRAA, Mr Colin Bourke says that the collection, which should be fully accessible to the public by mid-year, is perhaps the most comprehensive in Australia on contemporary issues as they relate to Aboriginals.

The report says: "Despite the generosity of the Education faculty we are seriously overcrowded." The report says that the objectives of the CRAA are to be reviewed this year "as they have changed little since 1964" when it was established. As they stand the objectives are:

- To maintain a body of information on matters relating to Aborigines and to provide information and resource materials in response to enquiries from a wide range of people both inside and outside the University.
- To conduct Aboriginal Studies lectures on current Aboriginal issues for University students and the general public.

Research on effectiveness of Aboriginal language programs

How effective are programs being conducted throughout Australia to give Aboriginal schoolchildren bilingual education? The Director of the Centre for Research into Aboriginal Affairs, Mr Colin Bourke, is carrying out a case study of schools in the Northern Territory, Queensland, South Australia and Western Australia to find out.

His research is being supported by the Education Research and Development Committee, set up to advise the Federal Minister for Education. Mr Bourke plans to finish his report in the next few months, presenting to the Education Department a survey of what is happening in Aboriginal bilingual education and making recommendations, perhaps, on what should be happening.

Bilingual programs have been operating since 1973 in 27 schools (19 in the Northern Territory, five in SA, two in Queensland and one WA). Mr Bourke has visited several of these schools, talking with teachers, students and other members of the communities.

He says that several difficulties have emerged.

One is with teaching staff. He says that in one State many of the non-Aboriginal teachers, having been sent to the remote schools rather than having gone by choice, feel isolated and disgruntled. None has been trained to conduct bilingual programs.

Many of the Aboriginal teachers, who have responsibility for the programs, have only learned to read and write in their own languages themselves and lack full teacher training.

He says: "Many were employed in more minor positions, such as teacher aides, until a few years ago and have since had quite heavy responsibilities thrust upon them with very little preparation."

Mr Bourke says that one of the biggest difficulties is the lack of suitable reading material in Aboriginal languages for use in the classroom.

He says that, as the market is so small, economic considerations prohibit the production of even basic material let alone a variety of good quality books.

Graham takes up new position as activities officer in Union

The Union has appointed Graham Dean as its new activities officer.

Graham replaces Neil Westworth, activities officer for three and a half years, who resigned in May to take up a position as technical assistant in Zoology and to continue part-time research in schools in the NT and three states.

Graham is no stranger to Monash. His association with it goes back to sea of mud", For the past 17 years he has worked as a "temporary" clerk of works with the Buildings and Grounds Branch.

Summer School

He will carry on the past duties of the activities officer: being responsible for the administration and co-ordination of Union clubs and societies, and organising the extensive arts and crafts tuition program offered to members of the Monash community and the general public in its annual Summer School during the long vacation and classes during term. As well, a major task will be handling administration of the new Monash Arts and Crafts Centre which is nearing completion.

Heavy demand: new classes

Heavily demand on second semester arts and crafts classes being run by the Union has led to more being added.

At the time of going to press, efforts were being made to organise new classes in pottery (evenings), stained glass, window-making, jewellery and silversmith, book restoration, repair and binding, and leathercraft. Inquiries about these classes should be directed to the clubs and societies office, ext. 3144 or 3180.

Graham has been studying part-time during the last four years for an Arts degree having gained entry as an Early Leaver.

Graham can be contacted through the clubs and societies office on the first floor of the Union (ext. 3144 or 3180).

The classes will move into the new Arts and Crafts Centre when it is ready for occupation.

The new activities officer, Mr Graham Dean, says: "This building, which will be officially opened during the running of second semester of its courses after tutors and students have had a chance to settle in, will provide expanded and improved facilities for classes which have struggled along under difficult conditions for many years."

SCHOLARSHIPS

The Academic Registrar's department has been advised of the following scholarships. The Reporter presents a précis of the details. More information can be obtained from the Graduate Scholarships Office, ground floor, Union, Federal Fellowships Office.

United States Institute of Health Internships and Postdoctoral Research Fellowships. Offered to Australians for training for graduate research in the USA. Value: $US13,000-$16,000 according to experience. Applications close October 31.

July, 1978
Society begins rehearsals for its opera first

Rehearsals have begun for what the Monash University Choral Society terms its "most ambitious project ever": the first performance of Ralph Vaughan Williams' opera "The Pilgrim's Progress".

The opera will be performed on August 1, 3 and 4 at the Toorak State College Theatre in Glenferrie Road, Malvern. Performances start at 8 p.m.

"The Pilgrim's Progress" is a Musical, built around a text written on the book by John Bunyan. It follows the path of a pilgrim on his way to the Celestial City.

The pilgrim will be played by Peter Wright, a third year student at the Victorian College of the Arts, with the other solo parts being taken by members of the choir.

Director of the production is Stewart Skell. The musical director is

Hugh McKevitt, present conductor of the Waverley Chamber Orchestra and of the Monash Choral Society.

Tickets cost $6 with a $3.50 concession. A discount of 50 cents per person is available for group bookings of more than 15 people but the seats must be booked by mail in advance.

Mail bookings should be directed to the Secretary, 64 Leura Grove, East Hawthorn, 3122. Cheques should be made payable to the Monash University Choral Society.

Phone bookings may be made, after hours, on 85 2920.

Important dates for students in July

The Academic Registrar advises the following important dates for students for July 1979:


M 9: Mid-year examination starts.

M 9: Mid-year examination results — Education.

F 12: Publication of mid-year examination results — Law (including Arts/Law, Eco/Law, Sci/Law).

F 15: Final teaching rounds end, Dip. Ed. Sat 14: Vacation and G.P. week ends for Medicine VI.


W 11: Publication of mid-year examination results — Education.

T 12: Publication of mid-year examination results — Law (including Arts/Law, Econ/Law, Sci/Law).

JULY DIARY

4-16: RED CROSS MOBILE BLOOD BANK will be visiting Monash University 9.15 a.m. - 4.30 p.m. Arts Assembly Rooms 840-14. Appointments can be made at the Union Desk. 64 Leura Grove, East Hawthorn.


11: LECTURE — "Arbitration after 75 years", presented by Haydn Roadie, Dreifus, Bartok. 8.16 p.m. Melbourne Recital Centre. Admission free. Inquiries: ext. 2989.

16: LUNCHTIME CONCERT — Paul Plunieret, violin. Works by Bruch, Elgar, Beethoven. 1.15 p.m. ABC, 10 Queen St. Melbourne. Fee: $3.20. Further information, ext. 2989.

17: CONCERT — Commonwealth final examination of the Melbourne Youth Festival. 10.30 a.m. Melbourne Recital Centre. Fee: $2.50. Further information, ext. 2989.

18: LECTURE — "Prime Numbers", by Dr R.T. Water. Of interest to year 11 & 12 students. 10 a.m. Arts Theatre Admission fee. Inquiries ext. 2560.

19: CONCERT — Melbourne University Parents Group — Dinner Dance. 6.30 p.m. Main Dining Room, Union. Admission: adult $3.95, children $2.75.

21: LUNCHTIME CONCERT — Jochen Schubert — guitar. Works by Giuliani, Gluck, Castelnuovo-Tedesco. 1.15 p.m. RBH. Admission free.


25: CONCERT — Monika Da Cennery, ABC recital concert. 7.30 p.m. RBH. Admission free.

26: LUNCHTIME CONCERT — Donald Scotts — violin. Works by Brahms, Beethoven. 7.30 p.m. Main Dining Room, Union. Admission free.


MONASH REPORTER

The next issue of Monash Reporter will be published in the first week of August, 1979. Copy deadline is Thursday, July 19.

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

MONASH REPORTER