White tie, top hat and tap...
DO DARK NEBULAE HOLD KEY TO LIFE'S ORIGIN?

Scientists at Monash are working on the development of a "chemical clock" - a method of allowing them to determine the age of the dark nebulae to our universe. It is to these dark cold parts of the universe, gigantic clouds of gas and dust, that scientists look for the formation of the first planetary systems - and the beginning of life itself.

Professor of chemistry at Monash, Professor Ron Brown, briefly outlined the work his team of galactic chemists is doing on the "chemical clock" in a paper on "Interstellar Molecules and the Origin of Life", delivered to the recent ANZAAS Congress.

Professor Brown said that, until comparatively recently, astronomers had regarded the dark nebulae as a nuisance because they obscured starlight from potentially interesting stars on the far side of them.

He said it had only been in the last 10 years that the role of the science of radioastronomy had allowed rapid strides in understanding the physical and chemical nature of the nebulae.

It was now widely accepted among astronomers of a generation ago that nebulae were formed by the gravitational collapse of the huge clouds of gas and dust.

Further, the use of the radio telescope, together with the new technique of molecular spectroscopy, had revealed that a considerable number of interstellar molecules existed in these nebulae, sheltering the traditional view that stars and the interstellar medium were composed of individual atoms or atomic ions and free electrons.

Professor Brown said: "Hot on the heels of these initial discoveries came the speculation that in these interstellar molecules we were seeing the chemical precursors of life already existing in space in the nebulae which had not yet condensed to form new planetary systems.

Professor Brown said that his team had been concerned by one aspect of work that one of the great achievements of chemistry in these nebulae - the use of the steady state approximation.

Not steady

The team's research in this area had now shown that various concentrations of simple molecules were expected to fluctuate widely during the lifetimes of a dark nebulae so that at no stage were the bulk of the constituents of dark cloud in a steady state situation.

Professor Brown said that if the team were able to measure the ratios of concentrations of molecular species then, as a function of time, these could be calculated.

He said: "This would be a great breakthrough because hitherto there had been no method of the age of a dark nebulae but there has been no technique available for any observation of the properties of the dark nebulae.

Professor Brown suggested that these interstellar molecules could hold the key to understanding the origin of life.

Outlining what he described as still a "very speculative theory", he said: "When the dark nebulae collapse to form clusters of new stars and surrounding planets, there is a considerable debris left in this process which could provide the smallest particles of the planetary system, objects that we refer to as comets and meteorites. By studying the molecules in the debris we know that there were very heavy falls during the early stage of the life of the solar system. This corresponds well with the time at which the earth had cooled down and conditions under which it was probably possible for prebiotic molecules to survive had been established.

"The most common form of meteorite is one called a carbonaceous chondrite, the name implying that the meteorite has a substantial content of carbon. Chemical studies of the content of these meteorites, especially one that fell that at Murchison in Victoria in 1969, have revealed an interesting array of organic compounds which include many amino acids and a number of nitrogenous bases including all of those involved in DNA. Moreover, there is a report of some Russian studies in which an organic polymer exhibiting a double spiral structure resembling of, but not identical with, DNA has been extracted from a carbonaceous chondrite.

"Thus the alternative scenario for the development of the first stage of the origin of life is that when the young earth had freshly cooled down and the first shallow pools of water had formed, there was a heavy fall of meteorites including a number of carbonaceous chondrites. These meteorites are prone years before landing, readily on falling and are porous enough to soak up some water. "If such a meteorite fall into a shallow pool, the conditions appear to be favourable for assimilated moisture to promote further reactions among the constituent organic molecules that these might include condensation reactions that produce biopolymers - at least in primitive form."

"Some workers have even suggested that they have discovered formations in meteorites that suggest tiny globules reminiscent of very primitive forms of cell structure."

"Conceivably then prebiotic chemical evolution even up to the stage of formation of somewhat organised packaged chemicals could have occurred following the fall of carbonaceous chondrites."

But myth was more revealing

As "geeks" talk of interstellar molecules and modern theories on the origin of life might be, there's no doubt they don't make 'em like they used to.

Evidently the former Milky Way guru in his paper at the ANZAAS Congress, Professor Ron Brown said in his ANZAAS paper: "It involved the attempt by the unfaithful Zeus to have immortality conferred on his son Hercules who was the product of his union with the mortal woman whose name has been lost by having Hercules thrust upon her."

"The sleeping Here was rudely awakened and displeased at having the young Hercules thrust upon her."

"In the disturbance some of her milk was split and became the stars of the Milky Way."

"Product of a more fertile imagination, you might say."

STEREOTYPES PERSIST SCHOOL STUDY SHOWS

Do women make good leaders of men?

In the eyes of Victorian schoolboys the stereotype persists that they don't, a survey by a Monash researcher has revealed.

And if boys do not think that women are as capable leaders as men, then it is highly probable that women think likewise, says Ms S. Sampson, lecturer in the Education faculty.

Ms Sampson delivered a paper on Sex Role Attitudes and Education: Sex Stereotyping in Some Victorian Schools" to the recent ANZAAS Congress.

Her work is based on a survey conducted last year in 10 suburban high schools - five with female principals and five with male principals. Questionnaires containing sex role attitude questions and others relating to male/female abilities were completed by 592 boys and 800 girls selected randomly.

On sex role attitudes, the survey showed that boys were more traditional in their response pattern than were females. The sex difference occurred in both types of schools.

And while a majority of responses indicated that parents were willing to accept sons or daughters as possible leaders of the home, "clearly, to those boys only men possess leadership superiority", the survey noted. The survey noted that questions concerning parental roles elicited traditional responses from both sexes.

Of questionnaires relating to men and women's abilities at leadership tasks deciding, understanding, instruction, cooperation - most boys replied that 'individual men and women may be equally good at these tasks'.

Ms Sampson says: "However, of those selecting other responses, a significant majority chose men as better at the instrumental tasks (deciding what needs to be done; giving instructions to others; people getting to cooperate to get things done) and women at the affective task (understanding how students feel), which accords with traditional stereotypes of male and female abilities."

DIFFERENCES

"Sex differences were highly significant once again and were not related whether the school had a male or female principal. Whereas a majority of girls believed that both men and women were equally well qualified at the instrumental tasks, on no task did a majority of boys choose either females or both males and females as equally competent."

"Clearly, to these boys only men possess leadership superiority, a hypothesis which might be expected in a good leader."

SEPTEMBER, 1977

Computers

Communication with a computer and a comprehensive of computers and mathematical models will be two essential skills for people at all levels in the 1980s.

For those at the lower levels, the stress of office life will be reduced because much of the work will be relegated to the computer. But for those at the top, the pressure will increase as rapid decisions about quickly moving and extremely complex situations are required.

How in the home, video display terminals will allow many workers to operate from their residences, say, three days a week and only travel to their workplace for face-to-face conference on the other two.

People will be able to vote in electronic referenda - "a form of true democracy which will give back to the individual his heretofore lost ability to influence decisions over his or her own destiny," says Associate Professor Montgomery.

The more research should be carried out into the different public transport needs of men and women workers, two members of the Monash geography department suggest.

In a paper given to the ANZAAS congress in Melbourne in August, Anna Howe and Kevin O'Connor say many large scale urban transportation studies fail to differentiate between the travel problems of men and women.

Many of these transportation studies, they say, apparently assume that there are no significant differences between the transport needs of men and women or that they are unimportant.

In their paper, entitled "A Working Woman's Place is Not Next to the Men's", the team conclude that the local area is relatively much more important as a source of employment for women than for men.

Second, the Melbourne city area is slightly more important as a destination for women than for men and the locations of jobs taken by men are far more dispersed than those for women.

Third, the O'Connor team find that two-thirds of women's jobs are in the local government area they reside in or in the central city.

However, less than half the male workforces are so located, and more than half are dispersed across the metropolitan area.

They say evidence is mounting that women are over-concentrated in a limited number of occupations, and often at lower levels within these occupations. There is a bias in favor of men in professional, managerial and technical fields, and towards women in clerical occupations. There is also a pronounced bias towards migrant women compared to Australian-born women in industrial work.

• From page 1

Monash Reporter

HOWE AND KEVIN O'CONNOR
Cold climate-arthritis link a myth says UK authority

The belief that a cold climate causes arthritis is nothing more than a painful myth, according to a leading authority on the disease.

Dr Helen Muir, head of the biochemistry department at Monash recently for a week. She was also a guest speaker at a joint meeting of the Connective Tissue Society of Australia and New Zealand and the newly formed Human Genetics Society, held at the University in August.

If "the cold" doesn't cause arthritis then what does?

That, Dr Muir indicates, is a complex question. Much work is being done around the world on the underlying cause of arthritis, on which a strategy for effective treatment can be built.

"Not strictly hereditary"

She says that arthritis is not strictly an hereditary disease but certain families are predisposed towards having members who are sufferers.

These are two common types — inflammatory and non-inflammatory.

The most prevalent is the non-inflammatory osteoarthritis which affects an average of one in 11 people in Britain.

New directions for arthritis treatment?

A Monash pharmacologist has foreshadowed new directions in the search for an effective treatment of the inflammatory disease, rheumatoid arthritis.

Professor A.L.A. Boura said in his ANZAAS paper, "Prostaglandins, Drugs and Rheumatoid Arthritis", that one possibility centred on a number of anti-inflammatory factors which there was evidence the body contained.

Professor Boura said that isolation and identification of these substances could lead to the production of new anti-inflammatory agents.

At present, he said, there was no drug available which blocked initiation of rheumatoid arthritis or reversed its progression.

This was in keeping with the lack of complete knowledge of the factor or factors responsible for the disease.

He said aspirin remained the drug of first choice for treatment and there were about another 12 non-steroidal anti-inflammatory agents which acted in the same way.

Causo gastro-intestinal damage

All, however, tended to cause gastrointestinal damage.

Professor Boura said: "I suspect if used as extensively as aspirin (all) would also be found to share more frequently than is thought to occur at the moment its ability to cause renal damage, particularly after prolonged usage."

He said the fact that in a large number of chemically dissimilar aspirin-like agents it had so far been proved impossible to dissociate completely the anti-inflammatory effect from the ability to cause gastric and renal damage, led him to suspect that these toxic effects somehow were a consequence of their mode of action as anti-inflammatory agents.

Rheumatoid arthritis attacks more women than men, and although it is more common in the aged, it can also manifest itself in the late 20s and in menopause. An associated form, Still's disease, affects children.

Dr Muir has conducted research in connective tissue biochemistry and disease for more than 20 years. As well as working at the Kennedy Institute she is also an honorary consultant at Charing Cross Medical School, a former member of the British Medical Research Council and scientific adviser to the British Arthritis and Rheumatism Council.

Her acknowledged world expertise was recently recognised by her election to the Royal Society — one of only a few women so honored.

Her visit to Australia has been sponsored by the Rheumatism and Arthritis Association of Victoria with the financial assistance of the Felton Bequests Committee.

At Monash she has been examining arthritis research being done in the biochemistry department. Similar work on the metabolic process in joints is being carried out here and in the Kennedy Institute in London.

For Dr Muir arthritis research has a personal significance — in recent years she has been trouble by a hip complaint.

Dr Helen Muir and Professor Dennis Lowther, professor of biochemistry at Monash.

One cause of osteoarthritis is physical trauma. Certain sports enthusiasts or professionals — such as football players, athletes and ballet dancers — suffer a high incidence of this complaint. An injury suffered in youth can take up to 40 years to develop as a painful condition.

A second cause is irregularities in the conformation of joints.

Dinosaurs arthritic, too?

Osteoarthritis is found in animals other than man also, especially those with a long life span. In fact, work on dinosaur bones indicates that these prehistoric animals may have suffered from a similar condition.

No drug is yet available to arrest this form of arthritis in all cases. The most successful cure is a joint replacement operation.

Dr Muir says a second common form of arthritis is rheumatoid arthritis, an inflammatory condition, quite different in pathology from osteoarthritis. About one million Britains suffer from it.

Dr Muir says there is strong circumstantial evidence to suggest that this variety might have originally been caused by a germ, but this has never been proved.

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Professor Boura said: "How can we go about finding better drugs than those available for treating this condition?"

"The answer probably lies primarily in the hands of the biochemist."

"If I were setting up test procedures to reveal such drugs, as one of my first priorities I would set up a biochemical system to detect inhibitors of phospholipase A. Inhibition of this enzyme by the anti-inflammatory agents, such as chloroquin and hydroxychlorquin, probably makes a contribution to their anti-inflammatory activity.

"Moreover, by blocking phospholipase A, in contrast to the situation with aspirin-like compounds, we may be able to find drugs causing less damage to the kidneys and stomach."

Suburban trips more common, study finds

A Monash study has shown that more Melbourne residents are travelling from one suburb to another to their jobs instead of travelling to the central business district in the city.

The researchers say that throughout a band of middle and outer suburban areas, cross regional homework patterns are typical, and increasingly more important than the trip to the central city.

The research work was carried out by Kevin O'Connor and C.A. Maher, of the Department of Geography. They have written a paper, "Changing work- residence patterns within Melbourne, 1961-1971", which was presented to the ANZAAS Congress in Melbourne last week.

The two researchers say that where job growth has been rapid, there has been a "spillover" beyond "labor market areas", and through the daily travel of labor from areas outside the "labourshed" — the area which usually provides personnel for industry in the area.

Job growth filled

They say that some areas have seen their much smaller job growth filled in the main by residents within their laboursheds.

These are generally middle or outer suburbs, very often failing within the labourshed of the areas already mentioned. These areas tend to be more residential suburbs.

Finally, there is a third group of areas which have experienced the loss of jobs, sometimes faster than the job growth, and, although they are functionally linked, somewhat more Melbourne residents are to their jobs in leaps and bounds of multi-modal transport."

Felt more strongly

The authors say: "One can only comment that the nodal effect would be felt much more strongly this year as much more growth has been compressed into half the distance."

"Hence, though Melbourne has experienced massive suburbanisation of both jobs and houses, and though these are functionally linked, the spatial pattern is one of a large number of employment nodes rather than a small number of large nodes."
Activities show study relevance

Two Monash departments — civil engineering and economics — have planned special activities this month designed to show secondary students the relevance of their studies.

In CIVIL ENGINEERING, the chairman of the department, Professor Noel Murray will deliver a lecture titled "From Simple Vectors to the Design of Structures" (subtitle "How to design a bridge using string and balsa wood") in the Walter Bassett Theatre (E1) on September 14 and 15 at 7.30 p.m.

The lecture is aimed at fourth, fifth and sixth form students.

As well, the audience will be given a tour of laboratories where the department carries out its teaching, research and commercial testing.

Professor Murray said recently: "The main purpose of the evening will be to try to show students what they are learning in their mathematics, physics and chemistry at school is used in practice."

Pictured is Don Kinder, a senior tutor in civil engineering, demonstrating one of the many models Professor Murray will use in his lecture.

The model demonstrates the validity of the mathematical theory used in calculating forces in a truss bridge.

Admission to the lecture will be free and tickets may be obtained from Mrs Pam Smith (ext. 5407).

In ECONOMICS, lecturing staff will conduct a series of talks aimed at sixth form economics students on September 17 (from 2.30 to 4.30 p.m.) and September 24 (from 9 a.m. to 1 p.m.) in the Alexander Theatre and seniors' repeat lecture theatre.

The lecturers and their topics will be:

- Mr L. McGregor, "Inflation and the Money Supply";
- Dr P. Haisch, "Power, Politics and Inflation";
- Dr L. Maglen, "Poverty and Income Redistribution";
- Professor Wolah, "Economics of Federalism"; and
- Dr D. Morawetz, "Problems of Economic Development."

Lectures are free and each will be delivered twice.

For further information contact Ms J. Atkins on ext. 2337.

Education launches summer teaching

Monash's Education Faculty will launch an experimental summer teaching program in its Bachelor of Education course next January to meet the special needs of students who are teachers.

Students will be able to take up to two subjects for credit towards the degree in an intensive daily program from January 3 to 31, rather than in traditional term time.

The program is being offered as a convenience for teacher students, who form the bulk of the Faculty's part-time students, and who have ability to attend classes at Monash during the year may be limited by pressure of work or distance.

Manitia College, across Wellington Road from the campus, will be available for accommodation for country students.

Drama: make it Monash

Students seeking to enter the B. Ed. course who wish to start their studies in the summer program must submit their applications to the Education Faculty Secretary, Mr. L. Shaw, by December 5.

Enrolments and re-enrolments in the summer program should be made from December 14 to 16.

For further information contact Mr. Shaw on ext. 2845.

Understanding: farm problems' plea

The Rural Women's Action (RWA) president is Mrs K. May, of Lake Burrumbute, herself a dairy farmer. She has thoroughly researched many of the problems besetting the farms of Victoria and has made frequent representations to politicians on both a Federal and State level.

The apathy on the part of both governments to what must prove to be the eventual breakdown in the food production system in this country is quite frightening to city slickers such as us.

Consider, for instance:

- A quality dairy herd takes a minimum of five years to build to an efficient production level.
- The average age of the dairy farmers of Victoria is 57 years.
- A man and wife working 12-hour days, 7 days a week, efficiently and tirelessly, can earn a joint income of $3000 - $4000 a year, depending on the size of the herd and on their overhead debts.

Certainly — and it's poor consolation — paying income tax is a thing of the past for these farmers.

Let me quote from a letter the RWA president received from the Rural Women's Action Committee based at Bridgwater, Queensland, and formed in 1971:

"Our members claim that six years ago we could see the rural industries were heading for the very situation we find ourselves in today.

"We honestly thought that if we approached decent politicians and put our case, these politicians would see the truth and do something constructive to hold and then reverse the situation. How wrong we were!

"We knew very little about financial-economic policies on the creation and control of credit but after six years of reading and studying we have gained knowledge and understanding of why things are in such a financial mess..."

Now the RWA is desperately trying to co-ordinate the findings of such groups throughout Australia in a last ditch effort to improve the situation before one of our most valuable assets is irrevocably destroyed. And being eroded irretrievably is precisely the current state of affairs.

Any requirements or improvements demanded by necessity or by changing health laws are financed on low-interest government loans; but with an income of no more than $2000 a head, what hope has a farmer of repaying a $9000 loan for a refrigerated tank to store his milk?

What hope have the hard-pressed smaller farmers of the recently burnt-out western districts got of repaying the loans from the Federal Government to rebuild and restock? And that disaster was not due to their mis-management, but to the size of the herd and the quality of the land.

Fences everywhere are falling into disrepair for there is no money for labor to maintain them. Drugs for dairy herds are being kept to a minimum, often at great risk, for there is no pharmaceutical benefit here. Registers of the herds are no longer kept because book work takes time; time is already at a premium.

The RWA supported a rally at Glenemiston Agricultural College last week — a rally entitled "Farmers Fight for Right."

One can only hope that, as a result, the farmers and their wives can find a united voice in order to achieve equitable status in our community, and that the rural economy can weather what looks like its Cyclone Tracy.

What hope the RWA is also seeking is support and advice from any other group. If anyone reading this article can give any information as to whom the RWA should contact for positive help or advice towards finding a solution, I would happily pass on such information, or any writing to Mrs K. May, Box 91, Cobden, 3296, directly.
DOUBLE-BARRELLED ATTACK ON THE ENERGY ISSUES

A leading US expert on the law in relation to solar energy has urged the Australian Government to adopt a clearer, more forceful stand on the energy issue.

This, he suggests, should be double-barrelled, consisting of:

- A public education program aimed at leaders in this country, to familiarize the community with the new energy consumption expectations.
- The removal of uncertainties surrounding alternative energy sources by encouraging the development of their technologies.

The Government should fund research into ways of maximizing our energy options. If it didn't, comments on the "uncertainty" of services such as solar power would become self-fulfilling prophecies.

Sounding the warning for Australia was Dr Alan Miller, a lawyer with the Environmental Law Institute in Washington.

Dr Miller is visiting Macquarie University in Sydney this year as a Fulbright scholar.

He was at Monash recently to address a public one day seminar on "Uranium, Solar Energy, the Law and the Citizen" run by the Law Faculty.

Speaking before the conference, Dr Miller said that President Carter's recent warnings that the American public must reduce its energy consumption were a start.

Dr Miller said: "The government must pave the way before it is too late. It cannot go too far out in front."

Government responsibility

It was nonsense for the government to suggest there was nothing it could do in the short term to clear uncertainties about future energy supplies, he said.

In large part, government was responsible for the uncertainty. It had checked on the supply of oil and gas, the rates at which they were sold, determining if nuclear power could provide incentives for the development of new technologies and their implementation, and could even legislate away some of the uncertainties on the use of these technologies.

Wine shipment

The Monash Wine Syndicate — formed to bid at overseas auctions for fine wines and arrange their shipment to Australia — is expecting the arrival of its final consignment of European wine.

A Syndicate member, Dr P. Hudson, says that small quantities of the wine are still available, including a delightful Spanish dry white, Castillo de los Enamorados 71, which costs about $2.90 a bottle.

He adds that there are also classed clarets of excellent vintage such as 1966 and 1970, a 1971 German wine from the Sear and vintage ports from 1965 and 1969.

For further information contact Dr Hudson on 729 4097.

Tour to study lifestyles

A Monash education student and Migrant English teacher, Miss Ann Waxman, will conduct a tour of Turkey, Greece and parts of the Middle East during the summer vacation. Miss Waxman says an aim of the one month tour will be to experience at first hand the lifestyles of the countries in which thousands of Australians have their heritage.

"It will be a chance for us to climb down from our academic ivory towers," she says.

Tour participants will meet beforehand to discuss special interests and to nominate educational institutions to visit on route.

Attitudes researched

A Canadian psychologist, currently visiting Monash, intends carrying out research on traditional and modern attitudes among young Australian Aborigines and white secondary school students from both rural and urban environments.

She is Dr Pauline Jones, Director of the Institute for Research in Human Abilities and Associate Professor of Psychology at the Memorial University of Newfoundland in St. John's. Dr Jones is visiting the Higher Education Advisory and Research Unit at Monash.

In Australia she will be extending the Canada Council-sponsored work she has been doing for the last two years in the province of Newfoundland and Labrador.

There, she has been examining modern attitude change and traditional-modern attitude conflict encountered by students from rural communities when they move to larger urban areas for post-secondary education.

She has been looking at the relationship between students' traditional or modern attitudes and their home environment and discovering whether they are more susceptible to change after moving to an urban centre.

She is also researching the extent to which students' traditional or modern attitudes affect their achievement in high school and in their new educational setting.

Dr Jones' work also involved research among the students' mothers, assessing inter-generational differences in attitudes.

She is still marshalling data and has reached no firm conclusions yet.

Dr Jones chose Australia to extend her work partly because of the interesting potential of the Aboriginal population with its wide variance of integration and "acculturation" into the larger Australian culture.

She will be examining differences in traditional-modern attitudes among the Aborigines and seeing if these relate to the level of "acculturative" stress.

She also intends replicating aspects of her Canadian research among white high school students here.

She plans, where possible, to select students of the same age and from the same areas as the Aborigines — in Sydney, Melbourne, Bourke, Alice Springs and Weipa.

Tour participants will meet beforehand to discuss special interests and to nominate educational institutions to visit on route.

The trip will take in Istanbul, Galipoli and the Aegean Turkey; Athens, classical sites and selected islands in Greece; and the choice of either Israel or Egypt.

A week is available for group members who wish to visit England before returning home.

For further information contact Miss Waxman on 529 4760 or at 3 Errol Street, Prahran.
Responsibility urged on text book ordering

It's been the time of year for that duty — compiling booklists for next year's courses — and some academics have come under fire for "irresponsible" attitudes towards textbook ordering.

These attitudes manifest themselves, for example, in a failure to distinguish between texts which will be frequently used and students would do well to buy and those which, more economically, could be borrowed from the Library, and a failure to give the University Bookshop adequate time to order supplies.

The result can be late arriving and unsaleable stock.

Similar problems overseas have prompted suggestions that there is a need for education for the educators in the use of books, their economics and distribution, and the role of libraries.

Incomplete detail, late lists and, worst of all, total lack of information, coupled with the absence of the staff member concerned, so that no follow-up was possible — these were the criticisms levelled at individual staff members, departments and faculties concerning the books compiled out of efforts by the Bookshop Board at a recent meeting.

Unobserved deadline

They were made after the deadline for lists had passed and less than a tenth of orders had been placed.

Among failings which have been criticised were:

- An apparent lack of communication between lecturers teaching different streams of the same subject causing confusion with estimates of quantities required.
- A lack of uniformity in classification of textbooks and reference books.
- Textbooks ordered not being the ones finally used.
- Lists in faculty handbooks differing from those given to the Bookshop.

It is not a situation peculiar to Monash.

The problem came under scrutiny at a recent conference on "Books and Undergraduates" held at Royal Holloway College in the University of London. The conference proceedings were published by the National Book League last year. The Chairman of the University Grants Committee and after-dinner speaker on that occasion, Sir Frederick Dainton, talked about the British situation, said that most of the reading lists he had seen were totally unrealistic.

Too often, he said, they were a kind of parading of the little knowledge of the lecturer and what he hoped to put into his course.

Sir Frederick said it was the "height of irresponsibility" to "over-prescribe" textbooks.

He suggested that few books should be recommended and lecturers should point out which books would be needed for only occasional reference in the library.

He also suggested that students should be instructed in the use of library instruction not of the kind where they have a 3½ tour instead of the 5 E tour, but a really systematic study of the library and how to use it, and how to respect it and so on.

Publisher Gordon Graham told the conference that undergraduate use of books could not be improved by lecturers who were themselves unclear about the role of books.

Mr Graham said: "There seems to be a general agreement that the attitude of students towards the use of higher education, their knowledge of the role of books in the educational process, and some familiarity with the economics and distribution of books are essential to what we are trying to achieve."

"Equally there seems to be agreement that there is considerable room for improvement."

He suggested that seminars should be conducted for staff on students' use of books.

He also said that the cumulative pressure from students and librarians on the one hand and publishers and booksellers on the other should be brought to bear on teachers.

"Lecturers should be thought that students are the most important because they are the centrepiece; they are what it is all about."

Political activity in universities

The picture is not always peaceful.

The author details cases of birds' resilience to encroachment and, in a few instances, the not-too-latet arrival of common sense on the part of man.

The book also parallels, perhaps wittily, the behaviour of birds with man's.

Dr Dorward dispels the myth of the eagle as the ruthless adversary of livestock by referring to the findings of a CSIRO major finding project which studied the bird in a relatively undisturbed habitat, the Nullarbor Plain.

Eagles, he says, prefer small, furred animals such as rabbits for food.

CSIRO's major finding was that, even in high density sheep farming areas, lambs formed only seven per cent of the specimens eaten.

Some of these would have been dead before the eagles took them.

It was also calculated that in an eagle territory of average size, 30,000 square kilometres, about 4000 lambs would be born in the season. Only half a dozen of these would end up in the eagle's nest.

These are average figures for adult birds. Dr Dorward says it is possible that young, unmated birds or "avian teenagers" as he calls them, do become rogues among lambs and if they cause a disproportionate amount of damage there may be a case for their selective destruction.

Dr Dorward says that, far from being terminated by the eagle, smaller birds such as the crow can often give it a hard time.

Being fond of carrion but unable to
Is the $ our only gauge of wealth?

Have Australians learnt to appreciate their "natural wealth" in terms other than dollars and cents?

It is a question suggested but not answered in Dr Douglas Dorward's new book, Wild Australia.

YESTERDAY

YESTERDAY, 140 years ago, Albatross Island in Bass Strait was a focus of attention. There, that "most superb of oceanic birds", the albatross was readily available — and its feathers were bringing tuppence ha'penny a pound on the Tasmanian market.

Sealers were doing a brisk sideline business on the island. They had perfected a method of capturing the albatross in a deep cavity in the middle of the island, known as the State Frigate. They drove the birds in their hundreds over the edge down into it, there to be killed and plucked of their feathers.

In one corner of the "prison" there is a cave where, according to an early visitor to the island and missionary, George Robinson, the sealers' women worked, plucking the feathers amid piles of putrid albatross bodies.

Dr Dorward writes: "One hundred and forty years later we found the stench bed gone, but the heaps of bones were still there. Amongst them were some heads with distinct depressed fractures of the skull, showing that the sealers had killed the birds exactly as Robinson described, 'with clubs... by a blow on the head'."

About 3200 albatrosses were killed for each cargo load — the estimated breeding population of the island now. Today Albatross Island is a protected sanctuary.

TODAY

But TODAY also our attention is on the Arnhem Land Escarpment, not so much because of its wealth of natural interest but because of its potential uranium wealth.

Dr Dorward says that while the Northern Territory's mineral resources have been established its natural ones have not.

A survey team from CSIRO's Division of Wildlife Research is currently compiling information of what animals are there.

Among the biological curios already documented are the freshwater crocodile, the pitted banded turtle, the white lined honeyeater and the black banded pigeon.

There are also 22 kinds of frogs, 75 species of reptiles and 230 species of birds.

As well, there is a great gallery of Aboriginal rock paintings on the Escarpment.

Dr Dorward says: "The question is whether the people that made them will lose themselves and their art, and whether one of nature's grand designs will be converted by men into a matter of profit or of loss."
The impersonators:

Whoever said that art and fun didn’t figure in the science of numbers?

The mathematics department at Monash has proved the myth wrong by recently presenting a History of Mathematics seminar featuring a dramatised version of letters written in the mid-19th Century between George Boole (modern day computers depend on Boolean algebra) and his friend, Augustus De Morgan.

Dr Chris Ash played George Boole, Professor J. N. Crossley, De Morgan, and Mr Gordon Smith, narrated.

It is little known that Boole considered applying for a chair at Melbourne University when it started. Wrote Boole to de Morgan of his mooted Australian visit: “I have not gone to the diggings yet. If any one shall tell you that I have, believe him not. I hereby enter into a solemn engagement not to transport myself thither without consulting you on the subject. How could you imagine that I should expatriate myself without at least bidding you good bye?”

But Boole had special reasons for not coming to Melbourne. De Morgan, congratulating Boole on his marriage, wrote: “You know the derivation of the words husband and wife? They are from the Sanskrit which compresses a good deal in few letters. The word wife originally means a demanding of money — and the word husband means a person who deceives himself and the truth is not in him if he imagines that by any possible method he will avoid forking out.”

For those who believe the language of mathematics to be mumbo-jumbo, De Morgan had a few choice words about another language, German.

He wrote: “I impute to that unfortunate language seven deadly sins, which are as follows: one, too many volumes in the language; two, too many sentences in a volume; three, too many words in a sentence; four, too many syllables in a word; five, too many letters in a syllable; six, too many strokes in a letter; seven, too much black in a stroke.”

In a Palm Court setting (embellished with plants from the mathematics department but unfortunately lacking an aspidistra), seminar participants were also serenaded by 19th Century ballads to set the Victorian mood.

And to prove that the cross-disciplinary approach wasn’t all one way, as well as mathematicians, the audience consisted of librarians and a lawyer with mathematical inclinations.

The writers:

• De Morgan  • Boole

The rogaining champs

Starter’s instructions just received, they’re off at the beginning of a recent rogaining championship.

But rogaining is hardly the event you start at a canter.

It’s the sport of 24 hour cross country navigation and one in which Monash participants are increasingly making their mark.

Monash teams won both the men’s and women’s sections of the Australian Universities Championship organised recently by Melbourne University at Kinglake.

Members of the winning teams were Ian Davies, Neil Phillips, Rod Phillips and David Rowlands; and Christine Arnold, Cathy Crook and Robyn Anker.

Christine Arnold was also a member of the winning team in the women’s section of the recent annual South Australian championships.

A men’s team from Monash came fourth in their section.

Both results were described as valiant efforts considering the teams’ shortage of sleep on the way over to Adelaide.

Next in the rogaining calendar is a “semi-event” — a rogaine over 12 hours instead of the traditional 24 — to be held on September 24.

This event is considered especially suitable for beginners.

For further information contact Gordon Davis on 89 9404 or Neil Phillips on 544 2613.

A tribute to Hector, Camo

The department of philosophy is planning a permanent reminder of its two founding professors, Emeritus Professor Hector Monro (March, 1961-December, 1976) and Emeritus Professor A. C. (Camo) Jackson (February, 1967-December, 1976).

It will take the form of photographic studies to be taken by Mark Strizic, and mounted by the department of visual arts.

Explaining the project, Associate Professor John McGeechie says: “Many of us who have had the privilege of working and studying with Hector Monro and Camo Jackson feel that some visible trace of their impact over the years would grace the department in which they worked, and through which they have influenced many generations of students.”

Past and present staff and students who would like to contribute to the cost of the project are invited to contact Associate Professor McGeechie in the department of philosophy.

Help for the handicapped

A committee has been set up to advise the Vice-Chancellor on the needs of people on campus who are handicapped.

The committee’s task will be to encourage those who are handicapped to make known their needs for facilities and equipment, to assess those needs and make recommendations on them to the Vice-Chancellor. It will also provide advice in relation to, and implement communication with, those who are handicapped in some way.

Chairing the committee will be the Deputy Chancellor, Mr Ian Langlands.

Its membership includes three students, Miss Helen Gillies, Mr Jim Finn and Miss Sue Shaw.

It expects to meet once a term.

A committee spokesman said that the Union Desk would be the first point of contact for people with handicaps who encountered difficulties.

Problems raised would be referred to the Assistant to the Warden of the Union, Miss Caroline Please, a committee member, who would offer advice and a solution where possible or refer the matter to the committee.
A study of the economic situations of recently arrived immigrant families has shown that they are earning less than established ones.

However, the study, which was carried out by Professor Ronald Taft, revealed that the males, at least, were increasing their income at a fast rate.

Professor Taft, professor of social psychology in the Monash Education faculty, examined the economic situations of 100 British, Maltese and South American family groups which arrived in Australia in a specified period in 1974 and 1975. They were given repeated interviews from the time of their arrival until September, 1976. At the time of the last interviews, only two out of the 85 males were unemployed and only one of the wives described herself as unemployed.

During 1976, 45 per cent of the wives of the immigrant families were employed, and the figure for South American wives was 77 per cent, compared to 68 per cent prior to emigration.

By comparison, about 47 per cent of women in the 25 to 44 age group in Australia were in full or part time employment.

Professor Taft said: "The average incomes for the British immigrants were higher than those for the other two nationalities and, as time went on, the Maltese earned relatively less than the other two. This applied to both of the sexes taken separately and to the combined incomes.

"The higher wages of the British immigrants were not reflected in the combined incomes because fewer of the wives worked. In the year 1976-7 the inflation rate was about 18 per cent, and the average increase in employees' earnings in Australia 14 per cent. The increase for the Maltese husbands was well below these figures, at 7 per cent, and the increase for the wives in each nationality was also quite low, but the increase in the South American and British husbands' incomes was high.

"Largely as a result of the wives going to work, the combined incomes for the British immigrants rose by almost two-thirds in the year after their arrival to $207 per week.

"How do the individual incomes quoted in the table compare with those of Australians? The Australian Bureau of Statistics' Survey of August 1976 suggests that the immigrants' incomes are considerably lower. The median earnings of male employees over the age of 20 (in all categories, both full and part-time, and in all parts of Australia) was $164 and that of females $119.

"The higher wages of the British immigrants rose because of the increase in combined income. This was reflected in their drive to own their homes, and a desire to become established as nationals.

"The Bureau's figures for the earnings of immigrants from English speaking countries were well above those for very recently arrived British immigrants."

Professor Taft said more of the South American wives were working from the beginning and this was the reason for their combined income of $185 in 1975, which was relatively high despite the rather low average incomes of the husbands.

In this context, it was important to note that all the working wives were mothers of young children. The fact that so many of these women worked showed the relatively low wages of their husbands and a desire to become established. Professor Taft said this was reflected in their drive to own homes.

By September 1976, none of the immigrants was living in a hostel, and 75 per cent of the British families and 50 per cent of the Maltese were paying off their homes.

In contrast, the figure for the South Americans was only 11 per cent.

"Presumably, some of the British and Maltese immigrants brought money with them for housing or were able to borrow from relatives," Professor Taft said.

"But this does not apply to the South Americans, who still have a long struggle ahead of them to get fully established," he added.

A study shows new migrants earn less initially

The Law and Aborigines

Accommodating Aboriginal law in the Australian legal system will be examined at a one day seminar on "The Law and Aborigines" to be held at Monash this month.

The seminar will be held by the Law faculty and the Centre for Research into Aboriginal Affairs on Sunday, September 25, starting at 10 a.m.

The Sir Isaac Isaacs Professor of Law at Monash, Professor Endel Campbell will speak on "Accommodating Aboriginal Law". The chairman of the National Aboriginal Education Committee, Mr Steven Albert, will comment on her paper.

Mr. de C. Cranwell, the Dean of Law at the University of NSW, Professor Garth Nethelum, will address the seminar on "Queensland Legislation and Aborigines — the View from 1977". It is hoped to have a commentary on this paper from a member of the Queensland Attorney General's Department.

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US society honors Monash men

A former Dean of the faculty of Engineering at Monash, Professor R. H. Hunt, and former Ph.D. student, Eugene Fichter, have won the Melville Medal — the highest honor awarded by the American Society of Mechanical Engineers.

The award is made annually for the best original research paper presented to the society.

Professor Hunt and Dr Fichter attended an ASME conference in Montreal last October, when Dr Fichter gave a paper dealing with their extended research project made use of some classical geometrical theorems formulated more than a century ago.

“We unearthed several very interesting old theorems — in particular some attributable to British geometers Samuel Roberts and Arthur Cayley — which seem to have been forgotten but which are closely related to our work.

“When we established that simple geometrical behaviour of a wide class of couplings. If certain hypotheses could be crystallised into theorems, then many discrete known properties of mechanisms would fall into place, and moreover, certain firm predictions made about mechanisms that have not as yet been analysed in detail.

“If appeared that you could 'multiply' the properties of the connections together in a simple manner and then nearly always obtain the correct answer for a coupling comprising multiple-component connections.

“We then sought to establish a general rule for the 'multiplication' of these properties and to prove the rule by resorting to classical synthetic geometry.

“What we have now established are two basic theorems that can be applied to many mechanical couplings.”

Professor Hunt says studies for the research project made use of some classical geometrical theorems formulated more than a century ago.

“We unearthed several very interesting old theorems — in particular some attributable to British geometers Samuel Roberts and Arthur Cayley — which seem to have been forgotten but which are closely related to our work.

“When we established that simple general rules did exist for couplings, we found that we could generalise about the geometrical aspects of mechanisms further than we initially thought we could.

“We also found we could explain apparent exceptions in a perfectly systematic geometrical way,” he adds.
**For Tolkien's readers, a new reference book**

J. R. R. Tolkien, a modest man, as befits any holder of a Chair of English, even in the University of Oxford, became an industry in his own lifetime and, as far as one can tell, hit it.

"His sound scholarship ignored for the most part, except by the inner circle of those who delight in Old and Middle English literature (a noble band)," his reputation now rests on Hobbits and Rings, Elves and Ents, Dwarves and Ores - and who shall say that the world is the poorer for this emphasis?

He has been accused by a younger generation of pseudo-scholars of anti-semitism, could the virtual-conservatism in (Australia read) the "outdated beliefs of the older Liberals," of writing "an overcrowded fairy story, a philological curiosity," sapped by "an impatience of imagination," appealing only to adults who never outgrow an "appetite for juvenile trash." We are told that he is the most traditionally British of women "the most backhanded of stereotypes," his dialogue, plot, and symbols "terribly simplistic."

I sometimes wonder, when I read these criticisms, whether we are reading the same book!

I find - and this is even more disturbing - that most of them have chosen to ignore Tolkien's own words on his purpose: "The Lord of the Rings has been read by many people since it finally appeared in print 15 years ago; and I should like to say something here with reference to the many opinions or guesses that I have received or have read concerning the motives and meaning of the tale. The prime motive was the desire of a tale-teller to try his hand at a really long story that would hold the attention of readers, delight them, and at times maybe excite them or deeply move them."

What makes the critics tick?

A simple enough purpose in all conscience, and when one reads a later remark by Tolkien, "As for any inner meaning or message, it has in the intention of the author none," one wonders just what is making the critics tick.

The volume under review, some 580 pages long, could well be read. "What you always wanted to know about Tolkien but never dared to ask". Of course, have read the books instead.

From "Accursed Years" to "Zirakzigil", via Mordor, Morogh, Nameless Lands, Old Man Willow, Path, Dead, Rangers of the North, Rhovanion, and a few rather scruffy maps with their barely legible captions: the reader has a blow-by-account of pretty well every significant work of Tolkien.

It will not help the beginner - better he should go straight into the novels and mouth them for himself.

Collin Wilson claims that he read "The Lord of the Rings" in three days - could this be the real reason that he stayed in bed for three days to do it.

My own record is a week - without staying in bed and doing other things, but not reading anything else. Some of my best friends will have a bar of Tolkien, and I am sure that the world is divided between those whose "hobbits" have been formed by him - and the rest.

As a reference book, very helpful for the initiated. But why could not the author have given us references to the first appearance in the novels of the word he is discussing? This would have added an extra touch not only of scholarship (which Tolkien would have applauded) but of usefulness to an otherwise valuable volume.

Revision, of course, will soon be called for, especially when Tolkien's unfinished novel The Silmarillion, edited by his son, appears later this year. More recently The Sun-Herald June 28, 1977, noted that the word "hobbit" (the origin of which Tolkien himself claimed that he could not remember), was popular with readers who delighted in Old and Middle Earths."

And Tolkien Mark II?

Epic fantasy lovers are being asked to believe in the reincarnation of Tolkien.

"For all those who have been seeking something similar to the sequel, the story of the search for the sequel, the story of Tolkien's Mark II, is available now.

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"For all those who have been seeking something similar to the sequel, the story of the search for the sequel, the story of Tolkien's Mark II, is available now.
Sophocles’ "Antigone" will be presented in concert recital form at Robert Blackwood Hall this month. For contrast, the curtain raiser to this classical Greek tragedy will be an intriguing comedy by Christopher Fry, "A Phoenix Too Frequent." There is a link between the plays — both focus on a woman who has committed herself to death.

The plays, to be performed by a professional company, are presented by Monaah Modem Dance Group. "Antigone," by Sophocles, opens October 27, 8:00 p.m., Union Theatre, R4, Admission free. "A Phoenix Too Frequent," by Gilbert and Sullivan, opens October 29, 8:00 p.m., Union Theatre, R4. Admission: adults $2.50, children $1.75.

Mr Douglas said recently he hoped the production of "Antigone" would give its audience a sharpened sense of the deeply moving qualities of classical Greek tragedy.

In explaining the long and intensive approach to rehearsal, he said that the company had set out to discover the play by moving and re-moving scenes until they were happy with them. They had researched and written carefully for their inner force and true motivation and had discussed scenes thoroughly at 8 p.m.

Rehearsals had been videotaped to explore the production of Othello, "with its complex approach to rehearsal, he said that the cast had set out to discover the play by moving and re-moving scenes until they were happy with them. They had researched and written carefully for their inner force and true motivation and had discussed scenes thoroughly at 8 p.m.

The production of Othello, by Shakespeare, presented by Monash Players, opens September 27, 8:00 p.m., Union Theatre. Admission free. "Antigone," presented by Monaah Modem Dance Group. A Phoenix Too Frequent, by Gilbert and Sullivan. (Monash students and staff members, $1.50.)

The shadow puppet theatre "How the Sun Was Made," and the adventures of Superkangaroo, presented by The Melbourne Chinese Chamber Singers, 8:15 p.m. RBH Admission: A. Res. $8, B. Res. $4; students $3.50.

MONASH REPORTER

The next issue of Monash Reporter will be published in the first week of October. Copy deadline is Monday, September 26.

 Movements and potential shifts in the field of research were addressed at the second annual conference of the information office, ground floor, University Offices.

MONASH REPORTER

SHADOWS PROMISE DELIGHT

Australia's top puppeteer, Richard Bradshaw, returns to the Alexander Theatre this month with a special shadow puppet presentation for schools and kindergartens.

Bradshaw is director of the Marionette Theatre of Australia which played in two productions, "Hands" and "Roos," at the Alexander in May this year.

The current show will run from September 24 to 29 with performances daily at 10:30 a.m. and 2:15 p.m., except Wednesdays when the single performance will be at 10:30 a.m.

Shadow puppets are simple cardboard figures manipulated by wires and rods behind a translucent screen. While their presentation requires a certain concentration, the overall effect is far from this.

The program includes a depiction of an Aboriginal legend, "How the Sun Was Made," and the adventures of Superkangaroo.

Prices are $2 for adults and $1 for children, with school concessions available.

For bookings phone 543 2828.

MONASH REPORTER

"Antigone" for RBH

...comedy besides

"Antigone" is expected to draw a large HSC and university student audience. It has been 10 months in rehearsal, he said that the cast was happy with them.

The production is being supported by the Victorian Department of Education, the Melbourne City Council, the Arts Council of Melbourne, and "Rooe," at the Alessander in May.

For bookings phone 543 2828.

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