Inside: Back from South Africa

1984 CHRISTMAS MESSAGE

As we draw to the end of George Orwell's legendary year, it seems in retrospect to have shaped up remarkably like other academic years. The most striking feature probably was the strong enrolment pattern at the start of 1984, leading to a record number of students undertaking undergraduate and postgraduate study - 4,944, according to the official statistics, compared to the previous highest of 4,621 in 1977. This has placed considerable stress on our staff and facilities, particularly as the Universities Council had predicted reducing numbers throughout each of the years of the Triennium 1982-84. However, I judge that most people preferred these problems to those of a student population steadily declining, with all that the latter inferred.

We start the 1985-87 Triennium with high hopes. The University's recommended financial support gives some margin for expansion and the large capital works programme will, in time, ease the various accommodation and space problems. The expansion in student accommodation in particular will ease the well-known problems which recur each year, as students discover that Newcastle is painfully short of the wide range of housing options that a city such as Sydney, for example, offers. The introduction of quotas throughout the University means the end of our largely open-access enrolment situation and whilst this has been a pleasant feature of Newcastle University (providing educational opportunities not available elsewhere), we do not have the resources to permit this any longer.

For those retiring or leaving the University's service, may I express sincere thanks for all your contributions. The tasks people undertake in support of the University's essential roles of teaching and research are many, diverse and specialised and without the dedicated contributions of each and every member of staff, the University would not enjoy its present high reputation. To all, my sincere thanks.

On behalf of the University I extend the compliments of the season to all the University NEWS readers and the hope that Christmas and the New Year will be relaxing and rewarding times spent with families and friends, in the very best tradition of the festive season.

D.W. George, Vice-Chancellor.

Letters to the Editor

Dear Sir,

Often when reading certain letters in University NEWS I wonder if they are tongue-in-cheek or merely foot-in-mouth. This was especially so when I read Inta Allegritti's letter in which a complaint was made about a photograph showing "two nude female models being carried by three males." On checking, however I discovered that the so-called "female models" were in fact dummies. Now they weren't the sort of dummies that you give to babies to suck (unless you're really wierd), but the ones you see in department store windows. They certainly weren't female models of the type you see on the cover of Cleo or Cosmopolitan, or other well-known magazines with "nude male" centrefolds.

Inta Allegritti mentioned today's "climate of awareness", but displayed what I would regard as gender ignorance in describing the dummies as "female". Presumably what was meant was "feminine" ((Female sex" but "feminine gender", Inta.) In any case, I believe that if one carried out any of the usual tests to determine gender or sex as used by the International Olympic Committee, one would be almost certain to find that the dummies were decidedly of neuter gender.

The dummies, were in fact not clothed in any garment. However, the word "nude" when used to describe an inanimate object such as a dummy is quite bizarre. It conjures up images of the Victorian Era when the legs of tables and chairs were covered to preserve their modesty. Perhaps the Victorian Era was a reaction to the imagery of Tom Brown's school-days.

Nevertheless, a case could possibly be argued that the photograph discriminated against dummies and the EEO Management Plan should carry an affirmative action programme to encourage the employment of a higher percentage of dummies.

R. Patterson, Department of Civil Engineering & Surveying.
Dear Sir,

It is with some embarrassment that I note the amount of critical attention given to our EEO office. No other University division is exposed to this sort of treatment. Clearly, the EEO lot is not considered a part of the University community (yet). There is certainly a case to be made against some of the activities, modi operandi and even (I feel) the very existence of other University divisions, but we keep a genteel silence.

"Strangers came, asking questions - why all the mistrust, even paranoid (see previous, ludicrous, letters)? Do we not trust, say, Personnel, Salaries, etc. with facts about us? Is it not obvious what that questionnaire is for, and that there is no thought of misuse of the information? The pedantic statement that, even if there is no plan for misuse, one cannot deny the possibility, ignores the fact that mutual trust pervades our lives to a remarkable extent - something which thinking people should know.

One reason we do not criticise, for example, the Planners Division (publicly) is that we know that we are amateurs in that area. It seems that there are a lot of University people who, on the other hand, consider themselves expert in the EEO area, and are willing to provide, confidently, fatherly advice, criticism or vitriol.

The women's lib connection also requires some mention: I understand how that phrase became dirty (as did Abolitionism, Trade Unionism, Socialism, PND, etc. etc. in their times) but one must distinguish between the thoughtless, "ratbag" component and that advocating a patently overdue reform in society. Clearly, women get the rough end in employment on the whole and, while there may not be any quickie solutions, something needs to be done and it is certainly relevant to EEO.

The Commonwealth Bank commissioned the portrait in recognition of Sir Bede's distinguished career in banking and his contribution to the development of the University.

The portrait has been hung in the Council Room in the McMullin Building where portraits of the University's first Chancellor, the late Sir Alister McMullin, and the University's first Vice-Chancellor, the late Professor James Auchmuty, can be seen.

Anyone who has met Monica Hayes will be reassured of a sense of proportion in the EEO.

Let us recognise that the EEO people are not strangers but a part of the University, trained professionals doing jobs whose goals most of us will agree with (the odd drop of vitriol notwithstanding).

D. Britz, Mechanical Engineering Department.
We've all heard about it - tax avoidance and evasion.

Mr. Frank Costigan, in his 1982 Interim Report of the Royal Commission into the Federated Ships Painters and Dockers Union, said: 'The tax avoidance industry ... has developed in Australia, particularly over the last five years, at a rate far in excess of any other industry and has brought with it profits comparable only to the heady days of the Victorian gold rush.'

Dr. Ian Wallschutzky, Senior Lecturer in Commerce, has been granted $2,500 by the Australian Tax Research Foundation in order to carry out research into possible causes of tax avoidance and evasion.

Research on this topic was pursued by Dr. Wallschutzky for his Ph.D. degree and he is probably the only researcher who is explicitly looking at the community's attitudes to and opinions about income tax.

The Australian Tax Research Foundation has existed, under the patronship of the Law Council of Australia, the Taxation Institute of Australia, the Institute of Chartered Accountants in Australia and the Australian Society of Accountants since December, 1982, to provide an input of researched information into the public understanding of all matters of taxation.

At a conference on general issues in tax reform in Sydney next April organised by the ATRF and the Committee for the Economic Development of Australia, Dr. Wallschutzky will present a paper summarising the results of his research.

He states that he has a particular interest in overall tax reform and discussion about tax avoidance and evasion is one of several ways of achieving tax reform.

He uses these pointers for understanding the difference between tax avoidance and tax evasion:

• Tax avoidance is reducing your tax liability by means outside the law, for example, understating income or overstating deductions.
• Tax evasion is reducing your tax liability by means inside the law, but against the spirit of the law, for example, taking advantage of loopholes in certain provisions of income tax legislation.

Dr. Wallschutzky's aims in respect of the research project include determining:

• Whether avoidance and evasion of income has increased over the last five years.
• The possible cause(s) for any change in the level of avoidance and evasion.
• The extent of avoidance and evasion under the present tax regime.
• Whether avoidance and evasion would be different under an altered tax regime, for example, if there was a reduction in income tax and the shortfall was made good by an increase in sales tax.
• What aspects of the present income tax system cause dissatisfaction.

Data will be collected by way of a mail questionnaire distributed to a random sample of persons enrolled on the New South Wales Electoral Rolls.

Dr. Alex Ziegert, of the Law School at the University of Sydney, is identifying, in another survey for the Australian Tax Research Foundation, whether people translate their dissatisfaction about income tax into attempts to avoid or evade tax.

**Forthcoming Nuptials**

Mr. Stephen Date and Ms Alison Williams will be married at St. Andrew's Church of England Church in Church Street, Mayfield on Saturday, December 15 at 2 pm.

Mr. Date is a BA graduate of the University and a former member of the Council. Ms Williams is a New Zealander.

The service will be conducted by Canon V. Pitcher a former University Chaplain and a former part-time Tutor.

Mr. Date has invited his friends from the University to attend the wedding and the reception in St. Andrew's Church Hall afterwards. Those who wish to attend the reception are asked to telephone 61 1540.
BACK FROM SOUTH AFRICA

A few weeks ago, Professor Clem Tisdell, of the Department of Economics, returned from a journey to South Africa, which enabled him to exchange views with a wide range of people, including economists, conservationists and managers of natural resources and to gather research data. The visit was at the invitation of the Department of National Education of South Africa.

Professor Tisdell visited all universities in the Republic of South Africa, as well as the University of Fort Hare in the Republic of the Ciskei. He gave seminars or lectures at these universities: Potchefstroom, Bloemfontein, Witwatersrand, Cape Town, Port Eliza-

both and Natal, as well as at other institutions.

At the Kruger National Park, Professor Tisdell was the guest of Dr. and Mrs. D. Mason. Dr. Daryl Mason, a research scientist at the Park, is an expert on warthogs and animal ecology. When Professor Tisdell was writing his book on Wild Pigs he communicated with Dr. Mason about relevant aspects of wild pigs in southern Africa. Professor Tisdell was able to see the operations of the park at first hand and discuss aspects of its economic management. He inspected a by-products factory at Skukuza and saw a good deal of the park by means of 4-wheel drive vehicle and on foot.

In South Africa, he gave lectures on such topics as the relevance of neoclassical economics to the modern world; economics of uncertainty, decision-making and society; the relevance of cost-benefit analysis to less developed countries; economics, ecology and sustainable development; arguments for and against government intervention in environmental conservation; South African-Australian trade; tourism and economic development; agricultural economics and ecology. Information was collected on a diversity of subjects: game-farming and game utilisation, economic development strategies, conservation policies, issues involved in weed control, and aspects of tourism.

Professor Tisdell said that possibly the most exciting parts of his journey were visits to Kruger National Park, to Soweto, to the Karoo and to parts of Qwa-Qwa.

In the Kruger National Park, he tracked rhinoceros on foot and a bull elephant charged towards the 4WD vehicle from which he was observing it.

In Soweto, the vehicle in which he was travelling had to be abandoned at a police station after the radiator boiled dry. The Karoo, with its fleshy plants (aloes), sheep and ostriches, proved to be an unusual environment.

He says he was impressed by self-help programmes in Qwa-Qwa, for instance a co-operative scheme for small businesses and a housing programme which he observed in slum areas of Inanda, near Durban. The housing scheme has been developed by the Urban Foundation, a body formed by businessmen and community leaders to assist poorer Black and other commu-

nities. He was shown over these developments by Professor Jill Nattrass, Professor of Development Studies at the University of Natal and an important adviser to Chief Buthelezi, Chief of the Zulus.

Staff House Christmas Party

Tuesday 18th December — 4.00 p.m. — 7.00 p.m.
Come & Celebrate with your Colleagues.

Beer — Wine — Snacks
And it's Free!
Holiday Arrangements

University

The University will close on Friday, December 21 for the Christmas to New Year holiday recess and will re-open on Tuesday, January 2.

University NEWS

This is the last issue for the year. University NEWS will not re-appear until February 15 as the first issue of the New Year, 1985.

Auchmuty Library

During the long vacation ending on February 25 (the first day of First Term), the Library will open from 8.30 am until 5 pm on Mondays, Wednesdays and Fridays and from 8.30 am until 7 pm on Tuesdays and Thursdays. It is closed at weekends.

Auchmuty Sports Centre

Closes on Friday, December 21 and will re-open on Monday, January 7.

Sports Pavilion

Closes Friday, December 21 and will re-open on Tuesday, January 7.

The Union

During the long vacation the Union Building will be open from 9 am until 7.30 pm during the week. Departments of the Union will comply with this opening schedule:

- shops: 9 am to 5 pm, Monday to Friday.
- bank agency: 9 am to 4.30 pm, Monday to Friday.

Credit Union

The Universities Credit Union Office will close on December 21 and will re-open on January 2. The Office is open between 9 am and 4 pm.

Staff House

The Staff House will close on December 21 and will re-open on February 3, 1985.

Interested in Environmental Studies?

During 1983 the constitution of the Board of Environmental Studies was changed to enable any full-time member of staff with an interest in environmental matters to become a member of the Board. Any persons interested in membership should ask their Head of Department or Division or, in the case of staff in the Faculty of Medicine, the Dean to submit a nomination to the Senate.

In accordance with normal practice all present internal appointments will expire on February 28, 1985. Present members wishing to continue and any member of staff wishing to become a member should arrange for a nomination to be submitted to the January meeting of the Senate.

Heads of Department will no longer be asked to submit nominations along with their nominations for other Boards and Committees. If you wish to continue or become a member you must take the initiative.

PERSONALITY OF THE MONTH

MURDOCH LECTURE

Professor S. Leeder, Professor of Community Medicine, was this year's Murdoch Lecturer.

The annual Murdoch Lecture was instituted by Murdoch University to commemorate Sir Walter Murdoch, after whom the University was named.

Professor Leeder has had extensive experience in community medicine and worked in diverse places, including New Guinea, London and Ontario. His is the author of more than 70 papers in the scientific press. His topic for the Murdoch Lecture was Health for All by the Year 2000.

Professor Leeder's lecture will be broadcast on 2NUR-FM on December 27 at 4 pm.
SUPERANNUATION - Issue of Concern

A matter of utmost concern to members of the University Sub-Division of the Public Service Association has been the superannuation crisis which has developed in New South Wales.

According to the re-elected Chairperson of the Sub-Division, Mr. Lionel Farrell, the PSA has always taken the view that superannuation is a condition of employment and forms part of an employee's total remuneration package.

Mr. L. West, PSA Regional Organiser who had been invited to attend in order to report on some of the issues the PSA has been dealing with, said member participation in the superannuation strike on November 21 was about 80 per cent across the State and 90 per cent in Newcastle.

"As a result of the strike, the Premier has agreed to renegotiate with Public Service Unions," he said. "Our new policy is to cease industrial action, except for the imposition of selective bans if the negotiations fail."

After lengthy discussion of some areas of "the superannuation crisis," the meeting approved the following action:

- The names of those members of the Sub-Division who participated in the one-day strike on November 21 will be published in the next newsletter.
- Because of the high cost of publicity and advertisements on radio and in the press in support of the campaign for the New South Wales Government to drop its new superannuation proposals, those members who did not lose a day's pay because of the strike be asked to donate a day's pay to the superannuation campaign fund.
- The Sub-Division expresses lack of confidence in the PSA's Exemption Committee for having granted an exemption to members on the New South Wales Lotto staff.

Other current issues mentioned in the Chairperson's report:

Promotions/Reclassifications

The new procedures are to be reviewed after they have been in operation for two years. Members who, from time to time, have any complaints, criticism or comment to make on the procedures are asked by Mr. Farrell to let the Management Committee know.

Word Processor Operators

A number of members were prepared to accept the University's proposals for dealing with the new WPO classification, but others were not. At a meeting with these members it was decided to ask the PSA to consider, and obtain legal advice on, bringing the matter back before the Industrial Commission.

Screen Based Equipment

Concern has been expressed to the University, Mr. Farrell says, at the apparent lack of action on its part concerning the environmental and ergonomic factors of operating screen based equipment. The Management Committee is aware of reports from Australia and overseas voicing concern over the health issues arising from the use of screen based equipment. It will monitor this situation closely, in particular, the problem of repetitive strain injury. RSI is a serious and frequently debilitating problem. During 1984 several cases of this type of injury were reported by operators of electronic keyboards.

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A ballot is presently being held to elect the two PSA representatives to the University's Occupational Health and Safety Committee.

The election of officers for 1985 resulted:

Chairperson, Mr. Farrell; Deputy Chairperson, Dr. David Kay; Secretary, Ms Kay Jackson; Assistant Secretary, Ms Mary Stroud; Committee Members, Mr. Ron Goodhew, Ms Joy Hoesli, Mr. Bede Jordan, Mr. Neil Keats, Ms Sue McDonald, Mr. David Shilcock and Mr. R. Murray; Delegates to Annual Conference, Ms Jackson and Ms McDonald; Nominee for election as Central Councillor, Mr. Giles Martin; Government Agencies Division Councillors, Mr. Farrell and Ms Jackson; Returning Officer, Mr. John Armstrong.
"The Making of Engineers"

Dr. Kerr Johnston, retired Associate Professor in Mechanical Engineering, makes a forceful appeal for a new way of educating engineers in his proposed book, The Making of Engineers.

Beginning with a criticism of the change to what he calls "all in-the-school learning", Dr. Johnston makes suggestions concerning the direction engineering education should go in the future.

The book is a historical commentary on engineering education in Newcastle.

Dr. Johnston will be happy to receive comments and anecdotal material from readers of the following summary of his work:

In the last few thousand years of human history, there have been engineers who built pyramids, viaducts, bridges, war machines, vehicles, mills, cathedrals, engines, etc., with considerable skill, knowledge and ingenuity. For more than 95 per cent of this time, none of the engineers had a degree or diploma. There were no engineering schools, nor were there any text books to study; engineers acquired their know-how on the job.

Engineering schools are a recent phenomenon, confined mainly to the last 100 years, and, in fact, in Newcastle to the last 60 years. The Newcastle Technical College began courses, in a piecemeal manner, in the 1920s that led to Diplomas in Engineering. By the 1930s the courses were fairly well-established and flourishing.

Degree courses were introduced in the newly-formed Newcastle University College in the early 1950s, and the process of development has continued to the present time, when we have a variety of undergraduate and postgraduate courses in the University of Newcastle.

In this historically very short period of about 50 years, there has been a complete transformation in the education of engineers, from the old, completely on-the-job learning of the past, to the present time, when it is effectively all in-school learning.

There are things to be said for and against both systems. The old system was a rather haphazard and secretive individual acquisition of know-how, without theory or rationale, and it evidently had a good many failures. Conversely, there is no complete substitute for practical experience, and a person who has spent all his time in school is no more qualified as an engineer than would be a person with a medical degree who had never been in a hospital.

It is possible by a little historical comparison to point up the inadequacy of the all-in-the-school system of education. Fifty years ago in Newcastle the only way to become a professional engineer was to be employed in an engineering industry and, simultaneously over a period of at least four years, to undergo a course of part-time study (four evenings per week) at the Technical College to obtain a Diploma.

The other way to become qualified was to leave Newcastle and go to Sydney University full-time for four years and, thus, acquire a degree. The fresh graduate from Sydney had done twice the amount of study that a Diploma had done, but had negligible on-the-job experience.

It was well known in those times that the fresh graduate was no match for the Diplomate. It took another four years for the graduate and the Diplomate to be on equal terms, after which the graduate generally went ahead. The reason the graduate ultimately made good was not, as was smugly assumed by the academics, because of the superiority of university instruction, but that, in those times, the people who got to university were a selected elite group who would eventually make good no matter what. The fact that initially the Diplomate could "run rings around" the graduate simply shows the severity of the handicap under which the graduate laboured.

The present situation in which we are attempting to educate engineers entirely "in-school" has resulted from the academic reaction to the knowledge explosion of the past few decades. Knowledge increases more in one decade now than it did in one millennium in the middle ages. So, there is a great deal to be studied. We are in the "Future Shock" of Alvin Toffler. In response to this situation, academics have shown three tendencies:

- Lengthen the academic courses.
- Specialise the courses and have more of them.
- Eliminate industrial experience requirements to make room for the above.
These are really palliative measures which are reaching their limits anyway.

Firstly, a person cannot spend half his life in school.

Secondly, it is pointless to try to specialise for every new technology - we will never keep up. Every engineer will effectively have to re-train on the job several times in his 40-year career.

Thirdly, we cannot eliminate any more industrial experience, because it is gone already. Eliminating the practical experience has something in common with throwing out the baby and keeping the bath water.

Some mix of experience and school study needs to be maintained. Half way between the time 50 years ago already mentioned and the present time, i.e., 25 years ago, a rather good mix existed in Newcastle. A large proportion of engineering students did several years of their degree courses on a part-time basis, while working in industry, and the remainder full-time. Furthermore, they were an elite group selected both by academic standard at school and by their employers. They had the advantages of both the Sydney University student of 50 years ago and the Technical College student of that time. Newcastle-educated engineers of that era gained a very high reputation.

Where do we go from here, in view of the continuing intensity of the knowledge explosion and the kind of future this implies? I venture a few suggestions:

- Develop a “core curriculum” for all engineering students whatever their department. A study of engineering curriculum over the last 50 years shows that about two-thirds of the material is common to all, even though it may be camouflaged by different names. Let this core then constitute two-thirds of every undergraduate course, and let it be given a numerical value of 40 units.

- Let the bachelor’s degree be awarded for a course consisting of the above core, plus another 20 units, chosen within the constraints of a particular department.

- Postgraduate study (generally part-time) should be the norm. The word “bachelor” means “beginner”, and the person who receives a degree certificate has begun his studies and, in the future, will never be able to stop without going into stagnant absences. With the increased leisure-to-work ratio so freely forecast for future society, everyone of every age should be a part-time student of something.

In tough times many years ago the engineering students once had an end-of-year celebration in which they featured a coat of arms with crossed hands holding beer mugs over the motto “STUDIUM IN MOTION”. I think they were far more prophetic than they knew.

SOUND BASIS FOR ABORIGINAL REPORT

The Australian Vice-Chancellors’ Committee believes that the recommendations of the National Aboriginal Education Committee concerning Aborigines and tertiary education are based on sound principles and justified aspirations.

After a Working Party of the AVCC had given careful consideration to the Report of the NAEC on Aborigines and tertiary education, the AVCC in particular supported the expansion of teacher education for Aborigines and the provision of special entry into all courses.

In the provision of expanded tertiary education for Aborigines, the AVCC believes that the Colleges of Advanced Education and the TAFE system will play the major role. Universities, however, can, and do, make special provision for Aborigines and the AVCC says it will continue to encourage special programmes consistent with maintaining appropriate standards.

The AVCC believes that universities give active support to Aborigines students to a greater degree than is evident in the statistics used in the NAEC Report. The AVCC proposes to survey universities with more specific questions in relation to the NAEC recommendations. It is hoped that the survey will provide more detailed information on how best the university system can meet the educational needs of Aborigines.

While supporting the broad thrust of the NAEC Report, the AVCC cautions against over-optimism in the expectation of full implementation. Points of concern include:

- The size of the pool of potential tertiary students is difficult to determine. While there has been a fivefold increase in teacher trainees since 1976, this rate of increase might not be maintained. School retention rates, beyond years 9 and 10, are still very low and, while there is a pool of mature-aged people who are capable and motivated to undertake tertiary studies, its size is not large and will be diminished as more of its members enrol in universities and colleges.
Summer of the seventeenth school

This January, the Newcastle Mathematical Association will run a Summer School for high school students entering Year 12, as it has for the last 16 years.

The annual Summer School, arranged in association with the Department of Community Programmes and the Department of Mathematics, Statistics and Computer Science at the University, aims to present topics in Mathematics and Computing for school students entering their last 3 years.

It will be held at the University from January 22 to 24.

The mathematical side of the programme will be directed by Dr. Lynette Bloom and Dr. Walter Bloom, from the Western Australia College of Advanced Education and Murdoch University, respectively. Lynette Bloom will speak on Congruences and Walter Bloom will talk on Public-key Codes.

The computing section of the programme will be presented by Simon, from the University of Newcastle, and will use the programming language Pascal. Simon is the author of several books on computing, and is an entertaining and lively speaker.

As well as lectures, workshops will be held on both codes and computing, run by tutors who are University students and staff, school teachers, and people from industry (BHP and Koppers Australia). The computing workshops will make active use of the computer at the Department of Mathematics, Statistics and Computer Science.

More information can be obtained from the Department of Community Programmes (685 600) or the Department of Mathematics, Statistics and Computer Science (685 657).

BOOK RELEASE

Dr. John Turner, Senior Lecturer in Community Programmes, is the compiler of a book from original sources, Who Was Who in the Hunter Valley Towns in 1888, which has been published by Hunter History Publications, Newcastle, and sells for $9.95.

The book is a compendium formed by Dr. Turner from some of the most interesting sources of historical information about the people of the Hunter Valley. The main source is WF Morrison, who in 1888, as the first centenary of New South Wales approached, collected biographical details from thousands of prominent citizens for inclusion in his Aldine Centennial History of New South Wales. This vast accumulation of information has never been republished, although as Dr. Turner observes, it remains the most valuable book of its kind, providing a starting point for generations of family historians.

Dr. Turner has included engravings and material from other publications which also appeared in 1888, Cassell’s Picturesque Australasia, by E.E. Morris, A. Garran’s Picturesque Atlas of Australasia and the Illustrated Sydney News. In addition, The Newcastle Nautical Almanac, Directory and Guide to the Port of Newcastle for 1888 listed the electors of Newcastle with their addresses and this forms a useful appendix to Who Was Who in the Hunter Valley Towns in 1888.

Here are biographical entries listing names, locations, years of birth, marriage details, numbers of children, religious affiliations, membership of lodges and, particularly, professional and business details.

As Dr. Turner states, the range of occupations represented is very wide: indeed, an alternative title for the book was The Butcher, The Baker, The Candlestickmaker. Solicitors, engineers, doctors, teachers, architects and ministers represent the professions and among the trades are: musicians, picture framers, chemists, bakers, upholsterers, cabinetmakers, plumbers, boot and shoe manufacturers, miners, tanners, limeburners and a great many others. There are also policemen, lighthousekeepers, council clerks, newspaper editors and Turkish bath proprietors. Shopkeepers are well represented and some quite famous business houses are described.

Who Was Who in the Hunter Valley Towns in 1888 is available at the Co-op Bookshop at the University.
Proteins - Work Horses of Proteins

It remains astonishing that each protein type folds to the same three dimensional structure, both during synthesis, and following denaturation. This compares with throwing the string of beads to the ground and finding the same recognisable 3d shape over thousands of trials. Moreover, the protein folding time is the order of seconds - hundreds of orders less than required for random search methods.

Fundamental and biotechnical advances await a clearer understanding of the protein folding mechanism.

Dr. Osborn has modelled folding protein on a computer to ascertain the relative significance to protein folding of aspects of amino acids, and of systems of many particles. Hitherto, computer simulation of a protein molecule (plus some solvent - water) have, at best, modelled 10-10 seconds of folding time. A specific innovation was development of Brownian dynamics for protein folding, utilising alpha-helices as the sub-units of folding. (Brownian dynamics is seen in the motion of pollen grains in water.) Fine tuning of the mathematics and computing made for simulation times of 10-5 seconds - sufficient for major aspects of folding to appear.

The alpha-helices (the most common and rapidly forming of protein substructures) were interspersed with randomly coiled regions. The three proteins investigated (two of 108 residues and one of 58) indicated four to eight helices, which compared well in location with native substructure was not always helical). The alpha helices were predicted from primary structure on a hydrophobic energy basis.

Some eight of the 20 amino acid residues are hydrophobic: that is, like oil they are relatively unattractive to water molecules. As a result, over short distances pairs of hydrophobic residues attract in water, although the specific interactions are quite subtle. The surfaces of predicted alpha-helices contained clusters of hydrophobic residues. Overall, assembled helices were subject to mutual attraction, much accentuated by proximity of hydrophobic clusters. Additionally, an electric dipole-dipole interaction arises between helices from alignment of helix stabilising hydrogen bonds. In the presence of water this interaction too is fraught with difficulty.

Previous studies were restricted to short-time phenomenon. Dr. Osborn's study demonstrated the capability of Brownian dynamics to model much of the organisation of a protein folding pathway. Close agreement with experiment for folding and structures was evident in the presence of dipole-dipole and hydrophobic interactions together. By selectively turning off either interaction, folding was markedly impeded.

In everyday terms, the dipole-dipole interactions tended to steer alpha-helices around each other, whilst the hydrophobic interactions facilitated more precise packing and overcame some barriers to folding to a native-like protein structure.

In addition, this study supported the suggestion of alpha-helices as the principal effective participants during initial protein folding. Possible future developments include prediction and design of enzymes not present in nature.

Thomas Osborn, a postgraduate student in the Department of Mathematics, Statistics and Computer Science, has been awarded a Ph.D. for his thesis on Protein Folding. He was supervised while he carried out the study by Assoc. Professor J. Croxton. Now a research associate at the University of New South Wales, Dr. Osborn says the work-horses of living organisms are the globular proteins. Unlike the simple shape of DNA, protein structures are quite complicated.

Protein primary structure, the sequence of amino acids, may be likened to a string of beads, with one of 20 types of beads at each location. Indeed, these sequences arise from the DNA sequence.

When folded to functional native form (the string of beads packed together), the complicated three dimensional structure of the protein comprises helices, sheets, barrels and bends as well as irregular regions. Typically, five to 15 amino acid residues constitute each of these substructures.
The University Squash Club teams male and female, have been singularly unsuccessful in their quest for honours during the recently completed district competition.

Our sole winners proved to be the excellent Women’s B4 team, which defeated Valentine at Edgeworth on November 29. Results in order of play were:

No.4. Rosslyn Thrift defeated M. Parker, 3-0. No.3, Julie Kiem lost to L. Lacey, 0-3. No.1, Vicki Price lost to G. Nicholson, 1-3. No.2, Jacinta Bird defeated Y. Crigg, 3-0.

The B4s played excellent squash and thoroughly deserved their victory. Particular mention must be made of Jacinta Bird who, undefeated throughout the entire competition, completed a glorious epoch, by overwhelming her grand final opponent to the points tune of 27-4.

Congratulations are extended to the team, and of course to their No.5 player, Michelle Adler, on a meritorious performance throughout the season. Unfortunately, Michelle is departing in the near future to colder Melbourne climes, but our loss is their gain. Her impact on the Melbourne squash scene will be watched with interest.

* * *

History was made when a Newcastle representative team won the prestigious 1,500-meter relay at the State Championships in Sydney on December 3. The fastest, and anchor-leg runner in the team, was Australian ranked David Forbes, who ran within himself and still recorded fastest time of the day (3 minutes 50 seconds).

University runner, Terry Farrell, was the only non-Myers Park runner in the team and, for the third time in as many races, he has lowered his best time over the distance, recording 4 minutes 9 seconds. Arthur Kingsland also ran well, but below his best, to record 4 minutes 2 seconds.

A second representative team also competed and again consisted of all Myers Park Club runners, with the exception of one University runner, in this case Albert Nymeyer. This team came 6th in the 12 team race.

On the previous Wednesday, the Branch 10,000-meter Championships was held. This was won by Albert Nymeyer in 33 minutes 39 seconds in a depleted field.

More recently, on the weekend of December 8 to 9 the 5,000-meter and 3,000-meter steeplechase Branch Championships were held. The steeplechase was won by Arthur Kingsland in a Branch record time of 9 minutes 35 seconds. Terry Farrell won the 5,000-meter with a gutsy run, recording 15 minutes 2 seconds. Arthur Kingsland, still feeling the effects of his record breaking run was second, and Albert Nymeyer third.

At the conclusion of the Championships all three runners celebrated their successes at a local milk bar in a thick-shake drinking contest. This was won decisively by Albert Nymeyer.

* * *

Sit-ups can leave you with a sore back and a fat stomach, if not done correctly.

One of the best exercises for the abdomen is the sit-up. But, more often than not, it is done incorrectly, causing pressure to be put on the lower back and little effort to be put on the stomach.

In the first place, sit-ups are often used alone "to take fat off the tummy." This concept is totally false. Fat is used from fat stores all over the body, not just from that part which is being exercised. "Spot Reduction" does not occur. Hence, excess fat will be used from the stomach in response to general aerobic exercise, such as jogging, walking, swimming etc. and/or a reduction of kilojoules in the form of food intake.

Sit-ups without such aerobic exercise would only result in a tight fat stomach, rather than a loose fat stomach, as the abdominal muscles are tightened under the stomach fat.

Sit-ups are often also carried out with legs straight, or with the feet hooked under a support. When this happens and the upper trunk is brought forward towards the lower body, the main muscles involved in the action are those which run across the hips from the upper leg to the lower back (called iliopsoas), not the abdominals.

Excess work of this muscle group may lead to an over strengthening, which can cause pain in the lumbar region of the spine.

To ensure the abdominals are involved, the iliopsoas can be removed from the action by flexing the hips and bending the knees.

* * *

Have you visited the Squash Pavilion Sports Store to indulge in the Christmas sale extravaganza?

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Be Wise Exercise !!!

The AVCC has written to the Prime Minister, Mr. Hawke, stressing the AVCC's concern about the funding for the Australian Research Grants Scheme.

The AVCC pointed out that one of the most important aspects of the Australian Research Grants Scheme is the funding it provides for basic research in universities. Without basic research, the quality of applied research activity would decline.

While the Government had increased the funding of the ARGS from $22.4 million in 1983/84 to $23.8 million in 1984/85, only 332 out of 1,273 new applications (or 26 per cent, compared with 46 per cent last year) received funding, while 140 continuing projects (or 14 per cent of total renewals) were refused support.

In all, 897 continuing projects (or 86 per cent compared with 93 per cent last year) had been funded, bringing the total number of projects supported in 1985 to 1,229, compared with 1,313 this year.

This meant that less than half of the 2,310 applications - totalling $65.8 million - had received funds and that 732 projects of excellence (compared with 361 last year, an increase of 103 per cent) had been rejected. For the first time the ARGS had awarded 'nil' grants to 256 of the best researchers.

The AVCC stressed that unless the amount of infrastructure money for basic research continues to increase, applied research in Australia will suffer and the efforts which the universities and industry are making towards closer collaboration will not be as fruitful as they might otherwise be.

The AVCC urged the Prime Minister not to neglect its funding of basic research through the ARGS.

Miss Orie Muta, Tutor in Japanese, asks two students who are enrolled in the Intensive Course in Japanese presently being conducted by the Japanese Section.

The course has 18 participants, who will go to Japan next year as Rotary exchange students. Year 12 students from Newcastle high schools, they are spending four weeks learning all the essentials of Japanese culture, including the language, meals, the tea ceremony and calligraphy.

On their arrival in Japan, the students will be immediately placed in homes and high schools.

Dr. K. Ono, Head of the Japanese Section, said the Intensive Course was akin to a "survival kit" for the students, as the knowledge they gained was essential if they were to make the transition from Australian culture to Japanese culture.

First introduced in 1977, the annual course attracts Rotary exchange students from the north coast, Sydney and Wollongong, besides Newcastle.

Wishing you all the unexpected delights that only Christmas brings
Honour to Dr. Wise

Dr. J.H. Wise, Senior Lecturer in Education, has been honoured by the American Biographical Institute for his distinguished service to Education.

The Institute recognised Dr. Wise's service with his selection for inclusion in its International Book of Honour, First World Edition, with the following entry:

"On December 31, 1984, John Harold Wise retired after 40 years of service to the educational profession, and more specifically, to geographic and international education. His degrees and awards include: B.Sc. (Hons.), Nottingham, 1952; M.Ed., British Columbia, 1961; Ph.D., Iowa, 1969; Atkey Prize, University of Nottingham, 1950; and Fellow, Province of Quebec, 1966-69.

"Dr. Wise's teaching career began in Burma in 1945 when he was serving in the Royal Air Force. Later he taught in various United Kingdom schools and, for several years in the 1950s, he was Head of the Geography Department at Southgate Secondary Grammar School, London.

"For the next 25 years he served either as a Lecturer or as a Professor in university Faculties of Education, such as McGill (1964-66) and Lakehead (1970-74) in Canada and the Australian universities of Queensland (1961-64) and Newcastle (1974-84). He also held numerous part-time appointments at Goldsmiths' College of the University of London (1957-60), at Queensland Kindergarten Teachers' College (1962-64) and at the Ontario Ministry of Education Summer Schools (1970-74).

"Throughout the past 30 years, Dr. Wise has travelled widely and given a wealth of addresses at geographic and other education conferences (e.g. NCSE in New York 1965, Detroit 1970 and Mexico City 1979), together with countless multi-media lectures at various universities, community-lecture and teacher in-service programmes and at Rotary and similar club meetings, covering such topics as Soviet Education, Music Paints the Scene and Starvation in Bangladesh. He has served, as well, as an honorary lecturer for the United Nations FAO and as writer and narrator for education television and radio programmes and as a curriculum committee member (e.g. Ontario Senior Geography, 1978).

"Dr. Wise's publications include several books concerned with geographic education and with world affairs, and many articles in education and geography journals.

"He was elected FRGS in 1954, becoming Life Fellow in 1970, and a Life Fellow of the International Biographical Association in 1984. Details of his career have appeared in such volumes as Who's Who in the Commonwealth, Men of Achievement, Leaders in Education and Directory of British Scientists."

Dr. Wise has received a memorial plaque which bears the above citation from the Institute.

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Myall Lakes camp site

Members of staff and their families, and members of student clubs, who would like a quiet area in which to camp and relax, are welcome to use the Les Gibbs Field Station on Boolambayte Creek at the Myall Lakes during the summer vacation.

The field station is quite isolated and, hence, there is a continual security problem. On two occasions over the past year items have been removed. The risk will be greater over the school holiday period when more people are in the area. It would be helpful if the station appeared to be occupied.

There are cooking facilities, a large shelter, toilets, etc., at the station. As beds, etc., are there, a small group could sleep in the shelter and so would not necessarily need tents.

Boolambayte Creek is suitable for small boats, canoes and swimming. It is an easy walk down to the lake.

People or groups interested should contact the Manager, Dr. Brian Conroy, at Extension 574, or the Secretary of the Department of Biological Sciences at Extension 566, for a list of facilities and more details.

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Thought we would drop you a Christmas lion

John & Linda
Rain over the Hunter

The computer-drawn map of mean annual rainfall in the Hunter Region viewed from the south. The plot shows significant rainfall areas in Barrington Tops, the north-east coast and the Watagans.

The image is on the cover of the new publication, *Climatic Atlas of the Hunter Region*, authored by Dr. Howard Bridgman and supported by the Board of Environmental Studies in association with the Hunter Development Board.

It is the first collation of all available regional climatic data in one publication. Within the 80 pages, the Atlas presents monthly spatial maps of:

Precipitation, maximum and minimum temperature, temperature at 9 am and 3 pm, relative humidity at 9 am, wind direction at 9 am and 3 pm, vapour pressure at 9 am and 3 pm, cloud cover at 9 am and 3 pm, and visibility at 9 am and 3 pm.

Data from 31 meteorological stations and 129 precipitation sites were used. The data used in the Atlas is included in an Appendix.

Mr. Des Hart, former weatherman for NBH Channel 3, provides a Foreword in which he says one of the unfilled dreams of those forecasting for this area has long been a computerised climatic atlas.

Dr. Bridgman, Senior Lecturer in Geography, says that people requiring climatic information on the Hunter Region, in particular those producing environmental impact studies, find that there is a seriously inadequate amount of weather statistics available. The Board of Environmental Studies felt that, with the Department of Geography having accumulated a significant amount of climatic data, it would be worthwhile to produce an atlas.

Mr. Bridgman says *Climatic Atlas of the Hunter Region* will provide a valuable background reference guide to the Hunter Region climate. It will be useful in many professions, such as education, architecture, tourism, development, planning, pollution control and so forth. The Atlas would be ideal for school and public libraries and regional information centres. It would be of great benefit to environmental impact statement construction and analysis.

A map of the Hunter Region highlighting topography, cities and towns, rivers, lakes and other features of the terrain has been produced in conjunction with the *Climatic Atlas of the Hunter Region*.

Drawn by Mr. Lawrie Henderson, the Geography Department’s Cartographer, the map is a 1:750,000, five-colour map, with a contour interval of 1:200. The map is the first to encompass the entire region in this scale and detail.

Copies of *Climatic Atlas of the Hunter Region* are available for $10 to cover postage, handling, and printing costs.

The topographic map costs $2 with discounts available for bulk orders.

For further information please contact Dr. Howard Bridgman, Chairman, Board of Environmental Studies, telephone Extension 774.
Two VCs Appointed

Professor Lawrence Nichol and Professor Malcolm Skilbeck have been appointed as the University of New England's and Deakin University's next Vice-Chancellors respectively.

Professor Nichol is expected to take up his appointment in the early part of next year. He succeeds Professor Ronald C. Gates, who announced his retirement last year.

Professor Skilbeck will take up his appointment at Deakin University on January 1, 1986, succeeding Professor Fred Jevons who proposes to return to an academic role.

For the past four years, Professor Nichol has been Chairman of the Board of the Institute of Advanced Studies at the Australian National University. He has been Professor of Physical Biochemistry in the John Curtin School of Medical Research since 1971.

Professor Nichol was born in Adelaide and holds B.Sc., Ph.D. and D.Sc. degrees from the University of Adelaide. He is a Fellow of the Australian Academy of Science and Chairman of the National Committee for Biophysics of the Academy.

Professor Skilbeck is an Australian currently living in the United Kingdom, and is Professor of Education and Chairman of the Department of Curriculum Studies at the University of London Institute of Education.

He has held posts as Director of Studies of the Schools Council for Curriculum and Examinations for England and Wales (concurrently with his present post for two years), as Foundation Director of the Australian Curriculum Development Centre in Canberra from 1975 to 1981, and as Professor and Dean of Education at the New University of Ulster.

Professor Skilbeck holds a Bachelor of Arts (Honours) degree from the University of Sydney, a Master of Arts from the University of Illinois, and a Ph.D. and Academic Diploma from the University of London.

Advertisements

Wanted to Share

Unit at Merewether, close to the beach (quiet location). This unit is fully furnished and would suit a professional person. Television, washing machine and dryer available. Rental: $50 per week. All interested persons are requested to telephone 69 3048.

Wanted to Buy

Bird cage suitable for canary in good condition with or without stand. If you are able to assist please telephone 43 2952.

Holiday Accommodation

One bedroom luxury unit at Broadbeach (Queensland) from January 5 to 12. (The lounge converts into another double bedroom if required.) Rental: $400 per week.

Luxury unit at Broadbeach, Queensland, for one week (January 26 to February 2). Rental: $200.

All interested persons are requested to telephone Sandy at Extension 430 or 33 2864 after hours.

MOVED BACK TO MELBOURNE

Edwin Galea

With four years of postgraduate study behind him, Edwin Galea has moved to Melbourne. Edwin has been appointed Research Scientist for the BHP Co. Ltd.'s Central Research Laboratory there, following his completion of a Ph.D. in the Department of Mathematics, Statistics and Computer Science under the supervision of Dr. Warren Wood.

A resident of Edwards Hall, Edwin was well-known for his activities as a Sub-warden during 1983 and this year.

Position Wanted

Need your gardens tidied up for Christmas? Any work that you don't want to do, we will for a reasonable rate. Lawns mowed, gardens weeded, shrubs trimmed, etc. Leave yourself free to enjoy the festive season. If we can be of assistance to you please telephone 57 3127 after 6 pm.