MOVABLE POLLUTION TESTING

The University has entered the new and unique Australian field of mobile air pollution testing.

Residents of the City of Newcastle can expect to see a motor vehicle bearing the name "NBN 3-University of Newcastle Environment Measurement Unit" (EMU) being driven around their streets. Sophisticated "sniffing" equipment has been installed in the vehicle, which will be used to obtain data on the quantities of some of the main pollutants in Newcastle's atmosphere at a range of locations.

The service has, in large part, been made possibly by the Newcastle Broadcasting and Television Corporation Limited, which operates the commercial television station, NBN Channel 3. The company's General Manager (Mr. K.W. Stone) expressed keen interest in his station broadcasting air pollution bulletins as a T.V. public service and he sought the assistance of academic members of the university's staff who were undertaking research into air pollution. When the Vice-Chancellor, the Chairman of the Board of Environmental Studies (Professor F.M. Henderson) and the Head of the Department of Mechanical Engineering (Professor A.J. Carmichael) responded favourably, Mr. Stone's company agreed to give the project a large degree of sustentation, namely $14,500 to finance the purchase of a van and air pollution measuring equipment.

An agreement was signed by Newcastle Broadcasting and Television Corporation Limited and the Vice-Chancellor; subsequently the van and the equipment were acquired and the mobile unit was assembled and tested. At least one of the sensing and measuring devices – the sulphur dioxide detector – is the first of its kind to be utilized in Australia.

EMU will detect and measure the amount of sulphur dioxide, carbon monoxide and dust in the air. NBN Channel 3 will communicate the findings to members of the public as part of its televised weather reports. The television station's weatherman, Mr. Des Hart, who has a good reputation in the Newcastle Region for his informative weather bulletins, will be the reporter.

In return for NBN Channel 3's collaboration, the Department of Mechanical Engineering has provided staff to operate the mobile testing unit and supply information on the levels of air pollution. Various Engineering Departments teamed together to install the "sniffing" equipment in the van. The service is being generally supervised by Professor Carmichael and the unit is manned by Lecturers in Mechanical Engineering Dr. A.J. Chambers, Dr. Chambers holds a Ph.D. from Stanford University where his research was concerned with transfers of energy and mass at an air-water surface. This is a problem in which the governing mechanisms are similar to those for the disposal of polluted air.

The programme of measurement prepared for the mobile unit is concerned with outdoor levels of sulphur dioxide (SO₂), carbon monoxide (CO) and haze in the Newcastle area.

The figure at the end of this article shows the variation of sulphur dioxide, smoke, deaths and temperature in London in December, 1952. From this figure the death rate and the SO₂ levels appear to be correlated. However, despite this correlation and similar inter-relations found in New York, medical opinion is that SO₂ is not the agent that is causing the excess of deaths. It is felt that concentrations of sulphur compounds should be regarded as an index of the general level of pollution.

Gases emitted by motor vehicles are the chief sources of carbon monoxide, high concentrations of which can be fatal to humans. The levels normally found along busy streets in Newcastle may impair reflex activity and, thus, contribute to accidents.

When carbon monoxide enters the body it reacts with the blood haemoglobin to form a carboxyhaemoglobin. The median carboxyhaemoglobin concentrate of a 20-a-day cigarette smoker who inhales is about 6% (66% saturation is usually fatal).

In London people exposed to high carbon monoxide levels have been tested and for the non-smokers these tests have shown carboxyhaemoglobin values generally less than 2%.

As regards particulate pollutants (particles generally larger than 10 microns), Newcastle City Council has an extensive testing network which measures this type of fallout. The findings indicate a decrease over the past 10 years.

Particles small enough to remain suspended in air indefinitely (smaller than 10 microns) are capable of being inhaled and may remain for long periods in the lungs.

EMU has the advantage over a fixed station of mobility and can be left at a site or moved to a number of sites. It will be used for measurements at weekends as well as on week days. Data obtained should be useful in several ways apart from helping to overcome pollution and protect the community's welfare; it should accelerate the university's long-range research into air pollution and assist the Board of Environmental Studies with its investigations into the total environment.

As Newcastle is predominantly industrial, with one of Australia's largest concentrations of heavy industry, it is highly unlikely that the mobile unit will fail to detect instances of air pollution. After the project was arranged representatives of industrial plants attended a...
CONVOCATION

The Warden of Convocation (Mr. W.G. Derkxonne, the Secretary of the Standing Committee (Miss F. Burns), attended the sixth annual meeting of the Australian Universities Graduate Conference held in Hobart from 26th to 31st January.

The U.G.C. Conference, which was attended by representatives approximately 100 universities in Australia and New Zealand, was concerned about the current employment opportunities for newly graduated personnel. The main purpose of the Conference was to set up a national and state-based survey of the projected need for tertiary graduates in all fields. The results of this survey will be presented in an updated report for the information and guidance of intending University students.

The President (Mr. R.A. Corn, of Sydney) said that the Conference would urge the Commonwealth Government to provide financial assistance to enable the survey to be undertaken. The Honorary President of the Conference, Dame Elizabeth Kendall, University of Queensland, stated that the next Annual Meeting would be held at the University of Queensland on the Australia Day weekend in 1973.

UNITED STATES, THREE VIEWS

At the Sixth Annual Meeting of the Australian Universities Graduate Conference, the following paper was presented: "A day's seminar at the theme 'The Role of the University in Society ... as seen by the leaders of three leading Australian universities'."

Professor H.H. Parker, Professor of Physics and Pro Vice-Chancellor of the University of New South Wales, gave his assessment of the role of universities in society:

All professors are socially important and it is important that their practitioners be as well trained as possible, but if the University is simply a centre for higher education, it will lose all those distinctive qualities which make it a University.

These qualifications, the President said, would argue, essentially from the existence of a substantial body of institutions that were not universities, the highest standards for their sole work — that is the commonwealth and state governments. If this is not the case, the University will have become a trade school.

"Many universities, following a bad American example, are trying to be all things to all people; the Ministry of Education is an integral part of the British educational system; the basic elements of such a scheme, which should aim to serve the parents of students, are the same as the universities' on the same footing as those living in university centres, should be (a) an adequate accommodation allowance; (b) a travel allowance to cover a return trip each year; and (c) a principle of providing travel and established allowances is already accepted in the case of Commonwealth Postgraduate scholarships.

The Committee stated that such a scheme would provide equal opportunity for all qualified students regardless of whether they lived at Mount Tom, Oswego State, or Carleton University, the same as the universities of the same footing as those living in university centres, should be a) an adequate accommodation allowance; (b) a travel allowance to cover a return trip each year; and (c) a principle of providing travel and established allowances is already accepted in the case of Commonwealth Postgraduate scholarships.

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**The GAZETTE**

**APRIL, 1972**

"The Hon. Malcolm Fraser, in a Ministerial Statement on the Commonwealth's 1971-72 educational programme, said, in part, The Government fully recognises the national importance of education and, its objectives is to do what is appropriate to... The Hon. W.G. Derkenne was appointed as a Member of the Eastman Kodak Company from 1966 to 1970 and was granted leave of absence to..."
The University's first Hall of Residence is scheduled to be completed in stages this year — the first in June and the second in September. Applications have been called for student residents, the college will be made available in vacancies to members of the public who request accommodation for conferences.

Mrs. J.P. Cabin, who was awarded a Bachelor of Arts degree with honours in this university in 1971, has begun duties as Tutor in Geo­graphy.

Mr. W. Jaffrey has commenced duties as Lecturer in Mechanical Engineering in the Department of Mechanical Engineering.

Mr. G.R. Keating has taken up his appointment as Senior Tutor. Dr. Jaffrey holds the degrees of B.Sc. with honours in the University of Queensland, M.Sc. in Mechanical Engineering, Ottawa, Canada, and Ph.D. in Mechanical Engineering in the University of Cambridge, Churchill College, Cambridge, where he was awarded with a scholarship in water polo and represented the college in rowing and swimming. He is married with two children and prior to assuming this position he was employed as an Engineer at the Electro­chemistry Laboratory, University of Pennsylvania, from 1966 until 1971, and a Ph.D. from the University of Queensland.

Mr. T.M. Bakker has begun duties as Dem­onstrator in Physics. He holds the degree of Bachelor of Arts in the University of Otago University and holds a Diplome de Physique.

Mr. G.W. Nichols, who graduated as a B.Sc. with honours in the University of Melbourne, B.Sc., Physics, and B.Sc. with honours in the University of N.S.W., has begun duties as Tutor in Geo­graphy. He is a Bachelor of Arts and Master of Arts in Otago University and holds a Diploma in Education.

Dr. D. Baker has taken up his appointment as Lecturer in Religious History in the Department of History.

The author considers that contained in the above three statistics could be the crux of a reason for the high fatality rate on Australian roads. Herein may lie the answer to the com­petence and efficiency of the Australian driver.

Of the drivers experienced with road travel overseas, approximately 90% thought that driving with a rule Giveway-to-Right, Major Road, was more comfortable, less fatigue and collisions were less likely to occur nose-to-tail, or vehicles at a junction of a major road, than with a rule of a minor road. Surprisingly 77% thought Giveway-to-Right, Major Road, would alter the general driver behaviour.

The role of the poll displayed some inter­estingly significant of these are that 8% of all drivers confirmed that the present Australian situation would NOT be improved by placing Yield signs on the side roads at all toll booths, each country road and the road sections.

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UNIVERSITY NEWS

Dr. K.H. White, Director of Pathology, Mater Misericordiae Hospital, Waratah, was elected to fill a vacancy on the Council of the University and took his seat on 14th January, 1972.

The vacancy was caused by the death of Dr. E.J. Egan, who was one of five members of the Council elected by Convocation of the University.

Dr. White, who holds the degree of Bachelor of Arts in this University, will hold office on the Council for the remainder of Dr. Egan’s term (until 30th June this year). He defeated three other candidates in an election in which all members of Convocation were eligible to vote.

Mr. R. McL. Robinson, Lecturer in Philosophy, has been elected to the Council. Mr. Robinson was elected by members of the academic staff other than professors to succeed Dr. N. Rutherford, who is on study leave.

The Council of the University appointed Professor K.W. Robinson Head of the Department of Geography for two years beginning on 1st January, 1972. The Council was informed that the former head, Professor A.D. Tweedie, planned to take sabbatical leave this year and had requested that Professor Robinson be appointed.

The Dean of the Faculty of Arts and Head of the Department of Philosophy, Professor A.M. Ritchie, is in the United States of America on overseas study leave. His itinerary includes visits to the University of Texas, where he will work with postgraduate students on Cartesiant Philosophy, and universities on the East Coast. Professor Ritchie expects to return in May.

Professor K.R. Dutton, Head of the Department of French, is serving as Acting Dean of the Faculty of Arts and Dr. W. Doniela is Acting Head of the Department of Philosophy.

Dr. G.C. Jones, a student of the former Newcastle University College who holds the degree of Bachelor of Arts in the University of N.S.W., with first class honours, has been appointed Professor of French and Head of the Department of Romance Languages in the University of New England. Dr. Jones is a Master of Arts in the University of Melbourne and a Doctor of the University of Frenoble, France. Before receiving his appointment to the University of New England, he was Lecturer in the University of Newcastle (June, 1966 to December, 1967) and Senior Lecturer in the University of Western Australia.

The second annual report of the Directors of TUNRA (the University of Newcastle Research Associates Ltd.) disclosed that the company earned a profit of $9,564 between 1st July, 1970, and 30th June, 1971. Twenty-four research projects were undertaken in the year.

Eight students have been chosen to receive University Medals as a result of distinguished undergraduate performances culminating in the 1971 examinations. They are Anne M. Vogelzang and Elizabeth A. Cousins (Mathematics), James C. Docherty (History), Evan P. Arthur (Classics), Ho Gin Tou (Industrial Engineering), Foo Say Wei (Electrical Engineering), Annette W. Cook (German) and Julie L. Marshall (Psychology).

Mr. P. Cornish, a 1962 B.A. graduate, is lecturing in English at the University of Kalmar in Sweden. Previously a teacher at Christ’s Hospital School, Sussex, Mr. Cornish will complete a year’s term of service next August when he plans to return to England.

At the annual English Society Dinner on 29th November, the Talbot Prize, donated by Dr. Norman Talbot for the best poem with a moral to inculcate, was awarded to Mr. P.L. Kavanagh, Lecturer in English, whose wife, Keryl, a Secretary in the Department of Psychology, presented the poem vocally without musical accompaniment.

Five students of the university will be awarded Blues for their performances in sport during 1971. They are Darryl Lang (Badminton), Dick De Tozer and Robert Williamson (Rugby), Peter Dodd (Cricket) and John Hawkins (Athletics). The University Council approved the recommendation made by the Blues Association that the students receive Blues.

Frank Breclec and Robert Baker, of University Cricket Club, and the Amenities Officer, Mr. H. Bradford, toured New Zealand with the Combined Australian Universities Cricket team in January and February. Mr. Bradford was Manager.

Mr. Niel Hatherly has taken up duties as Acting Secretary of the University’s Blues Association succeeding Mr. B.F. Curran, who has begun duties as Senior Classics Master at Canberra Grammar School.

A course for athletics (with strats), together with a cricket and football field, will be provided at No. 2 Oval, now under way at the University.

MATHS SUMMER SCHOOL

About 200 High School students enrolled for the Mathematics Summer School held at the University from January 25 to 27. It was the fourth staged by Newcastle Mathematics Association; students from high schools in Newcastle and the Hunter Valley, including Gloucester, Taree, Muswellbrook and Wingham High Schools, attended. Accommodation in Newcastle was arranged for students coming from centres a long way from Newcastle.

Professor C.S. Davis, Senior Professor of Mathematics, University of Queensland, and Mr. D. Moalem, well-known author of school text books and Mathematics Master at Fort Street Boys’ High School, were Visiting Lecturers for the school, Mr. D.W. Walls, Dr. J. Wallis and Professor E. Parker, of the University’s Staff, also lectured.

About 20 teachers, lecturers and senior students acted as tutors. Mr. K.F. Collis, of the Department of Education at the University of Newcastle, was Director of the Summer School and Mr. B. Donegan of Newcastle Boys’ High School, was Organiser.

Please advise

The Secretary, University of Newcastle, 2308, of

* Your change of address

* Names and addresses of other graduates who are not on the mailing list for “THE GAZETTE”

* Changes in marital status