Professor Henry L. Langhaar has arrived at the university to work with the Department of Mechanical Engineering as a Visiting Professor for a month. He is Professor of Theoretical and Applied Mechanics at the University of Illinois, where he has held an academic position since 1947, apart from two years' association with the Institute of Technology in Kharagpur, West Bengal (1960-1962). At the university Professor Langhaar has revived a friendship with Dr. D. Karanchetty, whom he met at the Institute.

Professor Langhaar, who is a Fellow of the American Society of Mechanical Engineers, has been interested for many years in model theory, the theory of buckling and elasticity, the theory of plates and shells (as regards building), and the analysis of stress. In the 1930's he worked, first, as a test engineer with the Ingersoll Rand Co. of New Jersey, and then as a seismographer with the Carter Oil Co., returning to Lehigh University, Pennsylvania, in 1938 to start his Ph.D. degree studies. He was an Instructor in Mathematics at Purdue University and, for the duration of World War II and immediately afterwards, a research engineer analysing stresses in aircraft.

As part of a career which included experience in unusual fields, Professor Langhaar is currently a consultant to the Marley Co., of Kansas City, for a project which provides for the erection of the world's highest cooling tower. The tower is proposed for a power plant in Limerick, Pennsylvania, and will be 500 feet high. With engineers aware that cooling towers collapsed in Ferrybridge, England, in 1965, a lot of investigation has been carried out into ways for the cooling tower to withstand wind and thermal stresses, as well as earthquakes.

Professor Langhaar is the author of two books and several scholarly articles. In Newcastle he will work with the Head of the Department of Mechanical Engineering (Professor A.J. Carmichael) and his staff on research projects and lecture to students on "Cooling Towers", "The Theory of Models" and other subjects. He will visit Queensland and New Zealand before returning to the University of Illinois in June or July.

BOARD POLL CONCLUDED

One hundred and sixty-nine students voted in the recent election for the Board of Management of the Union. The Board comprises several categories of representation, including members of the Union who are entitled to elect eight Members and two Graduate Members.

The eight Members who were successful in the election:


Mr. C.S. Enright was elected to take a position as a Graduate Member.
Messrs Gary McDougall and Greg Giles have been elected new Editors of Opus. They defeated the other candidates, Messrs. Kieran Smith and Kerry Hughes, by 117 votes to 45 in an election conducted by the S.R.C.

PLAN FOR SNOWY LODGE

A small band of enthusiasts has begun to meet at the university regularly to bring to fruition their plans for the establishment of an Alpine Lodge on the Snowy Mountains.

The project has only a broad outline at this stage. However, the National Parks and Wildlife Service is willing to lease land at Perisher Valley for use as a building site by a properly constituted club. At least 30 members can apply for permission to erect a lodge in Kosciusko National Park. Plans and specifications for a lodge must be approved by the Service before building can begin.

As regards the enthusiasts, who are members of staff and students, they believe that it should be possible to organise in Newcastle a co-operative club, with the objects of enabling members to ski, bushwalk, fish for trout and engage in other outdoor activities at Perisher. The great virtue of a co-operative club (conducted so that nobody profits) would be the reasonable tariff for accommodation. The organisers will be anxious to cater for families not just adults, and will be approaching ex-students as well as members of staff and students. Membership would come from the purchase of shares and, possibly, the making of a capital contribution to meet initial building costs and site fees.

Prompting has come from two successful non-commercial ski clubs - Canberra Y.M.C.A. and Narraburra, which built their own lodges for members on leased sites at Thredbo, Guthêga and Perisher Valley. Improvements to lodges are voluntarily undertaken in summer by members working in parties. Accommodation at the lodges is surprisingly cheap. Narraburra has 105 members, who are charged $6 for a week-end and $16 for a week. Y.M.C.A. has an annual subscription scale which costs married couples $13, single members $8 and juniors $4 a year. Apart from activities in the snowfields, the clubs regularly conduct socials and outings for members.

Fifteen people from the University of Newcastle attended the initial meeting of the prospective Ski Club. A working committee was formed and requested to develop plans for the construction, financing and registration of the club.

The organisers have asked that they be informed about members of the university who ski or just appreciate the outdoor life and who wish to avail themselves of the benefits of a co-operative lodge on the Snowy Mountains. A tear-off slip is provided at the end of this page for people to signify their interest. Later, bulletins will be printed and distributed to broadcast news of the scheme.

METRIC CONVERSION BOOKLET

"An Introduction to Metric Conversion and the Use of SI Units", a booklet explaining the metric system in detail, is on sale at the Cashiers' office for 75 cents a copy. It provides tables for the conversion of British Imperial units to international SI units. The University has published the booklet through TUNRA to provide students with a guide and members of the public with a cheap reference book.

NAME: ................................................
(Return to Mr. B. Mitcheson, University Library).
Rehabilitation of educational facilities in Bangladesh has been made a World University Service project for 1972. The Service has information from the President of Bangladesh (Justice Abu Sayeed Chowdhury) to the effect that 1139 educational institutions, 1,550,000 students and 70,800 teachers were affected to a small or a large extent by the war between Pakistan and Bangladesh.

The National Director of WUS in Australia (Mr. J. Stevens) said that while the object of activities in the next month was to raise money the Service would also be trying to change public opinion, as regards Bangladesh's requirements. Newspapers were currently failing to emphasise the proper state of affairs with only a small degree of publicity being given to the appalling lack of basic facilities, such as roads, bridges, houses and schools. The Australian Government's contribution of commodities was virtually useless to Bangladesh while basic distribution services were crippled. Rehabilitation had to come first.

Mr. Stevens said that if WUS succeeded in changing public opinion then the Federal Government's policy on assistance for Bangladesh might be changed so that financial grants were increased to accord with Australia's population.

WUS, Newcastle, will carry out a drive for funds for the rehabilitation of education in Bangladesh from 8th May to 12th May. Letters will be posted asking for donations and an appeal newspaper will be published. On 11th May students and members of staff will be asked to support an appeal by such ways as a "hold-up" at the University Entrance, and public collections will be made on 12th May.

STUDENT ADMINISTRATION OFFICE HOURS

Commencing on Monday, 17th April, the Student Administration office has been closed during the lunch period from 12.30 p.m. to 1.30 p.m.

At special times during the year, such as the Annual Examination period and the Admission and Enrolment periods, the office will remain open from 9 a.m.-5 p.m. and will not close during the lunch period.

The office will remain open from 9 a.m.-5 p.m. on the last three days of each term so that students wishing to arrange travel concessions will not be inconvenienced in any way.

HOSTEL GROUP'S OFFICERS

Newcastle International Student Hostel Steering Organisation, which has as its object the provision of low-cost accommodation in hostels for Australian and oversea students, elected a new Executive at the annual general meeting on 13th April.

The officers for this year:

President, Associate Professor J.W. Staines; Vice President, Mr. Giles Martin; Secretary, Mrs. H. Davidson; Treasurer, Mr. M. Connon; Oversea Student Representative, Miss Sue-Ann Angus; Committee members, Messrs. In Kim, J. Sara.

The organisation has been registered with the Chief Secretary's Department and members are looking at possible sites for a hostel. A working bee will be held on 15th and 16th July to raise money. It is intended that students will wash windows, clean yards and undertake similar jobs for payment.
ASSOCIATION OF UNIVERSITY WOMEN GRADUATES

The Association of University Women Graduates is a world-wide organisation. More than 50 countries are represented in the International Federation.

The local Hunter Valley Branch includes graduates not only from Newcastle but also from other Australian universities, as well as some British, American and European universities.

Meetings are held at the University of Newcastle on the fourth Wednesday of the month. Women graduates interested in joining the Association are most welcome to attend. At this time of the year a particular invitation is extended to recent graduates of the university.

An Open Night to which members brought husbands or friends was held on 26th April. The guest speaker was Professor Hoyt C. Hottel, at present Visiting Professor in the Department of Chemical Engineering.

Further information about the Association may be obtained from the Honorary Secretary (Mrs. Elaine Sheehan), Economics Department.

ADVERTISEMENTS

HOUSE WANTED: Dr. Byron Winn, who will be attached as Visiting Professor to Electrical Engineering from late June to December, 1972, requires a furnished house with three bedrooms, hopefully within walking distance of the university, for the period of his stay. Anybody able to help should contact Mrs. Lorraine King, Ext. 408 (685408).


DRESSTMAKER: Student available to undertake dressmaking work. Ring 681281 or call at 167 Dawson Street, Cook's Hill.

POSITIONS AVAILABLE

House Steward Position No. N41/72

A House Steward is required at the Edwards Hall of Residence to carry out a range of duties including responsibility for bed linen, oversight of cleaning standards and day-to-day activities in the Hall. While there is no age limit it is envisaged that the position would be best suited to a man in his forties. Salary is subject to negotiation but will be in the order of $72 per week.

Stenographer - Secretary's Division - Administration Position No. N40/72

A competent and experienced stenographer is required.

Commencing salary will be up to $61.49 per week, depending upon age, qualifications and experience. In addition efficiency allowances up to $6.89 per week can be gained by passing speed tests at examinations. There are sound prospects of advancement to a salary of $67.80 per week.

Applications close 29.4.72.

Adult Library Assistant (Graduate) Position No. N42/72

Previous library experience would be advantageous. Commencing salary will be within the range $4452-$5406 p.a. depending upon qualifications and experience.

Applications close 12.5.72.
The New Zealand Government, to commemorate the Bi-centenary of Captain Cook's first landing in New Zealand, established in 1969 a research Fellowship to perpetuate Captain Cook's spirit of scientific enquiry and exploration in the New Zealand and South West Pacific area. The Fellowship is administered by the Royal Society of New Zealand. APPLICATIONS FOR THE SECOND FELLOWSHIP ARE INVITED from persons of senior status who wish to carry out research in New Zealand or the South West Pacific in any appropriate field such as the following, taken in their broadest sense, or in any relevant field: Anthropology, Biology, Geography, Geology, Geophysics, History, Medicine, Oceanography. The Fellowship is normally tenable for two years, but may be extended for a third year, and must be held at a New Zealand University or Research Institution. The salary will be at the rate of the maximum for an Associate Professor (at present $9,769 N.A.: $11,430 U.S. or £4,495 approx.).

A travel grant will be paid to a Fellow appointed from overseas. Reasonable travel expenses incurred in New Zealand and the South West Pacific in carrying out the research project, and a special equipment grant at the rate of up to one seventh of the salary ($1,400 N.A. approx.) will be paid per annum. The Fellow selected will be informed during September 1972 and will be expected to take up the Fellowship within six months thereafter. Applications close on 31st May, 1972.

The German Academic Exchange Service offers Fellowships to foreign graduates and post-graduates with outstanding records for a course of study, specialized training or research at universities, technical universities, research institutes and academies of art or music in the Federal Republic of Germany. The duration of the fellowships is 10-12 months. Monthly allowances of DM500, DM600 or DM800 are paid according to candidate's age and level of previous training. In addition the fellowships provide tuition fees, travel expenses and additional allowances ($A 1 = DM 3.77 (approx.)).

Completed applications should be returned by 16th June, 1972.

Five Harkness Fellowships for study and travel in the United States for from 12 to 24 months are offered annually by the Commonwealth Fund of New York to candidates from Australia and New Zealand.

Candidacy is open to men and women in any profession or field of study who will be not more than 30 years of age on 1st September 1973. (Consideration may be given in exceptional circumstances to a candidate somewhat above this age). Candidates must, by 1st September 1973, have a degree, or an equivalent qualification conferred by a professional body, or an outstanding record of achievement in the creative arts, journalism or other comparable careers. Candidates who propose an academic career after tenure must have had experience of post-graduate study, and candidates for the M.B.A. must have had substantial full-time administrative experience. Candidates for the Australian awards must be citizens of Australia or have taken steps to achieve citizenship. Candidates must be either: (1) members of the Commonwealth or a State Public Service, or a semi-Government authority; (2) staff or post-graduate students at an Australian university; (3) individuals recommended for nomination by the Local Correspondents.

Fellowship emoluments are intended to cover expenses of travel, residence and study. They are planned to enable the Fellow to participate fully in the life of the community. It is therefore expected that all payments (except those made to a Fellow's family in his home country) shall be expended within the United States. Fellow's allowance: $300 per month until the 26th birthday; $350 per month after the 26th birthday. Family allowance, if a Fellow has no continuing salary: $150 per month for a Fellow's wife; $75 per month each for first and second child. If a Fellow's family remains in the home country, a family allowance of up to $200 per month will be considered. To and from the U.S.: for a Fellow, his wife and children (up to four half-fares), travel from home to United States place of study, and return. In the U.S.: a travel allowance of $250 per month for periods of approved travel (three months required); a car rental allowance of $1,200; and an annual contingency allowance of $250. Tuition and approved research fees and expenses. A book and equipment allowance of $300 for the first year and $200 for the second year. Health insurance.
The closing date for applications is 24th July, 1972.

The Alexander von Humboldt Foundation, of Germany, offers approx. 400 Fellowships a year to highly qualified foreign scholars of all disciplines and nationalities to pursue research work in the Federal Republic of Germany. Monthly allowances of from DM 1.200 to DM 1.600 are paid, as well as travel expenses and family allowances. To be eligible a candidate must have a Ph.D. or equivalent, a specific plan of research and working knowledge of the German language.

The Finnish Ministry of Education is offering specialist grants to foreign scholars for research and specialisation at post-doctoral level. A specialist grant is available for a period of four to eight weeks and may be taken up at any time during the year. The Benefits include 1,000 Finnish marks per month (approx. $A166.87), approved course fees and approved study tours within Finland in connection with the program. The cost of travel to and from Finland to take up the award is the scholar's own responsibility. Applications may be lodged at any time.

The Reserve Bank of Australia invites applications for three Senior Research Fellowships for applied research in agriculture. Candidates should be in a position to take up the awards no later than July 1973. The Fellowships will have a tenure of two years, possibly three, and will be tenable at any Australian university or other approved Australian scientific research institution. The research to be undertaken may be in any of the broad fields of economics and management, plant sciences or animal sciences.

It is planned to announce the names of the successful candidates in late September or early October 1972. Applications must be made by 30th June, 1972. The salary will be equivalent to that of a Readership at the University of Sydney, currently $12,593 per annum. An allowance will be paid to the host institution to defray costs.

The University of Melbourne invites applications for a Research Fellowship and these should be lodged by 30th June, 1972. The fellowship is intended for a scholar who has recently obtained the degree of Doctor of Philosophy (or equivalent qualification). The Research Fellowship shall be of value between $A6697 and $A9286 and is subject to income tax. (This corresponds to the salary range for a Lectureship.) The tenure of the fellowship shall be for one year but may be extended in special circumstances for a second year. The fellowship shall be held at the University of Melbourne and the fellow is expected to take up his fellowship late in 1972 or early in 1973. The fellowship may be held in any department of the University of Melbourne, but is unlikely to be awarded for work in a department in which a fellowship is currently being held - at present the departments of Genetics, Microbiology, Otolaryngology and Zoology.

Dalhousie University, Halifax, Nova Scotia, Canada, offers Izaak Walton Killam Memorial Scholarships tenable in all fields of graduate research at Dalhousie. The scholarships are valued at $4,200 and are renewed upon evidence of satisfactory completion of work leading towards the Master's or Doctoral degree. No remission of fees accompanies the scholarships, but additional funds to assist transportation to Halifax are available. Killam Scholars may perform instructing or demonstrating duties for which they are given additional remuneration. Those chosen as Killam Scholars by the trustees are selected on the basis of their likelihood "to contribute to the advancement of learning or to win distinction in a profession"; a Killam Scholar, however, "should not be a one-sided person and each scholar's special distinction of intellect should be founded upon sound character and good manners". All applications for Graduate Studies must be made through the Registrar, Dalhousie University, as early as possible.

The Ruth A. Cumming (E.S.U.) Scholarship is awarded by the English-Speaking Union of the Commonwealth, New South Wales Branch. This scholarship is intended to assist young people who, at the outset of their careers, seek to further their studies outside Australia. The scholarship is valued at $1000 and applications close on 31st May, 1972.
COMING EVENTS

Australian Conferences

The Institution of Surveyors, Australia, and the Australian Institute of Mining and Metallurgy will hold technical sessions of their annual conferences at the university during the May vacation.

At least 500 members from many parts of Australia will visit the campus for the Conferences.

The surveyors' conference, known as the 15th Survey Congress, will be held from 15th to 19th May. The Congress will be opened by the Minister for Public Works (Mr. Hughes) and the feature address will be given by the B.H.P.'s Executive General Manager, Minerals Division (Mr. W.W. Sweetland). Technical sessions of the Survey Congress will be held in the Main Lecture Theatre at the university and displays of scientific equipment and morning and afternoon teas will be held in the Union. An important guest will be the President of the New Zealand Institute of Surveyors (Mr. H.W. Hunter).

From 28th May to 2nd June, the annual conference of the Australian Institute of Mining and Metallurgy will be conducted in Newcastle beginning with an official opening by the Minister for Mines (Mr. Fife). The President of the Institute (Sir Ian McLennan), the President of the Australian Mineral Industries Research Association (Sir Maurice Mawby) and the Chairman of the C.S.I.R.O. (Dr. J.R. Price) will speak at technical sessions in the university.

Conference on Ecology

The Faculties of Engineering and Mathematics will jointly sponsor a "mini-conference" on Population and the Environment at the University on Monday, 1st May. Papers on aspects of ecological research will be submitted in Room G01 beginning at 11 a.m.

The speakers will be:

Professor M. Lieberstein, of the Faculty of Mathematics, University of Newcastle, subject: "The Steady-State Demand-Output-Waste Economy".

Professor R.L. Longhaax, Professor of Theoretical and Applied Mechanics, University of Illinois, U.S.A., subject: "Mathematical Theory of Growth of Biological Populations".

Dr. W. Taylor, of the University of New England, subject: "Simulation of Population with particular reference to the Grain Beetle".

Dr. B.S. Goh, of the University of N.S.W., subject: "Pest Management with Minimal Pesticide Pollution".

The Head of the Department of Mechanical Engineering (Professor A.J. Carmichael) said the conference was initiated in order to focus attention on some vital ecological issues and the research related to them. These issues are concerned with man and some of the ways by which he is upsetting the ecological balance of this planet.

The papers to be presented and discussed will deal with the mathematic modelling of biological populations for the purpose of growth prediction and, in the case of some insects, control of their population with minimal pollution being caused.

Convocation

The Annual Meeting of Convocation will be held in the Staff House on Friday, 5th May at 8 p.m. After the normal introductions, the Acting Vice-Chancellor, Professor B. Newton-John, will report on the University and the Warden, Mr. W.G. Derkenne, will report on Convocation's activities. There will be an election of members to the Standing Committee, after which Ald. Leo Port, member of the panel for the T.V. series, The Inventors, a member of Sydney City Council and a consulting engineer, will speak on "Some Aspects of the Sydney Strategic Plan, illustrated with diagrams. Light refreshments and wine will be served at the conclusion of the talk.

"The Future of Energy"

The Department of Chemical Engineering will conduct a seminar in Lecture Theatre EG01, Engineering Building, on Friday, 5th May, at 11 a.m.
Professor H.C. Hottel, Visiting Professor in Chemical Engineering, will speak on "The Future of Energy". Professor Hottel spent eight months last year studying America's energy consumption and the prospects for satisfying her future needs through developments now in progress. He will summarize some of the findings of that study. Many of the methods and general conclusions of the study have relevance to both Australian and world developments. Staff and students from any university department will be welcome.

Civilisation's Music
The Vice-Principal was unable to present on 18th April the first of a weekly series of recorded music concerts supplementing the Lord Clark "Civilisation" film series. Mr. J.D. Stowell most kindly acted as a substitute. Professor Newton-John will play examples of the work of Sweelinck, Buxtehude, Scarlatti and Purcell in the Main Lecture Theatre on Tuesday, 2nd May, and of Bach on 9th May.

Mathematics Seminars
The Department of Mathematics will hold a student seminar in Room AG24 on Wednesday, 3rd May, at 2 p.m. Mr. G.N. Falk, a third-year Honours student in the Department of Mathematics, will speak on "The Transportation Problem".

Miss Judith McLeod, a third-year Honours student in the Department, will speak on "Graph Theory and its Applications".

A Mathematics seminar will be held in Room AG24 on Friday, 5th May, at 12 noon. Dr. Sheila Oates-MacDonald, of the University of Queensland, will speak on "Implicationally Defined Classes of Algebras".

COUNCIL ELECTION
In the ballot conducted to elect one member of the Council being a student of the University, elected by the students of the University, the voting was as follows:

<table>
<thead>
<tr>
<th>Candidate</th>
<th>Votes</th>
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<tbody>
<tr>
<td>Barbara CALLCOTT</td>
<td>385</td>
</tr>
<tr>
<td>Christopher John Arthur CORNELIUS</td>
<td>94</td>
</tr>
<tr>
<td>John Hugh Scott KUMM</td>
<td>150</td>
</tr>
<tr>
<td>Informal</td>
<td>13</td>
</tr>
</tbody>
</table>

I therefore declare Barbara Callcott elected to the Council of the University of Newcastle for the period from 28th April, 1972 to 30th June, 1973.

28th April, 1972.

J.D. TODD,
RETURNING OFFICER.

SPORTING NEWS

Athletics
On the April 22 and 23 weekend eight athletes from the university competed in the Eastern Zone Universities Competition held at the University of New England. Although Newcastle finished only third in the aggregate (Queensland First, New England Second), the team took some consolation from the changed state of affairs that would probably have been caused if John Hawkins, the hurdles champion, had arrived. Hawkins and Professor G.T. Tanner failed to reach Armidale after their car, 'lent to them' by a certain Legal Studies lecturer, gave up the ghost at Tamworth.

Basketball
In a clash on the basketball courts at the University of New England on the same weekend, Newcastle Men's team won twice and Newcastle Women's team lost twice. Despite the good form currently being shown by the men, the University Basketball Club (Mr. B. Couper, Secretary) is still looking for players.

Inter-Varsity
The next University News will contain a full report on Inter-Varsity competitions to be conducted in the May vacation. The University of Newcastle will be host to 12 Rugby teams and 12 Rowing crews representing other Australian universities. The Rugby matches will be played from 15th-19th May and the weekend of 26th and 27th May will bring Rowing events to conclusion on the Manning River at Taree.
Male Model
A newsworthy sidelight from the presentation of Blues ceremony at the Staff House on 14th April was the first sighting of the university's new sports blazer. Not inappropriately, the blazer was worn by the Vice Chancellor, Mr. H. Bradford, of the Amenities Office, is taking orders for blazers, which are available at Rundles.

Golf
The annual golf match for staffs of the Universities of New England and Newcastle will be held at Newcastle Links on 29th and 30th April. Newcastle will be defending its right to hold the trophy.

Staff Sport
The Sporting Facilities Committee has resolved that members of staff can become Associate Members of the Sports Union by paying $8 each per academic year and, in consequence, can join any of the sporting clubs affiliated with the S.U. This decision means that members of staff and students, who pay for sporting facilities in their general services fees, are now paying identical fees.

STAFF HOUSE'S EVENING SERVICE
Hot dinners and light refreshments are served at the Staff House between 4.45 p.m. and 6.30 p.m. every evening.

The Staff House closes at 7 p.m.

Evening patrons are assured of quick service and cigars are always on sale.

UNIVERSITY WOMEN GRADUATES PRIZES
Winners have been announced of the four Jamieson Awards, prizes of $50 given each year by the N.S.W. Association of University Women Graduates to the most outstanding final year women students in the Faculties of (1) Arts, (2) Science, (3) Medicine and (4) Engineering and Other, throughout the universities of New South Wales.

Once more graduates of the University of Newcastle feature prominently in the prize list.

Miss Ann Vogelzang was awarded the Science prize and the Engineering and Other prize was awarded to Miss Gien Tou Ho. Miss Vogelzang graduated this year with First Class Honours in Mathematics and Miss H with First Class Honours in Industrial Engineering. Both young ladies were awarded the University Medal.

For those who wish to know more about these awards, information will be printed in the University News during second term.

STAFF EFFICIENT READING COURSE
In response to requests from members of staff, the Student Counselling Unit will run a Staff Efficient Reading Course aimed at increasing reading speed without loss of comprehension. The course will consist of six sessions each of two hours duration (two sessions a week for three consecutive weeks), to be held every Tuesday and Thursday from 11 a.m. to 1 p.m. during the coming May vacation in room LG53 in the Administration building. The first session will be on the 16th May and the last will be on 1st June.

To enrol in the course simply fill in the tear-off slip below and return it to the Student Counselling Unit by Wednesday 10th May.

NAME: .................................................................

DEPARTMENT: .............................................. Ext.: ......

I wish to enrol in the Staff Efficient Reading Course.