An unofficial bulletin prepared for the information of members of staff of Monash University.

Vol. III No. 22 September, 1966

HONOUR TO NEW MEMBER OF COUNCIL

At its last meeting the Council of the University of Melbourne conferred the title of professor emeritus on the former Professor of Education, Professor W. H. Frederick.

Professor Frederick was recently elected to the Council of Monash University by the Faculty of Education.

GRANTS AND GIFTS

Professor J. Bornstein, Department of Biochemistry, has received $3,000 from Merck, Sharp and Dohme (Aust.) Pty. Ltd. towards research on chemistry and biological activity of pituitary polypeptides.

Dr. A. L. Jones, Department of Chemistry, has received a grant of $700 from the Australian Institute of Nuclear Science and Engineering for research on the effect of specific activity upon solubility.

Mr. P. P. Phukey and Dr. A. C. McLaren, Department of Physics, have received $780 from the Australian Institute of Nuclear Science and Engineering for research on radiation damage of quartz minerals.

Dr. J. H. Smith, Department of Physics, has received a grant of $1,200 from the Australian Institute of Nuclear Science and Engineering for research on antiferromagnetic structures in manganese alloy systems.

Professor R. Street, Department of Physics, has received a grant of $400 from the Australian Institute of Nuclear Science and Engineering for research on incommensurate spin density wave structure and also $300 for research on the effect of magnetic field on the magnetic structure of chromium.

Professor R. Street and Mr. J. D. Brown, Department of Physics, have received $400 from the Australian Institute of Nuclear Science and Engineering for research on neutron diffraction studies of chromium alloys.

Professor J. H. Swan, Department of Chemistry, has received a grant of $4,000 per annum for three years from Merck, Sharp and Dohme for research on heterocyclic compounds. Merck, Sharp and Dohme have also paid Professor Swan's expenses to visit their research laboratories in New Jersey and to visit the National Institutes of Health in Washington and Stanford University in California.
GRANTS AND GIFTS (cont.)

Mr. G.J. Troup, Department of Physics, has received a grant of $2,000 from the Australian Institute of Nuclear Science and Engineering for research on E.S.R. studies of radiation damage, and $400 for research on statistics of scattered photons and Cerenkov radiation.

$250 has been received by the Department of Physiology from Riker Laboratories Australia Ltd., for general assistance in research expenditure.

$50.35 has been received by Mr. Ernest Clark, Librarian, as a result of a collection taken by the students during the "sit-in" in the Main Library on Thursday 21st July.

$100 has been received by the Careers and Appointments Office from Mount Isa Mines, Queensland.

$1,000 has been received from Patrick Brennan Trust to be used for research in the Department of Surgery.

$400 has been received from the Monash Parents Group for the Library and $20 for prints for the University Health Service and Sports Medicine Centre.

$20 has been received from Mrs. R. Baines, Oakleigh, for the Library.

STAFF ARRIVALS

Dr. A. Williams - Senior Lecturer in Mechanical Engineering - graduated B.Sc. (Tech.) with honours from the Manchester College of Science and Technology in 1958. After working for ten years with A.V. Roe and Co. Ltd., he was appointed Lecturer in Engineering at Manchester University where his teaching responsibilities were concentrated in the area of thermodynamics. Dr. Williams' principal research interests include heat transfer, lubrication and plasticity of metals and he completed his Ph.D. on contact heat transfer between metal surfaces.

Mr. C.F. Bailey - Student Counsellor - graduated B.Ec. from the University of Sydney in 1954. In 1965 he was awarded a Diploma of Psychology from the University of Melbourne. He has had several years of teaching experience, and before his appointment to Monash was student counsellor at Trinity Grammar School, Kew. Mr. Bailey is at present working on a study of differences in self-concept and motivation among students. He is a member of the Australian Psychological Society and a member of the Australian College of Education. Mr. Bailey is married.

Dr. D.H.W. Held - Lecturer in Mathematics - graduated Diplom-Mathematiker in 1962 and Dr.phil.nat. in 1964 from the University of Frankfurt. Before his appointment to Monash he was a Lecturer in the School of General Studies at the Australian National University. His research to date has been into Engel conditions in finite as well as infinite groups, automorphism in groups and hypercentrality criteria for Artinian groups, but he is also interested in the representation theory of groups and the work done to achieve the characterization of all finite simple groups. He has had four papers published in scientific journals and two more are to appear soon. Dr. Held is married.

Mr. F.A. Trindade - Lecturer in Law - graduated LL.B. from the University of Karachi in 1958, B.A. (Hons.) from the University of Oxford in 1961, Diploma in Comparative Law from the University of Strasbourg in 1963, and M.A. from the University of Oxford in 1964. He was called to the Bar at Gray's Inn, London, in 1965. Since then Mr. Trindade has been assistant lecturer in the faculty of Law at the University of Singapore. He has published five articles in legal journals. Mr. Trindade is married with two children.
Mrs. Ellen Held - Teaching Fellow in Mathematics - graduated Diplom-Mathematiker in 1965 from the University of Frankfurt. Mrs. Held's research has been in the field of topology particularly on Homotopy Groups.

Dr. B.J. Diggs - Education Research Officer - graduated B.A. with 1st Class Honours in Psychology from the University of Tasmania in 1957, and in 1962 was awarded the degree of Doctor of Philosophy by the University of London. Following teaching experience in schools in Tasmania and the U.K. he was a Research Officer at the National Foundation for Educational Research in London for five years. Dr. Biggs was Lecturer in Education at the University of New England for a short period in 1962 before transferring to a Lectureship in the Psychology Department of the same University. He has published several papers and has considerable experience in educational research. Dr. Biggs is married with two children.

DEPUTY WARDEN - HOWITT HALL

Dr. Peter Riach, Lecturer in the Faculty of Economics and Politics, has accepted the appointment as Deputy Warden of Howitt Hall.

Dr. Riach graduated as a Bachelor of Commerce with first class honours from the University of Melbourne in 1959. During 1959 he worked with a firm of chartered accountants and in 1960 was appointed a tutor in the University of Melbourne. Subsequently, he completed the course for a Ph.D. at the London School of Economics, and returned to Australia to take up an appointment as a lecturer in the Department of Economics early in 1965. Dr. Riach is married.

STAFF DRAMA GROUP

Synge's comedy, "The Playboy of the Western World", is to be the third production of the Staff Drama Group for this year, running from 5th to 8th October in the Union Hall. The cast will be as follows. Christy - Max Gillies, Pegger - Patricia O'Sullivan, Widow Quin - Adrienne Holzer, Shawn Keogh - Laurence Davies; Old Mahon - Harold Love, Michael James - Saul Pastovskoj, Philly Cullen - John Emery; Jimmy Farrell - Richard Pannell, Sara Tansey - Frances Ranks; Susan Brady - Aileen Bucknell, Honor Blake - Margaret Waterhouse; and Nelly - Jean Bedford. "The Playboy of the Western World" is being directed by Elaine Barry.

As in the case of "Hedda Gabler", bookings will be through Mrs. Wise in the Union Shop (just opposite the Union Office - extension 2923). Tickets, which can now be picked up and paid for in advance, will again be 80¢.

Other activities of the group in third term include three acted-readings in the 'Thursday Theatre' lunch-hour series, beginning in the first week of term on Thursday 8th September, and continuing on 15th and 22nd September. These will be presented in the Union Hall at 1.15 p.m. There will also be the usual monthly play-readings, the next being on Monday 5th September, at the home of the Vice-Chancellor, when the play to be read will be "The Dream of Peter Mann" by Bernard Kops. Because there will be a rehearsal of "The Playboy of the Western World" on Monday 3rd October, the following monthly play-reading will be on Monday 10th October.

Following her departure from the University at the end of second term, Betty Moore has resigned as Secretary of the group, a position which she has held since its formation.
STAFF DRAMA GROUP (cont.)

Her successor in the Department of English Office, Barbara Carlton, is also the new Secretary of the Staff Drama Group. Telephone enquiries about the activities of the group should therefore still be directed through extension 2140.

FACULTY CLUB

The following note has been received from Mr. J.C. Brierley:

"With the recent approval of the licence for the Faculty Club, we must start working out when we can launch into business. The celebration which was held in the Club to mark the issue of the licence was poorly attended and it is hoped that this is not a precursor for the future; if it is we are going to lose an awful lot of money.

"Back to the point now of when we can set-up in business. The first thing that has to be done is to get a refrigerating cabinet installed and this will take between four and six weeks. Secondly, we must take on a barman and with his assistance start stocking up the bar and also purchase items such as glasses, towels, drink dispensers and various other things which will crop up as experience dictates.

"Having explained what has to be done, the opening date can now be fixed and this will be Monday, 3rd October, 1966.

"The initial capital outlay will be a heavy drain on Club funds and it is therefore imperative that members who have not paid their current subscriptions - and there are 130 of them - do so straight away. The Rev. Job Hawkes is the treasurer and he can be located in the Department of History.

"It is understood that Clubs in Adelaide and West Australia Universities both lost money for periods of up to eighteen months and so we would be unduly naive to suppose that our experience will be any different. This means that we must have the full support of Club members, plus their forbearance in the event of corkage being charged on bottles brought into the Club.

"It must be reiterated here that only members and their invited guests may use the Club Premises and to ensure that this is so there will have to be occasions when the Club Committee polices the doors and asks for membership cards of those people who are not known to be fully financial.

"Let's drink to our success and a profitable return".

SCHOLARSHIPS, FELLOWSHIPS, AND PRIZES

"Angelina Lauro" Art Prize for Painting
"Achille Lauro" Art Prize for Sculpture

These two prizes are now available for competition and are worth approximately $3,000 each, made up as follows:

(a) return first class passage to Italy within twelve months of award of prizes
(b) three weeks stay in Italy visiting Naples, Rome and Florence
(c) one week in France and/or Germany to visit selected museums and art galleries

Conditions for entry are:

1. All works to be consigned or forwarded to the Director of the State Art Gallery not later than 15th January, 1967.
2. Paintings to be other than portraits not exceeding 3'6" x 4'6" in size and painted in oils or similar medium.

3. Sculptures - no subject restriction but must not exceed 1'6" x 2' x 3' in size.

Further details may be obtained from the Managing Director, Flotta Lauro, Australasia Pty. Ltd., 18A - 24A Pitt Street, Sydney. (G.P.O. Box 4218, Sydney - Telephone Sydney 27-1137/8).

Services Canteens Trust Fund - Post-graduate Scholarship:

The Trustees of the Services Canteens Trust Fund are inviting applications for Post-graduate Scholarship for study overseas.

The scholarship is valued at $2,500 per annum and will be tenable for a period of up to three years.

The scholarship is open to a child (including step-child, adopted child or ex-nuptial child) of a person who was at any time between 1st September 1939 and 30th June 1947:

(a) a member of the Naval, Military or Air Forces of the Commonwealth of Australia; or
(b) a member of any nursing service or women's service attached or ancillary to any branch of the Defence Force of the Commonwealth of Australia; or
(c) a member of the canteens staff of any ship of the Royal Australian Navy, and any person duly accredited to any part of the Defence Force who served in an official capacity on full time paid duty.

Applications must be lodged with the General Secretary, Services Canteens Trust Fund, Victoria Barracks, St. Kilda Road, Melbourne, by 1st November 1960.

Application Forms and any further information may be obtained from the General Secretary, Services Canteens Trust Fund, Victoria Barracks, Melbourne, or from Mr. W. Spence, Grants and Scholarships Officer, room G29, Administration building.

Commonwealth and University Post-graduate Scholarships:

Australian National University:

The Australian National University is inviting graduates with the capacity for research who wish to proceed to the degree of Ph.D. to apply for scholarships tenable in either the Institute of Advanced Studies, which is composed of the John Curtin School of Medical Research and the Research Schools of Physical Sciences, Social Sciences and Pacific Studies, or the School of General Studies, in which there are Faculties of Arts, Economics, Law, Oriental Studies, and Science.

A scholarship is awarded initially for two years but normally will be extended for the whole period of the course, usually three years. The basic scholarship allowance is £1165 per annum tax free. For scholars with appropriate qualifications in medicine the basic allowance is £1880 per annum.

Applications should reach the University by 30th September 1960.

Application Forms and further details about the scholarships and the work being carried out at the University may be obtained on request to the Registrar, The Institute of Advanced Studies, Australian National University, Box 4, P.O. Canberra, A.C.T.

Further information may be obtained from Mr. W. Spence, Grants and Scholarships Officer, room G29, Administration building.
SCHOLARSHIPS, FELLOWSHIPS, AND PRIZES (cont.)

Queen Elizabeth II Fellowships in the Physical and Biological Sciences:

Up to five fellowships may be awarded in December, 1966. They are open to Australian citizens, or citizens of the United Kingdom and Colonies ordinarily resident in the United Kingdom and who are not more than 30 years of age when applications close.

Candidates should have a Ph.D. degree or equivalent qualifications in one of the physical or biological sciences.

Stipend is normally $6,000 (Australian) per annum; but up to $7,000 per annum in special cases.

Application forms are obtainable from the Secretary, Queen Elizabeth Fellowships Committee, Prime Minister's Department, Canberra, A.C.T. by the 15th October, 1966.

Further enquiries may be made to Mr. W. Spence, Grants and Scholarships Officer, room G29, Administration building.

Frank Knox Memorial Fellowships at Harvard University 1967-1968:

Applications close with the Academic Registrar through the Grants and Scholarships office on the 3rd October, 1966.

Two awards are available.

The value of the Fellowships is $2,000 (American) plus tuition fees for school in which student is enrolled.

They are open to men and women now enrolled as students and who are British subjects or Australian citizens, and have recently graduated or are about to graduate from an Australian University in Australia.

There is no form of application but candidates should submit seven copies of a letter of application written on quarto size paper.

Further information may be obtained from Mr. W. Spence, Grants and Scholarships Officer, room G29, Administration building.

YOGA CLASSES

In response to a request by the University Union the Gita School of Yoga has indicated that one of their teachers could take a class at Monash on Fridays at 1 p.m. The class will be limited to 25 people and the course of ten weeks will cost $8 - city school cost is $15. Women staff members interested in taking part in these classes should ring Miss Pauline Cross, extension 2091, before Monday, 12th September.

RED CROSS BLOOD BANK

The Red Cross Blood Bank will be at the University on Monday, 19th September from 9.45 a.m. to 4 p.m. Appointments may be made by ringing extension 2108.

HOUSE FOR SALE

Four years old. 3 bedrooms, brick veneer (pink wire-cut), lounge with dining space, kitchen with dining section, tiled bathroom, separate shower recess, internal toilet, laundry; venetian blinds, light fittings, insect screens; quite close to Monash on main road with excellent bus service. Furniture could be left by arrangement. Price $11,600. Telephone - 546-4653.
CAR FOR SALE

Skoda Octavia Sedan, 1964, only done 6,000 miles, good condition, parts available. $1,000. Telephone 544-6340.

DEPARTMENTAL NEWS OF GENERAL INTEREST

APPLIED MECHANICS

The Engineering Research Colloquia series are continuing this year and listed below are the sessions scheduled over the next few months. Those wishing to obtain further details, please contact the departmental secretary.

October 19th - Mr. J.B. Agnew, Department of Chemical Engineering: 'Packed Tubular Reactors for Exothermic Chemical Reactions'.

October 28th - Mr. F. Lawson, Department of Chemical Engineering: 'Disproportionation of Stannous Oxide'.

November (Date to be announced later)

Dr. G.N. Patterson, Director of the Institute of Aerospace Studies of the University of Toronto, visited the University this month and also presented a talk on some studies in the field of transition aerodynamics.

CHEMISTRY

During recent months the following scientists visited the Department and have given lectures: Dr. I. Ross, Department of Chemistry, University of Sydney; Professor F.G.A. Stone, Department of Chemistry, Bristol University, U.K.; Professor A. Alexander, Department of Chemistry, University of Sydney; Professor G. Allen, Department of Chemistry, University of Manchester, U.K.; Professor N. Greenwood, Department of Chemistry, University of Newcastle-upon-Tyne, U.K.; Professor I. Kaufman, Department of Organic Chemistry, Munster University West Germany; Professor F.A. Cotton, Department of Chemistry, M.I.T., U.S.A.; Professor L. Woodward, Department of Chemistry, Oxford University, U.K.; Dr. P. Lions, Department of Chemistry, University of Sydney.

Professor R.D. Brown has been invited as an Australian guest speaker by the New Zealand Institute of Chemistry to its Annual Conference in Wellington. Professor Brown will spend three weeks in New Zealand.

Professor J.M. Swan recently visited North America in connection with his research activities in insecticides.

A large contingent from the Department attended the Royal Australian Chemical Institute meetings in Canberra. Several members of the party contributed papers.

FACULTY OF LAW

The following distinguished overseas lawyers visited the Law School during the month of August:

Professor Roy A. Ray, Professor of Law, Southern Methodist University, Dallas, Texas, U.S.A.

Professor Ingid Detter of Sweden, first visiting fellow of Newman College, University of Melbourne, under the Newman Fellowship Foundation. Professor Detter is acting Professor of Public and Private International Law in Uppsala University, and Associate Professor of International Law in Stockholm University, Sweden. She has the distinction of having been
DEPARTMENTAL NEWS (cont.)

sent by the Swedish Government as the only Swedish delegate to the Seminar on International Law held by the International Law Commission of the United Nations in Geneva. She has acted as Assistant Judge in the Stockholm Central Criminal Court, and has acted as sole judge in eight civil law cases in the High Court in Sweden. Dr. Detter will deliver a number of lectures on various International Law topics during her stay at the University of Melbourne, and in particular in the field of International Law organizations, an area in which she has specialized and published a number of writings.

A number of staff seminars have been held at lunch-times on Wednesdays during second term. Papers have already been delivered as follows: Mr. Rex Patkin, Teaching Fellow, "Exemption and Exclusion Clauses in the Law of Contracts"; Mr. P.W. Hogg, Senior Lecturer, "The Crown and Statutes in Australia"; Mr. R.A. Sundberg, Senior Teaching Fellow, "Conflict of Laws in Torts in Multi-State Transactions"; Professor Jackson "The Teaching of Common Law and Equity in the First Two Years of the Law Course".

MECHANICAL ENGINEERING

Dr. G.N. Patterson, Director of the Institute of Aerospace Studies of the University of Toronto, visited the Department on Tuesday, 2nd August, and discussed Transition Aerodynamics at an Engineering Research Colloquium.

MODERN LANGUAGES

Mr. R. Zatorski, Lecturer in Science Languages at the University of Melbourne has been giving lectures on Generative Grammars at the Linguistic Seminars on Tuesday evenings. These lectures have been well attended, not only by linguists, but also by interested persons from other disciplines.

Dr. A. Capell, Reader in Oceanic Linguistics, University of Sydney, visited Monash and Melbourne Universities as the guest of the Melbourne Linguistic Circle from July 10th to 13th. Dr. Capell gave three lectures at Monash to students of Anthropology, German, and Linguistics: "Mirror of Culture", (Anthropology students); "People and Language in time and place", (German historical Semantics); "Affix-Transference: A special language type in Australia", (Linguistic Students). He also gave an address entitled "Analysis of Fused Units" at a research seminar at the University of Melbourne for members of the Melbourne Linguistic Circle.

Professor Bodi returned from sabbatical leave at the beginning of July. This leave was spent mainly in Germany, and Austria. Professor Bodi also took part in conferences in Amsterdam and London.

Mr. Rodney Livingstone resigned from his position of Senior Lecturer and left Australia at the beginning of August. He took up a position as Lecturer in the German Department of Southampton University.

As in previous years a six weeks' pre-university course for students of Matriculation and Leaving classes was conducted by members of staff of the German Section. Enrolments included 180 students and 20 teachers.

High School students of German visited Monash in large numbers (250) to participate in a poetry reading competition.
DEPARTMENTAL NEWS (cont.)

Last month the German Section was visited by Professor Roy Pascal of Birmingham University. Professor Pascal gave public lectures as well as various seminars to members of the German staff and to Honours students of German. One of his seminars "Social Studies within a Modern Language Course" was followed by a lively discussion in which also some school teachers participated.

Professor Tisch of the University of Tasmania visited the German Section and gave papers on Baroque Lyric to students and conducted a research seminar for Monash and Melbourne members of staff on "Milton-reception in German speaking countries."

PATHOLOGY

Professor W. St. C. Symmers, Professor of Morbid Anatomy and Histopathology, Charing Cross Hospital Medical School, visited the Monash Medical School, Alfred Hospital, where he gave a departmental seminar on "Medical exotica" and delivered a faculty lecture entitled "Deep-seated fungal infections."

Dr. S.E. Keidan, paediatrician from Liverpool and an authority on leukaemia and cancer in children, visited the Department in August.

Professor R.C. Nairn is visiting Stockholm for the Pugwash meeting on Early Warning Methods in Biological Warfare. He will also attend the meeting of the British Association for Cancer Research in Nottingham and will visit Vienna to explore the technology of quantitative and automated immunofluorescence with microscope manufacturers.

Dr. T. Ghose and Dr. A.R. McGiven presented papers at the Eleventh Annual Scientific Meeting of the College of Pathologists of Australia in Sydney.

PHYSICS

As a continuation of the recently held discussions on postgraduate training, a Wednesday afternoon meeting was held in the Department and was attended by about seventy people. Informal talks were given by members of the Department on postgraduate education - in the U.S.A. by Dr. H. Morawitz, in Germany by Dr. J.M. Spaeth, in Italy by Mr. G.J. Troup, and in Oxford (as distinct from the United Kingdom) by Dr. G.V.H. Wilson.

The lively discussions which followed had to be broken off for the weekly research colloquium at 4 p.m. However, those who had only recently been introduced to the Australian scene invariably commented on the relative neglect of postgraduate training as compared with the obvious efforts devoted to undergraduate teaching. These open and frank discussions have much to commend them and have proved to be extremely valuable in providing guides for future assessment of teaching programmes.

Dr. A.P. Roberts has been attending, by invitation, a Summer School in Peking. Although full details are not available, we have learned that he has shaken the hand of Chairman Mao (before or after total immersion is not stated). We also understand that Dr. Roberts is not entirely convinced by the procedure of determining the equations of mathematical physics by application of Chairman Mao's thought.

Dr. Alex McLaren has left for a period of study leave. He will first be working in the University of California with Professor Griggs of the Institute of Geophysics. For the past two years Dr. McLaren's group has been collaborating with
DEPARTMENTAL NEWS (cont.)

Professor Griggs in studies of the plastic deformation of quartz and quartz minerals. Dr. McLaren has pioneered the development of electron microscope techniques for the examination of minerals, and his group has been able to investigate directly for the first time the fundamental solid state processes responsible for the deformation of minerals. It is hoped and expected that personal contact with the Californian group will lead to further extension of this most interesting and far-reaching new field of research.

Dr. McLaren will spend the second half of his study leave at Bristol University where he will work with Dr. Lang, of the Department of Physics there, who developed the Lang X-ray Camera for the investigation of defect structures in solids. The generosity of the Ian Potter Foundation recently made it possible for this Department to obtain a Lang Camera, and in the last few days the installation of the camera, with its micro-focus X-ray generator, has been completed. The performance of the equipment has exceeded our expectations, and it now appears possible to obtain photographs of the internal structures of solids at the rate of one every six hours.

There have been significant developments in the low temperature facilities of the department. A new "refrigerator," designed by Dr. Rod Donaldson, is now being commissioned. The working fluid is the rare (and expensive) form of helium gas known as helium 3, and the apparatus is capable of producing temperatures in relatively large experimental volumes down to 0.3 degrees above absolute zero.

Dr. Geoff. Wilson and his group are at present hotly engaged in even colder pursuits with the objective of achieving temperatures of a few thousandths of a degree above absolute zero which they require for their investigations of the properties of radioactive nuclei.

It is appropriate to recognize the debt the scientist owe to the technical staff of the Department who are now able to produce equipment which was unknown in Australia as recently as two or three years ago.

Mr. Gordon Troup's book, "Masers and Lasers", is to appear in a German edition. The publisher is Oldenburg Berlag. It has already been translated into Russian.

SURGERY

Recent distinguished visitor to the Department was Sir John Bruce, Professor of Surgery, Edinburgh University.

Professor Dudley delivered the Malcolm Gillies Memorial Oration at the Royal North Shore Hospital, Sydney, on 8th August. His title was "The teaching hospital of the 1970's".

Between 27th September and 6th November Professor Dudley will be overseas in his capacity as planner of the Monash Medical Centre. While overseas he will deliver the quarterly lecture at the Royal College of Surgeons, Edinburgh, in October. His subject will be "Surgical convalescence."

Alfred Hospital has established a civilian medical team in Vietnam. This is being manned by volunteers from among the hospital staff. Both Professor Dudley and Mr. Nayman have undertaken to serve a three months term with this team in the first half of 1967.

Dr. John Mainland has been appointed Vice-President of The Society for Medical and Biological Electronics.
Another problem which is looming up for those who control academic life and the resources which are necessary to nourish it is that they will have to consider very seriously the relations of the pursuit of knowledge and of the application of knowledge. Perhaps I can point my remarks by confining them to scientific matters. The current scientific opinion in Great Britain has been moving strongly to examine the intellectual relationships between so-called pure scientists and applied scientists, or technologists as they are sometimes called. The view is gaining ground that on the intellectual plane no sharp distinction should be drawn between those who pursue so-called fundamental science and those who are applied scientists. I suppose that one of the achievements of modern times which has most caught public fancy throughout the world is the endeavour to explore outer space. Marvellous feats have been performed, feats demanding gigantic organization, the mobilisation of the best talent a country has to offer and the overcoming of innumerable technical difficulties. The results are seen in such almost incredible performances as being able to land a substantial vehicle on a predetermined area of the moon and of taking close-up pictures of the distant planet Mars and transmitting them back to earth. It is commonly assumed that these remarkable exploits are the result of the labours of pure scientists, but they are essentially made possible by the activities of applied scientists, principally of engineers with a wide variety of training. The scientific principles involved were for the most part discovered long ago; they have now been developed by some of the most active minds of this century. "It is perhaps a little depressing to know that the Regius Professor of Modern History at Oxford is reported as saying - 'We don't want a school of plumbing here. A qualitative change of this sort would gradually lower the quality in other fields.' This remark was called forth by a recent report which was urging Oxford to pay more attention to applied science. In this day and age there is no room for academic snobbery of this kind and it is particularly deplorable in a country like Great Britain which is now so largely dependent for its economic recovery upon having a Civil Service that understands technology and technologists who can serve industry. "But governments and peoples are, I believe, going increasingly to judge universities by what they do rather than by what they imagine themselves to be. Pointed questions are probably going to be asked as to what social purposes they serve and academic societies will not be entirely free to pursue what they wish to. The easiest social purpose to quantify is the number of undergraduates who are turned out and who can undertake, in their future careers, some of the skilled work of a community. But it would in my opinion be very dangerous to let this be the dominating criterion by which universities are judged. Perhaps I can make clear what I mean by saying that, when we speak of the excellences of Harvard University, we do not think first of all of its undergraduate teaching - we think of the splendid research in nearly every field that is carried on in that great institution and of the marvellous staff they have assembled. However, it can be said with considerable assurance that in general where research is good, there undergraduate teaching will certainly be good. The national status of a university may be to a certain extent determined by the excellence of the teaching for a first degree, but in international terms this has only limited relevance. Having said that I must not be taken in any
sense to be underestimating the great national importance of first degree teaching nor the essential services that those involved in such activities render to the community. Nevertheless, as I have said, the counting of undergraduate heads as a means of estimating the efficiency of the work of a university has its dangers, for it is easy for government administrators to count the heads of those who are being given their first degree and to omit just contemplation of the manifold and vastly important activities of those who contribute to knowledge and to advanced teaching in other ways. This has happened to a certain extent in Great Britain in the recent past. At the present time endeavours are being made to estimate the cost effectiveness of the activities of universities. in other words to import what has been a successful technique in estimating the efficiency of commercial and so-called defence enterprises into a consideration of the effectiveness of those devoted to intellectual studies either by teaching or research or both. One absurd example of this has been that in England under the auspices of the University Grants Committee an enquiry has been inaugurated to try to get university teachers to allot in specific terms, and separately, the amount of time they devote to study, to teaching, and to research. The conception here is that teaching, learning and research are activities which have little to do with one another for anyone who has been in the academic field this division is on the face of it not very practical. The information is required in order to arrive at some estimate of the efficiency of universities, as judged by the cost per head of turning out an undergraduate. The bogus figures produced by such an enquiry will undoubtedly be used in England in allocating resources for all university purposes. I trust that in this country more realistic ways will be found of assessing the achievements of the universities."

Copy for the October edition of the Reporter closes on Tuesday, 20th September.