



THE AUSTRALIAN NATIONAL UNIVERSITY

*news*

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## PLATES

ILLUSTRATIONS TO ARTICLE BY W. E. H. STANNER

## NEWS AND NOTES

As will be generally known, the association of the University with Canberra University College will come into being on 30th September this year. The Government accepted in large part the joint submission of the University and the College, and the Australian National University Act 1960 (which is in effect an amending act of the original Act of 1946) passed through both Houses of Parliament and received the Royal Assent on 8th April, 1960. The main clauses of the Act reconstitute the University into two sections: the University as it has been known up till now will become the Institute of Advanced Studies and will incorporate the existing research schools, and the College will become the School of General Studies, which will be responsible for degree courses up to and including M.A. courses. Arrangements are to be made for courses leading to doctoral degrees to be undertaken in either part of the University.

An article by Professor Partridge which appears on page 13 explains the meaning of association in detail.

### THE VICE CHANCELLOR

On 23rd March, 1960, the University regretfully announced the resignation of Sir Leslie Melville as Vice-Chancellor. Sir Leslie will take up the appointment of Chairman of the Tariff Board in October of this year.

### THE NEW VICE-CHANCELLOR—AN APPRECIATION

I write this note as one of Professor Huxley's staff who joined the Physics Department in the University of Adelaide some eighteen months after his arrival in 1949 to occupy the Elder Chair of Physics, and if I restrict myself to these aspects of the man, and of his work, with which I am familiar I shall do less than justice to his whole field of activities which in recent years extended in widening circles beyond the University.

Professor Huxley inherited a department which suffered from the strains of the years immediately following the war, and which especially needed an invigorating leadership in post-graduate work. This he supplied in good

measure, and with a valuable asset in the form of a small group of capable and enthusiastic young men, he was able to develop those researches into the physics of the upper atmosphere and of the behaviour of low energy electrons in gases which have since been so eminently successful that it is unnecessary to write at length upon the topic. Apart from providing the direction and inspiration for this work his personal contribution is recorded in a number of papers concerned principally with laying down the theoretical bases of the investigations. As a result of this work, and in recognition of other personal qualities he has acquired a status which can be briefly indicated by referring to his appointments as Secretary for Physical Sciences of the Australian Academy, Chairman of the National Standards Commission, Chairman of the Radio Research Board, National delegate to the Committee on Space Research, and Chairman of a Committee on Space Research under the Auspices of the International Union of Radio Science.

While he was occupied with the researches already mentioned he was also generous in his support of other work in his department and I cannot refrain from acknowledging with gratitude his readiness to divert to my own work a substantial part of the slender resources available.

Apart from his scientific work Professor Huxley served the University of Adelaide in many ways and especially, by a display of integrity and strength of character, did it yeoman service in a time of internal stress, now happily passed. This won him very great respect from all his colleagues and the gratitude of most, so that his departure from that University left it with an unusual sense of deprivation.

These personal characteristics of his which served the University at large so well were always apparent to all who worked with him. Forthrightness, intolerance of foolishness and humbug, a quick temper quickly cooled leaving no residue of malice, a willingness to pursue through all vicissitudes any course of action which he considered right, all these were to be

found in him. He is moreover a cultivated man whose interests range far beyond the confines of his own specialised studies, the antithesis of the still not uncommon but grievously erroneous view of the scientist as an intellectually strait-jacketed oddity. There is, then, an admirable array of qualities, fortified by much experience of University and other affairs, in the man about to take office as the Vice-Chancellor of the Australian National University.

I am sure that my colleagues would wish to join me in expressing the hope that Professor Huxley will enjoy success and happiness in the years to come. No doubt these years will bring difficulties, but also, the satisfaction of great tasks well performed.

—S. G. TOMLIN

### CONVOCATION

Members of Convocation in New South Wales met on the 29th April, and formally constituted themselves into a Group. Sir Norman Gregg and Dr. Langford-Smith were elected Chairman and Secretary respectively. A pleasant evening was arranged which included a buffet supper and an address by Professor Sawyer on the forthcoming association of the University and Canberra University College.

The Melbourne Convocation Group is arranging, in co-operation with the Melbourne University Extension Committee, to sponsor public lectures in Melbourne by members of the Australian National University academic staff. It is hoped that the first of such lectures will be given in July.

One of the results of association with the College will be an increase in the membership of Convocation. The two groups already formed will benefit considerably from this and it may now be feasible to form groups in other Australian cities and possibly in places overseas.

### THE TRICENTENARY OF THE ROYAL SOCIETY

The Chancellor, Lord Bruce of Melbourne, represented the University at the recent Tercentenary Celebrations of the Royal Society.

### NEW APPOINTMENTS

No appointments have been made to Chairs since the last issue of the "News", but one new Reader has been appointed, namely Dr.

B. Westerlund as Reader in Astronomy.

Dr. Westerlund is a Swede and has been Astronomer in charge of Uppsala University Southern Station at Mount Stromlo since 1957. Dr. Westerlund was educated at Uppsala University and before coming to Australia held posts in that university's Astronomical Observatory in Sweden. In a distinguished career he has had wide experience of Astronomical research in observatories in Europe, Canada and the U.S.A. Dr. Westerlund, who is married, has been an Honorary Fellow of the Australian National University since 1958.

### HONOURS AND AWARDS

The Walter Burfitt Prize of the Royal Society of New South Wales for 1959 has been awarded to Professor F. J. Fenner, M.B.E., F.R.S., Professor of Microbiology.

The Prize is awarded every three years and is made to the research worker whose contributions published during the previous six years are considered by the Society of the highest scientific merit; account is taken only of investigations described for the first time and carried out by the author mainly in Australia and New Zealand.

The Prize was established as the result of a gift to the Society by the late Dr. W. F. Burfitt of Sydney and was augmented later by a gift from Mrs. Burfitt. The Royal Societies and the Universities of the various States and of New Zealand were invited to submit the names and publications of those they deemed worthy of consideration.

Towards the end of 1959 the Chemical Society of London instituted a "Chemical Society Lectureship" for the purpose of encouraging the study of chemistry in Australian Universities by a series of lectures on topics in which active research is being pursued. The Chemical Society has appointed Dr. F. P. Dwyer, Reader in Biological Inorganic Chemistry as the first lecturer. The lectures for 1960 are being given in Melbourne, Hobart, Adelaide and Perth, and began in May.

Two senior members of the staff have been honoured by other Universities: Professor Trenchard received the degree of D.Litt. *honoris causa* from the University of Adelaide in May, and Professor Sir Keith Hancock the same degree from the University of Birmingham during his present visit to England.

Two members of the staff have been elected Fellows of the Academy of Science: they are Professor Le Couteur, Professor of Theoretical Physics and Dr. Fazekas de St. Groth, Reader in Virology in the Department of Microbiology.

Professor Sir Mark Oliphant has been elected an Honorary Member of the Royal Society of New Zealand. Honorary Membership is confined to thirty eminent scientists throughout the world.

Mr. A. L. G. McDonald was awarded the O.B.E. in the Birthday Honours List.

### A. L. G. McDONALD IN THE UNIVERSITY LIBRARY

Chinese books are intractable material for a western librarian. He cannot read the script, the author is often unknown, the title of the book, when translated, gives little or no clue to its contents or classification. What does one do with a book called the "Collection of the Noble Ear"? Moreover, in 1950 the purchase of such works presented a number of tiresome difficulties. They could only be obtained in Hong Kong; they had to be paid for by methods which are not readily welcome to the accountant; bills and invoices were as unintelligible as the books themselves. None of these matters troubled Mr. McDonald when confronted with the suggestion that a member of the academic staff, with no previous experience of buying books in large numbers, should be turned loose in Hong Kong with ample funds. This incident of the early days of the Australian National University Library gives the measure of the first Librarian and the service he has rendered to us all. The Library, which has been built up since that time is an achievement which is particularly significant in a country far from the accumulations of rare and old books, where it is not possible to snap up the valuable item as soon as its existence is known. Just as distance from other centres of learning makes the library more important to an Australian university than it is in smaller countries, so the distance from Europe, Asia and America makes the acquisition of the books slower and harder than in the ancient centres of civilisation. Under these circumstances it is fortunate that Mr. McDonald is a patient man; he has a patience which permitted him to sleep at nights, soundly we hope, for seven long years while

his precious collection remained housed in a flimsy firetrap surrounded by acres of inflammable dry grass. His patience could soothe, if not wholly allay, the frustration of some scholar or staff member who needed, urgently, a book out of print for sixty years and published in a country now behind the Iron Curtain: and the book would arrive, by dint of diligent enquiry and the personal search of the Chief Librarian. As a result the range and depth of the material assembled for the social sciences and humanities astonishes the visitor and delights the user, even if it is still far from satisfying the man responsible for this great enterprise.

—C. P. Fitzgerald

The library is the heart of a research institute. For the natural scientist, the most important part of the library is the collection of periodicals, for it is here that he publishes his own results and finds out what his colleagues have done or are doing.

One of the major problems which confronted those who set about the establishment of great schools of research in the Australian National University was the provision of back sets of the periodicals which are vital for the experimental scientist. At the time of the establishment of the University there was a great demand for such periodicals, both to replace those destroyed during the war and to cope with the great expansion of interest in the natural sciences in the post-war era.

This task fell squarely on the shoulders of our Emeritus Librarian, Mr. A. L. G. McDonald, when he accepted the position of Librarian of the Australian National University in 1948. As the development of the University proceeded, it became apparent that the library would consist of at least three sections; the Main Library, the Oriental Collections, and the Medical School Library. Others have written of Mr. McDonald's achievements in the main Library and in the Oriental Collection. Speaking of the Medical School Library, I can say that in the face of fierce international competition for back runs of periodicals Mr. McDonald was able to build up a collection in the biological medical and chemical sciences that gladdens the heart of every worker in the fields covered by the John Curtin School of Medical Research.

A measure of his achievement is the fact that questions of the purchase of back runs of scientific periodicals no longer arise, even when new disciplines are incorporated into the School.

Not only did Mr. McDonald build up a splendid collection of books for the Medical Library, but he has had the satisfaction of seeing them housed in dignified quarters in which it is a pleasure to work.

But a library is not only a collection of books and periodicals, if it is good, it must be a collection which is accessible. In this respect also the Medical School Library is, unequivocally, first class. All the books and periodicals are on the open stacks, and the library is open to research students and staff members day and night for seven days a week.

In the natural sciences most of us spend the greater part of each day engaged in manual labour, sometimes tedious, sometimes requiring meticulous care, but rarely demanding great intellectual effort. Intellectual effort comes in design and interpretation, rather than in performance of the experiment itself. Because of our preoccupation during much of the working day with manual labour at the bench, it is important that we should be able to have quick access to the library during the short breaks which occur in the course of the day's work in the laboratory. For this the Medical School Library is ideally situated, readily accessible to all workers in the School within less than a minute.

For all this, we in the John Curtin School of Medical Research owe a debt of gratitude, of which we are deeply conscious, to the man who, without fuss or bother, made it possible; our Emeritus Librarian, Mr. A. L. G. McDonald.

—F. J. Fenner

The rapid acquisition of the essential working library for the physical sciences was a necessary preliminary to the establishment of researches in this field. This was particularly true of the periodical literature, where complete back runs of a very large number of journals must be available. The task of assembling them was especially arduous, because of the unprecedented expansion of scientific endeavour throughout the world, and the consequent heavy demand on back numbers of periodicals which had originated when science was a leisurely oc-

cupation of relatively few. Mr. McDonald seems to have had a great flair for detection and pursuit of such material for, despite all the difficulties, he acquired everything we needed. What is more, his deep knowledge of libraries used by research workers, enabled him to anticipate our needs and fill many gaps arising from our forgetfulness or our ignorance.

The number of books, as contrasted with periodicals, required by a scientist, is less than that needed by workers in the social sciences and humanities. Nevertheless, this number is substantial, and must contain classical works in the natural sciences which are very difficult to obtain. Here, the judgement was almost wholly Mr. McDonald's. Seldom, if one of us asked that such a book be acquired, did we find that it was neither already on the shelves or on its way from abroad. His uncanny instinct guided him to rapid collection of almost all that we required, and I have yet to find that he bought material which we did not regard as essential. This same instinct has been of the utmost importance to us in the years since the library was established, for important new books arrive miraculously, often before the reviews have appeared and we have decided that we want them. In all this, of course, Mr. McDonald's early training as a man of science has been invaluable.

We are grateful too, to Mr. McDonald, for his desire to see his books used. Too many librarians regard their collections so jealously, that the workers for whom they exist find all kinds of obstacles placed in their paths. Here Mr. McDonald has built a simple and flexible system which has satisfied everyone, and this is an achievement of immense value to a University such as ours.

—M. L. Oliphant

## FIRE IN THE COCKCROFT BUILDING

In the early morning of the 6th July fire broke out in a part of the Cockcroft Building of the Research School of Physical Sciences. The cause of the fire is not known and prompt action by the Canberra Fire Brigade helped to confine the damage to part of the top two floors of the east wing of the building.

About twenty staff members had to be moved as nine rooms were rendered uninhabitable and valuable equipment was destroyed: by far the most serious loss to the work of the University was the destruction of irreplaceable drawings and records amounting in the case of one research worker to the loss of twenty years' work.

It is estimated that repairs to the building will be in the region of £40,000: at the time of going to press no accurate estimate can be made as to the value of equipment destroyed.

### THE McDONALD ROOM IN THE NEW LIBRARY

In recognition of Mr. A. L. G. McDonald's outstanding achievement as the University's first librarian, it has been decided that a room in the new library building should be named the McDonald Room. This room will be used for display and exhibition of books, manuscripts and other objects associated with learning and with culture.

This room will also contain a collection of books to be known as the McDonald Collection. It will include early editions of outstanding works in the various fields of human endeavour, examples of fine printing and binding and other works of academic interest and value of a kind not normally purchased from library funds.

An endowment fund is being established, the annual income from which will be used to make purchases for the collection. It is hoped that direct gifts of books and other suitable items will also be made to the collection.

A personal presentation of a facsimile copy of Phillip's "Voyage to Botany Bay" has already been made to Mr. McDonald as a tangible memento of the University's appreciation.

### LIBRARY STAFF

The University is currently advertising the posts of Librarian and of Curator of the Oriental Collections. The Librarian will be appointed in succession to Mr. A. L. G. McDonald, but will be responsible both for the University collection and for the collection of the present Canberra University College. Similarly, the Curator will be responsible to the Librarian

for the Oriental Collections of both institutions. Arrangements have been concluded with the National Diet Library in Tokyo by which the Library will second one of its senior officers to the University for three years' full-time service to assist in the cataloguing of the Oriental Collection. It is expected that Mr. Yoshinbu Nakada will arrive about August 1960.

### NOTE ON THE ASTRONOMICAL NATURE OF TWO CEILINGS IN THE MEMORIAL BIBLE HOUSE, CANBERRA

In December 1959 Professor B. J. Bok, Director of the Mount Stromlo Observatory, received from the British and Foreign Bible Society in Canberra a request for aid in preparing facsimiles of astronomical constellations for two ceilings of the newly built Memorial Bible House. During early 1960, under Professor Bok's supervision, plans were prepared by two of the Observatory's Vacation Scholars; as a result, the new building's two main, circular ceilings were scattered with small star shapes made by Mr. W. Guard, who positioned them to represent regions of the Northern and of the Southern night skies. To aid viewers in distinguishing the constellations, charts of the regions of the sky concerned were drawn by Helen Bailey. These charts have been framed, and each now hangs on a wall adjacent to the appropriate ceiling.

### UNIVERSITY HOUSE

Dr. R. R. Brown and Dr. E. K. Inall were nominated to fill the Elective Fellowships falling vacant on 15th August. As theirs were the only nominations received, they were declared Elective Fellows for the period ending 15th August, 1962, Dr. Brown for his second time.

### Membership

In view of the forthcoming association of the A.N.U. with the Canberra University College, the University House Statute (20) has been amended to provide for the election of Fellows by members of or above the grade of Research Fellow or Lecturer, and that members of the College staff may be eligible for election either as Officials or Elective Fellows.

Rules of Membership have also been amended so that the following persons will be eligible for Membership of the House:

- (a) Members of the Council of the University.
- (b) Persons holding full-time academic appointments of or above the grades of Research Fellow, and Lecturer of not less than one year's duration.
- (c) Senior administrative and senior library officers.
- (d) Full-time Research Students of the University enrolled for the degree of Ph.D.
- (e) Graduates holding a doctoral degree of the University.
- (f) Such other persons as may be invited by the Master and Fellows.

Any existing member of University House may continue to be eligible for membership so long as he remains in the employ of the University.

A new category of Visitor Membership has been created and may be extended to any person attached to the University as a visiting research worker or visiting research student. The privileges of Visitor Membership have been extended to Professor R. D. Russell, Dr. C. Gertzel and Professor L. H. Aller.

The old category of Associate Membership has now been dropped.

### Activities

Second Term Commencement Dinner was held on 14th June and attended by over 100 members. After dinner, Professor J. H. Franklin of Brooklyn College, a distinguished American historian, spoke informally on tertiary education in the United States. A lively and stimulating discussion followed.

The House Library has received a further generous donation of French Books from the French Embassy.

The second gift of books, prints and posters from the British Council was formally handed over by the High Commissioner for the United Kingdom, Sir William Oliver.

### SPORT IN THE UNIVERSITY

There has been a growth of sporting activity in the University in recent years. This development is most noticeable in University House where considerable numbers of residents

are attracted to tennis, cricket, football, squash, table tennis and basketball. It is tempting to attribute this to a change either in the age structure or in the recreational pursuits of the University community. However the statistics of the last five years (published in the Annual Reports of the A.N.U.) reveal no disproportionate increase in the number of members of the University who are at an age (say twenty-five and under) where they are susceptible to sport. Nor is there any indication of a decrease in the number of those who prefer cultural forms of recreation. The growth of sporting activity is in fact largely the result of the general expansion of the University, which has led to increased participation in all forms of pastime.

Apart from the increasing size of the University the most important reason for the obtrusion of sporting elements has been the merge with the Canberra University College. This has already precipitated the formation of a combined University Rugby Club which has attracted members from within the present National University who had either retired from the game or had belonged to outside clubs. It is more likely that other clubs drawn exclusively from the enlarged University community will soon be formed; and that these will have a similar effect in both encouraging and co-ordinating the activity of University sportsmen. It is assumed that the governing body of the joint University will not be long in sanctioning the provision of playing fields and other facilities for these groups.

Despite these trends towards unification and cohesion the framework and character of University sport in Canberra will always differ from the pattern which is discernable in other Australian universities. In the first place the high proportion of resident research workers in the University population will ensure that there will continue to be a strong social as well as competitive emphasis in university sport, above all in the more casual tennis-playing, squash playing and cricketing groups. This will almost certainly lead to the formation of independent groups or to the continuation of existing ones which are informal in structure and not rigorous in their demands on their members' time.



A further unusual feature of university sport in Canberra may be that the competitive teams will reflect the ratio between the comparatively small undergraduate body and the large group of research students who are still young enough to take part in regular and strenuous games. The desirability of this from the point of view of the undergraduates would be questionable if it meant that they were perpetually excluded from teams by older and more experienced players. But the seriousness of this problem will depend upon whether an appreciable number of research students will continue to have enough time or energy to devote to regular competitive sport.

No matter what shape or character university sport eventually assumes, it is clear that it will continue to become a more prominent feature of University life.

#### ROTHMAN'S UNIVERSITY ENDOWMENT FUND

As has been reported in the press, Messrs. Rothman's of Pall Mall (Australia) Limited has established a Trust to which it will pay £12,500 per annum for ten years for:

1. Fellowships to graduates of any Australian university selected for higher study and research in Australia or overseas in mathematical, physical, medical, biological, agricultural, veterinary, engineering, social or other sciences and/or
2. grants to Australian universities or to organisations or funds affiliated or sponsored by one or more Australian university for the provision or encouragement of higher education or research in any one or more of the said sciences
3. grants to Australian universities for assistance in the provision of adequate buildings and facilities for the encouragement of higher education or research in any one or more of the said sciences.

The Trustees have not yet indicated the form in which requests for grants should be made.

Academics throughout Australia will welcome Messrs. Rothman's initiative in setting up such a Trust and it is to be hoped that other large concerns will follow their example.

#### THE J. G. WOOD MEMORIAL PRIZE

The University of Adelaide proposes to establish a J. G. Wood Memorial Prize or Scholarship for students in Botany.

J. G. Wood occupied the Chair of Botany in Adelaide from 1935 until his sudden death in 1959. He was a member of the Interim Council of the Australian National University from 1948-51 and a member of the Council from 1952-55. Wood was also closely concerned with the Academy of Science, C.S.I.R.O., and the Forestry School.

The University of Adelaide consider it fitting that Professor Wood's activities in the field of biological science be commemorated by the establishment of this prize in his name and they are asking colleagues and associates to contribute to this purpose.

Contributors are asked to make their cheques payable to the "University of Adelaide": the sum given is deductible for income tax purposes. Contributions should be sent to H. B. S. Womersley, Department of Botany, University of Adelaide.

#### THE UNIVERSITY ART COLLECTION

Mr. W. Boustead of Sydney has been appointed by the University to catalogue and maintain the University's collection of pictures.

Readers of the News will be aware that a collection is steadily being built up under the guidance of Sir Daryl Lindsay (see Vol. II No. I.).

#### PERSONAL PROFESSORSHIPS

The Council has approved the creation of Personal Professorships as a means to recognise outstanding performance in research. Such recognitions will only be given in special cases and on rare occasions; it will usually only be given to persons already on the University staff, though appointment by invitation to others is not precluded. As implied by the title, such a Professorship is personal to the holder and the post will not be filled again on the resignation or retirement of the holder. A Personal Professorship will not therefore be referred to as a Chair.

### THE STUDENTS' ASSOCIATION

The Students' Association have decided to preserve their autonomy after association with the College. Students reading for Doctoral De-

grees through what will become the School of General Studies will be eligible to join the association which will be known in future as the Research Students' Association.

Wood proposed the Chair of Botany in Adelaide from 1875 until his death in 1891. It was a position of high standing in the University of Adelaide. Wood was also a member of the Council of the University of Adelaide from 1877 to 1887. Wood was also a member of the Council of the University of Adelaide from 1877 to 1887.

The University of Adelaide considers it fitting that Professor Wood's activities in the field of biological science be commemorated by the establishment of this post in his name and they are asking colleagues and students to contribute to this purpose.

Contributors are asked to make their cheques payable to the University of Adelaide, the sum given is deductible for income tax purposes. Contributions should be sent to H. B. S. Wood, Department of Botany, University of Adelaide, Adelaide, South Australia.

### THE UNIVERSITY ART COLLECTION

Mr. W. Bennett of Sydney has been appointed by the University to catalogue and maintain the University's collection of pictures. He is of the view that a collection is rapidly being built up under the auspices of Sir David Fisher (see Vol. II, No. 10).

### PERSONAL PROFESSORSHIPS

The Council has approved the provision of personal professorships as a means to recognize outstanding performance in research. Such recognition will only be given in special cases and on recommendations it will usually only be given to persons already and the University staff through appointment by invitation to other is not precluded. As implied by the title such a professorship is personal to the holder and the post will not be filled again on the resignation or retirement of the holder. A personal professorship will not therefore be filled by a staff member who is not

of the University of Adelaide and it is intended that the post should be held by a person of high standing in the University of Adelaide. Wood was also a member of the Council of the University of Adelaide from 1877 to 1887. Wood was also a member of the Council of the University of Adelaide from 1877 to 1887.

### ROTHMANS UNIVERSITY ENDOWMENT

It has been reported in the Press (Melbourne) that Mr. R. H. Rothmans (London) has established a fund to which he will pay £12,500 per annum for ten years.

Following the tradition of an Australian university school for higher study and research in Adelaide, it is proposed to establish a school of biological and medical research, engineering and other sciences and to grant to Australian universities or to institutions or funds affiliated or associated with an Australian university, for the provision or improvement of higher education or research in any one or more of the following fields: (a) biological and medical research; (b) engineering; (c) other sciences; (d) research in any one or more of the above fields. The Council will be pleased to receive suggestions for the provision of such grants and facilities for the improvement of higher education or research in any one or more of the above fields. The Council will be pleased to receive suggestions for the provision of such grants and facilities for the improvement of higher education or research in any one or more of the above fields. The Council will be pleased to receive suggestions for the provision of such grants and facilities for the improvement of higher education or research in any one or more of the above fields.

## Association with Canberra University College

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In December last, the Prime Minister announced his Government's decision that the Australian National University and the Canberra University College should be amalgamated, and he asked the governing bodies of the two institutions to prepare a plan of amalgamation for the guidance of the Government. The discussions between the two Universities were completed in February; the proposals jointly submitted by them were acceptable to the Government; and the legislation to establish the new university (The Australian National University Act 1960) was passed by the Commonwealth Parliament in April. The amalgamation will take effect from 30th September, 1960.

The problem of ultimate relationship between the two institutions in Canberra has been under discussion for some years. Canberra University College ever since its establishment in 1929 (two years after the transfer of the seat of government from Melbourne to Canberra) had been associated with the University of Melbourne: the association provided for the College to prepare students for examinations of that University in the Faculties of Arts, Commerce and Law and for the university to award degrees. This was always intended as a provisional arrangement, and for some time the University of Melbourne has wanted to end its responsibility for the working and the development of the College. The College itself has grown very rapidly since the end of World War II by the end of 1959 a strong full-time teaching staff had been recruited, including a strong professoriate, and teaching leading to Melbourne degrees was being provided in five subjects in the Science Faculty in addition to the three Faculties mentioned earlier. The College has developed important policies of its own for future development; e.g., with the special financial assistance of the Commonwealth Government, a School of Oriental studies was rapidly being created. By 1959 not only had it become inconvenient for the University of Melbourne to continue its responsibility for Canberra University College, but the expansion and

the maturity of the College made it onerous for it to continue working under the tutelage of another University, profitable as the association had been throughout the life of the College.

The alternatives were either that the Canberra University College should be established by the Commonwealth Government as a full, independent, degree granting University, or that it should be associated in some way with the Australian National University which had been created by the Commonwealth Government in 1946 as a research and post-graduate university. The Act of the Commonwealth Parliament by which the University was established provided for the possibility that the University might at some time absorb the College; and, until 1957, a majority of the academic staff of the College had hoped that the future of their institution would be as one of the Schools of the National University. However, in 1957, after protracted and sometimes difficult discussions, the academic body and the Council of the Australian National University decided against absorption of, or formal association with, the College (informal academic relations were already growing apace); it was the opinion of the majority of the academic body especially (although by no means a unanimous opinion) that the University would develop best, and make its best contribution to Australian academic life, by preserving its character as an exclusively research and post-graduate institution; the four Research Schools of the University (the John Curtin School of Medical Research and the Research Schools of Physical Sciences, Social Sciences and Pacific Studies) had by no means consolidated themselves or established their reputation; and it seemed to many members of the staff of the University that it might easily prejudice the success of the very bold and imaginative conception which had led to the creation of the University if the authorities of the University had to cope also with the problems of a rapidly growing undergraduate university. There were other weighty reasons why association at this stage might be undesirable; e.g., the A.N.U. was a

national institution, drawing its students from the whole country (and many from abroad, Europe, New Zealand, Asia and America), and particularly dependent for its ultimate success upon the close co-operation it could cultivate with all the Australian universities. The College, on the other hand, might hope to expand and flourish as a regional university, serving the city of Canberra and the area of New South Wales of which Canberra might become the academic centre. For these and a number of other reasons, the academic body of the National University took the view that the interests of both institutions might be better served if they were not placed under a single governing body, but continued as separate universities. The College came to the same conclusion; and the advice tendered to the Prime Minister by both institutions was against amalgamation.

However there were obvious and serious difficulties, political, financial and academic, about the growth of two quite independent universities in a city as small as Canberra—and one whose growth and capacity for absorbing Commonwealth money is watched so jealously by other Australian governments and capital cities; therefore the Prime Minister, fortified by the advice of Sir Keith Murray and the Murray Committee, and also by that of the newly established Australian Universities Commission, resolved in favour of amalgamation. The Government's decision having been announced, the difficulties of the amalgamation did not prove to be very formidable, and, in the discussions between the two bodies, the constitution of the new University was worked out with great speed and in considerable harmony.

The aim of the constitution is to provide for a single government while preserving as far as possible the integrity of the two parts of the university. The Governing Body will be a Council of 38 members, including persons appointed by the Governor-General and representatives of the two Houses of the Commonwealth Parliament, the teaching staffs of the two parts of the university, the students and Convocation. The four Research Schools of the existing Australian National University will constitute an Institute of Advanced Studies; Canberra University College will become the School of Gen-

eral Studies within the University. The Institute and the School will be under the academic governance of Boards consisting mainly of the heads of departments, but three representatives of the Board of the School will be members of the Board of the Institute and *vice versa*. The Act provides also for a Professorial Board of which all Professors of the university will be members, but it is not intended that this should become an important organ in the government of the university; the expectation is that the Institute and the School, with a small amount of cross-representation, will largely control their own affairs.

The Australian National University since its inception in 1947 has accepted only post-graduate students, almost all of them candidates for the doctorate but a few studying for the Master's degree. The Australian National University Act now provides that, for the first ten years after the inauguration of the new university, the Institute of Advanced Studies will be responsible for the teaching and examining for doctoral degrees; the School of General Studies for all other degrees. At the end of ten years, the university may review this allocation of academic responsibilities. It will no doubt be the case that members of the staff of the Institute will be invited to lecture and teach in the School, and that members of the School will assist with the teaching and supervision of students working for the Ph.D. degree; indeed, this kind of interchange and co-operation between the two institutions has been growing in an informal way for a number of years. And discussions between corresponding Departments of the two sides of the university are now very active; it seems likely that in some cases there will be a pretty thorough pooling of resources for conducting the teaching of both institutions. There is, e.g., a proposal that the two Departments of Oriental Studies should come together in a centre for Oriental Studies.

In spite of earlier doubts about amalgamation, it is probably true that now most of the members of the two institutions expect the association to be a profitable one. The link with the Institute of Advanced Studies, and proximity to the National Library, are sources of strength for a young undergraduate university; its situation

at the seat of national Government gives the School the opportunity to develop especially strong departments of Economics, Politics and Administration; and, as has already been mentioned, it is already becoming, with the encouragement of the Commonwealth Government, a national centre for Oriental Studies. Moreover, the School of General Studies should be able to escape the worst effects of pressure of numbers and over-expansion that effect the great metropolitan universities. And, in the case of many subjects which are already provided for in some strength in both universities, the pooling of the resources of the two institutions will provide a body of teachers and scholars which, in numbers and in academic strength, will compare very favourably indeed with the strongest of Australian universities. Thus, on its undergraduate side, the new Australian National University should in the course of time be able to attract a corps of undergraduates of high quality; the university will be academically strong, it will enjoy unusually good equipment and facilities, and it should be able to provide exceptionally pleasant and favourable conditions for undergraduate work and living.

At the same time, it seems reasonable to expect that the union of the two universities need not affect the continued growth and strengthening of the four Research Schools that will henceforth constitute the Institute of Advanced Studies. The Schools in most of their departments are securely established; and they have begun to produce a volume of orig-

inal work which is having an important effect on Australian scholarship and scientific research, and is earning for very many of the members of the Schools an international reputation. It was not the intention of those who advocated and accomplished the union that it should lead to any revision of the original idea of the Australian National University: viz. that of a university whose first object was the prosecution of high level research in the physical, medical and social sciences; and whose second object was to provide facilities for the postgraduate training of Australian students, in subjects professed within the university, as good as those which hitherto many had gone abroad to find. The form of association has been designed to protect the Research Schools in their continued performance of these two functions. It is hoped and expected that there will continue to grow within the new Australian National University an undergraduate school of very high quality. But the unique character of this university among other Australian universities will lie mainly in the strength, the size, the freedom and independence of its research staff and its body of graduate students. Most of those who have supported the amalgamation have done so in the expectation that, in the fulfilment of the university's two main tasks (the building of a strong undergraduate school and a great research centre) each side of the university will assist, and not impede, the other.

—P. H. Partridge

## ABORIGINAL ROCK PAINTINGS

The aboriginal rock-paintings are of course seen at their best in their natural surroundings. One comes upon them in all manner of places where nature has provided some kind of protection from the weather, perhaps under a rocky overhang or in a wind-hollowed coign or in true caves. Sometimes one finds them in astonishing places that leave one wondering how on earth the artists managed to do the painting. They may be in a narrow cleft or crevice or under a ledge into which a European body is too bulky to fit, or high on a cave-roof which could have been reached only by a ladder of poles. For such reasons a number cannot possibly be photographed and to make even a sketch is difficult.

All the paintings are interesting, but some are truly exciting in both the intellectual and the aesthetic senses. When Sir George Grey discovered the now world famous paintings on the Glenelg River in 1839, he recorded in his diary the deep impression they made on him at first sight. Many explorers, bush wanderers and scholars have now had the same experience. I myself shall not easily forget the sudden shock of coming face to face with the remarkable paintings at Paiyininibi on the Fitzmaurice River a few years ago.

I had been in the deep bush for some time tracking down—with a good measure of success—a number of shelters and caves which contained a wealth of paintings. Eventually I found my way into a gorge walled in by precipitous cliffs. I knew, from many things my aboriginal friends had told me, that there was "something" in the gorge, but by this time my followers had dwindled to one, a companion of many years, who was not at all keen to go into the dank, deeply-shadowed hollow. He was a man of matchless physical courage, as I had proved a dozen times, and was devoted to me personally, but the "something" in the eerie stillness of Paiyininibi's recesses undermined his nerve. Nevertheless, he came rather than let me go alone. For some time we found nothing, and sat to refresh ourselves by a tiny

spring-fed stream trickling below the walls. In a somewhat depressed mood I looked broodingly at the southern scarp, and was jolted to my marrow by the sight of two large red eyes gazing—so it seemed—straight into mine from the roof of an overhang high on the cliff. For a few seconds, until a natural exaltation had time to make itself felt, I was spellbound, in spite of the fact that I had gone expecting to make such a discovery. The first sight, on the instant, in surroundings of utter solitude and heavy quiet, was very disturbing. I lost little time in climbing the slope and thus found my way into a small treasury of several hundred paintings. The eyes I had seen were those of an extraordinary figure almost eight feet long so placed on the ceiling of a half-cave, half-shelter, that the head and the upper half of the torso could be seen from far below. I knew at once that I had stumbled on paintings of the same family-type as those found by Sir George Grey more than a century ago many hundreds of miles away west by south.

Who were the artists? What was their intention in making these remarkable paintings? Whence came the styles, now representational, now abstract, now obviously charged with symbolic meanings? How to read the meanings? What do the motifs—hands, animals, concentric circles, misshapen humanoid figures, strange geometric shapes—signify? Questions such as these have occupied the attention of scholars for a long time. The interest is increasing rather than decreasing. As our knowledge and insight grow, piece by patient piece, we are coming to see that the aborigines are among the most remarkable peoples of whom we have knowledge.

The photographs reproduced with this article are of a very representative selection of paintings. Generally speaking they are of a type with thousands of others found in different parts of Australia. In a narrower sense they characterize a region. There are many regions which are slowly but surely being identified. The basic scientific study must proceed in this way, but on the whole it is perhaps a generation

too soon to make interpretations which are positive and thoroughgoing. However, a great deal is already known, some things with certainty, others with varying degrees of probability.

It is now beyond all reasonable doubt that the paintings are the work of aborigines. This was not always thought to be so. In the past many scholars and others simply could not believe that the aborigines had such artistic skill. The more outstanding works—such as those found by Grey—were often attributed to overseas visitors. Flights of fancy, all of them pure conjecture, visualised the Egyptians, Phoenicians, Chinese and other peoples as having come to Australian shores and then gone away, leaving in the paintings evidence of their visits. This nonsense indicted our own commonsense and needlessly denigrated the aborigines. The most notable scholars—a long succession of such men as Spencer and Gillen, Roth, Basedow, Davidson, Elkin, McCarthy, Mountford—have had no truck with such speculations. I myself have made actual experiments to test the graphic ability of aborigines with artistic aptitude. The outcome—a collection of contemporary, polychrome paintings in which there is no European influence at all except the type of surface drawn on and the shape of board or paper used—has deeply impressed some able critics and artists.

The fact is that we ourselves are too insensitive and, yes, too ignorant to be able yet to grasp what capabilities lie within the aborigines. It would be sad, were it not so amusing, to watch the inner struggle that goes on in the minds of many Europeans as they wrestle with their prejudices while trying to take in the moral, aesthetic, and intellectual significance of one painting I show them. It depicts the cosmos, with the planets and fixed stars arched over by ambient suns and moons while, underneath, the steady earth puts out its increase. What? A blackfellow with an idea of the cosmos? This is what they seem to say to themselves. Then I tell them about the old oversea-origin theory.

The technical aspect of the paintings is quite well understood. The methods used were broadly speaking those still used in graphic art. Earth-colours (red and yellow ochre, pipeclay) and charcoal were used in the piece or rubbed down to powder. In a shelter which I ex-

cavated I found many pieces of ochre at all depths in the earth. A number had rounded corners or flattened surfaces, and some had been rubbed down to a spherical shape. I felt sure that these were actual pieces used by the old artists. It was plain that on some works wet paint had been used, and in a few cases layered on, but the great majority were made with dry colour in the piece or in powder. The modern aborigines use wet paint for their bark-drawings, the colours being mixed with water or spit and often with a binding agent (tree-gum or plant-juice), and then put on with a finger or a brush made of a chewed twig. I think this was how some of the more elaborate rock-paintings were done. The paint is caked and still firm, and in a good light still gives out a lovely, soft glow.

Four colours only are used — red, yellow, white and black — in the region I have studied, but the hues vary greatly. The reds may vary from salmon to something very close to purple, and the yellows may intensify to an orange. None of the paintings is in more than three colours, and by far the greatest number are in one or two only. The most common type is a shape in one colour edged by a thin line which may be continuous or broken. The white edges unify the paintings in a very marked way, sometimes to a beautiful effect.

To list the range of subjects would require a catalogue. It is more sensible here to indicate the types of subjects. Let me say frankly to begin with that many of them are quite obscure, and that probably we shall never know for sure very much about them. The trouble is that the work of study began far too late. But had it started in 1788 there would still be difficulty. It is not simply a matter of the years and the locusts. The artists are dead anciently, and their visions with them. The living aborigines are as puzzled as anyone to identify the subjects of many paintings. There is thus an element of doubt about many of the finest works. A number of reported identifications and "meanings" must be treated with reserve or even suspicion.

Opinion is not evidence. Where tradition survives—and that means where aborigines are alive, or were alive when carefully questioned—the gaps can be closed a little, but even then serious mistakes can be made. I remember well thinking that a certain motif in one paint-

ing was probably a jellyfish, but a test made with modern symbolic drawings showed the same motif signifying a blazing stick.

The paintings in the region I have studied fall into six groups, which I shall list very briefly. (1) Hand and palmprints made by a "stencil" process: a hand (left or right) is placed flat on the rock and wet paint (usually white) is sprayed from the mouth so as to leave a print. Occasionally a stencil is made of the whole forearm. A few prints are filled in with black colour. (2) Tools, implements and weapons. (3) Human artifacts, such as bull-roarers, and other ceremonial objects. (4) Fauna, especially the large beasts. (5) Figures which are recognisably human or humanoid. (6) Geometric shapes.

You could easily make other classifications. This one is useful for my present purpose in that it lets me bring out two important things. It does not follow that because the subjects are readily recognisable (as in groups (1), (2) and (3)) we can dismiss them with matter-of-fact descriptions. All the objects entering the paintings have powerful symbolic meanings. For example, the human hand is at the centre of some very involved systems of symbolic thought in aboriginal culture; various metaphors make use of it to signify personality, will, fashion, and other such conceptions. Tools and artifacts are used to symbolise sex, status, and so on. The bullroarer is a symbol of deep religious significance. All the paintings document in such ways the structure of aboriginal mind and ideas. Second, we can see on the rocks actual evidence, even if we cannot always interpret it, of elaborate development of thought and artistic insight. Under (5) and (6) we have to include paintings, for example, which represent man in astoundingly different conceptions—here in a vividly representational way (Pl. 1), there by a beautifully symmetrical design of lines and geometrical shapes (Pl. 2). No classification can do justice to the work of an artist who, under the privilege of art, and prompted by his own insight, produces such a brilliant act of symbolic imagination as may be seen in Plate 3.

At any of the larger sites you may see scores, even hundreds, of paintings of subjects from within these groups, clustered or scattered on the rock-faces. Individual works may be left

in solitary splendour; others are made on top of older works, especially where there is not too much smooth rock. The effect is usually higgledy-piggledy. The sorting out, sketching, measuring, note taking and photographing of a couple of hundred paintings is a tiring and time-consuming affair, but the fascination is still there after one has spent weeks at the same site. Tiny incidents, in themselves quite unimportant, make an indelible mark on one's mind and memory by association with such times and places.

I recall waking one night when I was sleeping a cave at Kirindingin, 600 or 700 feet up on the scarp of what I shall call The Rainbow Serpent Range. The cold was bitter and I made up the camp fire to a high blaze. The yellow light flooded the cave (a huge kidney shaped hole about 75 feet wide by 60 feet deep behind a 20 feet entrance) and gave the paintings, especially the three figures shown in Pl. 1, an unexampled vitality. I made a torch of bark and went around the cave watching the play of gleam and flicker on the pale rock and the burnished glint that came from the ochres. Until that moment I had not fully appreciated that night and firelight were truly part of the "natural setting", to which I referred at the start of this article, of a goodly number of paintings. For the shelters and caves were lived in as recently as fifty years ago and are still in use occasionally.

That leads to the question that everyone asks: how old are the paintings? I cannot be very helpful here. Some are certainly not very old: we can tell that from the subjects, for example, European figures, guns, ships, handcuffs, bottles, wheels, spurs, brands, hobbles, and so on (Pl. 3). They must have been made since the 1880's. As for the others, the only honest answer is to say that we do not know. There is a high probability that we shall never know. An important negative fact is clear. The paintings are not all of the same period. On many rock-faces one can see faint outlines that not even a good camera and a range of filters can do much with. Since many of them are in places with maximum protection from light heat, rain, and wind, it is reasonable to think they have a high antiquity. One can often make out three or four paintings layered on top of each other, all immeasurably faded. Perhaps on top again, or nearby, may be another,



the ochre still bright. Not only are the relative ages very, very different, but the styles are, too. I shall speak of the style in a moment, but consider how many variables there are in judging from appearance even to relative age. The paint may not have been put on in a uniform way; the protection from weather varies; the rock surfaces differ and weather at different rates and so on. In most cases no judgement about absolute age is possible. There are perhaps too slender possibilities. If we could unmistakably match ochres from particular paintings with used ochres taken from the cave-floor at the same site, and if the latter could be given, by reasonable assumption, the Carbon-14 date assigned to organic substances found in intimate association with them, then we would have something reliable to consider. With this idea in mind—though for principle rather than in hope—I saved every fragment of used ochre that I found when excavating one shelter. Something may come of it one day. The other possibility is even more slender. We may well find out before too long from a study of the layering that the painting styles have an invariant order within and between regions. There is already a hint in the material that this is so. We are bound to find some time a wonderfully clear instance which will let us test theories about the sequence of styles. Then we can go back to the first possibility, and try to put the two together. But at the moment they are pipe-dreams.

In the region I have studied there are a number of quite distinct styles of painting. In a sense, the totality of all these works are of a style—the aboriginal style, which is just itself, like nothing else anywhere. It is a matter of constant and idiomatic form or pattern. Within this general sense one may recognize narrower boundaries. The analysis is complex, and one has to be extremely careful about it, and especially careful not to mix up description, analysis and interpretation. In the narrower sense, style is a matter of motifs, their inter-relationships, and their artistic treatment.

Now, it is remarkably clear, at least in my mind, that the old aboriginal artists loved to paint things with a vital relation to life. What tools, implements, and weapons? Or, to hunt could be more vital to man than his hands,

the birds and animals on which they lived? And, in such wild and often savage country, the more strikingly powerful and dangerous fauna? Subjects such as these are drawn with a wonderful naturalism (Pl. 4). So, too, are other things—guns, handcuffs, brands, wheels—which in more recent times and in a slightly different sense are also vital to life. We can thus speak of a naturalistic art (Pl.5). Within this type we could make other distinctions based on characteristic uses of forms, motifs, and colouration.

But none of the entities painted on the rocks are seen or conceived as they are by Europeans. They are depicted under the sway of ideas coming, quite literally, from another world. It is what we anthropologists call a "totemic" world. Living men are linked mystically with the cosmos and have a spiritual affinity with visible and invisible realities formed in The Dreaming Time. We are slowly coming to grasp the subtle profundity of this world-and-life view. Under its sway the aborigines abstract aspects of visible-invisible reality and express them—in the rock-art visually, in song musically, in language and myths verbally, in dance gesturally—through complex symbolisms. We can thus speak of symbolic art. Both naturalism and symbolism are bad words by which to hope to extract the significance of the paintings. They snare us in a trap of language and let us project the imperialisms of our own history and thought. By discipline and caution we can reduce, though not eliminate, the imperialism.

The abstractive, symbolic paintings were the works of impassioned artists, some of whom were in my opinion men of genius. The personal, expressionist-impressionist aspect of their work is and always will be a closed book. All we can do is to construct, with infinite care, a probable context of life and thought against which to assess possible meanings. There is an intricate little calculus to be made for each class of paintings. A single graphic element—a circle—may be used in several classes. We know by other researches that a circle may signify a host of things, such as a camp, a water-hole, a woman's breast, and so on. The aborigines have made an arbitrary connection between such things, possibly, as I have suggested,

based on their common relation to life or its sustenance. The "meaning" of the circle is all the things it signifies and everything it connotes to the aborigines. By following through the uses of the circular imagery—in the "languages" of gesture, dance, myth, and visual art generally—we can hope to attain a measure of understanding of the context I mentioned. The difficulties are obvious. A lifetime is not too long for such inquiries. The patient work of many anthropologists has already built up a good store of well-tested fact and theoretical understanding.

The living tradition is some help. For example, two of the figures in Pl. 1 are the wives of Kunmanggur, The Rainbow Serpent or The Father of All, who was killed by his son, and visited Kirindjingin in his death agonies. By wandering over The Rainbow Serpent's country, as I have done, in company with men of one clan, one can build up a store of fundamental knowledge bearing on all the paintings. Here, one can see the marks on the rocks where his blood fell and fertilized the world. Somewhere else, one can see his children growing in the shape of baobob trees, with finger-like branches reaching at the sky. One avoids a whirlpool to avoid being dragged down by the ever-living Serpent. One learns that the rainbow is his long tongue. By following out all

these hints, in an intensive study of the traditional culture, one can draw the shapes of meaning against which to range the paintings. Indeed, there is no other way of passing from observation through analysis to understanding.

If one does this sort of thing for long enough the bush becomes an enchanted country. It enriches one's own life-long experience as few other things can do. It also transforms one's attitude to the aborigines. They come to seem a people of true human dignity and, in their own way, of remarkable insight. Once one masters, by their help, the treasury of meanings in a countryside, it is impossible to be lonely: at the most, one can only be solitary, and in a peopled solitude. But all this is subjectivism and, therefore, if I understand the modern critics, unscientific and very wicked. There is always the objective side. The rock-paintings are part of the Australian heritage. We can at least protect and conserve them while scholars, in what I am sure will be an increasing number, go on with the slow task of bringing them within our appreciation.

—W. E. H. STANNER

(Acknowledgement is made to The Estruscan Magazine of the Bank of New South Wales for permission to reproduce this article.)



PLATE I

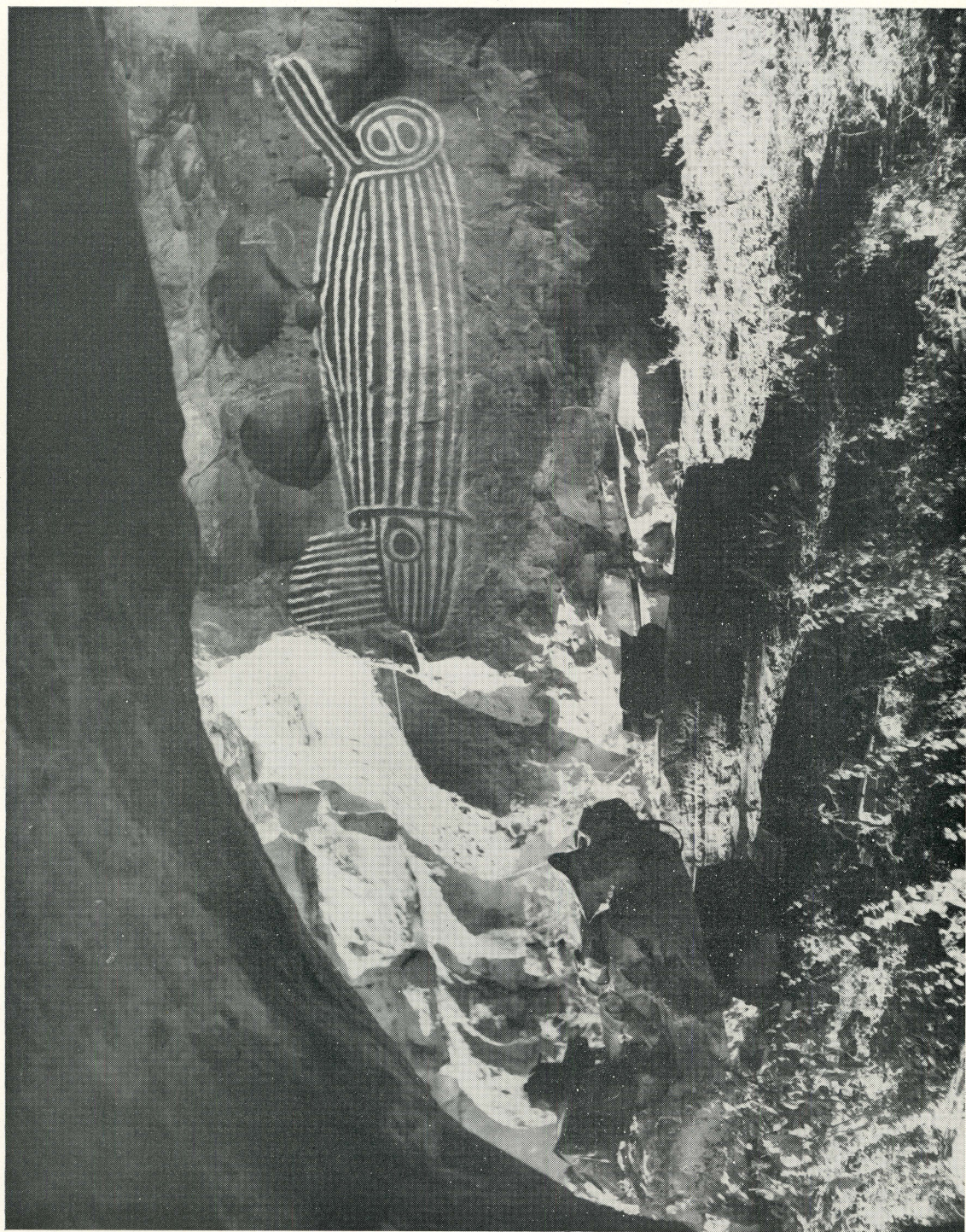


PLATE II



PLATE III

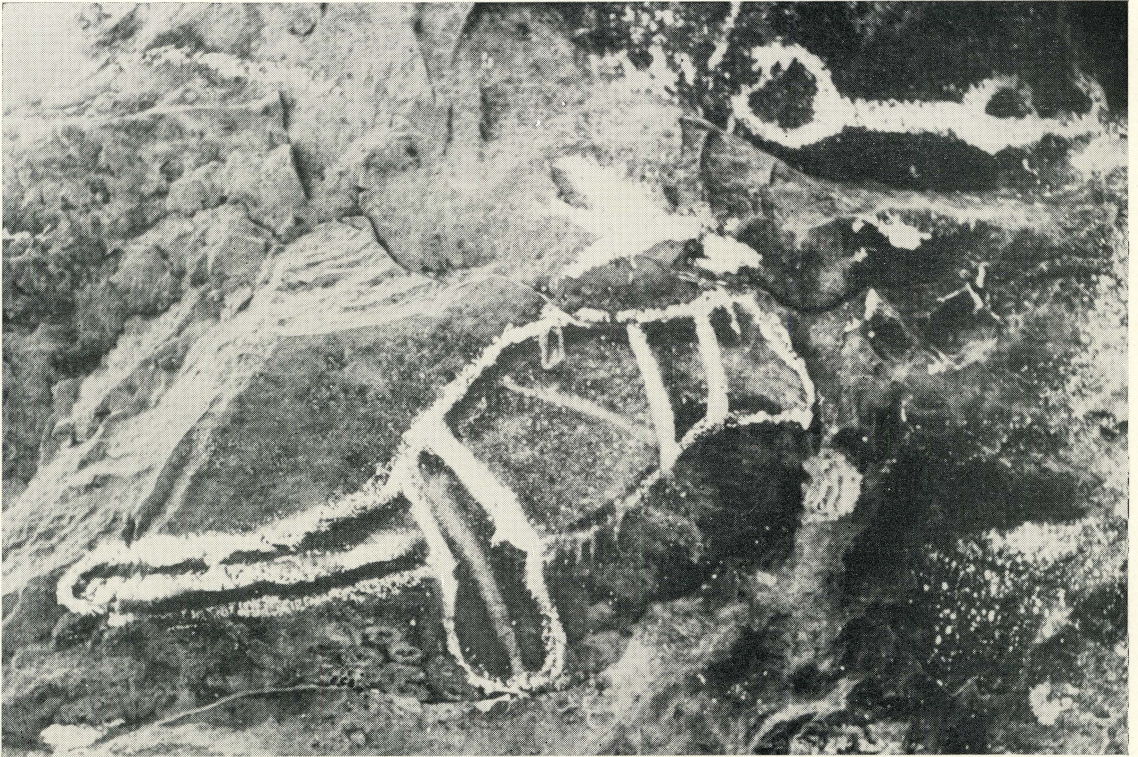


PLATE IV

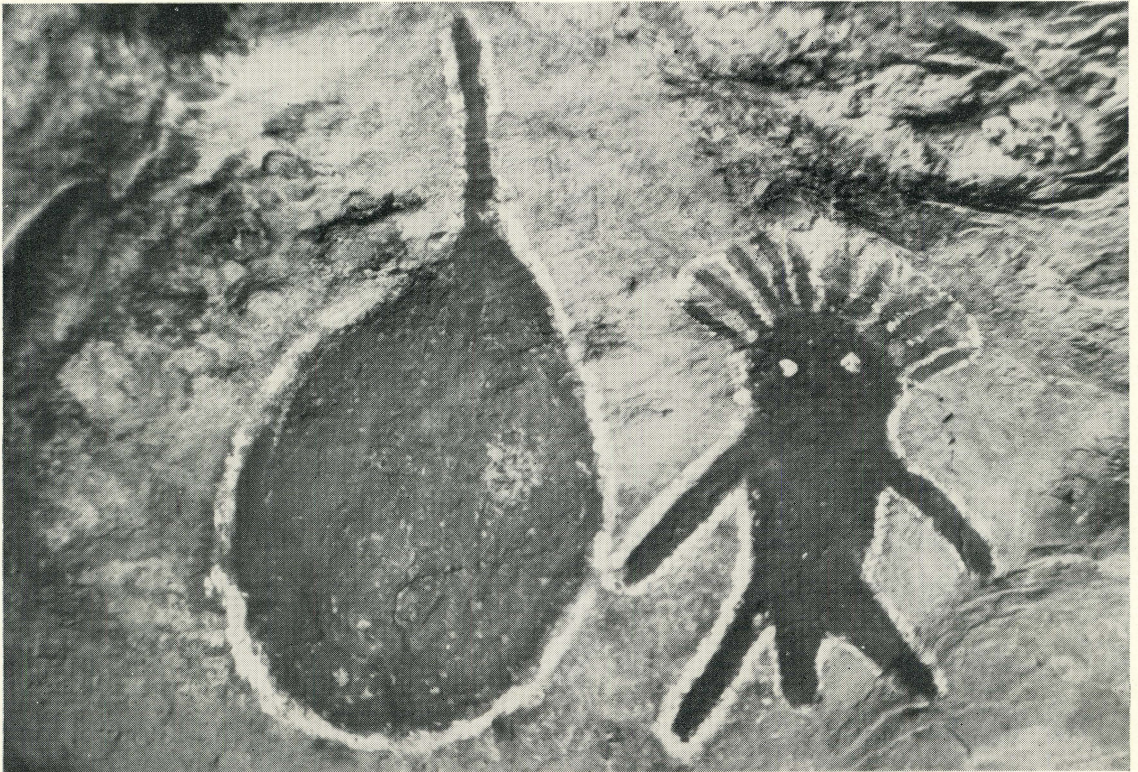


PLATE V

## CONFERRING OF DEGREES

On 13th May, 1960, the seventh annual conferring of degrees ceremony was held. The Pro-Chancellor (Dr. H. C. Coombs) conferred the degree of Doctor of Philosophy on twenty graduates of the University of whom eleven were present.

### THE JOHN CURTIN SCHOOL OF MEDICAL RESEARCH

- Richard Desmond Barry, B.V.Sc. (Syd.). Thesis: "The Multiplication of Influenza Virus."  
 Gordon Bruce Barlin, M.Sc. (Syd.). Thesis: "Thiol-Thione Equilibria in Nitrogenous Heterocyclic Mercapto Compounds."  
 Klaus Schell, D.V.M. (Hanover). Thesis: "The Innate Resistance of Mice to Mousepox."

### RESEARCH SCHOOL OF PHYSICAL SCIENCES

- Edwin Keith Carter, B.Sc. (Melb.). Thesis: "The Precambrian Orogenic Belt of North-Western Queensland."  
 Keith Ridley Walker, B.Sc. (Tas.). Thesis: "Petrology of the Basic Igneous Rocks of North Western Queensland."  
 Bruce Philip Walpole, B.Sc. (Syd.). Thesis: "The Evolution of the Pine Creek Geosyncline and its Relation to the Structural Framework of North Western Australia."  
 Donald Stewart Gemmill, B.Sc. (Adel.). Thesis: "Radiative Capture Reactions in Light Nuclei."  
 Eknath Waman Godbole, B.Sc. (Bombay), M.Sc. (Banaras). Thesis: "A Continual Monitoring Method of Measuring Single Ion Diffusion Coefficients."  
 Douglas Sinclair Kemsley, M.Sc. (Melb.). Thesis: "The Hardening of Metal Single Crystals by Reversed Deformation."

### RESEARCH SCHOOL OF SOCIAL SCIENCES

- Raymond Dynevor Bradley, M.A. (N.Z.). Thesis: "Free Will and Logic."  
 Colin Forster, B. Com. (Melb.). Thesis: "Industrial Development in Australia, 1920-30."

Timothy Lachlan Latour Suttor, M.A. (Syd.). Thesis: "The Catholic Church in the Australian Colonies, 1840-65."

John Miller Tregenza, M.A. (Adel.). Thesis: "The Life and Work of C. H. Pearson."

Hsin Yuan T'ien, B.A. (Haverford Coll.), M.A. (Penn.). Thesis: "The Australian Academic Elite: Their Family Origins and Structure."

### RESEARCH SCHOOL OF PACIFIC STUDIES

Walter Neil Gunson, B.A. (Melb.). Thesis: "Evangelical Missionaries in the South Seas, 1797-1860."

John Rutherford, B.A. (Syd.). Thesis: "The Integration of Irrigated and Dry Land Farming in the Southern Murray Basin."

Robert Kent Wilson, B.A. (N.Z.). M.A. (Lond.). Thesis: "Type-of-Farming Areas in Victoria, Australia."

Francis Harry Bauer, M.A. (California). Thesis: "The Regional Geography of Kangaroo Island, South Australia."

Eric Charles Frederick Bird, M.Sc. (Lond.). Thesis: "The Gippsland Lakes; A Geomorphological Study."

Triloki Natha Madan, B.A. (Jammu and Kashmir), M.A. (Lucknow). Thesis: "Family and Kinship—A study of the Pandits of Rural Kashmir."

On Friday, 13th November, 1959, at a meeting of the Council, the degree of Doctor of Philosophy was conferred on Venkateswarier Subramaniam, B.Sc., M.A. (Madras). Thesis "Public Service Promotion in Australia."

At the conclusion of the conferring the Vice-Chancellor delivered an address: the address is given in full.

### ADDRESS BY THE VICE-CHANCELLOR

'Since today we are not awarding any honorary degrees, we have no obvious person to press into service for an occasional address. It is for this reason that the task falls on me to talk to you about the state of the University. It is fitting that we should look back—and forward—at this moment when we have come to the end of the beginning for this is the last time

we shall meet as a purely research university. When we next meet, the Australian National University will include a School of General Studies which will take care of undergraduates, though not to the exclusion of graduate work, while we shall be known as the Institute of Advanced Studies and continue to concentrate on our research.

I hope that with this association, there will be no whittling down of the site that has been set aside for the development of the Australian National University either directly by the subtraction of areas promised to us or more subtly by the infiltration on to our site of Government activities. All over the world we see the sorry story of the universities planned on areas which seemed generous when they started but which have become absurdly small for modern needs. Decisions and developments are, as a consequence, taking courses which would not have been freely chosen and malformations are apparent. Great universities do not depend on any small region for their students but draw them from all over the world. We are seeing in Canberra the start of a great university and we must plan accordingly.

The Australian National University has a site of 193 acres. To this will now be added 138 acres promised by the Minister for the Interior to the College, making 331 acres in all. This is not enough to take care of the future development of what are essentially two institutions and of their associated residential colleges. We are therefore asking that an additional area of 100 acres of neighbouring land be set aside to meet future needs. These proposals will in no way interfere with the development of a Botanic Gardens for Canberra which can be developed alongside or even be in part surrounded by the University with nothing but advantage to us both.

The whole site is in any case under the care of the Canberra Parks and Gardens Section as part of the garden conception of the City of Canberra. It should not be too difficult to lay it out so that it strengthens and is strengthened by the adjoining Botanic Gardens.

While speaking of the site, I must express the University's thanks to Professor Winston who is advising us on our general development and to Professor Pryor who from the outset has done so much to help us.

Buildings do not make a University but they are the places in which we live and work.

We started in the timber huts inherited from the Canberra Community Hospital. We have since built laboratories and offices for the School of Physical Sciences, laboratories for the John Curtin School of Medical Research and a residential college, University House. We are just about to build a Library and are drawing up the plans for a building to house the two Schools of Social Sciences and Pacific Studies. The association with the College has caused us to bring forward our plans for an Administration building. This is the one area where there may be significant savings in the early years from the merging of the two institutions, but they can be realised only if the staff can be brought under one roof. We are therefore proposing that this building be given an early priority.

When this is done we shall have housed all our existing staff, but no doubt by then we shall have again outgrown our housing. There can be no end to the building of a university.

With the buildings so far built and in use, I think we can be satisfied. The first purpose of university buildings is to be useful and comfortable for the people working in them, but they can also be buildings of distinction and sometimes of beauty. I hope our record here has been good but I am well aware that in this field what is one man's Wren is another man's gargoyle.

It was a happy thought of those who put the building of University House high on our list of priorities. It early became of the utmost importance to provide the growing staff and the increasing student body with a centre where persons with different academic interests could meet. The facilities of University House have suited our purposes quite admirably and under the skilled guidance of the Master have proved a great boon to the corporate life of the University, bringing together not only the staff and students of the University but making it possible for scholars from all the universities of Australia and other parts of the world to meet us here in Canberra.

University House is also a handsome building—a winner of a Sulman Award—which will, I feel sure, remain a credit to the University and to the city. The Physics buildings and the



John Curtin Medical School are more functional in nature but they have proved excellent in practice and are pleasant enough in appearance. They were certainly most economical in costs. Buildings similar to our Medical School in Sydney and Melbourne are costing from 25 per cent to 50 per cent more. Internally these buildings are magnificently equipped and are good to work in.

For the work we are doing our equipment is, I believe, first class. The most dramatic examples are of course to be found in the Physics School where we are now installing the latest Van der Graaf Electrostatic Generator which will develop an energy of 12MeV and permit experiments to be made that were previously impossible. Our observatory at Mt. Stromlo is the best equipped observatory in the Southern Hemisphere with a 74-inch and a 50-inch reflector and a Coude Spectrograph of our own and a 26-inch refractor and a Schmidt telescope placed on the Mount by other observatories. It has also available to it the part of the sky most useful for astronomical observation, a facility denied to our friends in the Northern Hemisphere.

We have established a Seismological observatory in the Geophysics Department. The test running of Sir Mark Oliphant's Homopolar Generator has begun.

The equipment in the Medical School is less spectacular but equally ingenious. Much of it has been designed and built within the School for special research work planned by various departments and the needs of the school for equipment have been fully met,

Buildings and equipment are the outward visible form of a University but its essence is to be found in the ideas and concepts, the writings and the sayings of its scholars. I turn, therefore, from this survey of the corporeal to a review of the non-corporeal. The Australian National University is unique. It was formed to encourage and provide facilities exclusively for post-graduate research and study. This uniqueness will not be lost through our association with the Canberra University College. We shall now have an undergraduate wing. As honours courses are developed, I have no doubt that many members of the Institute will want to give some lectures in the School of General Studies. They will not be compelled to do so, but we have on the staff

of the Australian National University many gifted teachers who are likely to seek the inspiration that comes from association with alert students and from the necessity to explain their ideas clearly to a critical audience. This will be a great source of strength to the undergraduates' wing of the University but it will also be part fulfilment of one of the purposes for which the Australian National University was founded—the encouragement of research not only within the University itself, but throughout the Universities of Australia.

The University set out to provide facilities that were only sporadically to be found in the State Universities. Australian scholars generally had to go abroad to find the range of facilities we sought to provide. Thus the University set out to attract back to Australia, Australians long resident abroad, together with research workers from other parts of the world. It was also hoped that younger Australians would come to the Australian National University for the facilities in search of which they had previously to go abroad or do without.

To measure success in these matters is not easy. When Sir Howard Florey was opening the John Curtin Medical School, he told us that for this University to justify itself it was not sufficient for it to be good; it had to be superlatively good. I cannot claim that it is yet superlatively good. But it is good and provided we continue to watch our standards with care it may be on the way to the superlative for which Sir Howard asks.

I cannot describe today all the work of distinction that has been done in this University and to select is invidious. I need however some illustrations to make my point. I mention Sir John Eccles' work on nerve cells by the insertion of extremely fine glass tubes of 1/50,000" diameter into living cells and the recording of their responses. These electrical records have made it possible to understand not only the nature of the responses of individual cells, but also the way they are linked together leading on to further explorations into the behavior of the nervous system.

Professor Fenner and his team of workers traced the evolution of the virus of myxomatosis as it attacked the rabbit population of Australia, the genetic response of the rabbit and the course of the resulting disease. In addition to its

national importance, this investigation yielded information on the factors which govern the evolutionary changes in infectious disease.

In Geophysics, Mr. Irving has been making a study of the magnetism of rocks and deducing the direction of the earth's magnetic field over the last few thousands of millions of years. The results have shown that the poles have wandered over the face of the earth and some hundreds of millions of years ago the South Pole was near Southern Tasmania. It is also difficult to avoid the conclusion that the continents have themselves been wandering. The work has been so successful that this laboratory has, by international agreement, become the clearing house for all palaeomagnetic data collected throughout the world.

Methods pioneered by Professor Titterton for the detailed study of the properties of the nuclei of atoms have been adopted widely elsewhere and are yielding results of great importance.

In the School of Social Sciences, the seminar on the wool industry organised by Sir Keith Hancock, and Mr. Butlin's study of Australian national income and capital formation should be mentioned.

In the Research School of Pacific Studies, Professor Spate has prepared a report for the Government of Fiji on the social and economic problems of the indigenous Fijians while Professor Davidson is the constitutional Adviser to the West Samoan Government in its preparation for independence.

All these examples (and there are many others I could give if time permitted) have won international recognition; the University as each year has gone by, has been steadily attaining a more important place in the world of learning, until today it is greatly respected within its chosen fields of research. I would draw your attention to the publications by members of the staff, lists of which are published each year. The number of publications has steadily grown and will shortly increase quite substantially. Sheer numbers are, of course, not important but the standing of the journals which accept our publications is, and a study of the names of these journals will satisfy the most searching critic. Book production is now more than respectable in every sense though distribution

overseas is more difficult and I am not satisfied that this aspect of our publications is getting the attention the University deserves.

The training of research students has progressed to the point where there are now more than 120 senior students, most of whom are reading for a Ph. D. These students will provide Australia with an increasing number of highly trained staff who will be available in most cases for teaching or research tasks in the State Universities. Approximately half of all students past and present have come to us from abroad and thus in this respect we are succeeding in attracting to this country a number of persons of high quality whom we hope will remain here and enrich our cultural life.

The University's relations with its older sisters in the States are close and expanding. Most of the old suspicions have gone and we are accepted into the pattern of higher education in this country. We have had enormous help from these Universities and I wish to take this opportunity of thanking them for their co-operation in many fields. We like to think that we in our turn have been of benefit to them.

I would like to say a word about the staff of all levels, especially as this will probably be my last opportunity publicly to pay tribute to them. I have said something of the objects behind the founding of the Australian National University. We have built up a staff of highly skilled technical workers—many of whom have brought us their skill from abroad—without whom no natural science department can function effectively. To all of these and to our faithful, indispensable and much put upon administrators and their clerical assistants, I give my thanks and my best wishes. It is, however, about the academic staff that I wish to speak as it is on them that the University's reputation is based. You will know that in every field of learning that is covered in this University we have men of world standing: some are Australians who have made their reputations abroad, some are from other countries who have come to us with their names already established as leaders in their chosen fields. We have a younger group, some of whom have in the short history of this place already acquired fame for their work within these walls and all of whom are making their original contributions to knowledge.

The country cannot fail to benefit from the inspiration caused by the arrival here of so many outstanding men. It is not only this University that gains from their achievements: the system we have established of short term research appointments means that there is a constant flow of younger men and women who at a vital time in their academic life come under the influence of great teachers for a period of three years and then pass on, enriched, to spread the inspiration as trainers of undergraduates elsewhere, or as researchers of high promise in the expanding higher studies departments of the State Universities. It would be wrong on the other hand, to leave you with the impression that this is a mass movement through the University: the numbers of such persons is as yet quite small but they will grow and are even at present, I believe, significant.

In addition to the type of staff of which I have spoken we have a growing number of visiting staff. It is our aim, and one that is becoming increasingly effective, to invite to this University outstanding men from other universities, both Australian and overseas, to spend a period with us, to give us the benefit of their knowledge and experience, and, we hope, to learn in their turn something from us. In a country so far removed from large university centres of other lands, this kind of intimate contact is of the utmost value, but is not in itself enough: we realised this from the outset and one of the most important acts of the founders was to institute a liberal system of study leave. Our sense of isolation from the world of thought and experiment is greatly lessened by these means.

This University can take no more credit than any other for the flourishing state of the learned societies in this country, but it is a fact that these societies now base themselves in Canberra to our great advantage. I like to think that our presence here has had more than a little to do with this migration: we greatly welcome their presence.

All that I have said applies to the University we have known and to the University as it still is, but at a date later in this year we are to become associated with the Canberra University College. Many of us have been concerned with the effects this association may have on our own activities. All of us are concerned that

an institution such as this one is—new in structure, unique in purpose and with so many of its own problems still to be worked out—should be subject to so abrupt a change when we are still so far from being maturely established and when we had only lately obtained that world-wide recognition which is so vital to an organisation of this kind. Throughout our discussions with Canberra University College (very friendly and co-operative discussions) we have been at pains to do as little as possible to upset our present research structure. The College was very sympathetic to this attitude and the Government endorsed our joint proposals for the division of the new University into an Institute of Advanced Studies and a School of General Studies. The proposals have now been calcified in legislation and the pattern for the near future is clear.

The chief achievement of the Australian National University has been that research in this country and not only in this University has taken its rightful place as one of those matters which are vital to a modern civilised state if that state is not to become second-rate. The new structure of this University must not be allowed in any way to detract from this achievement or cause a lessening of the high standards that have so painstakingly been achieved. Research is expensive and to be effective it must be nourished. Nothing would be more tragic than if a great teaching university grew up at the expense of a great research institution. On the other hand, the research institute cannot flourish in a vacuum indefinitely—it needs regularly a new intake of young scholars of the highest quality and in increasing numbers, and these can only be provided if the teaching universities' standards are, at their level, as high as they can be made. The School of General Studies must aim at these high standards; it must seek to improve on anything that we have yet seen in this country. By so doing it will be serving not only its academic partner, but all of our universities and through them the whole country. To achieve these aims will not be easy and it will not be cheap; there will be many pressures on the School to maintain the status quo of pass degrees first and honours degrees last, and of local interests being made pre-eminent to national needs but I believe these difficulties can be overcome, and in fact must be overcome, if the new University is to

develop as we all wish. The whole University must advance and it must advance evenly but the pace must be set by the Institute; for only with the continuance of a fruitful, probing, and

active research body as the high point of the educational system, and as a target at which to aim, will the teaching body be able to reach its full development.'

The first achievement of the Australian National University has been that research in this country and not only in the University has taken its rightful place as one of those activities which are vital to a modern civilized state. It has done so not by becoming a technical school for new students of this University, but by being allowed in any way to interfere with the activities of those who are already engaged in the work of the world. It has done so by being allowed to be a part of the world, and not by being a separate entity. It has done so by being allowed to be a part of the world, and not by being a separate entity. It has done so by being allowed to be a part of the world, and not by being a separate entity.

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In addition to the type of work which I have spoken we have a growing number of visiting staff. It is not only and not just in becoming increasingly effective to invite to this University outstanding men from other universities both Australian and overseas to spend a period with us to give us the benefit of their knowledge and experience, and we look to learn in their turn something from us. In a country so far removed from large university centres of other lands this kind of intimate contact is of the utmost value, but it is not in itself enough.

We recalled the fact from the outset and one of the most important aims of the Institute was to establish a liberal system of study leaving our doors of education from the world of thought and experience is greatly lessened by their presence. The Institute can take an active part in the development of the country, but it is a part of the country, not a part of itself. It is a part of the country, not a part of itself. It is a part of the country, not a part of itself. It is a part of the country, not a part of itself.

## THE SCHOOLS

### THE JOHN CURTIN SCHOOL OF MEDICAL RESEARCH

Consequent upon the decision to develop a Department of Physical Biochemistry, plans were completed for the fitting out of a floor in Wing C, and under the guidance of Dr. H. A. McKenzie a considerable amount of physical equipment has already been installed. The Professor of Physical Biochemistry (elect), Dr. A. G. Ogston, F.R.S., visited the School and completed plans for staff increases which will be made shortly after he takes up permanent residence in Canberra in September.

Arrangements were also made for the transfer of the Electron Microscopist from the Department of Biochemistry to the Department of Physical Biochemistry, where electron microscopy is more closely associated with the work in hand.

Following recommendations from the School Committee, Council has decided to continue the Unit of Biological Inorganic Chemistry as a permanent part of the research structure. As a result of this decision, Dr. F. P. Dwyer (formerly Visiting Reader) has been appointed Reader and the financial arrangements with Commonwealth Scientific and Industrial Research Organisation will be discontinued.

The School Committee has given considerable attention to the problem raised by the necessity of housing increased numbers of experimental animals. The present arrangements which involve the use of much experimental space in the Animal House Wings E and F are no longer satisfactory and the increased use of large experimental animals has led to a plan to vacate the small experimental farm at Dickson. As a consequence, the plans have been prepared for a small animal breeding annexe by Mr. W. K. Whitten, Dr. B. Morris and Dr. W. V. Macfarlane in conjunction with the University Architect. It is hoped that these plans may be brought to fruition in the following year.

### THE RESEARCH SCHOOL OF PHYSICAL SCIENCES

A steady volume of publication of the results of scientific investigations carried out in the

School in all departments (58 papers) in 1959 gives concrete evidence of the growing research effort and of standards achieved. Graduates from the School have won recognition and employment in positions of importance abroad.

There is a rapidly increasing need for further accommodation for the work on the School, both on the University site and on Mount Stromlo Observatory. The buildings are now fully occupied and it will become increasingly difficult to house research students who need both laboratory space and offices.

Considerable further capital expenditure is necessary in the next year or two for equipment for the Observatory and its field station, for geophysical investigations and to make full and effective use of the 12 MeV Tandem Accelerator provided for the Department of Nuclear Physics with a special grant from the Government. These needs are not for the initiation of new ventures but to enable existing work in almost all fields to be carried further in the future. Scientific work in almost every field is becoming increasingly expensive, but this is an inevitable consequence of the great speed of advance in the natural sciences at the present time. It is to be hoped that the coming amalgamation with the Canberra University College, with its own rapidly growing science departments, will not prejudice the necessary development of the activities of the School. This is the only organisation outside C.S.I.R.O. devoted wholly to the advance of the fundamental physical sciences in Australia.

### RESEARCH SCHOOL OF SOCIAL SCIENCES

During 1959 the research staff of the School has numbered 37, of whom 25 held permanent appointments. Of these 25, seven—almost one in three—received during the year offers of chairs in America, England or (in one case) Australia. While mobility of staff between universities, both within and beyond Australia, is generally to be welcomed, stability of permanent research staff is a great advantage to the School in its present phase of growth, particularly as the policy of the School aims at a regular turnover of non-permanent staff. Consequently, it is satisfactory that in five out of seven cases men-

tioned above the offers of chairs elsewhere was declined.

It appears plain from these figures both that the School is now well known overseas and that the opportunities which it offers are highly valued by its members. These were considerations that had to be borne in mind when the announcement was made late in 1959 that the Australian National University and the Canberra University College would join forces. It was essential, in the interests of "the College" no less than those of "the University", that the identity and character of the Research Schools should be preserved within the new academic structure. The work of construction-making is not yet quite finished but the indications are that it will prove generally satisfactory. There will be no curtailment of existing opportunities of research and post-graduate teaching. In addition, there are good grounds for hoping that the association with "the College" will be fraternal and fruitful.

A great deal of thought was given during the year to the work and organisation of the School and some changes were made. Academic business is now for the most part the concern of the full Faculty, rather than of a small Faculty Board. Experience of these new arrangements suggest that they entail no loss of efficiency and a marked increase in the flow of ideas. Some of these ideas—for example, on the recruitment of staff and students—have not as yet been fully translated into policy; but others have been worked out in some detail. The School has decided that candidates for the Ph.D. degree must have henceforward more systematic class work, in addition to their thesis writing, than most of them have had in the past. Provision has been made for a "teaching M.A." as a prelude to the doctorate. It may be that the plans for this degree will be modified in large measure following upon the new relationship with the College, and that alternative means will be found of broadening and strengthening post-graduate education. The intention is to build upon and improve upon past practice. Starting from the first term of 1960, a printed list of lectures and seminars will be issued regularly. Some of these lectures and seminars will deal with research methods and techniques, others with "background" subjects, others with broad problems and topics. Some of them will

be open to students for the M.A. as well as for the Ph.D. degree, and possibly at times to the more advanced B.A. Honours students, when (as is hoped) "the College" begins to attract students of this quality.

In the coming year, co-operation is bound to grow at departmental levels between the School and "the College". It is important that ways and means should be sought at the same time of maintaining and improving co-operation with the School of Pacific Studies. An event of great importance for that School, as well as for our own and for the whole University, was the appointment of Sir John Crawford as Director. He will take up his duties in the second part of 1960.

Following his appointment, and the departure of Lord Lindsay to take up a chair at the American University, Washington, International Relations were transferred to the School of Pacific Studies. International Relations is a field of study of common concern to both the neighbour Schools. There are many other such fields in which it will be essential in the years ahead to maintain and improve the working partnership between the Schools.

During the year the number of post-graduate students enrolled for the degree of Ph.D. in the School was 39. Two students were enrolled for the degree of M.A. The degree of Ph.D. was awarded to seven students.

In 1959 the School enjoyed the company of two Visiting Fellows from England, Sir Alexander Carr-Saunders, formerly Director of the London School of Economics and Political Science, and Professor W. H. B. Court of the University of Birmingham. They both made progress with their own writing and contributed generously to seminars and to the research work of individual students. Sir Alexander was good enough to discuss with us our problems as a School and his reflections were timely and useful catalyst.

The School also derived much pleasure and profit from the presence of the following Visiting Fellows from Australian Universities: Miss K. Woodroffe (Adelaide), Professor I. Bowen (Western Australia), Mr. H. R. Anderson (Queensland), Professor J. A. La Nauze (Melbourne). Sir Donald MacDougall of Nuffield College, Oxford, spent six months in the De-

partment of Economics as Visiting Professor of Economics and Finance.

An event of great importance for the School, as for the whole academic community of Australia, was the constitution of the Universities Commission. It now has before it the School's plans of development for the triennium 1961-63. They include new ventures in the History of Ideas and Sociology. Apart from these, one question of the greatest importance has been raised—the expansion of the School's activities in the direction of "the Humanities".

### THE RESEARCH SCHOOL OF PACIFIC STUDIES

Early in 1959 Council accepted a request from the Government of Western Samoa that the Dean should act as its constitutional adviser during the Territory's transition to independence. Professor Davidson paid brief visits to Samoa in this connection in February and September and a longer visit during March and April. These duties will involve further visits during 1960. Professor Spate completed his study of the problems of economic and social adjustment facing the Fijian people which he had undertaken at the request of the Government of Fiji; he returned to Canberra in April.

By far the most important action, in line with proposals for the development of the School has been the appointment of Sir John Crawford, C.B.E., M.Ec., as Director of the School and Professor of Economics. Since 1950 Sir John has been Secretary to the Department of Trade (formerly the Department of Trade and Commerce). He will spend the latter part of 1960 abroad visiting centres where work is being undertaken on the economics of under-developed areas and will assume duty in Canberra early in 1961.

During its study of the School's future development, the Faculty Board reached the conclusion that the appointment of a Director could be of major benefit provided a scholar with appropriate experience and personal qualities was available. But it did not regard such an appointment as essential. The Director-elect was bound, therefore, to face the careful and critical scrutiny of the School. It is a tribute wholly to Sir John Crawford's personal qualities that his assumption of office in 1961 is eagerly looked forward to. Already he has given considerable time and thought to the School's affairs; and those who have worked with him in this regard have gained a warm regard and deep respect for him. There is complete confidence that the School will enjoy a vigorous and invigorating future under his leadership.

Following Sir John Crawford's appointment, the initial steps have been taken towards building up the Department of Economics. Other developments agreed to by Council in 1958 have also been proceeded with; an appointment to the Readership in Bio-geography has also been made and the Fellowship in Archaeology should be made this year. Further consideration has been given to the New Guinea Research Unit and steps are in train to bring it into active existence.

The temporary transfer of the group working in International Relations to the Research School of Social Sciences was terminated on 31st December. From 1st January 1960 it again constituted a Department of International Relations in the Research School of Pacific Studies.

During the year there were 40 students enrolled in the departments of the School (including some for part of the year only). Two former students received the Ph.D. degree in May. Three have been recommended for the award of the degree.

## OBITUARY—C. S. Gum

On April 29, Dr. Gum died in a skiing accident at Zermatt in Switzerland, where he was visiting for a brief holiday. He had been appointed last year to the post of Senior Lecturer in Astrophysics at Sydney University and for the past ten months had been working as a Carnegie Fellow at the Mount Wilson and Palomar Observatories. He had gone to Europe to talk with astronomers and manufacturers about the plans for a 36-inch Reflector for Sydney University and the accident in Switzerland occurred between his visit to Holland and his going to Germany. Dr. Gum was one of the best liked and most admired of younger Australian astronomers and many of us have a deep sense of personal loss at his too early death. Australia is still very short of first class astronomers trained and educated in the country, and his death is a severe blow to the development of Australian astronomy.

Colin Gum was born in 1924; he received his Honours B.Sc. Degree in Physics from Adelaide University in 1949. He came to Mount Stromlo directly from Adelaide University and he received his M.Sc. Degree from Adelaide on the basis of work done at Mount Stromlo (1951) and, in 1955, the Degree of Ph.D. in Astronomy from this university. In 1956, he joined the staff of the Radiophysics Laboratory of the C.S.I.R.O. in Sydney and he left his post to join Sydney University last year, when

he was asked to take charge of the programme in Observational Optical Astronomy in the School of Physics of Sydney University.

During his relatively brief career, Dr. Gum has made some notable scientific contributions.

He was an active and very effective member of the Sub-Commission of the International Astronomical Union, which re-defined the Galactic Pole.

Upon his return to optical astronomy last year, he turned to problems of interstellar polarisation and he indicated that he would want to spend some time in the years to come on questions relating to galactic magnetic fields.

For a person of his age, Colin Gum leaves behind a solid and impressive bibliography of significant scientific contributions and, in spite of his too-early death, he has left his permanent mark on the development of astronomy.

### DR. WALTER BAADÉ

The University learned, at the time of going to press of the News, of the death of Dr. Walter Baade.

Dr. Baade made many friends in the University when he was Visiting Fellow in Astronomy from Mount Wilson and Palomar Observatories for six months in 1959, and his loss as both friend and distinguished astronomer will be felt by many.



## STAFF

### THE JOHN CURTIN SCHOOL OF MEDICAL RESEARCH

#### New Appointments

Dr. F. Lehman-Grube has been appointed a Research Fellow in Microbiology. Dr. Lehman-Grube, who is married, was previously a Research Associate at the Medical School, University of Minnesota.

Dr. D. A. Lowther has also joined the Department of Microbiology as a Research Fellow: he is married and has lately been a Nuffield Research Fellow at St. Mary's Hospital, London.

Dr. R. I. Close and Mr. R. J. N. Morris have been appointed Research Fellows in Physiology. Dr. Close, who is a New Zealander, comes from the Physiology Department of the University of Illinois, and Mr. Morris was a lecturer in the Department of Physiology at the University of Queensland.

Miss L. Atkinson has been appointed Research Assistant in Physical Biochemistry.

Mr. M. C. Taylor has been appointed Electron Microscopist (with the status of Fellow) in Physical Biochemistry. Mr. Taylor, who was educated in Tasmania, has been for some years in the Division of Food Preservation and Transport of the C.S.I.R.O. Mr. Taylor, who is married, took up his appointment at the beginning of July.

Dr. B. N. Preston has been appointed Research Fellow in Physical Biochemistry with effect from 1st October. Dr. Preston, who was educated in England, is at present Medical Council Research Assistant in Biochemistry at Oxford University.

#### Visiting Staff

Dr. C. I. Davern, a Research Officer in C.S.I.R.O., has been granted the status of Honorary Research Fellow while working in the Department of Microbiology.

#### Departures

Mrs. M. Wright (nee Briggs) has resigned as Electron Microscopist in Physical Biochemistry, and leaves Canberra for America in August.

### News and Movements

Dr. H. J. F. Cairns, Senior Fellow in Microbiology, will be on study leave for one year from 16th May. Dr. Cairns has gone first to Oxford and will then spend nine months at the Department of Genetics, Long Island, U.S.A.

Professor Sir John Eccles is representing the Academy of Science at the Tercentenary Celebrations of the Royal Society in London.

#### VISITORS

Professor H. W. Thompson from Oxford, will be visiting the Department of Medical Chemistry in September next.

Professor Sir Alexander Todd from Cambridge, and Lady Todd, will visit the Department of Medical Chemistry from the 2nd to the 5th November next.

### RESEARCH SCHOOL OF PHYSICAL SCIENCES

#### New Appointments

Professor R. V. d. R. Woolley, Astronomer Royal and former Director of Mount Stromlo Observatory, has been re-appointed Honorary Professor.

The following members of staff have been promoted to Senior Fellowships: Dr. F. C. Barker, Fellow in Theoretical Physics, Dr. W. Buscombe, Fellow in Astronomy; Dr. J. H. Carver, Fellow in Nuclear Physics; Mr. E. Irving, Fellow in Geophysics; Dr. G. A. Joplin, Fellow in Geophysics; Dr. A. E. Ringwood, Senior Research Fellow in Geophysics; Dr. D. Robertson, Electronic Engineer in Particle Physics, and Dr. P. B. Treacy, Fellow in Nuclear Physics. Dr. E. K. Inall has been promoted to Senior Research Engineer with the status of Fellow.

Mr. R. A. Marshall has been promoted from Research Fellow to Fellow in the Department of Particle Physics.

Mr. I. McDougall has been appointed Departmental Assistant in the Department of Geophysics.

Mr. B. A. Robson has been appointed Research Fellow in Theoretical Physics. Mr. Robson has been Senior Demonstrator in Physics at the University of Melbourne.

Dr. A. R. Hogg, who has been Assistant Director of Mount Stromlo Observatory, will now hold the post of Deputy Director (Administration). Dr. Gascoigne, who has been Reader in Astronomy, will become Assistant Director (Research) of the Observatory.

#### Visiting Staff

Dr. C. B. B. Bull, Senior Lecturer in Physics, the Victoria University of Wellington, is now working in the Department of Geophysics as a Visiting Fellow. Dr. Bull leaves in July and is working on rock samples collected by him in Australia.

Dr. K. Kumar has been appointed a Visiting Fellow in Theoretical Physics for twelve months. Dr. Kumar is a Research Associate of the Tata Institute for Fundamental Research in India.

Professor J. Evernden of the University of California has been appointed Visiting Fellow in Geophysics for seven months from August this year. Professor Evernden will bring with him a Reynolds-Corbett Mass Spectrometer which is being purchased by the University, and will train the A.N.U. staff in its use.

Dr. N. S. Hush, Lecturer in Inorganic Chemistry in Bristol University, has been appointed Visiting Fellow in Theoretical Physics from next September.

Dr. W. M. Deuchars, Senior Scientific Officer in the United Kingdom Atomic Energy Authority, has been awarded the Selby Fellowship by the Australian Academy. He is to be appointed a Visiting Fellow in Nuclear Physics for one year from next September.

Professor Lawrence H. Aller, University of Michigan, a Visiting Professor in Astronomy, arrived with his family on 1st June for a stay of a year.

Dr. Gerald Kron of the Lick Observatory, University of California, has been appointed Visiting Fellow in Astronomy for nine months. Dr. Kron will arrive with his family in September.

Associate Professor R. D. Russell of the University of British Columbia spent a month with the Department of Geophysics in June/July.

Professor A. H. Voisey, Professor of Geology in the University of New England has been appointed Visiting Fellow in the Department of Geophysics for three months from next September.

#### News and Movements

The Director of the School, Professor Sir Mark Oliphant, has been attending the Tercentenary Celebrations of the Royal Society in London in July and will be visiting physical and mathematical laboratories in England and the United States.

Dr. D. S. Robertson, Fellow in Particle Physics, will be on study leave for one year from February 1961. Dr. Robertson will be at the Brookhaven National Laboratory, Long Island, New York.

Dr. F. C. Barker, Fellow in Theoretical Physics, will be on study leave for 12 months from August. Dr. Barker will be working in the Department of Physics, M.I.T.

### THE RESEARCH SCHOOL OF SOCIAL SCIENCES

#### New Appointments

Dr. J. M. Gani has been appointed Senior Fellow in Statistics. Dr. Gani, who is Reader at the University of Western Australia, will take up his appointment at the end of the year.

The following, all Fellows of the School, have been promoted to Senior Fellowships: Dr. R. A. Gollan, History; Dr. G. R. Hall, Economics; Dr. Norma McArthur, Demography, and Dr. C. A. Price, Demography.

#### Visiting Staff

Dr. P. Erdos, a Hungarian mathematician of world renown, was appointed a Visiting Fellow in Statistics for six weeks in May and June. Dr. Erdos delivered lectures on "Number Theory and Probability."

Professor S. A. de Smith, Professor of Public Law in the University of London, has been awarded a Visiting Fellowship from February 1962.

Dr. C. Goodwin, who is a member of the Commonwealth Studies Centre of Duke University, has been granted the status of Honorary Research Fellow for the period September 1960-March 1961. Dr. Goodwin will make a study of economic thought in Australia.

Dr. F. K. Crowley, Senior Lecturer in History in the University of Western Australia, has been appointed Visiting Fellow in History for five months from the end of August this year.

Dr. Cherry J. Gertzel, Lecturer in History in the University College of East Africa, was at the University for a month in May and June as Visiting Fellow in the History Department.

Professor J. H. Franklin, a distinguished visitor under the Fulbright Scheme, was granted the status of Honorary Fellow during his visit here in June. Professor Franklin holds the Chair of History in Brooklyn College and his special field is American History.

Professor Asa Briggs, Professor of History at Leeds University is spending six months from late June as Visiting Fellow in History.

Dr. Lloyd Ross, New South Wales State Secretary of the Australian Railways Union, has been appointed Visiting Fellow in Political Science for three months from next October.

#### Departures

Dr. K. H. Burley, Research Fellow in Economics, leaves in August to take up a Lectureship in the Faculty of Commerce and Social Science at Birmingham University.

#### News and Movements

The Director of the School, Professor Sir Keith Hancock, will be on study leave from July of this year until next February. Sir Keith will be in the United Kingdom during his visit and will deliver the Wiles lectures in Belfast in November: the lectures will be published. Sir Keith will get Volume 1 of his biography of Field Marshal Smuts to press and will edit two volumes of the *Smuts' Papers*.

Dr. N. McArthur attended the First National Conference of Social Welfare organised by the Australian Council of Social Services in Melbourne from 23rd to 27th May, 1960; she delivered a paper entitled "The Social Implications of Population Trends", and this will be published as part of the proceedings of the Conference.

Mr. Appleyard has been visiting various State Universities organising teams of interviewers to conduct the first large-scale survey of British immigrants recently arrived in Australia. This is the second stage of an enquiry into the British migration to Australia, the

first stage being the interviewing of 1,000 intending migrant families shortly before their departure from England.

#### Visitors

A member of the United Kingdom's Overseas Migration Board, Lord Ferrier, paid a brief visit to the Department of Demography in April 1960.

### THE RESEARCH SCHOOL OF PACIFIC STUDIES

#### New Appointments

Mr. Jack Golson has been appointed Senior Fellow in Prehistory in the Department of Anthropology and Sociology. Mr. Golson was formerly Senior Lecturer in the Department of Anthropology, University of Auckland.

Mr. G. R. Cochrane has been appointed Research Fellow in Geography. Mr. Cochrane was educated in New Zealand and has lately been Lecturer in Geography at Adelaide University.

Dr. D. C. S. Sissons has been appointed Research Fellow in International Relations. Dr. Sissons has lately been Visiting Research Fellow, Institute of Social Sciences, Tokyo University.

Miss R. Rathausky has been appointed Research Assistant in International Relations. Miss Rathausky was formerly a Training Officer in the Columbo Plan section of the Public Service Board.

Mr. E. K. Fisk has been appointed Senior Research Fellow in Economics. Mr. Fisk, who is married, is a graduate of Oxford and was for some years in the Colonial Administrative Service in Malaya and is at present Columbo Plan Economist in Malaya for the Australian Government.

#### Visiting Staff

Dr. Douglas Oliver of the University of Harvard, visited the Department of Anthropology and Sociology for four weeks in March.

Dr. Mervyn Jaspán of Padjadjaran University Bandung, Indonesia, visited the Department of Anthropology and Sociology for two weeks in May-June. Dr. Jaspán is expected to take up his appointment as Research Fellow in the Department early next year.

Professor Max Gluckman of the University of Manchester, arrived in Canberra in July for a stay of three months.

#### News and Movements

Mr. L. R. Hiatt left in February to carry out a second field trip of nine months at Manin-  
grida, Arnhem Land.

Mr. B. L. Verma left in February to carry out a year's research among the Mailu people of Papua.

Mr. A. Ploeg left in April to carry out a year's field research at Bokondini, Netherlands New Guinea.

Dr. B. N. de Martinoir left in April to carry out field research among the Kajang people of the Upper Rejang, Sarawak.

Mr. M. Singarimbun is expected to leave in July to carry out field research among the Karo Batak of Sumatra.

Dr. Paula Brown returned in March from the Chimbu region of the Eastern Highlands of New Guinea, after carrying out six months' field research.

Mr. D. C. Laycock returned in March from the Sepik District, New Guinea, after carrying out linguistic research in the area.

Miss Diane McEachern, Research Scholar, is expected to arrive in Canberra in July.

Members of staff and students of the Department of Anthropology and Sociology attended a meeting of the Australian Branch of the Association of Social Anthropologists at the University of Sydney on the 24th and 25th May.

Professor O. H. K. Spate has been on study leave in the United States of America from the middle of March. He visited the Riverside campus of the University of California to begin with, travelled through the desert S.W. of the States to a conference of the Association of American Geographers at Dallas, Texas, where he read a paper. On the way across he experienced a really violent dust storm in the 'Panhandle'

of Texas, country renowned in this respect. He then gave lectures and seminars in a number of Mid-West universities. Further requests for lecturing visits ranging from Berkeley to Syracuse will involve him in rather kalaeidoscopic movements later in the year.

Dr. George Modelski has now completed his teaching assignment in International Relations at the University of Chicago and for the last quarter will work as Research Associate on the theory of international relations at the Center of International Studies at Princeton. In April of this year he represented this University at an annual meeting of the American Political Science Association and read a paper there on international affairs in South-East Asia. He is planning to return to Australia at the end of the year.

Current Affairs discussions, held fortnightly, on Fridays at 1.20 p.m. in the Music Room of University House have been revived under the secretaryship of Mr. J. A. A. Stockwin, Research Scholar in International Relations. Speakers have been Mr. A. L. Burns, Mr. G. Boyd and Mr. P. Hunt.

Dr. Peter Lawrence, a former scholar and Research Fellow in the Department of Anthropology has been appointed Senior Lecturer in Anthropology at the University of Western Australia.

#### LIBRARY ADMINISTRATION

##### New Appointments

##### Library

Miss M. T. Sheridan and Miss M. Day were appointed Library Assistants from 21st March and 14th March respectively.

Miss N. G. Cook has been promoted to Senior Library Assistant from 10th March.

##### Administration

##### DEPARTURES

Mr. D. Thompson, Assistant Architect, resigned his post with effect from April this year.

## STUDENTS

### JOHN CURTIN SCHOOL OF MEDICAL RESEARCH

The following students have been admitted (the name, department, age academic background and date of arrival of each student is listed below):—

- \*Trevor James Heath (Experimental Pathology) 23, B.V.Sc. (Syd.). 27th June, 1960
- \*Beth Howard (Physiology) 30, B.Sc. (Qld.). 1st April, 1960.
- \*Yasuo Inoue (Medical Chemistry) 25, B.Sc. (Nagoya). 15th April, 1960.

The following scholarship awards have been announced but the students had not arrived at time of going to press:—

- \*Margaret Lucy Green (Biochemistry) 22, B.A. (Oxon.).
- \*Bulusu Venkata Rama Sastri (Biochemistry) 36, M.Sc. (Andhra).
- \*Robert Franz Schmidt (Physiology) 27, M.D. (Heidelberg).
- \*Graeme Hunter Searle (Medical Chemistry) 24, M.Sc. (N.Z.).
- \*Sadako Sugai (Biochemistry) 24, M.Sc. (Tokyo),
- \*Roger Balment Vaughan (Experimental Pathology) 27, M.B., B.S. (Lond.).

### RESEARCH SCHOOL OF PHYSICAL SCIENCES

The following students have been admitted (the name, department, age, academic, background and date of arrival of each student is listed below—

- \*Grahame Malcolm Bailey (Nuclear Physics) 25, M.Sc. (Melb.), 21st March, 1960.
- \*Ian Vaughan Mitchell (Nuclear Physics) 21, B.Sc. (Adel.), 8th March, 1960.
- \*Geoffrey David Symons (Nuclear Physics) 21, B.Sc. (Adel.). 7th March, 1960
- Donald Jack Faulkner (Astronomy) 23, B.Sc. (Qld.), 1st March, 1960.

\*A.N.U. or Commonwealth Post-graduate Scholar

The following scholarship awards have been announced but the students had not arrived at the time of going to press:—

- \*Ivan John Danziger (Astronomy) 23, B.Sc. (Qld.).
- \*Keith Alan Gross (Geophysics) 38.
- \*Mihir Kumar Roy (Theoretical Physics) 28, M.Sc. (Calc.).
- \*David Sher (Astronomy) 24, M.A. (Tor.).
- \*Robert Reginald Shobbrook (Astronomy) 23, B.Sc. (St. And.).

### RESEARCH SCHOOL OF SOCIAL SCIENCES

The following students have been admitted (the name, department, age, academic, background and date of arrival of each student is listed below—

- \*Glen St. John Barclay (Political Science) 29, B.A. (Hist.), B.A. (N.Z.), M.A. (N.Z.), 20th June, 1960.
- \*Miriam Joyce Rechter (History) 29, M.A. (Melb.), 11th May, 1960.
- \*Leslie Lloyd Robson (Demography) 28, M.A. (Tas.), 14th May, 1960.
- \*James Henry Rundle (History) 26, B.A. (Melb.), 16th May, 1960.
- Josevata Nakausabaria Kamikamica (Economics) 26, B.Com. (Melb.), 11th March, 1960.

The following scholarship awards have been announced but the students had not arrived at the time of going to press:—

- \*Brian Smith (Philosophy) 34, B.A. (W.A.).
- \*Duncan Bruce Waterson (History) 25, M.A. (N.Z.).

### RESEARCH SCHOOL OF PACIFIC STUDIES

The following student has been admitted (the name, department, age, academic background and date of arrival is listed below)—

- \*Diane Elizabeth MacEachern (Anthropology) 21, B.A. (Br. Col.).

## FELLOWSHIP

The following Fellowship has been awarded (the name, department, age, academic background and date of taking up award is listed below)—

### Fulbright

Harold Walter Scheffler (Anthropology)  
27, A.B. (Missouri), M.A. (Chicago), 1st  
May, 1960.

## MOVEMENTS

Mr. B. L. Verma, a scholar in the Department of Anthropology, left in February for twelve months field work in Papua, New Guinea.

## APPOINTMENTS

Mr. J. R. Robertson, a former student in the Department of History, has taken up an appointment in the History Department of the University of New England.

Dr. V. K. L. Whittaker, a former student in the Department of Biochemistry, has been appointed Junior Research Assistant in the Department of Biochemistry at the University of California (Berkeley).

Dr. E. C. F. Bird, a former student in the Department of Geography, will be taking up a Lectureship in Geography and Conservation at University College, London, in October this year.

After working in the Research Section of Government Missile Organisation, Dr. F. H. Bauer is now lecturing in the Department of Geography at the University of California

Mr. Andrew Fraser, a student in the Department of Far Eastern History, has been appointed to a Lectureship in the School of Oriental and African Studies, London, and will be leaving Canberra in July.

Mr. H. T'ien, formerly a student in Demography, has been appointed Associate Professor of Sociology at the University of Wisconsin.

Mr. G. A. Watterson, a student in the Department of Statistics, has been appointed to an Associate Professorship at the Virginia Polytechnic Institute and will begin duties in early August.

Dr. V. Subramaniam who obtained his doctorate last year has been appointed Senior Lecturer in Government in the Faculty of Economics at the University of Western Australia: he is at present Simon Senior Fellow at the University of Manchester.

Mr. N. S. Thornton, a former scholar in the Department of Social Philosophy has accepted an appointment in the Department of External Studies in the University of Queensland.

Mr. M. Wu, a student in Political Science, will be leaving Canberra in August to take up an appointment as Lecturer in Chinese at the R.A.A.F. College, Point Cook, Victoria.

## TRAVELLING SCHOLARSHIPS

Australian National University Scholarships have been awarded to Dr. R. D. Bradley, (formerly a scholar in the Department of Philosophy and Sociology and now Lecturer in Philosophy at the University of New South Wales) and Dr. R. D. Barry (formerly a scholar in Microbiology). Both scholars took the degree of Ph.D. at the University this year.

## PUBLICATIONS

The Publication Committee have published two Social Science Monographs (No.'s 17 and 18). They are:

J. A. Zubrzycki (Demography) **Immigrants in Australia: A demographic survey based upon the 1954 census.**

and

J. A. Zubrzycki: **Immigrants in Australia: Statistical Supplement.**

The purpose of this study is to discover the various characteristics of the immigrant population of Australia—a component of some one and a quarter million people in a total of just over ten million: the age and sex structure

of the immigrant population, their impact on the workforce numerically and by industry, their geographical and occupational distribution, their impact on the ethnic and religious structure of the Australian population.

The second volume contains particulars of detailed distribution and secondary source tables of the statistical material.

There are two works now with the printer:

H. Pappé, **'John Stuart Mill and the Harriet Taylor Myth'**.

A. Barnard: **'Visions and Profits: Studies in the Business Career of Thomas Sutcliffe Mort'**.

## PUBLIC LECTURES

**August 2:** Mr. J. A. C. Mackie—S.E. Asia series, fifth lecture.

**August 4:** Professor U. T. Holmes—American mediaeval scholar

**August or September:** Mr. V. T. Buckley—Commonwealth Literary Fund Lecture.

**September 6:** Professor H. M. Gluckman—Social Anthropology series, first lecture.

**September 13:** Professor J. A. Barnes—Social Anthropology series, second lecture.

**September 20:** Dr. Paula Brown—Social Anthropology series, third lecture.

**September 27:** Dr. W. E. H. Stanner—Social Anthropology series fourth lecture

**October 5:** The Morrison Lecture:—"Chinese Landscape Painting: The Golden Age" H. E. The Ambassador for China.

**November 2:** Students' Association Lecture—"The Map of Learning"—Professor Asa Briggs.

## ADVERTISEMENTS

### ROYAL SOCIETY AND NUFFIELD FOUNDATION

Applications are invited for awards under the Royal Society and Nuffield Commonwealth Bursaries Scheme which was instituted to provide facilities for increasing the efficiency of scientists of proven worth by enabling them to pursue research, learn techniques or follow other forms of study in natural science in countries other than their own in the Commonwealth where the physical or personal environment or both are peculiarly favourable. Of the available funds about one half is earmarked to assist movement outwards from the United Kingdom, and applications relating to this part of the scheme are especially invited.

The bursaries provide travel, maintenance at a rate depending on the applicant's circumstances and living costs in the country concerned (on the basis of about £600 a year in the United Kingdom) and are tenable usually for periods of two to twelve months; they are not intended to provide any salary as such. Bursars will not be allowed to prepare specifically for, or take examinations for, higher degrees or diplomas.

For the proposed visits beginning during the period from January to June 1961 or later, applications must be received complete with supporting documents not later than 15 September, 1960 by the Assistant Secretary, the Royal Society, Burlington House, London, W.I., from whom application forms and fuller particulars may be obtained.

### SOCIAL SCIENCE RESEARCH COUNCIL OF AUSTRALIA

#### Applications for Research Grants in the Social Sciences

The Social Science Research Council of Australia again invites applications for research grants in the social sciences.

Applications for research grants should be made on the prescribed forms and should be in the hands of the Secretary of the Social Science Research Council of Australia, Academy of Science Building, Gordon Street, Canberra City, A.C.T. by 16th September, 1960. Application forms will be forwarded by the Secretary on request.

Grants will normally be made for one year. Money will not be given for "training grants", e.g. for an M.A. degree, but this does not preclude a grant to a project in which some of the research workers may be proceeding towards an M.A. degree. Preference will be given to projects not assisted from other sources.

The nature and extent of the assistance to be given to any particular project will depend upon its method of organisation and the number of workers involved, but research assistance and travelling and other expenses directly associated with the research may be taken as examples of matters considered appropriate to the purposes of the grant.

Applications for grants may be made by heads of departments in universities or other similar institutions, or directly by the individuals who intend to conduct the research.



# ADVERTISEMENTS

## ROYAL SOCIETY AND WELLESLEY FOUNDATION

The Royal Society and the Wellesley Foundation have jointly established a fund to support research in the field of the history of science and technology. The fund is open to all scientists and engineers who are engaged in research in the field of the history of science and technology. The fund is open to all scientists and engineers who are engaged in research in the field of the history of science and technology. The fund is open to all scientists and engineers who are engaged in research in the field of the history of science and technology.

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## SERIALS ACQUISITION RESEARCH SOCIETY OF AUSTRALIA

The Serials Acquisition Research Society of Australia is a non-profit organization that is dedicated to the study of the history of serials acquisition. The society is open to all individuals who are interested in the history of serials acquisition. The society is open to all individuals who are interested in the history of serials acquisition. The society is open to all individuals who are interested in the history of serials acquisition. The society is open to all individuals who are interested in the history of serials acquisition.

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