

MONASH UNIVERSITY



Report
of the
Council

1968

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REPORT OF THE COUNCIL FOR 1968

In accordance with section 41 of the *Monash University Act 1958*, I submit the annual report of the Council of the University for 1968.

1. THE COUNCIL

The Council held ten meetings during the year.

At the graduation ceremonies held during the year, the following honorary degrees were conferred:

Doctor of Engineering:	William Hudson
Doctor of Laws:	Walter Osborn McCutcheon
	George Whitecross Paton
Doctor of Letters:	Flora Marjorie Bassett
Doctor of Science:	Frank Macfarlane Burnet

At the opening of The David Derham School of Law, the honorary degree of Doctor of Laws was conferred on David Plumley Derham.

There was a number of changes in the membership of Council during the year. The Council was exceedingly sorry to lose, by resignation at the end of the year, the services of the first Chancellor and Deputy Chancellor. In October Sir Michael Chamberlin resigned his Deputy Chancellorship and membership of Council in order to reduce the number of his commitments. Sir Robert Blackwood who relinquished his Chancellorship in December will continue as a member of Council until July 1969, having served continuously first as chairman of the Interim Council and then as Chancellor for over ten years. The University's debt to both leaders during the formative years of its life cannot be overestimated, and their influence will be felt for many years to come.

The new Chancellor who took office in December 1968 is the Rt. Hon. Sir Douglas Menzies. Dr. F. G. Lennox was elected as Deputy Chancellor in November 1968.

Other changes in Council membership during the year were the appointment of Mr. H. M. McKenzie in place of Sir Michael Chamberlin, the replacement of Sir George Paton by Professor D. P. Derham as representative of the University of Melbourne, the election by the graduates of Mr. M. H. Hubbert when Mr. A. R. Austin's period of office expired in October, and the retirement of Mr J. L. Kepert, the former Director of Technical Education in Victoria, whose *ex officio* place was taken in November by his successor Mr. E. T. Jackson.

During the year, Council agreed to the election of a second member by the students of the University, and the necessary statutory provisions for this are under discussion.

The Council noted with pleasure the award of the C.M.G. to Professor D. P. Derham, in the Queen's Birthday Honours List.

2. DEVELOPMENT OF SITE AND BUILDINGS

Law school, circular lecture theatre block, Religious Centre and second stages of bio-medical library and University Offices were completed and taken into use.

Construction of the following projects was commenced:

Second stage of main library consisting of four floor levels and a link to the existing building; education building comprising four floors plus a covered link to the new child study centre; science lecture theatres consisting of four theatres with a total capacity of 436 seats; science north building rising to an initial five floors and housing mathematics and computer centre; engineering heavy laboratories stage 4, completing the present heavy laboratories complex; extensions north and east of Union to provide additional dining accommodation and expansion of banks and bookshop; Great Hall which, when complete, will have a seating capacity of 1,320.

Plans were completed to tender stage for: science south building and extension to medical school, a project in two parts of which the former will provide accommodation for Botany and Psychology and the latter an extension for Anatomy and Physiology; stage 3 of the sports building, consisting mainly of change rooms.

Sketch plans were developed for Roberts Hall, the first of the new halls of residence.

Site works, embracing extensions to the University's road, water, master heating and electrical systems continued. The east-west road from Medicine to Education was relocated as was the main entrance from Wellington Road opposite the main library.

3. ADMINISTRATIVE MATTERS

Legislation

Three new statutes of the University, and eight amending statutes were made by the Council and came into force in 1968. During the year, the Council also made twenty-six new or amending regulations pursuant to the statutes.

One of the new statutes is 3.7—*The Disability Pensions Fund* providing for the creation and administration of a contributory fund for the payment of disability pensions to those members of staff who are

admitted as contributors and subsequently become wholly or partially incapacitated.

Another new statute is 3.3—*Deans, Associate Deans, and Sub-Deans of Faculties* which was made following a revision of the former *Statute 3.3—The Deans of Faculties*.

University Publishing

The various official publications—Calendar, Gazette, Guide for Prospective Students, Report of Council, and Faculty Handbooks—were again issued during the year.

Good progress continues to be made with the University's academic publishing programme. The Publications Committee of the Professorial Board is establishing the necessary procedures for various aspects of this work, and during the year it pioneered an arrangement for world-wide distribution of a monograph which it had published earlier.

Monash University Association

The Association continues its work of establishing links between the community at large and the University. Activities from its inception to the end of 1968 have included public lectures and conferences, visits to give information about the University in country centres, and fundraising—this last including the establishment of an all-purpose Monash University Development Fund. Visits have been paid to Moe/Morwell, Swan Hill, Wangaratta, Hamilton, Bendigo, Mildura, Geelong and Sale. Following a successful "Parent Orientation" for parents of new students in 1967, a similar occasion was held, again successfully, in 1968, and there have been a "Teach-in on Transition", a "Matriculation Forum" (at Yallourn) and a "Faculty Seminar (Science)" associated with transition problems.

4. STAFF APPOINTMENTS

The high demand for University teaching staff continues—and although recruitment was maintained at a satisfactory level during 1968 difficulties were experienced in some instances.

The total of 603 full-time academic staff on 31 December 1968 shows a net increase of thirty-five on the figure for December 1967.

The table on page 7 shows the staff by faculty and grade at 31 December 1968, the numbers in brackets indicating those who took up their appointments at Monash in 1968. The figures include a few short-term appointments.

In 1967 for the first time the number of resignations exceeded the net increase in staff and this trend continued in 1968 and will probably remain a feature of the University's staff recruitment pattern from now on.

(1) Academic staff who left Monash University during 1968 to take up other appointments were:

Deans	1
Professors	3
Readers	1
Associate Professors	3
Senior Lecturers	20
Lecturers	19
Senior Tutors	1
Senior Teaching Fellows	33
Teaching Fellows	22
	103

During 1968 professional library staff increased by nine to a total of forty-nine.

Administrative staff in the grades of administrative assistant and above increased six, to sixty-three in the central administration, and in academic departments and ancillary services, administrative staff increased by seven to a total of twenty-seven. The overall full-time staff of the University increased to 1,951 in December 1968 compared with 1,796 in December 1967.

(2) Of the full-time academic staff who took up appointments during the year eighty (of whom seventy-one had taken their first degree in Australia and nine overseas) were recruited from Australia, and fifty-eight (of whom eight had taken their first degree in Australia and fifty overseas) were recruited from overseas.

The following professors took up their appointments in 1968:

S. Faine, B.Med.Sc., M.D., Ch.B. (N.Z.), D.Phil. (Oxon.), M.C.P.A. (Microbiology)

B. S. Hetzel, M.D., B.S. (Adel.), M.R.C.P., F.R.A.C.P. (Social and Preventive Medicine)

B. W. Holloway, B.Sc. (Adel.), Ph.D. (Cal. Tech.), D.Sc. (Melb.) (Genetics)

J. W. McCarty, B.Com. (Melb.), Ph.D. (Cantab.) (Economic History)

M. G. Swift, B.Sc. (Econ.), Ph.D. (Lond.) (Anthropology and Sociology)

R. Taft, B.A. (Melb.), M.A. (Col.), Ph.D. (Calif.), F.A.Ps.S. (Education)

C. S. Wallace, B.Sc., Ph.D. (Syd.) (Information Science)

H. Feith, M.A. (Melb.), Ph.D. (Corn.) (Politics)

J. W. Warren, M.A., Ph.D. (Calif.) (Zoology)

J. McK. Watts, M.B., B.S. (Melb.), F.R.A.C.S. (Surgery)

The following professors who were appointed in 1968 will take up duty in 1969:

Professor D. E. Allen, M.A. (Cantab.) (The Sir Hayden Starke Chair of Law)

Professor J. N. Crossley, M.A., D.Phil. (Oxon.) (Pure Mathematics)

Professor B. G. Firkin, B.Sc. (Med.), M.B., B.S. (Syd.), F.R.A.C.P. (Medicine)

Professor W. Ironside, M.D. (Aberd.), D.P.M. (Lond.), F.A.N.Z.C.P. (Psychological Medicine)

Professor I. A. McDougall, M.A. (N.Z.), Ph.D. (A.N.U.) (Economics)

Professor Z. F. Oliverius, Ph.D., C.Sc. (Charles) (Russian)

Mr. F. R. Routley took up in 1968 the senior research fellowship referred to in the 1966 report, and Dr. A. Spry resigned his senior research fellowship. Six other research fellowships and twenty-eight more junior research posts were filled (including re-appointments).

The University records with regret the death of Associate Professor E. A. Morey in the faculty of Education, Dr. A. L. Jones of the department of Chemistry, Mr. G. H. Walker of the department of Civil Engineering, Mr. G. W. Tamme of the Library staff, and Mrs. J. L. Rivett on the staff of Central Administration.

FULL-TIME ACADEMIC STAFF (as at 31 December)

	Arts	Economics and Politics	Education	Engineering	Law	Medicine	Science	Total
Deans	1	1	1	1	—	1	1	6
Professors	17 (1)	8 (1)	3 (1)	6	3	13 (2)	15 (2)	65 (7)
Readers	3 (1)	2	—	—	1 (1)	3 (1)	6 (2)	15 (5)
Associate Professors	4 (1)	1	—	2	1	3	2	13 (1)
Senior Lecturers	36 (5)	23 (4)	13	23 (3)	14 (2)	39 (3)	46 (3)	194 (20)
Lecturers	59 (4)	24 (1)	13 (1)	16 (4)	5 (2)	17 (6)	36 (10)	170 (28)
Senior Tutors	13 (1)	—	—	—	1 (1)	—	—	14 (2)
Senior Teaching Fellows	16 (8)	14 (2)	5 (2)	4 (2)	4 (1)	8 (16)	18 (6)	69 (37)
Teaching Fellows	21 (12)	18 (8)	1 (1)	—	6 (6)	4 (4)	7 (7)	57 (38)
Total	170 (33)	91 (16)	36 (5)	52 (9)	35 (13)	88 (32)	131 (30)	603 (138)

5. ACADEMIC DEVELOPMENTS

The following degrees and diplomas were conferred by the University at graduation ceremonies in 1968. The final column shows the total number of degrees and diplomas awarded since the foundation of the University.

	<i>Male</i>	<i>Female</i>	<i>Total</i>	<i>Total 1961-68</i>
Bachelor of Arts	132	230	362	930
Bachelor of Arts with Honours	22	9	31	84
Master of Arts	6	1	7	19
Bachelor of Economics	109	17	126	297
Bachelor of Economics with Honours	13	2	15	40
Master of Economics	2	—	2	2
Bachelor of Education	10	1	11	14
Bachelor of Engineering	20	—	20	45
Bachelor of Engineering with Honours	38	1	39	70
Master of Engineering Science	—	—	—	7
Bachelor of Jurisprudence	53	3	56	90
Bachelor of Laws	3	1	4	4
Master of Laws	2	1	3	3
Bachelor of Medical Science	—	—	—	8
Bachelor of Medical Science (Hons.)	3	2	5	5
M.B., B.S.	69	11	80	171
M.B., B.S. (Hons.)	15	5	20	20
Doctor of Medicine	1	—	1	1
Bachelor of Science	60	28	88	165
Bachelor of Science with Honours	54	12	66	115
Master of Science	10	8	18	30
Doctor of Philosophy	36	1	37	81
	<u>658</u>	<u>333</u>	<u>991</u>	<u>2201</u>
Diploma in Education	120	131	251	548

1968 ANNUAL EXAMINATION STATISTICS

There has, in recent years, been much public interest in what are usually described as failure rates in the Australian universities. Monash has been attempting to ensure that the statistics which set out the pass rates in various faculties, departments and subjects are kept in a form

which is as accurate and meaningful as possible. It is believed that it is now possible to make available for publication statistics which show the trends in the pass rates of first year students across the whole University. These are probably the most important, because they illustrate the extent to which students are successful in making the transition from school to University. Further, it is extremely difficult to produce statistics for pass rates in later years which will be reasonably brief and yet not misleading. This is due to many factors, among which are the varying criteria upon which students are permitted to continue from one year of their course to the next, and the different numbers of subjects which are taken by students in different faculties.

It is clear that pass rates, in general, have risen significantly over the University as a whole. The level of marks which a student needs to achieve at the matriculation examination in order to gain a place at Monash has risen significantly over the period covered by the statistics now being made available, and it is encouraging to note that this has been accompanied by a significant improvement in the percentages who pass in the first year subjects in each faculty.

PASS RATES (per cent)					
<i>(For first year full-time students)</i>					
	1964	1965	1966	1967	1968
(a)					
Arts I	57	70	67	74	80
Economics and Politics I	61	70	77	85	83
Law I	60	71	76	72	80
Science I	60	78	88	89	90
(b)					
Diploma in Education	84	88	90	90	89
Engineering I	55	70	70	84	74
Medicine I	64	84	89	91	97

Note: For the purposes of this table students are regarded as having passed the year if—

- (a) they have passed more than half the subjects or units taken except that those taking three subjects are regarded as having passed the year only if they have passed all three subjects; and
- (b) they passed all subjects or failed in one or two subjects but were granted passes in the year as a whole and continued into the next year of the course.

ACTING VICE-CHANCELLOR'S REPORT

The year 1968, in the middle of the current triennium, was a time in which we looked back with some nostalgia on the previous triennia of rapid growth and forward to the triennia of the future in which we shall have been admitted to the ranks of the "established" universities. Already we are feeling the pinch of reduced budgets matched to a rate of increase of students, with the concomitant reduced rate of increase in both staffing and funds for maintenance and equipment.

In 1968 the number of "equivalent full-time" students increased to 8,184 from 7,026 in 1967. The University's budget for 1967 had provided for 760 "equivalent full-time" academic staff, a university's chief asset, while that for 1968 provided for 805. Thus, even had all positions been filled (and we rely on some being filled for only part of the year in order to remain within our financial allocation) our staff/student ratio deteriorated by some ten per cent. Such deterioration serves to confirm that the Australian community, now experiencing phenomenal economic growth, has not yet learnt that a country's best capital investment is in higher learning.

Space has been at a premium, especially in Science where, of the two new buildings approved for the current triennium, construction of the north building (for Mathematics, Information Science, and the computer centre) began in September and contracts for the south building (for Botany and Psychology) were let just before Christmas. Completion of these buildings, and of the education block and the extension to the library, will lessen the pressure on space not only for Science and Education but also in the buildings in which they have been temporarily accommodated.

Early in the year the rotunda lecture theatre block and The David Derham School of Law were commissioned, the occasion of the latter being marked by the conferment of the honorary degree of Doctor of Laws on Professor D. P. Derham, chief progenitor of the Monash law school, who had earlier taken up office as Vice-Chancellor of the University of Melbourne and in which office he carries the good wishes of his former colleagues at Monash. Of special interest was the opening in June 1968, marked by a joint service conducted by the Roman Catholic, Anglican and Jewish chaplains, of the new Religious Centre, the first building of its kind in the southern hemisphere, given to the University by the Christian churches and the Jewish community for the use of students of all faiths. It consists of a large and small chapel both of which have been regularly used for worship by various groups during the year. The narthex is used for meetings and contains a small collection of religious books and periodicals.

The preparation of submissions to the Australian Universities Commission, which was referred to by the Vice-Chancellor in his 1967 Report, has been the subject of planning discussions between the

A.U.C. and the A.V.C.C. As a result it is hoped that more meaningful data will be available to the Commission when it is preparing its recommendations for future triennia.

The official visitation by the A.U.C. took place in September 1968. Members of the Commission met various representative groups within the University, listened to their particular concerns and asked many questions relating to both our submission and the general line of thinking being adopted by the Commission itself. Certain members made a further visit in December in order to clarify matters connected with our capital submission for buildings. A somewhat revised capital programme was submitted in the light of these discussions.

Students continued to involve themselves in university and political affairs. Particular mention should be made of the dissolution of the Students' Representative Council, which has been replaced by a body called the Monash Association of Students which conducts its affairs by means of an administrative executive and a number of committees, but with major matters being decided at open meetings by the process known as "participatory democracy". During the year opposition was expressed to a parking scheme requiring the payment of fees in order to finance the construction of car parks sufficient to meet the predicted demand for 1969 and beyond.

In the course of his 1968 Stawell Oration the Vice-Chancellor remarked: "The students are by far the most numerous and, because of their future potential, in some ways the most important members of the (University) community. Although the undergraduates are at the receiving rather than at the creative end of the spectrum of learning, the time has long gone past when they could be treated as the merely passive recipients of whatever was handed out to them. It is now well-recognized that their education will be very deficient unless they are brought more and more into the councils of the University to participate in the criticism of what exists and the planning of what should replace it, subject only to the obvious consideration that they are transitory members of the team who do not have to live with their mistakes."

In line with this thinking Dr. Matheson took the novel step of setting up a Commission on University Affairs consisting of five student members, five staff members, and himself as chairman. The Commission formulated as its terms of reference "to investigate the nature, function and governance of Monash University and to examine how decisions are reached and implemented with particular reference to the involvement of students and staff". It began its hearings on 4 October and it is expected that it will continue to sit for the greater part of 1969. Although it is probably true to say that its work has been greeted with a certain amount of criticism from both staff and students, there is evidence that its existence has already stimulated quite a deal of questioning of our institutional structures by those who might otherwise have been content to allow the whole administrative and teaching machine

to roll on under the inertia accumulated during the years of our rapid growth.

Co-operation with the other Victorian universities and with the Victoria Institute of Colleges has grown during the year. It is generally acknowledged that, although certain procedures will need to be improved, the Victorian Universities Admissions Committee has already done much to speed up and rationalize the selection of students for the universities. Its officers have been able to draw on the resources of the Victorian Universities and Schools Examinations Board for assistance in assessing the qualifications of overseas applicants. The Victorian Universities Committee has also proved its worth during the year and is likely to assume a more established form in the future.

Faculty of Arts—Dean: Professor G. R. Manton, M.A. (Cantab.)

The number of first year Arts students has remained constant over the past two years at 1,100. In 1968 about 240 of these were re-enrolling students, the majority of whom, although they had had no failures, had been part-time students and had not yet completed the three first year subjects which must normally be passed before a student proceeds to second year subjects. Total undergraduate enrolments rose from about 2,500 in 1967 to 2,750. The number qualifying at the end of 1968 to graduate at pass level rose from 362 to 420, and at honours level from thirty-one to sixty-two. As might be expected from the steady rise in the cutting mark for entry into the faculty, there are increases in the proportion of the first year intake who graduate in minimum time and in the proportion enrolling for honours degrees in the second and third years. Against these encouraging trends within the student population of the faculty must be set the undoubted fact that with the rise in the cutting mark there is an increasing number of rejected students who would have had at least a fifty-fifty chance of success at the University if they had been admitted. For them there is no suitable alternative.

There has also been a marked rise in graduate enrolments, from 154 in the previous year to 197. A number of these have been attracted to certain departments at Monash from other Australian and overseas universities.

The staff establishment was increased from 186 to 192. Most positions were filled satisfactorily, but it was not possible to fill the chair of French left vacant by the departure of Professor Laufer in August 1967. The chair of Russian, vacated by Professor de Bray in 1966, was filled by the appointment of Professor Z. Oliverius of the Charles University, Prague, who takes up duty for a three-year period from January 1969. During the year Professor M. G. Marwick, who had built up the department of Anthropology and Sociology, resigned to accept

the chair of Sociology at the new University of Stirling in Scotland. During the year approval was formally given to the institution of a chair of Spanish in 1969, although undergraduate courses in Spanish have been given since 1966.

Three members of the faculty resigned to accept chairs elsewhere—Associate Professor G. W. Clarke to become professor of Classical Studies in the University of Melbourne, Associate Professor K. W. Rankin to become professor of Philosophy in the University of Victoria, British Columbia, and Mr. W. D. Joske, senior lecturer, to take the chair of Philosophy in the University of Tasmania. At the end of the year Dr. H. G. Gelber, senior lecturer in history, was appointed to a readership in politics.

At first year level, anthropology and sociology which had previously been taught as a combined subject were offered as separate subjects, and a new experimental course, Introduction to Language and Literature, was offered to a selected group of language students. Music, Spanish, Greek and ancient history were extended to third year level, and Latin and linguistics to fourth year honours.

Many members of the faculty have for some time felt that the structure of the B.A. degree is too rigid, and as a step towards greater flexibility it has now been made possible for a student to substitute for one of the subjects not included in a major or minor sequence two units each from different subjects. At the graduate level formal provisions have now been approved for inclusion of varying amounts of course work in the requirements for the M.A. degree, in place of qualifications by thesis alone.

With the increasing number and complexity of the subjects offered and of the regulations governing courses, the faculty has been at some pains to improve the intelligibility of its handbook. Subjects are now numbered systematically and explanatory sections have been inserted.

Research activity in the faculty is reflected mainly in the lists of publications under the various departments. On the inter-departmental and inter-faculty level the Centre of Southeast Asian Studies has had a marked increase in graduate students under its full-time director, and the Centre for Research into Aboriginal Affairs has attracted considerable outside support. The Linguistics section, although small, through its research seminars and similar activities, has stimulated activity both in other language sections at Monash and in language departments at other universities. A new venture in the inter-disciplinary field is the Board of Australian Studies which has been set up as an inter-faculty body by the Professorial Board. It has held a number of informal discussions.

Short intensive courses have again been offered by the Japanese and Indonesian sections and a number of departments concerned with school subjects have run special courses and lectures for secondary school pupils and teachers.

Faculty of Economics and Politics—Dean: Professor D. Cochrane, B.Com. (Melb.), Ph.D. (Cantab.)

Students

For several years entry into the faculty to undertake a B.Ec. degree has been stabilized at 500 students. However, the growing interest in economics shown by students in the faculties of Arts and Law has caused the number of students taking Economics 1 to continue to climb. Students attending Economics 1 increased from 624 in 1967 to 794 in 1968.

Despite the stability of student enrolments in the first year of the B.Ec. degree, student enrolment in the later years of the degree will go on increasing for several years. Total enrolments for the B.Ec. degree were 1,376 in 1968, compared with 1,149 in 1967. Total students taught by the faculty on an equivalent full-time basis increased to 1,536 in 1968 compared with 1,281 in 1967.

The rapid growth in student enrolments is now giving rise to a rapid increase in the number of graduands. Early in 1968 141 graduands received their first degree in economics. These were the output of the year 1967. The output of the year 1968 jumped to 257 and it is expected that most of these will graduate early in 1969.

In last year's report it was indicated that the faculty was pushing ahead with a graduate programme of course work which was not only designed for students doing Master's degrees in Economics and Administration, but also provided for Ph.D. students, before they embarked on major theses, an excellent background to the literature and thought relating to their various fields of interest.

The Master of Economics degree by course work and thesis was inaugurated in 1967 with twelve students. These rose to twenty-one in 1968. The Master of Administration programme commenced in 1968 with applications far in excess of the faculty's ability to handle them. Out of 110 applicants forty-four students were accepted and enrolled. Applications for 1969 indicate that the demand for entry has increased still further.

The number of students undertaking Master's and Ph.D. degrees by theses only expanded to forty in 1968 (Economics 20 and Politics 20), compared with thirty-four in 1967 (Economics 18 and Politics 16). Thus the total number of graduate students increased to 105 in 1968, compared with forty-six in 1967. This is an extremely heartening response to the faculty's efforts to provide an interesting, comprehensive and, I hope, stimulating graduate programme.

The first Master's degree in economics was completed in 1967. In 1968 three Master's degrees were completed by thesis and two by course work and thesis.

Staff

Rapid growth in both undergraduate and graduate student numbers has posed a number of problems, not the least of these being the difficulty of providing adequate staffing. Staff numbers have steadily grown but they are nevertheless lagging behind current requirements. While staff in general are in relatively short supply, certain types of specialist staff, particularly those required for the graduate programmes, are very difficult to obtain. Further, the standard university salary rates provide little attraction for such people.

However, the faculty was fortunate in filling two chairs with men of the highest academic calibre. Professor H. Feith, who has a world-wide reputation as a scholar of Indonesian affairs, accepted the second chair of Politics, while Professor I. A. McDougall, of Massey University, New Zealand, whose interests lie in international economics, was appointed to a chair of Economics. Dr. H. Gelber was appointed to a readership in politics, while Mr. K. S. Frearson was promoted to an associate professorship in economics. Dr. Gelber is at present on study leave at the Center for International Affairs at Harvard University. In addition, fourteen offers of appointment to lectureships and senior lectureships were accepted.

Leave

During the year a number of members of staff visited overseas universities and took study leave. Professor H. Feith went to Cornell University from February to March 1968 as visiting lecturer in Government. Dr. S. Joy took leave to act as adviser to the British Government on transport economics. While there, he accepted a position as senior economic adviser to the British Railways to take effect in 1969 after returning to Monash to complete a semester's teaching. Mr. W. Cook, Dr. G. McLaren, Mr. G. Pierson, Dr. R. Richards, Mr. K. Richardson and Dr. R. Snape took study leave and in the process taught at various universities in U.S.A. and Britain.

Research Grants

The Australian Research Grants Commission approved grants in October 1968 to Professor H. Feith and Mr. J. Mackie for research into "Political and Administrative Dynamics of Post-Soekarno Indonesia"; Mr. P. Y. Medding for research into "The Sociological Structure and Decision-Making Processes of the Israel Labour Party—Mapai, 1930-1968"; Mrs. E. Preston for research into "A Study of the Extent of Current and Projected Potential Trade Between Japan and Australia"; and Dr. I. D. S. Ward for research into "A Study of Different Types of Economic Systems".

General

Members of the department of Economics again conducted a special series of lectures for members of the staff of Felt and Textiles Ltd.

Mr. J. A. C. Mackie served as convenor of two research groups of the Australian Institute of International Affairs, one on the "Political and Economic Role of the Chinese in Indonesia" and the other on "Centrifugal and Centripetal Forces in Indonesian Politics".

Seminars

A large number of seminars were held at which staff gave papers. In addition a number of distinguished visitors gave seminars. In the department of Economics they were:

Mr. G. W. Rogerson, Operations Research Manager, I.C.I.A.N.Z. Ltd.

Professor Chikashi Moriguchi

Dr. C. I. Higgins, Commonwealth Bureau of Census and Statistics

Professor J. D. Pitchford, Australian National University

Mr. R. J. Deam, Manager, Economics and Operations Research Division, B.P. (London)

Professor Malcolm W. Hoag, Rand Corporation

Professor Akira Takayama, Purdue University, Indiana

Professor M. Postan, Cambridge University

In the department of Politics the following visitors contributed seminar papers:

Professor Louis Hartz, Harvard University

Professor Ronald Watts, Queen's University, Ohio

Professor Aaron Wildavsky, University of California

Professor William J. R. Fox, Columbia University

Professor Leonard Schapiro, London School of Economics

Professor Arthur Burns, Australian National University

Professor W. D. Borrie, Australian National University

Dr. J. Cairns, M.H.R.

Faculty of Education—Dean: Professor R. Selby Smith, M.A. (Oxon.), M.A.T. (Harv.), F.A.C.E.

The rapid development of the faculty continued with increased enrolment at all levels. In 1968 there were 306 full-time and 123 part-time candidates for the Diploma; three full-time and 115 part-time candidates for Bachelor; thirty candidates for Master and five candidates for Ph.D. The proportional increase was greatest for students taking higher degrees.

The teaching staff was expanded at the beginning of 1968 by four senior lecturers, five lecturers, two senior teaching fellows and a teaching fellow. In September Professor R. Taft (Social Psychology) took up duties.

Unfortunately the beginning of the year was marred by the tragic death of Associate Professor Elwyn Morey. Steps have been taken to launch an Elwyn Morey Award to commemorate her work.

The dean, Professor Selby Smith, departed in December 1967 for a year's study leave and Professor S. S. Dunn was acting dean in his absence. Professor Selby Smith spent his leave mainly in the United Kingdom, in the Universities of London, Bristol and Exeter, returning via U.S.A. where he visited Harvard, George Peabody, Berkeley, and Stanford. He was concerned with the organization of universities for the teaching of education, and with developments in English education and higher education in general. Mr. H. P. Schoenheimer spent part of his study leave in England studying the teaching of English and investigating methods of setting up a Diploma of Drama Teaching. He also visited schools in Japan, Russia, U.S.A. and some European countries.

Mr. J. Lawry of the faculty was the first person to complete a higher degree under the auspices of the faculty with his Ph.D. thesis. Miss M. Nixon and Mr. D. Phillips of the staff were awarded Ph.D's. by the University of Melbourne.

Subject associations and other educational groups call on faculty members for leadership in in-service and other educational activities, and staff members during the year made important contributions in this way. The Joint Council of Subject Associations of Victoria conducted its annual conference at Monash on the theme of "Student Assessment" and several staff members participated in this. Dr. F. J. Hunt was invited to Queensland by the Queensland Institute for Educational Research to give two lectures on some developments in social science school curriculum. Dr. Hunt was also invited to Tasmania to speak to a State Advisory Committee on social science education, and to the annual meeting of the Social Science Teachers' Association. On behalf of the Victorian Committee of the United Nations Association in Australia, Professor P. J. Fensham organized a series of seminars on education for Human Rights Year. Cheshire's are publishing the proceedings.

Staff members received a number of grants for research beyond faculty funds. A grant of \$50,000 from the Van Leer Foundation to the Centre for Research into Aboriginal Affairs is being administered through the faculty for a three-year project on pre-school education for aborigines. Dr. Phyllis Scott is acting as project co-ordinator. Professors Fensham and Taft were awarded grants from the A.R.G.C. and Mr. L. D. Mackay received a continuation grant. Work continued on projects funded by the Commonwealth Committee on Advanced Edu-

cation and the New Guinea Education Department. A start was made on recording on tape interviews with notable educators in Victoria as a supplement to written records. To date thirty-two people have been interviewed.

Following the success of the Physics Readiness tests prepared under the direction of Mr. Mackay and published by the Australian Council for Educational Research, Mr. P. Gardner, with assistance from some staff members and a group of biology teachers, prepared Biology Readiness tests which A.C.E.R. has published.

During the year Council agreed to the establishment in 1969 of the Higher Education Research Unit in association with the faculty, and Professor Dunn was appointed director on a part-time basis. The present educational research officer, Dr. J. B. Biggs, will become part of the new unit which plans to expand its services to the University.

Publications by staff members are set out in a later page.

A number of distinguished overseas educationists visited the faculty during the year. These included Professor B. J. Biddle of Missouri, Professor Sanusi of Indonesia, Mr. G. R. M'Mwirichia of Kenya, Professor P. Suppes of Stanford, Professor H. L. Elvin of the University of London Institute of Education, Professor R. R. Buell of Toledo, Professor N. V. Scarfe of British Columbia, Mr. L. T. Kohler of Casa Loma College in Los Angeles, and Dr. Van Praagh of the Nuffield Foundation.

Council agreed to invite Professor Biddle, who is professor of Sociology and Psychology and director of the Center for Research in Social Behavior at the University of Missouri, to become a visiting professor with the faculty during 1969, and Professor Biddle accepted this invitation.

The number of subjects available for B.Ed. candidates for 1968 was increased, with a provision that they would not be offered in 1969 unless a reasonable number of students enrolled. The Dip.Ed. was modified by changing Methods of Teaching and Teaching Practice to Methods and Practice of Teaching, where a candidate must choose two methods. It is felt this emphasizes better the unity of theory and practice.

The faculty also agreed that students with a degree and a teacher qualification such as a Trained Primary Teacher's Certificate, Trained Secondary Teacher's Certificate, etc., could be considered for granting partial equivalence toward a qualification considered equivalent to Dip.Ed. Students could thus, after completing some additional studies in the faculty, proceed to B.Ed. A number of applications were received from students with fine academic records.

Work was commenced in 1968 on the new building and the faculty expects to move late in 1969. In the meantime a large number of staff, research assistants and research scholars are housed in the law building.

Faculty of Engineering—Dean: Professor K. H. Hunt, M.A. (Oxon.), M.Mech.E. (Melb.), F.I.Mech.E., F.I.E. Aust.

The year 1968 (with a first year quota of 220) represents an important point in the development of the faculty; it is the last year in which our intake of engineering undergraduates stands below that of the University of Melbourne. Taken over all years of courses, undergraduate enrolments were approximately 609 (as against 502 for 1967), the numbers completing their courses being: chemical 19 (15), civil 25 (21), electrical 22 (15), mechanical 20 (9), (numbers in brackets being the 1967 figures). Of the total of eighty-six graduating, forty-seven qualified for honours (11 1st class, 21 2nd class, 15 3rd class). The entry into third year of students who had already qualified for diplomas in Victorian Colleges of Advanced Education dropped (6 as against 22 for 1967), the reason for this being that engineering diploma courses have been lengthened by one year with a consequent sudden drop in output from the colleges in the final transition year.

For the first time the faculty has experienced difficulty in placing all the second and third year students in suitable vacation work. It should be possible for every student graduating to continue to obtain at least ten weeks of such employment, but, in the future, concentrated more in one period at the end of third year rather than in two periods. Discussions continue with employers to discover the best means of meeting the faculty's requirements.

As in 1967, an "Information Day" was held for first year students, this time in October. By showing the work in the various departments and by holding discussions about courses and professional opportunities, the students' motivation and interest are certainly increased, and many of them are hereby helped in selecting their course and career.

The number of candidates enrolled for higher degrees rose from seventy-two in 1967 to eighty-six in 1968. Of these ten were members of staff. Two Ph.D. degrees were conferred at ceremonies during the year on members of staff, namely, L. Gruner, and L. J. Hart-Smith, and five more Ph.D.'s were also conferred during the year. Because the research activities in all departments have expanded considerably, the problem of accommodating research scholars has now become acute. During 1968 six research projects were being supported by the Australian Research Grants Committee, and several from other sources, principally the Australian Atomic Energy Commission, the Australian Water Research Foundation, and the Harold Armstrong Memorial Fund. This list does not include support from a number of government and private organizations for research scholars and others working full-time in the faculty.

Mr. P. H. Rogers, a graduate in chemical engineering, completed the first project supported by the Sir Alexander Stewart Memorial Fund, entitled "The Accommodation of Indigenous People to Modern Industrial Development".

The academic staff on strength in the faculty rose from fifty-three in December 1967 to fifty-seven in December 1968. Five members of the academic staff were absent on study leave during 1968, those actually departing on leave during 1968 for a period of one year in all cases being Professor O. E. Potter (to Cambridge), Dr. G. I. N. Rozvany (to India and Oxford), Mr. R. McPherson (to The National Physical Laboratories, Teddington), Mr. R. H. Brown (to Carnegie-Mellor University, Pittsburgh).

Associate Professor D. C. Stevenson accepted a position as professor and head of the department of Mechanical Engineering at the University of Canterbury, New Zealand, and expects to leave during second term 1969. Dr. J. K. Walters resigned to return to England.

Five members of staff and six research scholars in the department of Electrical Engineering attended an International Conference on Systems Science, in Hawaii in January. Dr. G. I. N. Rozvany spent three weeks in the U.S.A., mainly to attend the 12th International Congress of Applied Mechanics at Stanford. Professor J. D. C. Crisp presented a paper at the same congress, and also visited Seattle. During December the dean went to Paris as the nominee of deans of engineering in Australia, to take part in a U.N.E.S.C.O. International Conference on "The Teaching and Training of Engineers", and returned after making brief visits to Britain and the U.S.A. Other conferences in Australasia attended by members of staff include the I.F.A.C. Symposium (August, Sydney), the I.E.E. Conference on Non-linear Research Problems (May, Monash), A.N.Z.A.A.S. (January, New Zealand), Control Conference (May, Sydney), The Australian Road Research Board Conference (August, Melbourne), The C.S.I.R.O. Terrain Evaluation Study Tour, The Institution of Engineers, Australia, Hydrology Symposium (August, Sydney), The Australian Planning Institute Conference (Perth), A Symposium on Noise in Industry (February, Adelaide), a Symposium on Wind Tunnel Techniques (August, Monash), The Third Australian Conference on Hydraulics and Fluid Mechanics (November, Sydney), The A.I.M.M. Annual Conference (August, Broken Hill), The Metal Trades Employers' Association's Symposium on Engineering Production Techniques (November, Melbourne).

Mr. K. Morsztyn and Dr. D. C. Stevenson were both promoted to associate professor during the year. Dr. S. J. Redman was awarded a Queen Elizabeth II Research Fellowship to enable him to devote his activities full-time to research in the department of Electrical Engineering. Dr. G. Narsimhan, professor of Chemical Engineering at the Indian Institute of Technology at Kanpur, arrived to spend a year with the department of Chemical Engineering. Dr. D. Stenhouse took up a research fellowship in the department of Electrical Engineering and Dr. K. G. Kent one in materials science (department of Civil Engineering), these two fellowships being supported respectively by the

A.R.G.C. and by the Department of Supply in conjunction with the Australian Welding Research Association.

There were many visitors to the school of engineering during 1968. Prominent among them were:

- Professor J. Hollo (Agricultural Chemical Technology, Budapest)
- Professor C. J. Huang (Chemical Engineering, Houston)
- Professor J. D. Thornton (Chemical Engineering, Newcastle-on-Tyne)
- Professor D. C. Drucker (Civil Engineering, Brown University, U.S.A.)
- Sir William Glanville (Consulting Engineers, London)
- Dr. E. Eastwood (director of The English Electric Company and member of The Research Council of Great Britain)
- Professor J. Lamb (University of Glasgow)
- Professors J. Westcott and J. R. D. Francis (both from Imperial College, London)
- Professor M. Arbib (Stanford University)
- Professors R. M. Chisholm and F. S. Dodd (both from Queen's University, Ontario)
- Dr. J. Jack (University College, Oxford)
- Dr. W. Ker Wilson (leading consultant in Vibrations, London)
- Dean D. L. Mordell (McGill University)
- Professor J. H. Horlock (Cambridge)
- Mr. R. Gandy (secretary, Aeronautical Research Council, U.K.)
- Mr. F. O'Hara (head, R.A.E. Bedford, U.K.)
- Sir Stanley Brown and Sir Arnold Lindley (presidents of The Institutions of Mechanical and Electrical Engineers), together with Dr. G. F. Gainsborough and Mr. K. H. Platt, secretaries of these institutions).

In addition to those visitors mentioned above, there were several others taking part in the Commonwealth Universities' Congress, who spent some time in engineering departments. The participation by visitors in seminars, colloquia, and research activities, forms an important part of the scholastic activities within the faculty.

Significant gifts of equipment during 1968 have been two hydraulic pump units (from Mono Pump (Australia) Pty. Ltd., Mordialloc); one Zeromax laboratory model (from Powergrip (Vic.) Pty. Ltd.); various items from Monsanto (Aust.) Ltd.

One (unique?) experimental facility has been completed with the help of the Harold Armstrong Memorial Fund, namely a bunker complete with an adapted Bofors gun for studying ultra-high-speed machining. Since this bunker has remote control and various safety devices, it is suitable for a variety of other testing work.

Two "special short courses" were run by the department of Mechanical Engineering; one entitled "Mechanical Production Processes", and the other "Noise and its Control". The demand for the latter was such that several applicants could not be accommodated. These

courses form an important part of the liaison between the faculty and industry, other aspects of which are, for instance, increasing consulting work in many fields (including structural design and model studies on pumps, wind tunnel testing and development of structures for architects and consulting engineers, and testing of equipment for the mining and sanitation industries), and the continuing "professional tutors" scheme in the department of Mechanical Engineering to bring undergraduates into contact with practising engineers. Some academic staff have been concerned with the supervision of projects in industry undertaken by students on vacation employment.

Professor D. G. Lampard has brought considerable distinction to his department and to the faculty by his appointment as a director of The Institute of Electrical and Electronic Engineers, U.S.A. The dean held office as chairman of Victoria Division of The Institution of Engineers, Australia, for the 1968/69 session. The dean also appeared as the sole education witness in the third "Engineers Case".

Construction was at last started on the fourth and final stage of Building 5 (heavy laboratories). By reason of limited finance, the plans for this area have been severely restricted, but there has been some alleviation resulting from a favourable tender price. Through the whole year many members of staff have been considerably occupied with the detail of this new area so that as much as possible of it can be made usable in ways that will provide the most urgently required laboratory space and other accommodation.

The development of engineering courses has been under continued discussion, both inside and outside the faculty. With the growing numbers in the third and fourth years of the courses, it has been possible to introduce variations and electives to some extent. The subject Engineering I, and indeed the whole structure of the first year of the engineering courses, has been a matter for considerable debate. Some changes in first year are planned for 1969, with the expectation that this is merely a start in a more radical revision of the way in which students are introduced to and motivated in their engineering subjects. Outside the faculty itself, several members of staff have been closely concerned with the affairs of the Victoria Institute of Colleges and their engineering courses, with the object of clarifying the differences that should exist between diplomas and degrees. As chairman of the Victoria Institute of Colleges Schools Board for Engineering, Architecture and Building, the dean is closely associated with academic developments within the V.I.C., and also with the preliminary investigations that have just been started to determine the policy that La Trobe University should adopt in relation to engineering education there. Channels of communication such as these, between the various establishments concerned with engineering education in Victoria, are of considerable importance when determining the future policy of the faculty.

Faculty of Law—Acting Dean: Professor P. L. Waller, B.C.L. (Oxon.), LL.B. (Hons.) (Melb.)

In 1968, the law school completed its first full programme for the combined degrees of B. Juris. and LL.B. The first students admitted in 1964 will graduate LL.B. at the graduation ceremony arranged for May 1969. (Four students, enrolled in Arts or Economics before 1964, graduated LL.B. in 1968.) Many of them will proceed to serve as articulated clerks in 1969, in order to be admitted as barristers and solicitors of the Supreme Court of Victoria.

It is particularly noteworthy that six students completed the course prescribed for the degree of Bachelor of Laws with Honours. Two of them, Messrs Mark I. Aronson and Robert C. Williams, were awarded first class honours and shared the Supreme Court Prize, provided by the Supreme Court Library Fund for the best Monash honours graduate. The Supreme Court Prize provided for the best student completing the B.Juris. degree in each year was also awarded for the first time to Mr. Axel S. Joscht. Every subject established under the regulations was offered in 1968, with the exception of Advanced Constitutional Law, Comparative Law, and Industrial Law. In 1969, all subjects, save Comparative Law, will be offered. The faculty proposes to carry out a complete review of the curriculum in 1969, in the light of the experiences of students and teachers in the first five years.

There were more than 730 law students, both undergraduates and graduates, enrolled in 1968. Thirty-six full-time teachers made up the staff which provided teaching for these numbers in more than thirty different subject and seminar courses. This number included several teachers who took up duty early in 1968. To enable the further development of the law school to proceed as planned, further staff appointments were made in 1968 for 1969. These included the appointment of two senior lecturers and three lecturers.

In September, the fourth chair of Law, named the Sir Hayden Starke Chair, was filled by the appointment of Professor David E. Allan. Professor Allan, professor of Law and dean of the faculty of Law in the University of Tasmania, will take up duties at Monash on 8 January 1969. He has a distinguished reputation as a commercial and property lawyer, and is at present editing a work on Asian Contract Law, which will be published in 1969 by Melbourne University Press. The book embodies the result of research carried out under the auspices of LAWASIA. At Monash Professor Allan will continue to direct research into Australian-Southeast Asian commercial relations, particularly the provision of credit arrangements.

In July 1968, Associate Professor Igor I. Kavass was given leave to accept an invitation to be visiting professor of Law and director of the law library at the University of Alabama school of law. He will be away for twelve months. Emeritus Professor Frank R. Beasley, who had been special lecturer in law in the law school from 1964 to

1966, accepted appointment as senior law library adviser during Associate Professor Kavass's absence. The Monash law library owes a great deal to Professor Beasley's efforts during its first three years, and Monash is again grateful to him for returning to advise it about law library development at a very critical stage. Mr. J. D. McClean, visiting lecturer in law, was promoted to senior lecturer in law in the University of Sheffield while he was at Monash, and returned to his own university in December. He proved to be a most stimulating and helpful colleague, who made a valuable contribution to the teaching of Conflicts of Laws and Criminal Law. In 1969 Professor Harry Street, professor of Law and dean of the faculty of Law in the University of Manchester, will be visiting professor of Law for the whole of second term.

Two members of staff tendered their resignations. I mention in particular Miss Hilary B. Feltham, senior tutor in law. Miss Feltham served as the first secretary of the faculty from 1964 to the end of 1966, and as administrative officer in 1967. She left with the faculty's very good wishes and its grateful thanks for her work in the law school's early years.

In many ways the most significant event in 1968 was the law school's move into the law building, which was completed and occupied early in first term. The move almost coincided with the departure of Professor David P. Derham, foundation dean of Law, who resigned on 28 February to take up his appointment as Vice-Chancellor of the University of Melbourne. On 10 July 1968, the law school was formally opened by Professor Derham, on whom the Chancellor conferred the degree of Doctor of Laws, *honoris causa*, for his contributions to legal education, particularly at this University. Council further recognized the work which Professor Derham had carried out in the establishment of law teaching at Monash by naming the law building The David Derham School of Law.

After almost one year's occupation, it is good to be able to say that the law school has met most of the expectations of the faculty. The basic idea, a law library surrounded by studies and offices from which access to the book collection would be easy, has been admirably executed by architects and builders. The two discussion theatres, the impressively furnished moot court, the seminar rooms and the tutorial rooms have proved to be both suited to their purposes and aesthetically pleasing. In some places the building seems stark; it remains to adorn it with some appropriate works of art.

Several other events which occurred in the life of the law school in 1968 deserve special mention in this report. On 6 May, the first Wilfred Fullagar Memorial Lecture was given by the present Chancellor, the Rt. Hon. Sir Douglas Menzies, a Justice of the High Court of Australia. The theme of his lecture was "Australia and the Judicial Committee of the Privy Council"; it was published in the *Australian*

Law Journal for July 1968. The Rt. Hon. Sir Robert Menzies, Chancellor of the University of Melbourne and a life-long friend of the late Sir Wilfred Fullagar, introduced the lecture series, and the Chancellor, Sir Robert Blackwood, presided. It proved to be a happy inauguration for what it is hoped will be a distinguished series of public law lectures.

In September, two very distinguished law teachers, with whom members of the full-time staff had long had close contact, were welcomed at Monash. They were Professor Rupert Cross, Vinerian Professor of English Law in the University of Oxford, who gave a series of classes in Evidence and who delivered a public lecture; and Professor Norval Morris, Julius Kreeger Professor of Law and Criminology in the University of Chicago, who delivered a public lecture and conducted a seminar.

Members of the faculty continued to carry out their own research in various fields of law and to supervise work undertaken for higher degrees by graduate students and junior members of staff. It is a matter of some pride that in 1968, three candidates (one of them a full-time teacher) were awarded the degree of Master of Laws, the first time that that degree has been awarded by the University.

Faculty of Medicine—Dean: Professor R. R. Andrew, M.D., B.S. (Melb.), F.R.C.P., F.R.A.C.P.

1. Buildings

The antenatal clinic and department of Paediatrics extension at Queen Victoria Hospital were occupied during the year. This will be a significant gain for our teaching facilities. Plans were discussed for an appeal of one million dollars in 1970 for the Hospital. The facilities envisaged include an expansion of medicine, surgery and psychiatry which could continue the present hospital trend towards the modern ideal of a balanced teaching hospital such as is being planned for the Monash medical centre.

The functional brief for the medical centre to be built on the campus (800 beds) was distributed early in the year after three years' planning. This document of 184 pages with diagrams and appendices is a joint production of University and Hospitals and Charities Commission representatives. It is based on the concept of the balanced teaching hospital with progressive patient care, and when completed will provide not only a first class hospital, based on the most forward looking needs and expectations of this community for its health care, but also a unique situation for inter-disciplinary research. Only on the campus of a university, in these days of team work, can there be found the necessary milieu for the vital interaction of teaching, research, and patient care.

2. *Students*

Since the University opened in 1961, 1,053 students have been admitted to this faculty. There are this year 822 deployed over the six years of the course, of whom 125 are women (15%) and 103 are from overseas (13%). Admission for the last two years have been pegged at 160. Graduates number thirty in 1966, sixty-eight in 1967, and ninety-nine in 1968. There were ten candidates for B.Med.Sc. this year.

The minimum aggregate mark for admission to the faculty (three subject total apart from English Expression) was 199. Only 380 of the 989 who applied for Melbourne and Monash medical schools gained places in medicine.

3. *Staff*

The academic staff totalled ninety-five, of whom twenty-seven joined the faculty this year (new positions and replacements).

The full complement of chairmen as originally envisaged for the first phase of development was completed with the appointment of Professor B. S. Hetzel (Social and Preventive Medicine) and Professor Wallace Ironside (Psychological Medicine). Their departments will be centred in new quarters at Alfred and Prince Henry's Hospitals, respectively.

To the second chairs of Surgery (Prince Henry's Hospital) and Medicine (Alfred Hospital) Professor J. McK. Watts and Professor B. G. Firkin, respectively, have been appointed.

During the year Professors Hudson, McIntyre and Nairn left on study leave.

The dean represented the University at the opening of the medical centre at Kuala Lumpur (University of Malaya) and attended a conference there on "Medical Education" in August.

4. *Research*

Grant money for the year totalled \$396,528. This included A.R.G.C. \$44,499; N.H.&M.R.C. \$81,578. The identifiable and specific amounts for research from sources other than Government was fifty-four per cent of the total grant money.

The main sources of "outside" money were:

The Wellcome Trust, \$50,000; Rural Credits Development Fund, \$34,266; National Heart Foundation of Australia, \$33,337; Anti-Cancer Council of Victoria, \$27,478; Van Cleef Foundation, \$20,500; United States Department of the Army, \$16,244; United States Public Health Service, \$15,641; Asthma Foundation of Victoria, \$11,278; Wool Research Trust Fund, \$9,258; Queen Elizabeth II Fellowship, \$8,475; professional fees donated by members of staff of the faculty, \$7,676; The Felton Bequest's Committee, \$6,000; Australian Meat Re-

search Committee, \$5,654; Boepringer Ingelheim Pty. Ltd., \$4,423; Bristol Laboratories International Corporation, \$4,112; Carlton & United Breweries Ltd., \$4,000; Merck, Sharp and Dohme (Aust.) Pty. Ltd., \$3,000; Trustees Executors & Agency Company Ltd., \$2,200; Patrick Brennan Estate, \$2,000; The Riker Fund, \$1,328; The William Angliss (Vic.) Charitable Fund, \$1,000.

The research topics of the departments are set out below. It should be understood that in the biological sciences, with close connections with the faculty of Science, the grant money can be looked on as being provided for both faculties.

ANATOMY

1. Alveolar-capillary membrane of the lungs.
2. DNA and RNA content of lymphocytes.
3. Morphology of the alimentary canal.
4. The testis in normal and infertile males.
5. Human pituitary gonadotrophins in male infertility.
6. Autonomic neurotransmitter substances.
7. Gastrointestinal motility.
8. Fluorophores in pancreatic islet tissue.
9. Catecholamines in the hypothalamus.
10. Control of pituitary secretion by pituitary-releasing factors.
11. Cultural characteristics and innervation of intestinal tissues.
12. Biogenic amines and immunoglobulin production in the alimentary canal.

BIOCHEMISTRY

1. Control mechanisms in mammalian metabolism with special reference to diabetes mellitus.
2. Chemistry and physical chemistry of connective tissues.
3. Mechanisms of control in metamorphosis.
4. Biogenesis of mitochondria and mechanisms of action of antibiotics.
5. Information transfer in nervous tissues.

PHYSIOLOGY

1. Physiology of sense organs and sensory pathways.
2. Physiology and pharmacology of central nervous synapses.
3. Control of movement by the central nervous system.
4. Neurophysiological basis of learning and memory.
5. Physiology and pharmacology of the autonomic nervous system.
6. Ultrastructural studies of innervation.
7. Biophysics of excitation and contraction of muscle.
8. Comparative adrenal function.
9. Endocrine factors in reproduction.
10. Renal function in marsupials.
11. Physiology of the micro-circulation.

PATHOLOGY

The research of the Pathology department is broadly centred around problems of biological specificity. The main areas are —

1. Development of immunoradioactive agents for use in organ transplant operations and cancer therapy.
2. Study of mechanism responsible for immune diseases and cancer, in particular bronchial asthma and gastrointestinal cancer.

MICROBIOLOGY

1. Structure, morphology and chemical nature of a spiral bacterium (*Leptospira*) and immune response to infection.
2. Carotenoid pigments of *Staphylococcus*, their metabolism and biological significance.
3. Genetic control of enzyme synthesis and regulatory mechanisms.
4. Biosynthetic pathways in aromatic metabolism by *Pseudomonas*.
5. Gas chromatography of bacterial metabolic products.
6. Mycoplasma in tissue-cultured cells.
7. Rapid biochemical changes in bacterial cultures and their instrumented measurement.
8. Heterogeneity of immunoglobulins.

MEDICINE

1. Androgen secretion.
2. Radioimmunoassay of protein hormones.
3. Secretion and properties of pituitary and placental hormones.
4. Adrenal steroid biosynthesis.
5. Mechanism of gastric secretion.
6. Assay of gastrin.
7. Computer analysis and predictive studies of cardiac arrhythmias.
8. Role of angiotensin II in hypertension and aldosterone regulation.
9. Transport of large molecules across foetal and newborn alveolar-capillary membranes.

SURGERY

1. Development of a miniaturized respiratory analyser with integrated circuitry.
2. Sleep in seriously ill patients.
3. The physiology of bile secretion.
4. The structure and function of the bile ducts.
5. Experimental liver transplantation.
6. Experimental kidney transplantation and kidney preservation.
7. Organ culture.
8. Use of heterograft skin in the treatment of severely burnt patients.

9. Influence of renal failure on cell proliferation *in vivo* and in tissue culture.
10. Effect of aspirin ingestion on stomach.
11. Cell de-differentiation in gastric mucosa transplanted to colon.
12. Wound healing in relation to nutritional status.

PAEDIATRICS

1. Studies of the control of erythropoiesis in the newborn.
2. Anaemia in the newborn.
3. Red cell enzyme defects and neonatal jaundice.
4. Folate deficiency in the newborn.
5. Neonatal cardiology—electro-cardiographic changes in the first weeks of life in normal infants and those with cardio-respiratory disorders.
6. The distribution of trace elements, particularly zinc and magnesium in the newborn infant.
7. Disorders in trace elements in neonatal surgical disorders.
8. Studies in the treatment of respiratory distress syndrome in the newborn, particularly the management of disordered acid with the base balance.
9. Disorders of intestinal peristalsis.

OBSTETRICS AND GYNAECOLOGY

1. Applied foetal physiology—use of foetal scalp blood and sensor probes in determining foetal condition.
2. Aspects of placental lipid metabolism.
3. Sociological survey of unmarried mothers; premarital sexual behaviour and motivation towards family planning in married women.
4. Effects of hormones on cardiac output.

SOCIAL AND PREVENTIVE MEDICINE

1. Traffic accidents—epidemiology, human factors, and efficiency of ambulance services.
2. Student health, with reference to the social and psychological aspects in an attempt to predict illness and consequent failure.
3. Social problems in the general hospital—attempted suicide and psychosocial effects of serious illness on the patient and his family.

5. *Graduates and Graduate Education*

The degrees M.B., B.S. were conferred on ninety-nine candidates, four with 1st class honours. In addition the degree B.Med.Sc. was conferred on five of the 1967 candidates, two with 1st class honours. By 1972 we shall be graduating over 150 which, with the Melbourne University output, aggregates 360 or more. The faculty is still anxious about the number of intern hospital places where adequate training can

be obtained. At present there are only about 220. Through its representatives on the Melbourne Medical Postgraduate Committee, of which the dean is vice-president, the faculty is taking a strong and constructive part in giving information and advice at the request of the Hospitals and Charities Commission, towards the solution of this difficult problem. This committee and the faculty together with the Australian Medical Association and the Royal Colleges of Physicians and Surgeons continue to press the urgent need for the State government to legislate for a compulsory pre-registration year.

In April a successful conference on "First Year Medical Graduate Training", sponsored by the Melbourne Medical Postgraduate Committee, was held at the Monash University medical school, Alfred Hospital. The Minister of Health (Hon. V. O. Dickie, M.L.C.) opened the conference which was attended by the chairman of the Hospitals and Charities Commission and seventy-seven participants. The report has been published and is a landmark pointing towards better graduate training.

During the year the degree M.D. was conferred on one candidate and the Ph.D. on two.

6. Curriculum

A great deal of attention has been given to the curriculum, detailed examination in particular being directed to the expansion of Social and Preventive Medicine and Psychological Medicine now that the chairmen in these subjects have been appointed, and in a more general way towards more participation by staff and students in any future modifications of the curriculum.

It has now been agreed by faculty that in future the curriculum will be studied from three different viewpoints: (1) standing curriculum committee (identical with faculty executive and meeting as a curriculum committee, twice a year); (2) *ad hoc* committees to consider specific areas; (3) an education committee, comprising staff and students whose members will be elected from among themselves, to meet regularly on the basic pattern of courses and the curriculum.

It is evident that increasing participation by sub-professorial staff and students will become a feature of the continuing study of courses, subjects, and examination methods.

Faculty of Science—Dean: Professor K. C. Westfold, B.Sc., M.A. (Melb.), D.Phil. (Oxon.).

Two new chairs were filled in the faculty, the foundation chair of Information Science by Professor C. S. Wallace who took up duties during 1968, and a chair of Pure Mathematics by Professor J. C. Crossley who will arrive in early 1969. The latter appointment was to fill the vacancy caused by the resignation of Professor Z. Janko who

has left to accept an appointment at the Institute of Advanced Studies in Princeton University, U.S.A.

The number of first year students admitted to the faculty again increased by fifty to 400. New courses introduced were Psychology 303 and Chemical Engineering Science 303. New courses approved for 1969 were Information Science 303 and Genetics 400.

The large number of students enrolling for higher degrees is an indication of the strength of the graduate schools of the faculty, the numbers enrolled for Ph.D. and M.Sc. in 1968 being 257, compared with 204 in 1967. In 1968 eight M.Sc. and thirty-one Ph.D. degrees were awarded.

The deficiency of accommodation continues to hamper our activities. With the exception of one laboratory provided by the department of Biochemistry to enable the professor of Genetics to commence teaching and research, no new accommodation became available to the faculty in 1968 despite increases in undergraduate, graduate and staff numbers. Consequently, many of our areas are below generally recognized standards, and some are real safety hazards. Despite this, research and graduate training has continued and A.R.G.C. grants totalling over \$152,000 were given to departments of the faculty of Science.

Increasing attention is being paid to establishing better lines of communications between staff and students. Student committees were set up by the department of Chemistry, a number of informal gatherings were held by the dean to enable students to meet various professors, and a special meeting of the faculty was held to which graduate students were invited and at which Mr. Warren Mann spoke on career appointments for science graduates.

Steps have been taken to enable more members of the faculty to participate in its affairs and functions. Four new committees have been set up to meet early in 1969 — one to deal with undergraduate matters, a second to deal with graduate aspects, a third to concern itself with future planning and development of the faculty, and a fourth which will concern itself with general matters concerning education and research. All these committees include non-professorial members of staff. The establishment of these committees is a reflection of our increasing size, the growing complexity through involvement with different scientific disciplines, and the different problems of laboratory and non-laboratory departments.

DEPARTMENT OF BOTANY

Teaching

Student numbers: Biology I—427
Botany IIB—15
Biology IIC—25
Botany III—3
Graduate—4

Staff

Dr. B. J. Macauley, S.T.F. (Mycologist)

Research

Grants: A.R.G.C. continues to support Professor Canny and Mr. Lumley, "Translocation of Organic Solutes".

A.R.G.C. grant of an electron microscope to Dr. O'Brien plus technician to run it; \$41,000.

Wheat Industries Research Council Reserve Bank	}	continue to support Dr. Holland, "Ser- ology of Host/ Parasite Relations".
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Churchill Fellowship to Mr. R. Amor for world trip on "Blackberry Control".

Research Programmes

As before. Dr. Macauley starting work on "The Effect of High Carbon Dioxide Concentration on Metabolism of Fungi Living on the Surface of Roots".

Outside University

Dr. O'Brien ran a course of twenty evening lectures to Council of Adult Education class of twenty-five: "Cell Biology".

Professor Canny gave two lectures to Lauriston senior forms on "World Population" and the "Behavioural Inheritance of the Human Animal".

Professional Activities

<i>Lecture by</i>	<i>To</i>	<i>About</i>
Mr. P. F. Lumley	I.B.P.	Translocation in crop plants
Dr. T. P. O'Brien	Canberra Conference of Electron Microscopy	Micro-tubules
Dr. T. P. O'Brien	Walter & Eliza Hall Inst.	New histological techniques
Dr. T. P. O'Brien	Vermin & Noxious Weeds Division	Bracken control
Dr. T. P. O'Brien	Weeds Society of Victoria	Bracken control
Dr. T. P. O'Brien	Melbourne Botany Students Association	Histological techniques
Dr. T. P. O'Brien	Australian Primary Producers Union	Problems in weed control

Dr. T. P. O'Brien	First Victorian Weeds Conference (inaugural mtg.)	Approach of plant physiology to the selective toxicity of 2,4D
Dr. D. M. Churchill	First Victorian Weeds Conference (inaugural mtg.)	Weeds in the forthcoming plant survey of Victoria
Professor M. J. Canny	Aust. Chem. Inst.	Plants into people
Professor M. J. Canny	Aust. Chem. Inst. (Geelong branch)	Food, fertility and famine
Professor M. J. Canny	Malvern Liberals	The poverty explosion
Professor M. J. Canny	Astronomical Society (Vic.)	Tree rings and patterns of ancient weather
Dr. A. A. Holland	Australian Grasslands Conference, Perth	Legume nitrogen and artificial nitrogen

General

Accommodation continues critical. The intake of honours and higher degree students is limited by bench and desk space. The biology laboratory is used all the week for Biology I and IIC classes from Monday lunch-time to Friday night. The botany laboratory is shared by both second and third year classes.

DEPARTMENT OF CHEMISTRY

Teaching

In 1968 the undergraduate students numbers were (Chemistry I + IIB + IIC + IIE + IIIA + IIIB) 1,029 students. Sixty-six students (37 IIIA and 29 IIIB) successfully completed their B.Sc. with chemistry as a major. Nineteen completed their honours degree.

Three new Commonwealth Postgraduate Awards were gained by graduate students proceeding to Ph.D. degrees. P. G. Burton gained one of the Monash honours year scholarships. The Applied Chemicals Scholarship was awarded again to R. A. Spence.

Staff

Two new senior teaching fellows were appointed: Dr. S. H. H. Chaston and Dr. R. G. Amiet. Dr. P. G. C. Campbell joined the department as N.R.C. (Canada) Postdoctoral Fellow. Mr. I. G. McWilliam commenced research in the department on gas chromatography as the Shell Research Fellow. Dr. R. S. Rosich joined the department as research fellow on a grant made to Professor J. M. Swan. Mr. J. G. Crofts became a professional officer.

Research

The department continued to receive support for research activities from a number of sources: The Australian Wool Board, the Australian Meat Research Committee, Merck, Sharp and Dohme (Australia) Pty.

Ltd., Monsanto Chemicals (Australia) Ltd., the Victorian Anti-Cancer Council. A.R.G.C. grants were received for projects directed by the following staff members: Professors R. D. Brown, J. M. Swan, B. O. West, Drs. B. A. W. Coller, G. B. Deacon, R. S. Dickson and B. M. K. C. Gatehouse.

The equipment constructed to determine the tar content of cigarette smoke was brought into action during the year and tar contents of a number of brands of cigarettes were measured. The results, published by the Victorian Anti-Cancer Council, created considerable public interest and the "smoking machine" has appeared on television and in the press. The microwave Zeeman spectrometer mentioned in the last report has been found to have excellent sensitivity and resolution. A special, pyrolytic transient-species spectrometer has been constructed and searches for shortlived molecules are now commencing. It is believed that this is the only instrument of its kind in existence. The new Varian spectrometer A 56/60 was installed early this year and has been performing reliably throughout the year. A large Varian magnet (15") is currently being installed. It will be used for Zeeman microwave spectroscopy, E.S.R. spectroscopy and wide line N.M.R. spectroscopy. Research activities continue in many areas—organic synthesis, biological chemistry, inorganic chemistry, organometallic chemistry, solid state structural chemistry, physical chemistry of solutions, molecular interactions, spectroscopy and theoretical chemistry. Several research groups are making heavy use of computer facilities. It is a cause of concern that especially in the case of the theoretical chemistry group, research is restricted by the capacity of speed of the CDC 3200 computer. Although the new Burroughs 5500 computer will offer some added capability, it is feared that our studies of molecular wave functions will be outstripped by overseas groups until a faster machine with substantially increased core memory becomes available.

Student Relations

Two innovations designed to promote understanding and foster exchange of ideas between the department and chemistry students, both graduate and undergraduate, were introduced during the year. Firstly an informal meeting of second, third, and fourth year students was arranged by two of the younger staff members to suggest to students that if they liked to arrange further meetings from time to time, the department would help by, for example, providing some duplicating assistance, etc. The aim would be for students to discuss any matters relating to chemistry courses, etc. and, having reached a consensus, to provide a brief report. The department undertook to ensure that such views would be carefully considered by the appropriate person—the chairman, laboratory manager, or relevant lecturer, etc. Several such meetings were held and views passed on, leading in almost every case to action by the Chemistry department. It is planned to give such

meetings further encouragement in the future and perhaps give the procedure some suitable official recognition.

Secondly, a graduate students' liaison committee was formed. Three graduate students met regularly with the laboratory manager, and occasionally with the chairman, to discuss problems that either party had encountered and also to increase the flow of information in both directions. The graduate students' liaison committee appeared to be very effective in dealing pleasantly with many matters and it is now regarded as a permanent feature of departmental administration.

GENETICS

Teaching

Service courses in genetics to undergraduates were given as part of the following courses: Biology IIC, Botany III, Zoology III, Biochemistry III, Biochemistry IV.

There are at present two graduate students in genetics, one proceeding to a Ph.D., the other currently to an M.Sc.

Research

The programme of genetic studies on the bacterium *Pseudomonas aeruginosa* has been continued. This includes the genetic basis of a system for detecting differences in DNA which do not have a coding basis; the genetic control of enzyme synthesis and the nature of conjugation with particular reference to fertility and recombination deficient mutants. A new project on the role of prophage in the bacterial genome has been initiated. This research work has been supported by grants from the Australian Research Grants Committee and the Australian Institute of Nuclear Science and Engineering.

Education Outside the University

A textbook on genetics for matriculation students has been written and is currently in press.

Professional Activities

Professor Holloway is an associate editor of the *Australian Journal of Experimental Biology and Medical Science*. Two papers from the genetics group were given at the meeting of the Australian Genetics Society in Sydney in May.

General

This year has been one of integration of genetics teaching and research into the Science faculty. The temporary space generously provided by the department of Biochemistry is limited but adequate. This situation will continue next year. Visitors of genetic interest included Professor B. Strauss from the University of Chicago and Dr. Charlotte Auerback from the University of Edinburgh.

DEPARTMENT OF INFORMATION SCIENCE

General

The department commenced operation in July when Professor C. S. Wallace took up his appointment.

Teaching

Undergraduate teaching will start in 1969 with the subject Information Science 303. Approximately twenty-five students are enrolled. Mr. A. Y. Montgomery has been appointed senior lecturer, and Mr. P. Herman as senior teaching fellow.

One Ph.D. student, T. McQuade, is now working on medical records. Seven others have enrolled as M.Sc. or Ph.D. students.

A computer programme has been developed to assist undergraduate teaching by simulating the behaviour of sequential logic machines, and to mark exercises in digital logic.

Research

Professor Wallace's research work on numerical taxonomy is continuing, and a programme to analyse mixed normal distributions has been written.

Professional Activities

Invited addresses have been given by Professor Wallace to the Australian Computer Society, the Medical Society of Prince Henry's Hospital, and the Melbourne University Architectural Students' Society.

A course of ten lectures was given to computer science honours students at Sydney University.

Professor Wallace is a member of an Expert Group on Character Sets and Coding of the Australian Association Sub-committee on Data Processing Standards.

DEPARTMENT OF MATHEMATICS

Research

Early in 1968 a geophysical fluid dynamics laboratory was established to serve as a centre for theoretical and experimental research in those areas of fluid dynamics having relevance to meteorology and oceanography, especially stratified and rotating flows, turbulence and convection. This laboratory is a co-operative venture between the departments of Mathematics and Mechanical Engineering but participation is open to any member of the University and, in addition, to mathematicians; the group includes a number of engineers. It is hoped that proper laboratory accommodation will become available in 1969 but, in the meantime, a programme of experimental work has been

started in a temporary laboratory. A Geophysics Fluid Dynamics Seminar has been established and, through talks by visiting and local speakers, this helps to further contacts with the C.S.I.R.O. Division of Meteorological Physics and the Bureau of Meteorology.

Staff

Professor Z. Janko resigned his appointment and left in October. Dr. J. N. Crossley, Fellow of All Souls, Oxford, has been appointed to the chair of Pure Mathematics vacated by Professor Janko. Dr. Crossley will take up his appointment in 1969 and his arrival will initiate a programme of graduate and undergraduate activity in the area of mathematical logic, an important area of mathematical activity which has not previously been pursued to any great extent in Australia.

Higher degrees

During 1968 some fifty candidates have been enrolled for higher degrees in mathematics.

DEPARTMENT OF PHYSICS

Teaching

Student numbers — Undergraduates	930
Honours	19
Research students	45

Staff

Dr. R. J. Elliott and Dr. D. J. Roaf, both from Oxford, have temporarily joined the department.

In September, Professor H. C. Bolton went to the department of Theoretical Physics, Oxford, on twelve months' study leave.

Mr. G. J. Troup has been nominated as this year's staff exchange scholar to Leningrad University, which he will visit early in 1969.

Dr. A. H. Spry, who held a senior research fellowship in the department of Physics, has been appointed manager of Exploration Services at the Australian Mineral Research Laboratories.

Equipment

During this year, a cryostat incorporating a 100 kilogauss superconducting solenoid was constructed in the department. The solenoid can produce the most intense steady magnetic field in Australia.

A very low temperature cryostat, constructed in the department, is now operating to within 0.05° of absolute zero, and work on a 0.005° cryostat has begun.

Mr. Z. V. Padanyi constructed and successfully operated an Argon-ion laser which is being used for Raman studies of solids. This is the first such laser in an Australian university.

PROFESSIONAL ACTIVITIES

Lectures

Mr. G. J. Troup has given lectures on behalf of the Victorian Branch of the Gemmological Association of Australia to the G.A.A. diploma students, as well as a public lecture on lasers sponsored by Monash University Association.

Books

Mr. Troup's textbook *Understanding Quantum Mechanics* is being published by Methuen.

The text of Dr. Perlman's A.B.C. television lectures on relativity has been published by Sun Books under the title *An Idea of Relativity*.

Conference Contributions

<i>Papers presented by</i>	<i>At</i>
Dr. Chamberlain, Dr. Fletcher, Dr. Pilbrow	A.N.Z.A.A.S.
Dr. Pilbrow	Aust. Inst. Phys. Conf. on Ionic Crystals
Dr. McLaren, Dr. Phakey Dr. Spry	Aust. Crystallographers' Meeting Geological Soc. Granulite Symposium

General

The accommodation position has been acute this year. Fortunately, we were able to obtain some space for research students in the engineering building. Until completion of the north science block, accommodation will continue to be a very serious problem.

The extension of the liquid helium and liquid nitrogen plants for our low temperature research programme has been of major importance. The liquid nitrogen storage system has been piped directly into our helium liquefier. This results in great savings in time and effort. Also, we now provide an "on tap" service for liquid nitrogen to many other departments. We hope to have the helium liquefier converted to automatic operation soon and this will provide an increased supply and enable research programmes to operate more efficiently.

DEPARTMENT OF PSYCHOLOGY

Teaching

During 1968 Psychology IA (220 students), Psychology IIA (86) were taught in the faculty of Arts, and Psychology I (64), Psychology IIB (13), and IIIB (5) in the faculty of Science, the latter for the first time. In addition, subjects were offered in Medicine III, and Engineering III (Human Factors in Industry). In 1969 all subjects offered by the department of Psychology, including Psychology IV, will be taught for the first time.

Staff

During 1968 the following staff changes occurred:

Resignations: Mr. G. de F. von Sturmer, lecturer — to a lectureship in the University of Auckland, N.Z.; Dr. A. G. Worthington, lecturer — to an associate professorship in Trent University, Canada; Mr. P. M. Wenderoth, senior teaching fellow — to Survey Research Centre.

Appointments: Dr. J. L. Bradshaw — lecturer, Dr. C. S. Chen — lecturer, Dr. S. A. Crossley — lecturer, Dr. K. I. Forster — senior lecturer, Dr. J. C. Saunders — lecturer.

Research

The main research programmes during 1968 have been as follows:

- (i) Counting and fixation behaviour in rats;
- (ii) Human information processing with bisensory signals;
- (iii) Neurophysiological basis of attention and learning;
- (iv) Analysis of complex human skill, perceptual constancy and illusion;
- (v) Human cognitive processes.

The A.R.G.C. awarded Mr. A. D. Perriment an additional \$1,000 following an award of \$10,400 in 1967.

Education Outside University

A lecture on "Careers in Psychology" was given at Beaumaris High School and Blackburn High School during the year.

PROFESSIONAL ACTIVITIES

Editing: R. H. Day, Associate Editor, *Australian Journal of Psychology*

M. B. Macmillan, Review Editor, *Australian Journal of Psychology*

Conference contributions

The following contributed papers during the annual conference of The Australian Psychological Society, Brisbane, August 1968:

R. H. Day — "Perceptual Constancy of Auditory Direction".

W. R. Webster — "Tests of Theories of Auditory Response Habituation".

M. B. Macmillan — "Photographic and Computer Methods for the Analysis of Movement".

During the 13th Canberra Symposium in Perception held at Monash in May 1968, papers were presented by F. M. M. Coltheart and G. M. Geffen, N. J. Wade and R. H. Day, and J. L. Levy.

Personal

R. H. Day was invited to act as president of Section 23, A.N.Z.A.A.S. during the 41st Congress, August 1969.

F. M. M. Coltheart was awarded the degree of Ph.D. by the University of Sydney.

General

Accommodation difficulties constitute the main problem to be faced by the department of Psychology during 1969 and 1970. A situation of growing seriousness will not be relieved until the completion of science south building in 1970.

DEPARTMENT OF ZOOLOGY

General

In the course of the year the department of Zoology altered its name from "Department of Zoology and Comparative Physiology". The department taught undergraduate courses to approximately 500 students, 400 of whom were in first year biology, a course that is offered jointly with the department of Botany. At the beginning of the year there were twelve students enrolled as Master's candidates and sixteen candidates for the degree of Ph.D.

Research

Research programmes supported within the department deal with the following topics: (1) physiological and behavioural adaptation of animals to arid environments; (2) learning and communication between animals; (3) limnology; (4) temperature regulation in monotremes; (5) Paleozoic vertebrates; and (6) developing enzyme systems in the mouse and chick. Several projects dealing with behaviour and reproduction are being conducted in the Marshall Reserve where animals are relatively undisturbed and may be observed under somewhat natural conditions.

Most members of the department participated in educational and research efforts outside the University. Drs. Ealey, Dorward and Nelson contributed to a series of lectures on Australian fauna sponsored by the Australian Broadcasting Commission. Several staff members and graduate students contributed to conferences of the Australian Ecological Society, Australian Mammal Society, and the Australian Society for Limnology. The journal of the latter society is edited within the department by Dr. I. Hiscock.

Dr. I. A. E. Bayly chaired, by invitation, a session at the XVII International Limnology Congress in Israel. Recognizing the importance of fresh-water biology within Australia the department has gone ahead with plans to establish a field station in the Western Lakes District near Camperdown that will house equipment and a small number of researchers.

Visitors

Dr. E. Reese, University of Hawaii, and Mr. K. Schminke, Universität Kiel, worked in the department as visitors for several months and we were honoured to host Professor G. G. Simpson, Harvard Uni-

versity, for a brief visit. Members of the department were especially disappointed when Professor C. H. Fernando, University of Waterloo, cancelled a proposed visit in protest against Australia's racial policies for visitors (not immigrants).

COMPUTER CENTRE

Staff

Staff appointed in 1968: Lecturer — P. Annal, B.E. (previously engineer in computer centre); Teaching Fellow — D. Hambleton, B.E. (from P.M.G. Department, Perth); Programmer — G. Lodwick, B.Sc. (from C.S.I.R.O.).

Teaching

Undergraduate:

Three courses in elementary FORTRAN programming were presented, one in the first term to 130 engineering students and two in the second term to 100 science students. An introductory course in methods of statistics and related computing methods was given to a small number of zoology students.

Graduate and Staff:

In accordance with previous years' policies introductory courses in FORTRAN and COBOL programming were given to staff members and graduate students. In addition to these, evening courses in advanced aspects of computer science were offered to suitably qualified people on the campus and from outside organizations. No formal examinations were conducted.

Activities

A Burroughs B5500 computer system was ordered for delivery in February 1969. This will more than double the centre's computing capacity. The equipment ordered includes—

- 6 4096-word memory modules
- 1 Processor
- 3 Channels
- 1 10-million character disc
- 1 700 line per minute printer
- 1 800 card per minute reader
- 1 100 card per minute punch
- 1 Data communications controller for remote terminals.

An ICL mark sensing reader was ordered for delivery in April 1969. This will be used for data collection and for marking objective tests. As an interim measure a slower machine, an IBM 1232 document reader, was ordered for delivery in February 1969.

Late in 1968 the remote terminal monitor system (RTM), which has been developed in the centre, was put into restricted operation. The RTM system will be used to provide remote teleprinter terminals

at a number of places on the campus and in teaching hospitals early in 1969.

Operational Statistics (3200 system)

During term time in 1968 the 3200 was heavily loaded and was run without a break from 7 a.m. on Mondays to midnight on Saturdays and for about twelve hours on Sundays.

The total hours of operation for the year were 7,038, and approximately 104,000 programmes were run.

Computer Processing for Outside Agencies

During the year the computer centre has continued to carry out work for a number of outside agencies; a number of the centre's full-time staff being employed solely for this work. Income from these contracts has been used to offset the capital costs of computing equipment and has developed to the level where it will meet the rental of the B5500 computer in 1969.

The major projects for 1968 have been:

The Victorian Universities and School Examinations Board — processing of Leaving and Matriculation examination data;

The Victorian Universities Admissions Committee — selection of first-year students;

The Australian Council for Educational Research — processing the Commonwealth Secondary Scholarship examination data for Victoria, Tasmania, Queensland, South Australia, Western Australia and processing the Tertiary Entrance Examination experimental project;

The Department of Education and Science — Commonwealth Tertiary Scholarships;

The Bureau of Mineral Resources — geophysical calculations.

Education Outside University

A course for 270 school teachers on basic programming was held at the end of 1968 to introduce them to the MINITRAN system developed by Mr. Whitehouse. Several schools will teach MINITRAN in 1969 and use the computer centre services for processing student exercises overnight at a cost of ten cents per exercise.

Research and Development

A project on compilers and programming languages started by Mr. Whitehouse has made significant progress. A FORTRAN compiler written by Mr. Whitehouse and offering advantages over the standard compiler is now in general use.

Mr. Bainbridge has continued with his work on analysing matriculation examination results to study the possible techniques for standardization within and between subjects.

The collaborative project with the Hospitals and Charities Commis-

sion on developing computer-based systems in the medical field has made significant progress. Dr. D. Race was appointed director of the project and the staff has increased to ten.

General

Office space has been further increased to include space in engineering building 1 thus providing a reasonable level of accommodation until the north science building is completed.

Library—Librarian: Mr. E. H. Clark, B.A. (Melb.), F.L.A.A.

By the end of 1968, the University library had grown to approximately 315,000 volumes. 6,743 periodicals were being currently received.

Stock was distributed as follows: the main library (195,124 volumes), the Hargrave Library, for the physical sciences and engineering (42,213), the law library (28,105) and the bio-medical library, with 25,971 volumes on the Monash campus, 11,002 at the Alfred Hospital, 2,563 at Queen Victoria, and further small collections at Prince Henry's, Fairfield and Royal Park Hospitals.

The new law library came into use early in the year and provided welcome relief across the library system: to the Hargrave, in which the law collection had been occupying valuable space; to the bio-medical library, which was forced to move into the law library during extensions to its own building, and to the main library, whose space problems were such that a large proportion of the research material had temporarily to be evacuated. By the end of the year the bio-medical library building had been completed and re-occupied, but it became clear that the main library's needs were such that the law library would be asked to cede even more space in 1969.

The repeated movement of collections, sometimes at most inconvenient times, reduced the effectiveness of the staff, and the temporary arrangements were anything but convenient to readers. It is hoped that the situation will be eased in 1969, but full relief cannot be expected until completion of the extension to the main library late in that year.

Loans for the year were as follows:

Main Library	175,819
Hargrave	48,531
Bio-Medical	
(a) Monash	38,719
(b) Alfred	19,807
(c) Queen Victoria	4,860
Law	3,887
<i>Total</i>	<u>291,623</u>

Pressure on photocopying services was slightly eased later in the year by the provision of several coin-operated machines which have proved spectacularly popular. The library itself produced 158,340 prints for staff and students.

The number of items borrowed through the inter-library loan service rose to 8,595, as did loans to other libraries, at 3,048. The University is still, obviously, heavily indebted to the many libraries throughout Australia and overseas, who are so ready to make their stock available.

At the end of 1968 the library staff establishment had increased by only one, to 124.

Development of the operative computer systems supporting the student reading lists and lists of current periodicals has proceeded, with the object of providing greater control and more information to library staff and readers. Planning is proceeding for the gradual application of computer techniques also in the fields of acquisitions and circulation.

The most exciting development arises, however, from the availability of cataloguing data in machine-readable form from the Library of Congress. The volume of this data almost requires that it be handled on a co-operative basis; the three Victorian universities, with the State Library, have undertaken a considerable pilot project aimed at eliciting information as to the cost and feasibility of using computer techniques in central cataloguing work. The library has taken an active part in this project and has gained considerably in knowledge and experience of the operational requirements.

At a wider level, a small federal committee, on which the library is represented, has been set up to examine the implications for Australia of the Library of Congress move.

6. STUDENT ENROLMENT

The net total undergraduate population increased from 6,182 in the previous year to 7,221, an increase of 1,039 or seventeen per cent. Graduate enrolments increased from 475 to 599 and total enrolments of all students from 7,120 to 8,466. Full details of enrolment are given in the table opposite.

Of these 8,466 students, 442 (5.2 per cent of the total) were from overseas, as follows:

Borneo 9; Burma 1; Canada 3; Czechoslovakia 1; Fiji 5; France 1; Ghana 1; Holland 1; Hong Kong 49; India 19; Indonesia 19; Israel 3; Japan 3; Kenya 1; Malawi 2; Malaysia 206; New Zealand 10; Norfolk Island 1; Pakistan 4; Papua and New Guinea 3; Rhodesia 1; Sierra Leone 1; Singapore 39; South America 3; South Vietnam 11; Thailand 18; Uganda 1; United Kingdom 15; United States of America 7; West Germany 3; Zambia 1.

GROSS ENROLMENTS 1968 (as at 30 June)

Faculty and Year	Full-time			Part-time			Total		
	M	F	T	M	F	T	M	F	T
HIGHER DEGREE:									
Ph.D.	181	23	204	56	10	66	237	33	270
Master	125	37	162	130	37	167	255	74	329
Total	306	60	366	186	47	233	492	107	599
MASTER PRELIMINARY	17	6	23	22	13	35	39	19	58
BACHELOR DEGREE:									
Arts									
I	249	514	763	179	178	357	428	692	1120
II	226	355	581	128	124	252	354	479	833
III	276	325	601	63	66	129	339	391	730
IV	39	34	73	—	—	—	39	34	73
Total	790	1228	2018	370	368	738	1160	1596	2756
Eco. and Pol.									
I	345	51	396	101	8	109	446	59	505
II	309	44	353	88	7	95	397	51	448
III	270	37	307	69	8	77	339	45	384
IV	34	5	39	—	—	—	34	5	39
Total	958	137	1095	258	23	281	1216	160	1376
Education	1	3	4	81	27	108	82	30	112
Engineering									
I	214	2	216	—	—	—	214	2	216
II	192	—	192	—	—	—	192	—	192
III	118	2	120	—	—	—	118	2	120
IV	88	—	88	—	—	—	88	—	88
Total	612	4	616	—	—	—	612	4	616
Law									
I	213	49	262	20	1	21	233	50	283
II	168	21	189	9	2	11	177	23	200
III	92	8	100	2	1	3	94	9	103
IV	93	4	97	2	—	2	95	4	99
V	57	8	65	2	—	2	59	8	67
Total	623	90	713	35	4	39	658	94	752
Medicine									
I	137	24	161	—	—	—	137	24	161
II	135	27	162	—	—	—	135	27	162
III	133	20	153	—	—	—	133	20	153
IV	104	25	129	—	—	—	104	25	129
V	89	17	106	—	—	—	89	17	106
VI	84	17	101	—	—	—	84	17	101
B.Med.Sc.	10	—	10	—	—	—	10	—	10
Total	692	130	822	—	—	—	692	130	822
Science									
I	294	96	390	14	7	21	308	103	411
II	227	81	308	40	8	48	267	89	356
III	185	58	243	12	2	14	197	60	257
IV	81	12	93	—	—	—	81	12	93
Total	787	247	1034	66	17	83	853	264	1117
TOTAL	4463	1839	6302	810	439	1249	5273	2278	7551
DIPLOMA—Education	156	155	311	66	49	115	222	204	426
NOT FOR DEGREE	1	3	4	30	16	46	31	19	50
GROSS TOTAL ENROLMENT	4943	2063	7006	1114	564	1678	6057	2627	8684
Less adjustment for students enrolled for more than one course	182	24	206	10	2	12	192	26	218
NET TOTAL ENROLMENT	4761	2039	6800	1104	562	1666	5865	2601	8466

7. STUDENT FACILITIES

Student Residence

The position regarding housing and transport has shown no improvement as the student numbers increase.

With rising transport fares even more students are seeking accommodation close to the University, but it is not possible to meet this demand. The distances that students are being forced to travel are increasing alarmingly and costing more in time and money, causing dissatisfaction and hampering their work.

It is noted that many more students, of all years, are seeking flats or other types of independent accommodation in preference to private board: the shortage of such housing is acute.

The existing halls of residence, the North-East Halls, continue to function satisfactorily. However, from experience in their operation, it was agreed within the University that the next group should consist of smaller individual halls, each housing 120 students, surrounding a common catering and administrative facility. This grouping was intended to house students at the same capital cost per place as the arrangement, based on halls of 200 students, for which funds are available.

In the event, the Australian Universities' Commission ruled that a departure from its recommendation was not possible. The project for the first stage of a group of two halls, each housing 200, thus moved into the planning stage. The first of these halls, Roberts Hall, should be ready early in 1971.

Health Service

In general, it may be said that, with certain notable exceptions, which will be dealt with later in more detail, the scope of health service activities has changed little from 1967. What has happened is a further increase in the tempo and volume of work done so that 11,300 visits were made to the service. The nature of the work carried out remained much the same — medical advice and simple treatment with referral when appropriate, accidents, dressings, injections and, of course, medical counselling of students for a variety of problems.

This has been the first full year that the services of a consultant psychiatrist have been available in the health service. Even though he has been present on only one half day a week, it has been a great advantage to the service, and to the more severely disturbed students, to be able to obtain speedy expert assistance and advice.

No medical examination of first year students was done in 1968. Instead, with the approval of Council, a confidential health questionnaire was completed at the time of enrolment by all the first year entry. 2,595 completed forms were received, each of which was then studied and any relevant information noted. Where it was considered appro-

priate, letters were sent to students inviting them to attend for consultation if they wished. While the response was not startling, it was considered that we were able to help many. Council has approved the use of the health questionnaire for the future. For this we are grateful because it seems the best method of obtaining early details of the previous health and basic attitudes of first year students.

The health service maintains a keen interest in the functioning of the sports medicine centre, which at times experienced staffing difficulties during the year. This service is much appreciated by the undergraduates, and certainly helps greatly to return injured players speedily to their chosen sport.

Careers and Appointments

The number of people registered with the careers and appointments office as seeking employment at the end of 1968 rose by forty-seven per cent to 819 (554 men and 265 women) compared with the corresponding figure in 1967. As well as the graduating students to whom in the main these figures refer, the office is increasingly concerned with providing careers counselling to students in earlier years and to matriculants. In addition, the number of graduates with some experience seeking counsel or aid in the development of their careers is rising quite rapidly, and now represents about twenty per cent of total registrations.

Once again the actual placement of graduates has presented relatively few problems. There are two main areas causing some concern. The ever-present problem of placing women graduates, particularly those with pass degrees in Arts, in useful and challenging positions other than teaching is changing complexion but not abating. Whilst more and more of them are coming to the realistic conclusion that their university education must be supplemented by some form of vocational training, the paucity of suitable graduate courses providing such training is increasingly evident. Efforts are being made to encourage employers and other authorities to recognize the need for a greater range of such training and to support its provision.

The other significant area of difficulty concerns graduates and students with some special barrier to their normal employment. Amongst these are Asian graduates, who must normally leave Australia after one year of graduate experience, and people with physical or psychiatric disabilities. Efforts are being made to influence employers to accept a degree of responsibility for these problems.

In addition to its normal activities, the careers and appointments office organized a conference on 5 June 1968 on the theme "Industry, the University and Tomorrow". The conference was attended by some 150 senior delegates from industry, commerce, government departments and agencies, and Monash and other universities heard addresses from Sir Alan Westerman, Messrs. P. J. Derham and J. Carroll, and the Vice-Chancellor, and took part in discussion. It is believed that this

sort of dialogue is of real value to the University and it is proposed to make this conference the first of a series with similar aims.

With the appointment of an administrative assistant it has become possible for the office to conduct investigations into sociological and economic factors affecting the employment of graduates. The first fruits of this work will be an analysis of the first jobs accepted by all Monash graduates on completing their courses, and a survey of salaries actually paid to graduates completing their courses in 1968. In subsequent work it is proposed to look at the reasons why graduates change jobs, the trends in demand for certain types of graduates, the special problems relating to career planning by graduates with higher degrees, and such other matters as may seem relevant to the purpose of the office in providing a service to students, the University and the community of employers.

Student Counselling

900 students were seen by the unit during 1968. The range of problems and difficulties reported were not significantly different from those reported in previous years. The counsellors are continuing to explore the effectiveness of group methods with various student populations. In 1968 attention was concentrated on students whose problems were highly incapacitating. The results were quite encouraging. There will be closer co-operative efforts in this direction between the counselling unit and the student health service in 1969.

Bookshop

During 1968 a considerable effort has been made to improve the standard of service connected with the provision of textbooks, and to improve the financial position of the bookshop. The past policy of providing academic books together with a range of general books, gramophone records, art prints and stationery has been continued. Substantial returns of unwanted stocks to suppliers, several large sales during 1968 and the introduction of a planned textbook ordering programme have improved the bookshop inventory position.

In December it was decided to change the form of supervision of the bookshop. A board was set up to replace the advisory committee. Its function is similar to that of a board of directors which reports to the University Council via the Vice-Chancellor. It is not anticipated that the board will interfere in the day-to-day operations of the bookshop but will rather be responsible for overall direction and the formulation of broad policy.

It is expected that these efforts will improve the operation of the bookshop. It is emphasized that their aim is to establish an efficient bookshop which is able to provide the best possible service.

Religious Centre

The permanent Religious Centre was completed during second term

1968. It was opened on 9 June by Archbishop Woods, and presented to the University at a ceremony attended by donors and representatives of the University.

Daily religious services, discussion groups, and inter-denominational activities have been continued and extended in the new centre. Sunday services are of particular value to students resident in or near the University. There has been much pastoral work done by the chaplains among students and staff.

A number of outside organizations has made application for the use of the large chapel for special services; these are accepted whenever possible. It has been noticeable that a large number of University people (both students and staff) has requested that their wedding be celebrated in the centre. In December the Monash Staff Drama Group arranged an end-of-year programme of readings and one-act plays, and the first annual carol festival was arranged and performed by the Monash Choral Society.

Towards the end of the year, the Rev. L. W. Hahn accepted a position in Brisbane, and the Rev. J. W. Whitehead was appointed Anglican and Protestant chaplain. The Anglican services are conducted by the Rev. D. Dawkins.

8. STUDENT ACTIVITIES

The Union once again proved to be the centre of student activity, organized and otherwise. The first floor with its large lounge and dining areas provided ideal venues for mass meetings and teach-ins, apart from the ordinary day-to-day interaction. This year saw Farm Week directed towards a more positive aim, that of raising funds for the Richmond Day Hospital and as well as staging the usual protest marches, the students organized one for the Biafran Appeal, raising some thousands of dollars. The response to the Red Cross Blood Bank visits were overwhelming; the visits were increased to nine days, and there were over a thousand donors. It is unfortunate that these aspects of student activities are quickly forgotten by the public.

Another notable activity was that of the guide group formed by some interested students to conduct visitors around the University. Members of the Commonwealth Universities' Congress who visited Monash last August expressed much appreciation of the group.

After internal conflict, the Students' Representative Council was dissolved and a system designed to provide greater student participation and representation — the Monash Association of Students — was inaugurated, though as yet without a constitution.

Usual student activities were carried on through the interim period, and the new system appeared to work well in its first months of existence.

It is hoped that in 1969 the Monash Association of Students will

gain a constitution and will prove an effective centre of student activity after what has been a rather disturbed year in 1968.

Apart from the growth from seventy to ninety clubs, one of the most significant contributions made by clubs and societies was the initiation of vacation courses in effective speaking, Italian, Hebrew, pottery, jewellery, painting and dressmaking. During the year, tuition in a variety of subjects, like Topsy "just grewed", and fifty tutors took sixty classes of 750 students, as well as eighty individual students. The classes were organized by fifteen clubs and the Union.

Six home intervarsities were held, the most important being the Australian Universities' Drama Festival. Students were accommodated in caravans in the car parks, and attended twenty plays produced by fifteen universities. In addition, workshop and seminar sessions were held.

About twenty clubs held weekend or longer conferences. Demand for information on suitable sites led to a survey of guest houses and camp sites in Victoria. Seminars were held by the Law Students' Society and African-Australian Association and the Malay-Singapore Students' Association.

Although the number of intervarsity sporting successes was less than the previous year, 1968 was marked by steady progress for most teams in local competitions. The Australian Rules team finished second in B grade and thus won promotion to A grade of the Amateur Football Association, while the hockey club won the B grade section to go back to A grade.

The plans of the new change rooms and equipment store were completed and the tender let late in November.

Despite problems of staffing, the sports medicine centre continued its good work. A grant was received from the Rothmans National Sport Foundation to enable the production of a booklet on the emergency treatment of sports injuries. It is planned to publish this booklet early in 1969.

9. FINANCE

Funds for expenditure on recurrent purposes during the year ended 31 December 1968 were available from the following sources:

	<i>Totals</i>	<i>University</i>	<i>Teaching Hospitals</i>	<i>Halls of Residence</i>
	<i>\$000</i>	<i>\$000</i>	<i>\$000</i>	<i>\$000</i>
State Government Grant	6,328	6,270	58	
Academic Fees	2,209	2,209		
Commonwealth Government Grant	4,641	4,580	31	30
	<u>13,178</u>	<u>13,059</u>	<u>89</u>	<u>30</u>

The legislative sanction for the Commonwealth contribution is contained in the *Universities (Financial Assistance) Act No. 90* of 1966 as amended by Act No. 107 of 1967.

Government funds available for expenditure on non-recurrent purposes during the 1967-69 triennium are as follows:

(1) *State and Commonwealth—*

Buildings, Equipment and Furniture:	\$000
On University site, other than Halls of Residence	9,500
Halls of Residence	960
Affiliated Colleges	2,172
Teaching Hospitals	1,347
Computing Facilities	160
	14,139

The legislative sanction for the Commonwealth portion of each of these amounts (i.e. one-half) is contained in the *Universities (Financial Assistance) Act No. 90* of 1966.

(2) *State only—*

The sum of \$270,000 has been provided by way of A.U.C. special research grants for the training of graduate students during this triennium.

(3) *Commonwealth only—*

Grants totalling \$825,000 have been made available by the Australian Research Grants Committee for expenditure during this triennium on approved research projects.

In addition to the above amounts voted directly by governments, the sum of \$359,451 was received in 1968 from government-financed bodies for the conduct of specific research projects and for the support of graduate students. Institutions coming within this category include the National Health and Medical Research Council, the Rural Credits Development Fund and the Commonwealth Advisory Committee on Advanced Education.

A summary of the table of fees payable by students enrolled for the year 1968 is set out hereunder.

Academic Fees—

Undergraduate courses:	full-time \$372 per annum
Graduate courses:	
Master—	full-time \$132 per annum
	part-time \$66 per annum for first
	two years and \$15 per annum
	thereafter
Doctor of Philosophy—	full-time \$90 per annum
Higher Doctorate—	\$165

Union Fees—

Students studying on campus: full-time \$45 per annum
 part-time \$30 per annum

Students studying off campus: \$15 per annum

The University's accounts for the year 1968 are appended to this Report.

10. GIFTS AND DONATIONS

The following grants and gifts were received by the University:

\$59,459 from the Van Cleef Foundation as follows:

\$58,959, over four years, for the establishment of a research fellowship in neurophysiology in the department of Physiology.

\$500, to Dr. G. Fink (Anatomy) to attend the Third International Congress of Endocrinology in Mexico.

\$50,000, from the Bernard Van Leer Foundation Council (U.S.A.) to the Centre for Research into Aboriginal Affairs for the proposed study "A Victorian Aboriginal Pre-School Project", by Dr. Colin M. Tatz.

\$45,150, from the National Heart Foundation as follows:

\$11,100, to Dr. K. J. Catt (Medicine)

\$7,630, to Dr. L. Austin (Biochemistry)

\$7,500, to Dr. L. B. Geffen (Physiology)

\$5,900, to Dr. M. E. Holman (Physiology)

\$5,604, to Dr. C. L. Gibbs (Physiology)

\$3,350, to Dr. D. A. Lowther (Biochemistry)

\$2,926, to Dr. G. A. Bentley (Physiology)

\$1,140, for vacation scholarships in the faculty of Medicine.

In addition, Associate Professor K. H. McLean (Medicine) received an overseas travel grant to study coronary care units throughout the world.

U.S. \$45,790, from the United States Army Research and Developments Command, to Professor S. Faine (Microbiology) for the research project "Microbiological and Immunological Studies of Pathogenesis and Virulence in Leptospirosis".

\$44,739, from the National Health and Medical Research Council, for research in 1968 as follows:

\$16,939, to Professor A. K. McIntyre (Physiology) for physiology studies.

\$15,020, to Professor J. Bornstein (Biochemistry) for research into diabetes.

\$10,800, to Professor B. Hudson (Medicine) for cancer studies.

\$1,980, to finance six medical research scholarships, at \$330 each.

\$19,251.40, from the Anti-Cancer Council of Victoria for the following research:

\$19,011.40, to Professor J. M. Swan (Chemistry) for research on cancer-producing compounds in cigarette tobacco smoke.
\$240, for vacation scholarships.

\$10,000, from the Trustees of the William Buckland Foundation for the purchase of an Ampex VR-7800 videotape for the audio-visual aids section.

\$10,000, from Merck, Sharp and Dohme (Australia) Pty. Ltd. for the following research:

\$7,000, to Professor J. M. Swan (Chemistry) for research into novel insecticides.

\$3,000, to Professor J. Bornstein (Biochemistry) for his research on pituitary polypeptides.

\$8,375, from the Australian Institute of Nuclear Science and Engineering, for research as follows:

\$1,880, to Professor B. W. Holloway (Genetics)

\$1,360, to Dr. J. H. Smith (Physics)

\$1,280, to Mr. G. J. Troup (Physics)

\$1,140, to Professor R. Street and Dr. G. V. H. Wilson (Physics)

\$1,100, to Mr. C. W. Ambrose (Mechanical Engineering)

\$1,000, to Dr. R. J. Fleming (Physics)

\$615, to Associate Professor W. A. Rachinger (Physics)

\$7,800, from the George Hicks Foundation as follows:

\$5,200 for two graduate scholarships in 1968, each valued at \$2,600, to the department of Chemical Engineering and the Centre of Southeast Asian Studies.

\$2,600, to renew the foundation's graduate scholarships in the department of Chemistry for 1968.

\$6,935.59, from Merck and Co. (New Jersey) to Professor J. M. Swan (Chemistry) for research on anthelmintics and insecticides.

\$6,562, from the Myer Foundation as follows:

\$4,000, to Dr. F. J. Hunt (Education) for the development of a social service curriculum.

\$1,562, to Mr. C. A. Coppel (Politics) for a study tour of Indonesia.

\$500, to Dr. A. K. Lee (Zoology) for study leave expenses in America.

\$500, to Dr. J. B. Biggs (Education) to attend a seminar — "Learning and the Educational Process", held in Stockholm in 1968.

\$6,500, from the Water Research Foundation of Australia to Dr. I. A. McMahon (Civil Engineering) for the following two research projects:

(a) modelling the rainfall-runoff process with a digital computer, and

(b) factors affecting domestic and industrial water consumption.

\$6,000, from the Felton Bequest's Committee as follows:

\$4,000, to assist in the department of Surgery's studies on the diagnostic process.

\$2,000, to Dr. B. Ritchie (Medicine) for research on foetal pulmonary circulation and distribution of blood flow and permeability of large molecules.

\$6,000, from General Motors Holden Pty. Ltd. to finance the G.M.H. Postgraduate Research Fellowships in mathematics.

\$6,000, from the Life Insurance Medical Research Fund of Australia to Dr. B. Ritchie (Medicine) for research on foetal pulmonary circulation and distribution of blood flow and permeability to large molecules.

\$5,320, from the Australian Wool Board's Wool Research Trust fund to Dr. I. D. Rae (Chemistry) for his project "Protein Exchange Reactions and Configurational Study of Amides".

\$4,602.25, from Bristol Laboratories International Corporation to Professor S. Faine (Microbiology) for research on "Rapid Methods for Use in Diagnostic Medical Microbiology".

\$4,400, from the Trustees Executors and Agency Co. Ltd. to Dr. Paula Jablonski (Surgery).

\$4,000, from the H. & L. Hecht Trust to the University.

\$4,000, from Carlton and United Breweries Ltd. to Professor A. W. Linnane (Biochemistry) for research on yeast genetics.

\$3,000, from the Collier Charitable Fund to the University.

\$2,800, from Broken Hill Pty. Ltd. to finance the B.H.P. Postgraduate Scholarship in physics.

\$2,500, from the Asthma Foundation of Victoria to Dr. W. N. Eastham (Pathology) for technical assistance and supplies.

\$2,500, from Imperial Chemical Industries of Australia and New Zealand to finance the I.C.I.A.N.Z. Research Fellowship in physics.

\$2,500, from Pye Pty. Ltd. to the department of Electrical Engineering for the establishment of a graduate scholarship.

\$2,370, from the William Angliss (Victoria) Charitable Fund to be distributed in the following way:

\$1,000, to the department of Medicine in Prince Henry's Hospital.

\$500, to the University

\$500, to the interdenominational chaplaincy fund

\$370, to the University library.

\$2,200, from Boehringer Ingelheim Pty. Ltd. to Associate Professor G. A. Bentley (Physiology) for a graduate scholarship.

\$2,000, from the Australian Council for Educational Research to the faculty of Education for the development of research in testing and evaluation.

\$2,000, from the Patrick Brennan Estate for the following projects:

\$1,000, to the faculty of Medicine

\$560, for the purchase of a Mettler H.20T. Analytic Balance for the department of Paediatrics

- \$440, for the purchase of a Philips Load cell for the department of Surgery.
- \$1,860, from the Ian Potter Foundation as follows:
- \$1,400, to Mr. L. J. Louis (History) to enable him to travel to the University of Warwick for one year's study.
 - \$460, to Dr. D. de Kretser (Anatomy) to attend the Third International Endocrinology Congress in Mexico in July 1968.
- \$1,600, from Conzinc Riotinto of Australia for the C.R.A. undergraduate scholarships, 1968.
- \$1,500, from the Campus Fair Group of Jewish Women to endow an annual prize to be known as the Sophie Davis Memorial Prize, to be awarded in the faculty of Medicine.
- \$1,500, from the Joe White Bequest to the University library.
- \$1,400, from the Monash University Parents' Group as follows:
- \$1,000 to the library
 - \$200 to the University Union
 - \$200 to the Alexander Theatre.
- \$1,307.90 from Riker Laboratories Australia Pty. Ltd. as follows:
- \$557.90, to Dr. M. Holman (Physiology) to attend the XXIVth International Physiological Congress in August 1968.
 - \$500, for the travel purposes of graduate students in the department of Physiology.
 - \$250, to the department of Physiology
- \$1,050, from Monsanto Chemicals (Australia) Pty. Ltd.—
- \$500 for research in the department of Chemistry
 - \$500 for research in the department of Chemical Engineering
 - \$50 to the careers and appointments office.
- \$1,000, from the Social Science Research Council of Australia to Professor R. Taft to support his study on Jewish refugees in Melbourne.
- \$1,000, from Sou'west Frozen Food Packers Ltd. to Mrs. A. Lindsay (Botany) for research on abscission layers in pea pods.
- \$800, from the Sherwood Trust to Dr. A. K. Lee (Zoology) to assist with study leave expenses in America.
- \$600, from Casa d'Italia to finance three Casa d'Italia scholarships for 1968.
- \$500, from the G. H. & C. E. Waddell Trust to the department of Surgery.
- \$400, from the Chartered Institute of Secretaries, Victorian Branch towards the expenses of the Monash Annual Economics Lecture for 1968.
- \$400, from the University of Melbourne towards the cost of publishing the Australian Journal of French Studies.
- \$400, from an anonymous donor to the department of History for the encouragement of studies in labour history.
- \$350, from the Preston Rotary Club to the Centre for Research

into Aboriginal Affairs.

\$320, from Pharmaceutical Division Sandoz (Australia) Pty. Ltd. to Dr. R. Westerman (Physiology).

\$320, from G. D. Searle (Australia) Pty. Ltd. to Dr. R. Westerman (Physiology).

\$300, from Mobil Oil Australia Ltd. to the careers and appointments office.

\$300, from Syntex Pharmaceuticals (U.K.) to Dr. R. Westerman (Physiology).

\$277.64, from the Melbourne Rotary Club to the department of Obstetrics and Gynaecology for the purchase of equipment.

\$250, from the Memorial Foundation for Jewish Culture, New York to Mrs. G. Solomon (Education).

\$250, from Mr. B. Pitt to the department of Surgery for research on organ transplantation.

\$200, from Mrs. N. Gantner for the Vallejo Gantner Memorial Scholarship, 1968.

\$200, from the M. A. Ingram Trust to Mr. F. I. Norman (Zoology) for research on "The Effects of Introduced Mammals on Island-Nesting Sea Birds".

\$180, from Felt & Textile Industries (Australia) Ltd. to the faculty of Economics and Politics.

\$130, from the Monash Mothers' Club towards the cost of curtaining the bedrooms of the Medical School at the Alfred Hospital.

\$100, from Cooper Brothers & Co. Ltd., Melbourne to the careers and appointments office.

\$100, from Mount Isa Mines Ltd. to the careers and appointments office.

\$80, from the Geography Teachers' Association of Victoria to The Alexander Theatre.

\$50, from Altona Petrochemical Company Ltd. to the careers and appointments office.

\$50, from Sir Walter Bassett to assist the Monash Rugby Club towards expenses of the Interschool Rugby Carnival.

\$40, from H. J. Heinz Co. Australia Ltd. to the careers and appointments office.

\$30, from an anonymous donor to the department of Obstetrics and Gynaecology.

\$27.97, from Dr. M. Hefferman to the bio-medical library at the Queen Victoria Hospital.

\$25, from the Church of Christ, Oakleigh to the Religious Centre.

\$20, from the Clayton Technical School Council in appreciation of permission to use Monash grounds and facilities for some sporting fixtures.

\$20, from Mrs. Jean M. Cole for the Deakin Hall library.

\$20, from Professor N. W. Murray (Civil Engineering) to the

Monash Rugby Club towards expenses of the Intersarsity Rugby Carnival.

\$15, from Mr. J. R. Bainbridge to the University's General Funds.

A scale model of Captain Cook's ship "Endeavour" built by Sir Robert Blackwood, and presented by him to the University library. Sir Robert Blackwood has also presented to the University the typescript of his book *Monash University: The First Ten Years*.

A Rolls Royce gas turbine lecture aid from Rolls Royce Ltd., for the department of Mechanical Engineering.

An I.L. Micro-electrode Assembly, valued at approximately \$3,700, from the Melbourne Rotary Club to the department of Obstetrics and Gynaecology.

A set of the Revised Reports (152 volumes), from the Chancellor, the Rt. Hon. Sir Douglas Menzies, to the law library. These are reports of a considerable selection of cases heard in the English courts between 1720 and 1860.

A number of etchings including etchings by Rembrandt of his mother and of the Supper at Emmaus, a print cabinet, and a number of art books, from the estate of the late Dr. J. G. Burnell. The University already has some forty-three etchings presented to it by Dr. Burnell in 1964.

Two UNI-TRU SWI universal couplings for the department of Mechanical Engineering from Southwestern Industries Inc., Los Angeles, California.

A set of the recently issued planning maps of Melbourne from the Melbourne & Metropolitan Board of Works, Planning & Highways Branch.

In addition to the above gifts and grants, there have been many gifts of books, journals and other material, some very valuable, to the library and departmental libraries.

The following research grants, recommended by the Australian Research Grants Committee, were approved by the Commonwealth Government:

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount</i> \$
Dr. R. H. Desai	Urbanization and the changing caste system among the Bhargara Brahmins of India	2,355
Mr. R. Parsler	Analysis of social values of working and middle class families	9,722
Dr. H. H. R. Love	Applications of the computer to the editing of Thomas Southerne's play <i>The Fatal Marriage</i>	1,747
Mr. J. A. Peterson	Climate, periglacial landforms and tree-lines in south-eastern Australia	800

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount</i> \$
Prof. J. D. Legge	Political biography of Soekarno	2,719
Dr. M. E. Osborne	Political evolution in the secondary stage of the French dominance of Cambodia and Viet-Nam	1,079
Dr. H. G. Gelber	Australia and the United States alliance	250
Mr. I. R. Hancock	British colonial native policies in East Africa 1919-1930	2,000
Dr. A. G. Serle	History of Victoria, 1850-1900	1,590
Dr. W. Veit	History of the development of hymnic poetry	1,000
Dr. M. G. Clyne	A study of migrant German in Australia	1,450
Prof. J. V. Neustupny	A comprehensive structural grammar of modern standard Japanese	4,837
Mr. P. Y. Medding	The sociological structure and decision-making processes of the Israel Labour Party — Mapai, 1930-1968	1,929
Mr. J. A. Mackie and Dr. H. Feith	Political and administrative dynamics of post-Soekarno Indonesia	4,604
Dr. I. D. S. Ward	A study of different types of economic systems	3,487
Mrs. E. Preston	A study of trade between Japan and Australia	3,600
Prof. P. J. Fensham	Comparison of two methods of teaching science	2,900
Prof. R. Taft	Educational and vocational aspirations and values of Australian and immigrant children	2,300
Mr. L. D. Mackay	The development and testing of procedures for evaluation of physics curricula in secondary schools	4,353
Prof. O. E. Potter	Fluidized bed reactors — behaviour and design	5,900
Prof. I. J. Polmear and Dr. K. K. Rao	Studies of age hardening phenomena in alloys with special reference to the role of trace element additions	7,300
Dr. G. I. N. Rozvany and Mr. D. E. Charrett	Minimum volume synthesis of prestressed plates and other floor systems	4,153
Prof. D. G. Lampard	Information processing in the nervous system using the technique of stochastic stimulation	11,411
Dr. W. A. Brown	Identification, stored-programme control and adaptation for multivariable continuous systems	7,300

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount</i> \$
Mr. K. Morsztyn	The influence of linear and non-linear phenomena upon transient voltages in high voltage transmission lines and transformers	3,000
Dr. J. B. Hinwood	Turbulence in stratified fluids	680
Dr. W. H. Melbourne	Model scaling of wind effects on structures	4,585
Dr. D. C. Stevenson	The generation of aerodynamic noise in separated fluid flow	1,784
Prof. A. W. Linnane	Biogenesis of mitochondria	4,853
Prof. A. W. Linnane	Effects of antibiotics on mammalian tissues and on human cells in tissue culture	6,223
Dr. D. A. Lowther	Studies of connective tissue	5,037
Dr. L. Austin	The origin of axonal protein	3,912
Prof. R. C. Nairn	Immunological studies of biological specificity	4,900
Dr. I. R. McDonald	Adrenal function in Australian monotremes and marsupials	2,000
Dr. R. Mark	Behavioural and electro-physiological study of visual memory in fish	2,460
Prof. M. J. Canny	Physiological and structural studies of phloem	2,312
Dr. T. P. O'Brien	Cell biology of grasses, with special emphasis on cereals	41,163
Prof. R. D. Brown	The study of short-lived species by microwave spectroscopy	8,875
Prof. J. M. Swan	Design and synthesis of organic compounds having potential therapeutic value	16,563
Prof. B. O. West	Chloro and fluoro substituted organometallic compounds	6,350
Dr. R. F. C. Brown	Pyrolysis and mass spectrometry of carbonyl compounds.	3,410
Dr. R. F. C. Brown	Synthesis of mycelianamide and related compounds	5,340
Dr. B. M. K. C. Gatehouse	Chemistry of the solid state	2,020
Dr. R. S. Dickson	Substituent effects in organometallic chemistry	2,000
Dr. G. B. Deacon	Studies in organometallic and co-ordination chemistry	2,000
Dr. G. B. Deacon	Structures of halide complexes of organometallic compounds	3,545

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount</i> \$
Dr. A. D. E. Pullin	Intermolecular forces in charge transfer complexes (Access to technical officer granted to Dr. G. B. Deacon in connection with the above-mentioned study)	
Dr. B. A. W. Coller	Rate studies of the halogenation of electron rich heteroaromatic molecules and their application to biochemical analysis	2,095
Dr. I. R. Wilson	Quantitative studies of oxidation reactions	7,870
Dr. F. W. Eastwood and Dr. I. D. Rae	Synthesis of sporidesmin	3,913
Prof. B. W. Holloway	The genetic basis of enzyme regulation in <i>Pseudomonas aeruginosa</i>	8,417
Prof. B. R. Morton	Source and sink flows in stratified fluids	1,800
Prof. R. Street and Dr. G. V. H. Wilson	Studies of magnetic materials at low temperatures in high magnetic fields	23,650
Dr. A. C. McLaren	Minerals and rocks	3,792
Mr. G. J. F. Troup and Dr. J. R. Pilbrow	Temperature variations of magnetic resonance at 8 mm and nuclear magnetic resonance from 2-16 Mc/s	3,800
Mr. G. J. F. Troup	Photoelectron correlations and counting distributions (studies in quantum electronics)	1,000
Mr. A. D. Perriment	Man's ability to transmit information from bisensory signals	1,000
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Doctor of Philosophy

- Ho, A. K. S. — Experimental Studies on Granular Cells in the Alimentary Canal.

Department of Biochemistry

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THESES FOR HIGHER DEGREES

Doctor of Philosophy

- CATT, K. J. — Studies on Rat Growth Hormone and Prolactin.
- TOOLE, B. P. — Interactions Between Acid Mucopolysaccharide—Proteins and Collagen.

Master of Science

- BAXTER, ELSMAREE — The Presence of Mucopolysaccharide — Protein Complexes in Bovine Intervertebral Discs.
- CHRISTODOULOU, C. — The Biochemical Basis of the Resistance of *Saccharomyces Cerevisiae* Toward Antibiotics Which Specifically Inhibit Mitochondrial Protein Synthesis.
- GOH, ANNA, T. W. — Nature and Distribution of Acid Mucopolysaccharides in Cartilage.
- LEWIS, G. P. — The Involvement of RNA Synthesis in the Action of Testosterone on Protein Synthesis by Mouse Mammary Tumours.

Department of Medicine

- ALDER, A., BURGER, H. G., DAVIS, J., HUDSON, B., DULMANIS, A., SARFATY, G. and STRAFFON, W. — Carcinoma of the prostate: the response of plasma luteinising hormone and testosterone to oestrogen therapy. *Brit. Med. J.*, **1**, 28, 1968.
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THESIS FOR HIGHER DEGREE

Doctor of Medicine

- HOCKING, F. H. — Human Reactions to Extreme Environmental Stress.

Department of Microbiology

- FAINE, S. and CARTER, J. N. — Natural antibody in mammalian serum reacting with an antigen in some leptospire. *J. Bact.*, **95**, 280, 1968.
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THESIS FOR HIGHER DEGREE

Master of Science

- THAM, S. H. — A Study on the Mode of Action of Isoniazid on Mycobacterium Tuberculosis (B.C.G.).

Department of Obstetrics and Gynaecology

- FUNDER, J., WOOD, E. C. and WALKER, R. — What about abortion? *Crux*, **2**, 1968.
 BEISCHER, N. A., BROWN, J. B. and WOOD, E. C. — The value of urinary estriol measurements during pregnancy. *Ob./Gyn. Digest*, **37**, 1968.
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 CIBILS, L. A. — (Co-ordinator); ADAMSONS, K., KIRSCHBAUM, T. H., LIPSITZ, J., QUILLIGAN, E. J., SALING, S. and WOOD, E. C. (Correspondents) — What is the role of scalp sampling in assessing "foetal distress"? *The Journal of Reproductive Medicine*, **1**, No. 4, 1968.
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Department of Paediatrics

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Department of Pathology

DAVIES, D. J. — Changes in the renal cortex following experimental medullary necrosis. *Arch. Path.*, **86**, 377, 1968.

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immunoradio-active agent, ^{32}P -conjugated antibody. *Clin. exp. Immunol.*, **3**, 865, 1968.

THESES FOR HIGHER DEGREES

Doctor of Philosophy

McGIVEN, A. R. — Aspects of Autoimmunity in Man and Mice.

Master of Science

CERINI, J. C. — Haemagglutinin of *Canavalia Ensiformis*: Reactions With Cattle Blood.

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- VANCE, E. R. — A Study of Gamma Manganese and Some of its Alloys.

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For and on behalf of the Council,

D. I. MENZIES
Chancellor

ACCOUNTS FOR THE YEAR 1968

The audited accounts of the University for the year 1968 follow this introduction, in which the salient features are set out for ready reference.

1. *Capital Funds*

Since the incorporation of Monash University on 30 May 1958, the following funds have been provided for the acquisition of physical facilities of a permanent nature:

	\$000	%
State Government Grants	18,994	50·7
Commonwealth Governments Grants	18,497	49·3
	<u>37,491</u>	<u>100·0</u>

These funds have been expended as follows:

	\$000	%
Land	480	1·3
Site Development	2,955	7·8
Buildings	31,450	83·0
Furniture	1,596	4·2
Equipment	1,396	3·7
	<u>37,877</u>	<u>100·0</u>

2. *Recurrent Funds*

A brief summary of the income and expenditure for recurrent purposes of the University, for the year ended 31 December 1968, is given hereunder:

<i>Income:</i>	\$000	%
State Government Grants	6,270	48·0
Commonwealth Government Grants	4,580	35·1
Academic Fees	2,209	16·9
	<u>13,059</u>	<u>100·0</u>
<i>Expenditure:</i>	\$000	%
Teaching and Research	9,251	71·7
Libraries	1,000	7·8
Administration	1,431	11·1
Buildings and Grounds	952	7·4
Other	266	2·0
	<u>12,900</u>	<u>100·0</u>

The amount of \$158,970, being the portion of the year's income unspent at 31 December 1968, was held for the purpose of meeting commitments for materials and services which were on order at the balance date.

The following accounts, which have been prepared in the form prescribed by the Auditor-General, provide further details of the year's activities.

MONASH UNIVERSITY
 (1) STATEMENT SHOWING INCOME AND EXPENDITURE FOR ALL GENERAL PURPOSES
 YEAR ENDED 31 DECEMBER 1968

	DIRECT GOVERNMENT GRANTS					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	Recurrent	Research Projects	Buildings, Equipment and Furniture	Recurrent (Teaching)	Buildings, Equipment and Furniture (Hospitals)	Grants and Donations	Union Development	Other Items	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
INCOME—									
State Government Grants:									
Received this year	6,269,928	90,299	1,164,000	57,678	484,340				8,066,245
Add Accrual at 31 December 1968			250		116,725				116,975
Deduct Accrual at 1 January 1968			385,000 Dr.						385,000 Dr.
Commonwealth Government Grants:									
Received this year	4,694,253	222,434	779,250	51,124	619,931				6,366,992
Deduct Accrual at 1 January 1968	114,000 Dr.			19,947 Dr.	18,866 Dr.				152,813 Dr.
Academic Fees	2,209,063								2,209,063
Fees for Special Short Courses								10,595	10,595
Union:								231,883	231,883
Fees								6,602	6,602
Other Income							115,791		115,791
Union Development Fees									
Grants and Donations:									
Government-financed Bodies						359,451			359,451
Other						359,928			359,928
Appeals:									
Great Hall						11,833			11,833
Religious Centre						20,375			20,375
Development Fund						3,066			3,066
Outside Earnings							26,392	258,595	284,987
Other Income						55,416	19,342	99,901	174,659
TOTAL INCOME	13,059,244	312,733	1,558,500	88,855	1,202,130	810,069	161,525	607,576	17,800,632

	DIRECT GOVERNMENT GRANTS					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	<i>Recurrent</i>	<i>Research Projects</i>	<i>Buildings, Equipment and Furniture</i>	<i>Recurrent (Teaching Hospitals)</i>	<i>Buildings, Equipment and Furniture (Hospitals)</i>	<i>Grants and Donations</i>	<i>Union Development</i>	<i>Other Items</i>	
	\$	\$	\$	\$	\$	\$	\$	\$	
EXPENDITURE—									
<i>Teaching and Research:</i>									
Salaries	6,441,410	88,219		38,025		141,248		4,801	6,713,703
Superannuation	508,311	567				5,396			514,274
Departmental Maintenance	860,570	54,258		46,555		82,548		1,752	1,045,683
Minor Equipment	619,155	88,925	18,081		21,706	82,522			830,389
Major Equipment	2,589	51,952				46,824			101,365
Research Scholarships and Fellowships	311,196	91,765				284,157			687,118
Study Leave Grants and Overseas Travel	87,476								87,476
New Appointments	98,450								98,450
Other	323,343	8,603				28,499		28	360,473
<i>Libraries:</i>									
Salaries	444,153								444,153
Superannuation	26,413								26,413
Books, Journals and Binding	476,866	3,020		5,800		3,750			489,436
Equipment and Furniture	8,673								8,673
Other	43,851								43,851
<i>Administration:</i>									
Salaries	890,695								890,695
Superannuation	68,686								68,686
Postage, Telephone and Advertising	185,360								185,360
Equipment	25,258								25,258
Other	261,441								261,441
Forward:	11,683,896	387,309	18,081	90,380	21,706	674,944		6,581	12,882,897

	DIRECT GOVERNMENT GRANTS					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	Recurrent	Research Projects	Buildings, Equipment and Furniture	Recurrent <i>(Teaching</i>	Buildings, Equipment and Furniture <i>Hospitals)</i>	Grants and Donations	Union Develop- ment	Other Items	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Forward:	11,683,896	387,309	18,081	90,380	21,706	674,944		6,581	12,882,897
<i>Buildings and Grounds:</i>									
Construction of New Buildings			1,879,296		1,283,263	43,494	1,030		3,207,083
Site Development			495,771				36	64,464	560,271
Purchase of Land and Buildings								125,476	125,476
Repairs and General Maintenance	559,542							2,900	562,442
Furniture and Furnishings	29,680		176,602		19,793	130			226,205
Rents, Rates, Power, Lighting, Heating	290,732								290,732
Equipment	15,971								15,971
Other	55,719							1,860	57,579
<i>Sundry Expenditure:</i>									
Union Activities	18,228					70	16,273	226,471	261,042
Student Services	92,586								92,586
Audio-Visual Aids	73,364								73,364
Scholarships and Prizes	29,898					4,876			34,774
Halls of Residence Owned Houses and Transit Flats						286		17,191 Cr.	16,905 Cr.
University Bookshop								274 Cr.	274 Cr.
Alexander Theatre	13,771					2,441		1,027 Cr.	1,027 Cr.
Expenditure re Outside Earnings								155,198	155,198
Appeals:									
Great Hall						4			4
Religious Centre						104,519			104,519
Other	38,116					8,876		22,960	69,952
<i>Inter-Fund Transfers</i>	1,229 Cr.	1,000		1,525 Cr.			2,586	832 Cr.	—
TOTAL EXPENDITURE	12,900,274	388,309	2,569,750	88,855	1,324,762	839,640	19,925	586,586	18,718,101
STATE OF FUNDS—									
Balance, 1 January 1968	1,122,992 Cr.	149,809 Cr.	455,349 Cr.	—	292,742 Cr.	898,950 Cr.	207,227 Dr.	123,716 Cr.	2,836,331 Cr.
Result for Year:									
Deficit		75,576	1,011,250		122,632	29,571			917,469
Surplus	158,970						141,600	20,990	
Balance, 31 December 1968	1,281,962 Cr.	74,233 Cr.	555,901 Dr.	—	170,110 Cr.	869,379 Cr.	65,627 Dr.	144,706 Cr.	1,918,862 Cr.

(II) STATEMENT OF SOURCES AND APPLICATION OF FUNDS

	1958-66	1967	1968	Progressive Totals to 31/12/1968
	\$	\$	\$	\$
SOURCES—				
(1) State Government Grants:				
Recurrent—				
General	16,583,662	5,509,622	6,269,928	28,363,212
Teaching Hospitals	46,598	51,021	57,678	155,297
Site, Buildings, Equipment and Furniture—				
General	15,202,038	1,185,000	779,250	17,166,288
Teaching Hospitals	1,216,800	10,266	601,065	1,828,131
Research Projects	428,311	90,000	90,299	608,610
Total State Government	33,477,409	6,845,909	7,798,220	48,121,538
(2) Commonwealth Government Grants:				
Recurrent—				
General	10,635,500	3,995,000	4,580,253	19,210,753
Teaching Hospitals	25,131	27,579	31,177	83,887
Site, Buildings, Equipment and Furniture—				
General	14,704,600	1,185,000	779,250	16,668,850
Teaching Hospitals	1,216,800	10,266	601,065	1,828,131
Research Projects	428,311	277,361	222,434	928,106
Total Commonwealth Government	27,010,342	5,495,206	6,214,179	38,719,727
Total Government:	60,487,751	12,341,115	14,012,399	86,841,265
(3) Academic Fees and Fees for Special Short Courses	3,410,024	1,884,854	2,219,658	7,514,536
(4) Union:				
Fees	387,888	198,667	231,883	818,438
Other Income	16,032	18,124	6,602	40,758
(5) Grants and Donations, including Appeals	2,010,524	663,351	810,069	3,483,944
(6) Union Development	246,075	144,155	161,525	551,755
(7) Other Income	401,523	197,041	358,496	957,060
TOTAL FUNDS AVAILABLE	66,959,817	15,447,307	17,800,632	100,207,756

	1958-66	1967	1968	Progressive Total to 31/12/1968
	\$	\$	\$	\$
APPLICATION—				
(1) Recurrent Purposes:				
General—				
Salaries and other operating expenses	24,453,621	11,209,929	11,695,337	46,358,887
Equipment and Furniture	3,465,278	705,904	726,674	4,897,856
Books, Journals and Binding	1,680,195	400,440	478,263	2,558,898
Teaching Hospitals—				
Salaries and other operating expenses	67,229	74,100	83,055	224,384
Books, Journals and Binding	4,500	4,500	5,800	14,800
(2) Site Acquisition and Development	2,842,114	97,243	495,771	3,435,128
(3) Building Funds:				
General—				
Buildings	24,473,444	1,838,618	1,879,296	28,191,358
Equipment	1,031,183	232,592	18,081	1,281,856
Furniture	1,244,515	61,580	176,602	1,482,697
Teaching Hospitals—				
Buildings	1,656,230	319,082	1,283,263	3,258,575
Equipment	81,566	10,855	21,706	114,127
Furniture	105,583	11,926 Cr.	19,793	113,450
(4) Research Projects	700,397	373,777	388,309	1,462,483
(5) Grants and Donations, including Appeals:				
Salaries and other operating expenses	853,195	404,312	556,295	1,813,802
Equipment and Furniture	333,392	49,605	145,664	528,661
Books and Journals	9,081	14,920	3,750	27,751
Buildings	2,029	108,391	133,931	244,351
(6) Union Development	653,213	55,756 Cr.	19,925	617,382
(7) Other Expenditure	747,570	328,292	586,586	1,662,448
TOTAL FUNDS APPLIED	64,404,335	15,166,458	18,718,101	98,288,894

(III) STATEMENT OF BALANCES AT 31 DECEMBER 1968

	\$
Sundry Creditors and Accrued Expenses	1,211,983
Loans on Mortgage	251,978
Accumulated Funds—	
Direct Government Grants:	
Recurrent	1,281,962
Research	74,233
Buildings, Equipment and Furniture—	
General (Dr.)	555,901
Teaching Hospitals	170,110
Indirect Government Grants and Other Funds:	
Grants and Donations	869,379
Union Development (Dr.)	65,627
Other Items	144,706
	<u>1,918,862</u>
	<u><u>3,382,823</u></u>

	\$
Cash on Hand and at Bank	69,842
Investments—	
Official Short Term Money Market	1,400,000
Fixed-Interest Securities, at lower of par or cost	995,985
Ordinary Shares, at cost (Market Value: \$257,785)	168,159
	<u>2,564,144</u>
Sundry Debtors—	
Accrued Government Grants	116,975
Other	327,727
	<u>444,702</u>
Stocks on Hand	285,769
Payments in Advance	18,366
	<u><u>3,382,823</u></u>

(IV) STATEMENT OF INCOME AND EXPENDITURE OF TRUST FUNDS
FOR YEAR ENDED 31 DECEMBER 1968

<i>Income—</i>		\$
Interest on Investments	.....	3,121
<i>Expenditure—</i>		
J. W. Dodds Memorial Scholarship	.....	400
Bequest from Estate of S. S. McCutcheon	.....	18
Monash University Rowing Club	.....	50
The David B. Rosenthal Memorial Trust	.....	49
William and Katherine Winter Foundation	.....	2,050
		<u>2,567</u>
Surplus for the Year	.....	<u>554</u>

SCHEDULE OF TRUST FUNDS AT 31 DECEMBER 1968

<i>Inscribed Stock—</i>		\$
Melbourne and Metropolitan Board of Works	.....	60,000
State Electricity Commission of Victoria	.....	978
Commonwealth Government	.....	1,000
		<u>61,978</u>
<i>Current Account—</i>		
Commercial Bank of Australia Limited	.....	1,681
Trust Funds as at 31 December, 1968	.....	<u>63,659</u>

(V) STUDENTS' LOAN FUND

STATEMENT OF INCOME AND EXPENDITURE
FOR YEAR ENDED 31 DECEMBER 1968

<i>Income—</i>		\$
Interest on Loans	111	
Other Interest	<u>670</u>	781
<i>Expenditure—</i>		
Nil		
Surplus transferred to Students' Loan Fund		<u><u>781</u></u>

BALANCE SHEET AS AT 31 DECEMBER 1968

Students' Loan Fund—	\$		\$
Balance, 1 January 1968	47,732		
Surplus for Year	<u>781</u>	48,513	
		<u><u>48,513</u></u>	
			862
			34,651
			<u>13,000</u>
			<u><u>48,513</u></u>

CERTIFICATE BY MONASH UNIVERSITY

In our opinion the statements of accounts herewith, numbered (I) to (V), correctly record the transactions of Monash University for the year ended 31 December 1968.

18 June 1969

J. A. L. MATHESON,
Vice-Chancellor
F. H. JOHNSON,
Comptroller

AUDITOR-GENERAL'S CERTIFICATE
PURSUANT TO THE PROVISIONS OF SECTION 36 OF THE MONASH UNIVERSITY ACT 1958

The books and accounts of Monash University for the year ended 31 December 1968 have been audited by an officer acting under my direction. In my opinion, the statements of account herewith numbered (I) to (V) are correct.

23 June 1969

A. J. A. GARDNER,
Auditor-General

