

MONASH UNIVERSITY



Report  
of the  
Council

1969





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## REPORT OF THE COUNCIL FOR 1969

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In accordance with section 41 of the *Monash University Act 1958*, I submit the annual report of the Council of the University for 1969.

### 1. THE COUNCIL

The Council held eleven meetings during the year.

At graduation ceremonies in the course of the year the following honorary degrees were conferred:

Doctor of Laws:	Michael Chamberlin Thomas Weetman Smith
Doctor of Medicine:	Arnold Hughes Ennor
Doctor of Science:	George Lindor Brown Frederick William George White

During the year, the Council lost the services of no less than five members. Sir Robert Blackwood, to whose leadership as Chancellor tribute was paid in the previous report, and Mr G. P. H. Wilson relinquished office at the end of their respective four-year periods of office. Dr H. A. Jenkins resigned when he ceased being a member of the State Parliament and successfully contested a seat in the Federal Parliament. Mr J. H. Price, who had been the first student representative on the Council, resigned on the completion of his work as a research student. Professor J. D. Legge went overseas for a period and resigned in order that another professor might be elected to take his place.

Sir Douglas Menzies, who had succeeded Sir Robert Blackwood as Chancellor in December 1968, had previously been the elected representative of the faculty of Law on the Council. In order to avoid serving in a dual capacity he resigned his position as an elected member and in his place the faculty of Law elected The Hon. Mr Justice G. H. Lush. Other vacancies were filled by Mr J. C. McNeill in place of Sir Robert Blackwood, Mr K. P. Palmer in place of Mr G. P. H. Wilson, and Professor R. Street in place of Professor J. D. Legge. To avoid a gap in student representation whilst an election was being held to fill the student vacancy, Mr P. D. Fairbrother was invited to attend as an observer at one meeting on nomination by the Monash Association of Students and Mr K. G. Murphy was subsequently elected as the student representative. The vacancy created by Dr H. A. Jenkins' resignation remained unfilled.

Professor R. R. Andrew, the Rt. Rev. F. R. Arnott, Sir Walter Bassett, Mr H. M. McKenzie and Mr J. G. Wilson, all of whose terms of office expired in July, were re-elected or re-appointed in their same capacities. The Council again co-opted Sir James Forrest, Miss A. Hoy, Mr. B. W. Hone and Mr I. Langlands.

The Council noted with pleasure the award of the OBE to Mr B. W. Hone in the New Year honours list.

## 2. DEVELOPMENT OF SITE AND BUILDINGS

The following buildings were completed and taken into use: second stage of main library, a four-storey building linked to stage 1; education building, a four-storey building plus a single-storey child study centre; science lecture theatre block containing four small theatres and four tutorial rooms; fourth stage of the engineering heavy laboratories; third stage of the sports building, consisting mainly of change-rooms.

Construction continued on the science north building, to house the Mathematics department and the computer centre; Robert Blackwood Hall; extensions to the Union building for the bookshop, banks, student services, games areas, dining facilities and faculty club; two additional squash courts for the sports centre.

Construction commenced on the science south building and extension to medical school, a project in two parts of which the former will provide accommodation for the departments of Botany and Psychology and the latter an extension for the departments of Anatomy and Physiology.

Plans were completed to tender stage of the second stage of science south, which provides another three floors for Psychology; Roberts Hall, the first of the new halls of residence; the medicine-biochemistry building consisting mainly of teaching laboratories on two floors.

Sketch plans were developed for the second stage of Robert Blackwood Hall which provides for a foyer and display area on the south side.

Extensions of the University's roads and car parks, and reticulation of water, electricity and master-heating services continued. Work was completed on the widening of the new main entrance from Wellington Road and plans were completed for extending this road north to Normanby Road.

## 3. ADMINISTRATIVE MATTERS

### *Legislation*

In 1969, one new statute of the University and one amending statute were made by the Council and came into force. The new statute is 2.9—*The Committee of Deans* which formally constitutes the com-

mittee and prescribes its functions and procedures. During the year, the Council also made twenty-eight new or amending regulations pursuant to the statutes.

### *University Publishing*

The University's Calendar appeared for the first time in two volumes, the material on the outline of subjects being published separately as volume two. The various other official publications, such as the Guide for Prospective Students, Gazette, Report of Council and Faculty Handbooks, appeared at the appropriate time during the year.

The University's academic publishing programme was continued during 1969. The Publications Committee of the Professorial Board, which is responsible for the programme, produced a monograph on 'The Monash Swift Collection' and also resolved to undertake publication of several other works. In addition, it dealt with a number of applications for publishing assistance. During the year increasing attention was given to matters associated with the publication of learned journals.

### *Monash University Association*

During the year, the association organized parent orientation, eight public lectures on matters of topical interest, country visits to Ballarat, Shepparton and Horsham, four visits to the University by groups of metropolitan parents, a Tertiary Education Seminar in Swan Hill, and some fund raising. On the whole, the programme was very successful, but a restructuring of the organization became necessary. The association has now been replaced by a more widely-based one, the Monash Associations Liaison Committee, which aims to continue and expand the work done by the Monash University Association.

## 4. STAFF APPOINTMENTS

The high demand for University teaching staff continues and recruiting difficulties were experienced in some instances. Achievement of a satisfactory level of staffing during 1969 involved engagement of 180 full-time staff. There is a greater number of temporary and short-term appointments than was the case in former years. The gross academic recruitment figure was the highest since the inception of the University. A total of 654 full-time academic staff on 31 December shows an increase of 51 above the figure for December 1968.

The table on page 7 shows staff by faculty and grade at 31 December 1969, the numbers in brackets indicating those who took up their appointments at Monash in 1969, including short-term appointments.

The number of resignations was again high. Academic staff who left

Monash University during 1969 to take up other appointments were:

Readers	1 (this was a visiting reader)
Associate Professors	4
Senior Lecturers	22
Lecturers	24
Senior Teaching Fellows	42
Teaching Fellows	30
	<hr/>
	123
	<hr/>

Six visiting professors (rotating) held appointments during 1969. Two associate professors went to chairs in other universities.

Administrative staff in the grades of administrative assistant and above increased by five in the Central Administration to a total of sixty-nine, and in the academic departments and ancillary services increased by two to a total of nineteen. Overall the full-time staff of the University increased to 2,110 in December 1969 compared with 1,951 in December 1968.

In the University library, graduate staff and other staff with formal library qualifications increased during 1969 by twelve to a total of sixty-one.

Of the full-time academic staff who took up appointment during the year, ninety-two (of whom seventy-four had taken their first degree in Australia and eighteen overseas) were recruited from Australia, and eighty-eight (of whom twenty-eight had taken their first degree in Australia and sixty overseas) were recruited from overseas.

Despite a record number of academic appointments, the University has been able to cope with the demands of new appointees for short-term housing in University transit accommodation.

The following professors took up their appointments in 1969:

Professor D. E. Allan, 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, M.B., B.S., B.Sc. (Med.) (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 W. H. Scott, B.A., Ph.D. (Liv.) (Anthropology and Sociology)

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

The following professors who were appointed in 1969 will take up duty in 1970:

Professor P. W. Musgrave, M.A. (Cantab.), Ph.D. (Lond.) (Education)

Professor M. D. Neale, M.A., Dip.Ed. (N.Z.), Ph.D. (Birm.) (Education)

Professor P. G. Nash, LL.B. (Melb.), LL.M. (Tas.) (Law)

Early in 1970 Dr G. A. M. Scott (Botany) will take up the Monash Senior Research Fellowship vacated by Dr A. Spry (Physics) in 1968. Seven other research fellowships and thirty-one more junior research posts were filled (including re-appointments).

Professor A. King (English) retired from a chair of English at the end of 1969.

The University records with regret the deaths in 1969 of Mr H. R. Adam, of the department of Mathematics, and Mr F. J. Waters, Mr C. K. O'Brien and Mr T. A. Bishop, all of Central Services staff.

#### 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 (3)*	9 (2)*	3 (1)*	6 (1)*	4 (2)*	15 (2)	16 (2)*	70 (13)
Readers	4	2	—	1	1	4	7	19
Associate Professors	7	1	—	2	—	5	2	17
Senior Lecturers	41 (7)	20 (5)	16 (2)	25	14 (5)	28 (6)	56 (5)	200 (30)
Lecturers	58 (6)	25 (12)	9 (1)	15 (2)	7 (3)	25 (6)	42 (16)	181 (46)
Senior Tutors	15	—	1	—	1	1	—	18
Senior Teaching Fellows	23 (12)	15 (8)	4 (1)	4 (2)	4 (3)	20 (17)	19 (7)	89 (50)
Teaching Fellows	17 (9)	18 (17)	1 (1)	—	7 (4)	3 (5)	8 (5)	54 (41)
Total	183 (37)	91 (44)	35 (6)	54 (5)	38 (17)	102 (36)	151 (35)	654 (180)

\*Includes a Monash visiting professor.

(The numbers in brackets indicate those who took up their appointments at Monash in 1968.)

#### 5. ACADEMIC DEVELOPMENTS

The following degrees and diplomas were conferred by the University at graduation ceremonies in 1969, the final column indicating the total number of degrees and diplomas awarded since the foundation of the University.



	<i>Male</i>	<i>Female</i>	<i>Total 1969</i>	<i>Total 1961-69</i>
Bachelor of Arts	161	257	418	1348
Bachelor of Arts with Honours	32	28	60	144
Master of Arts	4	5	9	28
Bachelor of Economics	193	23	216	513
Bachelor of Economics with Honours	29	5	34	74
Master of Economics	5	1	6	8
Bachelor of Education	19	6	25	39
Bachelor of Engineering	35	—	35	80
Bachelor of Engineering with Honours	47	—	47	117
Master of Engineering Science	6	—	6	13
Bachelor of Jurisprudence	63	9	72	162
Bachelor of Laws	43	5	48	52
Bachelor of Laws with Honours	5	1	6	6
Master of Laws	—	—	—	3
Bachelor of Medical Science	1	—	1	9
Bachelor of Medical Science (Honours)	9	—	9	14
M.B., B.S.	73	12	85	256
M.B., B.S. (Honours)	15	7	22	42
Doctor of Medicine	2	—	2	3
Bachelor of Science	78	38	116	281
Bachelor of Science with Honours	74	13	87	202
Master of Science	17	6	23	53
Doctor of Philosophy	48	7	55	136
Master of Administration	—	—	—	—
<b>TOTAL DEGREES</b>	<b>959</b>	<b>423</b>	<b>1382</b>	<b>3583</b>
Diploma in Education	137	139	276	824

### 1969 ANNUAL EXAMINATION STATISTICS

A general rise in pass rates is evident over the whole of the period covered by the statistics.

In the one year, however, 1968-69, a fall in the percentage rate can be seen in four of the faculties. There is no evidence to suggest that the abilities academically of the first year students in 1969 are less than the students of the previous years, nor is there any evidence that the examinations or the course contents are more difficult than in previous years. It has been suggested, however, that the fall may be for reasons other than academic.

The year 1969, for example, has seen more student involvement in various activities other than academic, both on and off the campus, than in previous years and it may be that this has had some effect on academic success in certain faculties.

**PASS RATES (per cent)**  
(For first year full-time students)

	1964	1965	1966	1967	1968	1969
(a)						
Arts	57	70	67	74	80	77
Economics and Politics	61	70	77	85	83	76
Law	60	71	76	72	80	72
Science	60	78	88	89	90	83
(b)						
Diploma in Education	84	88	90	90	89	90
Engineering	55	70	70	84	74	75
Medicine	64	84	89	91	96	96

*Note:* For the purposes of this table, students are regarded as having passed 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.

### VICE-CHANCELLOR'S REPORT

At the end of 1969 I completed ten years as the chief executive of this University and the time is therefore opportune for a review of what has been accomplished in the course of this period. In January 1960, when my wife and family and I arrived to take up residence in what is still the Vice-Chancellor's House, the master building plan had been prepared, some preliminary levelling had been carried out, and the contract for the first science buildings was about to be let. By the end of 1969 virtually all the buildings on the master plan, and some not contemplated in 1960, had been built at a cost of some \$35,000,000.

At the end of 1959 the Vice-Chancellor, the then Registrar, the librarian and two professors had been appointed. By the end of 1969 there were 76 professors, 666 other members of the academic and senior administrative staff and 1,444 other employees.

The University opened with 363 students in March 1961. In 1969 there were 9,542 students, including 755 graduates. The original

five faculties had grown to seven; there were forty-three departments; three halls of residence; two affiliated colleges; six affiliated hospitals.

By the end of 1969 the only major project originally envisaged which had not come into being was the great teaching hospital, for which a site had been preserved in the south-west corner of the campus, and which was intended to serve the rapidly growing surrounding community. However, it is confidently expected that the Government will accept the scheme in principle and that planning can be expected to commence within the next few years.

All this represents an immense effort of building and organization but it has not been achieved at the expense of high academic standards. These are not easy to measure objectively but indirect evidence continues to accumulate that suggests that our scholars are highly regarded; certainly our graduates are eagerly sought.

With the main objectives of the first decade achieved, and with the University approaching the ultimate size of 12,000 undergraduates, attention turned at the end of 1969 to what was to be done during the next decade. This is an important question, for a university that is not growing and developing is all too apt to stagnate. But growth, at least in undergraduate members, is no longer either practicable or desired and so ways must be found of developing without growth, and this is not easy to contrive. While it is too early to report in detail how these plans will eventually develop it can already be reported that the University has resolved to build up its efforts in graduate education and to extend this over the whole spectrum of the continuing education of adult graduates.

In common with universities all over the world we have found that our students are taking an increasing interest in national and international politics and in the internal government of the University itself. Both these developments are to be welcomed and will surely lead, as these students grow into positions of responsibility, to an improvement in the quality of life. But a small number of students, impatient perhaps at the rate of progress that is usual when constitutional methods are employed, have resorted to the pressure tactics that are more common abroad than here in Australia. The main area of controversy centred, in 1969, on the draft revisions to the Discipline Statute which had been under consideration for some time.

As it has not yet been possible to resolve these differences, the old statute, with all its deficiencies, remains in force.

The development of the University, as has already been mentioned, has been extremely rapid and many arrangements had to be made without the full consideration that they deserved. Improvements have been made here and there, but it seemed desirable to attempt to find out whether the University was really fulfilling its aims, as judged by those most intimately involved, or not. Accordingly, in 1968, I estab-

lished a Commission on University Affairs, which invited written or oral evidence from any interested persons, in order to try to discover how the place actually runs or appears to run to those not at the centre of things.

The results were only partly successful: it soon became apparent that more restricted terms of reference would have been easier to deal with and might have led to conclusions that would prove to be readily acceptable. As it was great difficulty was found in reaching any sort of agreement and the final report was thought by some commissioners, I am sure, to be so emasculated as to be valueless. Nor was it possible to reach any agreement on the explanatory document that was supposed to accompany the recommendations.

In spite of this disappointing result the Council and other governing committees of the University are studying the Commission's report and some of the recommendations are soon to be adopted. Some faculties have already made appropriate changes to the constitution of their faculty boards.

As we look back over the past ten years we are conscious that much has been accomplished that is creditable and will endure; some experiments have turned out to be less successful than might have been hoped; and there are some failures. Among these perhaps the most serious is that from press and television reports an impression has been gathered that we are an ill-disciplined place to which only an irresponsible parent would send his child. We have really not been able to get across to the public a true impression of the University as it really is—young and alive and a place in which even much of our student activism augurs well for the future of the country and where only a small component is dangerous. Communications, both within the University and to the world outside, are very difficult.

And so we embark upon our next ten years with our sense of achievement tempered by some misgivings. Nevertheless we go forward in the good hope that if we are given sufficient resources we shall continue to build successfully upon the firm foundations that have already been laid.

*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 1969 about 242 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 2,750 in 1968 to 2,888. The number qualifying at the end of 1969 to graduate at pass level rose from 420 to 454, and at honours level from sixty-two to seventy-six.

There has also been a further rise in graduate enrolments, from 197 in the previous year to 228.

The staff establishment was increased from 192 to 203. Most positions were filled satisfactorily but it was not possible to fill either the second chair of French, which has been vacant since it was instituted in 1968, or the chair of Ibero-Romance, which was the only new chair to be added for 1969. The second chair in the department of Anthropology and Sociology was filled by the appointment of W. H. Scott, a distinguished British sociologist, who arrived to take up his duties at the end of the year. Professor A. King, who came to Monash as the second professor of English at the beginning of 1966, was unable, owing to ill health, to continue in his chair beyond the end of 1969. His contribution to the work of the department at all levels has been that of a mature, productive scholar with a vigorous mind and a deep appreciation of literature and the arts. Among many distinguished visitors to the faculty during the year, those who were here for a significant period included Professor H. Pilch from the University of Freiburg as Monash University visiting professor in the department of Linguistics, and Professor A. M. Boase, emeritus professor of French in the University of Glasgow. During the year three senior lecturers were promoted to associate professorships, Dr M. G. A. Wilson in Geography, and Dr M. E. Osborne and Dr I. A. H. Turner in History.

The departments of History and English continue to attract the greatest numbers of students, but Anthropology and Sociology is rapidly approaching their size. Of the smaller departments, Music, Linguistics, and Japanese attract steadily increasing numbers of undergraduates and have also been successful in developing graduate studies. It is unfortunate that the growth of some of our smaller departments is inhibited by the restrictions placed on the courses of studentship holders by the Education Department. The faculty is sympathetic to the needs of the Department, and some departments devote much effort to providing special courses for teachers. However, it has proved difficult to establish any degree of co-operation with the officers of the Department who are responsible for the approval of the courses of studentship holders. Many of these students are, in our opinion, unduly restricted in their choice of subjects.

There has been one major change in the organization of the faculty. By general agreement, the Modern Languages department had become too large and complex to administer as a single department under a rotating chairmanship, and after long discussion it was decided to reconstitute each of the seven language sections as a separate department. At the same time the language services section, which had previously operated within the Modern Languages department, was set up under a full-time director, with an advisory committee responsible to the faculty. Dr Eric Bauer, of the University of Minnesota, was appointed to this position.

Towards the end of the year the Council agreed to the creation of the office of sub-dean to assist the dean especially in the advising of students. Dr D. B. Heron, senior lecturer in Philosophy, has been appointed to this position from the beginning of 1970.

The report of the Australian Universities Commission published in August has been a source of great disappointment to the faculty. With the rest of the University we are acutely conscious of the inadequacy of the recurrent grant, which cannot possibly permit an improvement of staff/student ratios to the level which is allegedly provided for without crippling effects on the library, research, and other expenditure. In addition, the request for capital expenditure on additional accommodation in the humanities area has been cut by two-thirds, with no indication of the commission's intentions.

Inadequate grants, however reasonable the requests, may be due to some extent to factors beyond the commission's control. It is more difficult to explain the apparent rejection of our proposal for a department of Visual Arts, and the short-sighted and perfunctory manner in which the commission appears to have dealt in general with proposals for new developments in the humanities field.

The faculty board has given very full consideration to the matter of student participation both at the departmental and at the faculty level, and a proposal for an amendment to the regulations to allow for full student membership of the faculty board has been approved for implementation early in 1970.

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

### *Students*

The number of students admitted into the faculty to undertake the Bachelor of Economics degree has remained static at 500, although the faculty faces ever-increasing pressure from large numbers of applicants each year. Interest in our courses by students in other faculties is evidenced by the increased numbers attending Economics 131—794 in 1968 and 891 in 1969.

Total enrolments in the faculty have again increased. In 1968 there were 1,376 students enrolled for the Bachelor of Economics degree; in 1969 this number rose to 1,520. The total number of students taught by the faculty on an equivalent full-time basis increased accordingly from 1,536 in 1968 to 1,783 in 1969.

This growth in student enrolments results in a yearly increase in the number of graduands. The output of the 1968 academic year, who received their degrees early in 1969, was 256. The corresponding number of students who are expected to graduate early this year (from 1969) is 293—this number includes thirty-four honours graduates.

The graduate programme which the faculty established in 1967 is now subject to heavy demand as increasingly our graduates seek to progress to higher degrees. In 1969 fourteen Ph.D. candidates were enrolled in the faculty, nine in Economics and five in Politics. The Master of Economics course was inaugurated in 1967 with twelve students; enrolments rose to twenty-one in 1968, and to thirty-four in 1969. Eight graduate students completed the M.Ec. degree in 1969.

Applications for admission to the Master of Administration course have again exceeded by far the number of places available. In 1969, eighty-nine students were enrolled for various stages of the course, compared with forty-four in 1968. Last year thirty-five students succeeded in completing the first half of the course.

In the department of Politics fourteen students were enrolled for the Master of Arts preliminary year, and ten for the M.A. degree.

In total, the graduate school increased in number from 105 enrolments in 1968 to 161 enrolments in 1969.

### *Staff*

As noted in my report to Council last year, such increases in numbers of graduate and undergraduate students cannot help but create staffing difficulties, particularly in relation to the specialized graduate courses; in some cases a solution has been found to this problem in inviting senior men from industry to undertake lecturing on a part-time basis.

Fourteen new staff members joined the ranks of lecturers and senior lecturers of the faculty in 1969. Dr R. S. Snape was promoted to a readership; Dr Colin Clark, director of Populorum Progressio in Australia, became the first fellow of the faculty of Economics and Politics.

The faculty was visited by several special lecturers, among them Professor H. G. Johnson of the London School of Economics and the University of Chicago. During his stay at Monash, Professor Johnson attended an International Trade Seminar and delivered the third Monash Economics Lecture.

### *Leave*

In the course of 1969 a number of staff members took study leave. Professor I. McDougall, on short study leave, acted as economic adviser to a United Nations mission in Southeast Asia. Dr A. K. Collins taught in the graduate extension programme at Cornell University, examined business administration programmes at Harvard University and M.I.T., and spent some time consulting with the headquarters of large business organizations in New York, Mr B. Brogan, Mr L. McGregor, Mrs E. Preston, Dr P. Riach and Mr J. C. G. Wright also left Australia on study leave, and have been involved in teaching and/or industry in Britain and the United States.

Professor H. Feith visited the University of Papua and New Guinea to give several lectures and advise on the development of Indonesian studies. Mr J. A. C. Mackie attended the SEADAG (Southeast Asian Development Advisory Group) Conference on Social and Economic Implications of Agricultural Innovations in Asia, which was held in New York in June.

### *Research Grants*

In October 1969 the Australian Research Grants Committee approved a substantial grant to Professors A. A. L. Powell and F. H. G. Gruen for work on their project, 'A systematic analysis of alternative protective policies for Australia'. Professor H. Feith and Mr J. A. C. Mackie again received support for their research into 'Political and administrative dynamics of the post-Sukarno Indonesia', and a grant was also approved for Dr H. Gelber's project, 'Australia and the United States Alliance'. Dr B. Goss has been awarded a grant from the Reserve Bank for his research, 'An investigation of the Sydney greasy wool futures market'.

### *Seminars*

During the 1969 academic year seminars were normally held twice-weekly in the department of Economics. Among the distinguished speakers who presented papers were:

Professor Tjaling Koopmans, Yale University  
Professor E. H. Phelps-Brown, London School of Economics  
Professor Peter Lloyd, Michigan State University  
Professor Herbert Grubel, Pennsylvania University  
Professor Kelvin Lancaster, Columbia University  
Dr Max Corden, Oxford University  
Professor William Dewald, Ohio State University  
Dr C. Schedvin, Sydney University  
Dr W. Norton, Reserve Bank of Australia  
Dr A. Hunter, Australian National University  
Professor G. C. Harcourt, Adelaide University

Seminars given in the department of Politics included papers by a number of distinguished visitors, among whom were:

Professor R. Pear, Nottingham University  
Senator Magnus Cormack  
Mr Frank Crean, MHR  
Professor C. Berg, Leiden University  
Mr R. Muntu, 'Antara' newsagency correspondent, Canberra  
Professor Wang Gungwu, Professor of Far Eastern History, ANU  
Professor Ron Watts, Queens University, Ontario  
Professor Hedley Bull, ANU



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

### *Students*

The growth of the faculty continued to be rapid; at the Diploma level 342 full-time and 219 part-time students were admitted. It was possible to admit all appropriately qualified candidates to these courses, and thus to carry out the intention which the faculty has had from its inception, namely, to ensure that all Monash graduates who desire to gain entry to courses which will qualify them for work as teachers will be enabled to do so, and also to provide sufficient additional places for graduates from other universities to ensure not only that all candidates from overseas and interstate can be admitted, but also that provision can be made for those Melbourne graduates for whom their own university is unable to provide. The University of Melbourne has been anxious to ensure that in 1970, when the new triennium begins, its faculty should be able to offer places to a number of candidates equal to that of its own graduates who desire admission; unfortunately, it now seems likely that restrictions of finance, with the consequent limitations on staff and accommodation, may make this impossible. Our Monash faculty will probably no longer be able, in view of the continuing growth in the number of Monash degrees awarded, and the high proportion of graduates who wish to become teachers, to provide for the whole of the deficiency. No one will regret more than we shall this most unfortunate situation which arises from circumstances entirely outside our control.

The number of applicants for the Bachelor's course rose sharply, and 183 were enrolled. For the first time a large number of our own Diplomates were eligible for admission, and it is gratifying that a substantial proportion of them wish to continue with the further study of educational topics. Candidates for higher degrees also increased rapidly—to forty-one at the Master's level, and eleven for the Doctorate. These students tend to be a good deal older than their counterparts in other faculties; while we believe this is appropriate, it creates extremely difficult problems in that a good many candidates cannot afford to accept the kind of scholarship which may be appropriate and adequate for newly qualified graduates.

### *Staff*

Two new lecturers joined the staff—Mr Alan Gregory, B.Com., B.Ed. (Melb.), M.A.C.E., and Dr T. Hore, M.Ed., Ph.D. (Alta.), D.P.E. (Lough.). Mr Gregory continued to be responsible for the work in the *Methods and Practice of Teaching Economics* which he had previously undertaken in a part-time capacity, and Dr Hore is taking a share of the work in *Educational Psychology*. In addition, two new senior teaching fellows were appointed—Miss D. F. Davis, M.A., B.Ed.

(Melb.), M.B.Ps.S., M.A.Ps.S., whose interests are in Psychology and the Teaching of English, and Mr A. D. Spaul, M.Com., Dip.Ed. (Melb.), who is taking a share in the teaching in Education in Society. Mr I. R. Scott, B.Sc., B.A. (N.E.), took up duty as a teaching fellow and is tutoring in the History of Educational Thought. Mr M. F. Hammond, senior teaching fellow, left to take up a similar post at Macquarie University. Mr J. C. Clift, M.Sc. (Cantaur.), joined the Higher Education Research Unit as a senior fellow. He is mainly concerned with the unit's programme for assisting departments to evaluate their own teaching programmes. Towards the end of the year Mr H. P. Schoenheimer, one of the original four members of the faculty staff, accepted an appointment as a senior lecturer at La Trobe University, and Mr G. L. Johnston a comparable post at the University of Tasmania. Both had made a distinguished contribution to the work of the faculty, and they will be very much missed.

It was a matter for great regret, too, that Mr R. W. Knight, who had been the secretary to the faculty since the post was created, accepted appointment as assistant registrar in the University of Tasmania; we congratulate him on his promotion, and are very grateful to him for the excellent service which he gave the faculty. In his place we welcome Mr R. B. Osborn, D.S.O., D.F.C., M.A. (Cantab.), who transferred to us from the faculty of Medicine.

The Education Department of Victoria continued to give the faculty invaluable help in seconding a number of its senior teachers so that they could give part-time help as lecturers and tutors in the methods and practice of teaching the various school subjects. Without this help it would be quite impossible to provide the tutorial programme which is essential for effective work in these subjects.

Mr Brian Sureties took study leave for the year, and we congratulate him on completing his Ph.D. at the University of London. Professor Dunn left in May for two terms' leave which he spent mainly in the United Kingdom and the United States. Mr Sureties spent the whole of the year in the United Kingdom studying developments in the teaching of English. He visited a wide variety of schools, as well as colleges, university departments and institutes of education where significant research is in progress. Professor Dunn, during his two terms' study leave, spent approximately one month in Great Britain visiting the Universities of London, Bristol, Birmingham and Manchester, and the National Foundation for Educational Research, and six months in the United States and Canada, spending major periods in the Colleges of Education at the University of Syracuse and at the Center for Instructional Research and Curriculum Evaluation at the University of Illinois.

The appointment of the first technician, Mr P. Tucker, has proved most valuable in view of the increasing amount of specialized equipment now available to the faculty.

We welcomed a large number of visitors during the year, especially

Professor Bruce Biddle, A.B. (Ohio), Ph.D. (Mich.), of the University of Missouri, who was visiting professor during first term, and who was able to continue as a temporary professor for second term also. His stimulating presence was of great value to staff and students alike. Other visitors to the faculty included Dr Floyd B. Albin, associate dean of faculty, Oregon College of Education; Dr J. S. Birnbrauer, department of Psychology, University of Western Australia; Professor R. Freeman Butts, associate dean, Teachers' College, Columbia University; Professor I. Goldberg, Teachers' College, Columbia; Professor R. Harris, professor of Higher Education, University of Toronto; Dr Clark Kerr, chairman of the Carnegie Commission on Higher Education; Miss Geraldine Lack, OBE, headmistress, Roseberry Grammar School, Epsom; Professor A. J. Lewis, chairman, Teachers' College, Columbia University; Associate Professor M. Loflin, University of Missouri; Dr W. C. Lorimer, Deputy Minister of Education, Manitoba, Canada; Dr Shib K. Mitra, joint director, National Council of Educational Research and Training, New Delhi; The Hon. L. H. S. Thompson, Minister of Education, MLA; Professor J. Vaizey, professor of Economics, Brunel University, England.

### *Buildings*

With the generous co-operation of the faculty of Law, it proved possible to accommodate our growing staff without undue crowding, although it was necessary for junior staff members to share rooms, and a number of lecturers' studies had to be used for tutorial groups for which they were not really large enough. The faculty's new building was completed in November, and the staff moved into it late in that month. I believe that I can speak for the whole staff when I say that we find it very pleasant to work in, and believe that it will prove thoroughly convenient and well suited for its purpose. It is a great advantage to have the whole faculty, including the child study centre, together in one building. We are very grateful to the architects, Messrs J. F. D. Scarborough and Partners, for the care and skill which they have devoted to this project.

The building will be almost fully occupied in 1970, and it is already clear that, in 1972, we shall be in need of those additional rooms which were included in our proposal to the AUC, but which had to be omitted when the total project was reduced in size in view of the funds made available for it.

### *Curriculum*

Three new subjects were offered to candidates for the degree of Bachelor of Education—Educational Technology, Economics and Politics of Education, and Advanced Science/Mathematics Education. A wide range of options is thus being offered to candidates, making it possible to meet their interests and also to keep the numbers in the

teaching groups reasonably small. It is also now possible for each candidate to take three closely related subjects, thus achieving a limited degree of specialization, and a basis for possible further study at higher levels, or to choose three which will afford him a reasonably thorough study of a range of topics which will give him a broader background as a basis for a career in education at a senior level. My own study of the work of university departments and faculties of Education in England and in the United States revealed a broad consensus as to the main topics which should be included in programmes for the initial professional education of teachers; and it seems clear that our thinking at Monash is in line with the best overseas theory and practice in this regard. This is not to say that our programme could not be greatly improved; but it has led us to seek for improvement in the organization and presentation of these topics rather than in the attempt to find other and more relevant subjects for study.

### *Research*

The faculty's programme has continued to expand: substantial grants have been awarded by the ARGC to Professor P. J. Fensham for his study which will compare several different methods of teaching science; to Mr L. D. Mackay to enable him to continue his evaluation of the PSSC physics curriculum; to Professor R. Taft for his study of the educational and vocational aspirations and values of Australian and immigrant children and their parents and teachers; and to Dr L. T. Hore and Professor R. Taft for their work in teacher-pupil interaction with Australian and non-British immigrant children. Dr F. J. Hunt has received a grant from the Myer Foundation to assist him with continuing his study of educational resources and achievements. Professors Dunn and Fensham have published the first part of their report on the research project which is being financed by the Wark Committee; and a great deal of additional data remains to be processed and ordered for publication. The Aboriginal pre-school project, financed by the Van Leer Foundation, has progressed to the point where it has been possible to recruit experienced kindergarten teachers to take charge of the programmes in Swan Hill and North Melbourne respectively. The response to the advertisement for these posts was most pleasing, and promising appointments have been made. The Creswick Foundation provided a generous grant to enable Dr Phyllis Scott, who devotes part of her time to the direction of the Van Leer Project, to undertake continuing research into pre-school teaching programmes at the Melbourne Lady Gowrie Child Centre. She is thus employed as a full-time research fellow. Late in the year, the Department of Education and Science informed the Australian Pre-School Association, which sponsored this project, that they would take over the financial responsibility for it. The continuance of the programme for a sufficient period to give promise of worthwhile results is thus assured.

A number of other grants have been continued, and new ones made, which are enabling us to develop a reasonably broad programme of research work. The list of publications gives an indication of the topics covered and the progress being made.

### *General*

It is probably true to say that the first stage in the development of the faculty is coming to an end; we have, so far, at least been able to provide an initial course for all candidates who wished for it and thus to play our part in increasing the flow of well-educated recruits for the teaching service. It is very disappointing that the length of time for which these graduates serve in the schools tends to be so short, and that there thus continues to be a severe shortage of well-qualified people in the secondary schools.

Unlike most Australian faculties of Education, we now have the satisfaction of being established in a building of our own, properly designed for our work, and we are unique in Australia in having been given the opportunity of recruiting a group of professors, each of whom can be a specialist and, therefore, a leader of research and teaching in his or her own field. It is encouraging to note that this seems to have led at least three other universities to recruit a second professor.

Perhaps one of the most valuable contributions which our faculty can now make is to take full advantage of these opportunities to make clear to our students, to the University, and to the community at large, how vitally important, and also how intellectually exciting, the study of the great educational problems of the day can be.

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

The number of undergraduates enrolled in the first year of engineering courses was 265, namely, five above the nominal first year quota of 260. In 1969 Monash has for the first time exceeded the engineering intake of the University of Melbourne. The total undergraduate enrolments were approximately 743 (as compared with the 609 quoted in the 1968 report), the numbers completing their courses being: chemical 19 (19), civil 38 (25), electrical 29 (22), mechanical 18 (20), numbers in brackets being the 1968 figures. Of the 105 graduating, 51 qualified for honours (10 first class, 25 second class, 16 third class). Fourteen students entered third year having previously qualified for diplomas in Victorian Colleges of Advanced Education. This increase over the six who entered in 1968 is accounted for by the fact that 1968 was the first year that the extended diploma courses had run their full length.

There still remained the difficulty of providing second year students with suitable vacation employment in which they can obtain useful

engineering experience. However, more students are now concentrating the minimum prescribed period of ten weeks at the end of third year, and discussions with employers about the aims and objectives of vacation employment continue to be fruitful.

The first year engineering subject (Engineering 101) was revised this year. Lecturers from all departments took part in the subject and introduced students more broadly than hitherto to the underlying principles and methods in engineering. It is believed that this revised syllabus, coupled with the Information Day held towards the end of the year, has assisted a number of first year students in discovering what the profession of engineering really entails, and in strengthening their motivation. These 1969 changes can be regarded as representing an important stage in the continuing evolution of the early year engineering curriculum. The faculty has been fortunate in the interest taken in the subject Engineering 101, and in first year students as a whole, by the Higher Education Research Unit of the faculty of Education, which has undertaken valuable studies on aptitudes and on teaching method. It is hoped that this work will continue.

With the growing numbers in the final year of the courses, departments have now been offering an increasing number of elective subjects that cover a broad range of specialist interests.

The engineering student body itself has been constructively active and helpful. The Monash Engineering Students' Society made a valuable contribution during Orientation Week both in welcoming new engineering students and in guiding groups round the departments. Later in the year a core committee of five students was elected and has provided a useful link between staff and students in such matters as teaching technique, curriculum and timetabling. Two members of the core committee have been attending meetings of the faculty board as observers. It can be expected that the students will participate increasingly in the affairs of the faculty.

The number of students enrolled for higher degrees rose from eighty-six in 1968 to 102. Of these eleven were members of staff. Four Ph.D.s were conferred during 1969. Nine research projects were supported by the Australian Research Grants Committee to the extent of \$46,113 in total. A number of others were assisted from other sources, principally the Australian Atomic Energy Commission, the Division of Mechanical Engineering, CSIRO, the Australian Welding Research Association, the Water Research Foundation of Australia, the Electrical Research Board, and the Harold Armstrong Memorial Fund. Some research scholars, and others working full-time in the faculty, are, besides, receiving support from a number of Government and private organizations or foundations.

The problem of accommodation of staff and students was at least partially relieved when the final stage 4 of building 5 was handed over in August. Some areas within this portion of the laboratories are

still not fully completed or serviced, but, with the knowledge of the capital funds available for the 1970-72 triennium, plans for fully utilizing the space available were completed by the end of the year. Planning was also started on the proposed easterly extension to building 4, and on the most effective way to use the areas to be vacated early in 1970 by the University computer centre which has been housed within the engineering building since its establishment.

During the year the Council agreed to the creation of a new department of Materials Engineering within the faculty, with effect from 1 January 1970. The faculty has now agreed to offer, starting in 1970, a Bachelor of Engineering course in materials engineering. Holders of this degree should find many opportunities, particularly within the manufacturing and process industries.

Mr I. G. Wallis, a graduate scholar in the department of Civil Engineering, was supported by the Sir Alexander Stewart Memorial Fund in order to study the impact of the planned industrial development round Western Port Bay on pollution, marine life, and recreational facilities, and to make a cinematograph film aimed at highlighting the problems.

The academic staff on strength in the faculty remained effectively static at fifty-seven during 1969. Nine members of staff were absent on study leave at some time or other during 1969, those actually departing on leave during the year being Professor D. G. Lampard (as visiting professor in the department of Physiology at Bristol University for six months), Professor R. G. Barden (as visiting professor for eight months at the Institute of Sound and Vibration, University of Southampton), Mr R. J. de Laine (to spend three months at the University College of Cork, and three months at the Zinc Corporation, Broken Hill), Dr L. Gruner (to Imperial College, London, for ten months) and Dr A. Williams (mainly to Central Engineering Research Laboratories, Leatherhead).

One member of staff and seven research scholars in the department of Electrical Engineering attended, for the second year in succession, an International Conference on System Sciences in Hawaii in January. Professor D. G. Lampard, in his capacity as a director of The Institute of Electrical and Electronics Engineers, USA, attended meetings in New York, Ottawa, and Cuernavaca (Mexico). Dr W. H. Melbourne, as aerodynamics co-ordinator for the Aeronautics Research Council, attended a meeting of the Council in London. Professor O. E. Potter attended by invitation a IUTAM Conference on Two-Phase Flow at Cambridge, England. Other conferences attended by members of staff included the 22nd Congress of IUPAC (Sydney), the Annual Conferences of The Australian Institute of Metals (Perth), and of The Institution of Engineers, Australia (Sydney), the Conference on Vibration and Machines of the I.E.Aust. (Melbourne, under the chairmanship of the dean), a Select Conference on Weldable Alloys (Cambridge, Eng-

land), an Earthquake Engineering Symposium in Melbourne and a Rock Mechanics Symposium in Sydney, Interfaces Conference (Melbourne), the second Tewksbury Symposium on Fracture (Melbourne), the IFAC Symposium (Sydney), the IREE Conference (Sydney), the Neurosciences Research Programme (Colorado), a Control Symposium (Newcastle), the 41st ANZAAS Congress (Adelaide), a Heat Transfer and Fluid Mechanics Conference (Lucas Heights, Sydney), the RACI Summer School (Sydney), a Conference of The Concrete Institute of Australia (Brisbane), a Symposium on Compaction (Wagga), a Transport Planning Conference (Brisbane) and the Regional Applied Mechanics Conference (Victor Harbour).

Dr I. B. Donald was promoted to associate professor. Dr S. J. Redman has continued as a Queen Elizabeth II Fellow. Dr G. Nar-simhan continued longer than his originally planned year with the department of Chemical Engineering. Dr B. A. Parker joined the Materials Science section as a second research fellow, supported by the ARGC. Professor Y. C. B. Fung, professor of Bioengineering and Applied Mechanics, University of California at San Diego, came as visiting professor to the department of Mechanical Engineering for the month of August.

Prominent among the many visitors to the school of engineering during 1969 were:

Professor R. L. Bell (Materials Science, Southampton)

Professor R. E. Gibson (Engineering Science, King's College, London)

Professor G. W. Greenwood (Physical Metallurgy, Sheffield)

Professor C. Gurney (Mechanical Engineering, Hong Kong)

Professor D. R. Harper (Building Technology, Manchester)

Professor R. W. K. Honeycombe (Metallurgy, Cambridge)

Dr Borge Lunn (Northern Cable and Wire Works, Denmark)

Dr S. R. Valluri (director of The National Aeronautical Laboratories, Bangalore, India)

Dr P. A. O. L. Davies (Institute of Sound and Vibration, Southampton)

Professor Dr Ing. Laszlo Vahl (Technical University, Delft)

Dr S. Durvasula (Indian Institute of Science, Bangalore, India)

Professor C. F. Kettleborough (Mechanical Engineering, Texas A and M)

Professor H. H. Kellogg (School of Mines, Columbia University, New York)

Professor Hugo Tobar (Mechanical Engineering, Guayaquil Politechnic, Ecuador)

Professor F. R. Perry (Electrical Engineering, Ahmadu Bello University, Nigeria)

Professor A. O. Converse (Dartmouth College, USA)

Professor T. Fuwa (Metallurgy, Tohoku University, Japan)

Mr L. O. Barthold (president, Power Technologies Inc., Schenectady, USA)



A significant gift of equipment has been a level demonstration unit (from Taylor Instrument Companies of Australia Pty Ltd).

A 'special short course' in control engineering, run jointly by three departments, clearly exposed a demand from engineers in employment, since there were substantially more applicants for the course than could be accepted. These courses form an important link between the faculty and industry, which manifests itself in many ways in all departments through consulting work and testing in a variety of fields, and in final year projects (which in some instances have entailed direct contacts between the students and real technical problems in industry). There has also been continued supervision by some academic staff of projects undertaken by students on vacation employment.

This report may appear to highlight a little of the glamour of research grants, of conferences attended by staff, of the many other activities that are peripheral to our major concern. Of course, the single most important responsibility of all the staff is the students. This year the student numbers have grown considerably, while the staff has not. The teaching load has been heavy, and it is believed that the rapport between students and staff has been good. The aim that all departments are deeply conscious of is to maintain proper balance between teaching and all other aspects of faculty activities.

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

The 1968 Report pointed out that in that year the law school completed its first five-year cycle of teaching for the B.Juris., LL.B. degrees. 1969 saw the institution of teaching in two further subjects offered in the LL.B. course, Advanced Constitutional Law and Industrial Law, leaving only Comparative Law still to be instituted. This subject will be offered in 1970. In addition, plans to introduce teaching in Industrial Property Law have come to fruition: a seminar course for pass students on the one hand, and for members of the honours school on the other, will be introduced in 1970.

An important step in inter-disciplinary teaching was taken when Messrs R. Baxt and J. I. Fajgenbaum of the faculty joined with Professor M. Brunt and Dr G. Pursell of the department of Economics in the presentation of a seminar on Trade Practices Legislation. In 1970 this seminar will be offered to students in both faculties.

Throughout the year working parties considered the present curriculum and a number of proposals for change was submitted to the faculty board's curriculum and legislation committee. This full-scale review of the curriculum will be continued and completed in 1970. The experimental course in the Common Law, combining teaching in Criminal Law, the Law of Contracts and the Law of Torts was taught

to a group of forty-five first year students. The experiment will be continued in 1970, and reviewed at the end of that year.

The school continued to make steady progress towards its ultimate planned size. There were 869 undergraduates in the law school and fourteen enrolled for higher degrees in law. A number of new appointments were made to the full-time staff including, in September, the appointment of Professor P. G. Nash to the fifth chair of Law. Professor Nash is presently foundation professor of Law and dean of Law in the University of Papua and New Guinea. He will take up duties in July 1970. His chief interests are in commercial and criminal law.

Research and writing in a number of fields was carried out by members of the faculty. Support was received from outside sources for two research projects. Professor D. E. Allan was commissioned by the Law Association for Asia and the Western Pacific (LAWASIA) to carry out a study of credit and security in relation to development and finance in Asia. The project is receiving technical and financial assistance from the Asian Development Bank, the Ford Foundation, business interests in Australia and Japan, and the Commonwealth Government. Miss E. M. Eggleston was awarded a grant by the Australian Research Grants Committee to continue her research on aborigines and the law in Australia.

During 1969 a number of distinguished visitors were welcomed in the law school. Chief among these was Professor Harry Street, professor of English Law and dean of the faculty of Law in the University of Manchester. Professor Street spent the whole of second term as visiting professor of Law. In July he delivered the second Wilfred Fullagar Memorial Lecture in the Alexander Theatre on 'Compensation for Personal Injuries'.

Other visitors who delivered lectures or conducted seminars were: Justice Haim Cohn, of the Supreme Court of Israel—'Trial of Jesus'; The Rt. Hon. Lord Wilberforce, Lord of Appeal—'English legal developments';

Mr Walter Surrey, Attorney of Washington, D.C.—'Lawyers and economic development of less developed countries';

Professor Israel Drapkin, professor of Criminology in the Hebrew University of Jerusalem—'Crime and criminals in Israel';

Professor Lewis Simes, University of California's Hastings College of Law—'Reforms of the rule against perpetuities';

Professor D. Daube, professor of Civil Law, University of Oxford—'The migration of legal systems'.

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

Now that the staff and student numbers are almost at their maximum and the major buildings completed, this has been a year of consolida-

tion after the rush of the first decade. However, this report will show that the situation is dynamic and already plans (see curriculum) for an entirely new course are proceeding. It has been a year of difficulty and at times anxiety. But there are, we believe, in the faculty, effective means of communication between staff and students which will be extended and strengthened in the future.

### *Buildings*

AUC agreement for a new biochemistry building with a grant of \$345,000 (plus \$51,000 for alterations to the present medical school) will allow for much needed relief. While the medical requirements for biological science teaching are for the present satisfied, science students are still rapidly increasing.

The new building at Prince Henry's Hospital, a joint venture by the University, Hospitals and Charities Commission and the Department of Health, to which the University contributed \$469,600, was opened by the Premier (Sir Henry Bolte) on 27 March. This provides the faculty now with clinical school facilities, library and residential accommodation on a par with Alfred Hospital. A tender was let for the department of Psychological Medicine in the same hospital, for which \$76,600 are available.

There has been no government decision yet on the Monash medical centre, although a joint University and Hospitals and Charities Commission deputation to the Premier on 2 April, introduced by the Minister of Health, was favourably received. Final approval by the Council for a hospital of 800 beds on the campus was given on 14 April.

### *Students*

There are 856 medical students over the six years of the course, and twelve reading for the B.Med.Sc.

297 science undergraduates are doing various courses in the biological sciences which lie within the faculty (biochemistry, microbiology, physiology). It is clear that there are mounting pressures in the biological fields.

There are 113 overseas students: Malaysia 58; Hong Kong 20; Singapore 18; Borneo 2; Great Britain 2; India 2; Indonesia 2; Malawi 2; New Zealand 2; Canada 1; Kenya 1; Pakistan 1; PNG 1; Zambia 1.

Allusion has been made to relations between staff and students. The dean, professors, and non-professorial staff have regular meetings with students from all years, chosen at random. In addition, formal regular meetings are held between office bearers of the Monash University Medical Undergraduates Society, the dean and academic staff.

This year the faculty decided, with their agreement, to appoint students to both the selection committee and the unsatisfactory progress (exclusion) committee.

Throughout the year a Commission on University Affairs appointed

by the Council has studied, *inter alia*, many aspects of staff/student relations. The dean was a member of the commission. It was clear to him as a result of listening to representatives of the medical students appearing before the commission that there were no serious and contentious issues, although there were still matters to be dealt with, and that continuous review was necessary.

### *Staff*

There are now 131 tenure (full-time tenure 103, and part-time tenure 28) and 200 visiting staff at the six hospitals with which we are affiliated. Of the tenure staff seventy are on the campus and sixty-one downtown.

There are sixteen professors: Biochemistry 3, Physiology 2, Medicine 2, Surgery 2, and other departments one each.

Study leave was commenced by nine members and nine returned. The reports to Council by staff make it very clear how useful, indeed essential, this leave is for work, for time to think, and for relief from unending administrative burdens, especially necessary for senior staff. It could be that staff in the future will be less inclined to equate study leave with foreign countries, and pay more attention to the opportunities and facilities for intellectual refreshment in universities and research institutes in their own country, conceivably in their own town.

During the year Professor Dudley spent three months in Vietnam as a member of a surgical team. This is his second stint there in two years. He was awarded the Medal of Merit by the Government of South Vietnam.

The dean was appointed seminar director by the World Health Organization (Western Pacific) of a travelling group of deans who held seminars on medical education in Manila, Sydney, Perth and Singapore.

### *Research*

Active research programmes continue in all areas. The *Report of the Council 1968* has a detailed list of research in all departments to which now should be added Psychological Medicine (Professor Ironside, who has special interests in neo-natal development and the design of psychological tests in hospital populations).

A notable event was the announcement by Professor Bornstein (Biochemistry) and his co-workers of new discoveries in the field of diabetes (ACG—a polypeptide). This has attracted a special grant by the Commonwealth Government through the NH & MRC of \$262,000.

### *Graduate Education*

There are now eighty-four students doing graduate degrees in the faculty; most of these come from the faculty of Science. It should be remembered that all medical graduates continue for several years (some

for seven or eight years) in graduate education as interns, residents and registrars. A very considerable extra load falls on the clinical academic departments—approximately equal in time to that of undergraduate involvement. But because these graduate students are not enrolled in supervised degree courses, they may not be counted in the EFTS formulation by which the AUC and University calculate staff requirements.

It is to be hoped that the AUC will pay some attention in the future to this anomaly which has serious repercussions on clinical academic staffing.

### *Curriculum*

The means of review of the curriculum has changed this year as set out in *Report of the Council 1968*. As a result of intensive study leading to dissatisfaction with many features of the six-year medical course common to UK and Australia, an entirely new structure is being explored, the essentials being the granting of a degree at the end of three years, the transfer of topographical anatomy to fourth year, and the choice available to all medical students at the end of three years, either to continue into the clinical years or into further work in biological or behavioural sciences.

Student participation in course design will obviously increase now that an education committee on which they are equally represented has been established to advise the curriculum committee.

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

The chief academic developments in 1969 were the establishment of a new department of Genetics and the appointment of Dr D. R. Hutton as lecturer in Science Education. Professor B. W. Holloway, who had previously been on the dean's establishment, became chairman of the new department, and was re-elected to the office of associate dean until June 1970. Dr Hutton is formally on the dean's establishment, but with teaching responsibilities in the departments of Physics and Chemistry, making particular contributions to the Advanced Science/Mathematics Education Unit for the degree of Bachelor of Education. He will also concern himself with general educational matters in the faculty and will be available to departments for consultation.

The first year intake of students again increased by 50 to 450. Our undergraduate numbers reached 1,183 full-time and 89 part-time students. The increased numbers in the higher years are now tending to tax the capacities of the larger departments, so that quotas may have to be imposed in 1970. The position will be somewhat eased when the 1970-72 AUC building programme has been completed. The number of students enrolled for higher degrees continues to rise. The figures for 1967, 1968 and 1969 are 232, 257, and 365 respectively.

With the growth of departments it became necessary to devise a new schedule of membership of the Science faculty board, which will be implemented in 1970. Opportunity was taken to include representatives of undergraduate and graduate students as full members. Pending implementation of the new schedule student observers were invited to attend meetings of the faculty board and its committees. We hope that nothing but good will come from the increased involvement of students in the affairs of the faculty that concern them.

#### DEPARTMENT OF BOTANY

##### *Teaching*

All undergraduate classes increased substantially over the previous year's enrolments: Biology 101 by 20 per cent to 600; Botany 203 by 108 per cent to 27; Botany 301/3 from 3 to 7; Botany 400 from 1 to 2. These increases placed a great strain on space and staff, especially the first year (in which lecture theatres and many practical sessions were overcrowded), and Botany 203 where it was necessary to hold a Wednesday afternoon practical to take the spillover from the duplicated Tuesday-Thursday classes. The same laboratory houses 301/3, and is used continuously throughout the week. This has only been achieved by great tact, forbearance and sympathetic co-operation between all the teaching and technical staff involved. Excursions were run for third years (seven days to South Australia and Western Victoria) and second years (five days to Wyperfeld Park, and two days to Cumberland Falls).

##### *Research*

###### GRANTS AND EQUIPMENT TO:

Professor M. J. Canny, from ARGC: \$2,843 for salary and maintenance.  
Dr A. A. Holland, from Wheat Ind. Res. Council: \$5,300, for salary, equipment and maintenance.

Dr T. P. O'Brien, from ARGC (supp. to 1968): \$6,500, for metal coating unit and ultramicrotome; from ARGC: \$13,531, for salary, equipment and maintenance.

*Visiting Worker:* Dr J. R. S. Lawton, from Ibadan, is spending a sabbatical year in the department.

##### *Research Programmes*

Professor M. J. P. Canny and Mr P. F. Lumley—Translocation of sugars.

Dr D. M. Churchill—Vegetation history of Western Lake region.

Dr D. F. Gaff—Desiccation tolerance in plants.

Dr A. A. Holland—Immunofluorescence, and immunoelectrophoresis of fungal parasites and their hosts.

Dr B. J. Macauley—Effects of bicarbonate on respiration of *Ophiobolus gramminis*.

Dr T. P. O'Brien—Cell biology of grasses with special reference to the cereal grain.

Professor Canny spent four months of sabbatical leave in London and Cambridge writing a book.

#### *Education Outside the University*

The department ran an adult education course for the CAE on Topics in Modern Biology for the first two terms. Mr Lumley has been appointed to the VUSEB biology sub-committee, and has been advising authors of books on biology for primary and secondary schools.

#### *Professional Activities*

Several staff and research students attended ANZAAS in Adelaide. Dr Holland's group read two papers by invitation, Dr Churchill, one; and Dr Gaff and Mr Okong'o read a paper to the concurrent conference of the Australian Society of Plant Physiologists. The XIth International Botanical Congress in Seattle was attended by Professor Canny (who organized and chaired a symposium on Translocation) and Dr O'Brien who presented a paper by invitation to a symposium on cell walls. Dr O'Brien was invited to Canberra over the summer vacation where he held the position of visiting research fellow for nine weeks at the school of Biological Sciences, ANU. He attended the Cereal Chemistry Conference in Toowoomba where one of his honours students read a paper. Dr Churchill was invited to give lectures to the Geological Society of Australia and to the Botany Club of Melbourne University. Professor Canny was invited to lecture by the University of Madison, Wisconsin, and by the Weeds Society of Victoria.

#### *Personal*

Dr O'Brien was appointed a member of the faculty of Agriculture, University of Melbourne.

#### *General*

The accommodation situation is frightening. Up till January all planning of students and staff had been done on the assumption that the department would move to science south in 1969. Students were accepted into courses, staff were appointed to teach them, visiting workers and research fellows were promised space, research students were accepted for higher degree courses. In January, without reference to the Botany department, it was decided to add vertically to science south and delay its completion by at least a year. Now, at the end of 1969, we have staff and research students in cupboards, corridors and lavatories, and working at home. With the coming year, the new influx of students, research students and visitors will have to be turned away. We have already been turning away students from courses in 1969, and

this will increase in 1970. Quotas have been imposed on Botany 203, and 301/3, and Botany 400. Many good applicants for MGS have been refused consideration for lack of room. Research laboratories are crowded beyond the limits of safety; the corridors are lined with equipment, cupboards and desks. Attempts to alleviate this crisis have been frustrated by lack of money from Significant Minor Works.

#### DEPARTMENT OF CHEMISTRY

##### *Teaching*

In 1969 the undergraduate student numbers were 1,182 students. Approximately 100 students are expected to complete their B.Sc. with chemistry as a major. Nineteen are completing their honours degree. Graduate students enrolled total eleven M.Sc. and forty-nine Ph.D.

Three new Commonwealth Postgraduate Awards were gained by graduate students proceeding to Ph.D. degrees. P. G. Burton gained a CSIRO Postgraduate Studentship. The Applied Chemicals Scholarship was again awarded to R. A. Spence and a second such award was made to P. J. B. Fraser.

Higher degrees were obtained by the following:

*M.Sc.:* M. W. Hall (now at the Department of Supply); G. J. Murray; M. J. Rosser (now enrolled for a Ph.D. at University of Auckland).

*Ph.D.:* I. C. Bowater (now at University of Southampton); B. R. Cox (now with Mauri Bros. and Thomson); B. C. Elmes (now at CSIRO); Mrs P. S. Elmes (appointed research assistant in this department on an ARGC grant); L. Y. Foo (now at St Francis Xavier University, Antigonish, Canada); P. G. Kirk (now at Birkbeck College, University of London); M. J. Lane (now with Nylex Corporation); and R. R. Schrieke (now at the Ballarat School of Mines).

Four new senior teaching fellows were appointed: Dr I. R. McKinnon, Dr E. Elbing, Dr K. Bolton and Dr P. J. Pearce (arriving 1970). Drs M. W. Fuller and S. Middleton were promoted to senior lecturers. The department continued to profit from the presence of one of the University Research Fellows (Dr I. D. Rae), the Shell Research Fellow (Mr I. G. McWilliam), an NRC (Canada) Postdoctoral Fellow (Dr P. G. C. Campbell), Merck, Sharp and Dohme Research Fellow (Dr R. S. Rosich), and an NHMRC Research Fellow (Dr S. H. B. Wright), seconded part-time from the Pathology department.

##### *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. ARGC grants were received for projects directed by the follow-



ing staff members: Professors R. D. Brown, J. M. Swan, B. O. West, Drs R. F. C. Brown, B. A. W. Collier, G. B. Deacon, R. S. Dickson, F. W. Eastwood, B. M. K. C. Gatehouse, A. D. E. Pullin, I. D. Rae and I. R. Wilson.

Research activities continue in many areas—organic synthesis, biological chemistry, inorganic chemistry, organometallic chemistry, solid state structural chemistry, chemical kinetics, molecular interactions, spectroscopy and theoretical chemistry. Our financial resources did not permit the purchase of several major items of equipment that represent serious deficiencies in the department—X-ray diffractometer, laser-Raman spectrometer, double focusing mass spectrometer, precision UV spectrophotometer—but construction and successful operation of an ESR spectrometer and a Freeman spectrometer were achieved during the year.

Several research groups continue to make heavy use of the computer centre facilities. As mentioned in the last report, the facilities are proving inadequate and this is starting to hamper the progress of some graduate students.

Of the innovation described in the last report for promoting understanding and communication between chemistry students and staff, the Graduate Students' Liaison Committee (student members: Messrs Blackman, Felder and Spence) continued to play a valuable role. The undergraduate student meetings did not seem to continue fruitfully however.

### *Education*

A first year textbook, *Chemical Behaviour of the Elements*, was produced by Dr R. S. Dickson. With this we have now covered three of the four segments of first year teaching and the manuscript of the remaining portion, on physical chemistry, will be printed in time for sale to first year students in 1970.

Increasing attention has been given to the purpose, content and effectiveness of first year laboratory work. A pilot scale run on a new approach to laboratory work was made during the year and from this experience further modifications, unfortunately hampered by our straitened finances, will be explored in 1970. Preliminary investigations of modifications in other years have been commenced.

A revised syllabus of the physical chemistry section of Chemistry 101 was introduced and plans have been completed for the consequent changes in Chemistry 203 in 1970.

Some teaching of polymer chemistry was introduced into third year chemistry. We face difficulties in giving students adequate practical experience in this field however.

Drs A. C. Hurley and V. Maslen of the Division of Chemical Physics, CSIRO, gave a course in Chemistry 400 and graduate students profited from this contact with scientists from a kindred institution.

*Professional Activities*

Professor R. D. Brown was an invited lecturer at the Israel conference in April on 'Quantum aspects of heterocycles in chemistry and biochemistry' and spent a short study leave visiting universities in Europe, USA, Canada and Japan. Professor B. O. West was NSF visiting senior scientist at Virginia Polytechnic for part of 1969. He has also been elected vice-president of the Victorian branch of the Royal Australian Chemical Institute. Mr T. D. Smith was an invited lecturer at a conference on 'ESR spectra of transition metal compounds' in the United States in October 1969.

Most members of the department were involved in one or both of two international conferences held during the year—the International Magnetic Resonance Symposium held at Monash; the XXIIInd International Conference on Co-ordination Chemistry, held in the University of Sydney during August. These conferences brought an unprecedented number of the world's leading chemists to Australia, providing stimulating contacts with many members of the department. Limitations of space prohibit a listing of the many papers contributed by members of the department to these conferences, and the ensuing visits of prominent scientists to our laboratories, but perhaps the visit of Professor R. S. Mulliken, Nobel Laureate, should be recorded.

*General*

The accommodation available to the department in 1969 has been adequate and permits a slight increase in numbers, just sufficient to meet the anticipated increased numbers in 1970 if no appreciable increase in staffing occurs. The news of funds for extending the building in the next triennium is welcome but 1971 may prove a difficult year until the extensions are completed.

## DEPARTMENT OF GENETICS

In September 1969 Genetics was formally established as a department in the faculty of Science.

*Teaching*

Science courses in genetics were the same as those given in 1968, with the addition in 1969 of the genetics component of Biology 101 for both Medicine and Science. Two new staff members took up their appointments early in 1969, Dr V. Krishnapillai, lecturer in genetics, and Miss V. Stanisich, teaching fellow. The first Genetics 400 student was taken this year.

*Research*

Our main programme of research on the genetics of *Pseudomonas aeruginosa* and its bacteriophages continues, supported by both the ARGC and the Australian Institute of Nuclear Science and Engineering.

Professor A. J. Clark and Miss A. Templin of the department of Molecular Biology, University of California at Berkeley, spent three months working on recombination deficient mutants of *P. aeruginosa* with members of the department and aspects of this work will be continued both at Clayton and Berkeley.

### *Education*

A matriculation genetics textbook, *Genes and Chromosomes in Action*, by Professor B. W. Holloway was published by Thomas Nelson & Sons.

### *Professional Activities*

During a six-week visit overseas in August-September, Professor Holloway gave papers at the Annual Phage Meeting, Cold Spring Harbor, New York, and the European Molecular Biology Organization's Phage Meeting at the University of Sussex, Brighton, England. Seminars on aspects of the department's research work were also given at various universities in the USA and the UK.

Professor Holloway continued as an associate editor of the *Australian Journal of Experimental Biology and Medical Science*.

Professor Holloway took part in a symposium in Viral Genetics at ANZAAS in Adelaide, Mr J. Pemberton gave a paper at the Australian Genetics Society's meeting, and Mrs Isaac spoke at the Australian Society of Microbiology's Annual Meeting in Adelaide.

### *General*

Through the continued generosity of the Biochemistry department we have obtained one additional laboratory and two smaller rooms in Medical Block D. With additional space for 1970 provided by Chemistry and Physics it appears that we shall have the necessary space for 1970 until we move into parts of Block E and Block B—our permanent home.

## DEPARTMENT OF INFORMATION SCIENCE

### *Teaching*

The course Information Science 303 was commenced, with an enrolment of over forty students. The course appears to have been well received, but the burden of practical work on students has been excessive, largely because of the inadequate service which can be offered by the present computers.

Mr A. Y. Montgomery was appointed as senior lecturer, and Mr P. M. Herman as senior teaching fellow.

### *Research*

Graduate research on a reporting language for medical records has continued with good results. Work has started on machine organization

for rapid compilation, hierarchic classification using information measures, the simulation of large computer system resource allocation, and a review of the data processing needs of the University's student records.

Mr Montgomery has begun a study of the organization of large data bases, and Professor Wallace is working on a new method for Bayesian estimation.

### *Professional Activities*

Two papers were delivered to the Australian Computer Conference in Adelaide, a course of lectures given to honours students in computing at Sydney University, and two invited addresses given to the Victorian Computer Society.

### *General*

Teaching computing to undergraduates has turned out to place heavy demands on the computer centre, not so much in the volume of work, but in the need for fast turnaround, and in the high probability that a student's attempt at an advanced programming project will cause catastrophic failure of the computer's operating programmes. This situation has greatly increased the time and effort required of the students by their practical work.

## DEPARTMENT OF MATHEMATICS

Professor J. N. Crossley took up his appointment as professor of Pure Mathematics and is initiating a programme of graduate and undergraduate activity in the area of mathematical logic, an important area of mathematics which has not previously been pursued to any great extent in Australia.

The following staff members resigned or left during the year: Dr H. Laszlo, Dr B. P. Leonard, Dr T. P. Speed, Mr M. J. Edgeloe, Mr P. F. Renaud, Miss N. Pradhan, Mr C. R. Rao, Mr A. W. Sudbury.

New staff members joining the department included Professor J. N. Crossley, Dr J. Virsik, Dr S. G. Loo, Mr A. M. Roberts, Mr M. L. Thornett, Mr D. H. Adams, Mr T. E. Hall, Mr L. M. Leslie, Mr R. A. Littler.

Dr E. D. Fackerell and Dr M. A. B. Deakin were given leave of absence during the year.

The department reports, with regret, the death of Mr H. R. Adam, its administrative assistant. His work proved invaluable in the past and we will miss his help in the future.

Visitors and temporary members of the department included—

- Professor L. H. Aller, University of California at Los Angeles (March-June 1969) (Astrophysics)  
Dr Prem Kumar Bhatia, University of Jodhpur (September 1969-August 1970) (Astrophysics, magneto fluid dynamics)  
Professor G. A. Hookings, University of Auckland (February 1969-August 1969) (Atmospheric dynamics)  
Dr J. A. Johnson, University of East Anglia (July 1969-July 1970) (Geophysical fluid dynamics, theoretical oceanography)  
Professor Toru Saito, Tokyo Gahuzei University (September 1968-September 1969) (Semigroups)

#### DEPARTMENT OF PHYSICS

In 1969, the Physics department was responsible for the teaching of 995 undergraduate students, twenty-one honours students and fifty-two graduate students.

The following students gained higher degrees during the year:

*M.Sc.*: S. Boronkay, P. W. Y. Lung, L. A. Saunders.

*Ph.D.*: R. K. Day, J. R. Errey, T. R. Finlayson, P. C. Lanchester, J. A. Walter.

New members of staff appointed during 1969 are: Drs J. D. Cashion, T. J. Hicks, P. J. Lloyd, F. Ninio, K. Thompson and R. Weber. In addition, Drs J. M. Baker and J. H. Sanders, both from the Clarendon Laboratory, Oxford, were appointed as temporary senior lecturers. Dr J. A. Barclay joined the department for two years as an Australian Institute of Nuclear Science and Engineering Research Fellow.

Dr A. C. McLaren and Mr G. J. Troup have been promoted to the position of reader, and Dr J. H. Smith to that of associate professor.

Professor R. Street has been elected vice-president of the Australian Institute of Physics. Professor H. C. Bolton, Dr D. W. Coates and Dr J. L. A. Francey have returned from study leave in Oxford, Nottingham and St Andrews respectively. During his stay in Oxford, Professor Bolton's book, *A German Source-Book in Physics*, written in collaboration with Dr K. B. Beaton, was published by Oxford University Press.

Mr Troup spent six weeks at the Physical Institute of the University in Leningrad, and visited the Lebedev Institute of the Academy and Moscow University as a Monash Senior Staff Exchange Scholar. Professor Smith is at present collaborating with Professor S. Chikazumi (who worked in this department in 1967 under the Leverhulme Scheme) at the Institute of Solid State Physics, University of Tokyo, as the Monash out-going fellow under the terms of the Leverhulme Trust Fund Interchange Scheme. Professor W. A. Rachinger is at

present on study leave at Washington State University. Mr M. Wood, chairman of directors of the Oxford Instrument Company, returned to England in August, having supervised the construction and testing of a helium 3-helium 4 dilution refrigerator, which at present reaches temperatures below  $0.08^{\circ}\text{K}$ .

The superconducting solenoid system, which was constructed in the department and provides the most intense steady magnetic field in Australia (100 kilogauss), has been in constant use since its completion during the year for Mössbauer effect research.

Dr G. V. H. Wilson's research group has recently built an adiabatic demagnetization cryostat, which is used to cool metal alloy specimens to below  $0.01^{\circ}\text{K}$ .

The department's electronics workshop has developed a digital recorder which can be used to tabulate the output from a variety of electronic counting equipment. A counting circuit has also been designed which does not need a decoding matrix.

An international symposium on Electron and Nuclear Magnetic Resonance was held at Monash University in August under the aegis of the Australian Academy of Science, and was attended by 203 delegates. The organization of the symposium was an example of collaboration between CSIRO and the Chemistry and Physics departments of this University. The chairman of the symposium was Dr C. K. Coogan of the Division of Chemical Physics, CSIRO, and the secretary was Dr J. R. Pilbrow from this department. Other members of the Physics department who assisted in the organization of the symposium were Professor Street, Professor Bolton, Dr Wilson, Mr Lund and Mr Troup. The symposium proceedings were opened by the president of the Australian Academy of Science, Dr D. F. Martyn. The Government of Victoria gave a State Reception for the delegates, at which the Premier, Sir Henry Bolte, spoke of the importance of scientific research to the community. The Scientific Programme was built around twenty principal lectures given by leading scientists. These will be published as the Symposium Proceedings, by Plenum Press, edited by Drs J. R. Pilbrow and G. V. H. Wilson.

#### DEPARTMENT OF PSYCHOLOGY

##### *Teaching*

In 1969 all subjects in psychology in the faculties of Science and Arts were taught for the first time, including Psychology 400 (honours). The enrolment in Psychology 101 showed a sharp increase to 123 from 58 in 1968. Psychology 111 (280) and 211 (100) were taught in the faculty of Arts.

Graduate teaching and research continued and two M.Sc. degrees were awarded during the year.

### *Research*

The main areas of research during 1969 have been neuropsychology, cognitive processes, human performance, animal behaviour and learning, abnormal behaviour and perception. Investigation of human perception during early infancy has been initiated during the year.

Grants and awards for research during 1969 were as follows:

*Nuffield Foundation*—Dr J. L. Bradshaw, \$1,500.

*Australian Research Grants Committee*—Professor R. H. Day, \$6,151; Dr J. L. Bradshaw and Mr A. D. Perriment, \$4,221; Dr Chia-Chong Chen, \$1,880; Dr K. I. Forster, \$450; Dr J. C. Saunders and Dr W. R. Webster, \$8,270.

A research assistant included in Professor Day's grant is to be shared with Dr Forster.

### *Education Outside the University*

Two lectures were given to school children on psychology as a career.

### *Professional Activities*

Professor R. H. Day continued his associate editorship of the *Australian Journal of Psychology* and Mr M. B. Macmillan as book review editor of the same journal. Professor Day delivered the Presidential Address to Section 21 of ANZAAS at its 41st Congress in Adelaide in August. Papers were read by Dr Forster, Dr Coltheart, Dr Saunders and Dr Webster to the conference of the Australian Psychological Society in Sydney in August. Papers were also presented by members of the department to meetings of the Canberra Symposium in Perception and of the Physiological Society in Canberra, Sydney and Melbourne.

### *Personal*

During the year Dr Webster was awarded the degree of Ph.D. from the University of Sydney.

### *General*

In its report the Australian Universities Commission made available the sum of \$910,000 for the extension of the science south project to accommodate the major part of the department of Psychology. In addition the commission supported a proposal for a link between science south and the department of Zoology to accommodate mainly elements of the department of Psychology. On the completion of these two projects the department will be able to move entirely from the humanities building into the science area. However, since science south will

not be completed until September or October 1970, next year will be critical for the department in terms of space.

#### DEPARTMENT OF ZOOLOGY

##### *Teaching*

In 1969 the department of Zoology taught Biology 101 (504 students) and Biology 205 (26 students) jointly with the departments of Botany and Genetics. Fifty-six students enrolled in Zoology 203 and, as this is more than the second year laboratory can accommodate, temporary facilities were installed to deal with the overcrowding. The department ran a voluntary field trip of four days' duration two weeks prior to the beginning of first term for students in Zoology 203. It was well attended and will probably become a regular feature. Eleven students enrolled in Zoology 301, twelve in Zoology 303, and six in Zoology 400.

The department had nineteen candidates for the degree of Ph.D. (including two teaching fellows), and ten (six full-time, four part-time) candidates for the M.Sc. The degree of Ph.D. was awarded to the following four candidates who have accepted appointments as indicated: Dr E. Brough—Computer Centre, California; Dr J. Hope (nee Partridge)—ANU Research Station, New Guinea; Dr I. Norman—Research Scientist, Fisheries and Wildlife, Victoria; Dr M. Owen—Research Assistantship, Harvard University.

A new staff member, B. Roberts, Ph.D. (Northwestern), joined the department as lecturer. Dr Roberts' previous appointment was as a postdoctoral fellow at the University of Chicago.

##### *Research*

Research programmes in the department are concerned with aspects of the following general topics: (1) physiological and behavioural adaptations of animals to arid environments; (2) learning and communication; (3) fresh water ecosystems and primary productivity; (4) Paleozoic vertebrates, and (5) developing enzyme systems. Work on the atlas of the brain of a marsupial (dasyurid) has been initiated as part of a programme dealing with neurological correlates of behaviour.

Animals held in the Jock Marshall Zoology Reserve continue to provide information of both a behavioural and ecological nature, and an environmental laboratory is being planned for the reserve.

A research station for use in the limnology programme was completed in the lakes district of Western Victoria. With this aid our research in fresh water biology has expanded and is partially supported by a grant from ARGC. The following two visitors, working primarily at the field station, were in the department for approximately one year: Dr T. Hammer, University of Saskatchewan, and Dr C. Paterson, University of Waterloo.



Other visitors to the department on study leave were: Dr R. Carpenter, San Diego State College, and Dr R. Storer, University of Michigan.

### *Education Outside the University*

Staff members have contributed to one or more of the many public symposia on conservation and/or environmental pollution held by several government authorities and academic institutions this year. Some, including graduate students, produced a series of lectures on regional biology for the Australian Broadcasting Commission and also aided the ABC in the production of educational films.

Drs Ealey and Dorward are members of the biology standing committee of the VUSEB.

Dr Lee served as a co-editor for a revision of the Australian adaptation of the Biological Sciences Curriculum Study (*The Web of Life*) which is now used for matriculation biology.

### *Professional Activities*

Dr Williams has been engaged in the editorship of a journal, *Journ. Aust. Limn.*, and two books, Parker and Haswell's *Textbook of Zoology, Vol. I* (Macmillan), and *Biogeography and Ecology in Tasmania* (Junk). Dr Ealey has edited a book on *Conservation and Applied Ecology* (Heinemann).

Dr Williams has served as chairman of the subcommittee on freshwater biology set up by the Australian Academy of Science for co-ordination of the International Biological Programme.

Three members of staff, Drs Nelson, Lee and Dorward, joined, by invitation, the Alpha Helix New Guinea expedition which was under the auspices of the University of California and the U.S. National Science Foundation.

### *General*

The unexpected enrolment in Biology 101 (594 actual, 436 predicted) was more than could be accommodated in a duplicated lecture—the lecture theatre holds 240. In the senior zoology building the numbers of students have risen to occupy the available space. The strain on undergraduate laboratories is now such that it is necessary to apply a quota to second year Zoology, and it is hoped that this will in turn have the effect of holding the numbers in the third year class to within satisfactory limits. Also, the teaching museum area was converted into office space to accommodate graduate students and academic visitors.

No further increase in student intake can be considered without a concomitant expansion of physical facilities.

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

By the end of 1969, the University library had grown to approximately 364,000 volumes. 7,523 periodicals were being currently received.

Stock was distributed as follows: The main library—225,000 volumes; the Hargrave Library, for the physical sciences and engineering—49,200; the law library—33,000; and the biomedical library with 30,000 volumes on the Monash campus, 13,000 at the Alfred Hospital, 3,000 at Queen Victoria and further small collections at Prince Henry's, Fairfield and Royal Park Hospitals.

The library's budget for 1969 allowed it to increase book intake by roughly a third, to a level where some reasonable attempt could be made to keep abreast of current publishing in the wide range of subjects covered at Monash.

To handle this increase, as well as the demands of an increased population, staff numbers were raised to 152; the new appointments being mostly at junior levels. The extra intake was coped with until the end of the year. At that time, the move into the main library extension, with the need to divide the existing collection and the major selection and re-classification programme involved stretched the capacity of the staff to its limit.

The space problem was relieved throughout the system except for the main library, whose extension was not available for occupancy until late in the year. Progressively through third term more undergraduate space was occupied, but only in the last weeks of the year could the material stored and serviced in the law library be returned to its own building. The extended biomedical library building proved adequate to demands, and a considerable re-arrangement and extension of the Alfred Hospital library relieved overcrowding of books in that area.

Loans for the year were as follows:

Main library	166,839
Hargrave	54,176
Biomedical	
(a) Monash	40,025
(b) Alfred	23,453
(c) Queen Victoria	6,711
Law	5,373
Total	296,577

It had become clear that the circulation system in use since 1962 was failing to handle a turnover of this magnitude, and a computer-based system was gradually introduced through the year. None of the input devices at present available appeared suitable, so the system was

devised for minimal capital expense, but with the intention of compatibility with more suitable hardware when this becomes available. The system has proved suitable, although it still retains a planned but still undesirably high manual component.

Photocopying has continued as an accepted part of library service, and a total of 216,399 copies were produced by the library for staff, students and other libraries. In addition, the popularity of the public coin-operated machines became almost an embarrassment, and it is clear that this facility is now a normal feature of academic life.

The number of items borrowed through the inter-library loan service rose slightly, to 8,977, while loans to other libraries more than doubled, to 6,551. While Monash is clearly beginning to take its place in the community of major libraries, we must still record our debt to all those other institutions who have so readily made their stock available, through the inter-library loan system, to our researchers.

Work continued, at Monash, the other Victorian universities and the State Library, on the pilot project for common cataloguing, and a great amount of basic information has been collected. Just as the availability of Library of Congress catalogue tapes widened the scope of the original inquiry, so the expected arrival on the local scene of computer peripherals appropriate to the project, has opened possibilities which must still be considered.

The need for programme maintenance on the existing computer systems and investigation on the common cataloguing project have limited programming capacity for new projects, so that only the circulation system could be developed during the year. It is hoped that by a reorganization of duties, programming time may be freed in the coming year for other desirable applications.

## 6. STUDENT ENROLMENT

The net total undergraduate population increased from 7,221 in the previous year to 7,897, an increase of 676 or 9.4 per cent. Graduate enrolments increased from 599 to 755 and total enrolments of all students from 8,466 to 9,542. Full details of enrolment are given in the table opposite.

Of these 9,542 students, 471 (5 per cent of the total) were from overseas, as follows: Borneo 13; Burma 1; Canada 3; Czechoslovakia 1; Egypt 3; Fiji 1; France 1; Ghana 1; Great Britain 14; Holland 1; Hong Kong 44; India 27; Indonesia 16; Israel 2; Japan 6; Kenya 1; Macao 1; Malawi 2; Malaysia 233; New Zealand 10; Norfolk Island 2; Pakistan 3; Papua and New Guinea 6; Philippines 1; Rhodesia 1; Sierra Leone 1; Singapore 37; South America 2; South Vietnam 10; Switzerland 1; Thailand 17; Uganda 1; United States of America 5; West Germany 2; Zambia 1.

## GROSS ENROLMENTS 1969 (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.	225	31	256	54	11	65	279	42	321
Master	132	43	175	205	54	259	337	97	434
Total	357	74	431	259	65	324	616	139	755
MASTER PRELIMINARY	11	10	21	57	25	82	68	35	103
BACHELOR DEGREE:									
Arts									
I	228	469	697	198	189	387	426	658	1084
II	220	425	645	123	111	234	343	536	879
III	293	365	658	90	87	177	383	452	835
IV	54	35	89	1	—	1	55	35	90
Total	795	1294	2089	412	387	799	1207	1681	2888
Eco. and									
Pol. I	343	94	437	81	10	91	424	104	528
II	337	56	393	86	5	91	423	61	484
III	318	45	363	94	8	102	412	53	465
IV	38	4	42	1	—	1	39	4	43
Total	1036	199	1235	262	23	285	1298	222	1520
Education	3	1	4	115	44	159	118	45	163
Engineering I	262	3	265	—	—	—	262	3	265
II	195	2	197	—	—	—	195	2	197
III	171	—	171	—	—	—	171	—	171
IV	109	1	110	—	—	—	109	1	110
Total	737	6	743	—	—	—	737	6	743
Law									
I	214	38	252	29	3	32	243	41	284
II	181	39	220	17	1	18	198	40	238
III	145	15	160	4	2	6	149	17	166
IV	53	9	62	3	—	3	56	9	65
V	105	4	109	7	1	8	112	5	117
Total	698	105	803	60	7	67	758	112	870
Medicine									
I	125	37	162	—	—	—	125	37	162
II	135	23	158	—	—	—	135	23	158
III	127	27	154	—	—	—	127	27	154
IV	130	20	150	—	—	—	130	20	150
V	104	25	129	—	—	—	104	25	129
VI	85	18	103	—	—	—	85	18	103
B.Med.Sc.	12	—	12	—	—	—	12	—	12
Total	718	150	868	—	—	—	718	150	868
Science									
I	290	136	426	20	10	30	310	146	456
II	260	95	355	33	5	38	293	100	393
III	225	75	300	19	2	21	244	77	321
IV	83	19	102	—	—	—	83	19	102
Total	858	325	1183	72	17	89	930	342	1272
TOTAL	4845	2080	6925	921	478	1399	5766	2558	8324
DIPLOMA—Education	169	171	340	138	60	198	307	231	538
NOT FOR DEGREE	3	1	4	61	21	82	64	22	86
GROSS TOTAL ENROLMENT	5385	2336	7721	1436	649	2085	6821	2985	9806
Less adjustment for students enrolled for more than one course	224	24	248	11	5	16	235	29	264
NET TOTAL ENROLMENT	5161	2312	7473	1425	544	2069	6586	2956	9542

## 7. STUDENT FACILITIES

### *Student Residence*

Although there continued to be a shortage of reasonably priced accommodation within easily accessible areas, the University was successful in placing 50 per cent of students applying for full board and 67 per cent of those applying for part board.

There is a steadily growing demand for flats and houses, but the supply is very limited. Nonetheless, 25 per cent of applicants for this type of independent accommodation were satisfactorily housed.

The existing halls of residence, the North-East Halls, continue to operate satisfactorily. The contract for Roberts Hall, the first of the new two halls complex, was let towards the end of 1969 and building is proceeding.

The Australian Universities Commission recommendations for the 1970-72 triennium included funds for the second new hall, Richardson Hall, and planning for this hall commenced in the latter part of 1969.

Mannix College was opened in February 1969, and subsequently admitted 160 students. Construction of the second stage of the building is currently in progress.

Marist College was constructed during the year and was partly occupied towards the end of 1969. It is planned to admit lay students in 1970.

Lack of good public transport to the University still poses problems. Passenger counts for buses entering the University indicate that approximately 15 per cent of the people coming to the University used public transport.

Car parking fees were imposed for the first time in 1969 but have had no discernible effect on the use of private transport to the University.

### *Health Service*

The scope and nature of the work of the health service remains virtually unchanged. The demand for our services continues to increase. During 1969 13,958 visits were made to the health service, an increase of 2,658 from 1968.

A notable event was the appointment of our third full-time medical officer during the year. Our visiting psychiatrist now attends for two half-day sessions each week instead of only one. It seems inevitable that the demand for psychiatric help from students will grow. In fact already it has been suggested that a university the size of Monash should have a full-time psychiatrist.

First year students continue to complete a health questionnaire card as part of their enrolment procedure which gives basic information about their health problems.

During the year, on three occasions, an opportunity was given to students and staff to have oral Sabin poliomyelitis vaccine. This took

place in the University Union. We are grateful for their help in advertising and organizing the campaign.

During the autumn and early winter months many students and members of staff were given anti-influenza injections. An attempt was made to evaluate the protection, if any, conferred on patients who had received these injections. Unfortunately the computer did not come up with any statistically significant results. In this particular exercise only marginal benefit was demonstrated.

The advent of a third full-time medical officer immediately revealed some inadequacies of space and of staff. The space problem was partly overcome by partitioning off with curtains a corner of our, fortunately, fairly large treatment room. However, to give relief to our overworked secretary in her small office is virtually impossible until the health service is housed in a new student services building.

### *Careers and Appointments*

The scale of activities within the careers and appointments office has once again increased sharply. At the end of 1969 the number of people registered with the office as seeking employment was 1,211, an increase of 48 per cent on the previous year. Once again, also, the amount of time spent providing counselling to students in earlier years and to prospective students from schools has risen, and there are, of course, increasing numbers of graduates from earlier years making use of the service.

Each year since the office was established employers have been invited to send representatives to the University to interview prospective graduates who wish to learn something of the possible careers to which they might aspire. The number of employing organizations taking part in this programme has risen from 52 in 1965 to 127 in 1969, so far as is known, the largest number ever to visit an Australian university. In 1969, a total of 616 students took almost 3,900 interviews, and the whole programme placed a severe strain on the limited resources of people and space available to the office. It is expected that new quarters to be occupied early in 1970 will help to alleviate the problem.

It can again be said that no major problems have been encountered in graduate placement work. There are, however, some disturbing indications that the demand/supply ratios for most types of graduates are falling. Employers report that in general they are able to fill their requirements more easily than hitherto. The areas in which graduates are employed are still spreading, and it is not expected that any crisis in employment is likely to develop quickly. However, careful attention is being given to some more vulnerable categories such as arts and science graduates.

There is obviously a limit to the number of such graduates that can be employed in non-specific initial occupations. Employers certainly still seek educated young people with personal and mental qualities

which enable them to acquire vocational and administrative skills relatively quickly and perhaps to a greater degree than might be possible with less educated people. There are, however, some skills, which cannot be supplied economically by in-service training; it seems apparent that universities and other tertiary institutions must increasingly assume responsibility for providing, at graduate level, vocationally-oriented courses so that the full potential of particularly the more generally educated graduates may be fully realized.

There has been some public discussion of the employment difficulties which may face Ph.D. graduates as they become available in increasing numbers. Whilst there will undoubtedly be some problems, the growing demand from industry apparent in 1969 gives some cause for optimism. Most organizations recognize that in the increasingly complex and competitive era ahead it will be necessary to have a proportion of the best brains available involved in management. If increasing numbers of the best brains are proceeding to Ph.D., then such organizations must acquire some recruits from amongst them. The extent to which this occurs, and rate at which it proceeds, will depend on the attitudes of the graduates, and these in turn are much influenced by academic staff.

Following a review of the schools liaison function, the Professorial Board has agreed that it should be included within the careers and appointments office, and that the officer involved should be styled 'adviser to prospective students'. This new arrangement will take effect early in 1970 and it is hoped that it will result in a more effective dissemination amongst prospective students of information relating to the career implications of the course and subject choices that they make, as well as to the courses and conditions of university education.

During 1969 a survey of graduate starting salaries was published and was well received by both students and employers. It will be repeated as an annual review aimed at providing accurate and up-to-date information of starting salaries actually paid to various types of graduates. Other research completed or in progress includes a survey of the first occupations of graduating students, an investigation of the development of career plans amongst engineering students, and research into certain aspects of career development amongst graduates. This work not only gives assistance in providing realistic careers counselling, but is also of value to academic staff, employers and other organizations interested in career achievement amongst graduates.

### *Student Counselling*

Just over 1,040 students visited the counselling service in 1969, an increase of 15.5 per cent on the previous year.

First year students seem to use the service most extensively; about 20 per cent seek us out. Half of those have vocational/educational types of problems and about 30 per cent have more personal problems. Students in the middle years of their courses are next. About 10 per cent

of those seek counselling. The predominant problems are personal (about 50 per cent) and about 30 per cent have vocational/educational difficulties.

Only about 6 per cent of the final year student contingent seek counselling. Half of those have personal problems and another 20 per cent have vocational/educational ones.

Another interesting observation is that significantly more women use the service than men. The predominant concern of women students seems to be in the 'personal' area whereas the concern of male students is more in the vocational/educational area.

In addition to our individual counselling activities we have continued to experiment with group activities. In 1969 we ran six groups, four with student participants and two with staff participants. Altogether we spent about one-eighth of our counselling time in group activities.

With the addition of one counsellor we were able to resume the 'Transition Conference' which was held at Mt. Evelyn. Fifty-six first year students and twenty members of the academic staff participated. The venture was a great success and we intend to repeat it in 1970.

### *Bookshop*

During 1969 a new manager from the United Kingdom was recruited and the move of the bookshop into larger, new premises at the eastern end of the Union building was organized. With the provision of new fittings and an opportunity for good display the bookshop improved its customer appeal considerably. Profitable trading has now been achieved and past losses will be eliminated in 1970.

The bookshop board has continued to preside over policy aspects of the bookshop's activities, and has provided for two students to be members of the board.

With the co-operation of MUMUS, who made lists available to us, medical books for the pre-clinical years have been stocked in greater depth and this service will be extended. The bookshop has offered to take over, subject to MUMUS board's approval, the running of the co-operative bookroom at the Alfred Hospital, and incorporate it into the Monash University bookshop with normal trading hours. MUMUS have indicated by letter that, 'When the bookshop offers an equivalent service to all students and staff we shall happily close down'.

The University Council and the board is opposed to the existence of co-operative bookselling on campus. A bookshop carrying a wide variety of stock in which a student can browse is a necessary part of any university campus. It is not difficult to provide cheap textbooks but this can only be done at the expense of other functions which a bookshop should provide. If co-operatives were allowed without restriction to 'skim the cream' off the textbook market no general campus bookshop could remain financially viable.



### *Religious Centre*

During 1969, religious services, discussion groups, committee meetings and inter-denominational activities have been continued and extended in the centre. Those with continuing bookings during term-time include the Islamic Students Society, the Yoga Group, Christian Science Students, Lutheran Fellowship, Anglican and Roman Catholic groups. Use of the centre has included two recitals by the A Cappella Choir, a carol festival arranged by the Monash Choral Society and an evening of poetry and music arranged by the Staff Drama Group.

Some outside church and school bodies have made use of the centre while some groups using the University as a conference venue have held services in the centre.

More than two hundred and fifty weddings have been celebrated in the religious centre, December through to February being the busiest months. Towards the end of the year Mr Henry Shaw was appointed Hillel director with responsibility for Jewish students at tertiary institutions throughout Victoria.

## 8. STUDENT ACTIVITIES

In 1969, students again showed the range which their interests cover—the Modern Dance Group experiment in 'Audio and Optics', provoked much interest, a member of the Monash Players wrote and directed this club's entry in the intervarsity drama festival, the Malaysian students treated Union members to an evening of Asian songs and dances, forums on sexual behaviour and on education were organized by student groups, and the campaign against poverty was commenced.

The Union board's scheme to encourage members in carrying out imaginative projects aided a group of engineering students in constructing a hovercraft and assisted another two students to commence a scheme to aid an Aboriginal group to establish their own mining enterprise. It is regretted that the anti-litter campaign—'Make Monash 'Maculate'—was not successful.

Because of the strong demand the Red Cross blood bank spent a total of twelve days at Monash. The Union assisted the health service in distributing Sabin oral vaccine to about 1,000 staff and students.

The alpine lodge is proving to be a popular resort even outside the ski season. Another appreciated and well-used service, introduced in 1969, was that of the part-time legal adviser. The Monash Association of Students, inaugurated in 1968, continued throughout the year in its endeavours to increase the range of student participation in student government. To this end, a number of general meetings, some attracting thousands of students, were held. By the end of the year, MAS had adopted a draft constitution.

The student newspaper, *Lot's Wife*, was named as the best Australian university newspaper for the year.

Sixteen clubs ran tuition courses in a variety of subjects during the year, and the rapid growth of the Fine Arts Group resulted in the necessity for the activities officer to take over full administration of the fine arts courses early in the year. In addition, courses were provided in effective speaking and notehand, and individual tuition in musical instruments and singing was arranged. Altogether approximately 1,000 students and staff participated in extra-curricular tuition during the year.

Planning started in August for the 1970 summer school following the success of the 'trial run' vacation courses in January 1969. Twenty-one courses in fifteen subjects, with a total of 537 enrolments, made the 1970 summer school three times larger than its predecessor. A successful publicity campaign was launched for the school, which put Monash 'on the map' in this area, as well as arousing great interest amongst the general public. New courses were life drawing and painting, modern dance, creative arts, poetry writing workshop, photographic darkroom technique, small investors and the stock exchange, typing, weaving, and learning to study at university level.

Only three clubs ran home intervarsities, but sixteen clubs attended interstate intervarsities. Field trips and off-campus conferences were more popular than ever before. There were twenty-three conferences held in different parts of the State (five of which were held in the 'off season' at the Monash Mt. Buller Lodge). Eight field trips included the Archaeological Society's excavations at Warrnambool and the Biological Society's fight for conservation in the Little Desert.

1969 was a vintage year as far as intervarsity sport was concerned with Monash achieving wins in athletics (men), badminton (men), cross country, judo (women), lacrosse, orienteering (women), softball, table tennis (men and women), volleyball and weightlifting.

On the local scene successes were less numerous but the following clubs won their respective divisions: hockey (women), rifle (men), table tennis (men) and table tennis (women). The Australian rules and rugby clubs held their places in A grade.

After many delays the new sports pavilion was finally completed late in the year. The grounds staff, the weight training equipment, and the Bushwalking Club are now permanently housed in this area.

During the year an embankment was built at the south end of the main playing fields. This has afforded welcome parking space for spectators as well as some measure of wind protection for players. With the aid of a grant from Rothmans National Sport Foundation, the sports medicine centre published a booklet entitled *Emergency Treatment of Sports Injuries*. The demand for this booklet was so great that 20,000 copies have been distributed within Australia.

## 9. FINANCE

## 1. THE 1967-1969 TRIENNium

1.1 *Funds Available*

Government funds made available to the University, for which relevant legislative sanction is contained in the *Universities (Financial Assistance) Act No. 90* of 1966 as amended by Act. No. 107 of 1967, are as follows:

1.1.1 *Recurrent Funds*

Funds for expenditure on recurrent purposes during the year ended 31 December 1969 were available from the following sources:

	<i>Total University Hospitals Residence</i>			
	<i>\$000</i>			
State Government Grant	6,829	6,767	62	
Academic Fees	2,449	2,449		
Commonwealth Government Grant	5,046	4,982	34	30
	<u>14,324</u>	<u>14,198</u>	<u>96</u>	<u>30</u>

1.1.2 *Capital Funds*

Funds provided in equal proportions from the State and Commonwealth Governments for expenditure on non-recurrent purposes during the 1967-1969 triennium were as follows:

Buildings, Equipment and Furniture:	<i>\$000</i>
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
	<u>14,139</u>

1.1.3 *Research Funds*

The State Government contributed \$270,000 by way of Australian Universities Commission special research grants for the training of graduate students during this triennium.

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

### 1.1.4 Students' Fees

A summary of the tables of fees payable by students enrolled for the year 1969 is set out hereunder:

#### (a) 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

#### (b) Union Fees—

Students studying on campus:	full-time \$45 per annum
	part-time \$30 per annum
Students studying off campus:	\$15 per annum

## 2. THE 1970-1972 TRIENNium

### 2.1 Funds Available

Legislation was passed in 1969 (*States Grants (Universities) Act No. 76 of 1969*) in relation to the provision of funds for the 1970-1972 triennium.

#### 2.1.1 Recurrent Funds

Funds available for expenditure on recurrent purposes will be as follows:

Year	University		Teaching Hospitals	
	Amount \$000	Increase on Previous Year %	Amount \$000	Increase on Previous Year %
1970	15,380	8.3	123	29.5
1971	16,540	7.5	128	4.1
1972	17,660	6.8	130	1.6

The basis for the determination of the Commonwealth recurrent grant in respect of each hall of residence will remain unchanged. For each calendar year it is \$5,000 plus \$30 per resident student.

#### 2.1.2 Capital Funds

Funds available in equal proportions from the State and Commonwealth Governments for expenditure on non-recurrent purposes during the 1970-1972 triennium are as follows:

	<i>\$000</i>
Buildings, Equipment and Furniture:	
On University site, other than Halls of Residence	9,861
Halls of Residence	1,000
Affiliated Colleges	83
Teaching Hospitals	216
Capital Equipment	160
	<hr/>
	<u>11,320</u>

### *2.1.3 Research Funds*

A special grant of \$930,000 is available for research and research training during the triennium provided that the University continues to allocate to research and research training at least the same proportion of recurrent funds as it did in the 1967-69 triennium. This sum will be provided by the State and Commonwealth Governments in equal proportions.

## 3. GENERAL

During the triennium which concluded on 31 December 1969, the University was obliged to pay unusually large increases in the salaries and wages of non-academic staff. Increases for the majority of these staff were 19 per cent to 21 per cent with some as high as 34 per cent over rates effective at 1 January 1967 and this resulted in a sum of \$823,850 being withheld from allocation to teaching departments. There is no doubt that this increased cost placed a severe strain on the University finances and limited development and expansion both qualitative and quantitative.

Special grants have been sought from governments to assist in meeting these increases but no additional funds were made available for the 1967-1969 triennium. The universities and the Australian Vice-Chancellors Committee are continuing their efforts to establish a method whereby the universities will be granted financial assistance in meeting future similar increases as trends in wages and salaries give cause for great concern. Indications early in 1970 are that the increases in this year alone will be in excess of \$400,000.

During 1969 the University finalized the purchase of fifteen acres of land to the east of the campus at a cost of \$249,326. The funds employed in this purchase were obtained from income-earning activities during preceding years. The additional land will prove very useful in years to come.

The earnings of the computer centre enabled the University to lease an additional computer with a capital value of approximately \$900,000 to meet the expanding need for computer facilities on the campus.

## 10. GIFTS AND DONATIONS

The following grants and gifts were received by the University:

\$262,000, from the Medical Research Endowment Fund to Professor J. Bornstein to continue and expand his research in the field of diabetes.  
\$133,677, from the National Health and Medical Research Council as follows:

\$18,000, to Professor G. C. Schofield (Anatomy): Analysis of cell fluorescence.

\$17,720, to Dr K. J. Catt and Dr H. G. Burger (Medicine): Secretion and metabolism of human pituitary hormones.

\$14,390, to Professor J. Bornstein and Dr J. McD. Armstrong (Biochemistry): (i) Mechanism of the diabetogenic action of growth hormone; (ii) insulin control of the biosynthesis of collagen.

\$11,360, to Professor B. Hudson (Medicine): The secretion and metabolism of androgens.

\$10,850, to Professor R. C. Nairn (Pathology): Pathogenic mechanism in immunological diseases.

\$10,575, to Professor B. G. Firkin (Medicine): (i) Study of platelet physiology; (ii) mechanisms of anaemia; (iii) study of cell defects in hereditary spherocytosis.

\$8,255, to Professors A. K. McIntyre and R. Porter (Physiology): Computer analysis of neurophysiological data.

\$6,780, to Dr Mollie E. Holman (Physiology): Biophysics of smooth muscle and the automatic nervous system.

\$6,700, to Professor A. K. McIntyre (Physiology): Transfer of somatosensory information to the brain, and the neural basis of pain.

\$6,567, to Professor S. Faine (Microbiology): Novel rapid microbiological methods.

\$2,880, to Dr L. B. Geffen (Physiology): Immunological studies on the origin and fate of sympathetic synaptic vesicles.

\$1,500, to Professor R. Porter (Physiology): Central nervous mechanisms controlling limb movements.

\$1,500, to Professor E. C. Wood (Obstetrics and Gynaecology): Applied human foetal physiology and biochemistry.

\$1,500, to Dr D. M. de Kretser (Anatomy): A study of the structure of the normal and infertile human testis and its response to gonadotrophic stimulation.

\$1,000, to Dr G. Fink (Anatomy): Study on pituitary hormone releasing factors.

\$24,022, from the Anti-Cancer Council, as follows:

\$8,462, to Professor R. C. Nairn and colleagues (Pathology) for the project: Studies of organ-specific and cancer-specific antigens.

\$7,010, to Dr K. J. Catt (Medicine) for research on structural and biological properties of human placental and pituitary hormones.

\$4,350, to Associate Professor W. G. R. M. de Boer, for research on organ specificity and neoplastic transformation in tissues exposed to X-irradiation.

\$3,000, to the department of Chemistry for the cigarette testing programme.

\$1,200, to the department of Physiology towards the cost of a film on lung physiology.

\$14,100, to cover the cost of three medical research scholarships as follows:

Dr M. W. Johns (Surgery): Studies on sleep.

Dr A. Sali (Surgery): Physiology of biliary system and regulation of hepatic bile flow.

Dr G. C. Shardey (Surgery): Factors influencing rejection of allo-transplanted heart.

\$13,747, from the National Heart Foundation as follows:

\$9,850, to Dr M. E. Holman (Physiology).

\$2,297, to Dr W. A. Walters (Obstetrics and Gynaecology).

\$1,600, to Associate Professor K. H. McLean (Medicine).

\$9,900, from Melbourne and Metropolitan Board of Works towards the cost of a three-year Port Phillip Bay environmental study on Zooplankton being undertaken by the department of Zoology.

\$8,856.55, from the Life Insurance Medical Research Fund of Australia and New Zealand to Professor B. G. Firkin for research on platelet function and coagulation in patients with thrombotic deformity.

\$8,450, from the Shell Co. of Australia Ltd. as follows:

\$7,650, to finance the Shell Research Fellowship.

\$800, to finance the Shell Honours Year Scholarship.

\$8,150, from the Australian Institute of Aboriginal Studies, as follows:

\$6,520, to the department of Music for research into Aboriginal children's songs.

\$1,000, towards the cost of the Aboriginal Dance and Music Notation, Project 2.

\$900, to the department of Linguistics for the collection of linguistic material.

\$7,383, from the Nuffield Foundation, as follows:

\$3,000, to Professor M. G. Swift for the project 'The Protestant clergyman: conflicts and dilemma of the religious professional.'

\$2,300, to Professor B. G. Firkin for the project: 'Blood formation in Australian elasmobranchs, teleosts and amphibia'.

\$1,583, to Professor M. G. Swift and Mr J. Brehaut for the project 'Hospital organization in Australia'.

\$1,500, to Dr J. L. Bradshaw for the project 'Physiological indices during human information processing'.

\$7,000, from the Office of Aboriginal Affairs, Prime Minister's Department, as follows:

\$5,000, to the department of Anthropology and Sociology for a research project being undertaken on behalf of the Office of Aboriginal Affairs.

\$2,000, to the department of Music, towards the costs of the Aboriginal Dance and Notation Project.

\$6,699.53, from the Estate of Eileen Olive Renwick, for research on the treatment of diabetes.

\$6,350, from Imperial Chemical Industries of Australia and New Zealand as follows:

\$3,000, to finance a research grant for 1969.

\$2,500, to finance the ICIANZ Research Fellowship in Physics for 1969.

\$500, towards the study leave expenses of Dr K. J. Catt (Medicine).

\$250, to the department of Chemical Engineering.

\$100, to the department of Medicine, Alfred Hospital.

\$6000, from the Sunshine Foundation as a grant towards the salary of Dr J. Grimwade, research officer in the department of Obstetrics and Gynaecology.

\$5,900, from the Felton Bequests' Committee to Dr Paula Jablonski for research in the department of Surgery at Prince Henry's Hospital.

\$5,200, from the executive of CSIRO, as follows:

\$3,000, to the department of Mechanical Engineering to support research on heat and mass transfer in porous media.

\$2,200, to the department of Microbiology for research on the biological and infective properties of *Bedsonia*.

\$4,480, from the Australian Institute of Nuclear Science and Engineering as follows:

\$1,785, to Dr J. A. Barclay for nuclear orientation experiments in the department of Electrical Engineering.

\$1,100, to Dr R. J. Fleming (Physics) for materials and equipment for his project 'Radiation effects in polymers studied at the electronic level'.

\$1,095, to Professor B. W. Holloway (Genetics) for equipment for his project 'Radiation sensitivity and radiation repair mechanism in *Pseudomonas aeruginosa* and its bacteriophages'.

\$500, to Mr C. W. Ambrose (Mechanical Engineering) for one type Betz micromanometer for his project 'Asymmetric heating in non-circular ducts'.

US\$4,480 (A\$4,016.50), from Merck, Sharp and Dohme Research Laboratories, New Jersey, to Professor J. M. Swan, for research on the chemistry of insecticides.

\$4,000, from Carlton and United Breweries Ltd., as a further grant to Professor A. W. Linnane for research on yeast genetics.

\$4,000, from the Collier Charitable Trust, as follows:

\$3,000, to the general purposes of the University.



- \$1,000, to the Great Hall Appeal.
- \$4,000, from the Social Science Research Council of Australia to Professor P. J. Fensham for his project *Educational Aspects of Migrant Adjustment*.
- \$3,300, from General Motors Holden Pty. Ltd., as follows:
  - \$3,000, to finance a fellowship in the department of Economics.
  - \$300, towards the expenses of Dr G. A. Ryan (Psychological Medicine) to attend a conference on emergency medical services in the handling of traffic accident casualties in the United States.
- \$3,000, from Merck, Sharp and Dohme (Australia) Pty. Ltd. to Professor J. Bornstein for research on pituitary polypeptides.
- \$3,000, from the Committee of Management, Queen Victoria Memorial Hospital, to six months' salary to Dr J. C. Grimwade, Research Officer, department of Obstetrics and Gynaecology.
- \$2,950, from the Australian Road Research Board for the purchase of equipment in the department of Electrical Engineering.
- \$2,800, from Conzinc Riotinto of Australia Ltd. as follows:
  - \$2,400, to finance the CRA Undergraduates Scholarship for 1969.
  - \$400, towards fares for five fourth-year honours students in Japanese to undertake an academic and cultural programme in Japan.
- \$2,500, from Boehringer Ingelheim Pty. Ltd. as follows:
  - \$2,400, to finance a graduate scholarship in the department of Physiology.
  - \$100, to the Monash Medical School, Alfred Hospital.
- \$2,500, from the N. V. Phillips-Duphar Company, Weest, Holland, for a research project in the department of Obstetrics and Gynaecology.
- \$2,400 from the Creswick Foundation towards the salary of a research fellow in the faculty of Education for research in the pre-school educational field.
- \$2,300, from the Laura Bushell Trust, to the Monash department of Medicine, Alfred Hospital.
- \$2,000, from the Monash University Parents' Association as follows:
  - \$1,500, to the library.
  - \$300, to the Alexander Theatre.
  - \$200, to the Union.
- \$1,980, from Percy Baxter Charitable Trust to the Monash department of Medicine, Alfred Hospital, for the purchase of a spectrophotometer.
- \$1,600, from the Department of Supply towards a studentship.
- \$1,600, from Repco Ltd. to finance the Repco scholarships in Japanese for 1969 and 1970.
- \$1,600, from the Myer Foundation, as follows:
  - \$1,000, to the faculty of Education for studies on the interaction between Western education and nationalism in Indonesia, Malaya and the Philippines.

\$600, from the Myer Foundation's Asian and Pacific Fellowships selection committee to assist Professor J. D. Legge with the expenses of a study-tour in Indonesia.

\$1,500, from the Joe White Bequest to the library.

\$1,500, from Rothmans National Sport Foundation, the expense involved in printing 20,000 copies of the Monash sports medicine booklet, entitled 'Emergency Treatment of Sports Injuries'.

\$1,500, from Tuta Laboratories (Australia) Pty. Ltd. towards the work of biophysics section of the department of Surgery.

\$1,400, from the Forelanders Trust, to the Indonesian section of the department of Modern Languages, towards the cost of equipment for the language laboratories.

US\$1,350 (A\$1,210.33), from the Carnegie Corporation of New York towards the expenses of the Vice-Chancellor's visit to the USA.

\$1,100, from Total Oil Products (Australia) Ltd. to the *Australian Journal of French Studies*.

£stg.500 (A\$1,075.70), from Winthrop Biologicals Ltd., Surrey, to the department of Pathology for research into immunoradioactive and related agents.

\$1,004, from the Australian Pre-School Association, to the faculty of Education, in support of research project being undertaken by Dr Phyllis Scott.

\$1,000, from Monsanto Chemicals (Australia) Ltd. as follows:

\$500, to the department of Chemistry.

\$500, to the department of Chemical Engineering.

\$1,000, from the estate of the late Sir Charles Lowe, to the faculty of Law, to provide a prize in Professional Ethics and Conduct, or other subject.

\$1,000, from the Patrick Brennan Estate, to be applied as follows:

\$388, to purchase a fibrelight system for foetal blood collection and amnioscopy, as an aid to research in the department of Obstetrics and Gynaecology.

\$612, as part purchase price of a 'wild' inverted microscope for the observation of tissue cultures in the department of Microbiology.

\$970, from Sandoz (Australia) Pty. Ltd., to Dr R. A. Westerman (Physiology), as follows:

\$890, for research on the effects of the drug Hydergine on cerebral blood vessels.

\$80, towards expenses in attending a meeting of the Clinical Research Society in Canberra.

\$750, from Gillette (Australia) Pty. Ltd., to initiate a fund to provide short-term loans of limited amounts to students whose courses are endangered by lack of money.

\$600, from the University of Melbourne, towards the costs of production of the *Australian Journal of French Studies*.

\$500, from Mr and Mrs H. Goodman to the Elwyn Morey Fund.

\$500, from Abbot Australasia Pty. Ltd. to the Medical department, Alfred Hospital.

\$500, from Roche Products Pty. Ltd. towards the expenses of Dr J. F. Mainland's attendance at the 8th International Medical and Biological Engineering Conference to be held in Chicago in July 1969.

\$500, to the University, from Porcellus Pty. Ltd.

\$500, from the C. H. and C. E. Waddell Trust to the department of Social and Preventive Medicine.

US\$500 (A\$448.27), from the Medical Research Branch of Cyanamid International, to the department of Surgery at Prince Henry's Hospital.

\$403.12, from the Melbourne Regional Women's Committee of the Commonwealth Vice-Chancellors' Conference, to the University Library.

\$400, from the Chartered Institute of Secretaries, towards the expense of the Monash Annual Economics Lecture for 1969.

\$400, from the Monash Medical Mothers' Auxiliary to Mr G. S. Reisner (Surgery), for his project entitled 'Conservation of organs outside the body'.

\$375, being donations of \$125 each, from Mitsubishi (Australia) Pty. Ltd., Marubein-Iida Pty. Ltd., and Mitsui and Co. Ltd., towards the cost of sending five sixth-year honours students in Japanese to Japan to undertake an academic and cultural programme.

\$300, from the William Angliss (Victoria) Charitable Fund to the University library.

\$300, from ICI, to finance a scholarship in Japanese.

US\$333 (A\$298.55), from the Alcoa Foundation, Pittsburgh, USA, to the University consequent upon the award of a 1969 Alcoa Foundation scholarship.

\$276.43, from the department of Social Theory and Institutions, University of Durham, to Miss A. R. Edwards, lecturer in the department of Anthropology and Sociology, being part of a grant towards a youth study in the Newcastle area of the United Kingdom.

\$250, from Siemens Medical (Australasia) Pty. Ltd., Research Branch, towards the establishment costs of the department of Surgery at Prince Henry's Hospital.

\$250, from Johnson and Johnson Pty. Ltd., towards the establishment costs of the department of Surgery at Prince Henry's Hospital.

\$250, from Riker Laboratories to the department of Physiology.

\$250, from Drager (Australia) Pty. Ltd., to Dr J. F. Maitland, department of Surgery, towards costs in attending the eighth International Medical and Biological Engineering Conference in Chicago in July 1969.

\$250, from Mr L. S. Lazarus to the law school.

\$250, from Sterling Pharmaceutical Pty. Ltd., to the Monash depart-

ment of Surgery, Alfred Hospital.

\$250, from the State Department of Agriculture, being a maintenance grant for Mr B. Hangar, a Ph.D. candidate in the department of Botany.

\$249.75, from Mr N. M. Stephen to the faculty of Law.

\$225, from the Harold Woodruff Trust to the department of Social and Preventive Medicine at the discretion of the chairman of the department.

\$200, from the Ella Woodruff Trust to the department of Social and Preventive Medicine at the discretion of the chairman of the department.

\$200, from Mobil Oil Australia Ltd., as follows:

\$100 to the careers and appointments office.

\$100 to finance the Petroleum Refineries (Australia) Pty. Ltd. prizes.

\$150, from Creamota Ltd., as follows:

\$100 to the University's new publication *Monash*.

\$50 to the careers and appointments office.

\$106.68, from Mrs D. Gerzon, New Zealand, in support of Professor J. Bornstein's research on diabetes.

\$100, from Upjohn Pty. Ltd. to the Monash department of Medicine, Alfred Hospital.

\$100, from Australian Hoechst Pty. Ltd. to the Monash department of Medicine, Alfred Hospital.

\$100, from Geigy Australia Pty. Ltd., to the Monash department of Medicine, Alfred Hospital.

\$100, from Fawns and McAllan Pty. Ltd., to the Monash department of Medicine, Alfred Hospital.

\$100, from Nicholas Pty. Ltd., to the Monash department of Medicine, Alfred Hospital.

\$100, from Petroleum Refineries (Australia) Pty. Ltd., to the careers and appointments office.

\$100, from Beecham (Australia) Pty. Ltd. to medical school, Alfred Hospital.

\$100, from Smith, Kline and French Laboratories (Aust.) Ltd., to Monash medical school, Alfred Hospital.

\$100, from Boots Pure Drug Co. (Australia) Ltd., to department of Medicine, Alfred Hospital.

\$100, from CIBA Co. Pty. Ltd., to medical school, Alfred Hospital.

\$100, from International Harvester Co. of Australia Pty. Ltd. to the careers and appointments office.

\$100, from Riker Laboratories (Australia) Pty. Ltd., to the Monash department of Medicine, Alfred Hospital.

\$90, from the Water Research Foundation, to Dr T. A. McMahon (Civil Engineering) for the project 'Modelling and rainfall run-off process with a digital computer'.

\$80.19, from Uguine Kuhlman towards the cost of the *Australian Journal of French Studies*.

£stg.40 (\$A80.06), from Le Carbone-Lorraine towards the cost of the *Australian Journal of French Studies*.

\$80, from the Geography Teachers' Association of Victoria for purchasing equipment for the Alexander Theatre.

\$75, from the Campus Fair Group of Jewish Women, being an additional donation to finance the Sophie Davis Memorial Prize for 1968.

\$60, from Mr and Mrs R. F. Gow to the University.

\$50, from the Institution of Radio and Electronics Engineers, Australia, to finance the Fisk Prize in electrical engineering.

\$50, from Messrs MacKenzie and Ross for the purchase of specific books for the law library. (This is the first of five annual donations.)

\$50, from Mr B. Rockman, to the law library. (The first of five annual gifts of the same amount.)

\$50, from Messrs Rodda, Ballard and Vroland, to the Law Library Fund.

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

\$50, from the Australian-Asian Association of Victoria to finance the Australian-Asian Prize in Indonesian for 1969.

\$50, from Mr S. A. F. Pond, for the purchase of books on industrial property for the law library.

\$50, from Messrs Yuncken and Yuncken to the Law Library Fund.

\$50, from Fibremakers Ltd., to the careers and appointments office.

\$49, from Miss R. M. Romney for the library.

\$40, from Professor J. M. Swan to provide prizes for best articles in certain student publications.

\$30, from Dr J. K. Fullagar, to the Wilfred Fullagar Memorial Lecture Fund.

\$25, from Messrs Walsh and Spriggs to the Law Library Fund.

\$25, from Mr W. H. Aughterson to the Law Library Fund.

\$20, from Miss Sandra K. McCallum to the Law Library Fund.

\$20, from Mr P. H. Pippey to the Law Library Fund.

\$20, from Mrs Lorna Mitchell to the Elwyn Morey Memorial Fund.

\$20, from the Adelaide Kindergarten Training College Graduates' Association to the Elwyn Morey Child Study Centre.

\$20, from Mr R. Strahan (Director of Tooronga Park Zoo, Sydney) to the Marshall Memorial Fund.

\$10, to the department of Mechanical Engineering from Ingersoll-Rand (Australia) Pty. Ltd.

\$10, from Mr M. Barnett to the Law Library Fund.

\$10, from Mrs E. Tingman to the Elwyn Morey Memorial Fund.

\$5, from Mr A. Ingham, c/o W. D. Scott and Co., North Sydney, towards costs of the publication *Monash*.

A braille typewriter and accessories from the Mordialloc Lions Club for the use of successive blind students at Monash.

A Level Demonstration Unit at approximately \$1500 from the Taylor Instrument Companies of Australia Pty. Ltd., to the department of Mechanical Engineering.

A seascape entitled Rock Coast, Koonya, from Mr R. Fricke, to Deakin Hall.

A set of 36 × 10 inch records, 'French Music and French Musicians', from the French Embassy in Canberra to the department of Music.

A portrait of the Vice-Chancellor, Dr James Adam Louis Matheson, painted by Miss Christine Backhouse, presented to the University by the Monash University Parents' Association.

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 appeal by the University for funds towards the building of the Robert Blackwood Hall had reached by 31 December 1969 a total of \$498,677. The appeal by the Churches and the Jewish community for the building of the religious centre had similarly reached \$218,317. Full lists of gifts, among which are many generous ones, will be issued when the lists are closed.

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 P. E. B. Coy	Identification of social integration factors	2,689
Mr A. S. McDevitt	A linguistic analysis of the dialect of Boeotia	500
Dr M. G. Clyne	A study of migrant German in Australia	1,220
Dr M. E. Osborne	Political evolution in the secondary stage of the French dominance of Cambodia and Vietnam (1905-1940)	1,219
Dr A. G. Serle	History of Victoria 1850-1900	1,700
Professor A. A. L. Powell and Professor F. H. G. Gruen	A systematic analysis of alternative protective policies for Australia (Short title: Econometric analysis of protection)	27,384
Mr J. Mackie and Professor H. Feith	Political and administrative dynamics of post-Sukarno Indonesia	5,193
Dr H. G. Gelber	Australia and the United States Alliance	394

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount \$</i>
Professor P. J. Fensham	Comparison of two methods of teaching science	2,750
Professor R. Taft	Educational and vocational aspirations and values of Australian and immigrant children and their parents and teachers	4,380
Dr T. Hore and Professor R. Taft	Teacher-pupil interaction with Australian and non-British immigrant children	9,338
Mr L. D. Mackay	The development and testing of procedures for evaluation of physics curricula in secondary schools	4,777
Dr G. A. Holder	Mechanism of crystal growth poisoning by polymers	2,000
Mr R. McPherson	Ultra-fine dispersed phase ceramics produced by precipitation from metastable solutions prepared by plasma methods	7,900
Dr G. I. N. Rozvany	Minimum volume synthesis of prestressed plates and other floor systems	2,186
Professor D. G. Lampard	Information processing in the nervous system using the technique as stochastic stimulation	9,993
Dr W. A. Brown	Identification stored-programme control and adaptation for multi-variable continuous systems	1,000
Associate Professor K. Morsztyn	The theoretical and experimental investigation of the influence of linear and nonlinear phenomena on transient voltages in high voltage transmission lines and transformers	4,500
Dr B. W. Cherry	Mechanism of deformation in semi-crystalline polymers	5,113
Dr W. H. Melbourne	Model scaling of wind effects on structures	5,221
Miss E. M. Eggleston	Aborigines and the administration of justice. A critical analysis of the application of the criminal law to Aborigines (in Victoria, SA and WA)	5,450
Professor A. W. Linnane	Effect of antibiotics on mammalian tissues and on human cells in tissue culture	7,186
Professor A. W. Linnane and Dr H. B. Lukins	Biogenesis of mitochondria	6,121
Dr L. Austin	The origin of axonal protein	4,574

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount \$</i>
Dr D. A. Lowther	Structural studies of connective tissues, including factors involved in the maintenance of cartilage	5,437
Dr B. N. Preston	Physico-chemical studies on model connective tissue systems	2,973
Dr R. C. Bayly	Regulation of the enzymes of the 'Meta Fission' pathway in <i>Pseudomonas</i> species	3,000
Mr G. F. Cross	Mycoplasma-cell interaction	1,000
Professor R. C. Nairn	Immunological studies of biological specificity	4,500
Dr R. F. Mark	Behavioural and electro-physiological investigation of vision in fish	5,648
Dr I. R. McDonald	Adrenal function in Australian monotremes and marsupials	4,671
Dr R. A. Westerman	Communication between cells in the nervous system of teleost fish	3,487
Professor M. J. Canny	Physiological and structural studies of phloem	2,843
Dr T. P. O'Brien	Cell biology of grasses with special emphasis on cereals	13,881
Professor R. D. Brown	The study of short-lived species by microwave spectroscopy	11,561
Professor J. M. Swan	Design and synthesis of organic compounds having potential therapeutic value	3,261
Professor J. M. Swan and Dr Jean B. Youatt	Organic chemical aspects of cell differentiation	14,955
Professor B. O. West	Some chloro and fluoro substitutes organometallic compounds	6,761
Dr D. St.C. Black	Metal template rearrangements	4,121
Dr R. F. C. Brown	Synthesis of mycelianamide and related compounds (cyclic hydroxamic acids)	5,302
Dr R. F. C. Brown	Pyrolysis and mass spectrometry of carbonyl compounds	4,021
Dr G. B. Deacon	Structures of halide complexes of organometallic compounds	2,111
Dr G. B. Deacon	Main group element organometallic synthesis	2,500
Dr R. S. Dickson	Substituent effects in organometallic chemistry	2,000



<i>Investigator</i>	<i>Title of Project</i>	<i>Amount</i> \$
Dr F. W. Eastwood and Dr I. D. Rae	Synthesis of sporidesmin	4,487
Dr B. M. K. C. Gatehouse	Crystal chemistry of the solid state	3,220
Dr J. E. Kent	A spectroscopic study of small conjugated hydro-carbons in the near and vacuum ultraviolet	3,613
Dr A. D. E. Pullin	Weak intermolecular complexes	1,861
Dr I. R. Wilson	Quantitative studies of oxidation reactions	3,030
Professor B. W. Holloway and Dr V. Krishnapillai	Genetic control of enzyme regulation in <i>Pseudomonas aeruginosa</i>	23,806
Professor B. R. Morton	Source and sink flows in stratified fluids	1,400
Professor R. Street & Dr G. V. H. Wilson	Studies of magnetic materials at low temperatures in high magnetic fields	11,458
Dr R. J. Fleming	The effects of ionizing radiation on some common organic polymer materials, studied at the electronic level	3,765
Dr A. C. McLaren	Direct observation and identification of crystal defects and their role in the mechanisms of crystallization and defor- mation of minerals and rocks	668
Mr G. F. J. Troup and Dr J. R. Pilbrow	Variable temperature electron spin resonance and nuclear magnetic reson- ance in solids and complexes	6,200
Professor R. J. Day	An investigation of visual acuity with special reference to the effects of test object orientation	6,151
Dr J. L. Bradshaw and Mr A. D. Perriment	Human information processing: deter- minants and correlates of performance	4,221
Dr C. S. Chan	A comparative study of the learning ability and memory of different strains of rats in a temporal maze	1,880
Dr K. I. Forster	The perception of sentence structure under conditions of rapid visual presentation	450
Dr J. C. Saunders and Mr W. R. Webster	Single unit activity in the auditory system of unanaesthetized animals	8,270

<i>Investigator</i>	<i>Title of Project</i>	<i>Amount \$</i>
Dr I. A. E. Bayly	Studies on osmotic and ionic regulations of animals in highly saline inland waters	4,600
Dr G. Ettershank	Microclimate regulation in desert ant nests	700

## 11. PUBLICATIONS

### FACULTY OF ARTS

#### *Department of Anthropology and Sociology*

- BLAIKIE, N. W. H.—Religion, social status and community involvement: a study in Christchurch. *Australian and NZ Journal of Sociology*, V, 1, 14-31, 1969.
- BLAIKIE, N. W. H.—The dilemmas of the Church. *Journal of Societal Issues*, II, 4, 49-61, 1969.
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- COY, P. E. B.—A social function of folk literature in rural Mexico. *Proceedings of XIIIth AULLA Congress*, Perth, 1969.
- EDGAR, D. E.—*Professional Socialization and Teacher Autonomy*, University Microfilms, Ann Arbor, USA, 277 pages, 1969.
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- LIPPMANN, L. L.—Government responsibility and minorities, in *Ethnic Minorities in Australia*, ed. H. Throssell, Australian Council of Social Service, Sydney, 73-83, 1969.
- SCOTT, W. H., HEBDEN, J. E. AND ROSE, M. J.—Management structure and computerization. *Sociology*, III, 3, 377-396, 1969.
- STRIZOWER, S.—The Samaritans: the earliest Jewish sect. *Jewish Chronicle*, April 1969.
- STRIZOWER, S.—Forms of property through the ages. *Jewish Chronicle*, June 1969.
- SWIFT, M. G.—Anthropology and medicine. *Med. J. Aust.*, 2, 1, 1969.
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- TATZ, C. M.—Aboriginal education, in *Aboriginal Education: The Teacher's Role*, ed. Tom Roper, National Union of Australian University Students, 17 pages, 1969.
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#### THESIS FOR HIGHER DEGREE

##### *Master of Arts*

- FETT, M. I. E.—A Translation and an Appraisal of *Essay on the Seasonal Variations of Eskimo Societies*, Année Sociologique, 1905, by M. Mauss.

##### *Department of Classical Studies*

- BASTOMSKY, S. J.—The Emperor Nero in Talmudic legend. *Jewish Quarterly Review*, LIX, 4, 321-325, April 1969.
- BICKNELL, P. J.—The dates of the archaic owls of Athens belonging to Seltman's groups H and L. *L'Antiquité Classique*, XXXVIII, Pt. 1, 175-180, 1969.
- BICKNELL, P. J.—Marius, the Metelli, and the *lex Maria Tabellaria*. *Latomus*, XXVIII, fasc. 2, 327-348 pages, April-June 1969.
- BICKNELL, P. J.—Aminaiia. *Klearchos*, 35-36, 131-143.
- ELLIS, J. R.—IG II<sup>a</sup> 450b. 11. 7-8: an emendation. *Annual of the British School at Athens*, LXIII, 1968.
- RANKIN, H. D.—Lucretius on 'Eating People is Right': Petronius 141 and a τσπος. *Hermes*, XCVII, 3, 381-384, October 1969.
- RANKIN, H. D.—Lucretius on 'Part of everything is in everything'. *L'Antiquité Classique*, XXXVIII, 1, 158-161, 1969.
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- RANKIN, H. D.—Some themes of concealment and pretence in Petronius' *Satyricon*. *Latomus*, XXVIII, 1, 99-119, 1969.
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#### THESIS FOR HIGHER DEGREE

##### *Master of Arts*

- FITZGERALD, G. J.—Euripides' *Medea*, *Hippolytus*, *Bacchae*: A Critical Study.

##### *Department of English*

- BARTHOLOMEUSZ, D. S.—*Macbeth and the Players*. Cambridge University Press, xv + 302 pages, 1969.
- DOUGLAS, D. L.—Mini mags and the poetry explosion. *Overland*, 41, 46-47, Winter 1969.

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- DOUGLAS, D. L.—The conflict of values in *A Passage to India*. *VATE Journal*, IV, 1, 3-7, February 1969.
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- LOVE, H. H. R.—Review article on *The Complete Poems of John Wilmot, Earl of Rochester*, ed. D. M. Vieth, *AUMLA*, 32, 245-47, November 1969.
- LOVE, H. H. R.—*Satire and Gulliver's Travels*, reprinted as a monograph by VATE, 1969.
- LOVE, H. H. R. AND SILVA, G.—The identification of text variants by computer. *Information Storage and Retrieval*, Pergamon Press, V, 88-108, 1969.
- MARTIN, P.—Shakespeare's Sonnet 94. *The Critical Survey*, IV, 2, 84-89.
- MORGAN, P.—Activism and Inquiry, in *Australian Politics; A Second Reader*, ed. Henry Mayer, 213-215, Cheshire, xvi + 703 pages, 1969.
- MUECKE, D. C.—*The Compass of Irony*, Methuen, xi + 276 pages, 1969.
- NAISH, P.—Review article—the other Victorians. *Broadside*, April 1969.
- NIAL, B.—Salesman and dream: Sinclair Lewis's *Babbitt*. *Twentieth Century*, XXIV, 24-32, Spring 1969.

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*Master of Arts*

- BOTSMAN, P.—The Novels of Vance Palmer: A Study in the Development of Australian Fiction.
- KIRK, P.—Some Aspects of the Development of the Australian Novel Before 1900.

*Department of French*

- BOASE, A. M.—*The Poetry of France*, Vol. IV, Methuen 1969

- BOASE, A. M.—The Baroque syndrome. *Essays in French Literature*, 6, 1-17, November 1969.
- HUSSON, R.—Aragon, in *Modern French Writing*, ed. G. Lanoies, Heinemann, 51-65, 1969.
- KIRSOP, W.—*Towards a History of the Australian Book Trade*, Wentworth Books, 31 pages, 1969.
- LEONG, E.—André Malraux, in *Modern French Writing*, ed. G. Lanoies, Heinemann, 72-84, 1969.
- RIVERS, W. M.—From skill acquisition to language control. *TESOL Quarterly*, III, 1, 3-12, March 1969.
- RIVERS, W. M.—When and how do persons become bilingual (discussion paper), in *The Measurement and Description of Bilingualism, an International Seminar*, ed. L. G. Kelly, Toronto, University of Toronto Press. 35-41, 1969.

#### *Department of Geography*

- DUNCAN, J. S.—The environments of farming. *Geography Teacher*, IX, 3, 120-126, December 1969.
- EDGEHILL, M. C. R.—Vegetation of an upland ecosystem: Cader Idris, Merionethshire. *Journal of Ecology*, 57, 335-359, July 1969.
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- JOHNSON, B. L. C.—Review article—*Atlas of Physical, Economic and Social Resources of the Lower Mekong Basin*. *Geog. Journ.*, cxxxv, 4, December 1969.
- MERCER, D. C.—Amenity resources: can their value be measured? *Victoria's Resources*, XI, 4, 17-20, December 1969-February 1970.
- MERCER, D. C.—Wilderness and outdoor recreation—the example of Wilson's Promontory National Park. *Geography Teacher*, IX, 2, 62-77, August 1969.
- PETERSON, J. A. AND ROBINSON, G.—Trend-surface mapping of cirque floor levels. *Nature*, 222, 5188, 75-76, April 1969.
- POWELL, J. M.—The squatting occupation of Victoria, 1834-60. *Aust. Geog. Studies*, VII, 1, 9-27, April 1969.
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- ROBINSON, G. AND JOYCE, E. B.—Land evaluation review. *Australian Geographical Studies*, VII, 1, 74-80, April 1969.
- SANDERS, R. A. WITH ADAMS, JOHN S.—Urban residential structure and the location of stress in ghettos. *Earth and Mineral Sciences*, 38, 4, 29-32, January 1969.

- WARREN, V. R. C.—The urban race for space. *Geography Teacher*, IX, 3, 99-112, December 1969.
- WHITELAW, J. S. WITH BLOOMFIELD, G. T.—Auckland, New Zealand's largest urban area. *Geography*, LIV, 3, 303-307, July 1969.
- WILSON, M. G. A.—Demographic trends and characteristics in rural Victoria, in *The Church in Rural Victoria*, Vic. Coun. of Churches Conference Proceedings, 5-19, 1969.

## THESES FOR HIGHER DEGREES

*Doctor of Philosophy*

- PETERSON, J. A.—The Cirques of Southeastern Australia.
- POWELL, J. M.—Settlement and Land Appraisal in Victoria.

*Department of German*

- BODI, L.—Enlightened despotism and literature of enlightenment. *German Life and Letters*, new series, XXII, 4, 324-333, July 1969.
- CLYNE, M. G.—Teaching German to German migrants' children. *Babel*, V, 5-8.
- CLYNE, M. G.—Inhalt, Klangassoziation und Genus in der deutschen Sprache beim Ein- und Zweisprachigen. *Zeitschrift für Phonetik, Sprachwissenschaft und Kommunikationsforschung*, 22, 218-224.
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- HURST, H.—*Matriculation German Reading Comprehension Exercises*, 55 pages, Melbourne, 1969.
- KIRCHHOFF, G.—*Deutsche Gegenwart, Ein literarisches Lesebuch. 2. Teil, Schritte über alte Grenzen*, Huber Verlag, München, 351 pages, 1970 (published 1969).
- KIRCHHOFF, G.—*Die Matrone von Ephesus*, Huber Verlag, München, 1969.
- VEIT, W. F.—The concept of the 'Motif' in German literature science. *University of Ceylon Review*, XXIII, 1-2, 154-63, 1965 (published 1969).

*Department of History*

- GREEN, L. F. AND WEBSTER, D. (eds.)—*Documents in Renaissance and Reformation History*, Cassell, Melbourne, xii + 226 pages, 1969.
- KNOX, B. A.—Articles on Sir Henry Barkly and the Earl of Carnarvon, in *Australian Dictionary of Biography, Vol. III*, Melbourne University Press, 1969.
- MABBETT, I. W.—Devaraja. *Journal of Southeast Asian History*, X, 2.
- OSBORNE, M. E.—*The French Presence in Cochinchina and Cambodia: Rule and Response (1859-1905)*, Cornell University Press, Ithaca, NY, xvi + 379 pages, 1969.
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- SERLE, A. G.—The Victorian Government's campaign for federation, 1883-1889, in *Essays in Australian Federation*, ed. A. W. Martin, Melbourne University Press, 1969.
- SERLE, A. G.—Australia and Britain, in *Contemporary Australia: Studies in History, Politics and Economics*, ed. Richard Preston, Duke University Press, Durham, 1969.
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- SHAW, A. G. L.—Judges v. Viceroy—review article. *Historical Studies*, XIII, 52, 551-558, April 1969.
- SHAW, A. G. L.—Descendants of convicts. *First Fleeters*, I, 2, 1969.
- SHAW, A. G. L.—British attitudes to the colonies, c. 1820-1850. *The Journal of British Studies*, IX, 1, 71-95.
- TURNER, I. A. H.—Introduction—Brian Fitzpatrick, in *A Short History of the Australian Labour Movement*, B. Fitzpatrick, Macmillan & Co., Melbourne, 1969.
- TURNER, I. A. H.—*Cinderella Dressed in Yella: The Play-Rhymes of Australian Children*, Heinemann Educational Books, Melbourne, 1969.
- WATERSON, D. B.—The Matamata Estate, 1904-59: land transfers in New Zealand. *New Zealand Journal of History*, III, 1, April 1969.

#### THESIS FOR HIGHER DEGREE

##### *Doctor of Philosophy*

- KINGSTON, B. R.—Land Legislation and Administration in Queensland, 1859-1876.

##### *Department of Ibero-Romance*

#### THESIS FOR HIGHER DEGREE

##### *Master of Arts*

- BANKS, F. P.—Fantasy in the Theatre of Alejandro Casona.

##### *Department of Indonesian and Malay*

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WILD, J. D.—Absorption with Chemical Reaction.

*Master of Engineering Science*

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#### THESES FOR HIGHER DEGREES

##### *Master of Engineering Science*

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- WATHEN, G. R.—Frame-Shear Wall Interaction.

##### *Department of Electrical Engineering*

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## THESES FOR HIGHER DEGREES

*Doctor of Philosophy*

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- SEUMAHU, E. S.—Entire Signals, Complex Zeros and a Unifying Representation for Use in Communication Theory.

*Master of Engineering Science*

- DA, N. D.—Boundary Value Problems Concerning Longitudinal and Transverse Electric Fields in a Hot Plasma.
- GERRAND, P. H.—On Linear Time-Varying System Theory and its Application to Parametric Amplifiers.
- NICHOLLS, C. R.—Transient Performance of Differential Protection.

*Department of Mechanical Engineering*

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## THESIS FOR HIGHER DEGREE

*Master of Engineering Science*

- TAO, H. S.—A Study of Machining Parameter Selection.

## FACULTY OF LAW

- ALLAN, D. E. (chief ed.)—*Asian Contract Law—A Survey of Current Problems*, Melbourne University Press, xiii + 237 pages, 1969.
- CAMPBELL, E. M.—Democracy and political opposition, in *Contemporary Australia: Studies in History, Politics and Economics*, ed. R. Preston, Duke UP, Durham, 316-353, 1969.
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## FACULTY OF MEDICINE

### Dean's Department

#### NON-SCIENTIFIC

- ANDREW, R. R.—Graduate training: professional and university responsibilities. *Med. J. Aust.*, 1, 66, 1969.
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### Department of Anatomy

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## THESIS FOR HIGHER DEGREE

*Doctor of Medicine*

- DE KRETZER, D. M.—Studies on the Structure and Function of the Human Testis.

*Department of Biochemistry*

- ARMSTRONG, J. McD., BORNSTEIN, J., NG, F. M. AND TAFT, H. P.—Pituitary polypeptide with hypoglycaemic action in diabetes mellitus. *Brit. Med. J.*, **2**, 157, 1969.
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## THESES FOR HIGHER DEGREES

*Doctor of Philosophy*

- BRAY, J. J.—The Origins of Protein in Nerve Axons.
- LIVETT, B. G.—Site of Noradrenaline Synthesis in Sympathetic Neurons.
- MORGAN, I. G.—Synaptic Protein Synthesis.



*Master of Science*

- BECK, CHRISTINE LOGAN—Studies on the Biosynthesis of Insulin by Isolated Perfused Cat Pancreas.
- EDWARDS, CAROLINE LOIS—Synthesis of TCA Cycle Enzymes in Yeast.
- ROGERS, P. J.—The Physical and Chemical Characteristics of Yeast Mitochondrial RNA.
- YU, R. S. T.—Studies on the Biogenesis of Mitochondria in *Saccharomyces cerevisiae*.

*Department of Medicine*

- ANDERSON, S. T. AND PITT, A.—Lignocaine in the Management of Ventricular Arrhythmias. *Med. J. Aust.*, **1**, 208, 1969.
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*Doctor of Philosophy*

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##### *Department of Paediatrics*

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LUNG, P. W. Y.—Faraday Effect of Rare Earths in Crystals.  
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## NON-SCIENTIFIC

COWLEY, R. D., HEISLERS, A. AND EALEY, E. H. M.—Effects of fire on wildlife. *Vic. Resources*, 11, 3, 18-22, 1969.

## THESES FOR HIGHER DEGREES

*Doctor of Philosophy*

BROUGH, ELAINE JOY—The Structure and Function of the Momelibular Gland of the Calomyrnex Sp.

HOPE, JEANNETTE HELEN—Biogeography of the Animals on the Bass Strait Islands.

NORMAN, F. I.—The Effects of Some Introilucid Mammals on the Tasmanian Mutton Bird.

OWEN, M. D.—Some Aspects of Hymenopterans Venoms.

*Master of Science*

BALDWIN, J.—DNA Base Sequence Changes During Evolution.

CUTRESS, GILLIAN MARY—Gas Exchange, Energy Expenditure and Weight Change of the Meat Ant *Iridomyrmex Purpureus* (Smith) Over a Range of Temperatures and at True Relative Humidity Values.

MILES, PENELOPE LEA—Inorganic Pyrophosphatase Activity of Mouse Duodenal and Kidney Alkaline Phosphatases.

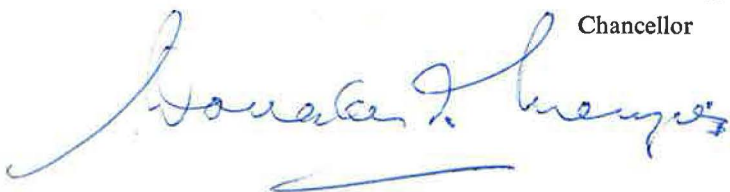
PARRY, VERONICA ANN—Sociality, Territoriality and Breeding Biology of the Kookaburra *Dacelo Gigas* (Boddaert).

WAKEFIELD, N. A.—An Investigation of Late Pleistocene and Recent Cave Deposits in Southeastern Australia.

For and on behalf of the Council,

D. I. MENZIES

Chancellor

A handwritten signature in blue ink, appearing to read 'D. I. Menzies', with a long horizontal flourish underneath.

## ACCOUNTS FOR THE YEAR 1969

The audited accounts of the University for the year 1969 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	21,926	50.6
Commonwealth Government Grants	21,429	49.4
	<u>43,355</u>	<u>100.0</u>

These funds have been expended as follows:

	\$000	%
Land	480	1.1
Site Development	3,095	7.4
Buildings	35,239	83.8
Furniture	1,777	4.2
Equipment	1,448	3.5
	<u>42,039</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 1969 is given hereunder:

*Income:*

	\$000	%
State Government Grants	6,767	47.6
Commonwealth Government Grants	4,982	35.1
Academic Fees	2,449	17.3
	<u>14,198</u>	<u>100.0</u>

*Expenditure:*

	\$000	%
Teaching and Research	10,258	70.0
Libraries	1,282	8.8
Administration	1,664	11.4
Buildings and Grounds	1,144	7.8
Other	278	2.0
	<u>14,626</u>	<u>100.0</u>

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**  
**(I) STATEMENT SHOWING INCOME AND EXPENDITURE FOR ALL GENERAL PURPOSES**  
**YEAR ENDED 31 DECEMBER 1969**

	DIRECT GOVERNMENT GRANTS AND ACADEMIC FEES					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	Recurrent	Research Projects	Buildings, Equipment and Furniture	Recurrent (Teaching Hospitals)	Buildings, Equipment and Furniture (Hospitals)	Grants and Donations	Union Development	Other Items	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
INCOME—									
State Government Grants:									
Received this year	6,766,523	89,701	2,870,000	62,020	178,692				9,966,936
Deduct Accrual at 1 January 1969			250 Dr.		116,725 Dr.				116,975 Dr.
Commonwealth Government Grants :									
Received this year	4,981,747	286,614	2,082,500	33,657	16,669				7,401,187
Add Accrual at 31 December 1969			787,250		45,298				832,548
Academic Fees	2,449,253								2,449,253
Fees for Special Short Courses								9,406	9,406
Union:									
Fees								253,234	253,234
Other Income								19,356	19,356
Union Development Fees							126,526		126,526
Grants and Donations:									
Government-financed Bodies						219,601			219,601
Other						365,724			365,724
Appeals:									
Robert Blackwood Hall						22,001			22,001
Religious Centre						15,950			15,950
Development Fund						3,188			3,188
Outside Earnings							26,773	237,006	263,779
Other Income						43,385	19,342	148,096	210,823
<b>TOTAL INCOME</b>	<b>14,197,523</b>	<b>376,315</b>	<b>5,739,500</b>	<b>95,677</b>	<b>123,934</b>	<b>669,849</b>	<b>172,641</b>	<b>667,098</b>	<b>22,042,537</b>

	DIRECT GOVERNMENT GRANTS AND ACADEMIC FEES					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	<i>Recurrent</i>	<i>Research Projects</i>	<i>Buildings, Equipment and Furniture</i>	<i>Recurrent (Teaching</i>	<i>Buildings, Equipment and Furniture Hospitals)</i>	<i>Grants and Donations</i>	<i>Union Develop- ment</i>	<i>Other Items</i>	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>EXPENDITURE—</b>									
<i>Teaching and Research:</i>									
Salaries	7,187,286	101,110		38,017		149,245		3,664	7,479,322
Superannuation	545,272	1,103				4,194			550,569
Departmental Maintenance	773,736	45,407		69,200		100,630		1,356	990,329
Minor Equipment	553,241	72,445	6,791		45,539	67,983			745,999
Major Equipment	59,525	47,199							106,724
Research Scholarships and Fellowships	359,789	109,947				135,314			605,050
Study Leave Grants and Overseas Travel	101,312	1,150							102,462
New Appointments	110,438								110,438
Other	549,276	15,696				41,871		1,060	607,903
<i>Libraries:</i>									
Salaries	570,501								570,501
Superannuation	31,229								31,229
Books, Journals and Binding	616,919	10,400		6,500		13,070			646,889
Equipment and Furniture	8,177								8,177
Other	55,590								55,590
<i>Administration:</i>									
Salaries	1,057,718								1,057,718
Superannuation	79,078								79,078
Postage, Telephone and Advertising	202,584								202,584
Equipment	10,213								10,213
Victorian Universities Admissions Committee	1,734								1,734
Other	312,544								312,544
Forward:	13,186,162	404,457	6,791	113,717	45,539	512,307		6,080	14,275,053

	DIRECT GOVERNMENT GRANTS AND ACADEMIC FEES					INDIRECT GOVERNMENT GRANTS AND OTHER FUNDS			TOTAL
	<i>Recurrent</i>	<i>Research Projects</i>	<i>Buildings, Equipment and Furniture</i>	<i>Recurrent (Teaching)</i>	<i>Buildings, Equipment and Furniture (Hospitals)</i>	<i>Grants and Donations</i>	<i>Union Development</i>	<i>Other Items</i>	
	\$	\$	\$	\$	\$	\$	\$	\$	\$
Forward:	13,186,162	404,457	6,791	113,717	45,539	512,307		6,080	14,275,053
<i>Buildings and Grounds:</i>									
Construction of New Buildings			3,710,177		78,766		332,923	4,121,866	
Site Development			140,335			230		17,221	157,786
Purchase of Land & Buildings								145,869	145,869
Repairs & General Maintenance	713,448							13,175	726,623
Furniture and Furnishings	38,869		161,642		19,324		5,172	181	225,188
Rents, Rates, Power, Lighting, Heating	318,502								318,502
Equipment	3,698								3,698
Other	68,936							2,592 Cr.	66,344
<i>Sundry Expenditure:</i>									
Union Activities	18,966						19,743	272,163	310,872
Student Services	120,591								120,591
Audio-Visual Aids	69,289					10,000			79,289
Scholarships and Prizes	35,129					2,252			37,381
Halls of Residence						304		24,700 Cr.	24,396 Cr.
Owned Houses & Transit Flats								2,930 Cr.	2,930 Cr.
University Bookshop								16,976 Cr.	16,976 Cr.
Alexander Theatre	15,952					802			16,754
Expenditure re Outside Earnings								307,593	307,593
<i>Appeals:</i>									
Robert Blackwood Hall						137,852			137,852
Religious Centre						10,695			10,695
Other	18,312					5,285		44,390	67,987
<i>Inter-Fund Transfers</i>	18,040			18,040 Cr.			1,166	1,166 Cr.	—
<b>TOTAL EXPENDITURE</b>	<b>14,625,894</b>	<b>404,457</b>	<b>4,018,945</b>	<b>95,677</b>	<b>143,629</b>	<b>679,727</b>	<b>359,004</b>	<b>758,308</b>	<b>21,085,641</b>
<b>STATE OF FUNDS—</b>									
Balance, 1 January 1969	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.
Result for Year:									
Deficit	428,371	28,142			19,695	9,878	186,363	91,210	956,896
Surplus			1,720,555						
Balance, 31 December 1969	853,591 Cr.	46,091 Cr.	1,164,654 Cr.	—	150,415 Cr.	859,501 Cr.	251,990 Dr.	53,496 Cr.	2,875,758 Cr.

## (II) STATEMENT OF SOURCES AND APPLICATION OF FUNDS

	1958-67	1968	1969	Progressive Totals to 31/12/1969
SOURCES—	\$	\$	\$	\$
(1) State Government Grants:				
Recurrent—				
General	22,093,284	6,269,928	6,766,523	35,129,735
Teaching Hospitals	97,619	57,678	62,020	217,317
Site, Buildings, Equipment and Furniture—				
General	16,387,038	779,250	2,869,750	20,036,038
Teaching Hospitals	1,227,066	601,065	61,967	1,890,098
Research Projects	518,311	90,299	89,701	698,311
Total State Government	40,323,318	7,798,220	9,849,961	57,971,499
(2) Commonwealth Government Grants:				
Recurrent—				
General	14,630,500	4,580,253	4,981,747	24,192,500
Teaching Hospitals	52,710	31,177	33,657	117,544
Site, Buildings, Equipment and Furniture—				
General	15,889,600	779,250	2,869,750	19,538,600
Teaching Hospitals	1,227,066	601,065	61,967	1,890,098
Research Projects	705,672	222,434	286,614	1,214,720
Total Commonwealth Government	32,505,548	6,214,179	8,233,735	46,953,462
Total Government:	72,828,866	14,012,399	18,083,696	104,924,961
(3) Academic Fees and Fees for Special Short Courses	5,294,878	2,219,658	2,458,659	9,973,195
(4) Union:				
Fees	586,555	231,883	253,234	1,071,672
Other Income	34,156	6,602	19,356	60,114
(5) Grants and Donations, including Appeals	2,673,875	810,069	669,849	4,153,793
(6) Union Development	390,230	161,525	172,641	724,396
(7) Other Income	598,564	358,496	385,102	1,342,162
TOTAL FUNDS AVAILABLE	82,407,124	17,800,632	22,042,537	122,250,293



	1958-67	1968	1969	Progressive Totals to 31/12/1969
	\$	\$	\$	\$
APPLICATION—				
(1) Recurrent Purposes:				
General—				
Salaries and other operating expenses	34,663,550	11,695,337	13,322,172	59,681,059
Equipment and Furniture	4,171,182	726,674	685,184	5,583,040
Books, Journals and Binding	2,080,635	478,263	618,538	3,177,436
Teaching Hospitals—				
Salaries and other operating expenses	141,329	83,055	89,177	313,561
Books, Journals and Binding	9,000	5,800	6,500	21,300
(2) Site Acquisition and Development	2,939,357	495,771	140,335	3,575,463
(3) Building Funds:				
General—				
Buildings	26,312,062	1,879,296	3,710,177	31,901,535
Equipment	1,263,775	18,081	6,791	1,288,647
Furniture	1,306,095	176,602	161,642	1,644,339
Teaching Hospitals—				
Buildings	1,975,312	1,283,263	78,766	3,337,341
Equipment	92,421	21,706	45,539	159,666
Furniture	93,657	19,793	19,324	132,774
(4) Research Projects	1,074,174	388,309	404,457	1,866,940
(5) Grants and Donations, including Appeals:				
Salaries and other operating expenses	1,257,507	556,295	438,573	2,252,375
Equipment and Furniture	382,997	145,664	79,988	608,649
Books and Journals	24,001	3,750	13,070	40,821
Buildings and Site Development	110,420	133,931	148,096	392,447
(6) Union Development	597,457	19,925	359,004	976,386
(7) Other Expenditure	1,075,862	586,586	758,308	2,420,756
TOTAL FUNDS APPLIED	79,570,793	18,718,101	21,085,641	119,374,535

## (III) STATEMENT OF BALANCES AT 31 DECEMBER 1969

	\$
Sundry Creditors and Accrued Expenses ....	1,823,580
Loans on Mortgage ....	193,501
Bank Overdraft ....	44,219
Accumulated Funds—	
Direct Government Grants:	
Recurrent ....	853,591
Research ....	46,091
Buildings, Equipment and Furniture—	
General ....	1,164,654
Teaching Hospitals ....	150,415
Indirect Government Grants and Other Funds:	
Grants and Donations ....	859,501
Union Development .... (Dr.)	251,990
Other Items ....	53,496
	<u>2,875,758</u>
	<u>4,937,058</u>

	\$
Cash on Hand and at Bank ....	12,548
Investments—	
Official Short Term Money Market ....	2,100,000
Fixed-Interest Securities at lower of par or cost	1,051,598
Ordinary Shares, at cost (Market Value: \$393,052) ....	269,836
	<u>3,421,434</u>
Sundry Debtors—	
Accrued Government Grants ....	832,548
Other ....	273,661
	<u>1,106,209</u>
Stocks on Hand ....	329,033
Payments in Advance ....	67,834
	<u>4,937,058</u>

(IV) STATEMENT OF INCOME AND EXPENDITURE OF TRUST FUNDS  
FOR YEAR ENDED 31 DECEMBER 1969

*Income—*

Interest on Investments	\$	3,253
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*Expenditure—*

J. W. Dodds Memorial Scholarship	400	
Monash University Rowing Club	82	
The David B. Rosenthal Memorial Trust	50	
William and Katherine Winter Foundation	1,025	
	<hr/>	1,557
Surplus for the Year		<hr/> <hr/> 1,696

SCHEDULE OF TRUST FUNDS AT 31 DECEMBER 1969

*Inscribed Stock—*

Melbourne and Metropolitan Board of Works	60,000	
State Electricity Commission of Victoria	978	
Commonwealth Government	1,000	
	<hr/>	61,978

*Current Account—*

Commercial Bank of Australia Limited	3,377	
Trust Funds as at 31 December 1969		<hr/> <hr/> 65,355

## FINANCIAL STATEMENTS

## 123

BALANCE SHEET AS AT 31 DECEMBER 1969																			
								\$					\$						
Students' Loan Fund—									Cash at Bank	xxxx	yyyy	zzzz	xxxx	yyyy	zzzz	xxxx	yyyy	zzzz	4,927
Balance, 1 January 1969	....	....	....	....	....	....	48,513		Loans to Students	....	....	xxxx	yyyy	zzzz	xxxx	yyyy	zzzz	41,723	
Surplus for Year	.....	.....	.....	.....	.....	.....	15,637		Fixed Deposit	.....	.....	zzzz	xxxx	yyyy	zzzz	xxxx	yyyy	17,500	
Balance, 31 December 1969	....	....	....	....	....	....	64,150												
								64,150									64,150		

## 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 1969.

J. A. L. MATHESON  
Vice-Chancellor

F. H. JOHNSON  
Comptroller

22 June 1970

## 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 1969 have been audited by an officer acting under my direction. In my opinion, the statements of account herewith numbered (I) to (V) are correct.

A. J. A. GARDNER  
Auditor-General

26 June 1970



