

CHAPTER XVIII

EDUCATION, CULTURAL ACTIVITIES AND RESEARCH

NOTE.—For the most recent statistics available on subjects dealt with in this Chapter, reference should be made to the series of mimeographed bulletins *Social Statistics* and *University Statistics* issued by this Bureau. The *Quarterly Summary of Australian Statistics* contains summarized information on these subjects, and financial aspects are dealt with in the annual bulletin *Finance, Part I.—Public and Private Finance*.

EDUCATION

NOTE.—An account of the development of the Australian school system up to 1929 may be found in Official Year Books Nos. 1, 2, 17 and 22. In Official Year Book No. 40, a review of changes which occurred up to 1951 and of the practices then current was presented from material furnished by the Commonwealth Office of Education, which contributed much of the textual matter in the following sections. The information relating to the educational programme applies mainly to the year 1962. The statistics given in the tables relate to 1961.

§ 1. Education in Australian Schools

1. Administration and Organization.—(i) *General*. In Australia, the provision of schools is mainly a responsibility of the governments of the States. During the nineteenth century, all six Australian colonies had established systems of compulsory education, beginning with the *Education Act* in Victoria in 1872, and followed by similar Acts in Queensland (1875), South Australia (1875), New South Wales (1880), Tasmania (1893), and Western Australia (1893). These Acts, with subsequent amendments, constitute the legal basis of compulsory education in the Australian States to-day.

School attendance is compulsory throughout Australia between the ages of 6 and 14 at least; in New South Wales the minimum leaving age is 15, and in Tasmania it is 16. An increasing number of children continue their education after reaching the minimum leaving age.

The *Education Acts* require that all children between the prescribed ages must attend either a government school or some other recognized educational institution. Children may be exempted from the requirement of compulsory attendance if they live too far from a school or suffer a physical disability. These children usually receive correspondence tuition.

The school year in Australia begins at the end of January or early in February; it ends in mid-December. The long vacation is taken over the summer months (December to February) and two short vacations divide the school year into three terms.

At government primary schools, it is usual for both boys and girls to attend the same school; at the secondary level, practices vary. Non-government schools cater mainly for boys and girls separately.

(ii) *Government School Systems*. Government schools are a responsibility of the six State governments, except in the Commonwealth territories. Although the educational systems are not identical, they have many similar features. Responsibility for framing educational policy and having it put into effect rests with a Minister for Education, who is a member of the State Cabinet.

The administrative authority in each State is an Education Department headed by a Director-General, or Director of Education. Separate divisions of the Education Department in each State administer primary, secondary and technical education (in New South Wales there is a separate Department of Technical Education). Other divisions look after such matters as the recruitment and training of teachers, pupil guidance, research and the education of atypical children.

In some States, administration has been decentralized to a degree by the appointment of "Area" or "Regional" directors, who are responsible for policy in the area which they control.

Tuition at government primary schools in all States is free. No fees are charged at secondary schools, except in Queensland, where a system of State scholarships has met the cost of fees for most pupils. By 1964, these tuition fees will be abolished in Queensland. Parents usually are expected to bear the cost of text-books, prescribed uniforms, and charges for such things as the use of sports materials. However, income tax concessions exist in respect of these expenditures.

(iii) *Non-Government Schools Systems.* More than three-quarters of the children at non-government primary and secondary schools attend Roman Catholic schools, which form a highly developed but not centralized system. At the primary level, these children normally attend mixed parish schools, but at the secondary level there are boys' schools, approximately half taking boarders, and girls' schools. Some of the small convent schools in country districts enrol young boys as well as girls. The organization of Roman Catholic schools is primarily on a diocesan basis under the general direction of the bishop, although many of the religious orders which conduct schools are Australia-wide, and have their own internal organization.

The majority of other non-government schools, sometimes known as "private" or "independent" schools, are conducted by, or are under the auspices of, various religious denominations, particularly the Church of England, Presbyterian, and Methodist Churches. Others are conducted by the Baptist, Lutheran, Congregational and Seventh-day Adventist Churches and by smaller religious groups. There are Jewish schools in several capital cities. A few non-government schools, including some of the foremost, are undenominational and conducted under the auspices of corporate bodies.

The methods adopted by the educational authorities to ensure an acceptable standard of education at non-government schools vary from State to State. In New South Wales, Victoria, Western Australia and Tasmania, these schools are regularly inspected. In Victoria and Tasmania, schools and teachers must be registered. In Queensland, eight grammar schools, which exist by statutory authority and are subsidized by the State, are subject to annual inspection. Other non-government schools in Queensland, and also those in South Australia, are not subject to inspection.

The principals of a number of the larger non-government schools have formed organizations with both State and Australia-wide coverage, namely, the Headmasters' Conference of Australia, and the Headmistresses' Association of Australia.

2. *Schools and Courses.*—(i) *Primary Education in Government Schools.* Though school attendance is not compulsory until the age of six, most Australian children begin school when they are five, attending infants' schools or infants' classes attached to a primary school. In some States, the first year in the infants' department is known as "kindergarten".

The emphasis in infants' classes, which occupy two or three years, is on general development, play activities and the informal aspects of education, with a gradual shift towards more formal activities in the second and third years. Creative expression through drawing, dancing, handwork, dramatization, painting and similar activities is encouraged. Attention is given to speech training and to activities with music.

At the end of their infants' school training, most children are able to read with some fluency, carry out simple arithmetical operations founded on the basic number facts, and write in pencil. In addition, they have acquired elementary skills in art, music and the like.

At about the age of eight, most children pass into the primary school proper, where they usually spend four or five years. Primary schools are normally provided when and where there is sufficient population to justify them. Irrespective of the size or the location of the school, standards of tuition do not vary appreciably, because teachers within a State follow similar courses of training and transfer freely between metropolitan and country areas.

The Education Departments prescribe syllabuses of instruction, which are drawn up with the assistance of expert committees. The primary syllabuses have an emphasis on basic subjects like reading, writing and arithmetic, social studies and oral language, but the teacher has some freedom to modify courses to suit local circumstances and the varying abilities of his students.

Children attend primary schools in their own districts, usually within walking distance of their homes, on five days each week. The school day is broken up into three or four sessions by a lunch break and by a morning and sometimes an afternoon recess. The total period of instruction is 4½ to 5 hours' daily with individual subject lessons lasting 20 to 30 minutes. Periods are set aside for physical education and sport. One teacher generally has charge of a class and teaches it all of the subjects set out in the curriculum for the particular grade.

Pupils do not, as a rule, sit for a public examination during or at the end of their primary course, and progression from primary to secondary school is automatic. Allocation to particular schools or particular courses is based on the recommendations of the headmaster, general ability tests, tests of achievement in the basic subjects and parents' wishes.

In South Australia, pupils may proceed to secondary school on receiving the Progress Certificate, which is awarded on satisfactory completion of the seventh grade, the highest grade at primary level. Until 1962, pupils in Queensland sat for a public examination before proceeding to secondary schooling.

(ii) *Secondary Education in Government Schools.* The age of transfer from a government primary to secondary school is usually between 12 and 13. Most secondary schools in the country are co-educational; in the cities the practice varies according to the State and the type of school concerned.

In the cities and larger country centres, secondary courses are provided in separate schools from primary courses, but in less populous areas secondary classes sometimes share buildings with primary classes.

The secondary student takes up new studies such as foreign languages and technical or commercial subjects, and moves on to more specialized studies in natural and social sciences and mathematics. The study of basic subjects begun in primary school is continued. The actual subjects studied depend on the ability of the pupil and the type of school. A school day is divided into "periods", and the children are taught by a number of teachers, each specializing in a particular subject or group of subjects.

To meet the varying abilities and needs of students, various kinds of secondary schools have been established in which different types of education are provided, although in country areas secondary schools tend necessarily to be comprehensive and offer a full range of secondary courses. But, following the re-examination by expert committees in all States of the problems associated with the provision of appropriate secondary education for all, significant changes in the structure and curricula of secondary schools are taking place. In New South Wales, for example, following a committee's recommendation that the secondary curriculum should offer a core of common basic education to all students, an increasing number of secondary schools are becoming comprehensive; in future, pupils of different aptitudes and interests in a given locality will attend the same secondary school, undertake this core of common basic studies, and in addition specialize according to their proven abilities and interests.

The main types of government secondary schools are described below.

High Schools. Until recently, high schools were organized on traditionally academic lines, offering courses of four to six years' duration which prepared students for public examinations qualifying them for entry to universities, teachers' colleges, other tertiary institutions and the public service. Curricula varied, but usually included English language and literature, foreign languages, mathematics, physics, chemistry, biology, history, and social sciences. In the comprehensive or multi-purpose high schools, which are becoming more common, a broader range of subjects is offered. There are high schools specializing in technical and commercial subjects, and as mentioned below, in agricultural subjects.

Junior Secondary Schools. Junior secondary schools provide general education, but also give pupils preparatory vocational training in trade, technical, commercial or agricultural courses, and assist them to determine the work for which they are best suited. Courses cover three to four years' study.

Home Science Schools. Home science schools offer two to five year courses in home science and commercial subjects. These courses prepare girls for the responsibilities of home-making and also for occupations in business, commerce, the public service and nursing.

Agricultural Schools. In each State, there are a few separate agricultural high schools, many of them residential. The curriculum consists of general educational subjects and practical farm training. There are also "area" and "rural" schools offering up to three years of secondary study, and in some States courses in agriculture are also given at high schools.

(iii) *Primary and Secondary Education in non-government Schools.* Non-government schools follow curricula similar to those laid down by Education Departments, and prepare their students for examinations conducted by public examining authorities. There are similarities between non-government and government schools in the courses they provide, but, in denominational schools, more emphasis is given to the religious training of pupils. Non-government schools at the secondary level, although usually organized along traditional academic lines, also cater for students who may wish to take commercial, junior technical or domestic science subjects. A few schools, mostly Roman Catholic secondary schools, specialize in agricultural and technical courses. Non-government schools offer some facilities additional to those normally found in government schools, such as personal tuition in music, ballet, etc. A few are organized on "experimental" lines.

3. *Examinations.*—During the course of secondary education, State-wide examinations are taken at two levels. The earlier examination, usually called the Intermediate or Junior Examination, qualifies pupils for entry to trade courses at technical colleges and agricultural colleges, to junior commercial positions in, for instance, insurance and banking, to nursing

and secretarial courses, to lower grades of the public service and to industry. The examination at the end of the secondary school course is usually called the Leaving Examination and qualifies students for entry to teacher's colleges, the higher grades of the public service, and commercial occupations. In the majority of States, the Leaving Examination is also the qualification for entry to the university, certain subjects and combinations of subjects being set down as the matriculation requirements by the respective universities.

The Leaving Examination is controlled by a Board consisting of representatives of the Department of Education, the universities, and non-government schools, and sometimes of other bodies such as teachers' organizations. In Victoria and Tasmania, the final secondary examination is controlled by the university and designed specifically for matriculation.

A brief description of the examinations in each State follows.

New South Wales. The Intermediate Certificate examination is taken internally after three years secondary study, at about the age of 15, and the Leaving Certificate examination after five years, at about 17. The structure of secondary education is being changed so that children entering secondary schools in 1962 and future years will follow a six-year course. The Intermediate Certificate examination will be taken as at present by those who wish to leave school at that stage. A School Certificate examination will be taken at the end of four years and a Higher School Certificate examination (Matriculation) after a further two years.

At present, a student presenting himself for the Leaving Certificate Examination qualifies for matriculation by obtaining passes in prescribed subjects. In addition, the University conducts its own matriculation examination, for which students may sit in place of the Leaving Certificate Examination.

Victoria. The Intermediate examination is taken at the end of the fourth secondary year, at about the age of 16, the School Leaving examination at the end of fifth year, at 17, and the Matriculation examination conducted by the University of Melbourne at the end of sixth year, at the age of 18. Pupils at approved non-government schools may be accredited for the Intermediate and Leaving Certificate by passing the examinations set by their own schools.

Queensland. The Junior Public Examination is taken at the end of second year, at about the age of 16. The Senior Public Examination conducted by the University of Queensland is taken at the end of fourth year, at the age of 18, and matriculation is obtained on results in this examination. At the beginning of the 1964 school year, a five-year secondary course will be introduced. Pupils will enter secondary school one year earlier than at present, and the Junior Public Examination will be taken at the end of the third year and the Senior Public examination at the end of the fifth year.

South Australia. The Intermediate Examination is taken at the end of the third year, at about the age of 15½. The Leaving Examination is taken at the end of the fourth year and Matriculation is gained on results in this examination. A further year may be taken, leading to the Leaving Honours Examination. The Leaving Honours year is designed primarily as additional preparation for university work, though it is not compulsory for intending students of the University of Adelaide.

Western Australia. The Junior Certificate examination is taken at the end of third year, at about the age of 15½. Students who pursue a less academic course may take the High School Certificate examination at this level. The Leaving Certificate examination is taken at the end of fifth year, at an average age of 17½, and matriculation is gained on results in this examination.

Tasmania. The Secondary School Certificate examination is taken at the end of third year, at about the age of 15½; the Schools Board Certificate examination at the end of fourth year, at 16½; and the Matriculation examination conducted by the University of Tasmania at the end of sixth year.

§ 2. Numbers of Schools, Teachers and Pupils.

1. *General.*—The statistics which follow relate generally to schools providing education according to the primary and secondary school curricula of the various State Education Departments, whether provided in government or non-government schools. Junior technical schools, correspondence schools and schools in institutional homes, hospitals and similar establishments are included. Institutions providing only pre-school education, senior technical colleges, evening schools, continuation classes and various unregistered schools such as coaching establishments are excluded.

"School Censuses" are conducted annually throughout all States and Territories of Australia. With the exception of non-government schools in Tasmania, where the census

is conducted in December, school censuses are conducted at or about the beginning of August. The numbers of pupils refer to the position at the school census date. The numbers of schools and teachers refer to the position at dates which vary from State to State and in some instances from year to year.

It has not been possible to present all figures on a uniform basis between States. However, continuity of the figures for any one State over the period of years shown has been maintained as far as possible.

Particulars relating to senior technical colleges are given in § 6, page 738.

2. Statistical Summary.—The numbers of schools, teachers and pupils for 1961 are shown in the following table.

SCHOOLS: NUMBER, TEACHERS, PUPILS, 1961

Type of school	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
NUMBER OF SCHOOLS									
Government ..	2,721	2,179	1,501	663	526	289	17	21	7,917
Non-government—									
Denominational—									
Church of England ..	38	37	17	13	9	5	..	3	122
Hebrew ..	2	6	..	..	1	..	..	..	9
Lutheran ..	3	5	2	12	..	..	..	..	22
Methodist ..	7	4	(a) 5	4	3	1	..	..	24
Presbyterian ..	13	14	3	2	2	2	..	..	36
Roman Catholic ..	668	444	283	123	171	50	4	9	1,752
Seventh-day Adventist ..	19	7	3	4	5	3	..	..	41
Other ..	..	4	..	2	1	1	..	..	8
Undenominational ..	67	27	9	5	2	4	..	..	114
Total ..	817	548	322	165	194	66	4	12	2,128
Grand Total ..	3,538	2,727	1,823	828	720	355	21	33	10,045

TEACHERS

Government ..	20,638	16,476	9,053	6,321	4,390	2,588	191	372	60,029
Non-government—									
Denominational—									
Church of England ..	843	794	298	244	174	112	..	61	2,526
Hebrew ..	15	101	..	..	2	..	..	..	118
Lutheran ..	16	10	35	75	..	..	..	..	136
Methodist ..	183	194	(a) 113	97	71	27	..	..	685
Presbyterian ..	343	386	58	81	61	49	..	..	978
Roman Catholic ..	5,422	2,956	1,910	813	773	314	19	105	12,312
Seventh-day Adventist ..	72	28	7	11	24	11	..	..	153
Other ..	..	109	..	28	2	46	..	..	185
Undenominational ..	536	282	153	93	3	11	..	..	1,078
Total ..	7,430	4,860	2,574	1,442	1,110	570	19	166	18,171
Grand Total ..	28,068	21,336	11,627	7,763	5,500	3,158	210	538	78,200

PUPILS (CENSUS ENROLMENT)

Government ..	601,127	439,740	243,977	173,198	124,632	66,624	3,625	9,755	1,662,678
Non-government—									
Denominational—									
Church of England ..	11,843	14,284	4,642	4,267	3,210	1,842	..	909	40,997
Hebrew ..	263	1,779	..	..	49	..	..	..	2,091
Lutheran ..	212	258	540	1,389	..	..	..	..	2,399
Methodist ..	2,819	3,747	(a) 1,992	1,703	1,319	368	..	..	11,948
Presbyterian ..	5,356	7,420	792	1,386	1,158	609	..	..	16,721
Roman Catholic ..	169,248	131,543	61,551	25,290	28,057	9,408	850	3,764	429,711
Seventh-day Adventist ..	1,075	453	130	170	439	151	..	..	2,418
Other ..	..	2,113	..	514	79	848	..	..	3,554
Undenominational ..	6,308	4,268	3,176	1,263	57	209	..	..	15,281
Total ..	197,124	165,865	72,823	35,982	34,368	13,435	850	4,673	525,120
Grand Total ..	798,251	605,605	316,800	209,180	159,000	80,059	4,475	14,428	2,187,798

(a) Presbyterian and Methodist Schools' Association.

3. **Growth of Schools.**—The numbers of schools, teachers and pupils in Australia are shown in the following table for the years 1957 to 1961.

SCHOOLS: NUMBER, TEACHERS, PUPILS, AUSTRALIA

Particulars	1957	1958	1959	1960	1961
Number of schools—					
Government schools ..	7,712	7,774	7,844	7,886	7,917
Non-government schools ..	2,015	2,014	2,069	2,099	2,128
<i>Total</i>	<i>9,727</i>	<i>9,788</i>	<i>9,913</i>	<i>9,985</i>	<i>10,045</i>
Number of Teachers—					
Government schools ..	48,592	52,012	55,086	57,032	60,029
Non-government schools ..	15,460	16,076	16,716	17,515	18,171
<i>Total</i>	<i>64,052</i>	<i>68,088</i>	<i>71,802</i>	<i>74,547</i>	<i>78,200</i>
Number of Pupils(a)—					
Government schools ..	1,425,126	1,496,065	1,558,309	1,612,046	1,662,678
Non-government schools ..	450,599	471,320	489,721	508,647	525,120
<i>Total</i>	<i>1,875,725</i>	<i>1,967,385</i>	<i>2,048,030</i>	<i>2,120,693</i>	<i>2,187,798</i>

(a) Census enrolment.

Particulars of the average daily attendance at schools for a series of years back to 1891 may be found in earlier issues of this Year Book.

4. **Ages of Pupils.**—The ages of pupils at government and non-government schools at the school census date 1961 are shown in the following table.

SCHOOLS: AGES OF PUPILS, AUSTRALIA, 1961

(Census Enrolment)

Age last birthday (years)	Government schools			Non-government schools			Total		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
Under 6 ..	69,357	64,591	133,948	44,115	44,746	88,861	197,361	188,491	385,852
6 ..	83,889	79,154	163,043						
7 ..	82,996	78,032	161,028						
8 ..	84,012	78,905	162,917						
9 ..	82,805	77,035	159,840						
10 ..	81,845	76,649	158,494						
11 ..	81,338	75,727	157,065						
12 ..	78,205	71,214	149,419						
13 ..	78,494	70,394	148,888						
14 ..	77,092	66,691	143,783						
15 ..	42,958	32,280	75,238						
16 ..	20,204	13,256	33,460						
17 and over..	10,587	4,968	15,555						
<i>Total</i> ..	<i>873,782</i>	<i>788,896</i>	<i>1,662,678</i>	<i>259,137</i>	<i>265,983</i>	<i>525,120</i>	<i>1,132,919</i>	<i>1,054,879</i>	<i>2,187,798</i>

The ages of all pupils in each State at the same date are shown in the following table.

SCHOOLS: AGES OF PUPILS, 1961

(Census Enrolment)

Age last birthday (years)	N.S.W.	Vic.	Qld	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Under 5	4,125	2,315	254	15,449	7,104	14,223	418	105	385,852
5	67,897	51,973	17,990	20,106	16,489	7,457	522	1,390	207,727
6	74,370	58,265	31,458	19,761	15,857	7,544	490	1,384	210,064
7	74,824	57,074	30,892	20,163	16,327	7,582	489	1,351	205,919
8	75,360	57,988	30,808	19,838	15,933	7,329	468	1,314	205,444
9	73,831	56,013	30,882	19,823	16,041	7,271	408	1,241	203,851
10	74,019	56,207	30,243	19,110	15,217	6,534	354	1,195	196,611
11	74,105	55,457	30,129	18,880	14,907	6,873	318	1,139	196,548
12	71,572	53,274	29,355	17,890	13,666	7,491	266	1,245	190,364
13	72,226	53,336	28,869	18,880	14,907	6,873	318	1,139	196,548
14	75,230	49,456	25,120	17,890	13,666	7,491	266	1,245	190,364
15	36,539	30,490	16,068	10,600	6,751	4,753	149	719	106,069
16	16,953	15,823	8,435	5,509	3,236	2,080	62	394	52,492
17	5,835	6,190	3,607	1,735	1,614	733	19	158	19,891
18 and over	1,365	1,744	2,690	487	447	189	3	41	6,966
Total	798,251	605,605	316,800	209,180	159,000	80,059	4,475	14,428	2,187,798

§ 3. Teacher Training and Recruitment

1. Teachers for Government Schools.—(i) *Recruitment.* The teacher shortage evident in past years has now to a certain extent been overcome. Some States have no difficulty in recruiting and training sufficient staff to meet the present needs of primary schools. Despite expanded training programmes, the shortage of secondary school teachers has proved a greater problem, especially in mathematics and science.

State Education Departments recruit most prospective teachers for government service from students leaving schools after a secondary course. Each department offers training awards annually on the basis of academic merit and personal suitability. The traineeships cover the cost of a teacher training course (which may include university studies) and provide a living allowance. Students are usually required to enter into a bond to serve for a specified number of years in the government schools of the State where they have trained. In some States, intending teachers can obtain a scholarship at Intermediate Certificate level to enable them to complete teachers' college entrance requirements. Such an award entails a bond of service for a longer period.

(ii) *Training of Primary School Teachers.* In most States, teachers for government primary schools are trained in teachers' training colleges controlled and administered by the State Education Departments. These colleges are described in § 10, para. 2. Generally, the duration of courses for primary teachers is two years. The basic subjects taken in the various courses are history and principles of education, general and special methods of teaching in the primary school, school organization, and educational psychology. In addition, students undertake courses in English (including speech training), mathematics, handicrafts, music, art, social studies, natural science, physical and health education. Optional subjects may include dramatic art, visual aids and so on. Supervised practice teaching in schools, and the observation of demonstration lessons form part of all training courses. Since primary teachers in Australia may be called upon at some time to teach grouped classes in a small school or a "one-teacher" school, special training for this kind of work is included in their course.

(iii) *Training of Secondary School Teachers.* Secondary teachers are normally specialists in a combination of subjects, such as English and history, modern languages, or mathematics and science. Intending secondary school teachers are required to complete a university degree, followed by a year of professional training qualifying for a Diploma in Education.

The degree courses followed are usually in arts, science or economics, with the major studies providing the essential background for future subject teaching. During the post-graduate or professional year, the student takes such subjects as the history and principles of education, comparative education, educational psychology, and special teaching methods. Training also includes practice teaching under the supervision of teachers' college and university staff, and the observation of demonstration lessons.

At several Australian universities, students wishing to take up teaching as a profession can receive their professional training along with the study of their teaching subjects as part of a first degree course in Education. The time taken to complete such a Bachelor of Education degree is four years.

(iv) *Training for Specialist Teaching.* Teachers of specialist subjects such as music, art, manual arts, domestic science and commercial subjects receive from two to five years training which varies according to the institution concerned and the type of secondary school in which the teacher is to serve. In several States, the shorter courses are provided wholly by the teachers' colleges. Where the specialist course is given at an institution other than the teachers' college—for example, at a university, technical college or conservatorium of music—as is usual for teachers of specialist subjects in high schools, trainees are required to attend teachers' college or university lectures in education, and in some cases the specialist course is followed by a year of professional training. In four States, teachers of music receive their specialist training at conservatoria of music.

Courses designed to train physical education teachers are offered in universities in all States, and in three States at a teachers' college as well.

Training for teachers of agricultural subjects in secondary schools is available in five States and consists of either an agricultural college diploma or a university degree course together with professional training. In Victoria, the two-year agricultural college diploma course follows on the normal two-year primary teachers' course.

Teachers of technical subjects in secondary schools may be trained in manual or industrial arts courses of two to four years' duration, at teachers' colleges, technical colleges, or, in one State, at a university. These courses include basic training in such subjects as wood and metal work, and geometrical drawing. In Victoria, there is a separate Technical Teachers' College. Some teachers of trade subjects in technical schools are recruited from the ranks of qualified tradesmen engaged in either industry or commerce. These teachers usually receive instruction in classroom teaching techniques and procedures upon appointment.

(v) *In-service Training.* As almost all teachers now enter the profession by way of teachers' colleges or universities, where they receive basic professional training, in-service training in Australia is directed chiefly towards keeping teachers abreast of developments and adding to their basic training.

In-service training usually takes the form of short courses held sometimes during vacations, sometimes during school-time or in the evenings. Courses consist of discussions and lectures given by senior staff members of Education Departments and university and teachers' college lecturers on such subjects as classroom techniques and supervision, librarianship, visual aids, music, arts and crafts, and physical education. In some States, there are also in-service courses for special groups of teachers such as headmasters or teachers in one-teacher schools. In addition, district inspectors are responsible for organizing short conferences of teachers, where professional topics are discussed. Education Departments encourage teachers to pursue university courses, and in some States pay the cost of courses undertaken by selected teachers.

The official publications of the Education Departments contain articles dealing with educational theory and practice. Magazines of the teachers' organizations, which reach the majority of government teachers, also contain articles of this type.

(vi) *Status.* Most teachers in government schools are permanent public servants and have security of tenure, superannuation rights, and the right of appeal in matters of promotion. The centralized education systems and the general policy of providing fully trained teachers for both city and country areas mean that teachers are subject to transfer to any part of the State in which they serve. It is common for a teacher's first appointment to be to a country school.

In each State, there is a federation or union of State school teachers, and these together form a federal body, the Australian Teachers' Federation. Their aim is to advance the teacher's status and conditions and to stimulate community interest in educational problems.

2. **Training of Non-government School Teachers.**—Teachers for non-government schools receive their training in a number of ways. The Roman Catholic Church staffs both its primary and secondary schools mainly with members of religious orders whose training has been obtained in conformity with the requirements of the particular order concerned. In recent years, there has been a growth in the number of lay teachers being employed in Catholic schools, and some training of students to become lay primary teachers has now been instituted. Secondary teachers receive their academic training mostly through courses provided by Australian universities.

Other non-government schools tend to recruit their staffs from teachers who have already obtained qualifications in Australia or overseas. There are two training institutions—one each in New South Wales and Victoria—which offer courses designed principally for teaching in non-government schools. Non-government schools recruit also university graduates who are then given some guidance by senior members of the school staff.

Private students may enrol at government teachers' colleges on payment of a fee, but the number of places available is limited. Some teachers destined for non-government schools are trained in this way.

In-service training to provide the basic training for teachers is used only to a limited extent by non-government schools, mainly in the case of the graduate recruits mentioned above. Recently vacation courses have been provided by bodies other than Education Departments for teachers from both government and non-government schools. For example, an independent body—the Nuclear Research Foundation—has provided such courses for teachers of science in secondary schools in New South Wales.

The training of pre-school teachers is carried out in five States in Kindergarten Training Colleges, set up by the Kindergarten Unions. These are described in § 10, para. 3.

§ 4. Other Aspects of School Education

NOTE.—Information relating to school medical and dental services is given in Chapter XVII. Public Health, and particulars of School Savings Banks in Chapter XX. Private Finance.

1. **Provisions for Isolated Areas.**—(i) *General.* Although the task of bringing education to isolated areas in Australia presents problems, all education authorities have nevertheless aimed at providing opportunities for country children comparable to those available to city children. Country children follow the same curriculum (with local adaptation, if desirable) and are under the guidance of teachers who are trained for service in country and city schools alike.

In areas where there are sufficient children of school age, a "one-teacher" school may be formed with all primary grades in a single classroom under the control of the one teacher. Special training is given to teachers undertaking work of this kind. Children who complete a primary course in a one-teacher school and cannot attend a secondary school may do secondary correspondence lessons under the teacher's supervision.

In districts where a number of small centres are scattered around a larger centre or country town, the tendency is to close the one-teacher schools and transport pupils each day by buses to a "consolidated" school in the larger centre. Consolidated schools provide primary instruction and from two to four years of post-primary instruction. The post-primary curriculum adopted is usually directed towards practical activities and training in subjects bearing on the primary industries of the locality.

Where a group of children is too small to warrant the establishment of a one-teacher school at public expense, a "subsidized" school may be opened. The Education Department pays part of the cost and in some States appoints a teacher. Some States also administer "provisional" schools, which are completely financed by the Government but which are not large enough, or sufficiently assured of adequate continued attendance of pupils, to warrant classification as permanent schools.

(ii) *Correspondence Schools.* These have been established in each State capital city to meet the needs of children whose daily attendance at school is prevented by distance between home and school, by illness or by physical disability. The correspondence schools also cater for inmates of penal institutions, Australian children overseas, pupils of other schools in which particular courses are not available, student teachers, members of the Defence Forces and other adults completing their secondary education. Lessons are done with the help of a supervisor, usually a member of the child's family, and posted back to the correspondence school in the capital city, where they are corrected and returned with helpful comments. Every endeavour is made to maintain a personal link between teacher and pupil. Correspondence schools began with primary grades only, but were soon extended to cater for secondary pupils, and it is now possible to do a complete secondary course to matriculation standard by correspondence. Some 18,000 primary and secondary pupils are receiving instruction through correspondence schools.

(iii) *Schools of the Air.* These are an attempt to give the outback child of school age some of the benefits of school life and at the same time to supplement correspondence education. Using the two-way wireless equipment developed first by the Royal Flying Doctor Service, children hundreds of miles apart participate in the same lesson, and teacher and pupils can talk directly with each other. The first School of the Air was established in 1950 at Alice Springs in the Northern Territory; it has been followed by similar schools at Broken Hill in the far west of New South Wales; at Ceduna and Port Augusta in South Australia; Cloncurry and Charters Towers in Queensland; and Meekatharra, Derby and Kalgoorlie in Western Australia. These nine schools serve children in an area of a million square miles.

2. Handicapped Children.—Special provision is made for the education of physically and mentally handicapped children, both by the State authorities and by church and voluntary organizations, often working in conjunction. In many cases where residential schools are necessary for particular groups, educational facilities and teaching staff are provided by a State Education Department, while a voluntary organization provides accommodation and accepts responsibility for the general welfare of the children. Among the facilities available are:—hospital schools for sick and crippled children; "spastic centres" for cerebral palsied children; special schools and special classes for deaf children; schools for blind children; and special classes and schools for mentally retarded children. Special schools and classes have involved the appointment of departmental specialists, the provision of special training courses, and close liaison with school health services. In some States, clinics attached to hospitals, or functioning as an independent child welfare service, handle cases of personality maladjustment and work in co-operation with the psychological services of the Education Departments.

3. Educational Guidance.—Each Australian State now has a comprehensive system of educational guidance administered by trained and experienced educational psychologists and backed by a system of individual pupil record cards. The functions of these services are the selection of pupils for courses at secondary level, diagnosis and guidance of atypical children, preliminary guidance and, in some States, research. The weight given to each of these functions varies from State to State, but the aim is to provide thorough educational guidance for all children.

Throughout Australia, branches of the Commonwealth Employment Service co-operate with State Education Departments by giving post-school vocational guidance, using the data obtained and made available by the Education Departments during the school career of the children. In New South Wales, a similar service is also provided by the Youth Welfare Section of the State Department of Labour and Industry.

4. Research.—All State Education Departments have set up branches undertaking research directed towards departmental activities. The work of the research branches is concerned with such matters as curriculum content, new teaching methods, evaluation procedures, wastage rates and educational statistics.

5. School Broadcasting and Television.—Over the years, an extensive school broadcasting system has been developed in Australia by the co-operative efforts of the Australian Broadcasting Commission and education authorities. The Australian Broadcasting Commission's Education Department is responsible for preparing and broadcasting programmes, but it draws freely on the advice and services of teachers and maintains permanent liaison with State Education Departments. It is estimated that, in 1962, over 90 per cent. of Australian schools were equipped to receive radio lessons.

School broadcasts are presented as part of the regular Australian Broadcasting Commission programmes without separate stations or wave lengths. Special efforts are made, however, to relate the broadcast to school work by the extensive distribution of booklets, giving details of programmes in advance, and subject notes accompanied by picture sheets, work books, and teachers' notes.

Broadcasting has proved to be a most effective way of reaching the outback children of Australia, and radio lessons have been designed to supplement correspondence lessons.

Even though the use of television in education is still in its early stages in Australia, more than 300 schools made use of the telecasts provided for schools by the Australian Broadcasting Commission during 1962. In 1962, over 400 programmes were broadcast to schools, mostly at primary level.

6. Scholarships and Bursaries.—All States have schemes of financial assistance to school pupils, mostly at the secondary level, through scholarships or bursaries. As tuition in government schools is free, this assistance is usually in the form of maintenance allowances, both for children living with their parents and for those living away from home. These may be paid in a lump sum or in instalments throughout the year. Awards are usually made on the results of a competitive examination, and sometimes a means test is applied. Other government and private authorities, such as the Repatriation Department and the Legacy War Orphans Fund, assist special categories of pupils with their school education. Many non-government schools also award scholarships on a competitive basis which enable students to attend the particular schools without payment of fees.

7. School Transport.—All States have systems of subsidies whereby transport is made available free or at a concession rate for children travelling to and from school. In some States, allowances are paid if private transport has to be used.

8. School Buildings.—The great increase in the school population in the last decade led to an expansion in school building, first for infants' and primary classes and later for secondary pupils. To cope with this growth in population, it was necessary at first to make use of temporary and emergency structures, but the period of resorting to this expedient is now giving way to one of consolidation and development in school building programmes. Quite large schools may be built in stages to match increase in local population in new and rapidly developing suburbs in metropolitan areas. Authorities are giving much attention to the use of new materials and especially to the planning of sites. An increasing number of schools are planned with playing fields and tennis courts. Gymnasiums which may also serve as assembly halls are included, and lighting, heating and ventilation to meet different climatic conditions are carefully planned.

9. Textbooks, Materials and other Equipment.—The State Education Departments supply government schools, free of charge, with essential equipment, including scientific apparatus, maps, blackboards, chalk and cleaning materials, and non-consumable equipment for commercial, home science and manual training. Garden tools and physical training equipment are also supplied in most States.

Primers and writing equipment for individual pupils are usually supplied free in primary schools, and Education Departments produce monthly school magazines which are supplied free or cheaply. In primary schools (except in one State) and in all secondary schools, textbooks must, however, be purchased by students. In several States, schools own stocks of textbooks which are hired to students, and in one State, secondary textbooks are sold at reduced prices.

Equipment such as radios, film and filmstrip projectors, pianos, duplicators and library books is ordinarily purchased for individual schools by the parent and citizen organizations associated with them, with the assistance of subsidies from the Departments.

The design of school furniture is undergoing considerable change following research on posture and the physical measurement of children. Dual desks are now being replaced in many schools by individual tables and chairs, provided in a range of sizes suitable to each class. The new type of furniture is more suitable for flexible arrangement of the class in line with modern educational practice.

10. **Visual Aids.**—Visual aids are widely used in Australian education. Each of the State Education Departments has a visual education branch to handle the production and distribution of such materials. Film strips and posters are distributed free or at low cost. Films are held in central libraries and are requisitioned by schools as required for teaching purposes.

§ 5. Pre-school Education

Pre-school centres of various kinds are conducted by private individuals, church bodies and voluntary organizations such as the Kindergarten Unions. Over recent years, the Commonwealth Government, State Governments, and some municipal councils have provided an increasing amount of financial assistance and themselves maintain centres in certain areas.

The Australian Pre-School Association is a federal body composed of the Kindergarten Unions and several other organizations. Its aim is to promote the development of pre-school education throughout Australia. It is also responsible for the administration of six Lady Gowrie Child Centres which were established in capital cities by the Commonwealth Government as model pre-school centres.

Centres are located in city and country areas. Programmes are adapted to suit the areas in which centres are situated. Types of pre-school centres include nursery kindergartens, crèches with full-day care for children in closely settled industrial areas, play groups and play centres, occasional care centres and residential holiday homes.

Pre-school centres can cater only for a small proportion of children in the three to five or six year age group, but radio and television have brought a form of education within the reach of practically every pre-school child in Australia. "Kindergarten of the Air", the first programme of its kind in the world, is a session of 25 minutes broadcast every week-day over the national radio network of the Australian Broadcasting Commission. Through it young children in hospitals, in homes in city and country towns and in bush homesteads in the outback, perhaps many miles from any school, receive some of the advantages of pre-school training.

"Kindergarten Playtime" is a 15-minute television programme transmitted each week-day. It is based on the interests of children from three to five years and is now broadcast in all State capital cities by the Australian Broadcasting Commission.

§ 6. Technical Education

1. **General.**—The following description of technical education refers to training in technical fields given by institutions other than secondary schools and universities. Students may proceed to this kind of training after completing three to five years at secondary school.

Each State has developed a system of technical education based on institutions set up in all the State capital cities and in many country areas. These institutions are known variously as technical colleges, technical schools, institutes of technology and schools of mines. The earliest began as local and even private ventures in the second half of the nineteenth century, but almost all of them have now come under the control of the State governments.

The technical colleges in Queensland, South Australia, Western Australia and Tasmania are administered by branches of the State Education Departments and are financed from the budget of the State Minister for Education. New South Wales has a separate State Department of Technical Education. Only in Victoria is there still a dual system with a number of the older colleges controlled by their own "councils" in addition to government-controlled colleges administered by the Technical Education Branch of the Education Department. The council-controlled colleges receive government grants-in-aid and their teachers' salaries are paid by the State government.

Australian technical colleges offer training in all the major industrial skills and in a wide variety of commercial, artistic and domestic occupations. The three main types of courses are described below.

2. **Trade Courses.**—These offer part-time training for apprentices. In developing a system of technical education, the Australian authorities were influenced by the British tradition which regards practical experience on the job as the fundamental training procedure, to be supplemented by theoretical and practical training at an appropriate school. In each of the Australian States there is an apprenticeship authority which supervises the administration of apprenticeships and an education authority which provides technical education through its technical colleges.

The time spent on training varies from three to five years in different trades and States. Between four and eight hours' instruction a week are required. Most of this takes place in the employer's time, and it is unusual for more than two hours a week of the employee's time to be spent in attending classes.

3. **Certificate Courses.**—There is considerable variation between the States in the aims and organization of certificate courses. In New South Wales, they provide training of a semi-professional nature in occupations for which no apprenticeship awards exist. Some of the courses are open to qualified tradesmen only. For others, no occupational entry qualifications are demanded, but it is necessary to hold an Intermediate Certificate or its equivalent. The courses are usually for four years, most of them being part-time.

The Victorian concept of a certificate course is somewhat different. It is designed to develop specialized skills in a particular phase of an occupation. In the building field, for instance, there is a certificate course in architectural drafting. The courses are offered at three levels—professional certificate courses which include diploma subject matter and can be counted towards a diploma; special short courses which are designed to increase the efficiency of people in their chosen field; and technicians' courses which give a standard of training between trade and professional courses. In general, they consist of part-time day and/or evening instruction concurrent with employment in the field, and entrance requirements are of approximately Intermediate Certificate standard.

Courses in other States are mostly part-time, and of two to seven years' duration. They provide a wide range of training for skilled technical and semi-professional workers, and, in most cases, entrance is at the level of the Intermediate Certificate or equivalent.

4. **Diploma Courses.**—Diploma courses are designed to provide professional training in fields such as architecture, art, building, commerce, management, public administration, manual arts, the various branches of engineering and metallurgy, and pure and applied science. They usually follow completion of a full secondary school course.

The courses consist of complete progressive units of study in which the lecture room, laboratory and workshop are closely associated. They vary from three to five years' full-time and from three to seven years' part-time study. At least one full year's employment in an appropriate occupation is usually required.

The aim of the courses is to develop highly trained technologists with the qualifications and experience required for membership of a professional institution.

5. **Other Courses.**—Most colleges provide short post-diploma and refresher courses to keep students in touch with new developments in their fields, as well as courses of general interest such as women's handicrafts and motor mechanics. Training in certain technical aspects of agriculture such as farm mechanics and wool classing is often given in the technical colleges. Some also offer general secondary courses to enable adults to prepare for matriculation and other public examinations.

6. **Correspondence Teaching.**—Each State has a well developed system of technical education by correspondence to extend the facilities of a metropolitan college to rural students. Entrance qualifications are identical with those for the regular classes. A major problem of correspondence work is the linking of theory with practice. This is overcome to a certain extent by holding practical sessions at appropriate training centres once or twice a year at the technical college where the correspondence school is based or at a mobile workshop stationed for the time at a focal point within the district. In New South Wales, these mobile workshops are rail cars equipped with machinery and fittings to make them self-contained training schools for engineering and other trades. Among practical courses offered by correspondence are trade drawing, fitting and machinery, welding, diesel engine operation, automotive engineering and workshop practice, and farm mechanics.

7. Colleges, Teachers and Students.—The number of colleges, teachers and enrolments of individual students during the years 1957 to 1961 is given in the following table.

TECHNICAL EDUCATION: COLLEGES, TEACHERS, AND ENROLMENTS

State	Colleges	Teachers			Students enrolled		
		Full-time	Part-time	Total	Males	Females	Persons
New South Wales(a)(b)—							
1957	45	1,240	1,291	2,531	51,244	27,386	78,630
1958	48	1,259	1,337	2,596	54,104	28,361	82,465
1959	48	1,299	1,691	2,990	(c) 47,064	(c) 41,736	88,800
1960	51	1,286	1,682	2,968	62,523	34,195	96,718
1961	51	1,302	2,051	3,353	66,715	35,495	102,210
Victoria—							
1957	50	2,209	1,558	3,767	42,224	16,082	58,306
1958	54	2,382	1,488	3,870	45,653	17,215	62,868
1959	63	2,644	1,678	4,322	48,089	16,845	64,934
1960	70	2,796	1,766	4,562	51,328	16,388	67,716
1961	76	3,133	1,929	5,062	(d) 47,053	(d) 13,424	(d) 60,477
Queensland(a)—							
1957(e)	13	167	410	577	12,728	4,469	17,197
1958(e)	13	166	568	734	13,422	4,792	18,214
1959(e)	13	176	517	693	13,500	4,970	18,470
1960(e)	14	174	647	821	13,556	4,893	18,449
1961	14	174	663	837	18,290	9,156	27,446
South Australia(a)(f)—							
1957	30	274	663	937	15,123	8,300	23,423
1958	25	280	770	1,050	16,991	8,570	25,561
1959	25	294	779	1,073	18,130	8,570	26,700
1960	25	323	737	1,060	15,728	7,722	23,450
1961	25	363	712	1,075	15,596	8,457	24,053
Western Australia(a)—							
1957	24	257	430	687	13,519	7,512	21,031
1958	23 (g)	278 (g)	735 (g)	1,013 (g)	15,977	8,436	24,413
1959	24 (g)	282 (g)	739 (g)	1,021 (g)	15,604	8,888	24,492
1960	19 (g)	307 (g)	802 (g)	1,109 (g)	17,017	8,739	25,756
1961	20 (g)	317 (g)	862 (g)	1,179 (g)	17,992	9,083	27,075
Tasmania—							
1957	7	85	383	468	4,423	2,215	6,638
1958	8	98	404	502	(c) 4,625	(c) 2,354	6,979
1959	8	104	398	502	4,837	2,463	7,300
1960	8	111	413	524	5,253	2,085	7,338
1961(h)	12	97	383	480	4,871	1,427	6,298
Total—							
1957	169	4,232	4,735	8,967	139,261	65,964	205,225
1958	171	4,463	5,302	9,765	150,772	(i) 69,728	220,500
1959	181	4,799	5,802	10,601	147,224	(i) 83,472	230,696
1960	187	4,997	6,047	11,044	165,405	74,022	239,427
1961	198	5,386	6,600	11,986	170,517	77,042	247,559

(a) Excludes correspondence students. (b) Includes A.C.T. (c) Estimated.
 (d) Number enrolled at Census. (e) Student figures are enrolments at end of year. (f) Student figures are individual enrolments. (g) Number of teaching positions. (h) In 1961 there was a transfer of classes in the hobby category to the Adult Education Board. (i) Partly estimated.

8. Training of Technical Instructors.—Prior to the 1939–45 War, technical colleges were staffed chiefly by trained teachers in the employment of the Education Department or technicians drawn from industry. Although some of the latter were highly qualified, the great majority had not been trained as teachers.

To preserve links with industry and trade practice, schemes have been developed which continue the recruitment of specialist tradesmen as instructors but provide also for their training in educational method and teaching techniques. In Victoria, the Technical Teachers' College provides training for students with appropriate diploma or trade qualifications and suitable industrial experience. In New South Wales, technical college lecturers and tradesmen-instructors receive an in-service course of teacher training in both general educational theory and teaching method, while correspondence courses and visiting lecturers assist the newly appointed tradesman-instructor in country colleges. Variations of this scheme are in operation in other States. Many technical teachers, principally of academic, commercial and domestic science subjects, hold trained teacher's certificates from teachers' colleges.

§ 7. Government Expenditure on Schools and Technical Education

1. *General.*—The following tables show particulars of the total net expenditure (i.e., gross expenditure less receipts for services rendered) from certain funds on government schools, education departments and technical education. The data have been compiled on the same basis as far as differences in organization and accounting methods between States and Territories will permit.

The tables include only expenditure from the consolidated revenue funds and certain trust or special funds. They exclude loan fund expenditure; expenditure on debt charges, payroll tax and superannuation payments, in so far as it is possible to identify these items; and some items for which information cannot be obtained from the public accounts of all States.

2. *Government Schools and Education Departments Expenditure.*—(i) *Total Net Expenditure.* The figures relate throughout to years ended 30th June. Net expenditure per pupil relates the total net expenditure to the mean of the numbers of pupils enrolled at two subsequent school censuses. Net expenditure per head of population relates the total net expenditure to the mean population.

GOVERNMENT SCHOOLS AND EDUCATION DEPARTMENTS

Year	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	N.T.	A.C.T.	Aust.
TOTAL NET EXPENDITURE (£'000)									
1956-57	.. 30,345	19,978	9,120	6,197	6,571	3,304	155	392	76,062
1957-58	.. 33,132	22,222	9,953	6,853	7,274	3,380	197	408	83,419
1958-59	.. 36,544	24,563	11,347	7,963	7,541	3,662	217	504	92,341
1959-60	.. 40,445	27,323	12,130	9,232	8,246	4,327	278	587	102,568
1960-61	.. 46,580	30,762	13,931	10,354	9,271	4,773	353	792	116,816

TOTAL NET EXPENDITURE PER PUPIL (£ s. d.)

1956-57	..	57 18 10	57 2 10	43 14 1 44 10 0	63 13 11	56 17 8	69 0 10	71 19 4	54 14 3
1957-58	..	60 18 10	59 13 11	45 7 10	46 11 4	67 2 8	56 0 3	75 18 4	66 12 3
1958-59	..	64 18 4	62 7 0	49 12 5	51 6 3	66 8 11	58 13 3	74 1 3	73 7 2
1959-60	..	69 15 0	66 2 7	51 7 6	56 12 9	69 19 11	67 7 0	86 14 3	73 9 4
1960-61	..	78 8 1	71 7 3	57 13 7	60 18 5	75 17 3	72 10 0	101 0 7	86 6 5

TOTAL NET EXPENDITURE PER HEAD OF POPULATION (£ s. d.)

1956-57	..	8 9 1	7 12 2	6 10 10	7 3 11	9 13 0	10 3 4	7 15 0	10 11 11	7 19 7
1957-58	..	9 10 0	8 5 5	7 0 0	7 14 8	10 9 8	10 3 8	9 7 7	10 9 3	8 11 3
1958-59	..	9 16 0	8 18 8	7 16 5	8 15 4	10 13 8	12 15 3	9 17 3	11 14 5	9 5 8
1959-60	..	10 13 1	9 13 9	8 4 2	9 17 8	11 10 1	12 11 7	11 2 5	11 14 10	10 1 10
1960-61	..	12 0 5	10 12 7	9 5 4	10 16 4	12 14 1	13 12 8	13 15 0	14 6 9	11 4 10

(ii) *Classification of Expenditure.* The following table shows, for the six States, the net expenditure on government schools and education departments classified into the following headings:—(i) Primary Education, (ii) Secondary Education, (iii) Administration, (iv) Training of Teachers, and (v) Transportation of School Children and Students. Expenditure on technical and agricultural education is excluded from the tables.

It has been necessary to estimate some items of expenditure, largely because the meanings of "primary" and "secondary" differ between States, and because elementary and higher education are sometimes given in the same school by the same teachers.

Expenditure on government schools in the Northern Territory and Australian Capital Territory is not included in the following table. This expenditure has been excluded, because the detail is not available.

**GOVERNMENT SCHOOLS AND EDUCATION DEPARTMENTS:
CLASSIFICATION OF EXPENDITURE
(£'000)**

Year		N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	Total(a)
PRIMARY EDUCATION								
1956-57	.. ..	18,043	11,553	6,603	4,065	3,557	1,517	45,338
1957-58	.. ..	19,037	12,659	7,065	4,409	4,044	1,625	48,839
1958-59	.. ..	20,562	13,953	7,980	4,905	4,095	1,751	53,246
1959-60	.. ..	22,272	14,892	8,325	5,527	4,464	1,858	57,338
1960-61	.. ..	25,076	16,366	9,352	6,009	4,930	1,926	63,659

SECONDARY EDUCATION								
1956-57	.. ..	7,973	4,177	1,350	1,179	1,224	823	16,726
1957-58	.. ..	9,241	4,870	1,532	1,362	1,480	814	19,299
1958-59	.. ..	10,661	5,406	1,830	1,800	1,631	997	22,325
1959-60	.. ..	12,139	6,372	2,148	2,237	1,894	1,261	26,051
1960-61	.. ..	14,826	7,538	2,791	2,714	2,218	1,509	31,596

ADMINISTRATION								
1956-57	.. ..	1,212	554	396	174	292	366	2,994
1957-58	.. ..	1,323	584	419	198	281	328	3,133
1958-59	.. ..	1,479	651	465	199	314	230	3,338
1959-60	.. ..	1,703	760	518	246	274	419	3,920
1960-61	.. ..	1,853	810	607	249	363	531	4,413

TRANSPORTATION OF SCHOOL CHILDREN AND STUDENTS								
1956-57	.. ..	1,455	1,749	359	388	1,021	420	5,392
1957-58	.. ..	1,616	1,913	423	404	930	443	5,729
1958-59	.. ..	1,613	2,002	502	467	910	458	5,952
1959-60	.. ..	1,813	2,120	601	486	957	516	6,493
1960-61	.. ..	2,058	2,393	685	523	998	569	7,226

TRAINING OF TEACHERS								
1956-57	.. ..	1,662	1,945	412	391	477	178	5,065
1957-58	.. ..	1,915	2,196	514	480	539	170	5,814
1958-59	.. ..	2,229	2,551	570	592	591	226	6,759
1959-60	.. ..	2,518	3,179	538	736	657	273	7,901
1960-61	.. ..	2,767	3,655	496	859	762	238	8,777

(a) Excludes Northern Territory and Australian Capital Territory.

3. **Technical Education Expenditure.**—The following table shows the net expenditure on technical education from the State consolidated revenue funds, together with expenditure in the Australian Capital Territory.

**TECHNICAL EDUCATION: NET EXPENDITURE
(£'000)**

Year	N.S.W.	Vic.	Q'land	S. Aust.	W. Aust.	Tas.	A.C.T.	Aust.
1956-57 ..	2,788	3,797	511	1,044	607	401	44	9,592
1957-58 ..	2,981	4,110	964	1,144	691	407	47	10,344
1958-59 ..	3,163	4,287	1,120	1,429	735	450	54	11,238
1959-60 ..	3,763	5,435	1,237	1,645	789	397	61	13,327
1960-61 ..	4,114	6,050	1,234	1,853	918	345	69	14,583

§ 8. Non-government Schools Finance

Most Roman Catholic parochial schools charge fees, but payment is not insisted on in the case of families who cannot afford it. At the majority of non-government secondary schools, privately endowed scholarships are available in varying numbers, and reductions in fees are normally made for children of clergy or for two or more members of one family attending the same school. With these exceptions, pupils of non-government schools must pay fees.

Certain State scholarships and bursaries are tenable at approved non-government secondary schools. Since the establishment of educational systems by the State governments, official policy has been largely against the provision of direct financial assistance to non-government schools. The eight undenominational grammar schools in Queensland, however, receive a State subsidy under the *Grammar Schools Acts 1860-1900*. In 1956, the Commonwealth Government undertook to contribute to the interest payments on loans raised in order to build non-government secondary school accommodation in the Australian Capital Territory. This contribution is now available for both primary and secondary school buildings extensions and additions.

§ 9. Universities

1. General.—Students qualify for entrance to Australian universities by passing a matriculation examination in one of the States after 5 or 6 years of secondary education. Each university has its own regulations for matriculation, specifying the number and combination of subjects to be passed for admission. Students entering the universities have the choice of undergraduate study in various faculties.

The Australian universities with their faculties are listed below in the order of their foundation.

University of Sydney, 1850, Sydney, New South Wales: Agriculture, Architecture, Arts, Dentistry, Economics, Engineering, Law, Medicine, Science, Veterinary Science.

University of Melbourne, 1853, Melbourne, Victoria: Agriculture, Architecture, Arts, Dental Science, Economics and Commerce, Education, Engineering, Law, Medicine, Music, Science, Veterinary Science, Applied Science.

University of Adelaide, 1874, Adelaide, South Australia: Agricultural Science, Architecture and Town Planning, Arts, Dentistry, Economics, Engineering, Law, Medicine, Music, Science, Technology.

University of Tasmania, 1890, Hobart, Tasmania: Agricultural Science, Arts, Commerce, Education, Engineering, Law, Science.

University of Queensland, 1909, Brisbane, Queensland: Agriculture, Architecture, Arts, Commerce and Economics, Dentistry, Education, Engineering, Law, Medicine, Science, Veterinary Science.

University of Western Australia, 1912, Perth, Western Australia: Agriculture, Arts, Dental Science, Economics and Commerce, Education, Engineering, Law, Medicine, Science.

Australian National University, 1946, Canberra, Australian Capital Territory.—Institute of Advanced Studies: John Curtin School of Medical Research, Research School of Physical Sciences, Research School of Social Sciences, Research School of Pacific Studies. School of General Studies: Arts, Economics, Law, Science, Oriental Studies.

University of New England, 1954 (formerly New England University College, established in 1938), Armidale, New South Wales: Agricultural Economics, Arts, Rural Science, Science.

University of New South Wales, 1958 (formerly the New South Wales University of Technology, established in 1948), Sydney, New South Wales: Architecture, Arts, Commerce, Engineering, Medicine, Science, Applied Science.

Monash University, 1958, Melbourne, Victoria: Arts, Economics and Politics, Engineering, Medicine, Science.

Each of the universities was established by a parliamentary Act as an autonomous institution, with its own Governing Council or Senate. Nevertheless, the Australian universities receive substantial government support from both State and Commonwealth sources, only part of their income being derived from students' fees, private donations and bequests.

There are also three university colleges. *Newcastle University College*, founded in 1951, is affiliated with the University of New South Wales, and has degree courses in the faculties of Applied Science, Architecture, Arts, Commerce, Engineering and Science. *Townsville University College*, founded in 1961, is a constituent part of the University of Queensland. It offers some courses in the faculties of Agriculture, Arts, Commerce and

Economics, Dentistry, Education, Engineering, Law, Medicine, Science and Veterinary Science. Wollongong University College was opened in 1962, and is affiliated with the University of New South Wales. It offers some courses in the faculties of Engineering and Science. In 1966, the University of Adelaide plans to open additional facilities at Bedford Park, where four schools will be established initially in Language and Literature, Social Science, Physical Sciences and Biological Sciences.

2. Organization of Courses.—Bachelor degree courses are from three to six years in length, depending on the faculty, and for the majority full-time attendance is required. However, certain courses may also be undertaken by part-time or evening students. The university academic year begins in March and finishes in early December. At most universities, two short vacation periods divide the year into three terms, but there are four terms in some universities.

Several universities make provision for external tuition, whereby students living away from university towns may take a restricted number of courses by correspondence. The University of Queensland has developed a system of correspondence tuition which now caters not only for students within the State but for those in the Northern Territory, Papua and New Guinea, adjacent Pacific islands and Asian countries. External students living in Queensland receive tutorial assistance at university centres in the principal country towns.

The University of New England's Department of External Studies offers a wide range of subjects for external study, leading to the degrees of Bachelor of Arts and Bachelor of Letters, and to the Diploma of Education and the Diploma in Educational Administration. External students must attend short annual residential schools of instruction in their subjects, usually held at the university.

Post-graduate courses leading either to a Master's degree or to a Doctorate are available at all universities. Facilities cover the humanities, social sciences, pure and applied sciences.

Additional courses are constantly being introduced by the universities at both the undergraduate and the post-graduate level, to cover new fields of knowledge and specialization. In 1962 and 1963, the following courses were introduced:—the University of Sydney, undergraduate courses in Biblical Studies within the Faculty of Arts; at the University of Adelaide, the degree of Master of Town Planning in 1962, and one of Master of Business Management in 1963; at the University of Queensland, a course towards a Diploma in Speech Therapy in 1962; at the University of Western Australia, undergraduate courses in Archaeology in 1962; and at the University of Tasmania a course towards a Bachelor of Agricultural Science degree in 1962.

3. Research.—A wide range of research work and training in research techniques is carried out by the universities as part of their normal functions. Post-graduate students and members of university staff are engaged in research, both as part of their work for post-graduate degrees and also as part of group and departmental research programmes. Support for research in universities is derived from public and private sources, including funds and foundations established to encourage research in a particular field.

4. Post-War University Expansion and Development.—Since the 1939–45 War, the Australian universities have had to face greatly increased demands on their facilities, firstly from large numbers of ex-service personnel in the immediate post-war years, and later from greatly increased numbers of students leaving secondary schools each year. By 1961, the total enrolments in Australian universities had reached a figure of 57,672 compared with an early post-war peak of 32,453 in 1948.

To assist the universities to cope with these demands, increasing co-operation between the Commonwealth Government and the State Governments in university finance became necessary. The Commonwealth Government set up a Committee on Australian Universities, whose 1957 report ("The Murray Report") led to more finance becoming available to universities and to the setting up of a permanent body, the Australian Universities Commission, to advise the Commonwealth Government on university development. In the years since the Murray Report, the following major developments have taken place in the Australian university structure:—the University of New South Wales was created from the earlier University of Technology in 1958; in the same year, Monash University was established in Victoria; in 1960, the Australian National University was reconstituted, combining both undergraduate and post-graduate facilities and now consists of the Institute of Advanced Studies and the School of General Studies created from the Canberra University College; the University of Queensland set up the University College of Townsville in 1961; and the University of New South Wales established the Wollongong University College in 1962.

Despite rapid expansion, the Australian universities are still faced with a problem in providing tuition for all students who reach matriculation standard. As a result, several universities have found it necessary to impose quotas on enrolments in their courses.

The Commonwealth Government and governments of two States have set up their own committees to examine the problems of tertiary education. These committees, and the governments of other States, are directing much of their attention to the expansion of university facilities, both within existing institutions, and by planning the establishment of new universities or university colleges in the future.

5. **Teaching and Research Staff.**—University statistics have been reviewed, and those for 1961 are compiled on a different basis from that used in the past. The following table shows particulars of the teaching and research staff of the universities during 1961.

UNIVERSITIES: TEACHING AND RESEARCH STAFF, 1961

University	Teaching and research staff(a)						Research (only staff(a))	
	Full-time					Part-time (b)	Full-time	Part-time (c)
	Professors	Associate professors and readers	Senior lecturers and lecturers	Assistant lecturers, demonstrators, tutors and teaching fellows	Total			
Australian National University ..	20	8	71	9	108	27	202	..
Sydney ..	66	34	403	132	635	855	95	6
New South Wales ..	43	45	429	57	574	532	4	1
New England ..	18	11	122	52	203	36	27	2
Melbourne ..	52	69	349	159	629	652	136	9
Monash ..	12	..	36	18	66	13	..	..
Queensland ..	37	40	287	130	494	506	39	2
Adelaide ..	39	41	229	45	354	286	104	7
Western Australia ..	31	32	147	13	223	229	66	2
Tasmania ..	19	9	69	13	110	63	39	3
Total ..	337	289	2,142	628	3,396	3,199	712	32

(a) Teaching and research staff includes all staff with teaching functions, but excludes Research (only) staff which is shown separately. (b) In units of 100 hours per annum. (c) In equivalent full-time units of 35 hours per week.

The next table gives details of the teaching and research staff of Australian universities for each year from 1957 to 1961. For purposes of comparison, the figures for 1961 have been compiled on a similar basis to those for previous years and therefore differ from those shown in the table above.

UNIVERSITIES: TEACHING AND RESEARCH STAFF, SUMMARY, AUSTRALIA

Year	Professors	Readers (a)	Lecturers(b)		Demonstrators, tutors and research assistants		Honorary lecturers and demonstrators	External studies staff	Total
			Full-time	Part-time	Full-time (c)	Part-time			
1957 ..	255	215	1,413	958	394	405	51	30	3,721
1958 ..	270	238	1,643	982	471	458	51	37	4,150
1959 ..	297	267	1,854	955	585	493	123	64	4,638
1960 ..	331	272	2,015	925	683	508	89	86	4,909
1961 ..	358	311	2,367	1,005	708	608	69	78	5,504

(a) Includes associate professors, assistant professors and lecturers-in-charge. (b) Includes senior lecturers, assistant lecturers, senior fellows, fellows and research fellows. (c) Includes technical officers of the University of New South Wales.

6. Students.—(i) *Total.* The number of students enrolled for courses at the universities for the year 1961 is shown in the following table.

UNIVERSITIES: STUDENTS ENROLLED, 1961

University	Degree courses	Diploma courses		Certificate courses	Miscellaneous subjects	Adjusted total(a)
		Post-graduate	Sub-graduate			
Australian National University ..	1,079	..	5	..	135	1,178
Sydney	11,477	295	558	..	272	12,534
New South Wales(b)	7,759	124	589	..	375	8,838
New England	2,290	189	..	..	61	2,536
Melbourne	10,150	332	462	175	547	11,451
Monash	363	..	..	..	..	363
Queensland	6,907	64	631	1,539	445	9,525
Adelaide	4,829	425	1,091	18	251	6,250
Western Australia	3,379	90	..	..	76	3,537
Tasmania	1,069	76	66	203	101	1,460
Total	49,302	1,595	3,402	1,935	2,263	57,672

(a) Adjustment made for students enrolled for more than one course. (b) From 1961, a new degree of B.Sc. (Technology) has replaced many sub-graduate diploma courses.

Of the students enrolled in 1961, 44,264 were males and 13,408 females. Included in those enrolled for degrees were 234 enrolled for higher degree courses at the Australian National University, 850 in Sydney, 478 at the University of New South Wales, 105 at the University of New England, 479 in Melbourne, 16 in Monash, 332 in Queensland, 331 in Adelaide, 264 in Western Australia and 81 in Tasmania, a total of 3,170.

The following table shows the number of students enrolled at Australian universities for each of the years from 1957 to 1961.

UNIVERSITIES: STUDENTS ENROLLED, SUMMARY, AUSTRALIA

Year	Degree courses		Diploma courses		Certificate courses	Miscellaneous subjects	Adjusted total(a)
	Higher degrees	Bachelor degrees	Post-graduate	Sub-graduate			
1957	1,357	26,197	735	5,855	1,115	1,670	36,568
1958	1,672	29,965	846	6,168	1,427	2,058	41,492
1959	2,226	34,108	1,007	6,405	1,575	2,367	47,151
1960	2,770	38,934	1,309	6,898	1,786	2,300	53,391
1961(b)	3,170	(b)46,132	1,595	(b)3,402	1,935	2,263	57,672

(a) Adjustment made for students enrolled for more than one course. (b) From 1961, a new degree of B.Sc. (Technology) replaced many sub-graduate diploma courses at the University of New South Wales.

(ii) *New Students Enrolled.* The number of new students enrolled for courses at the universities during the year 1961 is shown in the following table.

UNIVERSITIES: NEW STUDENTS ENROLLED, 1961

University	Degree courses	Diploma courses		Certificate courses	Miscellaneous subjects	Adjusted total(a)
		Post-graduate	Sub-graduate			
Australian National University ..	466	..	..	..	91	535
Sydney	3,153	85	98	..	35	3,371
New South Wales(b) ..	2,311	43	75	..	263	2,692
New England	851	82	..	..	29	960
Melbourne	2,360	20	157	15	228	2,733
Monash	363	..	..	..	..	363
Queensland	1,796	3	180	528	236	2,724
Adelaide	1,251	1	364	2	70	1,665
Western Australia ..	779	3	..	..	24	806
Tasmania	284	2	18	75	41	414
Total	13,614	239	892	620	1,017	16,263

(a) Adjustment made for students enrolled for more than one course. (b) From 1961, a new degree of B.Sc. (Technology) has replaced many sub-graduate diploma courses.

Of the new students enrolled in 1961, 11,643 were males and 4,620 females. Included in those enrolled for degrees were 349 enrolled for higher degree courses—Australian National University, 92; Sydney, 34; University of New South Wales, 74; New England, 31; Melbourne, 41; Monash, 16; Queensland, 27; Adelaide, 19; Western Australia, 10; and Tasmania, 5.

The following table shows the number of new students enrolled at Australian universities during each of the years from 1957 to 1961.

UNIVERSITIES: NEW STUDENTS ENROLLED, SUMMARY, AUSTRALIA

Year	Degree courses		Diploma courses		Certificate courses	Miscellaneous subjects	Adjusted total(a)
	Higher degrees	Bachelor degrees	Post-graduate	Sub-graduate			
1957	119	7,417	121	1,601	333	772	10,316
1958	211	8,949	92	1,657	457	1,038	12,231
1959	252	10,099	198	1,712	483	1,139	13,803
1960	278	11,647	242	1,985	526	1,094	15,685
1961(b) ..	349	13,265	239	892	620	1,017	16,263

(a) Adjustment made for students enrolled for more than one course. (b) From 1961, a new degree of B.Sc. (Technology) replaced many sub-graduate diploma courses at the University of New South Wales.

(iii) *Full-time, Part-time and External Students.* The following table classifies students at each university according to whether they were studying full-time, part-time or externally.

UNIVERSITIES: FULL-TIME, PART-TIME AND EXTERNAL STUDENTS, 1961

University	Full-time	Part-time	External	Total
Australian National University ..	488	690	..	1,178
Sydney	9,428	3,106	..	12,534
New South Wales	2,471	6,329	38	8,838
New England	694	142	1,700	2,536
Melbourne	7,226	3,720	505	11,451
Monash	334	29	..	363
Queensland	3,854	3,058	2,613	9,525
Adelaide	3,562	2,270	418	6,250
Western Australia ..	1,988	1,183	366	3,537
Tasmania	766	544	150	1,460
Total	30,811	21,071	5,790	57,672

The next table shows full-time, part-time and external students enrolled at Australian universities during each of the years from 1957 to 1961.

UNIVERSITIES: FULL-TIME, PART-TIME AND EXTERNAL STUDENTS, SUMMARY, AUSTRALIA

Year					Full-time	Part-time	External	Total
1957..	..	..	..	..	22,074	10,607	3,887	36,568
1958..	..	..	..	..	25,535	11,392	4,565	41,492
1959..	..	..	..	..	28,394	13,893	4,864	47,151
1960..	..	..	..	..	31,590	16,304	5,497	53,391
1961(a)	..	..	..	..	30,811	21,071	5,790	57,672

(a) The figures of full-time and part-time students in 1961 are not comparable with those shown for previous years, as in 1961 all universities used a uniform classification of students which differed from that used previously by some universities.

(iv) *Assistance to Students.* The Commonwealth Government, through the Commonwealth Scholarships Board, grants undergraduate and post-graduate scholarships to university students. (Details of the Commonwealth Scholarship Scheme are given on page 755.) Commonwealth, State and local governments also award cadetships and other assistance to their employees. Foreign students are assisted by the Commonwealth Government under arrangements such as the Colombo Plan.

The Universities themselves grant exhibitions and scholarships as well as special assistance to teachers, etc.

The following table gives details of students assisted at each university in 1961.

UNIVERSITIES: ASSISTED STUDENTS, 1961

University	Source of assistance					Type of course	
	Commonwealth Government	State Governments	Universities	Other	Adjusted total (a)	Higher degrees	Other
Australian National University ..	262	..	302	21	536	186	350
Sydney ..	4,272	327	2,095	253	6,313	270	6,043
New South Wales ..	1,310	620	1,239	1,592	4,229	299	3,930
New England ..	226	345	1,039	18	1,607	79	1,528
Melbourne ..	3,521	2,085	2,706	448	6,817	121	6,696
Monash ..	64	96	9	3	172	10	162
Queensland ..	2,084	614	322	226	3,246	184	3,062
Adelaide ..	1,446	1,474	1,188	107	3,785	211	3,574
Western Australia ..	944	550	54	45	1,518	71	1,447
Tasmania ..	306	391	71	13	730	21	709
Total ..	14,435	6,502	9,025	2,726	28,953	1,452	27,501

(a) Adjustment made for students assisted from more than one source.

The next table shows the numbers of assisted students at Australian universities in the years 1957 to 1961.

UNIVERSITIES: ASSISTED STUDENTS, SUMMARY, AUSTRALIA

Particulars	1957	1958	1959	1960	1961
Government assistance ..	14,700	16,532	18,756	20,345	20,937
University assistance ..	4,243	4,875	5,958	6,649	9,025
Other assistance ..	2,006	2,221	2,278	2,648	2,726
Adjusted Total(a) ..	18,155	20,645	23,342	26,061	28,953

(a) Adjustment made for students assisted from more than one source.

(v) *Resident Students.* In 1961, 4,424 full-time and 194 part-time students were in residence at affiliated colleges, halls of residence and university hostels. The 4,618 students in residence were distributed as follows:—Australian National University, 262; Sydney, 776; New South Wales, 192; New England, 619; Melbourne, 1,026; Queensland, 865; Adelaide, 361; Western Australia, 341; and Tasmania, 176. There were 3,422 male students and 1,196 female students in residence.

7. *Degrees Conferred, etc.*—The following table shows the number of degrees conferred and diplomas and certificates granted for males and females separately at each university during the year 1961.

UNIVERSITIES: DEGREES CONFERRED, AND DIPLOMAS AND CERTIFICATES GRANTED, 1961

Course	Aus- tralian National Uni- versity		Sydney		New South Wales		New Eng- land		Mel- bourne		Queens- land		Ade- laide		West- ern Aus- tralia		Tas- mania		Aus- tralia	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Degrees—																				
Arts ..	8	2	209	213	22	20	71	38	195	191	79	56	49	46	82	55	27	26	742	647
Divinity ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..
Music ..	..	..	..	1	..	..	..	..	..	14	1	..	..	..	..	..	..	..	9	15
Law ..	..	..	89	9	..	..	..	..	97	16	21	1	18	1	11	2	8	..	244	29
Commerce/Econo- mics ..	2	..	62	3	43	3	..	..	153	30	69	4	34	1	6	..	20	1	389	42
Education ..	..	..	12	1	..	..	..	..	44	11	13	4	..	..	25	4	..	..	94	20
Social Studies ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Science ..	16	1	209	79	192	11	36	9	185	55	126	38	147	27	48	17	36	10	995	247
Architecture and Town Planning	..	..	15	5	10	..	..	..	24	4	6	..	5	..	..	..	..	..	60	9
Engineering ..	..	..	117	..	193	..	..	..	137	..	103	..	113	..	31	..	11	..	705	..
Surveying ..	..	..	..	..	..	..	..	..	1	..	4	..	..	..	..	..	..	..	5	..
Dentistry ..	..	..	47	5	..	..	..	..	14	2	35	4	13	3	8	3	..	..	117	17
Medicine ..	..	..	191	27	..	..	..	..	131	26	57	7	59	11	15	..	..	..	453	71
Physiotherapy ..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1
Agriculture ..	..	..	51	9	..	..	10	1	41	5	35	..	27	1	13	..	..	..	177	16
Agricultural Econo- mics ..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Forestry ..	..	..	9	..	..	..	..	..	11	..	10	..	..	..	1	..	1	..	32	..
Veterinary Science	..	..	34	4	..	..	..	..	..	..	24	..	..	..	..	..	..	..	58	4
Total ..	26	3	1,045	356	460	34	118	48	1,042	354	583	119	465	90	240	81	103	37	4,082	1,122
Post-graduate Diplo- mas—																				
Education ..	..	..	84	106	6	9	36	45	38	25	45	13	12	7	46	9	9	9	276	223
Engineering ..	..	..	1	..	2	..	..	..	2	..	5	..	..	..	..	..	..	..	10	..
Medicine ..	..	..	22	1	..	..	..	..	13	1	..	..	..	..	..	..	..	..	35	2
Agriculture ..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1
Total ..	..	..	110	108	8	9	36	45	53	26	50	13	12	7	46	9	9	9	324	226
Sub-graduate Diplo- mas ..	..	..	13	12	..	..	..	..	26	45	49	29	84	80	..	..	2	1	174	167
Certificates ..	..	..	..	..	8	..	..	..	..	164	47	2	..	..	..	3	10	177	57	..

The next table shows total degrees conferred at all Australian universities during each of the years 1957 to 1961.

UNIVERSITIES: DEGREES CONFERRED, SUMMARY: AUSTRALIA

Degree	1957			1958			1959			1960			1961		
	M.	F.	P.	M.	F.	P.	M.	F.	P.	M.	F.	P.	M.	F.	P.
Arts ..	476	400	876	621	459	1,080	657	540	1,197	752	597	1,349	742	647	1,389
Divinity ..	1	..	1	1	..	1	5	..	5	..	..	..	1	..	1
Music ..	2	4	6	8	12	20	5	16	21	9	26	35	9	15	24
Law ..	160	12	172	180	23	203	185	24	209	218	24	242	244	29	273
Commerce/															
Economics ..	227	14	241	211	17	228	243	16	259	288	28	316	389	42	431
Education ..	110	18	128	111	14	125	88	15	103	87	19	106	94	20	114
Social Studies ..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	4
Science ..	576	140	716	618	134	752	701	161	862	885	193	1,078	995	247	1,242
Architecture and															
Town Planning ..	47	10	57	57	9	66	54	5	59	65	9	74	60	9	69
Engineering ..	441	1	442	465	..	465	517	2	519	551	..	551	705	..	705
Surveying ..	10	..	10	4	..	4	4	..	4	7	..	7	5	..	5
Dentistry ..	88	5	93	116	12	128	103	14	117	118	10	128	117	17	134
Medicine ..	397	61	458	368	66	434	361	63	424	397	72	469	453	(a) 72	(a) 525
Agriculture and															
Agricultural Eco-															
nomics ..	81	15	96	109	9	118	149	11	160	146	16	162	178	16	194
Forestry ..	14	..	14	26	..	26	16	..	16	20	1	21	32	..	32
Veterinary Science	45	2	47	42	4	46	40	2	42	56	2	58	58	4	62
Total—															
Higher Doctorates	25	1	26	11	1	12	29	2	31	21	1	22	24	2	26
Ph.D.'s ..	99	7	106	85	5	90	113	10	123	127	10	137	110	16	126
Master's Degrees	168	32	200	179	33	212	201	27	228	223	31	254	283	26	309
Bachelor's De-															
grees ..	2,383	642	3,025	2,662	720	3,382	2,785	830	3,615	3,229	955	4,184	3,665	1,078	4,743
Grand Total ..	2,675	682	3,357	2,937	759	3,696	3,128	869	3,997	3,600	997	4,597	4,082	1,122	5,204

(a) Includes one degree in physiotherapy.

8. Finance.—(i) *General*. Australian universities are incorporated by statute. Since their establishment, they have come to depend greatly on government grants for their income. In recent years, large amounts have been required for new buildings, as well as for current expenditure to provide staff and equipment to cope with increased student enrolments. In 1961, income other than from State and Commonwealth grants, including student fees, amounted to only about one fifth of the total income. Income from non-government sources includes grants, mainly for research purposes, from businesses, international foundations, and private individuals. Some income is also received from endowments.

(ii) *Financial Assistance from the Commonwealth Government*. (a) *General*. Prior to 1939, Commonwealth assistance was almost entirely concerned with research projects carried out by or in collaboration with the universities. During and since the 1939–45 War, the Commonwealth extended assistance to university students, at first to increase the number of highly trained people required for the war effort, then with the object of rehabilitating ex-servicemen, and finally as a social service benefit to the community. For the purpose of reconstruction training, the Commonwealth Government made available to the universities approximately £1 million for buildings and £500,000 for equipment.

Following a report submitted by a committee of inquiry appointed to report on university finances and requirements, the Commonwealth, since 1951, has made matched grants to the States for recurrent expenditure on university purposes. The Commonwealth also makes additional unmatched recurrent grants, assists with the capital needs of the universities for building projects and for equipment, and provides grants for the building programmes of residential colleges affiliated with universities.

In 1959, following the Report of the Committee on Australian Universities, the Commonwealth Government established the Australian Universities Commission under the *Australian Universities Commission Act 1959*. The Commission's principal functions are to advise the Prime Minister on financial assistance to Commonwealth universities and to States in relation to their universities and also on the balanced development of Australian universities. The Commission commenced its work in July, 1959. The first report of the Commission, covering the period 1961-63, was presented in October, 1960. The Commission recommended that Commonwealth grants in the period should be £93,300,000, approximately twice as great as grants available in the period 1958-60. The *States Grants (Universities) Act 1962* gave effect to the recommendations of a committee appointed to advise the Commission on the level of university salaries.

(b) *Commonwealth General Grant for Recurrent Expenditure*. This is a continuation of matched grants provided since 1951, and the maximum amount available in 1962 is shown in the following table.

UNIVERSITIES: COMMONWEALTH GENERAL GRANT FOR RECURRENT EXPENDITURE, 1962.

University								Amount
								£'000
Sydney .. .. .	..	..	..	..	..	..	..	1,726
New South Wales .. .. .	..	..	..	..	..	..	..	1,524
New England .. .. .	..	..	..	..	..	..	..	506
Melbourne .. .. .	..	..	..	..	..	..	..	1,453
Monash .. .. .	..	..	..	..	..	..	..	322
Queensland .. .. .	..	..	..	..	..	..	..	1,058
Adelaide .. .. .	..	..	..	..	..	..	..	904
The South Australian Institute of Technology .. .. .	..	..	..	..	..	..	..	76
Western Australia .. .. .	..	..	..	..	..	..	..	658
Tasmania .. .. .	..	..	..	..	..	..	..	293
Total .. .. .	..	..	..	..	..	..	..	8,520

From 1961, matched grants have been made on a basis of £1 of Commonwealth money for every £1.85 of income received by a university from fees and State grants. From 1951 to 1960, the matching ratio was, in general, £1 to £3.

(c) *Commonwealth Grants for the Teaching and Administrative Costs of Residential Colleges*. From 1961, there has been a change in the method of calculating these unmatched grants for residential colleges administered by or affiliated with a university. The grants consist of payments each year of £2,000 to each college, plus £15 for each resident student, and, a further £5 for each non-resident student receiving tutorial assistance. The Commonwealth total grant paid in 1962 was £164,445.

(d) *Commonwealth Grants for Selected Building Projects*. Those grants, for the period 1961-63, are shown in detail in the Second Schedule to the 1960 Act. Payments are made up to a given maximum for each project, on the basis of £1 from the Commonwealth for every £1 of State grants. The total Commonwealth grant for each University is shown in the following table.

**UNIVERSITIES: COMMONWEALTH GRANTS FOR BUILDING PROJECTS, ETC.,
1961-63**

University								Amount
								£'000
Sydney .. .. .	..	..	..	..	..	..	..	1,450
New South Wales .. .. .	..	..	..	..	..	..	..	2,880
New England .. .. .	..	..	..	..	..	..	..	670
Melbourne .. .. .	..	..	..	..	..	..	..	1,056
Monash .. .. .	..	..	..	..	..	..	..	3,890
Queensland .. .. .	..	..	..	..	..	..	..	1,100
Adelaide .. .. .	..	..	..	..	..	..	..	1,060
The South Australian Institute of Technology .. .. .	..	..	..	..	..	..	..	10
Western Australia .. .. .	..	..	..	..	..	..	..	1,200
Tasmania .. .. .	..	..	..	..	..	..	..	900
Total .. .. .	..	..	..	..	..	..	..	14,216

In addition, a grant of 5 per cent. of the cost of each project is made for equipping and furnishing buildings. This grant is also matched £1 for £1 by the States. In the period 1958-60, the universities received an unmatched Commonwealth grant for equipment equal to 16 per cent. of the cost to the Commonwealth of each project.

(e) *Commonwealth Grants for Buildings for Residential Colleges.* The Commonwealth also makes available, at the request of a State, grants for buildings for residential colleges affiliated with a university. Commonwealth grants are up to one half of the cost for the purchase, erection or alteration of a building at an affiliated residential college. The maximum amount available for distribution in each State in the period 1961-63 is shown in the following table.

**UNIVERSITIES: MAXIMUM COMMONWEALTH GRANTS FOR RESIDENTIAL
COLLEGE BUILDINGS, 1961-63**

University								Amount
								£'000
Sydney .. .. .	..	..	..	..	..	..	..	142
New South Wales .. .. .	..	..	..	..	..	..	..	150
Melbourne .. .. .	..	..	..	..	..	..	..	223
Queensland .. .. .	..	..	..	..	..	..	..	195
Adelaide .. .. .	..	..	..	..	..	..	..	101
Western Australia .. .. .	..	..	..	..	..	..	..	120
Tasmania .. .. .	..	..	..	..	..	..	..	69
Total .. .. .	..	..	..	..	..	..	..	1,000

(f) *Commonwealth Grants for Equipment.* Under the 1960 Act, special provision is made, for the first time, to assist universities to purchase items of equipment. A total Commonwealth grant of £500,000 is available for this purpose, grants being made available on the basis of £1 from the Commonwealth for every £1 of State grants. This grant is made available in two parts. The maximum amount of the first part available to each university is shown in the following table.

UNIVERSITIES: COMMONWEALTH GRANTS FOR EQUIPMENT, 1961-63

University								Amount
								£'000
Sydney ..	..	..	..	..	..	..	..	45
New South Wales ..	..	..	..	..	..	..	..	40
New England ..	..	..	..	..	..	..	..	15
Melbourne ..	..	..	..	..	..	..	..	45
Monash ..	..	..	..	..	..	..	..	15
Queensland ..	..	..	..	..	..	..	..	25
Adelaide ..	..	..	..	..	..	..	..	25
Western Australia ..	..	..	..	..	..	..	..	25
Tasmania ..	..	..	..	..	..	..	..	15
Total ..	..	..	..	..	..	..	..	250

The remaining half of the grant (totalling £250,000) is to be distributed among universities on the basis of grants for individual items specially approved by the Commission.

The grants for capital building projects at universities and residential colleges and capital equipment grants for universities are payable at any time within the period 1961-63.

(g) *Commonwealth Grants for Teaching Hospital Projects.* The *States Grants (Universities) Act* 1962 gave effect to the recommendations of a committee appointed to advise the Commission on the teaching costs of medical hospitals. This Act makes provision for the payment to universities of grants for associated teaching hospitals. Commonwealth grants for particular hospital building projects and specific items of equipment in the period 1961-63 are shown in the Fifth Schedule to the Act. Payments are made up to a given maximum for each building project or item of equipment on the basis of £1 from the Commonwealth for every £1 of State grants. The total Commonwealth grant for each university is shown in the following table.

UNIVERSITIES: COMMONWEALTH GRANTS FOR TEACHING HOSPITAL BUILDING PROJECTS, ETC., 1961-63

University								Amount
								£'000
Sydney ..	..	..	..	..	..	..	..	356
New South Wales ..	..	..	..	..	..	..	..	282
Melbourne ..	..	..	..	..	..	..	..	327
Monash ..	..	..	..	..	..	..	..	397
Queensland ..	..	..	..	..	..	..	..	270
Adelaide ..	..	..	..	..	..	..	..	103
Western Australia ..	..	..	..	..	..	..	..	31
Total ..	..	..	..	..	..	..	..	1,766

In addition, a grant of 5 per cent. of the cost of each project is available for equipping and furnishing each building; this grant is also matched £1 for £1 by the States.

(iii) *University Income.* The following table summarizes the income of each university in 1961. The statistics are compiled on a different basis from those published in previous years.

UNIVERSITIES: INCOME, 1961
(£'000)

University	State Government grants	Commonwealth Government grants	Student fees	Other	Total income
Australian National University	..	5,266	51	347	5,664
Sydney	2,727	2,212	978	1,099	7,016
New South Wales	3,174	2,872	562	462	7,070
New England	990	671	92	170	1,923
Melbourne	1,973	1,606	956	1,062	5,597
Monash	1,703	2,250	35	11	3,999
Queensland	2,035	1,174	569	402	4,180
Adelaide	1,694	1,310	227	276	3,507
Western Australia	1,119	836	136	312	2,403
Tasmania	642	501	69	63	1,275
Total	16,057	18,698	3,675	4,204	42,634

(iv) *University Expenditure.* The following table summarizes the expenditure of each university in 1961. The statistics are compiled on a different basis from those published in previous years.

UNIVERSITIES: EXPENDITURE, 1961
(£'000)

University	Teaching and research	Administration and general overhead	Libraries	Buildings, premises, grounds	Sundry auxiliary expenditure	Total expenditure
Australian National University	3,238	283	124	1,239	169	5,053
Sydney	4,402	523	192	2,049	137	7,303
New South Wales	3,123	394	193	3,558	185	7,453
New England	836	199	63	669	276	2,043
Melbourne	3,229	351	202	1,857	475	6,114
Monash	662	123	174	2,948	14	3,921
Queensland	2,324	262	126	1,366	83	4,161
Adelaide	2,099	204	131	786	147	3,367
Western Australia	1,285	145	89	814	230	2,563
Tasmania	610	102	63	498	51	1,324
Total	21,808	2,586	1,357	15,784	1,767	43,302

§ 10. Other Tertiary Institutions

1. *General.*—In addition to the degree-granting universities, there is a variety of institutions offering courses at tertiary level; the courses may lead to a certificate, diploma, or similar qualification. Included among the institutions are technical colleges, which have been described in § 6.

2. *Teachers' Colleges.*—The State Education Departments conduct teachers' colleges to train teachers for government schools. There are eight colleges in New South Wales, twelve in Victoria, three in South Australia, and two each in Queensland, Western Australia and Tasmania, making a total of 29 colleges. Two of these opened for the first time in 1962 (Wollongong Teachers' College in New South Wales and Western Teachers' College in South Australia), and one in 1963 (Hobart Teachers' College in Tasmania).

A variety of teacher training courses is provided in these colleges, including those for primary teachers, secondary teachers, and those specializing in teaching infants, handicapped children, art, music, and handicrafts. A description of these courses is given in § 3.

Teachers' colleges are co-educational, and, in the larger States, have been established in country areas as well as in cities. Students entering them have completed their secondary schooling and are usually about 17 years of age. The principal and staff of the colleges are responsible to the Director of Education in the State concerned.

3. Kindergarten Training Colleges.—The Kindergarten Unions in all States except Tasmania have established teacher training colleges providing three-year courses. The minimum entrance age is usually 17 years, and the Leaving Certificate is required for admission. In addition, in New South Wales, the Sydney Day Nursery and Nursery Schools' Association maintains a training college.

The pre-school teacher training courses in these colleges are all full-time diploma courses and are similar in content and standards. Teachers are trained for work with children between the ages of 2 and 7 years and the training courses include the study of general educational theory, the theory of pre-school education, general cultural subjects, and art and crafts (including music). In addition, training is given in practical pre-school teaching.

4. Agricultural Colleges.—There are seven State agricultural colleges—Hawkesbury and Wagga (New South Wales), Longerenong and Dookie (Victoria), Gatton (Queensland), Roseworthy (South Australia), and Muresk (Western Australia), offering a comprehensive course of two or three years leading to the award of a Diploma in Agriculture, or in a specialized field such as animal husbandry, dairy manufactures, and horticulture. The School of Horticulture, Burnley, Victoria, also offers a three-year diploma course.

Agricultural colleges are government institutions administered by the State Departments of Agriculture in New South Wales, Victoria, South Australia and Western Australia and by the State Department of Education in Queensland. Their purpose is to teach the principles and practices of agriculture and its specialized branches to those intending to take up farming as a career and to those who propose to enter such occupations as agricultural field officer or technical officer in food processing industries.

The minimum entrance standard is the Intermediate Certificate or Junior Public examination in all cases except Western Australia where it is Sub-leaving. As entry is competitive, there is a tendency for students to hold better than the minimum qualifications. All the colleges are fully residential, and the age at which students may enter them varies from 15 to 17 years, depending on the college and the type of course.

In addition to their formal courses of training, agricultural colleges offer short courses of from three days to one month to farmers and teachers in country districts.

5. Schools of Forestry.—Training in Forestry is carried out at the Australian Forestry School, Canberra, and at the Creswick School of Forestry in Victoria. Reference to these institutions is made in Chapter XXIII. Forestry.

6. Conservatoria of Music.—There are conservatoria of music in four States. Those in Victoria and South Australia are attached to the Universities of Melbourne and Adelaide respectively, while the New South Wales State Conservatorium and the Queensland Conservatorium are each controlled by the State Department of Education.

All four conservatoria offer diploma courses for which matriculation status is not required; at Melbourne and Adelaide, degree courses are also available to matriculated students.

7. Service and Administrative Colleges.—Each of the three Armed Services maintains institutions for the training of officers. Descriptions of these can be found in Chapter XXVI. Defence. Two of the institutions, the Royal Military College, Duntroon, Australian Capital Territory, and the Royal Australian Air Force College, Point Cook, Victoria, have arrangements with universities whereby their graduates may enter university courses at an advanced stage.

The Australian School of Pacific Administration, controlled by the Department of Territories, trains students in the various aspects of service and administration in Commonwealth Territories, including teaching.

8. **The Australian Administrative Staff College.**—The Australian Administrative Staff College was opened in 1957, following discussions among prominent leaders in business and government on the need to raise the standards of administration in all walks of Australian life.

The College is a private body, working in close co-operation with governments and other public bodies, the armed services and the Trade Union movement. It was founded and is owned by a large group of the leading Australian companies. It has as its permanent premises a nineteenth century mansion at Mt. Eliza, thirty miles from Melbourne.

The College is based on the model of the Administrative Staff College at Henley-on-Thames, England, but incorporates features drawn from comparable activities in other parts of the world. Its courses are conducted by a Principal, a small permanent directing staff, and by extensive use of visits by practising senior administrators.

The College conducts a ten-week advanced course in administration designed to enable mature administrators to exchange their views and experiences and further their study of the problems which arise in any managerial work. There is also an intermediate course designed to offer a similar opportunity to men and women at a much earlier stage of their careers. The advanced course is offered thrice annually, and the intermediate course twice; both courses are fully residential. Each session of each course comprises forty diversely selected candidates. Certain scholarships are available for the advanced course.

The College has a library, and facilities for research in administrative fields.

§ 11. Commonwealth Activities in Educational Fields

1. **General.**—(i) *Fields of Activity.* Although education is primarily the responsibility of the States, the Commonwealth is engaged in educational activities incidental to its responsibilities in such areas as defence, external relations, immigration and social services. It is also responsible for public education in its own Territories. Activities of the Commonwealth in education are not administered by a single authority but are divided among a number of departments and instrumentalities. Education in Commonwealth Territories is described in Chapter V. The Territories of Australia; various schools and colleges for the defence services are treated in Chapter XXVI. Defence; the Australian Forestry School is mentioned in Chapter XXIII. Forestry; and other activities which may be considered broadly as educational are described in Chapter XIV. Transport and Communication (Broadcasting and Television) and elsewhere in that chapter.

(ii) *The Commonwealth Office of Education.* This was set up under the *Education Act 1945* to provide advice to the Commonwealth Government on educational matters and to serve as a channel for liaison between Commonwealth and State educational authorities. Some of its major commitments are connected with international relations in education, including the association of Australia with the aims and activities of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and the planning and supervision of training for overseas students given awards by the Australian Government to attend Australian universities and similar institutions. The Office also acts as the administering authority for Australian participation in the Scheme of Commonwealth Co-operation in Education. The techniques of teaching English as a second language is another of its concerns, in connexion with both the assimilation of immigrants and tuition for sponsored foreign students.

(iii) *The Commonwealth Scholarships Board.* The Office of Education also provides the secretariat for the Commonwealth Scholarships Board. This Board under its former title of the Universities Commission was also established by the *Education Act 1945*. Prior to 1945, the Commission had functioned under wartime *National Security Regulations*. The Board consists of a chairman, who is the Director of the Office of Education, and three other members. The main responsibilities of the Board at present are advising the Government on the policy and co-ordinating the administration of the Commonwealth Scholarship Scheme and of Commonwealth Post-Graduate Awards. The Board is responsible for arranging and supervising the training of ex-service personnel and war widows at university and university type institutions under the Commonwealth Reconstruction Training Scheme, the Korea and Malaya Training Scheme and the Disabled Members' and Widows' Training Scheme.

2. **Assistance to Students.**—The Commonwealth Government provides financial assistance to students who are undergoing tertiary training through a number of scholarship schemes, all of which are administered by the Commonwealth Scholarships Board. The most extensive of these is the Commonwealth Scholarship Scheme, under which 4,000 scholarships are offered annually to undergraduates at universities and other approved institutions.

The majority of the undergraduate scholarships are Open Entrance awards allocated amongst the States on a population basis, and awarded competitively on the results of examinations accepted for matriculation in each State. Later Year awards are also available to students who have completed one or more years of a course, and Mature Age awards are available to older persons in the 25 to 30 years age group. All successful applicants have their fees paid. In addition, scholarship holders may be paid a living allowance subject to a means test. As from 1st April, 1962, the maximum rates of allowance have been £383 10s. per annum for a scholar living away from home and £247 per annum when he lives at home.

At 30th September, 1962, 13,782 Commonwealth scholars were enrolled in undergraduate courses including 4,230 new award holders. Up to the end of 1962, 19,462 scholars had completed undergraduate courses under the scheme.

In 1959, a scheme of Commonwealth Post-Graduate Awards tenable at Australian universities was introduced under which 100 awards were made available each year. The benefits comprise a living allowance without means test, and payment of university fees. From 1962, the possible number of Post-Graduate Awards was increased to 125. The Commonwealth Government contribution towards the stipend in respect of each award was at the same time increased from £700 to £800 per annum. Awards may be renewed annually up to a maximum period of four years; in 1962, 266 students were holding awards.

During 1962, the Commonwealth Scholarships Board also continued to arrange and supervise the training of ex-service personnel and war widows at university and university-type institutions. Training of this kind under the Commonwealth Reconstruction Training Scheme was completed at the end of 1961, a total of 21,424 students having completed training. At the end of 1962, 52 students were in training under the Korea and Malaya Training Scheme and the Disabled Members' and Widows' Training Scheme, 30 of them following full-time courses and 22 studying part-time.

3. **International Relations.**—The Commonwealth has been actively involved in the considerable extension which has recently taken place in relations and exchanges with other countries in the field of education. A significant encouragement to this growth has been membership in UNESCO, to which Australia has belonged since 1946 when the organization was founded.

Twelve specialist UNESCO committees in Australia are responsible for a wide and varied programme of activities and have helped to make Australia's contribution to many international conferences and seminars highly effective. Some of the Committees' projects include the organization of Australian and regional seminars, information programmes, and the preparation and circulation of travelling exhibitions which deal with subjects forming part of UNESCO's programme. The Australian National Advisory Committee for UNESCO co-ordinates the work of the specialist committees and advises the Commonwealth Government on Australian participation in UNESCO.

With the co-operation of educational institutions, State Education Departments and other bodies, the Commonwealth has accepted increasing commitments in schemes of international assistance and co-operation. The Colombo Plan Technical Co-operation Scheme, the United Nations Expanded Programme of Technical Assistance, and the Special Commonwealth African Assistance Plan are some of the programmes through which the Commonwealth Government is providing training for overseas students in Australia, and is sending Australian experts and equipment to many of the newly developing countries, especially in Asia and Africa. Australia is also actively sharing with other Commonwealth countries in the Scheme of Commonwealth Co-operation in Education which includes the Commonwealth Scholarship and Fellowship Plan. Other training schemes which the Commonwealth Government has established for developing countries are the Korean Training Scheme and the Australian International Awards Scheme. The total number of sponsored foreign students in Australian institutions in 1962 was 1,146, compared with about 400 in 1955.

Support is given to Australian participation in many international governmental and non-governmental organizations. For example, Australian educationists have attended yearly meetings of the International Bureau of Education, and regular contributions are made to the Bureau's international surveys into various aspects of education. Assistance has been given to bodies such as the Australian Teachers' Federation in sending delegates to meetings of the World Confederation of Organizations of the Teaching Profession.

4. Grants for other Educational Purposes.—The Commonwealth gives assistance to various educational schemes and institutions. Grants are made each year by the Commonwealth to the Australian Pre-school Association for the development of kindergarten education, to the Commonwealth National Fitness Council, to the Australian Council for Educational Research, to the Department of Tutorial Classes at the University of Sydney for the publication of the *Current Affairs Bulletin*, and to assist in the provision of training in Occupational Therapy, Physiotherapy and Nursing. The cost of the Departments of Indonesian and Malayan Studies at the University of Melbourne and the University of Sydney is also met by the Commonwealth Government.

5. Migrant Education.—The Commonwealth Government's post-war immigration policy has brought to Australia a large number of immigrants with little or no knowledge of English. To assist their assimilation into the Australian community, a system of migrant education has been developed to teach them English and to give them information about Australia. This service is provided free of charge to immigrants above school leaving age.

Before arriving in Australia, migrants who do not speak English are given some instruction in English by shipboard education officers. Some may have attended classes in Europe organized by the Inter-governmental Committee for European Migration with which the Australian Government co-operates.

In Australia, evening classes are arranged by State Education Departments wherever nine or more migrants in country areas, or twelve or more migrants in city areas, wish to learn English. There is also available through State Education Departments a free correspondence course in English. In addition, English lessons are broadcast regularly by the Australian Broadcasting Commission. The Commonwealth Office of Education provides technical advice on all aspects of migrant education and is responsible for the preparation of teaching materials, while responsibility for the overall supervision of the programme rests with the Department of Immigration, which also meets the costs.

In March, 1962, 17,431 migrants were enrolled in classes and 9,389 were taking correspondence lessons. At the same time, 15,527 were receiving the monthly booklet accompanying the radio lessons. Since the inception of the programme in 1948, close to 500,000 migrants have been enrolled for English tuition.

6. Technical Training by Government Departments.—Although the needs of departments for trained staff are met by apprenticeship schemes and other technical college courses and by the universities, some departments provide training which is not available elsewhere. The most important field for which such training is provided is the training of telephone, telegraph, radio and television technicians by the Postmaster-General's Department. In 1961, this Department was training 4,343 technicians-in-training.

§ 12. Adult Education

1. General.—The term "adult education" as used in Australia refers mainly to non-vocational educational and cultural activities for adults. While the nature of the recognized adult education authorities varies from State to State, their major activities have many common features. Regular courses of lectures are organized on such topics as literature, music, drama, international affairs, languages and crafts. Some authorities also organize discussion groups, festivals and summer schools, and provide special services for groups in remote areas. In 1960, an Australian Association of Adult Education was formed, and its first Annual Conference was held in Adelaide in 1961. The Association handles matters pertaining to adult education at a national level and arranges liaison with similar bodies in other countries.

One of the first bodies active in the field of adult education in Australia was the Workers' Educational Association, which formed associations in all States in 1913. Its aims are to bring the universities into closer relationship with the community in general and to provide for higher education in civic and cultural subjects. These associations have been superseded by Adult Education Boards or Councils set up by the State Governments in Victoria, Queensland and Tasmania and by the University in Western Australia. In the other two States, New South Wales and South Australia, the associations continue to co-operate with the universities in their extension work and are given direct grants by the governments concerned.

The organization of adult education, and some of the activities in each State are described below.

2. *New South Wales.*—State Government grants for adult education are allocated on the advice of the Adult Education Advisory Board. Grants are made to the University of Sydney (Department of Tutorial Classes), the Workers' Educational Association, the University of New England (Department of Adult Education), the Public Library of New South Wales (Adult Education Section), and the Arts Council of Australia (New South Wales Division).

(i) *University of Sydney.* At the University of Sydney, there are two separate authorities concerned with adult education, the Extension Board and the Department of Tutorial Classes.

The Extension Board provides two forms of education—the extension of existing university education to the public in the form of lectures, or to graduates in the form of refresher courses; and the extension of academic education beyond the existing university curriculum, for example by special courses or classes in subjects such as scientific Russian and scientific German.

The Department of Tutorial Classes works in conjunction with the Workers' Educational Association through the Joint Committee for Tutorial Classes appointed by the university senate, and its activities include the provision of tutorial classes in a wide variety of subjects, discussion groups and "kits" to serve the needs of country districts and people who cannot be catered for by tutorial classes. It also publishes the fortnightly "Current Affairs Bulletin".

In 1961, there were 390 tutorial classes and discussion groups with a total enrolment of 6,684 at the University of Sydney.

(ii) *University of New England.* The Department of Adult Education at the University of New England brings university extension activities especially to the people of northern New South Wales and conducts classes in arts and social sciences in towns throughout this region. Short residential courses are held on topics of interest to primary producers in the area. Vacation schools attract participants from many other areas as well.

(iii) *Workers' Educational Association.* In addition to co-operating with the Sydney University Department of Tutorial Classes, the Workers' Educational Association itself provides classes in a wide variety of fields. It publishes *Highway*, a bi-monthly journal of adult education, and maintains a property near Sydney where short residential schools are held throughout the year. In 1961, the Association ran 69 classes, for which there were 3,164 enrolments.

(iv) *Public Library of New South Wales.* The Public Library of New South Wales Adult Education section provides an adult education library service for all classes and groups conducted by the bodies mentioned above.

(v) *New South Wales Education Department.* The New South Wales Education Department has established Evening Colleges consisting of classes held in school buildings and staffed largely by departmental teachers. Such colleges provide a wide range of educational, cultural and leisure activities for adolescents and adults, and at some there are facilities enabling adults to prepare for Intermediate and Leaving Certificate examinations.

(vi) *Arts Council of Australia.* Adult education of a more informal kind is provided by the New South Wales Division of the Arts Council of Australia which maintains a mobile theatre unit and organizes touring companies in ballet, opera and drama to country towns.

3. **Victoria.**—The Council of Adult Education is a government instrumentality established by the *Adult Education Act* 1946. Its aims are to stimulate adult education in Victoria and to encourage voluntary organizations and associations by giving them advice and assistance. Its activities include a variety of classes, usually lasting from 10 to 20 weeks, on topics ranging from social studies, psychology, language and literature, to crafts, music and drama. An annual 10-day summer school is another important activity. The Council publishes every two months a bulletin, *C.A.E. Newsletter* and a quarterly journal, *Adult Education*. Its group service assists, and provides programme material for, discussion groups formed by organizations and individuals throughout the State. In 1960–61, there were 7,600 enrolments for classes and 2,994 individual enrolments in 277 discussion groups.

A recent development of importance is the extension of the council's activities, including classes and discussion groups, to the prisons, as part of a general plan for penal reform in Victoria.

Through its community arts service, the Council organizes tours by musicians and by theatrical and other companies in country towns which otherwise would have no opportunity of seeing such performances.

The Council's income is derived mainly from a government grant, but also from student fees and Community Arts Service performances.

4. **Queensland.**—The Queensland Board of Adult Education was constituted in 1944 and is responsible under the Minister for Education for the provision of adult education facilities throughout the State. Under the executive officer of the Board are six district officers, one based in Brisbane and five in large country towns, who are responsible for organizing activities in country areas.

The cost of the programme is borne by the State Government and admission to all courses is free. Activities include lectures, group meetings on a variety of topics, generally short-term but some of which extend over a full year, and film screenings. Library and film services are provided.

In 1961, there was a total attendance of 130,288 at 1,590 lectures and class meetings.

5. **South Australia.**—Since 1917, the University of Adelaide, through the Joint Committee for Tutorial Classes, has provided in the metropolitan area a series of tutorial classes, lecture classes and study circles on a wide range of subjects of cultural and current interest, in co-operation with the Workers' Educational Association of South Australia.

In 1957, a Department of Adult Education was established in the University and a full-time Director appointed. A wide range of university extension courses and educational conferences, summer schools and seminars, including a number dealing with subjects at post-graduate level, are organized directly by the University. In 1961, enrolments for tutorial and university extension classes totalled 2,613, for special schools and seminars 1,451, and for discussion groups 334.

The Workers' Educational Association of South Australia, in addition, carries on an independent educational programme of classes, schools, and exhibitions and film festivals.

The State Education Department also arranges an extensive programme of educational activities for adults.

6. **Western Australia.**—Adult education in Western Australia is organized by the Adult Education Board established in 1928 under the terms of the statutes of the University of Western Australia. The Board has a considerable degree of autonomy. Its executive officer is the Director of Adult Education.

The Board conducts, in the metropolitan areas, classes, refresher courses and short schools, conferences, seminars and public lectures, and maintains a library. Classes were held in 1960 with a total enrolment of 1,785. The Board's country work operates mainly through a box library scheme for discussion groups, of which there were 72 in 1960. Lecture tours and week-end schools are held, and local adult education is encouraged through local committees. Metropolitan work and country work are drawn together in an annual summer school. The Board also operates a community arts service and arranges screenings of foreign films. Regional drama festivals and music festivals are arranged, culminating in the annual Festival of Perth, inaugurated and administered by the Board.

7. **Tasmania.**—Some form of adult education has existed since the formation in 1913 of a Workers' Educational Association, which worked in conjunction with the University of Tasmania for a number of years, receiving a grant through the university, which had a Director of Tutorial Classes. Later, the grant was paid direct to the Association by the Government and the university's tutorial department ceased to exist. The Adult Education Board, established under the *Adult Education Act* of 1948, organizes classes of ten weeks' duration on a wide range of subjects. In 1961, 485 courses were held with a total enrolment of 5,199. The Board sponsors special lectures, film screenings and art exhibitions, recitals of music, and dramatic performances in both city and country areas. Its income is derived from a State Government grant and from students' fees.

The executive officer of the Board, located at Hobart, is the Director of Adult Education. Activities are organized on a regional basis by organizers based in Hobart, Launceston and three large country centres.

§ 13. Oversea Students in Australian Educational Institutions

The development of closer ties in education between Australia and other countries, and the demand for education in many countries in Asia, Africa and the Pacific has brought about a remarkable growth in the number of overseas students who come to Australia to further their education. Part of the growth and much of the awareness of the facilities available may be attributed directly to the schemes mentioned in § 11, para. 3. Since 1955, overseas students in Australia have increased from 3,500 to about 12,000 in 1962. Some attend institutions of higher education such as universities and technical colleges, and Australian qualifications are receiving increasing acceptance and recognition as students return home on the completion of their courses. Between 1955 and 1962, the numbers in institutions of higher education have risen from about 1,500 to 5,600, most of whom came from Asian countries. Australian institutions have shown a readiness to accept overseas students, and in many cases special provisions have been made to suit their needs. Nevertheless, population growth and the demand for education, especially for higher education, within Australia have forced many institutions to restrict the admission of overseas students in common with Australian students.

§ 14. Organizations Associated with Education

1. **Australian Council for Educational Research.**—The Australian Council for Educational Research, a non-governmental body, is engaged on educational research in a wide variety of fields, ranging from tertiary to pre-school education. It conducts surveys and inquiries, makes grants to approved educational investigators, serves as a centre for disseminating educational information, provides training for research workers, and standardizes and distributes educational and psychological tests for use in Australia. Although this council is an autonomous body, the Commonwealth and State governments contribute substantial financial support.

2. **The New Education Fellowship.**—The New Education Fellowship is a world organization of parents, educators, and other citizens interested in the development of new educational practices. It was founded in London in 1915 and spread to Australia at the time of a regional conference held here in 1937. There are now sections in each State. Its Australia-wide journal *New Horizons in Education* is published quarterly. A major conference of the New Education Fellowship was held in Australia in 1962, during which prominent educationists from Australia and overseas met in all States.

3. **Australian College of Education.**—The Australian College of Education was formed in 1959. Its aim is to bring together leading teachers and administrators in every field of education, to raise the standard of the profession of education in Australia, to establish and proclaim fundamental educational values, and to recognize outstanding contributions to educational practice. Chapters of the College have been set up in all States, and several of the addresses and papers delivered at meetings of the College have been issued in published form.

4. Parent and Citizen Organizations.—In Australia, where all government schools are administered by central departments, there is limited opportunity for local administration of education. Public interest is expressed through parents' committees or organizations of parents and other citizens interested in supporting their local school. The Education Acts of all States provide for the formation of groups of this type, whose aims are to promote the interest of the school by bringing parents, pupils and teaching staff together, to help provide supplementary teaching aids and recreation materials, to foster the regular attendance of children at school, and to help find accommodation for teachers.

In several States, the general maintenance of school buildings, equipment and grounds is a statutory responsibility of the parent groups, costs being covered by government grants. Lunch canteen services at local schools are maintained by groups in some States.

A notable achievement of the parent groups has been the establishment of school children's insurance schemes, operated through State government insurance offices or private insurance companies. These schemes cover accidents to children which occur between the time of leaving home for school and returning home by the usual direct route.

State-wide councils or federations of parents' groups are associated in a federal body, the Australian Council of School Organizations.

CULTURAL ACTIVITIES

§ 1. Libraries

1. General.—The Munn-Pitt report of 1935 greatly stimulated interest in libraries and librarianship throughout Australia. This is seen in the rapid development of libraries, the passing of legislation in all States to increase library services, and the establishment in 1937 of the Australian Institute of Librarians to improve the standard of librarianship. This body was reconstituted in 1949 as the Library Association of Australia, and its functions now include the promotion and improvement of libraries and library services. The Association conducts annual examinations for which students are prepared by courses of instruction in all States. Formal library schools exist in the Commonwealth National Library, Canberra, and the Public Libraries at Sydney and Melbourne. In 1960, the first library school to be attached to an Australian University was opened. This is in the University of New South Wales.

2. Commonwealth.—(i) *National Library of Australia.* This Library grew directly from the Library of the Commonwealth Parliament established in Melbourne in 1901, the Committee of which soon afterwards announced its intention to develop a library patterned on the Library of Congress at Washington, U.S.A., capable of serving purposes beyond those essential to the Parliament itself, appropriate to a national library and on a national scale. This policy was steadily pursued, so that, in addition to its primary function of serving Parliament, it gradually became a central source of information for the Government and its departments and other agencies, and assumed increasing reference and bibliographical responsibilities in relation to scholarship and research in Australia and abroad. It was also influenced by the basic elements of the national library concept of the older countries of Europe: namely, that a national library is the proper place to collect the national literature systematically and to make it known and available for use, and that it is a place to which scholars may turn for what is most significant in the literature of other countries. For these growing extra-Parliamentary activities, the Parliamentary Library Committee, in 1923, adopted the title of Commonwealth National Library.

A committee appointed to examine the future control and functions of the Commonwealth National Library recommended, in 1957, its establishment as the National Library of Australia, separate from the Parliamentary Library, with wide functions and controlled by a board subject to a Minister; the transfer, as a separate agency to an appropriate department, of its Archives Division, which constituted the Commonwealth's agency for the custody and organization of departmental records of permanent value which need no

longer be held within departmental offices; and that the Parliamentary Library be a separate library under separate Parliamentary control. Continuing co-operation, where possible, between the two libraries was also proposed.

Effect was given to these recommendations by the *National Library Act 1960*, which created the National Library of Australia as a body corporate under the control of a Council of nine members, of whom one is a Senator elected by the Senate, one a member of the House of Representatives elected by that House, and seven appointed by the Governor-General. Its functions are:—to maintain and develop a national collection of library material, including a comprehensive collection relating to Australia and the Australian people; to make the national collection available to such persons and institutions in such manner and subject to such conditions as the Council determines with a view to its most advantageous use in the national interest; to make available such other services in relation to library matters and material, including bibliographical services, as the Council thinks fit, and in particular for the purposes of the library of the Parliament, the Departments and authorities of the Commonwealth, and the Territories of the Commonwealth; and to co-operate in library matters (including the advancement of library science) with authorities or persons, whether in Australia or elsewhere.

The National Library comprehensively collects and preserves Australian books, periodicals, newspapers, government publications, pictures, prints, manuscripts, maps, moving picture films and sound recordings. In this, it has been assisted by the deposit provisions of the *Copyright Act 1912-1950*, and has also been enriched by the acquisition of such notable collections as the Petherick collection of 16,500 items in 1911, the Cook manuscripts in 1923, the Cumpston collection on Public Health in Australia in 1936, the Mathews Ornithological collection in 1940, the Nan Kivell collection of 16,000 items of Australian and Pacific interest including original paintings, prints, manuscripts and printed material in 1959, and the Ferguson Sociological collection which is still under transfer. A feature of the Library's Australian work is the copying on microfilm, in association with the Public Library of New South Wales, of all important unique material overseas relating to Australia, including over three million pages in the Public Record Office in London.

The Library maintains a permanent exhibition of selected paintings, prints and other historical material from its collections. This exhibition is displayed in Parliament House, Canberra.

The Library publicizes Australian publications, both at home and abroad, through select lists which include *Australian Books* (annual), and *Australian Public Affairs Information Services* (a monthly subject index with an annual cumulation), and by collections of Australian books maintained by it at all posts at which Australia is officially represented abroad. In London and New York, the National Library maintains and staffs Australian Reference Libraries supervised by its own Liaison Officers in those centres.

In the discharge of its wider bibliographical responsibilities, the Library publishes the *Australian National Bibliography* (monthly with an annual cumulation), which lists books, pamphlets, maps, prints, sheet music, government publications, the first issue of each new periodical or newspaper, and moving picture films produced in or relating to Australia. Commonwealth and State official documents, both monographic and serial, are listed in *Australian Government Publications* (annual). The Library is also building up a union catalogue of serials in the social sciences and humanities, and of monographs in Australian libraries.

In 1956, the Australian Bibliographical Centre was established within the National Library to serve as the secretariat of the Australian Advisory Council on Bibliographical Services. The Council, made up of representatives of the National Library, State libraries and library boards, the Commonwealth Scientific and Industrial Research Organization, each of the universities, and the Library Association of Australia, plans the further development and co-ordination of bibliographical services and co-operates with UNESCO and the International Advisory Committee of Bibliography. The Centre organizes bibliographical projects recommended by the Council, and operates as a centre for bibliographical information in Australia and overseas. It has published a *Union List of Newspapers in Australian Libraries*; Part 1: *Newspapers published outside Australia* (1959); and Part 2: *Newspapers published in Australia* (1960).

The Library acts as a central library of documentary and educational films, its film collection containing over 6,000 titles, together with Australian historical films and a great number of film strips. It published *Australian Films: a Catalogue of Scientific, Educational and Cultural Films*, 1940-58 in 1959 and annual supplements in succeeding years. A revised edition of the *Catalogue of 16-mm. Films*, which lists all films available for loan, was also published in 1960 and has been supplemented by annual accession lists. Special efforts are being made to discover and preserve samples of early Australian film production.

Through its Extension Division, the Library conducts the Canberra Public Library Service for residents of the Australian Capital Territory, to whom 692,000 books were loaned during 1961-62. It also assists in the provision of similar services in the Northern Territory, the Territory of Papua and New Guinea, and Norfolk Island.

The National Library's collections contain approximately 729,000 volumes, 32,000 pictures, prints, drawings and other graphic materials, one million feet of microfilm, 65,000 maps, and nine million feet of moving picture films. Special features of the book collection are its strong holdings of Australiana, materials relating to the Pacific area and east and south-east Asia, the publication of foreign governments and international organizations, and works in the social sciences, particularly in political theory and economics.

(ii) *Patent Office Library.* The Library of the Commonwealth Patent Office, Canberra, contains approximately 9,000 books and a wide variety of periodicals and other literature relating to pure and applied science, industrial technology and the industrial property (patent, trade mark, design and copyright) laws and practice of most countries. Patent specifications of inventions are received from the principal countries of the world; present holdings are more than 7,000,000. Indexes include a microfilm of a classified index to 3,000,000 U.S.A. patents and translations of abstracts of U.S.S.R. patents.

(iii) *The Commonwealth Archives Office.* In 1943, following a report by an Inter-departmental Committee, the Prime Minister directed the formation of a War Archives Committee to arrange for the preservation of war records. This Committee recognized that war archives could not be separated from peace-time archives and in 1946 the name was changed to the Commonwealth Archives Committee. In 1952, the National Library became the sole Archival Authority for the Commonwealth and the Chief Archives Officer became the Executive Officer for the Committee. In March, 1961, in accordance with a recommendation of the National Library Inquiry Committee, the Archives Division of the National Library was re-constituted as the Commonwealth Archives Office within the Prime Minister's Department.

The Archives Office is primarily a central agency for the control of those records created by the Commonwealth Government which are no longer required for frequent use in the day-to-day business of government. This function is carried out through the following three basic activities.

Control of Destruction. No Commonwealth records may be destroyed without the concurrence of the Chief Archivist whose responsibility it is to safeguard reference interests other than those of the department which compiled the records. This concurrence is given as far as practicable through continuing disposal authorities which enable Commonwealth departments to destroy certain routine classes of records automatically, but records not covered by such continuing authorities are checked before destruction is authorized.

Provision of Accommodation. Any records which are no longer in active use but which are considered, either by the originating department or by the Archives Office, to warrant preservation, either permanently or for a further period, may be transferred to an archives repository. While in archival custody, they are arranged and described so that the best use can be made of them.

Provision of Information. Records in the custody of the Archives Office are available for use by the depositing and other departments of the Commonwealth Public Service. The Office also provides departments with a service for the provision of information from the records in its custody.

As a complementary function, the Office also provides a service to persons engaged in academic and other forms of research. The headquarters of the Commonwealth Archives Office is in Canberra, for the time being in the National Library Annexe. There are also branches in Sydney, Melbourne, Brisbane, Adelaide and Perth.

(iv) *Commonwealth Scientific and Industrial Research Organization.* The library holdings of the Organization cover the pure and applied sciences. In addition to the Head Office Library in East Melbourne, each of the Divisions and Sections has a specialized collection covering such subjects as food preservation, forest products, chemistry, physics, animal health and fisheries. The collections are particularly strong in the publications of overseas scientific and technical research institutions, with many of which extensive exchange arrangements have been made.

The Head Office library maintains a union catalogue of the holdings of all C.S.I.R.O. libraries, and is responsible for the following publications:—*Scientific Serials in Australian Libraries*; *Australian Science Index*, an index of articles published in Australian scientific and technical periodicals; and *C.S.I.R.O. Abstracts*, which include abstracts of papers published by C.S.I.R.O. officers, C.S.I.R.O. translations, translations available from other Australian organizations and additions to the British Commonwealth Index of Scientific Translations.

The larger libraries in the Organization have photocopying facilities which, while normally for internal use, will provide a service for the public when a publication is not held elsewhere in Australia.

(v) *The Australian War Memorial Library.* In the War Memorial library are housed the documentary and pictorial records of Australia's fighting services in the 1914–18 and 1939–45 Wars, together with collections covering the war in Korea, 1950–53, and earlier wars in which Australian troops participated—Sudan, 1885; South Africa, 1899–1902; and the Boxer Rebellion in China, 1900–01. Books, periodicals and other records covering contemporary trends and events in the fields of military history and military science are constantly being added.

The printed records section contains approximately 65,000 volumes, a large collection of military maps, newscuttings and newspapers, sound recordings of war leaders, personalities and events, war posters and postage stamps. Many personal collections by distinguished soldiers and historical documents relating to the wars have also been placed in the Memorial's custody for preservation.

Written records comprise correspondence files of headquarters and units of both World Wars, and the original war diaries compiled from day to day by each unit during its service.

The collection of official war photographs covering the 1914–18, 1939–45, and Korean Wars numbers over 250,000, and a collection of official motion picture film depicts Australia at war.

Facilities for public research are not yet fully developed, but requests for information are met where practicable.

(vi) *Other Commonwealth Government Libraries.* Most Commonwealth authorities have specialized collections in their own fields, and in addition draw largely on the National Library.

(vii) *Northern Territory Library Service.* The Northern Territory Library Service maintains four centres in the Territory. At 30th June, 1962, stocks totalled 46,057 volumes which were held at the following centres:—Darwin, 24,480; Alice Springs, 14,578; Tennant Creek, 3,908; Katherine, 3,091.

3. *States (Other than University Libraries, for which see p. 767).—(i) State Public Libraries.* In each of the capital cities, there is a well-equipped public library, the libraries in Melbourne and Sydney especially comparing very favourably with similar institutions elsewhere in the world. The following statement gives the number of volumes in the public library of each capital city at 30th June, 1961. Later figures for some of the libraries are given in the text relating to the respective libraries.

STATE PUBLIC LIBRARIES, 30th JUNE, 1961

City	Number of volumes in—			Total
	Reference branch	Ordinary lending branch	Country lending branch	
Sydney	(a) 601,053	..	(b) 110,000	711,053
Melbourne	678,555	120,046	46,319	844,920
Brisbane	144,442	..	68,971	213,413
Adelaide	199,095	(c) 75,540	125,471	400,106
Perth(d)	191,039	(e) 222,201	..	413,240
Hobart	81,814	(f) 148,371	139,401	369,586

(a) Includes 172,820 volumes in the Mitchell Library and 16,083 volumes in the Dixon Library.
 (b) Includes 1,943 volumes in the model school library.
 (c) Includes 26,930 volumes in the children's branch and 10,464 volumes in the youth lending branch.
 (d) Figures for Library Board of Western Australia; separate details for Perth are not available.
 (e) Public libraries and circulation stock.
 (f) Includes 120,492 volumes in the children's branch.

(ii) *New South Wales.* The Free Library movement in New South Wales, founded for the establishment of a system of public libraries on the basis suggested in the Munn-Pitt Report of 1935, helped to pave the way for the *Library Act* 1939, which was fully proclaimed as from 1st January, 1944. Of the 175 councils which have adopted the *Library Act*, 159 have put their adoption into effect. During 1961-62, they spent on their libraries £1,415,917, including £407,339 received in subsidy. There are 205 libraries, of which 58 are in the metropolitan area and 147 in the country. There are also 16 bookmobiles, of which two are in Sydney, seven in the suburbs of Sydney and seven in country municipalities and shires. These libraries contain 2,402,940 volumes.

New South Wales departmental libraries are staffed by officers attached for duty from the State Library, which also provides a central cataloguing service for municipal and shire libraries constituted under the 1939-1959 Act. The State Library maintains an adult education section servicing adult education activities for the universities of Sydney and New England and the Workers' Educational Association.

The Country Circulation Department forwards books on loan to State schools, to municipal and shire libraries and to individual students. During 1961-62, 100,376 books were lent to small State schools, and 2,416 to country libraries, while 48,156 reference works were lent to individual country students and to libraries to satisfy special requests.

The State Library, known as the Public Library of New South Wales, includes a general reference department of 426,080 volumes, together with the Shakespeare Tercentenary Memorial Library, and the Mitchell and Dixon Libraries and Galleries which are mainly devoted to Australian and Pacific material. The Mitchell Library, of more than 60,000 volumes and pamphlets and 300 paintings, was bequeathed to the trustees of the Public Library in 1907 by Mr. D. S. Mitchell, together with an endowment of £70,000. There are now 179,776 volumes in the library, in addition to valuable manuscripts, maps and other material. In 1929, Sir William Dixon gave a collection of historical pictures then valued at £25,000. These were subsequently added to, and at his death in 1952 Sir William bequeathed the whole of his collection of books, manuscripts, pictures and other material, together with an endowment of more than £113,000, mainly for the printing or reprinting of historical documents relating to Australia and the Pacific.

The total number of volumes in the State Library now exceeds 730,000, apart from manuscripts, historical pictures and other material.

The maintenance and control of the ordinary lending branch of the Public Library were transferred in 1908 to the Sydney Municipal Council to become the City of Sydney Public Library.

The State Library, which had previously been the repository for State archives, transferred this responsibility to an Archives Authority in June, 1961. The Authority consists of nine members, one of whom the Trustees of the Public Library have a right to nominate.

Other important libraries in New South Wales are:—the Sydney Public Library, 211,782 volumes; Teachers' Colleges, 210,181; Railway Institute, 165,141; Technical Education Branch, 93,392; Government Transport Institute, 36,770; Australian Museum, 33,336; New South Wales Public School Teachers' Federation Library, 21,000; Workers' Educational Association, 13,579; and the Library at the National Herbarium, 10,120 volumes. At 30th June, 1962, the Parliamentary Library contained 142,187 volumes.

(iii) *Victoria*. Until the establishment of the Free Library Service Board in 1947, the only public library facilities available in Victoria (apart from those of the Public Library and one or two Metropolitan Municipal Libraries) were those offered by about 200 Mechanics' Institute Libraries situated in country areas all over the State. The Board's policy has been to replace these services with modern public libraries controlled by local Municipal Councils and subsidized by the Board. Since the Board's inception, 99 municipalities have established libraries. Of these, 23 are in the city and 76 in the country. An amount of £349,000 was paid to the Councils in library subsidy for the year 1961-62 and £698,000 was expended in municipal library services for the same year. More than 1,500,000 books are available to the communities in which libraries are established.

A feature of the services provided in the country is the number of co-operative or regional library groups now being developed. These services, of which there are fifteen, comprising a total of 59 councils, consist of groups of councils which pool their financial resources, book-stocks and trained staff, in order to provide more comprehensive, efficient library facilities. Approximately 140 Mechanics' Institute Libraries are still in existence in country areas. In 1961-62, 45 of them shared a grant of £2,000.

The Public Library of Victoria was established in 1856. It is controlled by a board of seven trustees and receives its finance from the State Government. The reference collections now total about 680,000 volumes, and the lending library has another 170,000 volumes. In addition, the library files 2,500 current periodicals and 500 newspapers, in all about 35,000 volumes. Special collections include the J. K. Moir Collection of Australiana, the M. V. Anderson Chess Collection and the Green and Brodie Shipping Collections. The Victorian Historical Collection contains nearly 20,000 pictures, drawings, prints and objects of historical interest. The Archives Division is responsible for the preservation of government records.

(iv) *Queensland*. The Library Board of Queensland was established in 1945 under the provisions of the *Libraries Act* 1943. Its duty is to attain the fullest co-operation and improvement of the library facilities of the State, with the object of placing such facilities on a sound basis for the benefit and educational improvement of the citizens generally. The Board consists of eight members including the State Librarian as *ex officio* member and secretary. A general function of the Board is to ensure that the fullest co-operation exists with the Department of Education, the University of Queensland, local bodies, and other bodies having for their object the encouragement of education, literature and the arts and sciences. A specific function of the board is the control and management of the Public Library of Queensland. Its policy is to build up the main collection of the Library as the State's reference centre.

The Country Extension Service, which is administered as a department of the Public Library, lends books of non-fiction free to adults and children residing outside the metropolitan area and to municipal libraries in areas of low population.

The Oxley Memorial Library, established in 1923, has been administered as a department of the Public Library since 1946, and the collection has been kept separate. It contains books, manuscripts, pamphlets and other graphic material relating to the history and literature of Australia, and of Queensland in particular, and provides facilities for research students in Queensland literature and history.

In 1958, the section of the *Libraries Act* dealing with the preservation of public records was proclaimed, and in 1959 an Archives Section of the Public Library was instituted and an archivist appointed.

Since 1948, a course in librarianship has been held annually at the Public Library for the purpose of preparing trainees for the examinations of the Library Association of Australia, up to 1961 for its Preliminary Examination, from 1962 for subjects 1-3 of its re-organized

Registration Examination. In 1959, a course covering some compulsory subjects of the Association's Registration Examination was inaugurated at the Central Technical College, Brisbane.

The holdings of the Public Library of Queensland and its extension services in 1961-62 were:—main reference collection, 131,958 volumes and 7,230 maps and pamphlets; country extension service, 73,208 volumes; Oxley Memorial Library, 21,097 volumes and 10,123 maps, pamphlets and miscellaneous items.

Local authorities are empowered by the *Libraries Act* to establish and conduct library services as a function of local government. The Board encourages local authorities to use these powers. In 1961-62, 66 local authorities were conducting 102 library services. The Brisbane City Council has established 12 of these libraries. There were 80 libraries in Queensland free to adults.

To help overcome the problems of large area and sparse population, various local authorities provide library services on a regional basis. By 30th June, 1962, four regional library services had been established:—the South Western (seven shires), the Central Western (seven shires), the North Western (seven shires), and the Central Highlands (five shires), with head-quarters at Charleville, Barcaldine, Mt. Isa and Emerald respectively. Other regional services are being planned.

During 1961-62, the Board received a grant of £217,414 from consolidated revenue to finance the activities of the Public Library and to pay subsidies to local bodies of fifty per cent. on the purchase of books and the acquisition or improvement of library buildings and equipment. Subsidies were paid to four regional library service boards, 43 local authorities, 37 schools of arts and four other bodies.

The library of the Parliament of Queensland was established in 1860. At 30th June, 1962, the library held 90,677 books and pamphlets, consisting of official publications and books devoted largely to history, the social sciences, biography and literature.

The *Libraries Act Amendment Act* 1949 provides for the Public Library and the Parliamentary Library each to receive a copy of all books, pamphlets, maps and other printed material published in Queensland.

(v) *South Australia.* In the reference department of the Public Library of South Australia, there are about 207,000 volumes, most of which may be borrowed. Over 3,000 periodicals are filed, and the collection of newspapers includes every newspaper printed in South Australia. There are 40,000 volumes in the lending department available to persons living in the metropolitan area, and the country lending service has 153,000 volumes, of which more than half are suitable for children.

The Research Service specializes in scientific and technical inquiries, and supplements the resources of the Public Library by borrowing from other libraries and by obtaining microfilm copies of material not available locally. It has an extensive collection of trade catalogues.

The library of the Parliament of South Australia held approximately 65,000 volumes at 31st December, 1961.

There are eleven local public libraries in South Australia provided by eight local government authorities. The libraries are subsidized on a £1 for £1 basis by the State Government. The Library Board of South Australia, through the Public Library of South Australia, provides various central services. Book-stocks are pooled in the Public Library of South Australia and are interchanged between the libraries.

At the end of June, 1962, these local public libraries contained 59,000 books. There were 38,000 registered borrowers. In the year 1961-62, 584,000 books were lent.

(vi) *Western Australia.* In 1955, the Library Board of Western Australia was made responsible for all public library services throughout the State to which the State Government contributes funds.

The Board has the following major functions:—to encourage local authorities throughout the State to establish public libraries, and to provide as a State subsidy all books and bibliographical services necessary for such libraries when established; to administer the State Library; to advise the Government on all matters relating to libraries; and to provide for the training of librarians.

Local public libraries are subsidized on a £1 for £1 basis, the local authority providing accommodation and staffing, and the Board all books and related services. The Board provides at least one volume per head of the population. All non-fiction books may be made available at any public library throughout the State on request to the Board. All cataloguing is done by the Board. The first library under this scheme was opened in August, 1954. By 30th June, 1962, 60 libraries had been established.

The State Library, established in 1887, is the reference division of the Library Service of Western Australia. In addition to providing the normal facilities of a reference library for the metropolitan area, it extends its service throughout the State through local public libraries. It is divided into four subject departments as follows:—J. S. Battye Library of West Australian History; Library of Business, Science and Technology; Library of Social Sciences, Philosophy and Religion; Library of Literature and the Arts.

The State bibliographical centre is housed at the State Library and there is also a commercial information centre. The State archives are maintained by the State Library and managed by the staff of the Battye Library. The State Library is fully equipped with microfilm and photocopy apparatus.

The book-stock of the Board at 30th June, 1962, was approximately:—lending library services (including books in public libraries), 270,617 volumes; State Library, 197,144 bound volumes.

The University of Western Australia, through its Adult Education Board, manages the Adult Education Library of some 18,000 volumes of general reading and fiction. Books are sent to country readers each month.

There are some 100 special libraries in government departments and industrial firms. Union catalogues of periodicals and books received in the libraries in Western Australia are maintained by the Library Board of Western Australia in the bibliographical centre of the State Library.

(vii) *Tasmania*. The Tasmanian Library Board, constituted in 1944, is responsible for administering the State library headquarters in Hobart, for the extension of library services throughout the State, for the control of State aid to libraries and for the State Archives. The first stage of a new State Library headquarters building in Hobart was completed in 1962. The State Government provided £141,038 towards the cost of library services in 1961–62.

Municipal libraries are assisted with the purchase of books and participate in a book exchange scheme. In 1962, 45 municipalities took part in the service, leaving only four outside the scheme. In Hobart, the Board operates the Hobart Lending Library on behalf of the City Council. Two bookmobiles operate in Hobart and country districts, catering for areas without library premises, for children, old people's homes, etc.

The Board also operates a Reference Library in Hobart from which reference services are available to people throughout the State. There is also a documentary film library and a recorded music library. The Board arranges screenings of documentary films, recitals of recorded music, lectures, library weeks in country centres, puppetry demonstrations, etc.

The Parliamentary Library works in close collaboration with the State Library, which provides a reference officer to serve members during sessions.

4. University Libraries.—(i) *General*. These libraries provide material not only for the education of graduates and undergraduates, but also for research workers and practical investigators all over the continent. Much of the material they contain is not available elsewhere, for although in most cases smaller, they are in many directions more highly specialized than the public libraries. They lend to one another and to State and private institutions as well as to individual investigators. Each of them is governed by a librarian, who is responsible as a rule to an executive sub-committee and a committee which is practically co-extensive with the professorial staff.

The following table shows the volumes held, accessions during the year, and expenditure of the Australian university libraries.

UNIVERSITY LIBRARIES, 1961

University				Volumes	Accessions during year	Expenditure
						£
Australian National University				251,719	21,766	124,119
Sydney				692,629	76,043	191,542
New South Wales				176,152	35,177	192,501
New England				115,403	12,650	63,158
Melbourne				300,366	19,032	202,204
Monash				28,000	18,000	174,000
Queensland(a)				236,993	24,954	126,129
Adelaide(a)				265,583	15,161	130,523
Western Australia(a)				193,484	14,510	88,643
Tasmania				134,000	8,203	62,617
Total				2,394,329	245,496	1,355,436

(a) Excludes pamphlets.

(ii) *Australian National University.* This library consists of two main collections; the former Australian National University Library, founded in 1948, which serves primarily the Institute of Advanced Studies, and the former Canberra University College library, founded in 1938, which serves primarily the School of General Studies. At the end of 1962, the stock comprised about 288,000 volumes including some 55,000 volumes in oriental languages. The collection serving the Institute of Advanced Studies specializes in the fields of the physical and medical sciences, excluding clinical works. In the social sciences, it aims to provide a good working collection while giving consideration to the holdings of the Commonwealth National Library. It possesses significant collections in anthropology, linguistics, mathematics and mathematical statistics. The collection serving the School of General Studies has been built up to meet the needs primarily of undergraduates studying arts, economics, law, oriental studies and science.

(iii) *University of Sydney.* The library consists of the central collection which is known as the Fisher Library, the Law Library, the Medical Branch Library, the Burkitt Library for pre-clinical medicine, and some fifty-two departmental libraries. The University Library, together with departmental libraries, held 776,548 volumes in December, 1962. Associated libraries in the University grounds bring the grand total to 1,028,483 volumes.

The first books were acquired in 1851, and shortly afterwards the library of Sydney College was added. The collection of Nichol D. Stenhouse was acquired in 1878 as the gift of Thomas Walker. In 1885, Thomas Fisher bequeathed the sum of £30,000, the income from which is used as a book fund. The Fisher Fund was matched in 1961 by establishment of the W. H. and Elizabeth M. Deane Library Fund. Perhaps the finest collection in extent and importance which has been given to the University is that of Sir Charles Nicholson. There have been numerous other benefactions, among which may be mentioned the library of Sir Francis Anderson, the W. H. Deane collection of books and manuscripts and the Dalley-Scarlett music library. In 1961, the University acquired the English literature collection of the late Hugh Macdonald. Sydney University Library has an extensive collection of mediaeval manuscripts and early printed books.

(iv) *University of New South Wales.* The libraries of this University consist of the Central Library at Kensington, and a Bio-medical Library at Kensington. There are also libraries at Newcastle and Wollongong University Colleges. The Broadway campus is serviced by the Sydney Technical College Library, where about 37,000 books from the University's library are placed. Service to university divisions at Broken Hill and Granville is also provided by the Department of Technical Education. In December, 1962, the university had approximately 232,600 volumes in its libraries and in Department of Technical Education libraries.

(v) *University of New England.* The Library was founded in 1938, when the New England University College was established. Sir William Dixon was its first benefactor. The library is now housed in a three-storied building, air-conditioned and containing all facilities. The library has approximately 120,000 volumes and receives 3,000 current periodical titles annually. The library is able to accommodate 200 readers and 278,000 volumes. A fourth floor is to be built later to house a further 120,000 volumes. The building also houses a bindery, photographic and archives division. The library has its own training officer and conducts formal courses in librarianship.

(vi) *University of Melbourne.* Early in 1854, the first allocation for books was made, but the library was housed in temporary quarters until 1959. The W. L. Baillieu Trust made available the first instalments of a £100,000 gift for building purposes, which have been followed by subsequent gifts and substantial grants from the Commonwealth and State governments, and a new building costing £700,000 was occupied at the beginning of 1959, the first in the University to be designed specifically for library purposes. It provides space for 1,300 readers and 300,000 books. During the academic year, admissions of readers to the building average 8,000 a day. Most of the books are accessible on open shelves, and though the library is intended primarily for reference purposes, borrowing, except of textbooks and certain valuable volumes, is made as easy as possible. The resources of the library are also used extensively on inter-library loan by industries and other organizations throughout Australia. The University Library, including 13 branch libraries in various departments, is administered from the centrally situated Baillieu Library, and at the end of 1962 it contained approximately 340,000 books and pamphlets. The large medical branch library is specially rich in periodicals.

(vii) *Monash University.* The library started to acquire books in 1960 and now has approximately 90,000 volumes and subscribes to 2,000 journals. It has been decided that the library organization will develop into four large units—the main library, a bio-medical library, a law library, and a library for physical sciences and engineering. The last named was occupied in January, 1962, but is functioning as the main library until that building is ready for occupation towards the end of 1963. The physical science and engineering library has been named the Hargrave Library after Lawrence Hargrave (1880–1915) and was officially opened on 15th December, 1962.

(viii) *University of Queensland.* The library was founded in 1911. The main library is in its own building in the University at St. Lucia, and there are a considerable number of departmental libraries. All books are open to access and most are available for borrowing. At 31st December, 1962, the library contained more than 289,000 volumes. Among the more important possessions of the library are its large holdings of periodicals, its geology collection, and its material relating to the history, development and culture of the countries surrounding the Pacific Ocean.

(ix) *Adelaide University.* This library bears the title of its original benefactor, Robert Barr Smith, who, with members of his family in and after 1892, gave the university over £50,000 for the library. Although readers have access to all parts of the library, the book collection is in two divisions, a collection of some 25,000 of the most frequently used books being kept in the main reading room, and the remainder, consisting of older or more specialized books, being shelved on the four levels of the extensions. Bound periodicals are shelved in steel stacks under the main reading room. Borrowing facilities are available to all matriculated students, to country students, and to graduates. There are branch libraries for medicine, law and music. The Australian Medical Association (S.A. Branch) and the Australian Physiotherapy Association (S.A. Branch) make annual contributions towards the maintenance of the medical library in return for borrowing privileges for their members. The Waite Agricultural Research Institute has a separately administered library of publications in agriculture.

(x) *University of Western Australia.* The first permanent library staff was appointed in 1927. Provision for a permanent library was not possible when the university moved to its present site, and space and facilities have consequently been inadequate. The first stage of the new library building, now under construction, is expected to be completed by October, 1963. The University Library developed very slowly in the early years, but recently has been adding about 12,000 volumes a year to its stock and making good earlier deficiencies. In addition to the Central Library, there are a number of departmental libraries of which the more important are engineering, agriculture, pre-clinical and law. There is also a medical library, in accommodation provided by the Royal Perth Hospital, for the use of the medical school.

(xi) *University of Tasmania*. Although this library was founded in 1893, a full-time librarian was appointed for the first time at the end of 1945. Since 1954, a Hobart Union List of Serials has been housed in and kept up to date by the University Library, thus providing a major reference tool for all bibliographic inquiries in the State. At the end of 1962, the library contained approximately 143,000 volumes. It receives 2,500 periodicals currently. The University Library also collects private and business archives and it has some important classical manuscripts as well as a collection of early printed books.

5. *Children's Libraries and School Libraries*.—(i) *New South Wales*. Children's libraries are being developed as departments of municipal and shire libraries. The Education Department maintains a school library service for the fostering of State school libraries, which are maintained partly by parents' and citizens' associations and partly by departmental subsidy. Secondary and central schools have trained teacher librarians.

(ii) *Victoria*. Under the auspices of the Free Library Service Board, 99 municipal children's libraries have been, or are being, established as part of the library services provided by the councils concerned. All these libraries provide comprehensive modern children's book collections which are constantly being augmented. An annual grant of £5,000, which is additional to the ordinary annual municipal library grant, is provided to assist these libraries. In addition, nine independently controlled children's libraries shared in this grant in 1961.

The Education Department is making provision for the building of library rooms in new schools. Where accommodation is available in existing schools, library furniture is provided free of cost to the schools and the government subsidizes the purchase of books. In June, 1961, 367 schools had central libraries.

A scheme of circulating libraries for small schools, particularly in remote areas, has been operating for some years. Two hundred and twenty-five schools benefited from this scheme in 1961.

The Department has a Library Service Officer with a small staff to advise and assist schools in the establishment and organization of libraries. A one-year course for the training of teacher-librarians was established at Melbourne Teachers' College in 1955. Approximately 25 teachers are trained each year.

(iii) *Queensland*. The Library Board of Queensland stresses to local bodies the importance of providing adequate library services for children. There are in Queensland 97 libraries free to children, of which 10 are conducted by the Brisbane City Council. The children's libraries at Rockhampton, Toowoomba, and Townsville are particularly active. Country children who are not catered for locally may borrow from the Country Extension Service which possesses a separate children's collection. The purchase of books in State school libraries in Queensland is financed by school committees and parents' associations, with a subsidy from the Department of Education on a £1 for £1 basis. Trainees at the Teachers' College are instructed in school library organization and management.

(iv) *South Australia*. A children's library of 27,000 volumes is used by school classes and individual children living in the metropolitan area. Except for works of reference, all books are available for loan. In August, 1957, a youth lending service was opened for young people from 13 to 18 years of age. It has a stock of 12,000 volumes.

(v) *Western Australia*. The Education Department provides library services and makes library subsidies and grants to schools. Advisory, central cataloguing and central repair and binding services are provided by the Library Services Section. The Teachers' Colleges provide courses in school library organization and management.

The Perth Technical College and Technical Schools are equipped with libraries, and an allocation for books is provided annually for each school and college department. A librarian at the College provides central ordering and cataloguing services throughout the Technical Division.

All high schools are provided with a library room and furniture, and trained teacher librarians are appointed to them. Building plans do not provide for primary school libraries, but a number of the schools have set up central libraries when rooms have become available.

One-teacher and two-teacher schools are served by the Charles Hadley Travelling Library and the Small Schools Fixed Library Schemes. Under the Fixed Library Scheme, grants are made once every three years to each school to provide additional books for the permanent libraries of reference books. The Hadley library provides recreational reading

and operates 350 boxes which are exchanged each school term in over 240 schools. Boxes are sent to small schools, mission schools and special classes. Finance is provided from a government grant and contributions from the participating schools of commission received from the Commonwealth Savings Bank.

Children in isolated areas who are unable to attend school are catered for by books sent out by the State Correspondence School's library. The children are kept in touch with the library by means of radio talks and leaflets issued periodically.

(vi) *Tasmania*. The Lady Clark Memorial Children's Libraries, at the State Library, Hobart, aim to serve all children in Tasmania. At 30th June, 1962, 180 children's libraries and depots had been established.

The Education Department provides library quarters in all high schools and in some of the larger primary schools. The purchase of books is financed by parents' associations and by departmental subsidies. Teacher-librarians are appointed in high schools. The Schools Library Service issues loan collections of books to schools and gives advice on the setting up of school libraries.

6. *Special Libraries*.—Before the 1939–45 War, the number of special libraries, apart from those maintained by government departments, was small, but during recent years many manufacturing, commercial, research and other firms, as well as statutory bodies, have found it necessary to establish special libraries to serve their staff. These libraries, which are most numerous in Sydney and Melbourne, are being administered increasingly by trained librarians.

7. *Microfilms*.—The following libraries supply microfilm or photostat copies of material usually at a small charge (the letter "P" signifies photostat supplied and "M" microfilm supplied):—*Australian Capital Territory*—Australian War Memorial (P), National Library of Australia (PM), C.S.I.R.O. (M), Australian National University (M), Patent Office (P); *New South Wales*—Metropolitan Water, Sewerage and Drainage Board (P), Public Library of New South Wales (M), Standards Association of Australia (P), School of Public Health and Tropical Medicine (M), Fisher Library, University of Sydney (PM); *Victoria*—Commonwealth Serum Laboratories (P), Technical Information Section, Munitions Supply Laboratories (PM), Public Library of Victoria (M), Standards Association of Australia (Melbourne Branch) (P), University of Melbourne (PM), C.S.I.R.O. (M); *Queensland*—Public Library (P); *South Australia*—Public Library of South Australia (PM), University of Adelaide (PM), Waite Agricultural Research Institute (P); *Western Australia*—State Library (PM); *Tasmania*—University of Tasmania (PM).

§ 2. Museums

1. *General*.—Museums have been established in all capital cities and in many provincial cities and towns. The most important are maintained by Government grants. Others are supported by municipal councils, the Universities, and private organizations or individuals. Many museums have art galleries which are housed in the same building. However, art galleries are described separately in § 3 below.

2. *Commonwealth*.—(i) *The Australian War Memorial, Canberra*. The Memorial comprises the national collection of war relics, and the building in which these are preserved. The building was opened in 1941. There is a collection of 4,000 art works, and a museum collection of more than 40,000 war relics, the gathering of which began on the battlefields of the 1914–18 War and was continued during the subsequent wars in which Australian Forces have participated. The collection has been enhanced by gifts of relics from the governments of Great Britain, the sister dominions, and of allied countries, and also by presentations made by ex-servicemen and relatives of those who died. The collection consists of items such as tanks, aeroplanes, submarines, field-guns and boats and through the widest possible range of war trophies down to the smallest items, nails, pieces of wire, wristlet watches and the like, each relic dependent for its value on its historical background. The works of art, all by Australian artists, depict battle scenes, individual officers and men, etc., and include oil and water colour paintings, drawings, statuary, bronzes, dioramas and mosaics. There is also a library, which is described in § 1, above.

(ii) *The Institute of Anatomy*. The museum of this institution is described in Chapter XVII. Public Health, p. 710.

3. *States.*—(i) *New South Wales.* The Australian Museum in Sydney, founded in 1836, is the oldest in Australia. It is incorporated under the control of trustees, and receives its finance from the State Government. Expenditure in 1960–61 was £219,995. The museum has very fine collections of Australian fauna, and important anthropological and mineral collections. The museum has a valuable library, which contained 33,500 volumes in 1961. The number of visitors to the institution during 1960–61 was 332,900, with average attendances of 837 on weekdays and 1,381 on Sundays. Courses of evening lectures are delivered and lecturers also visit suburbs and country centres. Gallery demonstrations are also given. Screenings of natural history films were attended by 11,085 persons in 1961. Day lectures are given for school children, and 15,202 children attended in 1960–61.

The Museum of Applied Arts and Sciences in Sydney is also financed by the State Government, and has collections illustrating manufacturing processes and natural products. The scientific staff conducts research work on the development of natural resources. There is a library of 9,000 volumes. Visitors number about 150,000 annually, and expenditure in 1960–61 was £72,462. There are branch technological museums at Goulburn, Bathurst and Broken Hill.

Representative collections illustrating the natural wealth of the country are displayed in the Agricultural and Forestry Museum controlled by the Department of Agriculture and in the Mining and Geological Museum controlled by the Department of Mines. The Mining Museum prepares collections of specimens for use as teaching aids in country schools. The National Herbarium and Botanical Museum is situated at the Sydney Botanic Gardens.

Three museums at the Sydney University are open to the public; these are the Nicholson Museum of Antiquities, the Macleay Museum of Natural History, and the Haswell Zoological Museum. The University also has a Museum of Morbid Anatomy.

Among historic homes which have been converted to historical museums is Vaucluse House, Sydney, the home of W. C. Wentworth.

(ii) *Victoria.* The National Museum of Victoria, Melbourne, was founded in 1854. It is devoted to natural history, geology and ethnology, and there are special Australian collections of birds, butterflies, molluscs and ethnology.

The Institute of Applied Science was founded in 1870 and has been enlarged recently by the addition of three new floors. Exhibits cover applied and economic aspects of all branches of science, with emphasis on recent scientific developments. A planetarium, to seat 116, was delivered in 1962.

There is a fine Museum of Botany and Plant Products in the Melbourne Botanic Gardens and a Geological Museum controlled by the Mines Department. Well-equipped museums of mining and geological specimens have also been established at Schools of Mines in several country towns.

Small museums are associated with art galleries in Castlemaine, Warrnambool, Mildura and Beechworth, in each case conducted by the local Council. There are a few private museums in country areas. Several historic homes of the 19th century are also maintained and exhibited to the public.

(iii) *Queensland.* The Queensland Museum, founded in 1855, is the State museum of natural science. It is a Government sub-department and is maintained by the State. The collections comprise extensive exhibited and reference series, mainly in the fields of zoology, geology and ethnology, and some mechanical and historical material is held with a view to future museum development. Lessons supported by film displays are arranged for the public, and an annual refresher course in natural science is conducted for teachers. The museum is now the recognized State depository for valuable material in natural science, and the collections are constantly being augmented. In addition, the Museum contains the outstanding library of the State in the fields of zoology, geology and anthropology. The annual number of visitors is about 200,000. Expenditure during 1960–61 was £41,637.

There is a Botanical Museum and Herbarium at the Brisbane Botanic Gardens, and the Royal Historical Society of Queensland has an historical museum at Newstead House, Brisbane, which has about 12,000 visitors each year. The University of Queensland has recently established an Anthropology Museum.

(iv) *South Australia.* The South Australian Museum has large collections of most branches of natural history and has especially rich collections of aboriginal artifacts. In 1961–62, there were at least 200,000 visitors and total expenditure was £63,335, met from State government grants.

In addition, there is a Municipal Museum possessing records and mementoes of the State and city, an Applied Science Museum with scientific and technological exhibits, and a Botanical Museum, situated in the Botanic Gardens, with a carpological collection and displays of economic plant products. Some town councils have special museums housing relics from earlier times of their districts, and several cottages once belonging to early pioneers have been restored as historical museums. These include Adam Lindsay Gordon's Cottage at Port MacDonnell and Captain Charles Sturt's Cottage, Grange.

(v) *Western Australia.* The Western Australian Museum was established in 1895. It is under the statutory management of a board of five members appointed by the State government, but operates under its own director and staff. Expenditure in 1960-61 was £63,357. It is primarily a museum of natural history, with active departments of vertebrate and invertebrate zoology, palaeontology, entomology, archaeology and anthropology. Principal research interests are in the fauna of Western Australia and the ethnology of the Western Australian aboriginal.

The Education Department of Western Australia provides a teacher to the Museum who instructs visiting classes and who is in charge of a Children's Centre during school holidays. Members of the Museum staff also take part in the teaching of undergraduates at the University of Western Australia.

There is also a Geological Museum at the School of Mines, Kalgoorlie.

The "Old Mill" Museum at South Perth, which exhibits historical objects of public interest including the old mill itself, is directed and maintained by a private business firm. A similar institution based on the Old Gaol at Toodyay is run by the local authority. Several other local bodies maintain small historical collections.

(vi) *Tasmania.* There are two main museums in Tasmania—the Tasmanian Museum in Hobart and the Queen Victoria Museum in Launceston. Both museums contain collections of botanical, mineral and miscellaneous exhibits, including valuable material illustrating the life of the now extinct Tasmanian aboriginal race. Fauna collections include many specimens of birds and marsupial animals not found in other parts of Australia. Art galleries are attached to each museum. State Government grants amounted to £32,500 in 1960-61. The Tasmanian Museum and Art Gallery is controlled by a board, which receives some assistance from the Hobart City Council, in addition to State Government grants. Expenditure in 1960-61 totalled £27,517. The Queen Victoria Museum and Art Gallery is controlled by the Launceston City Council, which met about half the total expenditure of £18,128 in 1960-61.

Several colonial houses have been converted into historical museums and there is also a privately owned museum near Burnie.

§ 3. Art Galleries

1. *New South Wales.*—The National Art Gallery of New South Wales originated in the Academy of Art founded in 1871, and is controlled by the State Government. At the end of 1961, its contents comprised 1,528 oil paintings, 979 water colours, 2,637 prints and drawings, 146 sculptures and casts, and 1,355 ceramics, works in metal, and miscellaneous. Since 1895, loan collections of pictures have been exhibited regularly in important country towns. Annual exhibitions include entries for the Archibald, Wynne and Sulman competitions. In 1960, 146 conducted lectures were given to 4,380 school children. The expenditure for 1961-62 was £66,305.

In 1959, a War Memorial Gallery of Fine Art was established at the University of Sydney.

2. *Victoria.*—At 30th June, 1961, the National Gallery in Melbourne contained 1,292 oil paintings, 8,066 objects of statuary, bronzes, ceramics, etc., and 9,204 water colour drawings, engravings and other prints. The gallery is situated in the same building as the museum and public library. Expenditure by the National Gallery in 1960-61 was £92,460, including £8,192 from government grants and legacies for purchases of works of art. Several bequests were made to the institution by private citizens. There are provincial art galleries at Ballarat, Bendigo, Castlemaine, Geelong, Hamilton, Mildura, Shepparton and Warrnambool, to which pictures are sent on loan from the National Gallery.

There are several small private art galleries in Melbourne. While some of these are commercial establishments, others exhibit the works of groups of artists or of individual artists. These works are generally for sale, but the purpose of the galleries is largely cultural. In addition, there is the annual *Herald* outdoor exhibition, an open-air exhibition of paintings and sculpture which is visited by many thousands of people each year.

3. **Queensland.**—The Queensland Art Gallery, maintained by the State government, was established in 1895. Expenditure totalled £10,936 in 1960–61 and there were 230,000 visitors. During 1959, the Government passed a new *Queensland Art Gallery Act* reorganizing the gallery, appointing a new Board of Trustees and granting a site for the building of a new art gallery. The collection has been enriched by numerous bequests. In 1959, an anonymous gift of £126,000 was devoted to the purchase of an important collection of modern French paintings. The collection as a whole comprises 669 oils and watercolours, 480 prints and drawings, 68 sculptures, and 206 art objects. During 1962, the first of what is hoped to be a regular series of travelling exhibitions to country districts was organized. In this case, the exhibition visited the coastal areas of northern Queensland.

The University of Queensland Fine Arts Committee controls the Darnell Collection, the result of a bequest by John Darnell who died in 1930. Income from the bequest is augmented by grants from the University Senate and is devoted to the purchase of works of art. The collection is exhibited at the University and includes 500 art books, 300 paintings in various media and some sculpture.

Two collections are exhibited at Toowoomba. The Gould collection, which includes paintings, pottery, ceramics, antique furniture and other art works, is displayed at the City Hall. The Sir Lionel Lindsay Art Gallery and Library was donated to the city by William Bolton and contains works of Australian artists and authors.

Other local authorities also maintain art galleries in provincial towns and there are several privately owned galleries.

4. **South Australia.**—The National Gallery in Adelaide originated in an exhibition of pictures in the public library building in 1881. Many bequests made by private citizens have materially assisted its growth. At 30th June, 1962, there were in the gallery 1,944 paintings in oil, water colours and pastels, 111 items of statuary, and large collections of drawings, prints, furniture, ceramics and coins. Special exhibitions are held from time to time. The expenditure during 1961–62 was £216,501. This included payments by the State from loan funds for alterations and additions to buildings amounting to £171,323.

Exhibitions of paintings are held regularly in private art galleries and are usually well-attended. In particular, the Royal South Australian Society of Arts presents five special exhibitions during the year, Spring, Autumn, Associate and Lay Members, Print and Drawing, and the Wholcan Prize Exhibition.

The Hahndorf Art Gallery was established in 1956, and since 1959 has operated in historic premises—the first Lutheran school built in Australia.

5. **Western Australia.**—The Western Australian Art Gallery was established in 1895. Although under the statutory management of a board of five members appointed by the State Government, it functions under its own director and staff. At 30th June, 1962, the collection included 400 oil paintings, 215 water colours, 10 pastels, 1,422 prints and drawings, 1,103 reproductions, 9 miniatures and 29 pieces of sculpture. International and interstate exhibitions are frequently held, and travelling exhibitions are sent to country centres.

There are no major private art galleries, but some municipalities maintain collections.

6. **Tasmania.**—In Tasmania, the Art Gallery in Hobart was opened in 1887. In June, 1962, it contained 236 oil paintings, 194 water colours, 127 black and white, 3 statuary and 105 etchings, engravings, etc.

The Art Gallery in Launceston was opened in 1891. In June, 1962, there were on view 250 oil paintings, 367 water colours, 144 black and white, and 258 miscellaneous exhibits.

Both galleries operate in conjunction with the museums in each city, occupy the same buildings, and are controlled by the museum authorities.

§ 4. Botanical and Zoological Gardens*

1. **New South Wales.**—The Zoological Gardens at Taronga Park, on the northern side of Sydney Harbour, were opened in 1916. The area is about 50 acres. The natural formation has been retained as far as practicable, with the object of displaying the animals in natural surroundings, and an aquarium has been built within the gardens. In 1960–61, admissions to the grounds were 828,698, and to the aquarium 291,408. The receipts of the

* In addition to the zoological gardens referred to, there are numerous privately owned zoos and sanctuaries, many of them at tourist resorts, which maintain collections of Australian flora and fauna. There are also various national parks, forests, reserves, etc. dedicated for public use, which are preserved largely in their natural condition.

zoological department of the Taronga Park Trust amounted to £189,224 in 1960-61, excluding an annual State grant of £3,250, and expenditure amounted to £163,104. Exhibits at 30th June, 1961, comprised 925 mammals, 2,412 birds, 117 reptiles, and 1,036 fish.

The Sydney Botanic Gardens are situated on the shores of Farm Cove, Sydney Harbour, close to the heart of the city.

2. **Victoria.**—The main botanical gardens in the State are the Royal Botanic Gardens, an area of 88 acres situated within one mile of the centre of the City of Melbourne, and containing over 12,000 species of plants, of which there are some 30,000 individual specimens. Many species of native birds breed on islands in lakes within the gardens.

The Zoological Gardens are situated in Royal Park, and contain a wide selection of animals, birds and reptiles. Wild life sanctuaries are also maintained at Healesville and North Balwyn, and contain specimens of indigenous fauna.

3. **Queensland.**—Botanical gardens have been established in Brisbane and Rockhampton by the City Councils.

4. **South Australia.**—The Botanic Gardens, begun in 1854, occupy 45 acres planted with many tropical and sub-tropical trees, shrubs and plants.

The Zoological Gardens, opened in 1883, have an area of approximately 19 acres set among lawns and gardens and contain a fine collection of animals, reptiles and birds. There were 278,000 visitors in 1961.

5. **Western Australia.**—Arrangements have been made for the creation of a botanic garden for the native plants of Western Australia, in King's Park, a reserve of almost 1,000 acres close to the centre of Perth. A site of 25 acres has been selected for garden development during the first five years, and an arboretum of 35 acres for a collection of native trees has also been planned. Both areas have been surveyed in detail and the layout determined.

The Zoological Gardens which were opened in 1898 at South Perth have an area of 44 acres and are under the control of the Acclimatisation Committee. Animals, birds and reptiles are exhibited and sporting and recreational facilities are available to the public. During the year 1961-62, 137,614 adults and 117,680 children visited the zoo.

6. **Tasmania.**—The Hobart Botanical Gardens adjoin Government House on the Queen's Domain. The gardens contain a fine collection of exotic trees and shrubs and are controlled by a Board appointed by the State Government, which supports the gardens by annual grants.

There is no zoo in Tasmania, but a small collection of animals and birds is maintained by the Launceston City Council at the City Park.

7. **Northern Territory.**—The Darwin Botanical Gardens were established in 1873, and were planted with imported exotic plants and trees. The gardens now occupy 80 acres and feature tropical plants of both native and overseas origin. They are controlled by the Darwin City Council.

§ 5. Book Publishing

1. **Australian Book Publishing.**—Some statistics relating to Australian book publishing are compiled by the National Library of Australia as part of its bibliographical responsibilities (see p. 761). Through the deposit provisions of the *Copyright Act* 1912-1950, its overseas collection agents, and its own efforts, the library receives practically all Australian publications although not necessarily in the year of publication. Because the statistics compiled and shown hereunder are classified according to the year of publication, all figures are subject to revision as publications not yet received in the National Library come to hand.

For books published in 1961 and thereafter, the method of counting conforms with international practice. Each title is counted as one unit. The figures cover all non-periodical publications (i.e. those published at irregular intervals or regularly at intervals of one year or longer) published in Australia. They refer to all publications of five pages or more and include pamphlets, new translations and re-editions. They include government publications, educational textbooks, university theses, etc., but exclude publications not available to the general public, advertising material, publications of transitory interest, off-prints, musical works, children's picture books, maps and charts.

Figures for 1960 and previous years are less comprehensive, excluding most government publications and certain paper-backs.

2. **Number of Publications.**—The following table shows the number of books, etc., published in Australia and received by the National Library during the years 1958 to 1962. From 1958 to 1960 the figures are on the "old" basis of compilation and exclude most government publications.

**NUMBER OF PUBLICATIONS RECEIVED BY THE NATIONAL LIBRARY:
AUSTRALIA**

Received by the National Library up to the end of—	Published during—				
	1958	1959	1960	1961	1962
1958	558	..	..	..	..
1959	680	580	..	..	..
1960	705	765	531	..	..
1961	720	814	839	1,840	..
1962	723	873	984	2,848	1,793

The next table shows the 1961 and 1962 publications received up to the end of 1962, classified by subject matter.

NUMBER OF 1961 AND 1962 PUBLICATIONS RECEIVED BY THE NATIONAL LIBRARY, BY SUBJECT(a): AUSTRALIA, TO 1962

Subject	Published during—	
	1961	1962
Bibliography, libraries, general	93	46
Philosophy, psychology	13	9
Religion	122	67
Social sciences	1,071	573
Philology	12	5
Science	189	107
Technology, business	695	391
Art, Amusement	133	73
Literature—		
Australian poetry	32	16
Australian drama	3	4
Australian fiction	134	133
Australian essays	2	1
Australian humour and miscellany	16	20
Criticisms, anthologies, school editions	63	121
Other literature	27	32
<i>Total, Literature</i>	277	327
Travel, biography, history	243	195
Grand Total	2,848	1,793

(a) The classification is based on the divisions of the Dewey Decimal Classification.

3. **The Commonwealth Literary Fund.**—In 1908, the Commonwealth Government, under Alfred Deakin, first established the Commonwealth Literary Fund. The Fund was entirely a compassionate one devoted to literary pensions for aged or infirm authors, for the families of literary men who died in poverty, and for writers who were unable for financial reasons to continue their activities.

In 1939, in an endeavour to encourage the development of Australian literature and to foster appreciation of it, the Commonwealth Government greatly enlarged the scope of the Fund. The Fund now awards Fellowships each year, assists in the publication of manuscripts of high literary merit, makes annual grants for lectures in Australian literature, and awards pensions to writers who have achieved a nation-wide reputation for their work in the field of creative literature.

The Fellowships are awarded each year to writers who have proved their capacity in the field of creative literature, to enable them to devote their time to working on a literary project they specify. A Fellowship carries a maximum value of £2,000 per annum. The Fund does not seek out people on whom to bestow Fellowships, but considers only those who submit applications. Applications close on 30th June each year and the awards are decided at the end of the year.

The Fund also assists in the publication of manuscripts which have outstanding literary merit, but which, in the opinion of publishers, may constitute a commercial risk. This assistance takes the form of a guarantee of assistance to the publisher. The Fund does not itself enter the field of publishing, nor does it make outright grants to authors to enable them to arrange publication personally.

Since 1940, annual grants for special lectures in Australian literature have been made to all universities. In 1956, the Fund initiated a scheme of lectures to the general public and to schools mainly in country areas, with the co-operation of State Adult Education authorities and Education Departments. Annual grants are now made to the States for this purpose.

The Fund also assists certain literary magazines of long standing and recognized literary value.

The Fund is administered by a Committee consisting of the Prime Minister (Chairman) the Leader of the Country Party, and the Leader of the Opposition in the House of Representatives. The Committee is advised on all literary matters by an Advisory Board of six persons with literary qualifications.

4. **The Literature Censorship Board.**—In 1937, the Commonwealth Government introduced legislation to provide for a Literature Censorship Board to advise the Minister for Customs and Excise on imported literature. At the same time, an Appeal Censor was appointed to afford appellants an avenue of appeal which did not make expensive court proceedings necessary. The Appeal Censor was replaced by an Appeal Board in 1960.

The Boards were set up to deal with that part of the problem which provides the greatest amount of controversy—restriction on books which have a real place in the field of literature. In practice, no imported publication having literary merit is prohibited without prior reference to the Literature Censorship Board. Should the Minister decide to prohibit the importation of a book on the recommendation of the Board, an appeal against the decision may be made for reference to the Literature Censorship Appeal Board. A decision to prohibit the importation of a book may be challenged through the normal processes of the law.

The Literature Censorship Board consists of a Chairman, a Deputy Chairman and two other members, while the Appeal Board is made up of a Chairman and two other members.

The foregoing refers to imported literature. Control of indigenous matter comes under the jurisdiction of the State governments.

§ 6. Film Production

1. **Australian Film Production.**—Australia was one of the pioneers in the history of film-making, a short story film, *John Vane, Bushranger*, having been made in 1904, only a year after America's *The Great Train Robbery* (1903), which is generally considered to be the first genuine story-film. It has been claimed that *The Kelly Gang*, made in 1905-6, was the first full-length feature film produced in the world.

Following the outbreak of the 1914-18 War, a series of short patriotic films were produced. In 1917, the first of a successful series of rural comedies was made, featuring a family called the Hayseeds. In the same year, *The Kelly Gang* was remade and the first film version of *For the Term of his Natural Life* appeared. A first film version of C. J. Dennis's *The Sentimental Bloke* was made in 1919.

The year 1920 was notable for a number of productions with an authentic Australian flavour:—*On our Selection*, a first version of *Robbery Under Arms*, another remake of *The Kelly Gang*, and C. J. Dennis's *Ginger Mick*. Production continued at about the same level until the coming of sound in 1928. Altogether, approximately 160 theatrical films were produced by Australian units in the silent period (1900-1930).

Lack of equipment hampered the commencement of production of sound films in Australia, but during the 1930's nearly 60 sound films were produced.

During the 1939-45 War, commercial film production combined with the Commonwealth Government in making films. Since the war, a number of British and American companies have made films in Australia. Altogether, between 1930 and 1960, about 115 feature films were produced in Australia.

2. The Australian National Film Board.—The Australian National Film Board was inaugurated in April, 1945, on the recommendation of a Commonwealth Government inter-departmental committee. It was attached, for administrative purposes, to the Department of Information. With the abolition of that Department in March, 1950, administration of the Board was transferred to the News and Information Bureau, Department of the Interior.

In November, 1950, the Board was reconstituted as an advisory body to the Minister for the Interior on matters concerned with the production, acquisition and distribution of films required by Commonwealth departments for use within Australia on important matters of national interest and welfare, such as school and adult education, rehabilitation, social development, international understanding, trade and tourist expansion, and immigration; and for dissemination abroad to expand trade and commerce with other countries, to encourage tourist traffic with Australia, to improve Australia's relations with other countries and, where necessary, to explain Australia's national policies and encourage immigration.

The constitution provides for a membership of eleven, with the Secretary of the Department of the Interior, Chairman, the Director of the News and Information Bureau, Deputy Chairman, and the remainder representative of Commonwealth departments, State Government instrumentalities, and organizations interested in the production, distribution or utilization of films for national publicity.

3. The Film Division of the News and Information Bureau.—The first Australian Government organization for the production of motion pictures for national publicity purposes was the Cinema and Photographic Branch of the Department of Commerce, set up in Melbourne in 1920. Early in the 1939-45 War, the newly-established Department of Information was made responsible for the operation of the Cinema Branch and for an Official War Photography Unit. Production and distribution of all films required by Commonwealth Departments are now undertaken by the staff of the Film Division, News and Information Bureau, Department of the Interior, or by commercial enterprises under the supervision of officers of the Film Division. Theatrical and television distribution in Australia, and both theatrical and non-theatrical distribution overseas, of all Film Division productions are organized by the News and Information Bureau's home office or its overseas representatives. Non-theatrical distribution in Australia is organized through the National Library, Canberra, in co-operation with State film distribution agencies.

Since 1946, the Film Division has produced 409 films for general exhibition, as well as training and special purpose films. Prints are dispatched to 50 overseas centres, where distribution is arranged by News and Information Bureau officers or other Australian representatives. In Britain, there is regular distribution through more than a thousand theatres and a large non-theatrical and educational series of circuits. By arrangement with the British Broadcasting Corporation, items of topical interest photographed by the Film Division are flown to London for television. In the United States of America, there is wide non-theatrical distribution and considerable use of the films by television networks. An exchange arrangement with the National Film Board of Canada secures extensive distribution in Canada. Selected films have been recorded in French, Dutch, German, Italian, Japanese, Malay, Thai, Hindustani, Tamil and other Indian dialects.

In addition to films made on the initiative of the News and Information Bureau, the Film Division produces films under the sponsorship of, or with the co-operation of, Commonwealth Departments and many other bodies such as the Commonwealth Bank of Australia, the Road Safety Council, the Overseas Telecommunications Commission, the Snowy Mountains Hydro-electric Authority, the Australian Wine Board, the Australian National University, and the Australian Broadcasting Commission.

The Australian motion picture industry co-operates with the Commonwealth, and special films for urgent national appeals are planned, produced and distributed with the assistance of the National Film Council of the motion picture industry and its Film Production Advisory Committee.

4. The Film Censorship Board.—(i) *Legislation.* The Commonwealth Government's powers over censorship of films extend only to imported films and imported advertising matter and stem from the *Customs Act*. Under that Act, the Customs (Cinematograph Films) Regulations provide for the appointment of a Film Censorship Board whose function is to ensure that films and related advertising material coming within certain defined categories are not admitted into Australia. Under those regulations, the Film Censorship Board may pass films in their original form, reject them, or pass them after eliminations have been made. Legislation passed by the State Governments of Victoria, Queensland, Western Australia and Tasmania names the Commonwealth Film Censorship Board as the censorship authority and vests in it the power to classify films as suitable for general exhibition or otherwise. The State Acts give the Commonwealth Board the authority to censor films made in Australia for commercial exhibition and advertising matter made in Australia.

The Censorship organization comprises a Censorship Board of seven persons and an Appeal Censor, the headquarters being in Sydney. Importers have a right of appeal to the Minister against decisions of the Board and the Appeal Censor.

(ii) *Import of films.* (a) *35mm. Films for Exhibition in Motion Picture Theatres.* In 1962, 1,243 films comprising approximately 4.5 million feet were censored. This represents approximately 835 hours' screening time. Of these films, 447 originated in the United States of America, 424 in the United Kingdom and 372 in other countries. The principal suppliers among the last mentioned were:—U.S.S.R., 75; France, 67; Greece, 49; Italy, 41; and Germany, 16. Included in these figures are 440 full-length feature films which constitute the main theatrical attractions. This was a decrease of 10 compared with the imports for 1961. Feature films came from:—the United States of America 159, the United Kingdom 95, U.S.S.R. and Greece 40 each, Italy 31, France 24 and Germany 9. Ten feature films were rejected and cuts were made from 131. There were eight appeals, seven against rejection and one against cuts. One was allowed and seven disallowed. Feature films classified as suitable for general exhibition numbered 252 and 188 were not suitable for children. Of the latter, 23 carried the special condition that all advertising should indicate that they are suitable only for adults. These classifications are advisory only and are designed to enable picture-goers and particularly parents to obtain a general idea of the nature of any particular film. In addition to these imported films, 184 35mm. films of 162,775 feet produced in Australia were cleared. These were mainly newsreels and documentaries intended for commercial exhibition or export.

(b) *16mm. Films.* Excluding those imported for television use, 5,878 16mm. films of approximately 4 million feet were examined. There were no rejections. These were films commercially produced for screening in theatres used by business undertakings for advertising and instructional purposes and for screening in churches, schools and universities, and on home movies.

(c) *8mm. and 9.5mm. Films.* Approximately 47,000 feet of these small dimension type films were examined.

(d) *Television Films.* 7,399 films, predominantly 16mm., of approximately 8.5 million feet, for use on television, were censored. The number of films is not a true indication of volume because many of these were of short duration. In terms of screening time, the films censored for television amounted to approximately 4,000 hours. On a footage basis, the United States of America supplied approximately 80 per cent. of the total imports and the United Kingdom 16 per cent. Eleven television films were rejected outright and an additional eleven were classified as unsuitable for televising. Eliminations were made from 939. There were two appeals against classification, one of which was allowed and one disallowed, and one appeal against rejection which was allowed.

(e) *Foreign Language Films.* Countries other than the United Kingdom and the United States of America supplied 372 of the 35mm. films imported for theatrical exhibition. Of these, 186 were feature films. Generally, the dialogue is in a foreign language with explanatory English captions. A few have an English commentary, and in some cases English "dubbed" dialogue. Of 5,878 16mm. commercial films censored, 1,092 originated from non-English-speaking countries. The chief supplying countries were Germany 214, Japan 124, France 120, Malaya 84, Italy 64, Holland 55, Czechoslovakia 48, India 48, Switzerland 45 and U.S.S.R. 41.

(iii) *Export of Films.* The quantity of films exported for the year was approximately 2.5 million feet, consisting mainly of newsreels, advertising films and documentaries. This footage included in many cases several prints of the one film. It also included large quantities of exposed negatives sent overseas for processing.

§ 7. The Arts Council of Australia

Patterned on the Council for the Encouragement of Music and Arts which operated in the United Kingdom during the Second World War, an Australian organization was brought into being in 1943. In 1945, it became The Arts Council of Australia. Originating in New South Wales, Divisions exist now in all States and the Australian Capital Territory. The centre of activity has been in New South Wales, which has a country branch network of over fifty centres. A Federal Council will become effective in 1963.

The Arts Council receives State government grants through the Departments of Education in New South Wales and Queensland. In 1963, for the first time, a substantial contribution was received from a private organization.

The New South Wales Division is a member of the Adult Education Advisory Committee in that State, representing the "live art" section of adult education. The Tasmanian Division is represented on, and works closely with, the Adult Education Board of that State.

In 1950, the New South Wales Division arranged and presented the world première of the ballet *Corroboree* and in 1951, in connexion with the celebrations of the Commonwealth Jubilee, the Federal Council arranged a tour to all States of the ballet, performed by the Victorian National Theatre Ballet Company. Seasons of *Let's Make An Opera* followed later in 1951 at Sydney, Brisbane, and Canberra.

Activities of the Arts Council are directed towards decentralization of the arts for the benefit of country centres and metropolitan and country schools. It is greatly concerned with taking the arts to children as a basic cultural development. Tours of high standard companies in opera, ballet, drama, puppets, etc., are operating throughout the year.

The Young Elizabethan Players Company was formed jointly by the Arts Council and the Australian Elizabethan Theatre Trust in 1958 to take Shakespeare to schools in New South Wales and Queensland, and is still operating.

The Council handles a wide range of art exhibitions, both for city and country areas. Summer schools for drama, painting, pottery, music and other arts are an established annual feature of the work of the New South Wales and Queensland Divisions.

Yearly drama festivals are conducted for the Little Theatre movement. For 1963, the New South Wales Division is sponsoring the first arts festival for Sydney (North Side Arts Festival), with a wide range of cultural activities concentrated on the north side of Sydney Harbour.

§ 8. The Australian Elizabethan Theatre Trust

Inaugurated in 1954 to commemorate the first visit to the Commonwealth of Her Majesty The Queen, the Australian Elizabethan Theatre Trust has since presented drama, opera and ballet throughout the entire Commonwealth. The Trust receives annual grants from the Federal Government, the State Governments and city councils. Its income also includes subscriptions from members.

In the field of drama it has presented, *inter alia*, the works of Australian playwrights, including plays which were subsequently presented overseas.

The Elizabethan Trust Opera Company has given seasons of opera and has presented overseas guest artists, conductors and producers. The Australian Ballet, which commenced its inaugural season in November, 1962, will visit all mainland capitals and New Zealand

during 1963. This company also features guest appearances by renowned overseas performers. The activities of the Trust in opera and ballet are providing employment for Australian singers, dancers, musicians, designers, choreographers and composers. The Trust has also been associated with commercial managements in the presentation of overseas attractions and large-scale musicals.

Country areas have been visited by Trust companies presenting opera, drama and puppets in association with the Council of Adult Education in Victoria and The Arts Council of Australia in New South Wales. During 1963, three companies of Young Elizabethan Players will again present Shakespeare for schools in five States. To date, almost one million children have attended a performance by these players which for many of them represents their introduction to "live" theatre.

In Victoria, the Trust is associated with the University of Melbourne in the Union Theatre Repertory Company, which presented its 120th production early this year. It is also associated with the University of New South Wales in the establishment recently of the Old Tote Theatre Company. Assistance is given to the Perth Playhouse, the Festival of Perth, the National Theatre and Fine Arts Society of Tasmania and other companies. The Trust has contributed productions to the biennial Adelaide Festival of Arts.

One of the most important activities undertaken by the Trust is its association with the University of New South Wales and the Australian Broadcasting Commission in the establishment and maintenance of the National Institute of Dramatic Art. This provides a training ground for young Australian actors, producers and technicians.

SCIENTIFIC RESEARCH

NOTE.—This section outlines first the role and organization of scientific and technological research in Australia and then refers specifically to various organizations, etc., associated with scientific research. Particulars regarding Commonwealth medical research organizations are given in Chapter XVII. Public Health.

§ 1. Science and Technology in Australia*

1. *General.*—The reputation of Australian science in pre-war days rested on the individual accomplishments of a few famous men. Many of the most able Australian scientists were attracted to posts abroad where they received better facilities, better rewards and proper recognition.

During the last twenty years, this state of affairs has altered. Attractive conditions of employment have been created for scientists, and scientific research as a national undertaking has been greatly expanded. While Australian scientists continue to go abroad for experience, many have returned to establish careers in their own country. In addition, the rapidly growing reputation of Australian scientific work is attracting to the country a steady stream of scientific talent from overseas.

The pattern of training of scientists and technologists in Australia is very much the same as that of Britain. The universities have followed the example of the British universities in teaching applied science as well as pure science. This differs from the practice in Germany, Switzerland and other continental countries, where special technical schools are the major source of highly trained technologists and engineers. A few of the Australian senior technical colleges do, however, produce engineers and technologists of professional status. The universities are currently producing some 800 graduates in science each year, and about 450 in engineering. In addition, the graduate schools in the universities are growing rapidly. In 1949, seven people received the Ph.D. degree for post-graduate work in science, agriculture and engineering, but eleven years later, in 1960, over a hundred people received it. During the period 1957 to 1962, the number of students working for higher degrees nearly doubled.

2. *Pattern of Research in Australia.*—The major scientific research body in Australia is the Commonwealth Scientific and Industrial Research Organization set up by an Act of the Commonwealth Government. The Organization operates in most fields of interest to industry and agriculture, and has research laboratories in all capital cities and in many country areas.

* The following article was specially prepared for this issue of the Year Book by the Commonwealth Scientific and Industrial Research Organization of Australia.

A good deal of research is also carried out by the universities and individual industrial firms and a few co-operative research associations. In certain other specific fields, research is carried out by various State and Commonwealth government authorities.

At present, there are no private business organizations established primarily to conduct sponsored research for industry, but the C.S.I.R.O. and some university departments are prepared to undertake sponsored research.

In quality, the research achievements of the Australian research groups have been outstanding, and university research, until recently limited in scope and volume, is now expanding rapidly.

3. Research in Industry.—Relatively few firms are large enough to maintain research activities within their own organization, and not all firms strong enough to do so have chosen to set up research laboratories. In recent years, however, there have been many signs that managements of most large enterprises have come to realize the importance of research. Practically all large firms utilizing modern technologies now undertake research, and several of them invest heavily in research activities. Even some firms with very close affiliation with overseas organizations are setting up large research laboratories in Australia.

Among the smaller firms, however, little has so far been achieved. Efforts to organize co-operative research associations have not yet been very successful in Australia, partly because of the scale of industry and more particularly owing to the diffusion of the constituent units throughout the country's main industrialized areas. So far, five research associations have been established, dealing with baking, tobacco, minerals, wine-making, and coal industries. All receive financial support from the Commonwealth Government.

With certain provisos, money spent upon research by industry is deductible for income tax purposes.

4. Research by State Authorities.—State administrations are increasingly active in research. The greater part of this work is directed to rural industries, particularly regional problems of agriculture. State government extension services promote the application of research in rural industries. Applied research is also carried out by some of the State instrumentalities responsible for power and gas generation, water supply and sewage disposal.

5. Research by Commonwealth Authorities.—The Commonwealth concentrates a large part of its scientific research effort in the Commonwealth Scientific and Industrial Research Organization (*see p. 784*).

C.S.I.R.O. has devoted part of its effort to basic research, and has achieved world leadership in certain fields. In applied research, some notable successes have been achieved. Particular attention has been directed to the potentialities of Australian raw materials, and to the improvement of the industrial processes concerned with processing these resources into finished products.

The basis has been provided for the establishment of a flourishing pulp and paper industry based upon indigenous hardwoods as raw material. Wool research, supported by a statutory contribution by the industry, has been able to show the way to notable advances in manufacturing techniques, and, in particular, new moth-proofing and shrink-proofing processes have been developed. Recent outstanding successes include processes for permanently pleating woollen fabrics and for endowing woollen fabrics with "wash-and-wear" properties.

The Mansfield process for the control of evaporation from free water surfaces is preventing the loss of many million acre-feet of water a year from open storages. For arid regions this is a most important advance. A new method of producing super-pure zirconium (a "new" metal used in nuclear reactors) was developed, and overseas patent rights were sold to an American corporation.

6. Standards.—Activities which are extremely important in maintaining industrial standards of performance are undertaken by the Standards Association of Australia and the National Association of Testing Authorities (*see also Chapter VI. Manufacturing Industry*). The functions are linked, in that whereas the Standards Association establishes and publishes standards, the Association of Testing Authorities works to ensure that the certified testing laboratories maintain their level of competence.

The Standards Association of Australia publishes standards of many kinds for the benefit of industry and commerce. It draws representative committees from its 2,500 members representing government departments, chambers of manufacture and commerce, professional associations, universities and other groups, which draft standard specifications,

codes and tests. The Association creates its own standards and endorses also certain British standards for Australian use with or without modification. So far it has issued about 1,000 standard specifications. It has nearly 500 more projects in hand.

The National Association of Testing Authorities is the recognized organization for the co-ordination of testing facilities. It is an independent body whose objective is the organization of a comprehensive testing service to meet the needs of government, industry and commerce by registration, on a voluntary basis, of testing laboratories throughout Australia. The technical work of the Association is performed by Registration Advisory Committees, each composed of experts in the field of testing entrusted to it. Members of the committees are appointed solely on the basis of specialist qualification and experience.

Laboratories may be registered for the performance of specified tests within such fields as metrology, mechanical testing, electrical testing, heat and temperature measurement, chemical testing, biological testing, and industrial radiography and crack detection.

In 1962, there were 373 laboratories registered with the Association, which had a further 100 applications for registration before it. Membership of the Association is open to all laboratories which conform to the standards of staff and laboratory practice required by the Association.

Laboratories registered by the Association are entitled to endorse test documents in the name of the Association. The Association reassesses its registered laboratories from time to time, and investigates discrepancies in results between the different laboratories.

7. Oversea Affiliations.—Australia follows Britain in its system of weights, measures and units. The Commonwealth Scientific and Industrial Research Organization is the custodian of the Australian national standards of measurement of the physical quantities. Under the Australian Constitution, regulation of trade practices involving weights and measures is a function of the States, but all measurements are ultimately referred back to the national standards.

Australia is a subscriber to most of the important international standards unions, including the International Bureau of Weights and Measures, the International Organization of Legal Metrology, the International Patents Union, and the International Trade Marks Union.

8. Science and the Industrialist.—The research agencies mentioned are all accessible to the industrialist and are willing to assist him with information and advice. Facilities exist whereby the manufacturer can obtain the help needed to enable translation of the facts won by scientists working in research laboratories into terms of plant and processes. Some of the agencies maintain sections set up primarily for the very purpose of assisting industrialists or others needing or desiring information.

Some of the research divisions of C.S.I.R.O., for example, handle a considerable volume of requests for advice and information. The Organization also undertakes a certain amount of service work for industry, particularly in the field of metrology.

C.S.I.R.O. also undertakes a growing amount of sponsored research. University departments and technical colleges also help industry to some extent, and the Department of Metallurgy in the Melbourne University has fairly recently instituted a small section specifically to undertake research for industry. The University of New South Wales has set up an organization to undertake contract research, using the facilities of the university. Technical service departments of firms marketing chemical products and the like make a valuable contribution towards improving standards of practice in some sectors of industry. The Laboratories of the Department of Supply assist industry in respect of manufacture on defence contracts, and thus raise standards generally. In the larger cities, the services of public analysts are available.

Scientific and technical literature is available in Australia from the libraries of government institutions, public libraries, special libraries maintained by learned societies and professional institutes, universities, etc. Practically every technical journal of any importance in the English language is available in Australia, as are the more important journals published in other languages (together with the services of technical translators).

Technical information services are also available in the C.S.I.R.O., the Defence Standards Laboratories, and the Department of Trade to provide the industrial inquirer with information on new processes, raw materials and a wide variety of new developments.

Apart from the C.S.I.R.O., many Commonwealth Departments do a certain amount of research—some of them a great deal, e.g. the Department of Supply, which, in collaboration with the British Ministry of Supply, conducts the Long Range Weapons Research Establishment. The Department also maintains other laboratories, notably the Aeronautical

Research Laboratories and the Defence Standards Laboratories, both of which contribute towards technological advances in some sectors of manufacturing industry by helping in the development of new processes and products important for defence.

The Postmaster-General's Department conducts research into modern telecommunications, radio broadcasting and television, and the improvement of techniques, and has earned overseas recognition for this scientific work.

The Snowy Mountains Hydro-electric Authority has a scientific services division dealing with physical, engineering, geological and hydrological problems stemming from the developmental projects it has in hand.

More recently, the Australian Atomic Energy Commission has begun research, mainly concerned with the peaceful use of atomic energy (*see also* p. 788). Facilities are being developed and staff recruited. The Commission operates a research reactor (HIFAR) designed to operate at up to 10 Megawatts, and has also a 10-Kilowatt research reactor (MOATA). A 3-million-volt particle reactor is to be installed.

The Australian Institute of Nuclear Science and Engineering comprises the Australian Atomic Energy Commission and all Australian universities. Through operations of the Institute, Australian universities will be able to use the facilities of the Commission's laboratories at Lucas Heights, Sydney.

§ 2. Commonwealth Scientific and Industrial Research Organization

1. *General*.—By the *Science and Industry Research Act* 1949, the previously existing Commonwealth Council for Scientific and Industrial Research was re-organized under the title of the Commonwealth Scientific and Industrial Research Organization. An account of the organization and work of the former Council, and of the earlier Commonwealth Institute of Science and Industry from which the Council was formed, was given in earlier issues of the Official Year Book. (*See* No. 14, p. 1061 and No. 37, p. 1183.)

2. *Science and Industry Research Act 1949-1959*.—This Act provides for an Executive of the Organization consisting of nine members, to be appointed by the Governor-General, at least five of whom shall be persons possessing scientific qualifications; and an Advisory Council of the Organization, consisting of the members of the Executive, the Chairman of each State Committee constituted under the Act, and such other members as the Advisory Council, with the consent of the Minister, co-opts by reason of their scientific knowledge.

The powers and functions of the Organization are as follows:—(a) to initiate and carry out scientific research in connexion with primary or secondary industries in Australia; (b) to train research workers and to establish industrial research studentships and fellowships; (c) to make grants in aid of pure scientific research; (d) to establish and make grants to industrial research associations in any industry; (e) to test and standardize scientific apparatus and instruments; (f) to collect and disseminate scientific and technical information; (g) to publish scientific and technical reports and periodicals; and (h) to act as a means of liaison between Australia and other countries in matters of scientific research.

3. *Science and Industry Endowment Act 1926-1949*.—Under this Act, the Government established a fund of £100,000, the income from which is used to provide assistance to persons engaged in scientific research and in the training of students in scientific research. Provision is made for gifts or bequests to the fund, which is controlled by a trust consisting of the Executive of the Organization. In accordance with the Act, arrangements have been made to send a number of qualified graduates abroad for training in special fields of work.

4. *Work of the Organization*.—(i) *General*. The activities of the Commonwealth Scientific and Industrial Research Organization have necessitated a widespread and adaptable arrangement of its research laboratories. Centralization has been avoided, in the first place by establishing laboratories in different places in the Commonwealth wherever the necessary facilities, contacts and other suitable conditions could best be found, and secondly by the establishment of a State Committee in each of the six States. These Committees are widely representative of scientific and industrial interests, and advise the Executive or the Advisory Council on general matters and on particular questions of investigation and research.

For about twelve years after its establishment, the work of the previous Council was devoted mainly to the solution of problems affecting the agricultural and pastoral industries. Unlike manufacturing concerns, which often employ their own scientific staffs, the farmers and the pastoralists are dependent on outside help for the solution of their problems which

require research. It was a recognition of the greater need of the primary producer which directed the Council's early policy. In 1937, however, the Commonwealth Government decided to extend the activities of the C.S.I.R.O. so as to provide assistance to secondary industries, and several laboratories were established for work in that field; it was thus able to render to these industries assistance almost immediately after the outbreak of war.

(ii) *Establishments.* For the purpose of carrying out its research work, there are established within the Organization a number of Divisions and Sections. The Divisions, of which there are now thirty-one, comprise the major establishments for which special laboratory buildings have been erected and equipped; the Sections generally include establishments which have not reached a stage of development, so far as the scope and magnitude of their operations are concerned, to justify their designation as Divisions. As the Organization's investigations extend over the whole Commonwealth, and as many of the investigations which are being conducted—particularly those concerned with problems affecting the agricultural and pastoral industries—necessitate experimental work in the field, a number of field stations are established in various parts of Australia.

Divisions.

- Plant Industry, with main laboratories at Canberra and field stations.
- Entomology, with main laboratories at Canberra and field stations.
- Animal Health (laboratories in Melbourne, Sydney and Brisbane), Animal Genetics (main laboratory in Sydney) and Animal Physiology (main laboratory in Sydney), which together comprise the Animal Research Laboratories.
- Biochemistry and General Nutrition, with main laboratories at Adelaide and field stations.
- Soils, with main laboratories at Adelaide and extensive operations in the field.
- Forest Products, with main laboratories in Melbourne and field experiments.
- Food Preservation, with main laboratories at North Ryde (New South Wales), and a subsidiary laboratory in Brisbane.
- Fisheries and Oceanography, with main laboratories at Cronulla (New South Wales), and experimental work in coastal waters of Australia.
- Physics and Applied Physics, comprising the National Standards Laboratory at Sydney.
- Radiophysics, with main laboratory at Sydney and Observatory at Parkes, New South Wales.
- Physical Chemistry, Chemical Physics, Mineral Chemistry, Applied Mineralogy, Chemical Engineering, and Organic Chemistry, comprising the Chemical Research Laboratories in Melbourne.
- Tribophysics, with laboratories in Melbourne.
- Building Research, with laboratories in Melbourne.
- Mathematical Statistics, with main laboratory in Adelaide.
- Meteorological Physics, with main laboratory and field station in Melbourne.
- Land Research and Regional Survey, with headquarters in Canberra, and field stations at Alice Springs and Katherine (Northern Territory) and Kununurra (Kimberley, Western Australia).
- Protein Chemistry (Melbourne), Textile Industry (Geelong, Victoria) and Textile Physics (Sydney), which together comprise the Wool Research Laboratories.
- Coal Research, Sydney.
- Tropical Pastures, with main laboratories in Brisbane and field stations.
- Dairy Research, Melbourne.
- Wildlife Research, with main laboratories at Canberra.

Sections.

- Horticultural Research Station, Merbein (Victoria).
- Upper Atmosphere, with laboratory at Camden (New South Wales).
- Mineragraphic Investigations, Melbourne.
- Ore-dressing Investigations, Melbourne and Kalgoorlie.
- Fodder Conservation, Melbourne.
- Physical Metallurgy, Melbourne.
- Soil Mechanics, Melbourne.
- Engineering, Melbourne.
- Agricultural Research Liaison, Melbourne.
- Industrial Research Liaison, Melbourne.
- Editorial and Publications, Melbourne.
- Wheat Research Unit, Sydney.
- Sugar Research Unit, Melbourne.
- Computing Research Section, Canberra.

An Agricultural Research Liaison Section established at the Organization's Head Office assists in making results in agricultural research speedily available to State Departments of Agriculture for use in their extension work.

An Industrial Research Liaison Section has also been established at Head Office to foster liaison in the secondary and manufacturing fields.

The Organization's Head Office, with administrative and executive staff, is in Melbourne, and associated with it are the Organization's Central Library, Agricultural Research Liaison Section, Industrial Research Liaison Section and Editorial and Publications Section. The funds for the Organization are provided from two main sources, namely, from Commonwealth revenue by parliamentary appropriation, and from industry directly or indirectly by way of contributions and special grants. It has some 1,500 professional officers in its total staff of 4,500, and has an annual budget of £12 million.

C.S.I.R.O. maintains liaison offices in London and Washington, in each case as part of the British Commonwealth Scientific Office. These offices keep in close touch with developments throughout Europe and North America, and through them Australia receives advice of significant advances. These offices also play an important role in assisting scientists who are studying in the regions concerned. Numerous overseas studentships are maintained by C.S.I.R.O. as a means of raising the standard of training among its professional staff.

§ 3. Mount Stromlo Observatory

Mount Stromlo Observatory—since 1957 incorporated into the Australian National University—is the largest observatory in the southern hemisphere. It is in effect the Department of Astronomy of the Australian National University, and its staff members assist in the training of the future astronomers of Australia. In its instrumental resources, it is second only to some of the great observatories of America. Since it is located south of the Equator, it is placed especially advantageously for the conduct of research into the structure of the Milky Way System and of the Star Clouds of Magellan. The telescopes and auxiliary equipment at the Observatory provide access to parts of the sky that are forever hidden from the view of northern hemisphere astronomers. Mount Stromlo astronomers have therefore a special responsibility to do research on stars and other celestial objects at far southern declinations.

Mount Stromlo itself is a ridge of hills, approximately one mile long, situated at 35° 19' 16" South Latitude and 149° 0' 20" East Longitude, seven miles west of the city of Canberra. Its highest point is about 2,560 feet above sea level, and telescopes can be situated so as to be well screened from the lights of the city.

The first permanent installation on the site was established in 1911, but, because of the war and other circumstances, the development of the Observatory was delayed. It was not until 1925 that regular astronomical work could be undertaken. Since then, the Observatory has developed steadily, and now, under its third Director, the scientific staff consists of fifteen astronomers. This does not include ten scholars and a number of overseas astronomers visiting Mount Stromlo for periods of a year or so. With technical clerical and maintenance personnel, the total staff amounts to about 60 persons.

Mount Stromlo Observatory possesses eight mounted telescopes with apertures ranging from five inches to 74 inches. The 74-inch reflector is the largest telescope in the southern hemisphere. There are also special telescopes for the Time Service, and two overseas groups have major telescopes on the Observatory grounds. These telescopes are a 26-inch refractor from the Universities of Yale and Columbia, U.S.A., and a 26-inch Schmidt Telescope from the University of Uppsala, Sweden.

The principal fields of research at Mount Stromlo are as follows.

Studies of the structure and dynamics of the Milky Way system.

Investigation of the Large and Small Magellanic Clouds.

Studies of the physical properties of the interstellar medium of gas and dust, and its relation to the spiral structure of our galaxy.

Studies of the physics of the stars of the southern hemisphere by spectrographic means and by photoelectric techniques.

Maintenance of the National Time Service leading to studies of the variable rotation of the earth and polar motion.

Published accounts of the researches have a world-wide distribution.

The Observatory is at present engaged in a major expansion of equipment and staff. A permanent Field Station is under construction on Siding Spring Mountain (Latitude 31° 16' South; Longitude 148° 41' East; altitude, 3,820 feet) near Coonabarabran, New South Wales. This is an area having less cloud than Mount Stromlo. The principal instrument will be a modern 40-inch reflector, now being built in the United States. Other sites are being examined for the future development of astronomy in Australia.

At certain times, Mount Stromlo is open for inspection by members of the public when arrangements can be made so that the scientific work of the Observatory is not interrupted. A more detailed description of the Observatory's work is given in Official Year Book No. 46, pages 1142-4.

§ 4. Australian Atomic Energy Commission

1. **Establishment and Functions of the Commission.**—In November, 1952, a Commission of three members was appointed to control the Commonwealth's activities in relation to uranium and atomic energy, and in April, 1953, upon the enactment of the *Atomic Energy Act 1953*, the Commission was established as a statutory authority, with powers and functions as defined in the Act. Under amending legislation, the number of Commissioners was increased to five in April, 1958. The Commission is a corporate and autonomous body, controlling its own service. It functions under the direction of the Minister for National Development.

The functions of the Commission fall under two main headings. Firstly, it is responsible for undertaking and encouraging the search for and mining of uranium, and is empowered to co-operate with the appropriate authorities of the States in connexion with these and related matters. Secondly, it is authorized to develop the practical uses of atomic energy by constructing and operating plant for this purpose, carrying out research and generally fostering the advancement of atomic energy technology.

2. **Uranium Prospecting and Mining.**—Uranium prospecting and mining in the Territories of the Commonwealth are freely open to private enterprise, subject to the *Atomic Energy Act 1953* and the Ordinances of the Territories. In the past, the Bureau of Mineral Resources, Geology and Geophysics of the Department of National Development has carried out, on behalf of the Commission, widespread aerial and ground surveys aimed at ascertaining the uranium resources of the Territories and delineating areas in which further search for uranium by private prospectors was considered worthwhile. Although rewards are no longer paid for discoveries of uranium, tax concessions are still allowed in respect of income earned from uranium mining. The Bureau of Mineral Resources provides prospectors and mining companies in the Territories with a wide range of technical and advisory services.

The development of the uranium resources of the States is governed by the legislation and policies of the States. Commonwealth assistance, in the form of aerial, geological and geophysical services, is available to the States, and State Mines Departments inspect uranium prospects and test samples submitted by prospectors.

Interest in the search for deposits of uranium has, however, declined in recent years because of world-wide over-supply.

Uranium oxide is being produced in Australia from ore deposits at Rum Jungle and South Alligator River, in the Northern Territory, and Mary Kathleen in Queensland. The Rum Jungle deposits were originally worked under arrangements between the Commonwealth and the Combined Development Agency, a joint procurement organization of the United States and United Kingdom Governments. Since 1953, mining and treatment operations have been conducted for the Commonwealth by a mining company. The treatment plant was commissioned in September, 1954, and the total production from that date to the 6th January, 1963, was sold to the Agency for defence purposes. As a result of sustained exploration in the area, a major new ore body—Rum Jungle Creek South—was discovered. This ore body was mined during the period April, 1961, to January, 1963. The Commonwealth Government has decided that treatment operations will continue at Rum Jungle, using ore stockpiled from the Rum Jungle Creek South mine. Apart from being successful financially, operations at Rum Jungle have made a significant contribution to the development of the Northern Territory. The Government decided therefore that the profits would be re-invested in the Northern Territory. The oxide produced will be available for sale at competitive prices. Exploration is continuing to determine whether or not further ore bodies exist in the area.

Uranium deposits at Radium Hill in South Australia were worked by the State Government, which built an ore concentration plant on the field and a plant for the treatment of the

concentrates at Port Pirie. Production of uranium oxide began in 1955, the output being sold to the Combined Development Agency. Operations ceased at the end of 1961, when the contract expired.

The Mary Kathleen ore body in the Mount Isa-Cloncurry district in Queensland has proved to contain Australia's largest reserve of uranium ore. A mine and treatment plant which cost over £10 million have been established in the area by a large mining company. Production from the plant is being sold to the United Kingdom Atomic Energy Authority for the British nuclear power programme under arrangements approved by the Commonwealth Government. Two other companies in the South Alligator region in the Northern Territory also had contracts with the Authority for the British nuclear power programme. These contracts were for relatively small tonnages, and one has now been completed. Both companies began production in 1959.

3. Research.—The Commission's Lucas Heights Establishment is the major Australian centre for atomic energy research and information. It has a programme of research in the development of nuclear power, the utilization of radio-isotopes, and in other associated fields, directed towards the long-term development of the resources of the country.

The major research effort of the Lucas Heights establishment is the evaluation of a high-temperature gas-cooled reactor system in which the fuel is dispersed in the moderator.

A number of reactor types, e.g. those employing graphite as the moderating material and an inert gas such as helium as the coolant, are being developed overseas. For various reasons, including the avoidance of duplication of effort, the Commission decided to investigate the feasibility of using beryllium metal or beryllium oxide as the moderator, and carbon dioxide (which is cheap and easily obtainable) as the coolant. Most work has been done on the metal system and effort is now being concentrated on the oxide or ceramic system, which appears to offer greater promise in the long run.

With all-ceramic fuel, higher operating temperatures can be achieved. This permits a reduction in the size and cost of heat exchangers and associated civil works and an improvement in steam conditions and overall efficiency.

The development of a new power reactor concept to a commercially economic stage generally takes 15 to 20 years and involves considerable expense. Since a number of different types of reactors have already been developed to a commercial stage, a new concept faces strong competition, and its development can, in general be justified only if it offers promise of some long-term advantages. The beryllium oxide moderated all-ceramic fuel reactor holds such promise.

Provided certain design problems can be satisfactorily solved, a dispersed fuel beryllium oxide based high-temperature gas-cooled reactor should yield lower plant and equipment costs than most other gas-cooled systems.

The maximum gas temperature will be limited by the ability of materials used in parts of the heat exchangers and for duct work to withstand it. Nevertheless it should be possible to achieve steam conditions equal to those likely to be used in any future conventional plants. At present, using available steels which are economically practicable, the maximum temperature of the carbon dioxide coolant would appear to be 750° C., a considerable advance on British gas-cooled stations of current design. There is no obvious reason why this temperature should not be raised as better structural materials are developed. Then gas-turbines or other plant could be used as topping sets, as has been proposed for future development in the conventional power field.

Thus there is plenty of scope for development, and the general concept is unlikely to become prematurely obsolete.

The Commission is also seeking to extend the use of radio-isotopes in Australia in scientific research and development, in the treatment of disease, in raising production and lowering costs in agriculture and in manufacturing industry. New applications are being continually devised. In Australia, these new processes are being used only in a small fraction of the possible fields. The use of isotopes is fostered by providing an advisory service which is a ready source of information on established uses, and by investigation of other projected applications. Isotopes, including short-lived isotopes which cannot be economically imported, are being produced in the high flux research reactor HIFAR, and some are being exported.

Research and development work on technical and scientific applications of radiation is also being carried out. The possibilities of radiation for such purposes as industrial

sterilization, food preservation, and the control of insect pests are being investigated. Scientists at Lucas Heights are also studying the biological effects and questions of health and safety involved in the use of radio-active materials.

Lucas Heights is a centre of specialized equipment and information. In addition to the research reactor HIFAR, used for testing materials and producing radio isotopes, there is much other equipment unique in Australia. All these facilities are available to universities and other institutions under suitable conditions. In these endeavours, the Atomic Energy Commission is working in close co-operation with the British Atomic Energy Authority, under arrangements which give Australia access to results of British research on peaceful atomic energy uses. Results of research in Australia are in like manner available to Britain. Work in Australia, though constituting a self-contained programme, is co-ordinated with the British programme to avoid overlapping of research objectives and duplication of investigations. Australia also has bilateral arrangements with the United States and Canada, and is taking part in the promotion of the peaceful uses of atomic energy through the International Atomic Energy Agency.

§ 5. Scientific Societies

1. **Royal Societies.**—The following table contains the latest available statistical information regarding the Royal Society in each State, the headquarters of which are in the capital cities.

ROYAL SOCIETIES
(December, 1962)

Particulars	Sydney	Mel-bourne	Bris-bane(a)	Ade-laide	Perth	Hobart	Can-berra
Year of charter	1866	1859	1884	1880	1913	1844	1930
Number of members ..	355	402	270	204	209	583	196
Volumes of transactions issued ..	96	(b) 950	74	85	45	96	..
Number of books in library ..	39,000	25,000	58,500	21,500	6,000	33,840	..
Societies on exchange list ..	388	350	288	297	194	316	..

(a) 1961.

(b) Volumes of proceedings.

2. **Australian Academy of Science.**—The Australian Academy of Science is the national institution representing science in Australia. Constituted by Royal Charter presented personally by Her Majesty, Queen Elizabeth II, in Canberra on 16th February, 1954, the Academy promotes scientific knowledge and research, maintains standards of scientific endeavour and achievement in the natural sciences in Australia, and recognizes outstanding contributions to the advancement of science.

The Academy represents Australian science and scientists at the national and international level, organizes meetings of scientists, holds symposia, and arranges for visits of scientists from other countries to Australia.

In its functions, the Australian Academy is comparable with the Royal Society of London and national academies of science of many other countries. Its 100 Fellows (designated F.A.A.) are eminent in some branch of the physical or biological sciences in Australia, occupying professional positions in universities, the Commonwealth Scientific and Industrial Research Organization, other research organizations, and industry. A very few places are reserved for Fellows who have rendered conspicuous service in the cause of science.

No more than six new Fellows are elected in any one year. His Royal Highness, Prince Philip, Duke of Edinburgh, was admitted as a Royal Fellow during his visit to Canberra on 20th November, 1962.

The Australian Academy contributed substantially to the work of the International Geophysical Year and has developed plans for Australian participation in the International Year of the Quiet Sun, from April, 1964, to December, 1965.

Representation is provided at the General Assemblies of the International Scientific Unions and similar bodies relating to astronomy, geophysics, geology, physics, crystallography, mathematics, biochemistry, physiology, geography, biological sciences, chemistry, Antarctic research, space research and oceanic research.

On certain national scientific projects and matters with scientific implications, the Commonwealth Government has sought the Academy's advice.

As the Australian Academy of Science is too young a body to be financially self-sufficient, the Commonwealth Government makes annual grants of general purpose and special funds without affecting the autonomy of the Academy. These grants, together with substantial private benefactions, enable the Academy to continue its work. Research fellowships provided by industry are administered.

The Academy's £250,000 copper-domed circular conference centre was opened in 1959. It was paid for by donations from companies and individuals.

The Academy is managed by an elected council comprising a President, Treasurer, two secretaries, and eight ordinary members who are drawn equally from the physical sciences and biological sciences. Chief administrative officer is the Assistant Secretary, who is not a Fellow.

3. **The Australian and New Zealand Association for the Advancement of Science.**—This association was founded in 1887. Its headquarters are at Science House, Gloucester Street, Sydney, and congresses are held at intervals of approximately eighteen months in the various States and in the Dominion of New Zealand. The latest congress, celebrating the 75th Jubilee, was held in Sydney in August, 1962.

4. **Other Scientific Societies.**—The Linnean Society of New South Wales, with headquarters in Sydney, was founded in 1874. Sir William Macleay, who died in 1891, during his lifetime and by his will endowed the Society to the amount of £67,000, which has been increased by investment to approximately £100,000. The Society offers annually to graduates of the University of Sydney who are members of the Society and resident in New South Wales research fellowships (Linnean Macleay Fellowships) in various branches of natural history. One fellowship was awarded for 1963. The library has some 19,000 volumes. Eighty-seven volumes of Proceedings have been issued, and the Society exchanges with about 300 kindred institutions and universities throughout the world. The membership at the end of 1962 was 267.

The British Astronomical Society has a branch in Sydney, and in each of the States there is a branch of the Australian Medical Association.

There are over 200 other learned societies devoted to the study of particular sciences. Some of these, including the Royal Australian Chemical Institute and the Institute of Engineers, Australia, are qualifying bodies, admission to which is by qualification only. Others, such as the Institute of Food Technologists, are open to any interested person. Some societies, such as the Australian Biochemical Society, have annual symposia of a very high standard. A great many of these bodies publish appropriate journals.

STATE GOVERNMENT EXPENDITURE ON EDUCATION, SCIENCE AND ART

The expenditure by each State Government on education, science and art during the year 1960–61 is shown in the following table. Since details are not available in all States, the figures exclude officers' pensions and superannuation, pay-roll tax, and interest and sinking fund on capital expended on buildings. The cost of the medical and dental inspection of school children is also excluded, as this service is more appropriately classified under public health.

STATE EXPENDITURE ON EDUCATION, SCIENCE AND ART, 1960-61
(£'000)

State	Expenditure from—				Receipts	Net expenditure
	Revenue	Loan	Other funds	Total		
New South Wales ..	58,690	15,691	..	74,380	1,247	73,133
Victoria	40,874	12,925	..	53,799	539	53,260
Queensland	18,036	4,101	1,549	23,686	1,094	22,592
South Australia ..	15,512	4,893	..	20,405	1,694	18,711
Western Australia ..	11,645	2,742	30	14,418	250	14,168
Tasmania	5,898	2,139	39	8,076	476	7,600
Total	150,655	42,491	1,618	194,764	5,300	189,464