

## CHAPTER XXII.

## FORESTRY.\*

## § 1. General.

1. **Objects of Forestry.**—Forestry is a profession based on science, art and economic and business principles, which aims to protect and treat forests as restorable resources to provide their maximum direct and indirect benefits to a country.

The direct benefits lie in the providing of essential commodities such as structural timber, poles, piles, sleepers, pulpwood, firewood, tans, oils, resins, etc. and the provision of an avenue for the employment of labour in forestry and associated and dependent industries. The indirect benefits include the regulation of stream flow from catchment areas, by providing conditions ideal for the maximum penetration into the soil of rainfall and other precipitations. Floods, the effects of reduced and/or intermittent flow of streams, and the ravages of water erosion are thereby minimized, and the effects of aeolian or wind erosion are lessened. Neither the direct nor the indirect benefits of forests are fully appreciated until they are seriously reduced or until their absence brings about a situation which is a matter of public concern.

Australia has a particular interest in water and soil conservation because the area suitable for agricultural and pastoral development is not so large that material reduction in extent or deterioration of productive capacity cannot but limit expansion and retard development, and because of the potential susceptibility of many parts to water and wind erosion; moreover, the water conservation and irrigation schemes, constructed at the cost of millions of pounds to ensure the successful cropping of very large areas, are ultimately dependent on regular stream flow and minimum siltation.

Forestry aims to protect existing forests from the ravages of fire, insect, fungus and destructive agencies generally; to improve the quality and condition of forests by carrying out judicious fellings; to control exploitation so that the forest increment and not the forest capital is removed; to regenerate cut over areas; to afforest with native or exotic species denuded lands, or those which for protection or other reasons are from a national point of view better under forest than under any other crop.

2. **General Account of Forests and Timbers.**—Compared with Australia's land area of approximately three million square miles, the area of forest land capable of producing commercial timber has always been very small, occupying in the main the wetter belts of the coastal areas and the near coastal highlands. In the early days of settlement the forests, however, appeared to the small population to be practically inexhaustible. In those early days timbers were exploited chiefly on account of their accessibility, ease of working and general utility regardless of their intrinsic merits, and so it was that what are now regarded as superlative furniture and cabinet timbers were often put to quite inferior uses. Clearing of forest land by axe and fire stick to make room for crops and pastures has bitten deeply into the original forest estate which has been further degraded by recurrent forest fires. In retrospect, the damage and waste of the past is appalling, but it marked a phase of forest and timber loss which has been paralleled in the vigorous pioneering activity of the early history of many countries.

Predominantly the forests of Australia consist of relatively coarse bluish green foliated evergreen hardwoods. The characteristic genus is *Eucalyptus*, embracing five to six hundred species, which with few exceptions are endemic to Australia. The genus includes such species as the mountain ash (*E. regnans*) of Victoria and Tasmania, and karri (*E. diversicolor*) of Western Australia, both of which for height and grandeur have few equals in the world. At the other end of the scale of size of species of this

\* A specially contributed article dealing with Forestry in Australia appeared as part of this chapter in Official Year Book No. 19 (see pp. 701-12 therein). See also "The Commercial Timbers of Australia, Their Properties and Uses" by I. H. Boas, published by the Council for Scientific and Industrial Research in 1947, "Timbers and Forest Products of Queensland" by E. H. S. Swain, published in 1928 and "Australian Standard Nomenclature of Australian Timbers" published by the Standards Association of Australia.

genus are dwarf types, including the small multiple stemmed species collectively known as the "mallees", which thrive in some of the drier belts. Probably not more than 80 to 90 of the eucalypts are used for sawmilling in Australia and, for one reason or another, not more than 30 to 40 are extensively exploited.

Among these outstanding eucalypts are—

Blackbutt (*E. pilularis*) of New South Wales and Queensland; Tallowwood (*E. microcorys*) of New South Wales and Queensland; Spotted Gum (*E. maculata*) of New South Wales and Queensland; Ironbarks (*E. spp.*) of New South Wales, Victoria and Queensland; Alpine Ash (*E. gigantea*) of New South Wales, Victoria and Tasmania; Redgum (*E. cumaldulensis*) of New South Wales, Victoria and South Australia; Mountain Ash (*E. regnans*) of Victoria and Tasmania; Messmate, Stringybark or Tasmanian Oak (*E. obliqua*) of New South Wales, Victoria and Tasmania; Jarrah (*E. marginata*) of Western Australia; Karri (*E. diversicolor*) of Western Australia.

The range and properties of eucalypt timbers are very great indeed. They fulfil all Australia's requirements where strength and durability are required, for example in such uses as railway sleepers, poles, piles, beams, girders, telegraph crossarms, waggon scantlings, posts, house blocks, wheelwright timber, as well as for fuel, etc. In large measure they also meet general building requirements and, to a lesser extent perhaps, export packaging requirements. In recent years certain of the eucalypts have been extensively pulped for paper-making and, less widely, for the manufacture of hardboard.

A large number of other genera represented in the Australian forest flora also produce commercial hardwoods. Among the outstanding furniture cabinet and veneer timbers are red cedar (*Cedrela toona* var. *australis*), Queensland maple (*Flindersia brayleyana*), Southern and Northern silky oak (*Grevillea robusta* and *Cardwellia sublimis*, respectively), Queensland walnut (*Endiandra palmerstoni*), blackwood (*Acacia melanoxylon*), rose mahogany (*Dysoxylum fraserianum*), etc. Turpentine (*Syncarpia laurifolia*) ranks with the world's best as a harbour piling timber and swamp box (*Tristania suaveolens*) is almost as good. Coachwood (*Ceratopetalum apetalum*) came into prominence for rifle furniture and for aircraft ply during the last war. The foregoing are but a few examples indicating the range of use of the timbers of the Australian hardwood forests.

Indigenous softwood resources have never been large and are now seriously depleted. A remnant only remains of the forests of hoop pine (*Araucaria cunninghamii*), bunya pine (*Araucaria bidwillii*) of New South Wales and Queensland, kauri (*Agathis spp.*) of Queensland, and huon pine (*Dacrydium franklinii*), celerytop pine (*Phyllocladus rhomboidalis*) and King William pine (*Athrotaxis selaginoides*) of Tasmania.

There are still considerable areas of the slow-growing but useful white ant resisting cypress (*Callitris spp.*) in the forests of the inland areas of Queensland, New South Wales and Victoria, but many of them are being overcut and in some localities regeneration of the forests presents difficulties.

The savannah forests of the interior yield minor products such as sandalwood and tan barks, and the leaves of some of the mallees are used for oil distillation.

3. **Extent of Forests.**—According to data submitted by State Forestry authorities for the Empire Forestry Conference in 1947, the total area of forest is 119,402 square miles, or about 4 per cent. of the total land area of Australia. This forest area is distributed between the different States as follows:—New South Wales and Australian Capital Territory, 19,364 square miles; Victoria, 27,025; Queensland, 27,050; South Australia, 5,909 (excluding 4,600 square miles of mallee containing firewood only); Western Australia, 27,154; Tasmania, 12,900; total, 119,402 square miles.

The South Australian authorities especially emphasize that, after excluding the mallee firewood areas, the percentage of the remaining forest comparable with even mediocre forest land in other States is so small as to be almost negligible. Apart from this specific case it seems clear that there is considerable variation in the standards adopted for the definition of forest land. Also it should be emphasized that the figures

given are stated to be rough estimates only. Furthermore, it is generally agreed that the figures for forest areas given are often far in excess of those which are both suitable for reservation and likely to be maintained for timber production. Considering these facts the proportion of Australia carrying commercial forests is very low. On the other hand it should be noted that approximately 68 per cent. of the area of the continent is practically uninhabited and carries less than one person in every eight square miles.

The table below shows a classification of the estimated total forest area referred to above :—

**CLASSIFICATION OF FOREST AREA : AUSTRALIA.**  
(Square miles.)

Class of Forest.	State Forest.	Communal Forest.	Private Forest.	Total.	
				Area.	Proportion of Total Forest Area.
Exploitable—					Per cent.
Softwood .. ..	3,858	16	1,832	5,706	4.8
Mixed wood .. ..	1,033	..	94	1,127	0.9
Hardwood .. ..	32,016	780	13,146	45,942	38.4
Total .. ..	36,907	796	15,072	52,775	44.1
Potentially Exploitable—					
Softwood .. ..	200	..	278	478	0.4
Mixed wood .. ..	100	..	..	100	0.1
Hardwood .. ..	16,853	141	7,848	24,842	20.9
Total .. ..	17,153	141	8,126	25,420	21.4
Other Land Classified as Forest .. ..	34,798	..	6,409	41,207	34.5
Grand Total .. ..	88,858	937	29,607	119,402	..
Proportion of Total Forest Area .. .. Per cent.	74.3	0.8	24.9	..	100.0

The bulk of the softwood forest areas of approximately 4,000 square miles are in Queensland and New South Wales. The softwood forest areas given for these States represent natural forest, a large proportion of which consists of slow-growing native cypress (*Callitris spp.*) in low rainfall areas, and the per acre volume of which is comparatively low.

4. Forest Reservations.—The rate at which the original forest estate was being diminished had exercised the minds of far-sighted individuals as long ago as the eighties of last century and it was about that time that the first large forest reservations were made. Over the years recognition that forest reservations were inadequate became more general. It was not, however, until an Interstate Forestry Conference was held at Hobart in 1920 that a specific target to be aimed at was mentioned. The figure then agreed upon was an area of 24½ million acres of indigenous forest, which it was considered should be permanently reserved to meet the future requirements of Australia.

The forest reservations in Australia at 30th June, 1950 totalled 27,856,655 acres of which 20,452,579 acres are described as Dedicated State Forests, and 7,404,076 acres as Timber and Fuel Reserves. The distribution of these areas is shown by States in § 4. 2 hereafter.

In general the timber and fuel reserves are temporary only and are liable to be alienated after the timber on them has been exploited. Some of these areas contain land of high value for forestry purposes, but the greater part does not justify permanent reservation.

If the permanently reserved areas were all of good quality, accessible, and fully productive forests supplying the class of timber required, they could be regarded as adequate for a much larger population than exists in Australia at the present time. Actually, however, a considerable proportion is in inaccessible mountainous country and many of the forests contain a mixture of species, some only of which are at present of commercial value: a good proportion consists of inferior forest and a large proportion of the whole has been seriously degraded by recurrent fires. Also the indigenous forest does not contain adequate supplies of softwoods producing commercial timbers, of which our needs have to be largely met by softwood timber imported from other countries.

It is freely acknowledged by Australian forestry authorities that information on forest resources is very imperfect. It is not possible at present to give a reliable estimate of the forest areas needed to meet all future demands because of the number of unknown variables involved; in particular the yield capacity per acre, future consumption of different classes of timber per head, and the future population. It would appear, however, that all available potentially good forest country, including adequate areas for plantations of conifers, will need to be reserved, protected and systematically managed, if Australia is to approach the goal of self sufficiency in timber supplies in the future. One of the most urgent requirements in this connexion is a comprehensive, if provisional, estimate of forest resources.

5. **Plantations.**—The inadequacy of indigenous softwood supplies has been referred to. This fact has long been recognized by the various forest authorities and considerable progress has been made in experimental planting of exotic conifers and also some substantial progress made in the establishment of commercial plantations. It was natural that this aspect of forestry received earliest attention in South Australia as it is the State most poorly endowed with natural forest and it now has the largest plantation area. For some years South Australia has been exploiting considerable quantities of timber from its plantations and these quantities will increase very substantially during the next decade.

According to statements provided by State authorities, the total effective area of plantations in Australia as at the 30th June, 1950 was 294,223 acres. Details by States are given under § 4. 3.

## § 2. Forestry Activities of the Commonwealth.

1. **Prior to 1925.**—When the Commonwealth of Australia was established on the 1st January, 1901, forestry was not included among the matters transferred from the States to the control of the Commonwealth, and Federal jurisdiction was therefore restricted to the then relatively unimportant forests of the Australian Territories. After the 1914–18 War these Territories (including Papua-New Guinea and Norfolk Island) covered a large area, and in the aggregate contained a substantial forest resource. In the early twenties of this century a professional forester was appointed as forestry adviser to the Commonwealth Government, and he submitted preliminary reports on the forest resources of Papua-New Guinea, Norfolk Island and the Australian Capital Territory, with suggestions for future policy.

2. **Commonwealth Forestry Bureau.**—In 1925 the Commonwealth Forestry Bureau was instituted and the Commonwealth Forestry Adviser became the Inspector-General of Forests. At this stage it was considered that the most useful contribution that the Commonwealth could make to Australian forestry was: (a) to provide better facilities than then existed for the higher training in forestry for recruits to the professional ranks of the State services and for forestry research workers; and (b) to initiate research into problems connected with silviculture, forest management and forest protection, which fundamentally were common to most, if not all of the States.

By deciding to build, equip and staff the Australian Forestry School on its own Territory the Commonwealth Government ended a long standing controversy as to the site of a National School which successive Interstate Forestry Conferences had

unanimously resolved was necessary. All States sent students to the Australian Forestry School when its career commenced in Adelaide in 1926, pending completion of the school in Canberra in the following year. At this time also a nucleus of selected and qualified officers was sent abroad to undergo special courses of instruction and to obtain experience for the purpose of staffing the research side of the Bureau, which received statutory powers by an Act passed in 1930. These powers and functions, subject to the regulations and the direction of the Minister, were as follows :—(a) advising the Administrations of the Territories on all matters pertaining to the management of forests ; (b) the management of forests placed under its control by the Governor-General ; (c) the establishment of experimental stations for the study of silviculture, forest management and forest protection ; (d) the provision of educational facilities for the training of professional foresters ; (e) the establishment and awarding of forestry scholarships ; (f) the collection and distribution of forestry information ; (g) the publication of reports and bulletins dealing with forestry ; and (h) such other functions as are prescribed.

3. **Wartime Control of Timber.**—In previous issues reference is made to the steps leading up to the war-time control, by the Controller of Timber, of all phases in the production, treatment and use of timber.

4. **Forestry and Timber Bureau.**—(i) *General.* At the end of the war the war-time organization of Commonwealth Timber Control lapsed and the direction of timber supplies within the boundaries of each State became the responsibility of the respective State Governments. The Commonwealth Government decided, however, to continue certain advisory functions previously carried out by War-time Timber Control and such functions were incorporated in the Forestry and Timber Bureau Act 1946 under which the title of the Bureau was altered from Forestry Bureau to Forestry and Timber Bureau, its administration was placed under the charge of a Director-General in lieu of an Inspector-General of Forests, and the powers and functions of the Bureau were extended to embrace the following :—(a) Collecting statistics and information regarding timber supplies and requirements in Australia, and formulating programmes in respect of the supply, production and distribution of timber in Australia, and the importation into, and exportation from, Australia of timber ; (b) advising the Government of the Commonwealth or any instrumentality of that Government, or, when so requested, the Government of any State, or any instrumentality of the Government of any State, or any body or person, on matters relating to the supply, production and distribution of timber in Australia, and the importation into, and exportation from, Australia of timber ; and (c) carrying out investigations and research relating to the supply, production, distribution and use of timber. The activities of the Bureau under its statutory functions are summarized below under four main headings.

(ii) *Forestry Education—Australian Forestry School.* The genesis of the Australian Forestry School situated in Canberra in the Australian Capital Territory, which was established by the Commonwealth Government primarily to meet the demand of the States for an institution which would give professional training at least equal to that given by the recognized Forestry Schools abroad, has been referred to in § 2.2 above.

For information on the conditions required for enrolment as a student, the methods of entry and the scholarships available, see previous issues of this Year Book.

A Board of Higher Forestry Education advises in regard to the maintenance of the standard of the school diploma course and regarding pre-requisite university courses leading to the diploma course. Students who have passed the approved two-year university preliminary science course and two years of diploma course at the school may be granted the degree of B.Sc.F. by their universities.

For various reasons the number of students attending the School each year almost since its inception has been well below the number which events have since shown were necessary to meet the demand for trained personnel. This position was naturally aggravated during the six years of war, while demands for timber and the need for expansion in all phases of forest developmental work, better protection, transport and more intensive management, have accentuated the shortage of trained staffs. The attendance at the Australian Forestry School has consequently increased substantially

to 80 students during 1950. It is not anticipated that this large attendance will be maintained but it has been estimated that in order to meet the future requirements of professional foresters in Australia, the annual attendance at the School for some years to come should be at least 40 to 50 students.

(iii) *Silvicultural Research.* Although a considerable amount of research work had been carried out by the Forest Services of the States, it was recognized that there existed a wide field of research in problems of the living tree and the forest crop which could be most usefully undertaken by the Commonwealth.

The Bureau was accordingly charged with the responsibility of initiating research into problems connected with silviculture, forest management and forest protection. However, the financial situation in the years immediately following the constitution of the Bureau and, later, the impact of the 1939-45 War delayed development in these activities, but some progress was made by the establishment of a small Central Research Station at Canberra. Experimental forest research stations were also established at Mt. Burr in the south-east of South Australia and in Tasmania on a co-operative basis with the Forest Services of those States.

With its present limited staff, the research work of the Bureau has been concentrated largely upon studies of forest and climatic conditions, the genetical relationships and silvicultural requirements of various species, forest nutrition and the improvement of forest yields.

A considerable expansion in the research activities is envisaged over the next few years as suitable trained staff becomes available.

The activities of the Central Research Station are in course of expansion and an Experimental Forest Research Station has been opened at Dwellingup, Western Australia, in co-operation with the Forests Department of that State. It is proposed to extend further the field of this class of work by the establishment of Research Stations in other States and Papua-New Guinea in co-operation with the respective Forest Services.

(iv) *Timber Supply.* The value of reliable statistical data covering availability of timber and timber requirements was so forcibly demonstrated during the 1939-45 war that it was considered essential to maintain at least a skeleton organization against times of future national emergency. Apart from this it became clear that for many years to come shortages of timber on the one hand and heavy post-war reconstruction demands on the other, accentuated by a rapidly increasing population, necessitated assessment of requirements and availability of supplies being kept constantly under review as a basis for short and long term policies of timber supply and distribution.

Advice is currently provided to Government Departments and the trade in matters pertaining to timber supply, including—(a) the availability of total quantities and quantities of particular grades and specifications required to meet Australia's housing and other constructional projects; (b) the quantity of timber that should be imported to assist in meeting such requirements; (c) the extent to which exports of timber and related products might be allowed without detriment to local needs in order to maintain oversea markets; and (d) distribution of timber within Australia from those States having surplus production to those with insufficient production.

Considerable progress has been made on investigations into timber requirements of the many industries dependent on timber, but shortage of trained and experienced staff still hampers the development of this important work.

(v) *Research and Investigation regarding Forest Resources.* Production of timber from native grown species has considerably increased since 1939 in order to assist in meeting the heavy demands, firstly for war purposes, and more latterly for building and other constructional projects of the post-war era.

The extent to which the present rate of production can be continued is dependent upon our forest resources. In the national interests it is essential that overcutting of our forests should be avoided and in consequence it is a matter of primary importance that reliable information be available as to the country's forest resources and potentialities.

To this end a national forest stocktaking is being carried out by the Bureau in co-operation with the Forest Services of the States and, to assist in the work of forest assessment, special consideration is being given to the development of the use of aerial surveys.

Consideration is also being given, in co-operation with the State Forest Services, to the establishment of increased areas of plantations of exotic pines with a view to providing additional supplies of softwood timber to meet requirements.

5. **Commercial Forests.**—The forest areas under Commonwealth control include the following:—

- (a) *Australian Capital Territory.* The forests of the Australian Capital Territory are administered by a Division of the Forestry and Timber Bureau. Further information is contained in Chapter X.—The Territories of Australia.
- (b) *Northern Territory.* The forests of the Northern Territory are administered by the Administrator of that Territory under ordinance. The native forests of the Territory are very limited, consisting only of a limited area of rain forest in the North, patches of cypress pine, river fringing forests of paper bark, tittree and savannah woodland. A Forestry Officer has recently been appointed to the Territory and efforts are to be made to protect and extend the forests.
- (c) *Norfolk Island.* The forests of Norfolk Island are administered by the Administrator of that Territory. The area reserved for forest covers 1,037 acres, of which the main species is Norfolk Island pine.
- (d) *Papua-New Guinea.* The forests are under the control of a Forestry Department and administered under ordinance of the Territorial Administration. Forestry in the Territory of Papua-New Guinea commenced with the appointment of two Forestry Officers to the Administration of New Guinea in 1938. Plans for the expansion of forestry activities are being prepared by the Director of the Forestry Department. This planning has been somewhat hampered by the loss of all records through enemy activities in 1942. Further information is contained in Chapter X.—The Territories of Australia.

6. **Forest Products Research.**—Fundamental investigations connected with the properties and uses of timber and forest products generally are carried out by the Forest Products Division of the Commonwealth Scientific and Industrial Research Organization. These investigations cover a very wide field, e.g., pulp, paper, seasoning, structure and chemistry of wood, tans, etc.

Details can be obtained from the annual reports and publications of the Division.

### § 3. Forest Congresses.

Reference to the various forestry conferences held in Australia and elsewhere is given in Official Year Book No. 22, page 742. The first British Empire Forestry Conference was held in London in 1920. Subsequent conferences were held in Ottawa in 1923, Australia, 1928 and South Africa, 1935, but the Fifth Conference which was to have been held in India in 1940 was postponed because of the war. The Fifth Conference was eventually held in London in 1947, at which statements were presented on a more uniform basis than formerly by the various forest authorities of the British Commonwealth of Nations. These statements included references to the part played by forestry in the different parts of the Empire in the war effort. Publications issued in connexion with these conferences are available on application to the various State and Commonwealth forestry authorities.

The first session of the Food and Agriculture Organization of the United Nations held at Quebec in 1945 drew attention to the need for statistics on forest resources and the supply of, and demand for, forest products; sound forest policies; sound forest management; afforestation; forest research; forest education; integration of forest industries and avoidance of waste; and forest products research, particularly in the direction of extending utilization to little known woods.

At the second session held at Copenhagen in 1946, the Director-General of the Forestry and Timber Bureau attended the conference as alternate delegate and adviser in forestry matters for the Commonwealth.

The Third World Forestry Congress was held in Helsinki in 1949 and was attended by the Officer-in-charge of the Division of Forest Resources of the Forestry and Timber Bureau, who also attended the United Nations Scientific Conference on Conservation and Utilization of Resources, held at Lake Success, United States of America, in the same year.

#### § 4. State Forestry Departments.

1. **Functions.**—With the exception of Queensland, the powers and functions of State forest authorities are laid down under Forestry Acts and Regulations. In each State there is a department or commission to control forestry work. The functions of these administrations are as follows :—(a) The securing of an adequate reservation of forest lands; (b) the introduction of proper measures for scientific control and management of forest lands; (c) the protection of forests; (d) the conversion, marketing and economic utilization of forest produce; and (e) the establishment and maintenance of coniferous forests to remedy existing deficiency in softwoods. Annual reports are issued by each State forest authority.

In Queensland, forestry is a sub-department of the Department of Public Lands.

For many years Victoria has possessed a forestry school at which recruits are trained for the forestry service of the State.

2. **Forest Reservations.**—As mentioned in § 1. 4 *ante*, State forest authorities agreed that, in order to secure Australia's future requirements, an area of 24½ million acres should be permanently reserved. In June, 1950 the area of State forests reserved in perpetuity totalled 20,452,579 acres or 83 per cent. of the area recommended as the goal to be attained.

In addition to the work of permanently reserving areas in each State, foresters are endeavouring to survey all timbered lands with a view to the elimination of those unsuitable for forestry. Considerable areas have been revoked in certain States, while dedications of new areas have resulted in gains to the permanent forest estate.

The Forestry Departments also control more than 7,000,000 acres, recorded as temporary timber and fuel reserves, but, while these areas contain some land of high value for forestry purposes, the greater part does not justify permanent reservation.

In the following table details of forest areas as recorded by State Forest Authorities, distinguishing between Dedicated State Forests and Timber and Fuel Reserves, are shown for each State as at 30th June, 1950.



## AREA OF FOREST RESERVATIONS, 30th JUNE, 1950.

(Acres.)

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total.
Dedicated State Forests	5,926,782	4,975,056	4,101,347	(a) 254,695	3,410,406	1,784,293	20,452,579
Timber and Fuel Reserves	1,301,917	(b)	c 3,127,473	..	2,837,658	(c) 137,028	d 7,404,076
Total ..	7,228,699	4,975,056	7,228,820	254,695	6,248,064	1,921,321	27,856,655

(a) Includes Timber and Fuel Reserves. (b) Not available. (c) Excludes Fuel Reserves.  
(d) Incomplete.

3. **Reforestation, Afforestation, etc.**—In the table below details are shown of the area of indigenous forest improved or regenerated, the area of forest plantations and the number of persons employed by Forestry Departments for the year 1949–50.

## FORESTRY AREAS, AND NUMBERS EMPLOYED BY FORESTRY DEPARTMENTS, 1949–50.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
Total area of indigenous forest improved or regenerated .. acres	1,525,685	1,087,189	521,605	9,928	1,992,000	406,000	5,542,407
Total area of effective plantations—							
Hardwoods .. .. acres	742	2,955	3,323	4,157	17,865	105	29,147
Softwoods .. .. "	39,122	52,096	43,138	113,464	13,108	(a) 4,148	265,076
Number of persons employed " in Forestry Departments—							
Office staff .. .. No. (b)	418	210	172	85	61	72	1,018
Field staff .. .. "	181	361	2,307	670	(c) 131	(d) 79	3,729

(a) Includes 30 acres of nurseries. (b) Includes Wood Technology staff totalling 54.  
(c) Excludes 410 other employees. (d) Excludes 316 other employees.

4. **Revenue and Expenditure.**—The revenue of State Forestry Departments for 1949–50 was £4,155,672, as compared with £3,604,905 in 1948–49 and £1,466,781 in 1938–39; State details for 1949–50 were as follows:—New South Wales, £1,016,428; Victoria, £1,130,307; Queensland, £1,010,460; South Australia, £580,596; Western Australia, £318,940; and Tasmania, £98,941.

The expenditure of the Departments for 1949–50 was £7,606,512, as compared with £6,328,530 in 1948–49 and £1,840,088 in 1938–39; State details for 1949–50 were as follows:—New South Wales, £1,689,947; Victoria, £2,574,197; Queensland, £1,881,048; South Australia, £660,300; Western Australia, £470,410; and Tasmania, £330,610.

## § 5. Forestry Production.

1. **Timber.**—Particulars of logs treated and the production of rough sawn timber by sawmills and other woodworking establishments are shown in the following table by States for the year 1949–50.

**OUTPUT OF NATIVE TIMBER : ALL MILLS, 1949-50.**  
( '000 sup. feet.)

Particulars.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
<b>LOGS TREATED, INCLUDING THOSE SAWN ON COMMISSION.(a)</b>							
Hardwood ..	404,080	466,689	216,632	6,359	313,413	230,063	1,637,236
Softwood ..	111,423	25,482	174,997	93,754	3,615	6,441	415,712
<b>Total ..</b>	<b>515,503</b>	<b>492,171</b>	<b>391,629</b>	<b>100,113</b>	<b>317,028</b>	<b>236,504</b>	<b>2,052,948</b>

<b>SAWN TIMBER PRODUCED FROM LOGS ABOVE.(b)</b>							
Hardwood ..	270,630	292,714	137,589	4,081	136,585	123,543	965,142
Softwood ..	70,513	16,078	113,538	52,694	1,492	3,603	257,918
<b>Total ..</b>	<b>341,143</b>	<b>308,792</b>	<b>251,127</b>	<b>56,775</b>	<b>138,077</b>	<b>127,146</b>	<b>1,223,060</b>

(a) Includes logs used for plywood and veneer production. (b) Includes the sawn equivalent of timber peeled or sliced for plywood and veneer.

The following table shows logs used and the sawn timber produced in Australia for the years 1938-39 and 1945-46 to 1949-50.

**OUTPUT OF NATIVE TIMBER : ALL MILLS, AUSTRALIA.**

Particulars.	Unit.	1938-39.	1945-46.	1946-47.	1947-48.	1948-49.	1949-50.
<b>Logs used—</b>							
Hardwood ..	'000 super. feet (hoppus measure)	1,015,136	1,140,719	1,333,098	1,436,654	1,544,601	1,637,236
Softwood ..	" "	293,680	369,360	409,242	425,812	432,567	415,712
<b>Total ..</b>	" "	<b>1,308,816</b>	<b>1,510,079</b>	<b>1,742,340</b>	<b>1,862,466</b>	<b>1,977,168</b>	<b>2,052,948</b>
<b>Sawn Timber Produced—</b>							
Sawn equivalent of Timber Peeled or Sliced for Plywood and Veneers—							
Hardwood ..	'000 super. feet	(a)	2,670	2,924	2,981	2,190	3,602
Softwood ..	" "	21,639	18,968	24,362	27,629	22,644	22,444
<b>Total ..</b>	" "	<b>21,639</b>	<b>21,638</b>	<b>27,286</b>	<b>30,610</b>	<b>24,834</b>	<b>26,046</b>
<b>Used for other purposes—</b>							
Hardwood ..	" "	} 695,376	643,815	777,113	841,512	905,514	961,540
Softwood ..	" "		224,517	242,683	245,191	253,740	235,474
<b>Total ..</b>	" "	<b>695,376</b>	<b>868,332</b>	<b>1,019,796</b>	<b>1,086,703</b>	<b>1,159,254</b>	<b>1,197,014</b>
<b>Total Sawn Timber—</b>							
Hardwood ..	" "	526,229	646,485	780,037	844,493	907,704	965,142
Softwood ..	" "	190,786	243,485	267,045	272,820	276,384	257,918
<b>Total ..</b>	" "	<b>717,015</b>	<b>889,970</b>	<b>1,047,082</b>	<b>1,117,313</b>	<b>1,184,088</b>	<b>1,223,060</b>

(a) Not available for publication ; included with softwoods.

The next table shows the sawn output of native timber in sawmills and other wood-working establishments in each State for the years 1938-39 and 1945-46 to 1949-50.

## SAWN OUTPUT (a) OF NATIVE TIMBER : ALL MILLS.

('000 sup. feet.)

State.	1938-39.	1945-46.	1946-47.	1947-48.	1948-49.	1949-50.
New South Wales ..	179,350	252,108	300,945	332,591	353,685	341,143
Victoria .. ..	120,197	212,611	253,266	260,502	281,852	308,792
Queensland .. .	193,250	189,912	219,745	235,214	250,355	251,127
South Australia ..	14,537	37,113	46,479	47,700	51,633	56,775
Western Australia ..	125,453	107,647	124,198	131,597	126,859	138,077
Tasmania .. ..	84,228	90,579	102,449	109,709	119,704	127,146
Total .. ..	717,015	889,970	1,047,082	1,117,313	1,184,088	1,223,060

(a) Includes the sawn equivalent of timber peeled or sliced for plywood and veneers.

In addition to the sawn timber shown in the preceding table, a large amount of other timber, e.g., sleepers, piles, poles, fencing material, timber used in mining, and fuel, is obtained from forest and other lands. Complete information in regard to the volume of this output is, however, not available. In Western Australia particulars are obtained of the quantities of timber hewn by contractors for the Railway Department, mines, etc., as well as of the quantities produced by other agencies, but the figures have not been included in the preceding tables. The quantities so produced in Western Australia in the five years shown in the preceding table were as follows:—1938-39, 35,862,540 sup. feet.; 1945-46, 10,348,458 sup. feet.; 1946-47, 15,604,008 sup. feet.; 1947-48, 17,210,844 sup. feet.; 1948-49, 16,331,835 sup. feet.; and 1949-50, 16,823,566 sup. feet. The annual reports of the Forest Departments of the States contain particulars of the output of timber from areas under departmental control, but owing to lack of uniformity in classification and measurement, accurate determination of total production cannot be made. Moreover, there is a moderate quantity of hewn timber produced from privately owned land, but information regarding output is not available.

2. Paper and Wood Pulp.—(i) *Tasmania*. The manufacture of paper from Australian-grown timber has been established in three States. In Tasmania two large mills are making paper from indigenous hardwoods. The first of these started production of paper from imported pulp at Burnie in August, 1938, and so continued until the pulp mill, using local hardwood, came into operation a few months later. At this mill, pulp is produced by the soda process and the caustic soda necessary for cooking the wood and chlorine for bleaching the pulp are produced by a separate plant located alongside the mill. Late in 1951, three paper machines were in operation, with widths of 200, 120 and 90 inches and maximum speeds of 800, 1,000 and 400 feet per minute respectively. A fourth machine similar to the existing 120 inch machine was to be completed early in 1952. The paper produced covers a wide range of high class printing, writing, drawing, duplicating and blotting papers. At Boyer on the River Derwent, 20 miles from Hobart, production of newsprint commenced in February, 1941. The newsprint is manufactured from locally ground wood pulp to which is added a small proportion of sulphite pulp imported from Canada. Two paper machines are installed. Widths are 230 inches and 160 inches and the present operating speed of both machines is 1,200 feet per minute. When running at full capacity total production is 1,560 tons per week. At Boyer, logs are taken from the forest by means of tractors and transported to the mill by rail. The same practice will be followed at Burnie when a large sawmill at present under construction is completed, but in the meantime deliveries to the mill are in the form of split billets. Power is supplied by the Tasmanian Hydro-electric Commission under contract, but since the introduction of power rationing early in 1951 some curtailment of production

has been enforced, and at Boyer one machine was idle on this account. Hardwood not suitable for pulping and Tasmanian coal are used as fuels. During 1949-50, 59,871 cords of pulpwood and 24,082 cords of firewood were delivered to these mills.

(ii) *Victoria.* In Victoria the production of wood pulp for paper-making commenced in January, 1937, with a pilot plant having the capacity of about 3,000 tons of air-dried pulp per annum. In October, 1939 the main plant at Maryvale, with a capacity of 27,000 tons of pulp per annum, commenced operations. Associated with the pulp mill is a paper-making plant capable of producing about 20,000 tons of kraft paper per annum. The timber used at this mill consists mainly of hardwoods at present unsuitable for other purposes and, in addition, a small quantity of pine, mainly thinnings, mill waste, and special softwood for production of cellulose. During 1948-49 the wood taken from Crown Lands for the production of wood pulp and cellulose amounted to 3,373,704 cubic feet of which 3,347,467 cubic feet were hardwood and 26,237 cubic feet were radiata pine.

(iii) *South Australia.* In South Australia a pulp and paper board mill commenced operations during 1941-42 near Millicent. The mill uses considerable quantities of softwoods from the Mount Burr and Penola pine plantations. During 1949-50, 8,611,357 super. feet of pulp wood were produced, 4,515,717 super. feet for local use and 4,095,640 super. feet for use in an interstate mill.

3. *Other Forest Products.*—(i) *Veneers, Plywood, etc.* Cutting of timber for the manufacture of veneers, plywood, etc., has been carried out in most States for a number of years. Recently, however, this has been considerably extended in all States, and much greater use has been made of local-grown timbers, both hard and softwoods. In recent years special attention has been paid to the selection of logs suitable for peeling.

The following table shows the production of plywood for each of the years 1938-39 and 1945-46 to 1949-50 :—

## PLYWOOD PRODUCED.

('000 square feet  $\frac{1}{8}$  in. basis).

State.	1938-39.	1945-46.	1946-47.	1947-48.	1948-49.	1949-50.
New South Wales ..	24,194	19,545	22,323	23,726	25,572	28,008
Queensland ..	66,100	73,581	87,180	99,823	104,262	111,048
Other States ..	14,511	10,731	13,770	15,528	16,451	17,977
Total ..	104,805	103,857	123,273	139,077	146,285	157,033

During 1949-50, 469.7 million square feet ( $\frac{1}{8}$ -in. basis) of veneers were produced by the rotary process for the manufacture of plywood, and 46.2 million square feet ( $\frac{1}{8}$ -in. basis) were sold or added to stock, the bulk of which would eventually be used in the production of plywood. In addition, 23.4 million square feet were produced by slicing. Comparable figures for earlier years are not available.

(ii) *Charcoal.* During the 1939-45 War, charcoal was widely used as a substitute fuel for petrol, and production was considerably increased; it fell from this level, however, when more petrol supplies became available.

(iii) *Eucalyptus Oil.* Oil may be distilled from the foliage of all varieties of eucalyptus, and several of them furnish a product widely known for its commercial and medicinal uses. Complete information regarding Australian production and consumption of eucalyptus oil is not available, but considerable quantities are

manufactured, particularly in Victoria. The value of oversea exports of eucalyptus oil distilled in Australia amounted in 1938-39 to £86,714; in 1945-46 to £201,948; in 1946-47 to £408,451; in 1947-48 to £323,800; in 1948-49 to £138,304; and in 1949-50 to £147,355. The quantities exported in the years 1946-47 to 1949-50 were 1,680,461 lb., 1,481,418 lb., 765,195 lb., and 680,802 lb., respectively. Particulars of quantities for earlier years are not available. The bulk of the product is shipped to the United Kingdom and the United States of America, Victoria being the principal exporting State.

(iv) *Sandalwood and Sandalwood Oil.* Most of the sandalwood is produced in Western Australia where considerable quantities are gathered each year for export to Asiatic countries. Small quantities are also produced in South Australia, Queensland and New South Wales. Details of exports of sandalwood are shown in paragraph 3 (ii), § 6. Oil distilled from Western Australian sandalwood has a medicinal value and is used extensively in the manufacture of perfumes. Quantities of this oil are exported annually to the eastern States of Australia and oversea countries, principally the United Kingdom. Oversea exports of Australian sandalwood oil amounted in 1938-39 to £13,964; in 1945-46 to £19,560; in 1946-47 to £59,145; in 1947-48 to £38,327; in 1948-49 to £16,118; and in 1949-50 to £22,889.

(v) *Grass Tree or Yacca Gum.* South Australia is the chief State producing this gum, which is used in the preparation of varnishes and lacquers. Quantities are also obtained in New South Wales and Western Australia but these are small. The production in South Australia during 1949-50 amounted to 779 tons, whilst the exports from Australia amounted to 715 tons valued at £17,873.

(vi) *Tanning Barks.* The forests of Australia are capable of yielding a wealth of tanning materials; many species of eucalyptus and other genera contain varying proportions of tannin, chiefly in the bark, but also in the wood and twigs. Although many of these species contain higher percentages of tannin than are found in the barks of oak, chestnut and hemlock, formerly the chief source of tannin material in the northern hemisphere, scattered distribution has resulted in the richest tan-bearing species only being used in Australia. These are:—Golden wattle (*Acacia pycnantha*), black or green wattle (*Acacia decurrens* or *mollissima*), and mallet (*Eucalyptus astringens*).

Up to 1913 the production of wattle bark was more than sufficient for local requirements, and an export trade was built up. The supply diminished during the six years ended 1926-27, and Australia imported on the average about 2,900 tons each year from Natal, where the plantations were originally started from Australian seed. From 1927-28 to 1938-39 exports exceeded imports in every year except 1936-37, but since 1939-40 there has been a considerable excess of imports. This matter is referred to in tables appearing in § 6 following. The other valuable tanning bark, mallet (*Eucalyptus astringens*) of Western Australia, is not extensively used in Australian tanneries, but it is exported to Europe and other countries, where it is used for producing a tannin extract. A brief account of work done by the Council for Scientific and Industrial Research in connexion with tanning materials is given in Official Year Book No. 22, p. 743. The production of extract from the bark of karri (*Eucalyptus diversicolor*), of which very large quantities are available at karri sawmills, has passed the experimental stage, and private enterprise has started production on a commercial scale. The experimental work in kino impregnated marri (*Eucalyptus calophylla*) bark is not yet complete. The production of tanning bark in Australia approximated 25,000 tons per annum in the years prior to 1939. Since then production has declined and in 1945-46 reached the level of about 8,800 tons recovering to about 11,000 tons in the years subsequent to 1946-47. However, this diminution is offset by the increased use of vegetable tanning extract which rose from 3,686 tons in 1938-39 to 10,714 tons in 1949-50.

4. Value of Production.—(i) *Gross, Local and Net Values, 1949-50.* The values of forestry production on a gross, local and net basis are shown in the following table for the year 1949-50.

**GROSS, LOCAL AND NET VALUE OF FORESTRY PRODUCTION, 1949-50.**  
(£'000.)

State.	Gross Production Valued at Principal Markets.	Marketing Costs.	Gross Production Valued at Place of Production.	Net Value of Production. (a)
New South Wales .. .. .	7,447	262	7,185	7,185
Victoria .. .. .	6,159	589	5,570	5,570
Queensland .. .. .	4,700	680	4,020	4,020
South Australia .. .. .	2,437	137	2,300	2,300
Western Australia .. .. .	2,251	230	2,021	2,021
Tasmania .. .. .	2,339	240	2,099	2,099
Total .. .. .	25,333	2,138	23,195	23,195

(a) No deduction has been made for depreciation and maintenance nor for the value of other materials used in the process of production.

(ii) *Net Values, 1934-35 to 1949-50.* In the following table the net value of forestry production and the net value per head of population are shown by States for the years 1945-46 to 1949-50 in comparison with the average for the five years ended 1938-39.

**NET VALUE OF FORESTRY PRODUCTION.**

Year.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
<b>NET VALUE.(a) (£'000.)</b>							
Average, 1934-35 to 1938-39 .. .. .	2,094	837	2,226	547	1,176	394	7,274
1945-46 .. .. .	3,745	2,411	2,502	1,170	1,459	973	12,261
1946-47 .. .. .	4,508	2,946	3,037	1,383	1,496	1,327	14,697
1947-48 .. .. .	5,741	3,493	3,394	1,700	1,605	1,833	17,766
1948-49 .. .. .	6,561	3,940	3,804	2,104	1,791	2,105	20,305
1949-50 .. .. .	7,185	5,570	4,020	2,300	2,021	2,099	23,195

**NET VALUE PER HEAD OF POPULATION. (£ s. d.)**

Average, 1934-35 to 1938-39 .. .. .	0 15 7	0 9 1	2 5 2	0 18 7	2 11 8	1 13 9	1 1 4
1945-46 .. .. .	1 5 6	1 3 11	2 6 2	1 17 1	2 19 6	4 19 10	1 13 9
1946-47 .. .. .	1 10 5	1 8 11	2 15 4	2 3 2	3 0 2	5 4 3	1 19 1
1947-48 .. .. .	1 18 2	1 13 9	3 1 0	2 12 1	3 3 1	7 0 1	2 6 6
1948-49 .. .. .	2 2 10	1 17 4	3 7 1	3 3 3	3 8 7	7 16 11	2 12 1
1949-50 .. .. .	2 5 4	2 11 4	3 9 2	3 7 0	3 14 1	7 11 4	2 17 8

(a) No deduction has been made for depreciation and maintenance nor, for the year 1949-50, for the value of other materials used in the process of production; in earlier years deductions were made on this account for one or two States only.

5. **Employment.**—(i) *Forestry Operations.* The estimated number of persons employed in forestry operations as at June, 1950 is shown in the following table. These estimates, which have been based upon pay-roll tax and other data, include working proprietors, but exclude those employed in the sawmilling industry whose particulars are shown in the next table.

**ESTIMATED NUMBERS EMPLOYED IN FORESTRY, JUNE, 1950.**  
(Excluding Sawmilling Industry).

Sex.	N.S.W. (a)	Victoria.	Q'land.	S. Aust. (b)	W. Aust.	Tasmania.	Total.
Males .. .. .	7,522	7,044	5,627	1,637	1,854	1,708	25,392
Females .. .. .	39	20	4	10	10	4	87
Total .. .. .	7,561	7,064	5,631	1,647	1,864	1,712	25,479

(a) Includes Australian Capital Territory.

(b) Includes Northern Territory.

(ii) *Milling Operations.* Details of the number of persons employed, including working proprietors, in the milling operations of sawmills during the year 1949-50 are shown in the next table. Further details regarding the operations of these mills are shown in Chapter XXIV.—Manufacturing Industry.

## SAWMILLS : PERSONS EMPLOYED, 1949-50.

Sex.	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	Total. (a)
Males .. ..	8,923	6,094	6,226	1,747	3,016	2,236	28,242
Females .. ..	302	111	202	107	21	23	766
Total .. ..	9,225	6,205	6,428	1,854	3,037	2,259	29,008

(a) Excludes Northern Territory and Australian Capital Territory.

## § 6. Oversea Trade.

1. Imports.—(i) *Dressed Timber*. The quantities and values of timber imported into Australia during the years 1938-39 and 1947-48 to 1949-50 inclusive are shown in the following table according to countries of origin :—

## DRESSED TIMBER : IMPORTS INTO AUSTRALIA.

Country of Origin.	Quantity ('000 sup. ft.).				Value (£).			
	1938-39.	1947-48.	1948-49.	1949-50.	1938-39.	1947-48.	1948-49.	1949-50.
United Kingdom .. ..	1	2	21	6	44	425	1,194	383
Canada .. ..	8,927	3,297	1,707	398	90,833	137,916	68,518	12,316
Other British Countries .. ..	3	155	183	773	21	6,113	8,881	30,111
Norway .. ..	4,209	2,094	6,604	9,242	43,297	90,924	273,734	374,718
Sweden .. ..	1,978	5,075	32,033	33,189	24,290	220,817	1,302,495	1,297,208
U.S. of America .. ..	2,242	2,245	550	..	22,029	122,060	31,081	1
Other Foreign Countries .. ..	418	103	1,021	546	6,163	4,057	42,019	21,946
Total .. ..	17,778	12,971	42,119	44,154	186,677	582,312	1,727,922	1,736,683

The figures in the table above exclude items such as architraves, veneers, plywood, staves, etc., quantities for which are either not shown, or are expressed in dissimilar units in the Customs entries. The total value of the items so excluded amounted to £587,084 in 1949-50.

The bulk of the imports of dressed timber now comes from Norway and Sweden and consists of softwoods cut for making boxes, and tongued and grooved timber, weather-boards, etc.

(ii) *Undressed Timber*. Australian imports of undressed timber for the years 1938-39 and 1947-48 to 1949-50 are shown hereunder :—

## UNDRESSED TIMBER (a) : IMPORTS INTO AUSTRALIA.

Country of Origin.	Quantity ('000 sup. ft.).				Value (£).			
	1938-39.	1947-48.	1948-49.	1949-50.	1938-39.	1947-48.	1948-49.	1949-50.
United Kingdom .. ..	115	104	181	181	9,984	24,014	33,586	27,137
Canada .. ..	296,948	48,148	78,761	80,201	1,115,562	1,414,520	2,012,413	1,997,618
Malaya (British) .. ..	165	311	840	2,167	1,264	6,311	29,820	92,250
New Zealand .. ..	11,193	13,956	26,588	15,085	157,967	342,614	704,552	447,086
Other British Countries .. ..	10,840	10,421	25,350	34,454	68,387	206,274	431,599	572,444
Indonesia, Republic of .. ..	20	257	..	17	118	1,584	..	582
New Caledonia .. ..	1,671	6	867	450	5,796	55	19,399	11,613
Philippines Republic .. ..	6,879	2	..	..	66,371	34	..	..
Sweden .. ..	4,654	3,168	23,046	23,115	36,946	98,530	799,750	696,590
United States of America .. ..	12,245	57,735	36,545	46,368	191,221	1,453,164	955,227	1,311,309
Other Foreign Countries .. ..	3,368	297	11,723	11,819	34,708	29,106	421,248	437,132
Total .. ..	348,098	134,405	203,901	213,857	1,688,324	3,576,206	5,407,594	5,593,761

(a) Includes logs not sawn and excludes timber not measured in super. feet.

By far the larger proportion of the undressed timber imports consists of softwood such as oregon, redwood, hemlock, western red cedar and yellow pine from Canada and the United States of America; kauri, red and white pine from New Zealand and other softwoods from Sweden. Amongst the hardwoods imported are mahogany from the United States of America, teak from Burma and other hardwoods from the Pacific Islands.

2. Exports.—(i) *Undressed Timber (excluding Railway Sleepers)*. The quantity and value of undressed timber, exclusive of railway sleepers, exported during the years 1938-39 and 1947-48 to 1949-50 are shown below, together with the countries of destination.

### UNDRESSED TIMBER (EXCLUDING RAILWAY SLEEPERS) (a) : EXPORTS FROM AUSTRALIA.

Country to which Exported.	Quantity ('000 sup. ft.).				Value (£).			
	1938-39.	1947-48.	1948-49.	1949-50.	1938-39.	1947-48.	1948-49.	1949-50.
United Kingdom .. ..	11,750	8,247	7,025	15,319	137,927	266,490	268,213	594,193
Canada .. ..	223	382	210	326	4,723	14,531	8,548	14,697
Hong Kong .. ..	98	163	..	34	1,058	5,433	..	3,227
Mauritius .. ..	354	275	310	397	4,520	6,922	8,349	12,476
New Zealand .. ..	17,145	8,561	12,227	11,634	245,194	254,386	425,253	462,793
Union of South Africa ..	7,164	3,807	2,843	2,655	80,668	117,630	87,945	91,329
Other British Countries ..	2,280	1,349	1,666	2,613	36,333	67,899	62,851	102,016
Belgium .. ..	1,286	217	121	270	19,347	9,160	6,280	14,047
United States of America ..	867	409	291	144	26,506	15,671	12,154	6,697
Other Foreign Countries ..	2,630	403	101	375	32,470	8,603	4,388	15,877
Australian Produce .. ..	43,797	23,813	24,794	33,767	588,746	766,725	883,981	1,317,352
Other Produce .. ..	541	564	191	470	6,079	24,894	11,208	23,148
<b>Total .. ..</b>	<b>44,338</b>	<b>24,377</b>	<b>24,985</b>	<b>34,237</b>	<b>594,825</b>	<b>791,619</b>	<b>895,189</b>	<b>1,340,500</b>

(a) Excludes timber not measured in super. feet.

The bulk of the exports of undressed timber were consigned to New Zealand, the United Kingdom, South Africa and the United States of America, and consisted largely of the Western Australian hardwoods, jarrah and karri, which have earned an excellent reputation for such purposes as harbour works and wood paving, etc.

(ii) *Railway Sleepers*. Particulars of the quantities and values of railway sleepers exported, which are excluded from the previous table relating to undressed timber, are shown below.

### RAILWAY SLEEPERS : EXPORTS FROM AUSTRALIA.

Country to which Exported.	Quantity ('000 sup. ft.).				Value (£).			
	1938-39.	1947-48.	1948-49.	1949-50.	1938-39.	1947-48.	1948-49.	1949-50.
United Kingdom .. ..	1,438	739	..	..	14,467	29,956	..	..
Ceylon .. ..	5,334	2,705	417	423	53,339	109,366	17,354	17,622
Mauritius .. ..	563	..	428	350	6,216	..	17,836	15,011
New Zealand .. ..	16,896	12,645	14,679	11,358	165,303	263,691	344,954	271,855
Pacific Islands (British) ..	201	341	88	347	2,341	7,808	4,349	9,319
Union of South Africa ..	4,941	873	2,982	1,923	49,412	37,352	133,881	82,858
Other British Countries ..	..	2,160	20	92	..	98,112	652	3,628
Egypt .. ..	4,198	..	..	..	41,986	..	..	..
Iran (Perela) .. ..	271	..	1,238	1,005	2,707	..	46,863	42,087
Iraq .. ..	165	..	2,687	..	1,696	..	109,028	..
Other Foreign Countries ..	29	42	..	42	291	787	..	1,088
<b>Total .. ..</b>	<b>34,036</b>	<b>19,505</b>	<b>22,539</b>	<b>15,540</b>	<b>337,758</b>	<b>547,072</b>	<b>674,917</b>	<b>443,465</b>
Number of Sleepers '000	1,268	773	955	647	..	..	..	..



3. **Classification of Imports and Exports.**—(i) *General.* The quantities and values of timber, according to items, imported and exported during the year 1949–50 are shown in the following table:—

**TIMBER : IMPORTS AND EXPORTS, AUSTRALIA, 1949-50.**

Description.	Quantity.				Value (£).		
	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.	Imports.	Exports.	Excess of Imports over Exports.
Logs, nor sawn ..	'000 sup. ft.	31,501	5,942	25,559	493,323	236,515	256,808
Timber undressed—							
Beams, Baulks, etc. ..	"	133,186	27,103	106,083	3,354,103	1,059,785	2,294,318
Boards, Planks, etc. ..	"	45,399	1,192	44,207	1,562,025	44,200	1,517,825
Boxmaking timber ..	"	3,286	(a)	..	127,198	(a)	
Railway sleepers ..	"	(a)	15,540	..	(a)	443,468	
Other undressed ..	"	..	..	..	63,972	169,914	
Timber, dressed—							
Bent or cut into shape ..	"	..	..	..	89,521		
Boxmaking timber ..	'000 sup. ft.	11,356	..	..	449,341		
Tongued, and grooved, weatherboards ..	"	22,137	..	..	872,758	21,334	1,804,870
Other, dressed or moulded ..	"	10,660	..	..	414,584		
Plywood ..	'000 sq. ft.	24,598	586	24,012	391,749	19,799	371,950
Veneers ..	"	6,559	4,978	1,581	105,814	51,037	54,777
Total ..	..	..	..	..	7,924,388	2,046,052	5,878,336

(a) Not separately recorded.

NOTE.—Minus sign (–) denotes an excess of exports.

(ii) *Sandalwood.* A considerable quantity of sandalwood is exported, principally from Western Australia, to Singapore and Hong Kong, where it is highly prized and largely used for artistic and ceremonial purposes. Particulars for the five years 1947–48 to 1949–50 are compared with 1938–39 in the following table:—

**SANDALWOOD : EXPORTS FROM AUSTRALIA.**

Country to which Exported.	Quantity (Tons).				Value (£).			
	1938-39.	1947-48.	1948-49.	1949-50.	1938-39.	1947-48.	1948-49.	1949-50.
Hong Kong ..	806	49	25	40	18,709	11,428	5,985	9,820
Malaya (British) ..	97	15	49	85	3,149	3,790	11,400	19,863
Singapore ..	..	72	67	54	..	17,493	14,650	12,058
Other British Countries ..	42	11	13	15	1,385	2,860	3,116	3,570
China ..	686	..	..	..	18,511	..	..	..
Other Foreign Countries ..	17	..	2	1	574	..	484	235
Total ..	1,648	147	156	195	42,328	35,571	35,635	45,546

(iii) *Tanning.* For a number of years prior to 1927–28 Australia had to import large quantities of tanning bark, but thereafter imports dropped to negligible quantities and exports rose annually to 89,061 cwt. in 1931–32. Since 1931–32 there has been a diminution of exports and by 1941–42 these had reached the low level of 421 cwt. The quantity imported did not rise appreciably until 1939–40 when imports were more than three times that of the previous year. Since that year there has been a considerable excess of imports, the Union of South Africa being almost the sole source of supply. During recent years exports have been negligible.

A comparison of the imports and exports of tanning bark during 1938-39 and the five years ended 1949-50 is shown in the following table :—

**TANNING BARK : IMPORTS AND EXPORTS, AUSTRALIA.**

Particulars.	1938-39.	1945-46.	1946-47.	1947-48.	1948-49.	1949-50.
<b>QUANTITIES—</b>	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.	Cwt.
Imports .. ..	6,199	86,367	65,056	69,012	27,690	21,464
Exports .. ..	18,220	1	9,673	..	22	..
Excess of imports over exports ..	- 12,021	86,366	55,383	69,012	27,668	21,464
<b>VALUES—</b>	£	£	£	£	£	£
Imports .. ..	2,318	56,986	49,456	64,696	36,809	25,316
Exports .. ..	8,630	6	13,032	..	119	..
Excess of imports over exports ..	- 6,312	56,980	36,424	64,696	36,690	25,316

NOTE.—The minus sign (—) denotes an excess of exports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One species of Australian wattle, *Acacia mollissima*, is chiefly relied upon for the production of wattle bark in the South African plantations. Seed has been tried from New South Wales, Tasmania and Victoria, but it is stated that most of the seed is obtained from the best wattle bark areas in eastern Tasmania and western Victoria.

Two reasons are given to account for the success of the industry in the Union of South Africa :—(a) It is found that the treeless, grassy highlands of Natal are specially suitable for wattle culture, and the trees can therefore be grown in rows and economically attended to, while the necessary bark sheds and other appurtenances can be placed in the most advantageous positions ; and (b) the availability of native labour.

(iv) *Other Tanning Substances.* Considerable quantities of tanning substances other than bark are imported annually into Australia. The total value in Australian currency of the importations in 1949-50 was £334,767, and was composed as follows :—Tanners' Bates, £5,439 ; wattle bark extract, £283,571 ; other extract, £4,915 ; and volonia, myrobalans, cutch, etc., £40,842.

Exports of tanning extracts from Australia amounted to £240,818 in 1949-50.