

## CHAPTER XIX.

## FORESTRY.\*

## § 1. Forestry.

1. **General.**—Economic forestry aims at the preservation and development of existing forest areas by safeguarding against fire and other destructive agencies, by expert supervision of the removal of timber, by judicious thinning, and by reforestation of denuded areas with suitable new growths of local or exotic origin. It provides also for the continuance of an indispensable form of national wealth by the afforestation of available bare lands adapted to the growth of various timbers. Though large areas of virgin forests still remain in Australia, the inroads made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—are considerable, and it is not unlikely that climatological changes are caused thereby. It is stated that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest-covering beneficially regulates the effects of rainfall.

Successful planting of exotics in various parts of Australia has demonstrated that the climate is suitable for the cultivation of a large number of the most valuable and beautiful of the world's timber trees.

2. **Extent of Forests.**—(i) *Australia.* The wooded area of Australia contains a large number of xerophilous trees and woody shrubs which thrive in regions receiving less than 10 inches of rain per annum. Country devoid of tree growth is rare, the conditions being due to lack of suitable soil rather than lack of rainfall. Sand dunes, rock exposures, and clay pans are the most common treeless areas. A treeless region such as the 300 miles long Nullarbor plain is quite exceptional. There the lack of tree growth is due to the failure of the limestone formation to retain moisture. While, however, the major portion of Australia carries trees, and may be said to be well wooded (the term “desert” applying to relatively small areas only), dense forest is confined to a very narrow fringe. The savannah forests of the interior yield minor products such as sandalwood and tanbarks, but do not produce timber. These open, park-like formations carry only scattered trees of low habit. The bulk of the commercial forest products comes from the thickly-timbered areas comprised in the 30-inch and over rainfall belt south of the Tropics, and the 70-inch and over rainfall belt in the Tropics. The total area is comparatively small, and is confined to the following districts:—(a) The coastal belt in the extreme south-west of Western Australia, from a little north of Perth to Albany; (b) the Otway country, in the south of Victoria, and the whole of the south-eastern portion of that State; (c) the mountain forests of Victoria and New South Wales. A forest fringe extends along the coast of New South Wales and Queensland, the rainfall rising from 30 inches in the south and temperate portion to 140 inches in the Tropics. The greater portion of Tasmania receives sufficient rainfall to carry high forest, but a very small area only in South Australia, and practically none in the Northern Territory, are endowed with the necessary rainfall. Edaphic forests occur here and there, and the most important belt is probably that which is to be found on each side of the Murray River in New South Wales and Victoria. Red Gum (*E. rostrata*) is the riverine species. Practically the whole of Papua and New Guinea carry or have carried dense forests, the exceptions being certain small dry belts where the rainfall is less than 70 inches. Norfolk Island was, at one time, covered with a thick jungle.

Special articles relating to Australian Eucalyptus timbers and the chemical products of Eucalyptus will be found in Official Year Book No. 10, pp. 85–98.

\* A specially contributed article dealing with Forestry in Australia appeared as part of this chapter in Official Year Book No. 19 (*vide* pp. 701 to 712 therein).

Scientific surveys of the forests of the various States have not yet been completed, and there are, in consequence, conflicting reports regarding the total forest area of Australia. Expert foresters, however, estimate the forest area possible for permanent reservation at approximately 24,500,000 acres, distributed throughout the States as follows:—

## ESTIMATED FOREST AREA—AUSTRALIA, 1925-26.

State.					Total Forest Area.	Percentage on Total Area.
					Acres.	%
New South Wales	..	..	..	..	8,000,000	4.04
Victoria	..	..	..	..	5,500,000	9.78
Queensland	..	..	..	..	6,000,000	1.40
South Australia	..	..	..	..	500,000	0.21
Western Australia	..	..	..	..	3,000,000	0.48
Tasmania	..	..	..	..	1,500,000	8.94
Total					24,500,000	1.29

(ii) *Comparison with other Countries.* The absolute and relative forest areas of Australia and other countries are shown below:—

## FOREST LANDS.—RELATIVE AREAS, VARIOUS COUNTRIES.

Country.	Total Wooded Area.	Percentage on Total Area.	Country.	Total Wooded Area.	Percentage on Total Area.
	Sq. Miles.	%		Sq. Miles.	%
Soviet Republics	2,662,000	37.81	Norway	27,434	21.95
Canada	965,234	26.78	Rumania	26,436	21.62
United States	724,150	24.35	Italy	21,309	17.81
India (British)	228,850	20.91	Spain	18,965	9.74
Sweden	90,889	57.35	Czecho-Slovakia	17,996	33.17
Japan	74,019	50.13	New Zealand	17,969	17.30
Finland	71,770	55.80	Austria	12,220	37.75
Germany	50,608	26.29	Latvia	7,027	27.70
France	39,873	18.74	Greece	5,844	11.71
<b>Australia</b>	<b>38,281</b>	<b>1.29</b>	United Kingdom	5,180	3.90
Poland	32,781	21.99			

3. *Requisite Proportion of Forest Area.*—It is generally held that when the proportion of forest in any country falls below 0.86 acres per head of the population, that country will be obliged to import timber. Australia possesses 4.09 acres of forest per head of population, and the excess of imports of timber over exports amounts to 28,000,000 cubic feet. There are two reasons for this excess. In the first place the area of 24,500,000 acres given as the wooded area comprises all forest lands, reproductive or otherwise. The bulk of this area consists of cut-over forests swept by fire at frequent intervals, and the area of really productive forests is not available. Secondly, Australia does not possess a surplus of softwoods, and must, therefore—with the exception of a small quantity produced in Queensland and northern New South Wales—import the bulk of its requirements from overseas. The figure 24,500,000 acres represents the total area that in the estimation of foresters should be reserved for forestry, and taking the factor of 0.86, then, when all the forest area of Australia has been brought under sylvicultural treatment, and is yielding its maximum of hard and soft woods, and none is being imported, the timber supply of Australia would support a population of 28½ millions.

## § 2. Activities of the Commonwealth Government.

Forestry was not included amongst the matters transferred by the States to the control of the Commonwealth, and federal supervision, therefore, is restricted to the forests in the Commonwealth Territories. These territories cover a large area, and, with the exception of the Northern Territory, are capable of sound forestry development. It is only during the last few years, however, that any attempt has been made to take stock of the forestry position. Reports have been issued in regard to Papua, New Guinea, the Federal Capital Territory, and Jervis Bay, and a general policy has been drawn up for the management of the forests of these Territories. So far as co-operation with the States is concerned, there has been progress in a small way in connexion with the investigation of minor forest products. The Commonwealth Institute of Science and Industry, for example, has carried out valuable research work into the pulping qualities of Australian hardwoods and into the tanning qualities of barks and other material. It is proposed to enlarge the work of investigation into minor products, and, through the Forestry Bureau of the Commonwealth Government, to co-operate with the States in major forest work. An Australian Forestry School has been founded, and the Federal Capital Commission has appointed a qualified forester to manage the forests at Canberra and Jervis Bay, while it is anticipated that in both New Guinea and Papua the forests will shortly be placed under technical management.

## § 3. State Forestry Departments.

1. **Functions.**—Each State has organized a separate Department or Commission specially charged with the control and management of the State forests and timber reserves. Extensive survey work is carried on with a view to the classification of forest lands and the proclamation of State forests. The forests are improved by systematic cutting and scientific treatment, by judicious thinning and ringbarking, by the making of roads and the establishment of fire-breaks, and by the removal and destruction of debris, and stunted, diseased or suppressed growth. Provision is made for effective patrols in forest districts to check the ravages caused by fire, often due, it is believed, to carelessness. The training of forest officers, the conduct of research work, and the collection of forestry statistics are also undertaken.

2. **Forest Reservations.**—At the Interstate Conference on Forestry, held at Hobart in 1920, the forestry authorities of the various States agreed upon the necessity of reserving an area of 24,500,000 acres of indigenous forest lands to meet the future requirements of Australia. This area was distributed among the States as set out in § 1. 2 *ante*.

Having been endorsed by the Premiers' Conference held later in the same year, this area was adopted as the Australian forest ration towards which the authorities are now aiming for permanent reservation. The progress made in the various States to the end of June, 1926, is set out in the following table :—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1926.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests ..	5,230,601	3,581,371	1,779,349	201,857	916,553	176,137	11,885,868
Timber and fuel reserves ..	1,653,817	749,081	3,356,187	..	774,364	1,641,125	8,174,574
Total ..	6,884,418	4,330,452	5,135,536	201,857	1,690,917	1,817,262	20,060,442

(a) Includes Timber and Fuel Reserves.

The only notable increase in reservation during 1925-26 took place in Western Australia, where 782,257 acres were added to the permanent estate. Much progress has been made by the Lands Department of this State in arranging for the dedication of prime timber country as State Forest, and assurances have been given that this work will continue steadily until the whole of the prime timber belt has been dealt with.

The area of State forests reserved in perpetuity amounted in June, 1926, to 11,885,868 acres, or 48.5 per cent. of the quota adopted for Australia, while the timber reserves, which are liable to cancellation, embraced an area of 8,174,574 acres, making a total area of 20,060,442 acres under the control of the Forestry Departments. Of this area a considerable proportion consists of inaccessible mountainous country and cut-over lands, while the Australian quota recommended refers to merchantable forest only. The foresters of Australia are, therefore, faced with a difficult task in improving and preserving the existing forests, and in securing the reservation of further suitable forest country to ensure a permanent supply of accessible timber.

3. **Sylvicultural Nurseries and Plantations.**—Recognition of the necessity for systematic sylviculture has led to the creation in all of the States of a number of sylvicultural nurseries and plantations. The locality of these establishments, together with a brief statement of the nature of their activities, is given in previous issues of the Year Book. (Reference may be made to Official Year Book No. 6, pp. 451-3.) Details regarding forest plantations and employment are given hereunder:—

**SYLVICULTURAL PLANTATIONS AND FORESTRY EMPLOYMENT, 1925-26.**

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tasmania.	Total.
Total area of Effective Plantations—							
Softwoods .. Acres	11,214	10,995	1,225	16,084	1,954	300	41,772
Hardwoods .. Acres	..	2,183	282	5,761	..	..	8,226
Number of persons employed in Forestry Departments—							
Office Staff .. No.	30	34	62	9	36	3	174
Field Staff .. No.	669	126	187	165	(a)343	7	1,497

(a) Including 262 casual hands.

4. **Revenue and Expenditure.**—The revenue and expenditure of the State Forestry Departments from 1921-22 to 1925-26 are given below:—

**FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE, 1921-22 TO 1925-26.**

State.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
<b>REVENUE.</b>					
	£	£	£	£	£
New South Wales .. .. .	217,841	168,698	186,393	209,732	224,207
Victoria .. .. .	155,160	163,076	166,556	162,792	161,608
Queensland .. .. .	220,950	267,816	227,830	246,641	224,728
South Australia .. .. .	11,234	8,362	11,110	22,905	19,418
Western Australia .. .. .	88,529	87,658	127,253	182,764	227,061
Tasmania .. .. .	18,891	19,346	21,150	20,757	20,715
Total .. .. .	712,605	714,956	740,292	845,591	877,737
<b>EXPENDITURE.</b>					
	£	£	£	£	£
New South Wales .. .. .	186,588	137,108	137,705	153,722	178,490
Victoria .. .. .	130,076	138,714	160,373	199,575	274,732
Queensland .. .. .	201,865	158,618	66,670	60,542	72,236
South Australia .. .. .	36,467	40,822	40,487	43,459	53,977
Western Australia .. .. .	47,885	38,827	48,333	86,739	101,321
Tasmania .. .. .	7,069	8,293	8,277	11,435	13,007
Total .. .. .	609,950	522,382	461,845	555,472	693,763

5. **Instruction in Scientific Forestry.**—Forestry schools have been established in New South Wales, Victoria, and Western Australia, in which general scientific instruction is imparted, special attention being paid to forestry. In the classes, theoretical forestry, botany, geology, physics, land surveying, etc., are taught; while in outside work trainees receive practical instruction in the preparation of seed-beds, seed-sowing, propagation, planting out, pruning, the general care and improvement of plantations and natural forests, and the employment of timber to the best advantage. Courses of lectures are also given at various centres, and, at some of the higher technical schools, members of the forest staffs are afforded opportunities of qualifying in special subjects. It was early realized, however, that a higher national school was necessary for the training of fully qualified foresters and this matter has engaged the attention of the forestry authorities in the various States since 1916. A site for the school was chosen, the curriculum was drawn up, and complete unanimity was arrived at regarding the higher training to be given at the institution, but matters were allowed to remain in abeyance. Early in 1925, however, the Commonwealth Government assumed the responsibility of establishing the institution, and the States agreed to nominate a certain number of students annually. Applicants for entry must have completed a two years' science course at one of the universities. The school, comprising eighteen students, was housed for the first year at Adelaide University, but early in 1927 it was transferred to Canberra, the Federal Capital City. It is anticipated that the Central College will supply the States with foresters qualified to undertake all necessary forestry work, and that it will constitute a nucleus of forest knowledge designed to develop on sound lines the sylviculture of Australia.

6. **Forest Congresses.**—Interstate Conferences on Forestry were held in 1911 and 1912, chiefly with a view of securing uniformity of management. An International Forest Congress was held at Paris in June, 1913, when a Professor of South Kensington Imperial College represented the Commonwealth Government. The papers and reports dealt chiefly with the threatened shortage of timber, and the measures necessary to avert the danger. An Imperial Forestry Conference was held in London in the summer of 1920, at which also Australia was represented. Important Interstate Forestry Conferences were held in Adelaide in May, 1916; at Perth in November, 1917; at Hobart in April, 1920; at Brisbane in April, 1922, and at Sydney in September, 1924. Australia was also represented at a World's Forestry Congress held at Rome during May, 1926.

### § 4. Production.

1. **Timber.**—Estimates of the quantity and value of local timber sawn and hewn in the sawmills of the various States are given hereunder:—

#### SAWMILL OUTPUT OF NATIVE TIMBER, 1921-22 TO 1925-26.

State.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	1,000 sup. feet.				
New South Wales .. .. .	143,593	147,108	167,493	162,423	169,991
Victoria .. .. .	112,008	118,336	134,639	114,705	109,534
Queensland .. .. .	(a)112,987	(a)126,088	(a)141,672	143,623	131,662
South Australia .. .. .	3,398	1,187	1,350	3,981	3,362
Western Australia .. .. .	(a)163,991	(a)149,158	(a)161,749	(a)189,019	(b)271,662
Tasmania .. .. .	(a)54,518	(a)45,564	(a)63,120	50,799	53,588
Total .. .. .	590,495	587,441	670,023	664,550	739,799

(a) Year ended 31st December. (b) Figures for eighteen months ended 30th June, 1926.

In addition to the timber shown above for Western Australia, the following quantities were hewn by contractors for the Railway Department, Mines, etc., or were sawn in establishments other than forest sawmills during the past five years:—1921-22, 19,672,258 sup. feet; 1922-23, 29,901,378 sup. feet; 1923-24, 30,797,419 sup. feet; 1924-25, 18,118,199 sup. feet; and 1925-26, 57,272,898 sup. feet.

2. **Other Forest Products.**—(i) *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 large quantities are manufactured, particularly in Victoria. Oversea exports amounted in 1922-23 to £33,990, in 1923-24 to £66,339, in 1924-25 to £75,763, and in 1925-26 to £73,023, the bulk of the product being shipped from Victoria to the United Kingdom, the United States and Germany. Large quantities of the crude oil are used locally in flotation processes at the mines.

(ii) *Tan Barks.* The forests of Australia contain a wealth of tanning materials, all the eucalypts being capable of furnishing a percentage of tannin. The principal source of supply in Australia is obtained from the golden, and the black or green wattle, and in pre-war days the production was more than sufficient for local requirements and an export trade was built up. The supply is, however, diminishing, and since 1921-22 Australia has imported on the average about 2,750 tons each year from Natal, where the plantations were originally started from Australian seed. In addition to the wattle bark, a valuable tan bark is obtained from the mallet (*E. occidentalis*) of Western Australia. This bark is not extensively used in Australian tanneries, but is exported to Europe and other countries, where it is used for producing a tannin extract. A survey of the tanning materials of Australia was recently completed by the Council for Scientific and Industrial Research, and the results have shown that with one possible exception no new high-grade tanning materials were discovered that could be exploited commercially for tanning purposes in the natural form, i.e., as tanning bark. Several new materials, however, were found to have a high tannin content, but in the majority of cases abundant supplies would not be economically available for transport to consuming centres unless the varieties of trees concerned were systematically cultivated. Prospects for utilizing a large variety of materials are more favourable in connexion with the manufacture of blended tannin extracts at or near the centre of harvesting. A tannin content of about 30 per cent. was recorded for the first time for the bark of a gum-tree (*Eucalyptus alba*) from the Kimberleys in the north-west of Western Australia. The tannin of this bark possesses excellent tanning qualities, and ample supplies are believed to be available, but the cost of collection would be high. Other Western Australian materials which possess a high tannin content, and of which abundant supplies are available in the southern portion of the State are the bark of karri (*E. diversicolor*), the wood of tuart (*E. gomphocephala*), and red-gum or marri kino (*E. calophylla*). All these materials could be utilized if blended either with other known tanning materials occurring in the same area, or with soluble (sulphited) marri kino. Abundant supplies of mangrove barks are available both in tropical Australia and Papua. Their tannins might be worked up to form extract, either alone or blended with other lighter-coloured extractives. Blends of ridge-gum and mangrove bark are considered suitable for the manufacture of a high-grade extract. In the eastern States cypress pine bark is considered a promising raw material for the preparation of tannin extract. Blends with wattle have been tried. Silver wattle (*Acacia decurrens*, var. *dealbata*) might also be profitably worked up for tannin extract (alone or blended). None of the leaves and twigs examined was considered a promising material either for utilization in the original form or for the preparation of tannin extract, as in most cases the tannic content was low and the proportion of non-tannin too high. The production of tan bark in Australia is estimated at about 27,000 tons per annum.

3. **Value of Production.**—Though the valuation of the quantity of firewood consumed in Australia presents serious difficulty, an estimate of the total value of forest production is compiled annually with the following results for the past five years:—

VALUE OF FOREST PRODUCTION.—AUSTRALIA, 1921-22 TO 1925-26.

Production.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	£	£	£	£	£
Total ..	8,998,000	9,344,000	10,292,000	10,577,000	10,964,000

## § 5. Commercial Uses of Principal Australian Timbers.

1. **General.**—The uses of the more important Australian timbers are many and various, and are indicated in previous issues of this work. (See Official Year Book No. 6, pp. 454-6; and Official Year Book No. 10, Section III., § 7 and 8.)

The following is a list of the Australian timbers best known on the local markets :—

### (a) SOLEROPHYLLOUS FOREST OF THE SOUTH, WEST, AND EAST—MAIN GENUS EUCALYPTUS.

Eucalyptus :—Blue Gum (*E. globulus*), Messmate or Stringy Bark (*E. obliqua*), Mountain Ash or Swamp Gum (*E. regnans*), Red Mountain Ash, Wollybutt, Gum topped Stringybark (*E. gigantea* and *E. delegatensis*), Jarrah (*E. marginata*), Karri (*E. diversicolor*), Murray River Red Gum (*E. rostrata*), Brown Stringybark (*E. cupitellata*), Red Ironbark (*E. sideroxyylon*), Grey Ironbark (*E. paniculata*), Narrow-leaved Ironbark (*E. crebra*), Tallow Wood (*E. microcorys*), Spotted Gum (*E. maculata*). Conifers :—Cypress Pine (*Callitris & Frenela verrucosa*), Huon Pine (*Dacrydium Franklinii*)\* King William Pine (*Arthrotaxis selaginoides*)\* Celery-top Pine (*Phyllocladus rhomboidalis*)\* Other :—Blackwood (*Acacia melanoxylon*), Myrtle (*Fagus Cunninghamii*), Sassafras (*Atherosperma moschata*), — (*Banksia sp.*), Oaks (*Casuarina sp.*).

### (b) TROPICAL AND SUB-TROPICAL RAIN-FORESTS—BROAD LEAVED TREES.

Cedar (*Cedrela Toona var. australis*), Silkwood or Cedar (*Flindersia Mazlini*), Crows Ash (*Flindersia australis*), Hickory (*Flindersia Ifflaiana*), White Beech (*Gmelina Leichardtii*), Black Bean (*Castanospermum australis*), Walnut (*Cryptocarya sp.*), Turpentine (*Syncarpia laurifolia*).

### (c) CONIFERS OF THE EAST AND NORTH-EAST.

Hoop Pine (*Araucaria Cunninghamii*), Bunya Pine (*Araucaria Bidwilli*), Queensland Kauri Pine (*Agathis Palmerstoni*), Brown Pine (*Podocarpus elata*).

### (d) INTRODUCED SPECIES IN PLANTATION.

Excluding ornamental trees, the introduction of trees for forestry purposes is confined to conifers. South Australia took the first steps in this direction. The following species have been tried there and in other States :—

Monterey Pine (*P. radiata (syn. insignis)*), Cluster Pine (*P. pinaster (syn. maritima)*), Jerusalem Pine (*P. halepensis*), Canary Pine (*P. canariensis*), Yellow or Pondosa Pine (*P. ponderosa*), Black Corsican Pine (*P. nigra (syn. laricio)*), Longleaf Pine (*P. palustris*), Lobolly Pine (*P. taeda*), Bishop's Pine (*P. muricata*), Slash Pine (*P. caribaea*), Cedar (*Cedrus deodara*), Cedar (*Cedrus libani and atlantica*), Douglas Fir or Oregon (*Pseudotsuga Douglasii*), Larch (*Larix europea*), Redwood (*Sequoia gigantea and S. sempervirens*).

2. **Lack of Uniformity in Nomenclature.**—Unfortunately the vernacular names applied to the gums, ironbarks, etc., in the various States, and even in different parts of the same State, do not always refer to identical timbers. The resulting confusion has not only been productive of loss, but it has, to some extent, prejudicially affected the timber trade. This subject is referred to at some length in the special article "Australian Eucalyptus Timbers," in Section III., § 7 and 8, in Official Year Book No. 10. At the Forestry Conferences alluded to above, the matter came up for special consideration, and steps were taken to establish a uniform nomenclature.

## § 6. Oversea Trade.

1. **Imports.**—(i) *Dressed Timber.* The quantity and value of timber imports into Australia during the four years 1922-23 to 1925-26 inclusive are shown according to countries of origin in the following tables :—

\* Confined to Tasmania.

## DRESSED TIMBER.—IMPORTS, AUSTRALIA, 1922-23 TO 1925-26.

Country of Origin.	Quantity.				Value.			
	1922-23.	1923-24.	1924-25.	1925-26.	1922-23.	1923-24.	1924-25.	1925-26.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ..	625	3,443	1,083	5,343	33	659	112	342
Canada ..	4,119,889	5,112,662	3,122,711	6,367,054	44,113	59,456	33,733	60,942
Other British Countries:	2,995	17,998	109,050	46,477	124	568	1,363	1,079
Norway ..	49,971,566	38,071,271	41,824,922	41,419,031	724,507	528,346	605,784	506,705
Sweden ..	30,299,618	46,363,406	25,814,691	43,282,827	421,307	633,704	306,715	485,867
United States ..	7,196,660	8,040,984	15,789,591	15,303,997	63,998	94,492	173,095	161,674
Other Foreign Countries:	497,096	48,032	39,147	1,460,169	6,468	1,168	2,004	22,419
Total ..	92,088,449	97,057,796	86,701,195	107,884,898	1,260,550	1,318,393	1,122,806	1,239,028

The figures in the table above are exclusive of items such as architraves, veneers, 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 £185,299 in 1925-26, including plywood, veneered or otherwise, £139,772.

The bulk of the imports of dressed timber comes from Norway, Sweden, and the United States. Practically the whole of this timber consists of softwoods—deal and pine—used for lining, weatherboards, flooring, shelving, doors, box-making, etc.

(ii) *Undressed Timber.* Australian imports of undressed timber for the latest available four years are given hereunder:—

## UNDRESSED TIMBER, INCLUDING LOGS (b).—IMPORTS, AUSTRALIA, 1922-23 TO 1925-26.

Country of Origin.	Quantity.				Value.			
	1922-23.	1923-24.	1924-25.	1925-26.	1922-23.	1923-24.	1924-25.	1925-26.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	28,736	25,226	49,168	132,230	1,216	1,482	1,183	3,362
Canada ..	43,548,208	52,976,045	22,454,122	21,433,364	314,978	475,450	166,934	168,515
India ..	62,909	97,869	322,963	396,877	769	2,693	6,559	12,860
Malaya (British) ..	237,433	257,560	176,539	220,411	2,057	1,944	1,509	2,168
New Zealand ..	42,822,742	42,843,088	44,170,689	49,626,921	533,962	510,165	594,478	671,165
Other British Countries ..	1,699,662	971,622	890,033	1,567,528	14,471	9,803	9,112	15,354
Japan ..	6,116,548	5,082,826	8,103,367	6,895,043	130,550	113,196	200,187	136,835
Java ..	a 884,416	a 577,930	928,474	1,252,120	a 8,007	a 8,058	10,230	9,649
Norway ..	406,720	1,724,176	3,528,405	787,576	5,761	27,207	37,086	7,916
Sweden ..	3,220,682	6,914,823	5,864,057	6,465,812	44,012	96,407	61,583	60,643
United States ..	169,636,426	226,360,751	219,487,525	288,943,456	1,665,312	2,762,302	1,921,325	2,517,746
Other Foreign Countries ..	3,871,076	6,147,964	9,963,442	14,298,104	69,751	67,849	131,229	188,898
Total ..	272,535,558	343,979,380	315,938,784	392,019,451	2,790,936	4,076,056	3,141,415	3,795,111

(a) Including other Dutch East Indian possessions.

super. feet.

(b) Exclusive of timber not measured in

By far the larger proportion of the undressed timber imports consists of softwoods such as yellow pine, redwood, and oregon from the United States of America and Canada; kauri, rimu, and white pine from New Zealand; pine from Japan, and red deals from Norway and Sweden. Amongst the hardwoods imported, the principal are oak from the United States of America and Japan, and teak from India.

2. Exports.—The quantity and value of undressed timber exported from 1921-22 to 1925-26 are given below, the countries of destination being also shown:—

UNDRESSED TIMBER, INCLUDING LOGS (a).—EXPORTS, AUSTRALIA,  
1921-22 TO 1925-26.

Country to which Exported.	Quantity.					Value.				
	1921-22	1922-23	1923-24	1924-25	1925-26	1921-22	1922-23	1923-24	1924-25	1925-26
	1,000 sup. ft.	£	£	£	£	£				
United Kingdom ..	8,824	5,731	14,154	17,539	10,718	116,017	75,556	143,443	192,744	107,951
Canada ..	136	41	198	201	302	3,030	866	2,915	4,272	6,537
Ceylon ..	6,203	1,898	3,222	4,822	8,385	61,759	19,392	30,773	44,798	100,536
Egypt ..	402	(b)	(b)	(b)	(b)	4,698	(b)	(b)	(b)	(b)
Hong Kong ..	462	334			131	6,580	3,883			1,618
India ..	9,161	2,672	12,588	1,230	7,920	91,353	28,468	125,865	11,274	79,890
Malaya (British) ..	2	176			4	24	5,045			25
Mauritius ..	3,706	2,367	2,835	2,448	67	50,591	24,546	29,849	24,152	1,040
New Zealand ..	23,874	24,845	36,349	46,318	31,750	358,960	324,052	510,035	680,802	424,214
Pacific Islands—										
Fiji ..	845	664	1,130	781	1,077	12,604	10,307	17,407	13,286	17,230
Territory of New Guinea ..	95	157	213	239	509	2,401	2,883	4,572	4,483	8,038
Other Islands ..	586	474	535	715	937	12,597	8,339	10,558	16,520	17,471
Papua ..	99	217	316	405	357	2,391	3,814	5,347	7,197	7,244
South African Union ..	37,261	42,370	24,681	51,902	47,130	395,026	472,564	273,713	558,511	527,138
Belgium ..	1,766	595	716	2,182	157	18,790	5,949	7,157	21,819	1,473
China ..	1,939	3,149	3,695	4	1,703	19,796	27,418	36,951	187	17,032
Egypt ..		(c)1,981	5,341	66	518		(c)19,963	55,666	664	5,156
Japan ..	128	173	116		50	2,478	2,169			742
Pacific Islands—										
New Caledonia ..	51	32	57	76	40	1,234	538	1,034	1,450	990
Other Islands ..	62	63	87	124	83	1,426	1,329	1,658	2,079	1,717
U.S. of America ..	489	439	399	469	846	12,550	11,196	9,318	12,169	20,131
Other Foreign Countries ..	303	122	276	433	501	4,417	1,865	3,587	5,855	6,377
Total ..	96,394	88,500	106,908	130,004	113,185	1,178,725	1,050,142	1,271,948	1,602,272	1,352,550

(a) Exclusive of timber not measured in super feet. (b) Now recorded as a Foreign Country.  
(c) Previously recorded as a British Country.

As the table shows, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, and the United Kingdom, and consisted largely of the Western Australian hardwoods, jarrah, and karri, which have earned an excellent reputation for such purposes as railway sleepers, harbour works, wood paving, etc.

3. Classification of Imports and Exports.—(i) *General*. The quantities of timber classified according to varieties imported and exported during the year 1925-26 are given in the next table:—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA,  
1925-26.

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Dressed .. .. .	sup. ft.	107,884,898	799,343	107,085,555
Undressed, including logs	.. .. .	392,019,451	113,184,837	278,834,614
Architraves, mouldings, etc.	lin. ft.	37,629	69,941	— 32,312
Plywood, veneered or otherwise	sup. ft.	8,796,795	(b)	(b)
Palings .. .. .	No.	.. .. .	334,849	— 334,849
Pickets .. .. .	.. .. .	58,840	1,000	57,840
Shingles .. .. .	.. .. .	3,590,370	472	3,589,898
Staves—				
Dressed, etc. .. .. .	.. .. .	490,686	1,485	489,201
Undressed .. .. .	.. .. .	2,346,868	5,027	2,341,841
Laths—				
For blinds .. .. .	.. .. .	(a)	(a)	(a)
Other .. .. .	.. .. .	31,850,145	5,000	31,845,145
Doors .. .. .	.. .. .	30,290	.. .. .	30,290
Wood pulp .. .. .	ton	15,514	(b)	(b)
Veneers .. .. .	.. .. .	(a)	(b)	(b)
Spokes, rims, felloes, etc.	.. .. .	(a)	(a)	(a)
Other .. .. .	.. .. .	(a)	(a)	(a)

(a) Quantity not available. (b) Exports not recorded separately.  
NOTE.—The minus sign — denotes an excess of exports.

Similar particulars relative to the values of imports and exports during the year 1925-26 are shown hereunder :—

**TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, AUSTRALIA, 1925-26.**

Description.	Imports.	Exports.	Excess of Imports over Exports.
	£	£	£
Dressed .. .. .	1,239,028	19,786	1,219,242
Undressed, including logs .. .. .	3,795,111	1,352,550	2,442,561
Architraves, mouldings, etc. .. .. .	328	447	— 119
Plywood, veneered or otherwise .. .. .	139,772	(a)	(a) 139,772
Palings .. .. .	..	3,750	— 3,750
Pickets .. .. .	556	21	535
Shingles .. .. .	6,338	3	6,335
Staves—			
Dressed, etc. .. .. .	27,672	58	27,614
Undressed .. .. .	34,612	152	34,460
Laths—			
For blinds .. .. .	25	132	— 107
Other .. .. .	44,644	20	44,624
Doors .. .. .	22,298	..	22,298
Wood pulp .. .. .	227,122	(a)	(a) 227,122
Veneers .. .. .	11,912	(a)	(a) 11,912
Spokes, rims, felloes, etc. .. .. .	4,209	4,940	— 731
Other .. .. .	2,901	..	2,901
<b>Total .. .. .</b>	<b>5,556,528</b>	<b>1,381,859</b>	<b>4,174,669</b>

NOTE.—The minus sign - denotes an excess of exports. (a) Exports not recorded separately.

(ii) *Sandalwood*. A considerable amount of sandalwood is annually exported principally from Western Australia to China, where it is highly prized, and largely used for artistic and ceremonial purposes. Particulars for the past five years are as follows :—

**SANDALWOOD.—EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.**

Country to which Exported.	Quantity.					Value.				
	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
United Kingdom ..	4	..	..	..	1	267	2	..	..	7
Hong Kong ..	3,334	4,057	8,894	3,811	5,063	57,714	66,460	222,300	113,551	155,139
India ..	333	469	239	406	341	6,144	8,131	6,192	11,574	12,384
Malaya (British) ..	228	352	1,404	725	567	3,935	5,322	45,118	27,321	18,340
Other British Countries ..	2	2	..	..	1	36	30	..	..	53
China ..	575	2,419	3,754	1,722	2,255	7,611	30,876	83,415	53,031	66,639
Other Foreign Countries ..	6	..	..	..	7	123	3	..	..	245
<b>Total ..</b>	<b>4,482</b>	<b>7,899</b>	<b>14,291</b>	<b>6,664</b>	<b>8,235</b>	<b>75,830</b>	<b>110,824</b>	<b>357,025</b>	<b>205,477</b>	<b>252,807</b>

(iii) *Tan Bark*. Tan bark figures both as an export and import in the Australian trade returns, as the following tables show. The first table refers to exports :—

## TAN BARK.—EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Country to which Exported.	Quantity.					Value.				
	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom..	1	12		48	104	1	3		48	58
New Zealand ..	17,047	12,718	5,278	4,061	1,008	11,927	8,299	3,263	2,372	701
Other British Possessions ..		309		332			194		170	
Germany ..			9,005	36,081	303			4,983	19,587	159
Other Foreign Countries ..	822	4,490	3,313	2,272	5,033	534	2,220	2,172	1,155	2,900
Total ..	17,870	17,529	17,601	42,794	6,448	12,462	10,716	10,418	23,332	3,818

The exports of tan bark from Australia during the past three years consisted largely of mallet bark from Western Australia. The shipments of this bark are not so large as in pre-war days, owing to the cutting out of supplies. This bark is mainly despatched to Germany, where it is converted into a tannin extract.

A comparison of the imports and exports of tan bark during the last five years is given in the next table :—

## TAN BARK.—IMPORTS AND EXPORTS, AUSTRALIA, 1921-22 TO 1925-26.

Particulars.	1921-22.	1922-23.	1923-24.	1924-25.	1925-26.
	cwt.	cwt.	cwt.	cwt.	cwt.
<b>QUANTITIES—</b>					
Imports .. .. .	34,328	93,769	73,941	28,628	44,372
Exports .. .. .	17,870	17,529	17,601	42,794	6,448
Excess of exports over imports	— 16,458	— 76,240	— 56,340	14,166	— 37,924
<b>VALUES—</b>					
Imports .. .. .	£ 15,954	£ 37,349	£ 28,672	£ 11,821	£ 21,498
Exports .. .. .	12,462	10,716	10,418	23,332	3,818
Excess of exports over imports	— 3,492	— 26,633	— 18,254	11,511	— 17,680

NOTE.—The minus sign — denotes excess of imports.

The imports consist almost exclusively of wattle bark from the plantations in South Africa. One variety of Australian wattle is found to flourish in the sandy belts near the coast, but it is the *Acacia decurrens*, var. *mollis*, which 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 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. (b) There is an abundance of cheap and efficient native labour available for employment on the plantations.

Considerable quantities of tanning substances other than bark are annually imported into the Commonwealth. The total value of the importations in 1925-26 was £79,535, and was composed as follows :—Wattle bark extract, £1,278; quebracho extract, £20,740; other extract, £23,307; and valonia, myrobalans, cutch, etc., £34,210.