

## 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 tan barks, 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 Eucalypts will be found in Official Year Book No. 10, pp. 85–98.

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\* 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.

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
Australia	38,281	1.29	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 4.01 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 silvicultural 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 Council for Scientific and Industrial Research, 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. The Forestry Bureau was instituted in 1925 and an Act passed in 1930 provided certain statutory powers. The Australian Forestry School was inaugurated in 1926. A qualified forester has been appointed 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 scientific 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 ring-barking, 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, 1929, is set out in the following table :—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1929.

Particulars.	N.S.W.	Vic.	Q'land.	S. Aust.	W. Aust.	Tas.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests ..	5,255,635	4,348,940	1,796,172	2,267,797	2,974,344	1,252,893	15,895,781
Timber and fuel reserves ..	1,564,858	748,794	3,403,174	..	1,401,987	950,538	8,069,351
Total ..	6,820,493	5,097,734	5,199,346	267,797	4,376,331	2,203,431	23,965,132

(a) Includes Timber and Fuel Reserves.

In addition to the work of permanently reserving their respective quotas, the State foresters are concerned with the surveying of all forest lands and the excising of those unsuitable for forestry. During the year considerable areas were revoked in certain States, but dedications of new areas resulted in a gain of 1,140,424 acres to the permanent estate, the greatest increase occurring in Western Australia.

The area of State forests reserved in perpetuity amounted in June, 1929, to 15,895,781 acres, or 64.9 per cent. only of the quota adopted for Australia. 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.

The Forestry Departments also control 8,069,351 acres of temporary timber and fuel reserves, but although these areas contain some land of high value for forestry purposes, the greater proportion thereof is not of importance for permanent reservation.

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, 1928-29.

Particulars.	New South Wales.	Victoria.	Q'land.	South Australia.	Western Australia.	Tas. mania.	Total.
Total area of Effective Plantations—							
Softwoods .. Acres	19,780	18,800	3,874	28,760	4,110	780	76,104
Hardwoods .. Acres	..	2,478	423	9,110	..	..	12,011
Number of persons employed in Forestry Departments—							
Office Staff .. No.	45	37	72	14	35	4	207
Field Staff .. No.	85	137	176	10	(a)402	6	816

(a) Including 343 casual hands.

4. Revenue and Expenditure.—The revenue and expenditure of the State Forestry Departments from 1924-25 to 1928-29 are given below:—

#### FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
REVENUE.					
	£	£	£	£	£
New South Wales .. ..	209,732	224,207	224,943	226,667	210,743
Victoria .. ..	162,792	161,608	156,700	140,715	129,684
Queensland .. ..	246,641	224,728	260,881	462,383	414,515
South Australia .. ..	22,905	19,418	24,376	37,586	34,666
Western Australia .. ..	182,764	227,061	222,607	228,614	191,023
Tasmania .. ..	20,757	20,715	18,600	17,790	14,810
Total .. ..	845,591	877,737	898,007	1,113,755	995,441
EXPENDITURE.					
	£	£	£	£	£
New South Wales .. ..	153,722	178,490	207,099	212,858	194,069
Victoria .. ..	199,575	274,732	320,217	285,271	240,191
Queensland .. ..	60,542	72,236	69,262	277,534	174,407
South Australia .. ..	43,459	53,977	120,036	105,279	166,903
Western Australia .. ..	86,739	101,321	103,319	125,745	157,827
Tasmania .. ..	11,435	13,007	12,098	11,017	8,895
Total .. ..	555,472	693,763	832,031	1,017,704	942,292

5. **Instruction in Scientific Forestry.**—Early in 1925 the Commonwealth Government assumed the responsibility of establishing a national forestry school, and the States agreed to nominate a certain number of students annually. The school, which opened with eighteen students in March, 1926, was housed for the first year at Adelaide University, but early in 1927 it was transferred to Canberra, the Federal Capital City. Applicants for entrance must be graduates of an Australian University or matriculated students who have completed a minimum University course of two years in science. The school provides a two years' course in pure forestry, and successful students are awarded the Commonwealth Forestry Diploma. It is anticipated that the institution 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.**—Reference to the various Forestry Conferences held in Australia and elsewhere will be found in Official Year Book No. 22, p. 743, but, owing to limitations of space, the information cannot be repeated herein.

#### § 4. Production.

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

##### SAWMILL OUTPUT OF NATIVE TIMBER, 1924-25 TO 1928-29.

State.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. ft.
New South Wales .. .. .	162,423	169,991	162,891	146,575	(c)136,051
Victoria .. .. .	114,705	109,534	115,813	100,567	79,018
Queensland .. .. .	143,623	131,662	122,311	102,192	106,862
South Australia .. .. .	3,981	3,362	3,971	4,833	3,219
Western Australia .. .. .	(a)189,019	(b)271,662	156,087	163,180	145,043
Tasmania .. .. .	50,799	53,588	52,058	53,174	46,195
<b>Total .. .. .</b>	<b>664,550</b>	<b>739,799</b>	<b>613,131</b>	<b>570,521</b>	<b>516,388</b>

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

(c) Excluding 892,285 cubic feet of round timber and 926,101 sleepers.

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 :—1924-25, 18,118,199 sup. feet; 1925-26, 57,272,898 sup. feet; 1926-27, 73,107,815 sup. feet; 1927-28, 64,451,395 sup. feet; and 1928-29, 29,281,146 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 1924-25 to £75,763, in 1925-26 to £73,023, in 1926-27 to £63,284, in 1927-28 to £90,729, and in 1928-29 to £85,009, 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 1922-23 Australia has imported on the average about 2,900 tons each year from Natal, where the plantations were originally started from Australian seed. During the year 1928-29, however, the excess of exports over imports amounted to 2,762 tons, valued at £33,043, the chief exporting State being South Australia, where the quantity exported amounted to more than 1,000 tons, as compared with 77 tons for the previous year. 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 brief account of the work done by the Council of Scientific and Industrial Research in connexion with tanning materials will be found in Official Year Book No. 22, p. 743. 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, 1924-25 TO 1928-29.

Production.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
Total	£ 10,577,000	£ 10,964,000	£ 11,046,000	£ 10,339,000	£ 9,450,000

### § 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.)

A list of Australian timbers best known on the local markets appeared in Official Year Book No. 20, p. 713.

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 1925–26 to 1928–29 inclusive are shown according to countries of origin in the following tables :—

#### DRESSED TIMBER.—IMPORTS, AUSTRALIA, 1925–26 TO 1928–29.

Country of Origin.	Quantity.				Value.			
	1925–26.	1926–27.	1927–28.	1928–29.	1925–26.	1926–27.	1927–28.	1928–29.
	sup. feet.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ..	5,343	157,061	39,790	8,117	342	1,928	1,734	303
Canada ..	6,367,054	6,399,263	8,271,122	7,361,669	60,942	67,524	95,831	80,590
Other British Countries	46,477	57,513	21,823	212,733	1,079	700	490	2,124
Norway ..	41,419,031	44,103,595	21,397,766	36,184,991	506,705	487,284	258,707	391,159
Sweden ..	43,282,827	38,304,718	45,084,605	25,934,266	485,867	425,896	497,606	290,814
United States ..	15,303,997	7,561,278	6,878,065	7,851,388	161,674	78,504	65,002	86,289
Other Foreign Countries	1,460,169	1,405,503	1,636,579	358,136	22,419	24,143	25,209	7,312
Total ..	107,834,898	97,988,931	83,329,740	77,911,300	1,239,028	1,085,970	944,579	858,591

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 £247,066 in 1928–29, including plywood, veneered or otherwise, £171,218.

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 (a).—IMPORTS, AUSTRALIA, 1925–26 TO 1928–29.

Country of Origin.	Quantity.				Value.			
	1925–26.	1926–27.	1927–28.	1928–29.	1925–26.	1926–27.	1927–28.	1928–29.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	132,230	53,568	1,540,112	502,310	3,362	3,557	15,248	10,496
Canada ..	21,433,364	16,488,751	29,247,286	12,199,991	168,515	137,380	240,233	97,384
India ..	396,377	317,602	509,256	442,651	12,860	14,256	17,252	14,246
Malaya (British)	220,411	172,121	165,788	149,388	2,168	1,540	1,372	2,113
New Zealand ..	49,626,921	37,370,304	35,635,337	37,320,809	671,165	551,461	436,648	484,856
Other British Countries ..	1,567,528	2,563,920	1,888,052	2,926,161	15,354	20,460	16,778	28,567
Japan ..	6,895,043	8,365,463	7,502,972	7,512,930	136,835	176,516	165,149	146,576
Netherlands East Indies ..	1,252,129	377,217	882,892	1,582,775	9,649	3,124	5,273	9,301
Norway ..	787,576	365,855	307,450	565,474	7,916	4,021	3,138	6,076
New Caledonia ..	2,313,790	2,058,738	2,276,101	1,461,433	15,393	16,998	20,334	12,719
Philippine Islands	8,822,160	4,382,704	4,041,218	3,943,533	147,881	75,333	59,614	60,056
Sweden ..	6,465,812	3,716,746	4,690,710	3,512,165	60,643	36,428	45,711	33,576
United States ..	286,943,456	289,897,409	340,466,618	250,803,732	2,517,746	2,388,678	2,697,717	2,144,665
Other Foreign Countries ..	3,162,154	1,689,851	2,698,764	165,646	25,624	25,662	29,821	3,366
Total ..	392,019,451	367,820,251	431,852,556	323,088,698	3,795,111	3,455,414	3,754,288	3,054,597

(a) Exclusive of timber not measured in super. feet.

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 oak deals from Norway and Sweden. Amongst the hardwoods imported, the principal are red from the United States of America and Japan, and teak from India.

2. Exports.—The quantity and value of undressed timber exported from 1924–25 to 1928–29 are given below, the countries of destination being also shown:—

**UNDRESSED TIMBER, INCLUDING LOGS (a).—EXPORTS, AUSTRALIA, 1924–25 TO 1928–29.**

Country to which Exported.	Quantity.					Value.				
	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.	1924–25.	1925–26.	1926–27.	1927–28.	1928–29.
	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	£	£	£	£	£
United Kingdom ..	17,589	10,718	8,332	7,751	9,191	192,744	107,951	87,409	85,024	104,314
Canada ..	201	302	183	213	529	4,272	6,537	4,147	4,338	10,226
Ceylon ..	4,822	8,385	8,745	6,679	4,069	44,798	100,536	98,950	67,656	46,051
Hong Kong ..	..	131	927	184	478	..	1,618	12,566	2,818	5,813
India ..	1,230	7,920	12,971	10,946	6,124	11,274	79,890	130,772	119,192	70,202
Malaya (British) ..	..	4	6,575	4,840	574	..	25	67,347	49,879	6,745
Mauritius ..	2,448	67	293	1,380	1,240	24,152	1,040	2,927	13,796	12,434
New Zealand ..	46,318	31,750	28,793	18,350	23,041	680,802	424,214	369,920	262,422	308,057
Pacific Islands—										
Fiji ..	781	1,077	1,096	1,480	1,155	13,286	17,230	17,668	23,484	18,932
Territory of New Guinea ..	239	509	293	489	650	4,483	8,036	5,434	8,835	10,898
Other Islands ..	715	937	997	1,027	(b)1,003	16,520	17,471	18,293	18,260	(b)16,515
Papua ..	405	357	419	247	136	7,197	7,244	9,736	4,818	2,709
South African Union ..	51,902	47,130	50,278	41,519	24,981	558,511	527,138	554,298	467,922	269,522
Belgium ..	2,182	157	207	82	1,230	21,819	1,473	2,259	852	12,579
China ..	4	1,703	2,175	5	2,006	197	17,032	21,787	77	20,521
Egypt ..	66	518	19	355	..	664	5,156	192	3,798	..
Japan ..	..	40	35	7	219	..	742	618	155	3,380
Pacific Islands—										
New Caledonia ..	76	40	15	12	33	1,450	990	281	233	642
Other Islands ..	124	83	140	176	309	2,079	1,717	2,433	2,979	4,674
U.S. of America ..	469	846	800	1,480	6,427	12,169	20,131	18,160	26,313	105,352
Other Foreign Countries ..	433	501	1,361	1,786	9,211	5,855	6,377	15,182	19,757	96,928
Total ..	130,004	113,185	124,654	99,008	92,606	1,602,272	1,352,550	1,440,379	1,182,603	1,125,494

(a) Exclusive of timber not measured in super. feet. (b) Includes other British Countries, 4,850 sup. feet, £94.

As the table shows, the bulk of the exports of undressed timber was consigned to South Africa, New Zealand, India, 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 1928–29 are given in the next table:—

**TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA, 1928–29.**

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Dressed .. ..	Sup. ft.	77,911,300	661,870	77,249,430
Undressed, including logs	.. ..	323,088,698	92,605,986	230,482,712
Architraves, mouldings, etc.	lin. ft.	834,173	67,320	766,853
Plywood, veneered or otherwise	sup. ft.	11,112,733	(b)	11,112,733
Palings .. ..	No.	..	179,230	—179,230
Pickets .. ..	.. ..	12,919	630	12,289
Shingles .. ..	.. ..	4,648,301	..	4,648,301
Staves—				
Dressed, etc. .. ..	.. ..	518,580	2,424	516,156
Undressed .. ..	.. ..	886,574	..	886,574
Laths—				
For blinds .. ..	.. ..	(a)	(a)	(a)
Other .. ..	.. ..	7,323,690	..	7,323,690
Doors .. ..	.. ..	9,343	(a)	(a)
Wood pulp .. ..	ton	11,966	(b)	11,966
Veneers .. ..	.. ..	(a)	(b)	(a)
Spokes, rims, felloes, etc.	.. ..	(a)	(a)	(a)
Other .. ..	.. ..	..	..	..

(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 1928-29 are shown hereunder :—

**TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, AUSTRALIA, 1928-29.**

Description.	Imports.	Exports.	Excess of Imports over Exports.
	£	£	£
Dressed .. .. .	858,591	14,735	843,856
Undressed, including logs .. .. .	3,054,597	1,125,494	1,929,103
Architraves, mouldings, etc. .. .. .	7,336	449	6,887
Plywood, veneered or otherwise .. .. .	171,218	(a)	171,218
Palings .. .. .	..	1,932	-1,932
Pickets .. .. .	97	6	91
Shingles .. .. .	7,124	..	7,124
Staves—			
Dressed, etc. .. .. .	30,583	136	30,447
Undressed .. .. .	10,994	..	10,994
Laths—			
For blinds .. .. .	..	..	..
Other .. .. .	10,604	..	10,604
Doors .. .. .	4,405	1,768	2,637
Wood pulp .. .. .	151,338	(a)	151,338
Veneers .. .. .	31,277	(a)	31,277
Spokes, rims, felloes, etc. .. .. .	1,851	2,509	-658
Other .. .. .	5,500	..	5,500
<b>Total .. .. .</b>	<b>4,346,015</b>	<b>1,147,029</b>	<b>3,198,986</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 Hong Kong and 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, 1924-25 TO 1928-29.**

Country to which Exported.	Quantity.					Value.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
United Kingdom .. .. .	..	1	25	..	..	..	7	858	..	..
Hong Kong .. .. .	3,811	5,063	3,984	4,856	5,432	113,551	155,139	116,408	142,890	156,086
India .. .. .	406	341	246	314	352	11,574	12,384	8,871	11,434	12,310
Malaya (British) .. .. .	725	567	346	397	150	27,321	18,340	10,784	13,610	4,418
Other British Countries .. .. .	..	1	12	13	333	..	53	533	470	594
China .. .. .	1,722	2,255	3,991	822	3,486	53,031	66,639	114,626	25,170	103,485
Other Foreign Countries .. .. .	..	7	11	46	50	..	245	411	1,052	1,345
<b>Total .. .. .</b>	<b>6,664</b>	<b>8,235</b>	<b>8,615</b>	<b>6,448</b>	<b>9,470</b>	<b>205,477</b>	<b>252,807</b>	<b>252,491</b>	<b>194,626</b>	<b>278,238</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, 1924-25 TO 1928-29.

Country to which Exported.	Quantity.					Value.				
	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom	48	104	..	1,505	11,153	48	58	..	922	5,488
New Zealand	4,061	1,008	1,633	27,070	17,934	2,372	701	1,355	21,431	12,496
Other British Possessions	332	..	102	22	20	170	..	51	11	12
Germany	36,081	303	2,050	15,414	26,466	19,687	159	1,272	10,086	16,256
Other Foreign Countries	2,272	5,033	2,150	2,538	1,231	1,155	2,900	1,332	1,061	546
Total	42,794	6,448	5,935	46,549	56,804	23,332	3,818	4,010	33,511	33,798

The exports of tan bark from Australia during the past five years consisted largely of mallet bark from Western Australia. The shipments of this bark, exported mainly to Germany, are not so large as in pre-war days, owing to the cutting out of supplies. A considerable improvement, however, was shown during the year 1928-29. New Zealand took 37 per cent. of the total exports, which were sent chiefly from South Australia.

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, 1924-25 TO 1928-29.

Particulars.	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.
	cwt.	cwt.	cwt.	cwt.	cwt.
<b>QUANTITIES—</b>					
Imports	28,628	44,372	57,302	5,114	1,562
Exports	42,794	6,448	5,935	46,549	56,804
Excess of exports over imports	14,166	-37,924	-51,367	41,435	55,242
<b>VALUES—</b>					
Imports	£ 11,821	£ 21,498	£ 27,680	£ 2,633	£ 755
Exports	£ 23,332	£ 3,818	£ 4,010	£ 33,511	£ 33,798
Excess of exports over imports	£ 11,511	£ -17,680	£ -23,670	£ 30,878	£ 33,043

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 1928-29 was £63,369, and was composed as follows:—Wattle bark extract, £1,191; quebracho extract, £9,597; other extract, £18,739; and valonia, myrobalans, cutch, etc., £33,842.