

CHAPTER XXII.

FORESTRY.*

§ 1. General.

1. **Objects of Forestry.**—Scientific forestry aims at the preservation and development of existing forest areas by safeguarding them 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 forest crops 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. Only small areas of virgin forests still remain in Australia, as extensive inroads have been made by timber-getters, by agriculturists, and by pastoralists—who have destroyed large areas by “ring-barking”—and it is not unlikely that climatological changes have resulted therefrom. It is recognized that beneficial consequences follow on the planting of trees on denuded lands, or along eroding coasts, and that a forest covering tends to regulate to the best advantage the effects of rainfall. The existing virgin forests consist of hardwood jungle, or brush, with very little softwood, and the need for extensive softwood planting is urgent.

Efficient forestry is of particular interest in connexion with the Murray River Basin, where a large expenditure from the public funds has been incurred in the provision of locks and weirs and in the formation of irrigation settlements in the lower course of the river. The stability of the Murray's flow in so far as it can be assured by forest plantation may rightly be deemed a question of national importance.

Successful planting of exotics in various parts of Australia has demonstrated that both climate and soil are suitable for the cultivation of a number of highly serviceable softwoods.

2. **Extent of Forests.**—(i) *Australia.* The bulk of the present local timber supply comes from the thickly forested areas in the 30-inch and over rainfall belt south of the tropics, and the 70-inch and over rainfall belt within the tropics. The total forest area included in the divisions specified is comparatively small, and is confined to the following regions:—(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; (d) the coastal districts of New South Wales and Queensland; (e) the greater portion of Tasmania; (f) the forests on the Murray River near Echuca; (g) the cypress pine belt from the Murray northward to Queensland and westward of the coastal belt.

Over 90 per cent. of the timber trees of Australia consists of hardwoods belonging to the genus *Eucalyptus* (Gum Trees). Including the mallees, over 400 species are now recognized, but the chief commercial varieties are confined to about 50 species.

* 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).

In addition to the hardwood forests and the cypress pine belt, the coastal strip in Queensland and northern New South Wales provides "rain" or "brush" forests. These tropical forests furnish the serviceable hoop pine, and furniture timbers such as black bean, Queensland walnut and maple, silkwood, &c.

The drier wooded area of the continent 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. Unsuitable soil conditions such as basalt formations, clay pans, rock exposures or sand dunes are as a rule more responsible for treeless areas than lack of rainfall. The 300-mile stretch of the Nullarbor Plain is a treeless area where the non-retentive limestone foundation accentuates the effects of a low rainfall. While, however, the major portion of Australia carries trees, and may be said to be 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 scattered trees of low habit only. 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 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.

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 19,500,000 acres, distributed throughout the States as follows:—

ESTIMATED FOREST AREA.—AUSTRALIA.

State.	Total Forest Area.	Percentage on Total Area.
	Acres.	Per cent.
New South Wales	4,000,000	.224
Victoria	5,500,000	.301
Queensland	6,000,000	.335
South Australia	500,000	.028
Western Australia	3,000,000	.167
Tasmania	500,000	.028
Australia	19,500,000	1.024

(ii) *Comparison with other countries.* The table hereunder shows the absolute and relative forest areas of Australia and other countries, and the respective areas publicly and privately owned.

The figures are based on information supplied to the International Institute of Agriculture and are the latest available. Comparisons of the returns for different countries are, however, subject to the qualification that the significance of the term "forest" is not identical in all cases. In older countries, and chiefly in Europe, scientific forestry has been practised for centuries, whereas in newer lands, such as Australia, Canada, &c., it is of comparatively recent origin. Further considerable areas included as forests in the newer countries contain indigenous growth of little or no commercial value, and effective comparison with countries where efficient forestry has been practised for many years is, therefore, unattainable.

FORESTS.—AREA AND OWNERSHIP, VARIOUS COUNTRIES.

Country.	Forest Area.	Per cent. of	Publicly	Privately
		Total Area.	Owned.	Owned.
	sq. miles.	Per cent.	sq. miles.	sq. miles.
Soviet Republics	2,589,880	63.3	2,589,880	..
Canada	1,151,402	32.8	1,040,867	110,535
United States of America	733,539	24.7	(a)	(a)
India	307,928	27.5	253,816	54,112
Nigeria	234,990	63.8	8,486	226,504
Finland	97,538	73.5	39,733	57,805
Sweden	89,500	56.5	21,390	68,110
Japan	87,678	59.5	51,332	36,346
Germany	48,857	27.0	23,541	25,316
France	39,873	18.74	(a)	(a)
Poland	34,531	23.0	11,603	22,928
Australia (b)	30,469	1.08	(a)	(a)
Yugoslavia	29,289	30.5	19,545	9,744
Norway	28,955	24.2	5,646	23,309
Turkey	28,703	9.7	27,100	1,603
Rumania	27,544	24.2	7,929	19,615
Italy	21,309	17.81	(a)	(a)
New Zealand	20,778	20.2	15,033	5,745
Spain	18,965	9.74	(a)	(a)
Czechoslovakia	18,003	33.2	5,595	11,892
Union of South Africa	15,958	3.4	1,231	14,727
Algeria	12,257	10.7	9,195	3,062
Austria	12,112	37.4	2,925	9,187
Dutch East Indies	11,737	23.1	(a)	(a)
Bulgaria	11,143	28.0	3,043	8,100
Greece	9,291	18.5	6,442	2,849
Latvia	6,874	27.1	5,568	1,306
Great Britain	4,745	5.4	493	4,252

(a) Not available. (b) Estimate of forest area possible for permanent reservation.

3. **Requisite Proportion of Forest Area.**—It is generally held that when the forest area in any country falls below 0.86 acres per head of population, that country will be obliged to import timber. Australia possesses 3.19 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 the excess. In the first place, the area of 19,500,000 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 has not been ascertained. Secondly, Australia does not possess a sufficient supply of softwoods, and must, therefore—with the exception of a small quantity produced in Queensland and New South Wales—import the bulk of its requirements from overseas. The figure 19,500,000 acres represents the total area that in the estimation of foresters should be reserved for forestry, and, taking the factor of 0.86, then, provided that the whole of the forest area of Australia has been brought under sylvicultural treatment, is yielding its maximum of hard and soft woods, and that there are no imports, the timber supply of Australia should be sufficient for a population of 22½ millions.

§ 2. Forestry Activities of the Commonwealth Government.

Forestry was not included amongst the matters transferred from 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. The Commonwealth Forestry Bureau was instituted in 1925 to initiate sylvicultural and other forest research work and to take charge of the education and training of the professional staffs required by the Commonwealth and the State services. The Bureau received statutory powers under an Act passed in 1930,

In the meantime, the Australian Forestry School was established in 1926, and not only was the training of the State forest officers begun, but a nucleus of qualified officers was sent abroad to undergo special courses of instruction with the object of staffing the research side of the Bureau. The financial situation since 1930 has delayed progress on the research side, and the educational work of the Australian Forestry School is at present the Bureau's main activity.

The forest resources of the Commonwealth Territories of Papua, New Guinea, Norfolk Island, and the Federal Capital, have been investigated, and reports in connexion therewith have been furnished and published. In the case of the Federal Capital area an active forest policy has been inaugurated.

The investigation of the dead product of the forests is entrusted to the Council for Scientific and Industrial Research, which has established a Forest Products Division. Research work is being carried out by this institution in regard to various matters, e.g., paper pulp, seasoning, preservation, tan barks, the chemistry of woods, the utilization of forest products generally, including the substitution of local for imported woods for such purposes as butter boxes and fruit cases.

§ 3. 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 specially charged with 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 to include such measures for silvicultural treatment (i.e., regeneration treatment, thinnings, improvement, fellings, etc.), as are necessary; (c) The protection of forests; (d) The conversion, marketing and economic utilization of forest produce; (e) The establishment and maintenance of coniferous forests to remedy existing deficiency in softwoods.

Annual reports are issued by each State forest authority.

In Victoria a forestry school has been established at which recruits are trained for the forestry service of the State.

2. **Forest Reservations.**—At the Interstate Forestry Conference, held in Hobart in 1920, the State forestry authorities agreed in regard to the necessity of reserving an area of 19,500,000 acres of indigenous forest lands in order to meet the future requirements of Australia. This area was distributed among the States as set out in Section 1, 2 *ante*.

Having been endorsed by the Premiers' Conference held later in the same year, this area was adopted as the Australian forest desideratum towards the permanent reservation of which the authorities are now aiming. The progress made in the various States to the end of June, 1931, is set out in the following table:—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1931.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests	5,152,462	4,678,063	1,904,664	261,831	2,967,912	1,259,553	16,224,485
Timber and fuel reserves	1,523,715	735,889	3,439,679	..	2,851,215	950,000	8,500,498
Total	6,676,177	5,413,952	5,344,343	261,831	4,819,127	2,209,553	24,724,983

(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. Considerable areas have been revoked in certain States, while dedications of new areas have resulted in gains to the permanent forest estate.

The area of State forests reserved in perpetuity amounted in June, 1931, to 16,224,485 acres, or 66.2 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 8,500,498 acres of temporary timber and fuel reserves, but, while these areas contain some land of high value for forestry purposes, the greater proportion thereof is not adapted for permanent reservation.

3. **Sylvicultural Nurseries and Plantations.**—Recognition of the necessity for providing by systematic sylviculture for the future softwood timber needs has led to the creation in all of the States of a number of nurseries and plantations. A brief statement showing the locality of these establishments, and the nature of their activities, will be found in the previous issues of the Official Year Book. (See Official Year Book No. 6, pp. 451-3.) Details regarding forest plantations and employment are given hereunder :—

FORESTRY.—AREAS AND EMPLOYMENT, 1930-31.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
Total area of indigenous forest improved or regenerated .. acres	852,195	571,086	74,148	8,255	131,200	..	1,636,884
Total area of Effective Plantations—							
Softwoods .. acres	27,300	27,056	5,621	40,590	4,940	1,170	106,677
Hardwoods .. acres	..	2,500	588	9,110	..	..	12,198
Number of persons employed in Forestry Departments—							
Office Staff .. No.	43	37	(b) 64	17	27	2	190
Field Staff .. No.	75	137	(b) 138	(a) 320	(a) 676	8	1,354

(a) Including casual hands. (b) Includes staff engaged in connexion with timber sales.

4. **Revenue and Expenditure.**—The revenue and expenditure of State Forestry Departments from 1926-27 to 1930-31 are given below :—

STATE FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE.

State.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
REVENUE.					
	£	£	£	£	£
New South Wales ..	224,943	226,667	210,743	128,795	88,548
Victoria ..	156,700	140,715	129,684	128,645	74,583
Queensland ..	250,881	462,383	414,515	336,762	174,106
South Australia ..	24,376	37,586	34,666	48,423	33,437
Western Australia ..	222,507	228,614	191,023	173,219	94,895
Tasmania ..	18,600	17,790	14,810	10,545	10,616
Total ..	898,007	1,113,755	995,441	826,389	476,185
EXPENDITURE.					
	£	£	£	£	£
New South Wales ..	207,099	212,858	194,069	183,720	121,009
Victoria ..	320,217	285,271	240,191	220,875	267,055
Queensland ..	69,262	277,534	174,407	209,170	140,800
South Australia ..	120,036	105,279	166,903	141,633	111,759
Western Australia ..	103,319	125,745	157,827	142,376	93,974
Tasmania ..	12,098	11,017	8,895	10,091	13,480
Total ..	832,031	1,017,704	942,292	907,865	748,077

§ 4. The Australian Forestry School.

The Australian Forestry School was established in 1926 by the Commonwealth Government to meet the demand of the States for an institution which would give a professional training at least equal to that afforded by the recognized forestry schools abroad.

Under existing arrangements the head of the State forestry service may nominate candidates for enrolment at the school. According to the system in vogue in each State, the nomination may be made either at school leaving age or after the candidate has successfully completed the specified university courses. In the first case, the youth is helped through his university career and is given employment in practical work during the long vacations to test his suitability as a forestry officer; in the second case he is chosen later, and the practical tests are not made until the long vacation immediately preceding his entry to the school. The possession of a nomination by a State government service is not, however, essential for enrolment, since any candidate possessing the necessary qualifications will be accepted for the diploma course, and in special cases applicants desirous of studying a particular branch of forestry will be allowed to follow certain lectures only. Refresher, or post graduate courses are arranged to meet the needs of senior foresters.

A candidate for enrolment in the diploma course must possess—(a) a degree of a University, or (b) a certificate that he has completed the special two years' preliminary course at a University.

The qualifications for enrolment may be waived to assist an applicant of exceptional ability with a record of long service in a State Forestry Department, who has been specially recommended by the head of that service. Such applicants must show proof of education equal to that required for a school leaving certificate.

The course of instruction extends over three years, the first two of which are spent at the school, and the third in one of the forestry services of the Commonwealth.

The Commonwealth diploma of forestry is awarded to students on the following conditions:—(a) Successful completion of theoretical course. (b) Satisfactory field work during the course. (c) One year's satisfactory practical forestry work following the school course.

Students who have passed the approved two-year preliminary science course at the Universities of Adelaide, Melbourne, Western Australia or Queensland, and two years of Diploma course at the School, may be granted the degree B.Sc.F. by their Universities, subject to certain conditions laid down, particulars of which may be obtained from the Registrar of the University concerned.

§ 5. 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. The Third British Empire Forestry Conference was held in Australia and New Zealand in 1928. Publications issued in connexion with this Conference are available on application to the various State and Commonwealth forestry authorities.

§ 6. Forestry Production.

1. Timber.—Particulars regarding the production of sawn timber from forest sawmills for the year 1930-31 are shown in the following table.

SAWMILL OUTPUT OF NATIVE TIMBER, 1930-31.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
LOGS MILLED.							
Hardwood—							
Quantity cub. ft.	5,454,143	(a)	3,843,215	(b)	18,686,770	(a)	(a)
Value.. £	221,824	(a)	214,829	(a)	124,730	(a)	(a)
Softwood—							
Quantity cub. ft.	1,911,977	(a)	3,274,762	(b)	(c)	(a)	(a)
Value.. £	79,525	(a)	280,202	(a)	(a)	(a)	(a)
Total—							
Quantity cub. ft.	7,366,120	(a)	7,117,977	684,282	18,686,770	(a)	(a)
Value.. £	301,349	(a)	495,031	(a)	124,730	(a)	(a)

SAWN TIMBER PRODUCED.

Hardwood—							
Quantity sup. ft.	41,412,881	37,468,000	22,136,383	(b)	74,192,476	20,930,599	(d) 196,140,339
Value.. £	450,397	(b)	332,039	(b)	619,661	141,296	(e) 1,543,393
Softwood—							
Quantity sup. ft.	16,119,109	..	29,024,785	(b)	132,120	320,364	(d) 45,596,378
Value.. £	182,532	..	484,154	(b)	1,807	5,449	(d) 673,942
Unspecified—							
Quantity sup. ft.	..	4,806,000	7,608,712	(b)	..	9,326,919	(d) 21,741,631
Value.. £	..	(b)	175,827	(b)	..	62,395	(e) 238,222
Total—							
Quantity sup. ft.	57,531,990	42,274,000	58,769,880	3,411,728	74,324,596	30,577,882	266,890,076
Value.. £	632,929	310,430	992,020	44,881	621,468	209,140	2,810,868

(a) Not available. (b) Not available separately. (c) Included with Hardwood. (d) Exclusive of South Australia. (e) Exclusive of Victoria and South Australia.

The next table gives the sawmill output of native timber for the five years ending 1930-31.

SAWMILL OUTPUT OF NATIVE TIMBER.

State.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.
New South Wales	162,891	146,575	136,051	119,021	57,532
Victoria	115,813	100,567	79,018	86,145	42,274
Queensland	122,311	102,192	106,862	92,248	58,770
South Australia	3,971	4,833	3,219	3,613	3,412
Western Australia	156,087	163,180	145,043	123,572	74,324
Tasmania	52,058	53,174	46,195	60,038	30,578
Total	613,131	570,521	516,388	484,637	266,890

In addition to the sawn timber shown in the 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 sawn in establishments other than forest sawmills, but the figures have not been included in the two preceding tables. The quantities so produced in the past five years were as follows:—1926-27, 73,107,815 sup. feet; 1927-28, 64,451,395 sup. feet; 1928-29, 29,281,146 sup. feet; 1929-30, 36,071,054 sup. feet; 1930-31, 38,158,959 sup. feet. The annual reports of the Forest Departments in each State contain particulars concerning the output of timber from areas under departmental control, but owing to lack of uniformity in measurements accurate determination of total production cannot be made. Efforts, however, are being made to obtain more comparable information. Moreover, there is a fair quantity of hewn timber produced from privately owned land, but information regarding output is not available.

At the Conference of Statisticians in August, 1932, it was agreed that the computation of satisfactory statistics of timber production other than sawn timber necessitates a preliminary investigation which might with propriety be undertaken by the Forestry Departments. In the meantime, efforts are being made by the Statisticians to obtain more comprehensive information.

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 1926-27 to £63,284, in 1927-28 to £90,729, in 1928-29 to £85,009, in 1929-30 to £63,388, and in 1930-31 to £47,090, 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 in connexion with the recovery of gold and other minerals.

(ii) *Sandalwood Oil.* The distillation of oil from Western Australian sandalwood has been characterized by improvement both in quality and in quantity within recent years. It is claimed that the Western Australian oil is at least as valuable medicinally as the well-known Mysore oil, besides having an extended use in the manufacture of perfumes. Oversea exports of essential oils from Western Australia amounted in 1926-27 to £26,307, in 1927-28 to £38,919, in 1928-29 to £63,307, in 1929-30 to £77,510, and in 1930-31 to £56,170. The bulk of the product consisted of sandalwood oil which was shipped principally to the United Kingdom, Eastern States of Australia, Germany, etc.

(iii) *Tan Barks.* The forests of Australia are capable of yielding a wealth of tannin materials, many species of eucalyptus and other genera containing varying proportions of tannin, chiefly in the bark, but in the wood and twigs also. Although many of these species contain higher percentages of tannin than is found in the bark 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*), mallet (*Eucalyptus astringens*).

In pre-war days 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 ending 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. During the past four years, however, the excess of exports over imports averaged 2,930 tons, valued at £33,643, the chief exporting State being South Australia. The other valuable tan bark, mallet (*Eucalyptus astringens*) of Western Australia, 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 for Scientific and Industrial Research in connexion with tanning materials will be found in Official Year Book No. 22, page 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 recently started production on a commercial scale. The experimental work in kino impregnated marri (*Eucalyptus calophylla*) bark is not yet complete. The production of tan bark in Australia is estimated at about 25,000 tons per annum.

3. **Value of Production.**—Owing to the lack of complete information concerning hewn timber, referred to on a previous page, coupled with the difficulty in arriving at accurate values in respect of firewood, the figures showing total value of forest production inserted in the next table must be regarded as estimates.

VALUE OF FOREST PRODUCTION.—AUSTRALIA.

Production.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	£	£	£	£	£
Total ..	11,046,000	10,339,000	9,450,000	9,103,000	6,488,000

§ 7. 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. [Further references are made in "Timber and Forest Products of Queensland (E. H. F. Swain), published in 1928.]

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.

§ 8. Oversea Trade.

1. **Imports.**—(i) *Dressed Timber.* The quantity and value of timber imported into Australia during the four years 1927-28 to 1930-31 inclusive are shown according to countries of origin in the following tables:—

DRESSED TIMBER.—IMPORTS, AUSTRALIA.

Country of Origin.	Quantity.				Value.			
	1927-28.	1928-29.	1929-30.	1930-31.	1927-28.	1928-29.	1929-30.	1930-31.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ..	39,790	8,117	3,693	1,848	1,734	303	131	178
Canada ..	8,271,122	7,361,669	8,952,360	3,920,447	95,831	80,590	96,132	38,307
Other British Countries	21,823	212,733	104,437	92,498	490	2,124	898	870
Norway ..	21,397,756	36,184,991	22,459,688	3,200,306	258,707	391,159	212,565	30,862
Sweden ..	45,784,605	25,934,266	43,501,713	2,389,990	497,606	290,814	406,001	23,024
United States ..	6,878,065	7,851,388	8,022,251	3,952,219	65,002	86,289	88,836	30,958
Other Foreign Countries	1,636,579	358,136	1,278,267	285,008	25,209	7,312	17,154	5,229
Total ..	83,329,740	77,911,300	84,321,809	13,842,316	944,579	858,591	821,717	129,458

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 £40,006 in 1930-31, including plywood, veneered or otherwise, £11,272.

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.

Country of Origin.	Quantity.				Value.			
	1927-28.	1928-29.	1929-30.	1930-31.	1927-28.	1928-29.	1929-30.	1930-31.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	1,540,112	502,310	97,258	1,635,051	15,248	10,496	9,591	11,768
Canada	29,247,286	12,199,601	43,715,830	21,299,710	240,233	97,384	305,569	84,610
India	509,256	442,651	62,123	30,148	17,252	14,246	2,647	1,882
Malaya (British)	165,788	149,388	169,360	101,577	1,372	2,113	1,452	778
New Zealand	35,635,337	37,320,809	37,172,537	15,918,061	436,648	484,856	459,095	191,193
Other British Countries	1,888,052	2,926,161	3,540,928	2,238,999	16,778	28,567	31,806	20,587
Japan	7,502,972	7,512,930	7,344,925	978,626	165,149	146,576	149,085	14,985
Netherlands East Indies	882,892	1,582,775	1,269,866	..	5,273	9,301	9,921	..
Norway	307,450	565,474	153,229	88,325	3,138	6,676	1,262	918
New Caledonia	2,276,101	1,461,433	1,181,507	911,724	20,334	12,719	11,622	10,374
Philippine Islands	4,041,218	3,943,433	5,779,971	433,041	59,614	60,956	79,212	5,865
Sweden	4,690,710	3,512,165	4,147,499	66,791	45,711	33,576	38,184	710
United States	340,466,618	250,803,732	233,538,575	61,561,589	2,697,717	2,144,665	1,811,759	276,964
Other Foreign Countries	2,698,764	165,646	287,739	1,235,299	29,821	3,366	4,407	8,501
Total	431,852,556	323,088,698	338,461,347	106,498,941	3,754,288	3,054,597	2,915,619	629,135

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

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

2. *Exports.*—The quantity and value of undressed timber exported from 1926-27 to 1930-31 are given below, the countries of destination being also shown:—

UNDRESSED TIMBER, INCLUDING LOGS.(a)—EXPORTS, AUSTRALIA.

Country to which Exported.	Quantity					Value.				
	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	£	£	£	£	£
United Kingdom	8,332	7,751	9,191	11,722	12,399	87,409	85,024	104,314	127,469	141,746
Canada	183	213	529	212	125	4,147	4,338	10,226	5,087	2,498
Ceylon	8,745	6,679	4,069	12,013	10,328	98,950	67,656	46,051	120,873	104,668
Hong Kong	927	184	478	28	820	12,566	2,818	5,813	440	7,307
India	12,971	10,946	6,124	1,391	32	130,772	119,192	70,202	15,607	316
Malaya (British)	6,575	4,840	574	39	103	67,347	49,879	5,745	410	1,147
Mauritius	293	1,380	1,240	382	1,017	2,927	13,796	12,434	3,840	10,160
New Zealand	28,793	18,350	23,041	24,256	22,671	369,920	262,422	308,057	318,671	271,244
Pacific Islands—										
Fiji	1,096	1,480	1,155	1,297	813	17,668	23,484	18,932	21,834	12,987
Territory of New Guinea	293	489	650	356	92	5,134	8,835	10,898	6,269	1,293
Other Islands	997	1,027	1,093	840	624	18,293	18,260	16,515	14,496	9,284
Papua	419	247	136	149	80	9,736	4,818	2,709	3,197	1,223
South African Union	50,278	41,519	24,981	17,447	5,843	554,298	467,922	269,522	188,678	65,972
Belgium	207	82	1,230	1,246	528	2,259	852	12,579	12,460	5,713
China	2,175	5	2,006	89	5,292	21,787	77	20,521	1,018	51,703
Egypt	19	355	..	1,039	..	192	3,793	..	10,385	..
Japan	35	7	219	50	..	618	155	3,380	768	..
Pacific Islands—										
New Caledonia	15	12	33	23	..	281	233	642	378	..
Other Islands	140	176	309	144	68	2,433	2,979	4,674	2,364	1,212
U.S. of America	800	1,480	6,427	5,737	1,332	18,160	26,313	105,352	85,860	22,897
Other Foreign Countries	1,361	1,786	9,211	3,901	1,000	15,182	19,757	96,928	42,569	11,581
Total	124,654	99,008	92,606	82,361	63,167	1,440,379	1,182,603	1,125,494	982,673	722,951

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

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. Considerable quantities of pole, pile and girder timber are also exported from New South Wales to New Zealand.

3. Classification of Imports and Exports.—(i) *General.* The quantities of timber classified according to varieties imported and exported during the year 1930-31 are given in the next table :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA, 1930-31.

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Dressed	Sup. ft.	13,842,316	1,284,719	12,557,597
Undressed, including logs	"	106,498,941	63,166,867	43,332,074
Architraves, mouldings, etc.	lin. ft.	261,327	37,967	223,360
Plywood, veneered or otherwise	sq. ft.	1,336,704	(b)	(a)
Palings	No.	..	146,760	-146,760
Pickets	"	..	644	-644
Shingles	"	61,500	..	61,500
Staves—				
Dressed, etc.	"	347,475	..	347,475
Undressed	"	604,247	16	604,231
Laths—				
For blinds	"	(a)	(a)	(a)
Other	"	277,990	4,500	273,490
Doors	"	207	(a)	(a)
Wood pulp	ton	22,327	(b)	(a)
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 1930-31 are shown hereunder :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, AUSTRALIA, 1930-31.

Description.	Imports.		Exports.		Excess of Imports over Exports.
	£	£	£	£	
Dressed	129,458	20,892	108,566		108,566
Undressed, including logs	629,135	722,951	-93,816		-93,816
Architraves, mouldings, etc.	1,262	334	928		928
Plywood, veneered or otherwise	11,272	(a)	11,272		11,272
Palings .. .. .	..	1,537	-1,537		-1,537
Pickets .. .. .	..	25	-25		-25
Shingles	120	..	120		120
Staves—					
Dressed, etc.	16,985	..	16,985		16,985
Undressed	10,543	2	10,541		10,541
Laths—					
For blinds .. .. .	..	42	-42		-42
Other	400	5	395		395
Doors	168	609	-441		-441
Wood pulp	218,749	(a)	218,749		218,749
Veneers	9,068	(a)	9,068		9,068
Spokes, rims, felloes, etc.	845	866	-21		-21
Other	930	..	930		930
Total	1,028,935	747,263	281,672		281,672

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

(ii) *Sandalwood.* A considerable quantity of sandalwood is 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 follow :—

SANDALWOOD.—EXPORTS, AUSTRALIA.

Country to which Exported.	Quantity.					Value.				
	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
United Kingdom ..	25	..	..	..	..	858	..	..	..	..
Hong Kong ..	3,984	4,856	5,432	2,482	50,193	116,408	142,890	156,086	57,688	62,741
India ..	246	314	352	288	1,621	8,871	11,434	12,310	9,437	2,585
Malaya (British) ..	346	397	150	63	520	10,784	13,610	4,418	1,716	770
Other British Countries ..	12	13	17	15	220	533	470	594	424	330
China ..	3,991	822	3,486	737	6,599	114,026	25,170	103,485	19,521	6,363
Other Foreign Countries ..	11	46	33	37	120	411	1,052	1,345	641	180
Total ..	8,615	6,448	9,470	3,622	59,273	252,491	194,626	278,238	89,427	72,969

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

TAN BARK.—EXPORTS, AUSTRALIA.

Country to which Exported.	Quantity.					Value.				
	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom ..	..	1,505	11,153	..	1,138	..	922	5,488	..	510
New Zealand ..	1,633	27,070	17,934	22,038	14,415	1,355	21,431	12,496	14,109	8,100
Other British Possessions ..	102	22	20	2	..	51	11	12	3	..
Germany ..	2,050	15,414	26,466	41,567	30,059	1,272	10,086	15,256	21,266	14,097
Other Foreign Countries ..	2,150	2,538	1,231	6,433	24,745	1,332	1,061	546	3,226	10,527
Total ..	5,935	46,549	56,804	70,040	70,357	4,010	33,511	33,798	38,604	33,234

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 past four years. A vigorous policy of reforestation is now in operation and an increased permanent annual export may be expected in the near future. New Zealand took 37 per cent. of the total exports. *Wattle bark* is exported 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.

Particulars.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports	57,302	5,114	1,562	1,936	596
Exports	5,935	46,549	56,804	70,040	70,357
Excess of exports over imports	-51,367	41,435	55,242	68,104	69,761
	£	£	£	£	£
VALUES—					
Imports	27,680	2,633	755	950	236
Exports	4,010	33,511	33,798	38,604	33,234
Excess of exports over imports	-23,670	30,878	33,043	37,654	32,998

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.

(iv) *Other Tanning Substances.* Considerable quantities of tanning substances other than bark are annually imported into the Commonwealth. The total value of the importations in 1930-31 was £43,253, and was composed as follows:—Wattle bark extract, £545; quebracho extract, £9,158; other extract, £8,669; and valonia, myrobalans, catch, etc., £24,881.