CHAPTER XX.

FORESTRY.*

§ 1. General.

1. **Objects of Forestry.**—Scientific forestry aims at the preservation and development of existing forest areas by safeguarding them against fire, pests and destructive agencies generally by expert supervision of the removal of timber, by judicious thinning and by reforestation of denuded areas with suitable forest growths of local or exotic origin. It provides also for the continuance of this indispensable form of national wealth by the afforestation of available bare lands proved capable of producing 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 flow of this river in so far as it can be assured by forest plantation may be regarded as 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, originally, 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.

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. Moreover, considerable areas included as forests in the newer countries contain indigenous growth of little or no commercial value, and effective comparisons cannot, therefore, be made with countries where efficient forestry has been practised for many years.

FORESTS.—AREA AND OWNERSHIP, VARIOUS COUNTRIES.

Country.	Forest Area.	Per cent. of Total Area.	Publicly Owned.	Privately 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 within comparatively recent 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 follow:—(*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 sylvicultural 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, 1932, is set out in the following table:—

AREA OF FOREST RESERVATIONS, 30th JUNE, 1932.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.
Dedicated State forests ..	5,131,046	4,688,279	1,941,340	*a* 263,940	2,971,054	1,275,958	16,271,617
Timber and fuel reserves ..	1,484,867	735,889	3,366,806	..	1,856,289	950,000	8,393,851
Total ..	6,615,913	5,424,168	5,308,146	263,940	4,827,343	2,225,958	24,665,468

(*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, 1932, to 16,271,617 acres, or 66 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 8,393,851 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, 1931–32.

Particulars.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Total.
Total area of indigenous forest improved or regenerated acres	918,891	591,771	82,518	8,255	184,676	..	1,786,111
Total area of Effective Plantations—							
Softwoods .. acres	32,018	30,811	7,422	46,218	5,874	1,170	123,513
Hardwoods .. acres	..	2,500	771	9,110	..	..	12,381
Number of persons employed in Forestry Departments—							
Office Staff .. No.	43	37	(*b*) 59	21	31	2	193
Field Staff .. No.	73	137	(*b*) 148	*a*717	*a*802	8	1,885

(*a*) Including casual hands. (*b*) Excluding staff of 55 engaged in connexion with Forest Sawmills.

4. **Revenue and Expenditure.**—The revenue and expenditure of State Forestry Departments from 1927–28 to 1931–32 are given below :—

STATE FORESTRY DEPARTMENTS.—REVENUE AND EXPENDITURE.

State.	1927–28.	1928–29.	1929–30.	1930–31.	1931–22.
REVENUE.					
	£	£	£	£	£
New South Wales ..	226,667	210,743	128,795	88,548	104,674
Victoria	140,715	129,684	128,645	74,583	77,189
Queensland.. ..	462,383	414,515	336,762	174,106	162,246
South Australia ..	37,586	34,666	48,423	33,437	83,714
Western Australia ..	228,614	191,023	173,219	94,895	57,267
Tasmania	17,790	14,810	10,545	10,616	8,584
Total	1,113,755	995,441	826,389	476,185	493,674
EXPENDITURE.					
	£	£	£	£	£
New South Wales ..	212,858	194,069	183,720	121,009	*a* 114,151
Victoria	285,271	240,191	220,875	267,055	152,820
Queensland.. ..	277,534	174,407	209,170	140,800	*a* 160,311
South Australia ..	105,279	166,903	141,633	111,759	117,882
Western Australia ..	125,745	157,827	142,376	93,974	*a* 93,151
Tasmania	11,017	8,895	10,091	13,480	8,764
Total	1,017,704	942,292	907,865	748,077	647,079

(*a*) Including expenditure from Unemployment Relief Funds as follows :—New South Wales, £7,782 ; Queensland, £22,650 ; and Western Australia, £45,454.

§ 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 1931–32 are shown in the following table.

SAWMILL OUTPUT OF NATIVE TIMBER, 1931–32.

Particulars.	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	Total.
LOGS MILLED.							
Hardwood—							
Quantity cub. ft.	4,501,032	(a)	f4,411,447	1,021,693	10,434,078	(a)	(a)
Value.. £	153,376	(a)	254,420	19,253	54,865	(a)	(a)
Softwood—							
Quantity cub. ft.	2,322,571	(a)	3,009,635	(c)	(c)	(a)	(a)
Value.. £	89,223	(a)	230,454	(c)	(c)	(a)	(a)
Total—							
Quantity cub. ft.	6,823,603	(a)	7,421,082	1,021,693	10,434,078	(a)	(a)
Value.. £	242,599	(a)	484,874	19,253	54,865	(a)	(a)
SAWN TIMBER PRODUCED.							
Hardwood—							
Quantity sup. ft.	34,250,992	44,775,012	18,627,850	(b)	40,777,172	19,008,369 d	157,439,395
Value.. £	328,018	(b)	261,012	(b)	330,553	109,098 e	1,028,681
Softwood—							
Quantity sup. ft.	17,851,342	..	26,634,172	(b)	81,978	536,483 d	45,103,975
Value.. £	185,687	..	406,393	(b)	980	9,492 d	601,952
Unspecified—							
Quantity sup. ft.	..	4,637,402	7,143,138	(b)	..	16,601,438 d	28,381,978
Value.. £	..	(b)	149,499	(b)	..	103,518 e	253,017
Total—							
Quantity sup. ft.	52,102,334	49,412,414	52,405,160	5,781,450	40,859,150	36,146,290	236,706,798
Value .. £	513,105	326,587	816,904	65,669	331,533	222,108	2,275,906

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

The next table gives the sawmill output of native timber for the five years ending 1931–32.

SAWMILL OUTPUT OF NATIVE TIMBER.

State.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.	1,000 sup. feet.
New South Wales ..	146,575	136,051	119,021	57,532	52,102
Victoria	100,567	79,018	86,145	42,274	49,413
Queensland	102,192	106,862	92,248	58,770	52,405
South Australia	4,833	3,219	3,613	3,412	5,782
Western Australia ..	163,180	145,043	123,572	74,324	40,859
Tasmania	53,174	46,195	60,038	30,578	36,146
Total	570,521	516,388	484,637	266,890	236,707

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 follow :—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; 1931–32, 16,831,214 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 1927–28 to £90,729, in 1928–29 to £85,009, in 1929–30 to £63,388, in 1930–31 to £47,090, and in 1931–32 to £40,977, 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 extensive use in the manufacture of perfumes. Overseas exports of essential oils from Western Australia amounted in 1927–28 to £38,919, in 1928–29 to £63,307, in 1929–30 to £77,510, in 1930–31 to £56,170, and in 1931–32 to £59,301. 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 3,235 tons, valued at £35,370, 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.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	£	£	£	£	£
Total ..	10,339,000	9,450,000	9,103,000	6,488,000	7,703,000

§ 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 indentical 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 1928–29 to 1931–32 inclusive are shown according to countries of origin in the following tables:—

DRESSED TIMBER.—IMPORTS, AUSTRALIA.

Country of Origin.	Quantity.				Australian Currency Values.			
	1928–29.	1929–30.	1930–31.	1931–32.	1928–29.	1929–30.	1930–31.	1931–32.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom ..	8,117	3,693	1,848	264	303	131	201	38
Canada	7,361,669	8,952,360	3,920,447	2,105,195	80,590	96,132	43,238	26,899
Other British Countries	212,733	104,437	92,498	25,116	2,124	898	982	248
Norway	36,184,991	22,459,088	3,200,306	1,712,394	391,159	212,565	34,836	15,936
Sweden	25,934,266	43,501,713	2,389,990	1,308,711	290,814	406,001	25,988	14,756
United States ..	7,851,388	8,022,251	3,952,219	53,001	86,289	88,836	34,978	1,359
Other Foreign Countries	358,136	1,278,267	285,008	165,327	7,312	17,154	5,902	3,524
Total ..	77,911,300	84,321,809	13,842,316	5,370,008	858,591	821,717	146,125	62,760

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 £39,894 in 1931–32, including plywood, veneered or otherwise, £1,958.

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(b).			
	1928–29.	1929–30.	1930–31.	1931–32.	1928–29.	1929–30.	1930–31.	1931–32.
	sup. ft.	sup. ft.	sup. ft.	sup. ft.	£	£	£	£
United Kingdom	502,310	97,258	1,635,051	72,162	10,496	9,591	13,283	8,211
Canada ..	12,199,691	43,715,830	21,299,710	75,835,435	97,384	305,569	95,504	352,720
India	442,651	62,123	30,148	37,933	14,246	2,647	2,124	1,695
Malaya (British)	149,388	169,360	101,577	92,688	2,113	1,452	878	849
New Zealand ..	37,320,809	37,172,537	15,918,061	23,177,441	484,856	459,095	215,809	296,538
Other British Countries ..	2,926,161	3,540,928	2,238,999	1,280,271	28,567	31,806	23,238	12,843
Japan	7,512,930	7,344,925	978,626	311,900	146,576	149,085	16,914	3,371
Netherlands East Indies ..	1,582,775	1,269,866	..	..	9,301	9,921	..	..
Norway ..	565,474	153,229	88,325	27,902	6,676	1,262	1,036	169
New Caledonia ..	1,461,433	1,181,507	911,724	139,785	12,719	11,622	11,710	1,557
Philippine Islands	3,943,533	5,779,971	433,041	93,175	60,056	79,219	6,620	670
Sweden ..	3,512,165	4,147,499	66,791	537,808	33,576	38,184	801	4,452
United States ..	250,803,732	233,538,575	61,561,589	18,585,996	2,144,665	1,811,759	312,623	110,034
Other Foreign Countries ..	165,646	287,739	1,235,299	1,408,034	3,366	4,407	9,596	9,161
Total ..	323,088,698	338,461,347	106,498,941	121,600,530	3,054,597	2,915,619	710,136	802,270

(a) Exclusive of timber not measured in super. feet. (b) Australian currency values.

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 1927–28 to 1931–32 are given below, the countries of destination being also shown :—

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

Country to which Exported.	Quantity.					Value.				
	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	1,000 sup. ft.	£	£	£	£	£
United Kingdom ..	7,751	9,191	11,722	12,399	13,173	85,024	104,314	127,469	141,746	153,315
Canada	213	529	212	125	40	4,338	10,226	5,087	2,498	682
Ceylon	6,679	4,069	12,013	10,328	6,700	67,656	46,051	120,873	104,668	65,952
Hong Kong ..	184	478	28	820	355	2,818	5,813	440	7,307	2,126
India	10,946	6,124	1,391	32	..	119,192	70,202	15,607	316	..
Malaya (British) ..	4,840	574	39	103	23	49,879	5,745	410	1,147	473
Mauritius ..	1,380	1,240	382	1,017	408	13,796	12,434	3,840	10,160	4,093
New Zealand ..	18,350	23,041	24,256	22,671	7,675	262,422	308,057	318,671	271,244	83,467
Pacific Islands—										
Fiji	1,480	1,155	1,297	813	510	23,484	18,932	21,834	12,987	7,408
Territory of New Guinea ..	489	650	356	92	429	8,835	10,898	6,269	1,293	4,772
Other Islands ..	1,027	1,003	840	624	316	18,260	16,515	14,496	9,284	4,848
Papua	247	136	149	80	105	4,818	2,709	3,197	1,223	1,932
South African Union	41,519	24,981	17,447	5,843	8,646	467,922	269,522	188,678	65,972	83,187
Other British Countries	..	..	..	..	129	..	..	..	..	1,287
Africa Portuguese East	..	..	..	..	193	..	..	..	..	2,343
Belgium	82	1,230	1,246	528	615	852	12,579	12,460	5,713	6,132
China	5	2,006	89	5,292	3,670	77	20,521	1,018	51,703	23,513
Egypt	355	..	1,039	..	..	3,793	..	10,385	..	..
Germany.. ..	..	..	..	..	176	..	..	..	..	1,869
Japan	7	219	50	..	38	155	3,380	768	..	801
Netherlands ..	..	..	..	..	1,036	..	..	..	..	10,491
Pacific Islands—										
New Caledonia ..	12	33	23	..	..	233	642	378	..	..
Other Islands ..	176	309	144	68	88	2,979	4,674	2,364	1,212	1,613
U.S. of America ..	1,480	6,427	5,737	1,332	3,039	26 313	105,352	85,860	22,897	42,453
Other Foreign Countries	1,786	9,211	3,901	1,000	54	19,757	96,928	42,569	11,581	421
Total ..	99,008	92,606	82,361	63,167	47,418	1,182,603	1,125,494	982,673	722,951	503,178

(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 1931-32 are given in the next table :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—QUANTITIES, AUSTRALIA, 1931-32.

Description.	Unit of Quantity.	Imports.	Exports.	Excess of Imports over Exports.
Dressed	Sup. ft.	5,370,008	708,093	4,661,915
Undressed, including logs	,,	121,600,530	47,418,389	74,182,141
Architraves, mouldings, etc.	lin. ft.	12,114	37,856	—25,742
Plywood, veneered or otherwise	sq. ft.	281,816	(*b*)	(*a*)
Palings	No.	..	120,196	—120,196
Pickets	,,	..	..	..
Shingles	,,	49,242	..	49,242
Staves—				
Dressed, etc.	,,	578,291	..	578,291
Undressed	,,	1,425,763	..	1,425,763
Laths—				
For blinds	,,	(*a*)	..	..
Other	,,	..	..	..
Doors	,,	5	(*a*)	(*a*)
Wood pulp	ton	25,783	(*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 1931-32 are shown hereunder :—

TIMBER, VARIETIES IMPORTED AND EXPORTED.—VALUES, (*b*) AUSTRALIA, 1931-32.

Description.	Imports.	Exports.	Excess of Imports over Exports.
	£	£	£
Dressed	62,761	9,989	52,772
Undressed, including logs	802,270	503,178	299,092
Architraves, mouldings, etc.	139	409	—270
Plywood, veneered or otherwise	2,495	(*a*)	2,495
Palings	..	1,231	—1,231
Pickets	..	..	..
Shingles	139	..	139
Staves—			
Dressed, etc.	32,375	..	32,375
Undressed	10,423	..	10,423
Laths—			
For blinds	..	..	..
Other	..	..	..
Doors	10	857	—847
Wood pulp	243,135	(*a*)	243,135
Veneers	15,340	(*a*)	15,340
Spokes, rims, felloes, etc.	469	830	—361
Other	2,500	..	2,500
Total	1,172,056	516,494	655,562

(*a*) Exports not recorded separately. (*b*) Australian currency values.
NOTE.—The minus sign (—) denotes an excess of exports.

(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.				
	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	ton.	ton.	ton.	ton.	ton.	£	£	£	£	£
Hong Kong ..	4,856	5,432	2,482	50,193	1,286	142,890	156,086	57,688	62,741	38,068
India	314	352	288	1,621	209	11,434	12,310	9,437	2,585	6,270
Malaya (British) ..	397	150	63	520	115	13,610	4,418	1,716	770	3,370
Other British Countries	13	17	15	220	7	470	594	424	330	213
China	822	3,486	737	6,599	649	25,170	103,485	19,521	6,363	12,651
Other Foreign Countries	46	33	37	120	78	1,052	1,345	641	180	2,342
Total ..	6,448	9,470	3,622	59,273	2,344	194,626	278,238	89,427	72,969	62,914

(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.				
	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	cwt.	cwt.	cwt.	cwt.	cwt.	£	£	£	£	£
United Kingdom	1,505	11,153	..	1,138	2,298	922	5,488	..	510	978
New Zealand ..	27,070	17,934	22,038	14,415	41,260	21,431	12,496	14,109	8,100	19,570
Other British Possessions ..	22	20	2	..	20	11	12	3	..	9
Germany ..	15,414	26,466	41,567	30,059	35,441	10,086	15,256	21,266	14,097	17,133
Other Foreign Countries	2,538	1,231	6,433	24,745	10,042	1,061	546	3,226	10,527	4,599
Total ..	46,549	56,804	70,040	70,357	89,061	33,511	33,798	38,604	33,234	42,289

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 46 per cent. of the total exports on the basis of values. 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.	1927–28.	1928–29.	1929–30.	1930–31.	1931–32.
	cwt.	cwt.	cwt.	cwt.	cwt.
QUANTITIES—					
Imports	5,114	1,562	1,936	596	21
Exports	46,549	56,804	70,040	70,357	89,061
Excess of exports over imports	41,435	55,242	68,104	69,761	89,040
VALUES—	£	£	£	£	£
Imports	2,633	755	950	(*a*) 266	(*a*) 13
Exports	33,511	33,798	38,604	33,234	42,289
Excess of exports over imports	30,878	33,043	37,654	32,968	42,276

NOTE.—The minus sign (−) denotes excess of imports. (*a*) Australian currency values.

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.

(iv) *Other Tanning Substances.* Considerable quantities of tanning substances other than bark are annually imported into Australia. The total value of the importations in 1931–32 was £42,292, and was composed as follows :—Wattle bark extract, £290; quebracho extract, £12,560; other extract, £9,285; and valonia, myrobalans, cutch, etc., £20,157.