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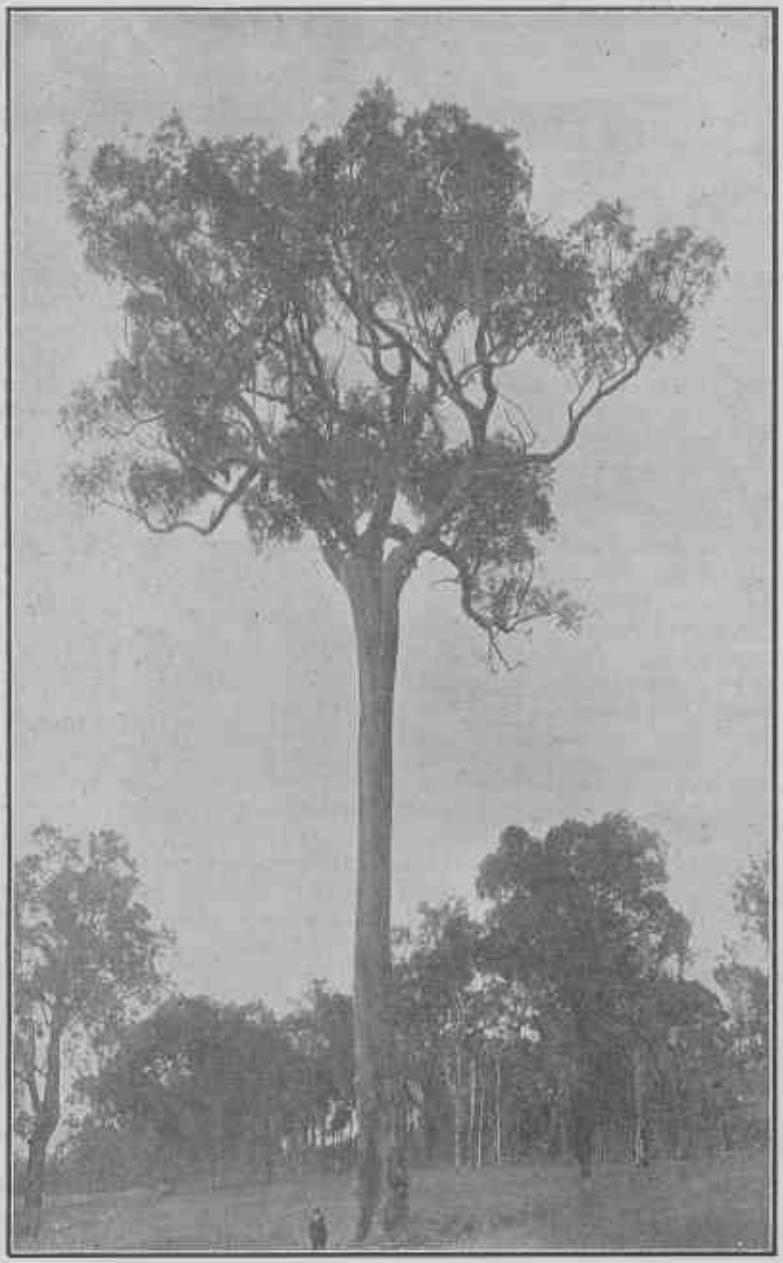
FORESTS DEPARTMENT



JARRAH.

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JARRAH

(Eucalyptus marginata).

The forests of Western Australia hold many trees of prime commercial value, but, undoubtedly, Jarrah (*Eucalyptus marginata*) has been the prime factor in establishing the State's high reputation as a timber producer. The knowledge that Jarrah existed in extensive forest areas in the South-West part of New Holland influenced to a large extent the British authorities in founding the Swan River Settlement. Jarrah formed the universal building material of the early settlers, and exports of the timber brought in the necessary money to tide the young Colony over many a trying and anxious period. Communication with the outside world was in the thirties very irregular, and the colonists had no capital wherewith to import such machinery as was at that time used in flour mills. The grinding of the wheat that was raised was a matter of urgent necessity, and Jarrah met the difficulty. The early flour mills around Perth were constructed of Jarrah, and the machinery and shafting inside them, including the cogwheel, were also of that timber, as was the huge wind wheel which propelled the whole. The hardy pioneers of the early thirties were so impressed by the quality and beauty of Jarrah timber that they gave it the name of "mahogany," and at one time an optimistic little band of settlers sent a parcel home to certain London piano manufacturers, with the hope that they might use it for piano cases. If the London piano makers did not immediately adopt Western Australian "mahogany" it was not because they were dissatisfied with the wood—indeed they admitted its high qualifications for the purpose indicated—but it was due to the fact that the product of Honduras and Guatemala could be had in London at a cheaper rate than the Western Australian article. The position is now reversed, but Jarrah—the tree became known by its aboriginal name of Jarrah about 1860—has in the meantime secured a universal reputation for durability and has been long forgotten by the cabinet makers, although prized by the engineers. The use of the timber for higher grade purposes is, however, increasing rapidly. Beautiful furniture and cabinet work of every description are manufactured from it. Since the Great War a large number of Rolls of Honour have been erected throughout the State, and it is interesting to note that these have been constructed almost entirely of Jarrah. In many cases, carving has been used as a decoration, and the excellent results obtained by the wood carver in delicate patterns are a certain indication of the useful properties of the timber in this connection.

Although Jarrah is to be found scattered throughout the South-West of the State, over many millions of acres within the 25 to 45 inch rainfall belt, *the total area of Prime Jarrah Forest is not more than* 2,500,000 *acres*, and is all on the Darling Range of laterite-capped hills. The main Jarrah belt stretches from Chidlow's Well in the North along the Darling Range to the extreme South of the State in the neighbourhood of Albany. The species attains its largest proportions between the Collie and Warren Rivers, becomes smaller to the East of the Kent River, is reduced to typical mallee form on the mountains of the Stirling Range, and small, crooked trees on the plains to the South. Jarrah regenerates itself well, but the constant firing of forests has resulted in the destruction or deforming of the young growth in many parts of the forests.

The tree attains a height of 100 to 120 feet, with a bole of about half this length and a diameter of six feet. The colour of the timber varies from a light to a dark reddish-brown when first cut, darkening with age usually to a deep rich mahogany colour. The chief physical and mechanical properties are as follows :—

Density :
Green, 68lbs. per cubic foot.
Dry (at 12% moisture), 55lbs. per cubic foot.

Transverse Strength (Beams 20sq. in. cross section at 12% moisture) :
Modulus of Rupture, 15,000lbs. per square inch.
Modulus of Elasticity, 2,080,000 lbs. per square inch.

Jarrah is an amazingly versatile timber. Though hard, it is easily worked, and, therefore, is used for almost every purpose to which wood may be put. In the form of piles, strainers and decking it has been employed so largely that there is scarcely a wharf, pier or jetty in Western Australia into the construction of which Jarrah has not extensively entered. As a building timber it is eminently satisfactory, being used in the sawn state for stumps, joists, weatherboards, or siding, plates, studs, rafters, laths and shingles, while flooring, lining, frames, doors, windows, interior trim, mantelpieces and other furnishings testify to the beauty and suitability of the dressed timber for high-grade purposes. In large buildings Jarrah makes excellent beams, columns, and rafters, while, as dadoes, panelling, partitioning, stair-railing, counters and so on it adds to the beauty of the interior. On account of its exceptional fire-resisting properties, the use of Jarrah, both for strength members and interior furnishings, undoubtedly tends greatly to reduce the inflammability of a building and its contents. In beam and column work it has already been amply demonstrated that Jarrah is far superior to unprotected steel, on account of its ability to continue its work under conditions where steel would long before have buckled as a result of the intensity of the heat.

A further use for Jarrah is found in shipbuilding. It is upon Lloyd's list of timbers suitable for building ships, and was used very largely for this purpose in the first half-century of the Colony's existence. During that period every boat that plied on the rivers was of Jarrah, while vessels were built in Fremantle and Bunbury and other places, of sufficient size to be engaged in trading operations between the Colony, India and the East, the Cape of Good Hope and Great Britain. At the present moment nearly all of the hundreds of luggers engaged in the pearling industry on the Nor'-West coast of the State are built of Jarrah.

Among the numberless purposes for which Jarrah is well suited may be mentioned the following :—

Furniture and cabinet work.
Carved goods.
Bodies of vehicles.
Wagon scantling.
Wagon under-carriages.
Building construction of all kinds.
Bridge and wharf timbers.
Piles.
Poles.
Railway sleepers.
Packing cases.
Fruit cases.
Picture frames.
Coopers' work, vats, etc.
Veneers.

One of the principal characteristics of Jarrah is its remarkable durability both in the ground and in water, and when exposed to the worst conditions. Piles have been drawn from bridges in Western Australia after being over 50 years in position, and have shown very few signs of decay. Posts that were driven into the ground as part of early buildings have been taken out after remaining 70 years in position, and their state of preservation is remarkable. In 1918, a building was demolished in Perth, which had been erected in 1833, 85 years before. The roof, wall-plates and joists of Jarrah were as good as the day they were put in position. Recently, some of the tramway tracks in the city of Perth were relaid after 25 years' service. The Jarrah sleepers had outlasted the rails, for although the rails were too worn and corroded to be of further use as rails, the majority of the sleepers were retained for use in less important lines. A sleeper which was sawn down the middle for examination was found to be so sound that the original auger marks could be faintly distinguished in the dog-spike holes.

Of recent years, the increase in popularity of Jarrah for higher grade uses has necessitated a study of the seasoning of this wood. Jarrah is somewhat difficult to season, and while this is a disadvantage as far as drying is concerned, it is compensated somewhat by the fact that, when thoroughly dry, the timber does not reabsorb moisture so readily as the more easily dried woods. The kiln-drying of Jarrah has been studied in the Departmental experimental kiln, which is of the Tiemann type, and suitable drying schedules for the different sizes have been developed. This system has been adopted by Millars' Timber and Trading Co., and at the firm's Yarloop mill four kilns, with a total capacity of some 4,160 cubic feet of 1in. material, have been operating for several years. This firm has also several smaller kilns of the same type at its city plant. Investigations are at present proceeding with a view to finding the cheapest method of seasoning Jarrah flooring. For the purpose of flooring, Jarrah is so eminently suited that the supply cannot keep pace with the demand, and consumers are obliged often to wait while the material seasons. As the output runs to many million feet per year, the seasoning position, as far as flooring is concerned, warrants special attention, and at the present time a comprehensive air-seasoning test is being made throughout all the main flooring-producing areas of the State. From the results of this test it is hoped that the best air-seasoning methods may be determined and adopted, and also that data may be obtained concerning the possibilities of combining air and kiln seasoning, with a view to producing a better product at a lower cost.

By Authority : Fred. Wm. Simpson, Government Printer, Perth.