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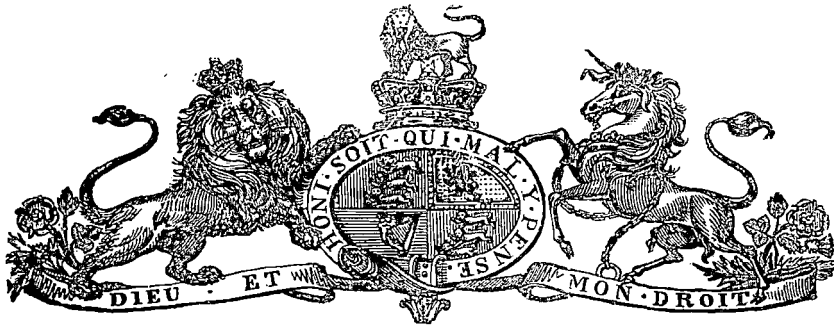
1886.

PARLIAMENT OF TASMANIA.

**THE EUCALYPTS AND DECORATIVE WOODS
OF TASMANIA :**

REPORT BY CONSERVATOR OF FORESTS.

Presented to both Houses of Parliament by His Excellency's Command.



THE EUCALYPTS AND DECORATIVE WOODS OF TASMANIA.

Public Works Department, Hobart, 21st May, 1886.

SIR,

I HAVE the honor to submit for your approval the following Report on the Eucalypts of Tasmania chiefly used in constructive works; also of some of the woods used in cabinet and decorative works of art, &c.

I have the honor to be,
Sir,

Your most obedient Servant,

GEO. S. PERRIN, *Conservator of Forests.*

The Hon. N. J. BROWN, Minister of Lands and Works.

*REPORT on the EUCALYPTS OF TASMANIA chiefly used in Constructive and Marine Works;
also of some of the Woods used in Cabinet and Decorative Works of Art, &c.*

THE blue gum (*Eucalyptus globulus*) of Tasmania is, undoubtedly, the best timber in the Colony for all important constructive works. Its hardness, density, and weight, combined with lasting qualities of a high order, place it in the foremost position among Tasmanian timbers. For marine work it is particularly suitable, as its hardness of grain, together with the presence of kino-tannic acid, wards off for a considerable time the attacks of marine insects until, in fact, the sea water nullifies the effect of the acids contained in the wood, and thus opens the way to their destructive proclivities. The toughness and elasticity of the wood is another factor in its favour, as its capability of withstanding great transverse strain is remarkable, whilst its power of resisting a vertical or crushing strain is equally so, averaging 3.078 tons on one square inch in experiments on cubes of 2 inches.

Its extreme elasticity enables it to withstand the blows of the heaviest "monkey" used in pile-driving without curling over or rending; and the elastic properties of the wood is shown by the fact of a rebound of some inches after every blow of the pile-driver, often necessitating the employment of rope or old bagging in order to check the rebound of the "monkey."

There appears to be some difficulty in distinguishing the wood of blue gum (*E. globulus*) from ordinary stringy-bark (*E. obliqua*), which, with its congeners *E. macrorrhyncha* (Victorian stringy-bark), *E. capitilata* (South Australian stringy-bark), and (gum-top, Tasmania) *E. Sieberiana*, present to those unacquainted with the timber points of resemblance which render it difficult to identify one from the other, more especially if cut and stacked away for some time.

The best and easiest way to distinguish them is by *weight*, the blue gum being the heaviest of all our eucalypts, and *sinking* at once on being placed in water.

All Tasmanian eucalypts, without exception, are liable to attacks of both land and marine insects, and, when used for important constructive works (marine), it is absolutely essential that some protective measures should be adopted to preserve the wood, from, say, a few inches above the water-line to a few inches below the mud line, in the case of piles, &c. Experience teaches us that the more destructive marine insects labour only in the water and not in the mud at the bottom; hence the necessity of some coating or sheathing material from the mud-line to the water-line, which will effectually prevent the ingress of the destructive *teredo navalis* and other allied marine insects. The use of metal for this purpose, whilst suitable for ship-building, is not so well adapted for permanent marine works, being very costly, easily damaged, and requiring constant supervision.

The chief fault of eucalypt timber, almost without exception (the famous "jarrah" and red gum not excluded), is its liability to rents and fissures caused by shrinkage; and Tasmanian timber is very liable to this on account of its rapid growth, free grain, and the moist localities from whence it comes. Blue gum in this respect is the best of our local timber, the openings being much less, and rarely interfering with its strength.

Still it would, doubtless, be better if this fault could be overcome, or, at all events, mitigated in a great measure. It must not, however, be supposed that these rents and fissures vitally affect the timber; and in no way are they to be confused with "heart" and "wind shakes" of imported timber; these being very serious faults in the latter, and affecting, in a marked degree, not only the value but the strength of the material used.

In our blue gum the smaller fissures are harmless, as far as strength and durability are concerned, as a coating of tar or paint effectually prevents the ingress of wet, which is the greatest enemy to be feared.

There is no doubt but that in past years prejudice has arisen in respect to this timber by persons outside the Colony on account of the fault above mentioned, together with dishonest practices, in sending—in lieu of blue gum—stringy-bark, gum-top, and swamp-gum, thus falsely misrepresenting the timber, and giving blue-gum a bad name in consequence. That this prejudice is being rapidly overcome the present large and increasing demand for this timber for important public works abundantly testifies.

There is, however, no reason why the mill-owners of the South—with special reference to blue-gum, and also the saw-mill proprietors of the North and North-West—with the stringy-bark, gum-top, white and stringy-gum, should not, in their own interests, take more pains with the felling of the timber, as it is here that the chief fault lies. Mr. J. Watson, as long ago as 1851, called attention to this matter in a report embodied in the transactions of the Royal Society of that year; but, I am sorry to say, his valuable and important suggestion was never acted upon, perhaps because the matter was not brought more prominently before those chiefly interested, viz.—the saw-mill interest of the Colony.

I would, therefore, here point out to all interested, and strongly urge the importance of placing their timber in the best possible condition in the hands of their customers on the other side of the water. Competition in timber, like other commodities, is keen at the present day, whilst the question of the timber supply of the world has of late years assumed such importance, in view of the enormous and ever-increasing demand, that its conservation and proper management now occupies the attention of the foremost thinking men of the time in all countries.

Western Australia, with its enormous forests of indigenous growth, chiefly "jarrah" (*Eucalyptus marginata*), will ever be a formidable competitor to Tasmania in the markets of Australasia; hence it behoves all who have the interests of the trade of the Colony at heart to be up and doing, *i.e.*, place their timber in the markets of the colonies in the best possible condition, and, when blue-gum is ordered, let the customer rely upon having that eucalypt instead of swamp and other gums being foisted upon him for it. In order that so desirable a state of things may be brought about, I would suggest,—

- 1st. The "ring-barking" of all trees intended for sawing at least three months prior to placing on the bench.
- 2nd. Cessation of the present system of cutting timber at the mill in a perfectly green state.
- 3rd. Stoppage of the system of selection of young and immature trees for the mill, such trees being invariably filled with sap and half-formed wood, yielding quickly to decay, and, therefore, more exposed to the attacks of insects and fungoid growth.
- 4th. Sea water soakage, where possible, in the log after being felled for, say, a month.
- 5th. In all large and important contracts care should be taken that none but the best trees are selected, and that when before the saw the sap wood, also the inner heart wood, should be carefully excluded.

I attach the utmost importance to this question of "ring-barking" all trees intended for the saw, as the tree in its perpendicular position is more rapidly drained of its sap and natural juices when once the bark is cut through into the wood, and thus descending by the natural channels instead, as is customary, of allowing the log to remain on the ground in a horizontal position, and allow the sap and acids contained in the trunk to percolate slowly into the wood tissues, and remain there decomposing and gradually rotting the log if left long enough.

This question of "ring-barking" is so important that it cannot be too strongly impressed upon the mill proprietors of the Colony. The sap and juices of the timber trees of Tasmania, owing to its moist climate and excess of rainfall, are present in greater abundance than in the trees of the other colonies, owing to the arid conditions of their growth; hence the necessity of greater precautions being taken here to rectify the faults caused by a superabundance of sap and juices contained in the tree.

The best time of the year for the operation of "ring-barking" is, undoubtedly, just before the sap begins to rise in the tree; but as some eucalypts are in advance of others in this respect, and certain local conditions may arise,—such as climatic differences between the north and south of the island,—that it is not easy to fix with exactness an absolute date for such operations, as individuals must be guided by local conditions, &c. Mr. John Watson (and a better authority could not be quoted) gives, as his opinion, that the month of May is a good time to commence "ring-barking" trees; but this, of course, depends upon the

rising of the sap. I quite coincide with the opinion thus expressed, and would mention that in an important sleeper contract in a neighbouring colony (South Australia) a clause was inserted in the contract agreement "that no trees were to be felled in the Forest (Wirabara) from the 1st June to the 31st August inclusive, or such time as the Conservator of Forests deemed necessary;" but, after an expression of opinion from me, the Conservator (Mr. J. E. Brown) allowed the contractor to ring-bark a certain number of trees previous to the 1st of June; and these, after standing for about two months, were cut and taken to the mill, and the result was most satisfactory.

The stringy-bark tree (*Eucalyptus obliqua*) is a very valuable timber, and for fencing and all general purposes where hardwood is used it is unrivalled. Its fissile properties render it peculiarly valuable in supplying posts and rails for fencing, and for house-building it is in universal demand all over the colonies, and if properly seasoned and cut under conditions mentioned above, it would be hard to excel it anywhere.

The stringy-bark, of which *E. obliqua* is the best, is widely distributed throughout the southern parts of Australia. In South Australia it is found in association with *E. capitata*, also a stringy-bark; but both are of a stunted habit, and neither ever attain the noble dimensions of this tree, as noticed in Victoria, and more particularly in Tasmania, where the maximum of girth and height are reached. In Victoria the timber is difficult of access, and transportation to navigable water is much more costly than in Tasmania, where the tree luxuriates almost to the water's edge.

Eucalyptus macrorrhyncha, a Victorian stringy-bark, is a noble tree, and is found in company with *E. obliqua*, and both are valuable for various domestic purposes in the sister colony; but the Tasmanian eucalypt (*E. obliqua*) bears the palm against all comers for majestic height, stem girth, general utility, freedom of grain, or fissile properties, together with the undoubted advantage of being obtained in unlimited quantities at the water's edge.

The abundance of this timber is shown by the fact that the settlers all over the Colony have in years past, and, in fact, are still engaged in destroying by hundreds of thousands every year this noble and useful tree. Timber which in years to come will be very valuable is, in the most ruthless and wholesale manner, destroyed by farmers and others, who now only see an enemy in the wooded features of their holdings, which by-and-by might become even of more value than the land itself, and this in the immediate neighbourhood of fine safe harbours and navigable streams. To a forester or lover of sylviculture there is no more mournful sight to be met with in the island of Tasmania than that presented to the view of thousands of weird giant skeletons of defunct monarchs of the forest seen on the farms bordering the roadsides of the North-West Coast, and, in fact, all over the Colony.

The Huon or Macquarie Harbour pine (*Dacrydium Franklinii*) must take precedence before all Tasmanian timber in regard to value, lasting qualities, beauty of grain, and easiness in working.

This timber has everything in its favour for every and any purpose. It cannot be excelled for ship-building requirements; its power of resisting moisture and rot is most remarkable and well-known. For constructive works, furniture, cabinet work, or for any domestic use, it is absolutely unrivalled; but, unfortunately, it is not procurable in large quantities within reasonable distance of navigable water; and had it not been for the wise forethought of the Government in prohibiting its cutting and sale for a time it is quite possible that this useful and valuable tree would have become so scarce, on river banks and neighbourhood of navigable water, that considerable difficulty and no slight danger would have to be encountered by those employed in getting the timber, inasmuch as they would have to travel inland long distances and explore fresh country for new "beds" of timber.

I understand that valuable "beds" of this pine are to be found on the western coast of the island, but that distance from navigable water, natural impediments in the way of transit, together with the entire absence of roads or facilities of shipping, render the getting of this timber a costly undertaking. This tree might be easily propagated in various parts of the island more accessible to the settler than its natural habitat by means of seed and the raising of young plants in suitable localities, thus renewing the supply of this remarkable tree in places where its excellent properties could be utilised in the arts and manufactures of the Colony.

The blackwood (*Acacia melanoxylon*) comes next, and is probably of equal importance, if not greater, in the eyes of some people than the pine. The former being more readily obtained, and at less cost than the latter, the extreme beauty of the blackwood for furniture and cabinet work causes it to be much sought after. However, this grand timber being so well known, requires but few remarks here. It is now obtained in large quantities on the North-West Coast, and is being transhipped in large quantities to Victoria chiefly, as well as to the other colonies, and at prices which, considering its rapidly approaching scarcity, may be best characterised as "giving it away."

In a very short period of time the present supplies will fall off rapidly, and from the fact of the timber being then only obtained from long distances inland, the cost will materially increase, and the timber become as valuable as the Macquarie pine, and from precisely similar causes,—its scarcity, combined with difficulty of transit, &c.

The system of sending the blackwood out of the Colony in the log is objectionable from a local point of view, and is productive of a certain amount of injustice to the labouring classes in the various districts from whence the timber is procurable.

The saw-mill "plants" of this Colony can compare most favourably with those of the neighbouring colonies, and being located in the vicinity of the blackwood, could compete effectually with mills across the water, handicapped by freight charges, to say nothing of the local mills possessing the greater advantage of supplying sawn boards and even-sided timber, as against the rough unwieldy logs now sent away, and thus save the freight on the waste.

The right method of dealing with blackwood and other valuable indigenous woods is that which will make the most of it; hence, if means could be devised by which the log, instead of being sent away in bulk, could be cut by the local mills, and thus keep the labour where it ought to be,—within the Colony,—much good would accrue to all concerned, and local manufacturers would probably be induced to extend their business, and send the manufactured article to compete with outside manufacturers in Victoria and other places which labour under the disadvantage of having to send to Tasmania for the raw material which the local men would have ready to hand.

It must always be borne in mind that the question of future blackwood supply rests chiefly with Tasmania, as heavy transit charges, and long distances to water carriage, must greatly influence its cost in Victoria. The following splendid results, bearing high testimony to the quality of our blackwood, is thus shown by recent experiments in Victoria.

Three samples of Tasmanian blackwood were tested in Victoria in January and February, 1884. The pieces were 7 ft. by 1½, distance between the bearings, 6 ft. The weight was gradually applied until piece broke.

Weight.	Average.	Average for cubic feet in lbs.	Specific gravity.	Breaking rate.	Average breaking rate.	Deflection.
7¼	} 7.16	41.89	0.671	cwt. qrs. lbs.	840.3	} 3¼
7				{ 7 2 4		
7¼				{ 7 3 7		
				{ 7 0 18		{ 4
		Average, 3.83.	Total specific strength, 2294.			{ 3¼

In concluding these remarks upon the blackwood, I may again state that Tasmania stands alone in regard to the supply and easy transit to navigable water, as well as in quality of the timber; and yet, in the face of these facts, it is being shipped away from these shores at rates not very much in excess of that charged for the better class gum timber.

South-eastern Victoria certainly possesses blackwood of excellent quality, but its distance from safe anchorage or navigable water presents formidable obstacles to its transit, and, as a matter of course, is only obtainable at a very largely increased cost.

Teak, from the fact of its scarcity, and that it is nearly three or four times the present price of blackwood, with a rising tendency, will never supersede blackwood, handicapped as the former is with heavy freight charges.

Tasmanian blackwood, in my opinion, will ever hold its own against all competitors as to quality, cost, and easy means of transit, whilst for furniture and all decorative purposes it is most valuable, and fully deserving of every consideration at the hands of the State.

Myrtle, so called, is, properly, a Beech (*Fagus Cunninghami*), and claims notice next from its extreme abundance all over the island.

There appear to be two kinds known to bushmen—the red and white myrtle. The former is the better timber for decorative purposes, and selected specimens of this timber show a most beautiful grain and figured marking. It, in my opinion, is equal to cedar, and will ultimately take the place of that timber, and is certain very shortly to come into prominent notice as a wood to be used extensively for all inside and decorative work.

It has the power of standing a considerable crushing strain, and when used for tram-rails on the Mount Bischoff tram line, it was found more durable than any other timber, and did not string or shred off, the wear being even and the rails always presenting a clean face, besides lasting much longer than stringy-bark. In the south it was found even more durable for that purpose than the blue-gum.

A prejudice has, in the past, undoubtedly arisen against the use of this wood, but that has chiefly been caused by mistakes in the use of it. It is not an outdoor wood, and should never be used for that purpose, or where damp or rot can reach it, as it is found that moisture affects it very materially. As a decorative wood it certainly should take the third position among Tasmanian timbers, and is quite as handsome when polished as cedar, which it doubtless will supersede in course of time.

In recent experiments made in Victoria in February, 1884, two samples of this Tasmanian wood gave the following results, weight of each piece respectively being 8 lbs. and 7½, averaging 7.75:—Average weight per cubic foot in lbs., 45.30; breaking weight of first sample, 6 cwt. 0 qr. 6 lbs.; breaking weight of second sample, 6 cwt. 1 qr. 6 lbs., averaging 692.0; deflection at point of rupture in inches, 2½ and 3¼, averaging 3.12; average specific gravity, 1889.

The white myrtle possesses a pretty grain and takes a good polish; but it is not as much sought after, as it does not look so well as the red. It is, however, a useful timber, and could be utilised in a variety of ways for some of the purposes to which Huon pine has been used in the past.

There is no apparent reason why the red myrtle timber should not come into general use for all purposes in which cedar has hitherto been required.

For ornamental and decorative requirements the roots of the sassafras, blackwood, and, more particularly, the musk (*Eurybia argophylla*) are not to be excelled for beauty of grain and markings, together with their capacity for taking a high polish. These extremely beautiful woods are bound in the near future (with other equally beautiful Tasmanian trees now but little known) to be much sought after by cabinetmakers throughout the world. They are, in my opinion, quite as good as the best and much prized satin and maple woods imported at a great cost, and extensively used in marine ship decoration, &c.

All these woods are obtainable in large quantities, roots of all the above growing to a great size, and readily available in close proximity to navigable water.

There are many smaller woods of the Colony of exceeding beauty of texture, and of great value where hardness of grain is required, could they be brought into the prominent notice of the cabinetmakers of Australia, England, and the continent. Many of the *Banksias* and *Casuarina* possess great beauty of grain, and could be used to a large extent in the finer and more costly cabinet-work, such as inlaying, &c., and borders for other woods, some of these affording timber of exceptional beauty for decorative art, whilst many of the figured eucalypts of the Colony are beautiful in the extreme.

Some of the indigenous timbers, indeed, possess remarkable properties, *e.g.*, the celery-top pine (*Phyllocladus rhomboidalis*), though never a large tree, is yet of a useful nature, as it can be cut into boards in a green state and put down as a floor at once, and never shrinks.

I have been assured of this fact, and can give an example of it. The bar floor of Wiseman's *Emu Bay Hotel* is composed of this timber; it was put down when green, and is now as good as when first laid.

A timber possessing such qualities would be inestimable in the large agricultural implement factories, both in the colonies and the Mother Country; whilst for purposes of handle-making and work in connection with coachbuilding, it would simply be invaluable.

The resources of Tasmania, from a timber point of view, being of so varied a character, combined with excellent quality, together with a superabundant supply, should lead to every encouragement being given to its conservation and proper care under regulation, in order that the supply may be kept up, and enable Tasmania ever to occupy the premier position as a timber-producing province among the Australian Colonies.

GEO. S. PERRIN, *Conservator of Forests.*

May, 1886.