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A
DESCRIPTIVE CATALOGUE
OF THE SPECIMENS IN THE
Industrial & Technological Museum,
MELBOURNE,
ILLUSTRATING THE
ECONOMIC WOODS
OF VICTORIA.

Melbourne :

PRINTED AND PUBLISHED BY PERMISSION OF THE TRUSTEES OF THE PUBLIC LIBRARY,
MUSEUMS, AND NATIONAL GALLERY OF VICTORIA,

BY FERGUSSON & MITCHELL LIMITED,

56-62 ELIZABETH STREET.

MDCCCXCIV.

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NOTE.

IN this Catalogue the better known local names of the principal kinds of timber trees are given, as well as the scientific names. The conflicting statements as to the value of some of the timbers are explained by the differences caused by the climate and character of the soil of the locality from which the specimens were taken, and the time of the year when the tree was felled. Many more determinations of the yield of charcoal, potash, pyroligneous acid, etc., and of the weight of a cubic foot of each variety of wood must be made, before a reliable average can be taken.

The following is a list of the more generally used popular names. The repetition of the same number indicates the recurrence of different popular names under the same species. A plurality of numbers opposite a name denotes its recurrence as applied to different species.*

	No.
Beech, Native or Evergreen	108
Blackwood	15
Bloodwood	80
Blueberry Ash	70
Boobyalla	13
Bottle-tree	43
Box, Prickly	44
Caper-tree, Native	45
Currijong	163
Cyprus or Sandarac Pine, Mountain	49
„ Desert	51
Dogwood	175
Fig, Native	114
„ Prickly	70
Flintwood	98
Grass-tree	181

*For example, Blackwood or Lightwood both appear under No. 15, which represents *Acacia melanoxylon*. Blue Gum is a name applied to at least four species of Eucalyptus, under Nos. 79, 83, 84, and 105.

	No.
Gum-tree or Eucalypt—	
Apple-tree	104
Blackbutt	98
Blue	79, 83, 84, 105
Bloodwood	80
Box	87, 93, 103
Bastard	84, 89
Grey	87, 100
Red	100
Yellow	89, 93
White	87
Cider	86
Drooping	107
Flintwood	98
Flooded	101, 105
Giant	77
Green	103
Grey	105
Ironbark	90, 102
White	82
Red Flowering	90
Black	90
Mallee	81, 96, 106
Manna	107
Messmate	94
Mountain Ash	77, 102
Peppermint	77, 95
Poplar-leaved	100
Red	101, 105
Spotted	84
Stringybark	79A, 81A, 92, 94, 99
White	93, 103, 107
Mountain	97
Woollybutt	91
Heartwood	152
Hickory, Native	11, 28
Honeysuckle-tree, Common	38
" Coast	39
" Heath	40
Lightwood	15
Mangrove, Native	37
Mint-tree	169
Mulberry, Native	125
Musk-tree	34
Myall	8
Myrtle-tree	108, 113
Olive, Spurious	152
Palm, Fan	137
Peach, Native... ..	173
Pepper-tree	69
Pine, Oyster Bay	49
" Sandarac	51
Pomegranate, Wild	45
Quandong	173
Radish-tree	61
Sandalwood, Native	174
Sassafras, Victorian	36

	No.
She-oak, Desert	56
„ Drooping	57
„ Shrubby	55
„ Straight	58
Spearwood	7
Spurious Apple	33
Stonewood	48
Sugar-tree	149
Tea-tree, Coast	133
„ Swamp	142
Tree Fern	67
„ Common Mountain	32
„ Common Gully	67
Umbrella Tree	17
Waratah, Victorian	177
Water-tree	123
Wattle, Black	4
„ Broom	2
„ Common	4
„ Feathery	4
„ Golden	20
„ Green	4
„ Prickly	10, 30
„ Silver	5
„ Willow	2
Whitewood	159
Yellow wood	31

The scientific names adopted will, with few exceptions, be found enumerated in Bentham and Mueller's *Flora Australiensis*, from which work also the few synonyms used have for the most part been selected.

For convenience of reference the species have been arranged in alphabetical order.

In the genus *Eucalyptus*, the position of each species in the Cortical System of Baron von Mueller is in most cases indicated. The following is the arrangement of the groups in that system:—

- (1). LEIOPHLOIÆ. Bark smooth, outer layers shedding entirely.
- (2). HEMIPHLOIÆ. Bark in the lower part of the trunk persistent, wrinkled or full of clefts, in the upper part and in the branches smooth, by the shedding of the outer layer.
- (3). RHYTIPHLOIÆ. Bark everywhere persistent, wrinkled, solid within.
- (4). PACHYPHLOIÆ. Bark everywhere persistent, wrinkled, fibrous within.
- (5). SCHIZOPHLOIÆ. Bark everywhere persistent, deeply furrowed, solid within.

The original Catalogue was carefully revised by Baron von Mueller, and, in compiling the present edition, advantage has been taken of the information contained in *The Useful Native Plants of Australia* by J. H. Maiden.

As new editions will be issued from time to time, it is hoped that any person in possession of information relating to the Trees of Victoria will forward the same to the Museum, with, if possible, specimens of the timber.

Those engaged in collecting woods are recommended to secure with their specimens (branchlets with leaves, buds, flowers and fruits), portions exhibiting the common prevailing characters of the bark of the trunk and branches. Indeed such materials are essential, particularly for the examination of any member of the genus *Eucalyptus* and reference to the foregoing groups.

Articles made from various timbers may be seen in the Museum.

The Jurors' Reports mentioned in the text are from the Official Records of the Intercolonial Exhibitions held in Melbourne on the dates mentioned.

The following species have not been included in the Catalogue. They are mostly of a shrubby nature, and little seems known concerning their utility :—

Acacia aneura	Dodonæa lobulata
„ hakeoides	Eucalyptus alpina
„ montana	Exocarpus aphylla
„ Oxycedrus	Grevillea Huegelii
„ rupicola	„ ilicifolia
Baeckea Behrii	„ Victoriae
Banksia ornata	Hakea rostrata
Beyeria opaca	Leptospermum attenuatum
Callistemon coccineus	„ scoparium
Calycotrix tetragona	„ myrsinoides
Cassia eremophila	Melaleuca uncinata
„ Sturtii	„ Wilsoni
Cassinia arcuata	Phyllanthus Gunnii
Correa speciosa var. virens	Pomaderris prunifolia
Daviesia latifolia	Solanum vescum
„ pectinata	Templetonia egena

J. COSMO NEWBERY,
Superintendent.

a 32108

B 94.14.05

CATALOGUE
OF
SPECIMENS OF WOODS
FROM THE
TREES & SHRUBS OF VICTORIA,
ADAPTED FOR ECONOMIC PURPOSES.

ACACIA.

(*Natural Order—Leguminosæ. Sub. Order—Mimoseæ.*)

THE genus *Acacia* is in Australia more numerous in species than any of Phanerogamous (or flowering) plants. It includes the so-called Wattle-trees, a name more commonly applied to those species celebrated for the astringency of their bark, and for their gum.

Among the woods yielded by this genus are the beautiful and valuable Blackwood (specifically identical with Lightwood) (No. 15), the Victorian violet-scented Myall (No. 8), two species of so-called Native Hickory (Nos. 11, 28), and a few other timbers (notably Nos. 7, 9, 10, 13, 14, 23, 27, 30) adapted for cabinetwork, implements, and small turnery purposes, etc. Time may develop peculiar values possessed by many of our small species; some kinds, once classified as useless on account of their diminutive size, are now applied in our manufactures.

1. *Acacia brachybotrya*, *Bentham*.

Not uncommon in the Mallee country. A tall handsome shrub.

2. *Acacia calamifolia*, *Sweet*.

WILLOW OR BROOM WATTLE.

Not infrequent in the Mallee country. A tall shrub. Yields an excellent tan bark.

3. *Acacia Dallachiana*, *F. v. Mueller*.

In the Buffalo Ranges. A tree 20 to 30 feet high.

4. *Acacia decurrens*, *Willdenow*.

COMMON WATTLE.

This, including its variety *A. mollissima*, is known also under the names of Black Wattle and Feathery Wattle, but must not be confounded practically with the Silver Wattle noted next in order, though but doubtfully a distinct species.

Frequent throughout the colony, except the desert tract; particularly frequent on ridges; forming often underwood in Eucalyptus forests. A small or middle-sized tree.

Wood light and tough, extensively used by coopers for staves. Specific gravity, 0.727 and 0.773; weight, 45-48 lbs. per cubic foot of dry wood; it yielded of charcoal 26.125 per cent.; of crude wood vinegar, 44.750 per cent., and of tar 7.125 per cent. Wattle bark is obtainable in vast abundance, and is much used by the tanner. The trees are stripped in September and the two or three months following, and the bark, being allowed to dry, is then in a marketable condition. Wattle gum is rather copiously available during the summer season. This tree, which grows on the uplands, affords a larger percentage of tannin than the Silver Wattle, whose habitat is on the banks of creeks and rivers. (Baron F. von Mueller, Osborne, Hoffmann.)

5. *Acacia dealbata*, *Link*.

SILVER WATTLE.

Common on river banks and in valleys, flowering earlier than *A. decurrens* var. *mollissima*, and requiring much less time for maturing its pods.

The timber and other products of the tree are very similar to those of the last-named species, though the percentage of tannin is considerably lower in the bark, which, moreover, is of less thickness.

On the banks of forest streams this tree attains a height of about 150 feet.

6. *Acacia discolor*, *Willdenow*.

Occurs on heath grounds on the lowlands, as well as on the mountains of Gippsland. A small tree only.

7. *Acacia doratoxylon*, *Cunningham*.

SPEARWOOD.

A small tree, restricted to the north-east part of the colony. Its hard and durable wood may be employed for cabinetwork, and is used by the aborigines for the manufacture of their spears and other weapons. It is also scented, and therefore may rank amongst perfumes. The leaves are eaten by stock.

8. *Acacia homalophylla*, *Cunningham*.

MYALL.

Is found in the Mallee scrub. A small tree, being in Victoria the only species yielding the violet-scented Myallwood. It possesses a dark and beautiful duramen. From its generally small size the use of its timber is mostly confined to the manufacture of tobacco pipes, whip handles, and small articles in turnery. This species yields a gum which is more or less copiously available during the summer season.

9. *Acacia implexa*, *Bentham*.

Scattered over ridges of the lower silurian formation, from Port Phillip to the Pyrenees and Upper Murray, but nowhere common. A middle-sized tree; wood useful for cabinetwork, turnery, and cogs. It is hard and close-grained. Colour, dark brown with yellow stripes. Specific gravity, 0·711; weight, 44 lbs. per cubic foot of dry wood. Bark available for tanning.

10. *Acacia juniperina*, *Willdenow*.

COMMON PRICKLY WATTLE.

In the granite formation of Gippsland; also in the Grampians and a few other places. The wood is light and tough, and much esteemed by splitters.

11. *Acacia leprosa*, *Sieber*.

NATIVE HICKORY.

Dandenong Ranges, and elsewhere in moist forest-valleys through the southern and eastern parts of the colony. Usually a rather small tree with a slender stem, yielding excellent wood for small cabinetwork and turnery.

12. *Acacia linearis*, *Sims*.

Frequent in moist forest valleys through the southern and eastern parts of the colony. Usually a rather small tree; wood available for minor furniture, implements, etc.

13. *Acacia longifolia*, *Willdenow*.

On the coast it is known by the native name "Boobyalla."

Chiefly in the eastern and southern parts of the colony. A large shrub, or frequently a small tree, yielding excellent wood for small cabinetwork and various tools, etc. The variety *A. sophoral* is particularly well adapted for binding coast-sands.

14. *Acacia lunata*, *Sieber*.

North-eastern part of the colony. A small tree only.

15. *Acacia melanoxylon*, *R. Brown*.

BLACKWOOD. LIGHTWOOD.

Rather frequent on many rich river flats, thence extending often up the valleys and on to flats. A middle-sized to a large tree yielding magnificent wood for every kind of cabinetwork, as it has a beautifully-marked and richly-coloured grain which takes a polish freely, and gives an effect hardly to be surpassed even by walnut. It is very close-grained and heavy, and is useful for all purposes where strength and flexibility are required. It is largely used by coach-builders, for cooperage, in the construction of railway carriages and trucks, and in the better class of agricultural implements. It is also used for gun-stocks and a variety of turnery work, and is the best for bending under steam. Specific gravity, from 0.664 to 0.777; weight of a cubic foot of dried wood, 41.48 lbs. The yield of charcoal from the wood, 29.250 per cent.; crude wood vinegar, 40.250 per cent.; and of tar, 7.062 per cent. (F. M., Osborne, Hoffmann.)

This species yields tanners' bark which is inferior, however, to that from *Acacia decurrens*.

16. *Acacia myrtifolia*, *Willdenow*.

Widely distributed over the colony in mountain and forest regions, rocky hills, etc. A tall shrub.

17. *Acacia Osswaldi*, *F. v. Mueller*.

In the Mallee scrub, not uncommon, but always remaining a small tree. The plant is exquisitely adapted for tall hedges. It is often called the "umbrella tree," as it gives a capital shade. The heart-wood is dark, hard, heavy, and close-grained. It would be useful for cabinetwork, turnery, etc.

18. *Acacia penninervis*, *Sieber*.

Scattered through the eastern half of the colony, over ridges and ranges; gregarious on some of the sub-alpine declivities and plateaux. A usually small tree. (*F. Mueller*.) The bark yielded of tannic acid 17·9 per cent., and of gallic acid 3·8 per cent. The bark of this species was chosen by Baron von Mueller to demonstrate the fact that many of the species of this great genus are calculated to afford, in their bark, a large supply of material adapted for packing papers. (*Official Record, Exhibition, 1866*, page 246.)

19. *Acacia pravissima*, *F. v. Mueller*.

Upper Gippsland and Buffalo Ranges. A tall shrub or small tree.

20. *Acacia pycnantha*, *Bentham*.

GOLDEN WATTLE.

Frequent throughout the greater part of the colony, in open forest country or scrub, as well as on the sea-coast. This is one of the species yielding superior tanners' bark and wattle gum. The specific gravity of the wood has been given by Mr. Osborne as 0·830; weight of a cubic foot of dried wood about 51½ lbs.

21. *Acacia retinodes*, *Schlechtendal*.

On grassy ridges and open valleys throughout the greater part of the colony. A moderate-sized, ever-flowering tree; yields good tan bark; also gum. The wood is prettily grained, tough, and durable.

22. *Acacia rigens*, *A. Cunningham*.

Desert country along the Murray and Wimmera. A tall shrub or small tree. Wood hard and tough, and possessed of a very agreeable perfume.

23. *Acacia salicina*, *Lindley*.

Common in the north-west desert. A small or occasionally middle-sized tree. Wood hard, heavy, durable, and of a fine dark shade; highly adapted for ornamental furniture. Specific gravity, 0.763; weight of cubic foot of dried wood about 47½ lbs. (*Jurors' Report*, 1862.) Diameter of tree, 12 to 18 inches; height, 30 to 50 feet.

24. *Acacia sclerophylla*, *Lindley*.

In the Murray Desert. A shrub only.

25. *Acacia sentis*, *F. v. Mueller*.

Murray Desert. A bush or small tree; well adapted for hedges. In New South Wales the presence of this tree is always considered a sure indication of underground water.

26. *Acacia stenophylla*, *A. Cunningham*.

Restricted within Victoria to the banks of the Murray River and the lower Wimmera and Avoca. A middle-sized tree. Wood very hard. Planes excellently, giving a very smooth surface.

27. *Acacia stricta*, *Willdenow*.

Southern and eastern tracts of the colony. Wood, on account of its small size, only suitable for minor articles such as turners' work.

28. *Acacia subporosa*, *F. v. Mueller*.

NATIVE HICKORY.

Restricted to the east part of Gippsland. This is considered a valuable wood for many purposes. It is exceedingly tough and elastic; would make good gig-shafts, handles for tools, gun-stocks, etc. Tall straight spars, fit for masts, can be obtained of considerable length and 18 inches diameter. (L. Morton.) The bark yielded of tannic acid 6.6 per cent., and of gallic acid 1.2 per cent.

29. **Acacia verniciflua**, *A. Cunningham.*

A shrub or small tree widely distributed over the colony in mountain and forest regions.

30. **Acacia verticillata**, *Willdenow.*

THE COMMON PRICKLY WATTLE.

Occurring almost everywhere in moist valleys. More of a shrub than a tree. Wood useful for small turnery work.

31. **Acronychia lævis**, *Forster.*

YELLOW WOOD. *Natural Order—Rutaceæ.*

Ranges scantily from Lake King to Cape Howe. A beautiful tree, attaining a height of 60 feet; diameter of stem occasionally $1\frac{1}{2}$ to 2 feet. Timber of superior quality, pale, close-grained.

32. **Alosphila Australis**, *R. Brown.*

MOUNTAIN TREE FERN. *Natural Order—Filices.*

On slopes of moist ranges; abundant in most of the southern forest districts. Attaining 40 feet in height and upwards. Occasionally used for turnery for the sake of its peculiar markings. Laboratory researches under the directorship of Baron von Mueller, yielded from the stem; charcoal 29 per cent.; crude wood vinegar, 44 per cent.; tar, 6 per cent.; tannic acid, 2.9 per cent.; and gallic acid, 0.9 per cent.

33. **Angophora intermedia**, *De Candolle.*

SPURIOUS APPLE-TREE. *Natural Order—Myrtaceæ.*

Restricted to the eastern part of Gippsland. A shady, middle-sized, rarely a large tree. Timber very valuable in quality; when free from gum-veins it is much used for naves of wheels, and cut into boards for various purposes. (Moore.)

34. **Aster argophyllus**, *Labillardière.*

THE MUSK-TREE. *Natural Order—Compositæ.*

Confined to moist umbrageous forest gullies, but there abundant.

Seldom exceeds 60 feet in height, and is generally smaller. The wood has a pleasant fragrance, is of a beautiful mottled colour, and well adapted for turnery, veneering, fancy articles of furniture, pianofortes, etc. (*Jurors' Report*, 1866.) Specific gravity is stated at 0.642; weight of a cubic foot of dried wood about 40 lbs. A brilliant sap-green has been prepared from this species by Mr. Bosisto.

35. *Aster glandulosus*, *Labillardière*.

Widely distributed through the colony; never of large size, often shrubby.

36. *Atherosperma moschatum*, *Labillardière*.

VICTORIAN SASSAFRAS-TREE. *Natural Order*—*Monimiaceæ*.

In deep, wet forest ravines. A middle-sized tree, affording a timber which is useful to the cabinetmaker. It has a dark duramen, frequently exhibits a pleasant figure, and has also the quality of taking a beautiful polish. The bark of this tree, as also an essential oil therefrom, both of which are shown in the Museum, are articles of commerce. One hundred lbs. of bark chips yielded 18 ozs. 6 drs. of oil. (Bosisto). It contains an alkaloid which has been named Atherospermine, possessing valuable therapeutic properties. (For further details see *Official Exhibition Record*, 1862, page 51, and *Philadelphia Centennial Exhibition Record* of 1875, page 82-83.)

37. *Avicennia officinalis*, *Linné*.

NATIVE MANGROVE. *Natural Order*—*Verbenaceæ*.

Extending along the sea-coast in saltwater estuaries. A low, branching tree, yielding a timber valued for stonemason's mallets (Moore) and some other utensils.

38. *Banksia marginata*, *Cavanilles*.

(*B. Australis*, *R. Br.*)

THE COMMON HONEYSUCKLE-TREE. *Natural Order*—*Proteaceæ*.

In less fertile localities all over the colonial territory, ascending to sub-alpine elevations. A small tree, yielding a light timber of

a beautiful grain, which is used for stems and short knees of boats, and generally for cabinet furniture and various ornamental purposes. (*Jurors' Report*, 1866.) Specific gravity, 0·610; yielded of charcoal, 29·500 per cent.; of crude wood vinegar, 40·062 per cent.; and of tar, 6·562 per cent. A ton of dry wood yielded, as a maximum, 14¼ lbs. of pearlash, or 6½ lbs. of pure potash. A cubic foot of dried wood weighs about 38 lbs. (F. v. Mueller, Osborne.) Bark available for tanning, and the well-seasoned wood for veneers.

39. *Banksia integrifolia*, *Linné Filius*.

THE COAST HONEYSUCKLE-TREE.

To be found only on the coast eastward from Port Phillip. A middle-sized tree. Timber possessing qualities similar to those of *Banksia marginata*, but dimensions much larger. (*Jurors' Report*, 1866.) Specific gravity of wood, 0·799; weight of a cubic foot of dry wood about 50 lbs. Beautiful veneers have been cut from this timber.

40. *Banksia serrata*, *Linné Filius*.

THE HEATH HONEYSUCKLE-TREE.

On the sandy heaths of Gippsland, rather frequent. A small or occasionally middle-sized tree, having always a remarkably crooked stem; wood possessing qualities similar to those of *B. marginata*. (*Jurors' Report*, 1866.) The timber is soft and short in the grain; it is high-coloured and singularly marked. (Lockhart Morton.) Specific gravity, 0·803; weight of cubic foot of dried wood, about 50 lbs. The bark of this species yielded of tannic acid 10·8 per cent., and of gallic acid 0·7 per cent. Also suitable for veneer cutting.

41. *Bertya Findlayi*, *F. v. Mueller*.

Natural Order—Euphorbiaceæ.

Only in the most north-eastern parts of Victoria. A small tree.

42. *Boronia arborescens*, *F. v. Mueller*.

(*Zieria Smithii*, Andr.; *Z. lanceolata*, R. Br.) *Natural Order—Rutaceæ.*

From the Grampians and Cape Otway Ranges eastward, along

humid forest valleys, ascending to high mountain regions. A shrub or small-sized tree. Timber used for wood-engraving in New South Wales. (Moore.) One hundred pounds of fresh leaves yielded $6\frac{1}{2}$ ozs. essential oil, strongly resembling in taste and odour that of rue (*Ruta graveolens*), to which order botanically the plant belongs. Baron von Mueller, in *Official Record of the Exhibition of 1861*, mentioned that this plant might be used medicinally as a substitute for the South African *bucco*.

43. *Brachychiton populneum*, R. Brown.

THE BOTTLE TREE; one of the Currijongs. (*Sterculia diversifolia*, G.D.) *Natural Order—Sterculiaceæ*.

Sparingly in the more open valleys of the Murray, Mitta Mitta, the Snowy Rivers, and thence to the eastern limits of Gippsland. Stem often remarkably turgid; wood exceedingly soft, white, and somewhat mucilaginous; the fibre of the bark can be converted into cordage. Gum Tragacanth exudes from the stem. This tree is excellent for forming permanent shade-lines.

44. *Bursaria Spinosa*, Cavanilles.

PRICKLY BOX-TREE. *Natural Order—Pittosporææ*.

Common in the lowlands as well as in the mountain districts. A tree of small size; stem rarely exceeding a foot in diameter; wood very hard and fine-grained, adapted for turnery, carpenters' rules, and many other implements. (*Jurors' Report*, 1866.)

45. *Busbeckia Mitchelli*, F. v. Mueller.

NATIVE CAPER TREE, or WILD POMEGRANATE (*Capparis Mitchelli*, Lindl.) *Natural Order—Capparideæ*.

Found in the Mallee scrub. A small tree. The wood is whitish, hard, close-grained, and suitable for engraving, carving and similar purposes. Strongly resembles lancewood.

46. *Callistemon brachyandrus*, Lindley.

Natural Order—Myrtaceæ.

Murray Desert. Never a large tree; often shrubby.

47. **Callistemon lanceolatus**, *De Candolle*.

East Gippsland. Very ornamental. Wood hard and heavy ; suitable for wheelwright's work.

48. **Callistemon salignus**, *De Candolle*.

STONEWOOD.

On banks of watercourses. A small tree, yielding a remarkably hard wood, which has been used for wood-engraving. (*Jurors' Report*, 1862.)

49. **Callitris cupressiformis**, *Ventenat*.

THE MOUNTAIN CYPRESS-PINE. (*Frenela rhomboidea*, *Endl.*) *Natural Order—Coniferae*.

On rocky, densely-timbered ranges—thus on the Grampians and the Genoa Ranges ; also on low sandy country near the Wimmera. A middle-sized tree, known also as the Oyster Bay Pine. (F. Mueller.) Wood used, like that of *Callitris verrucosa*, for a great variety of purposes. (*Jurors' Report*, 1866.)

50. **Callitris calcarata**, *R. Brown*.

(*Frenela pyramidalis*, *A. Cunn.* *Frenela Endlecheri*, *Parla.*)

Ovens Ranges. A small or middle-sized tree. Spreads rapidly over sterile, particularly sandy land. The timber is durable, fine-grained, fragrant, and capable of a high polish. It is used for piles, and for sheathing punts and boats ; it is repugnant to termites ; the knotty portions are useful for inlaying.

51. **Callitris verrucosa**, *R. Brown*.

THE DESERT SANDARAC-PINE, or CYPRESS.
(*Frenela robusta*, *A. Cunn.*)

Generally a middle-sized tree, more or less copiously dispersed through the Mallee scrub, in some directions abundant. The timber of this tree, from its peculiar odour, is said to be obnoxious to the attacks of insects. The dark beauty of the wood renders it useful for many articles of cabinet furniture, as well as for building and flooring. (*Jurors' Report*, 1866.) Valuable for

cabinet purposes, and very durable for telegraph posts. (Moore.) Specific gravity, 0.691. Resin from this species and from *C. cupressiformis* is available in considerable abundance; it exudes naturally from the bark in tears, or small pendulous masses, and also flows from incisions made to encourage exudation. It is almost identical with the best Sandarac from the *Callitris quadrivalis* of North Africa, so largely used in the manufacture of varnishes. (*Jurors' Report*, 1861, page 57.) Weight of a cubic foot of dried wood, about 43 lbs.

52. **Carumbium populifolium**, *Reinwardt*.

(*Omalanthus populifolius*, *Grah.*) *Natural Order—Euphorbiaceæ.*

Occurring in the eastern extremity of Gippsland. A tall shrub or small tree.

53. **Cassinia aculeata**, *R. Brown*.

Natural Order—Compositæ.

Frequent in moist wooded tracts of the colony. Oftener a shrub than a small tree. The wood is white and hard.

54. **Cassinia lævis**, *R. Brown*.

Murray Desert. Wood light and soft.

55. **Casuarina distyla**, *Ventenat*.

THE SHRUBBY SHE-OAK. (*C. rigida*, *Miq.*)

Natural Order—Casuarinæ.

Widely dispersed through the colony. Suited for fixing drift-sand.

56. **Casuarina glauca**, *Sieber*.

THE DESERT SHE-OAK.

A middle-sized tree. For description of timber see the following more abundantly dispersed species. The timber of the various *Casuarinas* is in some parts of the colony known by the name of Beefwood. All *Casuarinas* may be pollarded for cattle fodder,

and their timber used for cabinetwork and veneers when of large size.

57. *Casuarina quadrivalvis*, *Labillardière*.

THE DROOPING SHE-OAK.

Frequent in grassy plains, on hills, and along the sandy coast. A quick growing middle-sized tree, with branchlets usually if not always pendulous. Wood close and tough, but not durable. The She-oaks are well adapted on account of the singular beauty of their grain for various purposes in furniture manufacture. They are used in certain applications in boat-building. This wood is also excellent for turnery and for other ornamental work. She-oak is also frequently used as firewood for domestic purposes. It does not flame much, but burns down to an incandescent glowing mass which makes a peculiarly pleasant fuel for the house. (*Jurors' Report*, 1866.) Timber of this and allied species used for shingles and staves. (Moore.) The specific gravity of this wood, 0.935 to 1.037. It yields charcoal 27 per cent., crude wood vinegar 43 per cent., and tar 7 per cent. The stringy foliage, formed by the cylindrical concrescence of the branchlets with the leaves, can be converted into an excellent pulp for packing, and even printing papers and millboard. (F. Mueller, *Official Record*, 1866, page 247.) Weight of a cubic foot of dried wood, from 58 to 64 lbs.

58. *Casuarina suberosa*, *Otto and Dietriop*.

THE STRAIGHT SHE-OAK.

On ridges of the lower as well as higher regions, not rare. A moderate-sized tree. Timber and foliage possessing qualities similar to those of *C. quadrivalvis*. A ton of dry wood yields about 7¼ lbs. pearlash, or 4½ lbs. of pure potash. (F. v. M.)

59. *Casuarina torulosa*, *Aiton*.

East Gippsland. Timber used principally for shingles and sometimes for cabinetwork. (Moore.) Is one of the best woods for oven-fuel.

60. *Celastrus Australis*, *Harvey and Mueller*.

Natural Order—Celastrineæ.

Gippsland. Wood available only for small fancy work.

61. **Codonocarpus cotinifolius**, *F. v. Mueller.*

THE RADISH TREE.

Natural Order—*Phytolacææ*.

In the Mallee scrub very sparingly ; attaining a height of 30 feet. The Poplar of the Central Australian explorers. Whole tree strong-scented.

62. **Commersonia Fraseri**, *Gay.*

Natural Order—*Sterculiaceæ*.

East Gippsland. Small tree ; bark fibrous.

63. **Coprosma hirtella**, *Labillardière.*

Natural Order—*Rubiaceæ*.

Frequent in moist forest regions. Shrubby only.

64. **Coprosma Billardieri**, *Hooker.*

In forest swamps and on periodically inundated river banks ; not rare throughout the southern and eastern districts. A small-sized tree or a bush only.

65. **Correa Lawrenciana**, *Hooker.*

Natural Order—*Rutaceæ*.

In sub-alpine situations, along rivulets and torrents, to 4,000 feet elevation. A tall shrub or small tree.

66. **Cyathea Cunninghami**, *J. Hooker.*

Natural Order—*Filices*.

Cape Otway Ranges and Dandenong. A tall but rare fern-tree, with very slender stem.

67. **Dicksonia Billardieri**, *F. v. M.*

(*D. antarctica*, *Labillardière* ; *Cibotium Billardieri*, *Kaulfuss*.)

GULLY TREE-FERN. *Natural Order*—*Filices*.

Frequent in the lower fern-tree gullies. Nowhere occurring in antarctic, but extending to sub-tropic regions. One of the aptest of tree-ferns for horticultural transmissions. The stems are sometimes used for cutting into rustic chairs.

68. *Dodonæa viscosa*, *Linné*.

Natural Order—*Sapindaceæ*.

In nearly all regions of the colony. A tall shrub. Wood exceedingly dense, close-grained, and durable; of a very flinty nature. Fit for sheaves of ships' blocks, rulers, tree-nails, turnery, inlaid works, etc.

69. *Drimys aromatica*, *F. v. Mueller*.

(*Tasmannia aromatica*, *R. Br.*)

NATIVE PEPPER-TREE. *Natural Order*—*Magnoliaceæ*.

Humid forest ranges from the Cape Otway Ranges and Gippsland to the Australian Alps, ascending to at least 5,000 feet. A bushy shrub or small tree.

70. *Elæocarpus holopetalus*, *F. v. Mueller*.

BLUEBERRY ASH OR PRICKLY FIG. *Natural Order*—*Tiliaceæ*.

Within Victoria. Found only in ravines or on river banks in East Gippsland. A noble tree, attaining a height of 120 feet. Wood pale, fine-grained; exquisite for cabinetwork.

71. *Elæocarpus cyaneus*, *Aiton*.

Forest gullies and wooded ranges, from Wilson's Promontory to the eastern frontiers of Gippsland. A small or middle-sized tree. Wood compared by artisans to ashwood (*Jurors' Report*, 1862), and recommended for wood engraving by Dr. G. Bennett.

72. *Eremophila alternifolia*, *R. Brown*.

Natural Order—*Myoporinæ*.

Murray Desert. A bush but rarely attaining tree dimensions.

73. **Eremophila bignoniflora**, *F. v. Mueller.*

Murray Desert. Wood very valuable for its fragrance, density, and beautiful tinge; elegantly marked with green and yellow. (Thozet.)

74. **Eremophila longifolia**, *F. v. Mueller.*

Peculiar to the northern and north-western desert. A small tree. Wood brittle.

75. **Eremophila oppositifolia**, *R. Brown.*

Murray Desert. A small tree, or shrubby only.

76. **Eriostemon squameus**, *Labillardière.*

Natural Order—Rutaceæ.

In the ranges towards Cape Otway, along brooks; maximum height, 50 feet; greatest stem-circumference, $7\frac{1}{2}$ feet.

EUCALYPTS or GUM-TREES.

(*Natural Order—Myrtaceæ.*)

77. *Eucalyptus amygdalina*, *Labillardière*.

One of the Peppermint trees and Mountain Ash of the Dandenong Ranges. Giant Gum-tree.

In forest country of the southern and eastern parts of the colony, always interspersed with other trees. A tree attaining colossal size in deep ravines, and of middle size in more open places. This tree may be the tallest on the globe, perhaps only rivalled by the *Wellingtonia gigantea* (*Sequoia Wellingtonia*) of California. It has been measured repeatedly 420 feet, and towards the sources of the Yarra it is said to attain a still greater height. The wood is fissile, well adapted for shingles, rails, house-building, for the keelson and planking of ships, and other purposes. It is hard, close-grained timber. The inner bark is adapted for the preparation of all kinds of coarser paper. This species contains more oil in its foliage than any of its congeners; 1000 lbs. of fresh-gathered leaves, with their small branchlets, yield about 500 ozs. of oil by distillation. It is rubefacient, disinfectant, and employed externally in rheumatic and other affections. It is extensively used in various manufactures, chiefly for perfumery, soaps, etc. Kino from this species is largely available. (Mueller, Bosisto.) The gigantic state of the tree passes also as a Mountain Ash.

78. *Eucalyptus Behriana*, *F. v. Mueller*.

(*Sect. Rhytiphloicæ.*)

Found in the Mallee scrub, and also towards the Avoca. A tall shrub, or small tree.

79. *Eucalyptus botryoides*, *Smith*.

The BLUE-GUM of New South Wales, or BASTARD MAHOGANY of Gippsland. (*Sect. Rhytiphloicæ.*)

East Gippsland, delighting in river banks. A tall, handsome tree, remarkable for its dark-green foliage. The stems, which have a rough, furrowed, persistent bark, attain a height of 80 feet without a branch, and a diameter of 8 feet. The timber, usually

sound to the centre, is adapted for waterwork, waggons, knees of boats, etc. No decay was observed in posts which were in use fourteen years. (F. v. M.) The Blue-gum of the coast district of New South Wales. It is considered to be one of the finest timbers for ship-building. (Moore.)

79A. *Eucalyptus capitellata*, *Smith*.

One of the Stringybarks. Affords a good, useful timber, principally used for fence-rails, shingles, and rough building purposes. Might be raised with advantage on wet, sandy land. Produces seed when quite young.

80. *Eucalyptus corymbosa*, *Smith*.

THE BLOOD-WOOD EUCALYPT. (*Sect. Rhytiphloia*).

In Victoria this species is confined to the eastern part of Gippsland. A small or middle-sized tree, but sometimes attaining a great height, with a persistent furrowed bark. Less known to artisans than its apparent quality would seem to merit. It exhibits a clear grain of a red colour, and is well adapted for many useful purposes in the mechanical arts. (*Jurors' Report*, 1866.) Timber subject to kino veins, but the sound timber durable, and principally used for posts and beams. (Moore.) The kino from this species is obtainable in rather large quantities. In experiments conducted at the Melbourne Phytochemical Laboratory, the bark yielded tannic acid 2.7 per cent., and gallic acid 0.8 per cent. It is also available for paper material.

81. *Eucalyptus dumosa*, *Cunningham*.

One of the principal bushes or small trees constituting the Mallee scrub on the Murray River and its tributaries. May be regarded as a variety of *E. incrassata*.

81A. *Eucalyptus eugenioides*, *Sieber*.

BASTARD STRINGYBARK.

This wood is pale-coloured, splits well into shingles, palings, rails, and slabs, and can also be sawn into flooring boards, but it forms a very inferior fuel. Said to be less fissile than other stringybark trees but more lasting. (Mueller.)

82. *Eucalyptus fasciculosa*, *F. v. Mueller*.

(*E. paniculata*, *Sm. var. fasciculosa*, *Benth., Fl. Aust.*)
(*Sect. Schizophloeae*.)

In the Mallee scrub. In New South Wales, *E. paniculata*, of which this, according to Bentham, would appear to be a variety, is a moderate-sized tree, known as one of the white Ironbarks. (Woolfs.) Timber strong and very durable. (Sir Wm. Macarthur, Moore.)

83. *Eucalyptus globulus*, *Labillardière*.

THE VICTORIAN AND TASMANIAN BLUE-GUM. (*Sect. Leiophloeae*.)

Is confined to forest valleys except near the coast where it is common, especially in the forests of Cape Otway, Western Port, and Gippsland, from which last place it extends to Mount Buller and the Buffalo Ranges. It grows to colossal size, in deep declivities of ranges; supplies a hard light-coloured timber of great strength and tenacity as well as durability, extensively used for beams, joists, etc., in buildings, and for railway sleepers, piers, and bridges. It is also well adapted for ship-building. From the great length in which it can always be procured it is especially suitable for outside planking. It has been used for masts of vessels, but, owing to its great weight, it is not so suitable for this purpose as some other kinds of timber. It is also used for shafts. (*Jurors' Report*, 1866.) The specific gravity of the timber has been found 0·698 to 0·889. The kino of the tree is largely available. Paper made from the bark answers for packing, and perhaps for printing. Samples of wood spirit, acetic acid, tar, charcoal, etc., prepared at the Phytochemical Laboratory of the Botanical Gardens under the directorship of Baron von Mueller, are in this Museum. The essential oil and other extracts from and preparations of the foliage of *Eucalyptus globulus* are already of world-wide repute, mainly through Jas. Bosisto, Esq., J.P., M.L.A. Much valuable information in reference to these products will be found in the various official records of the Victorian and Intercolonial Exhibitions of 1861, 1866-7, 1872, and 1875. Mr. Bosisto contributes essential oil, Eucalyptol, Eucalyptic acid, liquor Eucalypti globuli. A ton of dry wood yields about 4½ lbs. pearlash or 2¾ lbs. of pure potash. Weight of a cubic foot of dried wood from 43½ to 45½ lbs.

Results of Experiments on the strength of Blue-gum Timber instituted by MR. JAMES MITCHELL.

The pieces subjected to test were 7 feet long by 2 inches square.

	DEFLECTION.			Total weight required to break each piece.	Value of strength $\frac{l w}{4 b d^3}$	Direct cohesion (tensile strength) per square inch	Specific gravity.
	Weight and Deflection while the Elasticity remained perfect.		Deflection at the crisis of breaking.				
	Weight in	Deflection to					
No. 4, seasoned 8 months	...	...	inches. 1'5	lbs. 819	2149	lbs. ...	1'076
No. 5, seasoned 8 months	...	...	1'375	867	2276	...	1'034
No. 6, seasoned 2 to 3 years	...	...	1'375	1029	2701	28,784	1'054
No. 7, seasoned 4 to 5 years	...	...	1'375	1043	2737	27,440	1'078
No. 8, seasoned 2 to 3 years	...	...	1'75	1113	2921	22,064	'987
No. 9, seasoned 4 to 5 years	...	...	1'375	1113	2921	27,472	1'071
No. 10, seasoned 3 years	...	...	1'625	1122	2945	31,088	'942
No. 15, seasoned 20 years*	...	...	1'625	1330	3491	28,336	1'089

* Part of an old door-post.

Results of Experiments instituted by MR. LASLETT on the strength of Blue-gum Timber. The pieces subjected to trial were 7 feet long by 2 inches square. The weight was suspended in the middle, both ends free.

EXPERIMENTS ON TRANSVERSE STRENGTH.

Number of the specimen.	DEFLECTIONS.			Total weight required to break each piece.	Specific gravity.
	With the apparatus weighing 390 lbs.	After the weight was removed.	At the crisis of breaking.		
1	inches. 1'25	inches. '15	inches. 4'50	lbs. 767	1'079
2	1'75	'20	3'75	602	'997
3	1'35	'10	5'75	710	1'037
4	1'00	'00	3'75	767	1'108
5	1'25	'15	3'50	684	1'026
6	1'00	'00	4'00	741	'924
Average	1'26	'10	4'21	712	1'029

Each piece broke with a short fracture. S = 1869.

EXPERIMENTS ON TENSILE STRENGTH.

Number of the specimen	Dimensions of each piece.	Specific gravity.	Weight each piece broke with.	Direct cohesion on 1 square inch.
7	inches.	.997	lbs. 14,560	lbs. 3640
8	} 2 x 2 x 30 }	1.079	26,600	6650
9		1.037	24,360	6090
10		1.108	26,600	6650
11		1.026	28,840	7210
Average ...	...	1.049	24,192	6048

12
13

VERTICAL OR CRUSHING STRAIN ON CUBES OF 2 INCHES.

No. 12.	No. 13.	No. 14.	No. 15.	No. 16.	No. 17.	Average.	Average on 1 square in.
tons. 12.875	tons. 13.000	tons. 12.750	tons. 11.125	tons. 10.500	tons. 13.625	tons. 12.312	tons. 3.078

The tensile strength as given by James Mitchell is greatly in excess of that recorded by Laslett, but is fairly in accord with some recent observations by Mr. F. C. Campbell, of Geelong. (See Proceedings of the Royal Society of Victoria, 1879.)

Results of Experiments on the transverse strength of wood of *Eucalyptus globulus* instituted by BARON VON MUELLER and J. G. LUEHMANN. The pieces were 2 inches square, 2 feet long between the supports, the weight suspended in the middle, both ends free. The timber was seasoned for nine months.

No.	DEFLECTION.			Total weight required to break each piece.	$S = \frac{1}{4} \frac{w}{b d^2}$	Specific gravity.
	With the apparatus weighing 780 lbs.	After the weight was removed.	At the crisis of breaking.			
	inches.	inches.	inches.	lbs.		
1	.12	.04	.75	2444	1833	.938
2	.08	nil	.62	3224	2418	.992
3	.16	.04	.58	2256	1692	.913
4	.12	.04	.75	2661	1996	.942
5	.10	.02	.75	2740	2055	.946
6	.12	.03	.55	2288	1716	.927
7	.12	.02	.75	2409	1807	.924
8	.12	.04	.58	2280	1710	.845
9	.16	.04	.62	2252	1689	.852
10	.05	nil	.58	3752	2814	1.094
11	.08	nil	.65	3024	2268	1.096

$$S \text{ (strength)} = \frac{L \text{ (length)} \times W \text{ (weight)}}{4 \times b \text{ (breadth)} \times d^2 \text{ (depth multiplied by itself)}}.$$

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*Results of Experiments on the transverse strength of the wood of various Eucalypts, by BARON VON MUELLER
and J. G. LUEHMANN. Specimens 2 feet long, 2 inches square.*

	DEFLECTION.		Total weight required to break each piece.	Value of strength. $S = \frac{lw}{4bd^2}$	SPECIFIC GRAVITY.	
	With the appar- atus weighing 760 lbs.	At the crisis of breaking.			Air dried.	Absolutely dried.
	inches.	inches.	lbs.			
Eucalyptus leucoxylon — Victorian Ironbark-tree ...	{ '03 '03 '02 '02	{ '63 '60 '63 '56	{ 4192 3977 3873 3752	{ 3144 2683 2605 2814	{ '1'028 '1'061 '1'075 '1'129	{ '908 '913 '936 '953
polyanthema—Red box ...	{ '10 '08	{ '56 '58	{ 3215 3145	{ 2411 2359	{ '1'248 '1'214	{ 1'031 1'010
melliodora—Yellow box ...	{ '06 '08 '08	{ '58 '63 '52	{ 2903 2781 2781	{ 2177 2086 2086	{ '1'112 '1'040 '1'008	{ '947 '876 '843
rostrata—Pale red gum-tree ...	{ '07 '10	{ '48 '65	{ 2712 2539	{ 2034 1904	{ '940 '1'045	{ '790 '874
rostrata—Dark red gum-tree ...	{ '09 '17	{ '68 '62	{ 2417 2412	{ 1813 1809	{ '984 '952	{ '809 '809
macrorrhyncha — Stringybark- tree ...	{ '17 '12 '14 '12 '14	{ '60 '75 '75 '54 '56	{ 2384 2327 2268 2425 2170	{ 1788 1745 1701 1819 1627	{ '1'060 '950 '1'021 '1'010 '834	{ '901 '802 '842 '850 '834
Gunnii var.—Swamp gum-tree	{ '12 '14 '12 '14	{ '75 '75 '54 '56	{ 2327 2268 2425 2170	{ 1745 1701 1819 1627	{ '950 '1'021 '1'010 '834	{ '802 '842 '850 '834
Stuartiana—Apple-scented gum- tree ...	{ '12 '12 '14 '12 '16	{ '65 '70 '70 '50 '58	{ 2384 2195 2209 2050 2195	{ 1788 1646 1658 1537 1646	{ '954 '916 '948 '937 '1'045	{ '797 '761 '807 '798 '878
viminalis—White gum-tree ...	{ '12 '12 '20 '12 '12	{ '65 '70 '58 '65 '70	{ 2384 2195 2209 2050 2195	{ 1788 1646 1658 1537 1646	{ '954 '916 '948 '937 '1'045	{ '797 '761 '807 '798 '878
goniocalyx—Bastard box ...	{ '16 '20 '12 '12	{ '50 '58 '65 '70	{ 2209 2050 2195 2132	{ 1658 1537 1646 1399	{ '948 '937 '1'045 '1'076	{ '807 '798 '878 '908
amygdalina—Peppermint-tree ...	{ '12 '12 '14	{ '70 '50 '48	{ 2132 2053 1776	{ 1399 1540 1332	{ '1'076 '1'045 '935	{ '908 '867 '783
obliqua—Messmate ...	{ '12 '14	{ '50 '48	{ 2053 1776	{ 1540 1332	{ '1'045 '935	{ '867 '783

Results of Experiments on the transverse strength of timber other than Eucalyptus, by BARON VON MUELLER and J. G. LUEHMANN. Specimens 2 feet long, 2 inches square.

	DEFLECTION.		Total weight required to break each piece.	Value of strength $S = \frac{lw}{4bd^3}$	SPECIFIC GRAVITY.	
	With the apparatus weighing 780 lbs.	At the crisis of breaking.			Air dried.	Absolutely dried.
	inches.	inches.				
Carya species hickory ...	{ .04	{ .60	lbs. 3579	2684	.785	.665
Fraxinus Americana — American white ash ...	{ .05	{ .56	3388	2541	.808	.688
Quercus Alba — American white oak ...	{ .12	{ .54	2504	1878	.800	.696
...	{ .12	{ .54	2640	1980	.604	.525
...	{ .10	{ .62	2781	2086	.716	.612
...	{ .12	{ .65	2192	1644	.669	.582
Acacia melanoxylon—Blackwood	{ .08	{ .50	2296	1722	.616	.529
...	{ .08	{ .54	2261	1696	.625	.536
Dammara Australis—Kauri	{ .08	{ .42	2053	1540	.600	.518
...	{ .08	{ .42	1967	1475	.613	.531
Pinus silvestris—Baltic deal	{ .17	{ .70	1811	1358	.541	.458
...	{ .21	{ .48	1398	1048	.399	.346

Mr. Laslett obtained for English oak $S=2117$.

In Chambers's Mathematics the following quotations are given for S:—Ash, 2030; beech, 1560; birch, 1900; elm, 1030; fir, 1100 to 1140; larch, 1120; English oak, 1200 to 2260; Canadian oak, 1760; Red pine, 1340; poon, 2200; teak, 2460.

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84. *Eucalyptus goniocalyx*, F. v. Mueller.

THE SPOTTED-GUM TREE. One of the White-gum trees ; also, one of the Blue-gum Trees and Bastard Box. (*Sect. Leiophloia.*)

Confined to the more fertile ranges occurring in many parts of the colony. A moderate-sized or even gigantic tree ; bark usually deciduous but sometimes persistent. Timber hard ; employed for joists, beams, rafters, and heavy framing, as also by the cooper for staves. (*Jurors' Report*, 1866.) Its wood resembles in many respects that of *E. globulus*. (F. v. M.) Utilised likewise for wheelwright's work and ship-building. The bark yields a good packing paper. (F. v. Mueller.) Kino from this species is largely available. One hundred lbs. of fresh leaves gave 16 oz. essential oil.

85. *Eucalyptus gracillis*, F. v. Mueller.

(*Sect. Leiophloia.*)

In the Mallee scrub. A tall shrub or small tree, with silver-grey smooth bark.

86. *Eucalyptus Gunnii*, J. Hooker.

SWAMP-GUM TREE ; CIDER TREE.

On wet alluvial flats and in moist forest valleys in the southern and eastern regions of the colony, ascending with *E. pauciflora* to alpine elevations. In the lowlands a large, spreading tree ; in the uplands, gradually reduced to shrubby growth. Wood hard, fairly good for many purposes of artisans, but not splitting well ; large dimensions of straight wood are not readily obtainable. The fermented sap affords a beverage somewhat like cider. (F. v. M.)

87. *Eucalyptus hemiphloia*, F. v. Mueller.

WHITE BOX or GREY BOX TREE. (*Sect. Rhytiphloia.*)

Occurs on open ridges in the Ovens, Broken River, and some other spots. A tree attaining 60 to 80 feet, with a dull green persistent bark, famous for the hardness and toughness of its timber. The vernacular names in use for most of the Eucalypts are, as a rule, ill-chosen. The term GUM-TREE is particularly objectionable, as this tree yields kino and not gum.

88. *Eucalyptus incrassata*, *Labillardière*.

(*Sect. Leiophloia*.)

One of the Mallee shrubs. A shrub or small tree, with a smooth bark, persistent, or shedding in large patches.

89. *Eucalyptus largiflorens*, *F. v. Mueller*.

(*E. bicolor*, *A. Cunn.*)

One of the BOX-TREES, also known as BASTARD-BOX. (*Sect. Hemiphloia*.)

In the Mallee scrub, and generally in the N.W. portion of Victoria. A large shrub, or sometimes a tree of 30 to 40 feet, with a persistent ash-grey or blackish bark. Wood very hard and exceedingly durable; good for shafts, poles, cogs, etc. (Woolls.) Timber redder, closer, softer, and more easily worked than the generality of Ironbarks; highly valued. (Moore.)

90. *Eucalyptus leucoxylon*, *F. v. Mueller*.

THE IRONBARK TREE, sometimes RED FLOWERING or BLACK IRONBARK-TREE. (*E. sideroxylon*, *A. Cunn.*—*Sect. Schizophloia*.)

On many of our less fertile ridges, usually indicating an auriferous country; gregarious. This is considered the strongest wood in our colony. It is much recommended for railway sleepers, and extensively used for underground mining work. It is very extensively employed for the handles of axes and other implements by Victorian manufacturers. A middle or large-sized tree, with usually a thick, rough, iron-grey bark, with deep, longitudinal fissures, which are strikingly characteristic; but with smooth whitish bark after the shedding of the outer layers. One of the hardest and heaviest of our native woods. It possesses great strength and tenacity, and has a close and straight grain, on which account it is highly useful to the coachmaker and wheelwright for the poles and shafts of carriages and the spokes of wheels. Its greasy nature also renders this wood very serviceable to the millwright for the cogs of heavy wheels. It is also valuable for many purposes in ship-building, and constitutes one of the most imperishable of our timbers. (*Jurors' Report*, 1866.) Specific gravity, 1·106 and 1·024; and yielded—charcoal, 28 per cent.; crude wood vinegar, 45 per cent.; and tar, 6 per cent. Kino is also largely available from this species. The bark is

capable of being converted into a coarse paper; 100 lbs. of leaves gave 16 oz. 7 drs. of essential oil. Weight of a cubic foot of dry wood, from 63½ to 68½ lbs. (Baron von Mueller.) This tree is rich in kino.

91. *Eucalyptus longifolia*, Link and Otto.

THE WOOLLYBUTT-TREE. (Sect. *Hemiphloia*.)

Occurs in the E. portion of Gippsland. A tall, stately tree. Bark rough, fibrous, persistent, or partially deciduous. (F. Mueller.) Somewhat smooth, or fibrous and wrinkled, according to the size of the tree. (Woolfs.) This timber bears a high character for durability when used for fencing purposes. For posts, it is said to stand undecayed in the ground for twenty years. The wood is esteemed an excellent fuel. It is sometimes split for fencing and rough carpenter's work. A beautiful solid wood, yet easily worked and well adapted for furniture. (*Jurors' Report*, 1866.) The Woollybutt grown at Illawarra is in very high repute for wheelwrights' work. (Sir W. Macarthur.) The fibre of the bark is adapted for packing paper. Specific gravity of wood, 1.187. The yield of essential oil from 100 lbs. of leaves, which had suffered in transit, was 3 oz. ¾ drs. Weight of a cubic foot of dried wood, about 68½ lbs.

92. *Eucalyptus macrorrhyncha*, F. v. Mueller.

The ordinary Victorian STRINGYBARK-TREE.

In dry ranges at lower elevations than the usually taller Messmate Stringybark. The wood is hard and easily split into shingles, palings, and rails, and much sawn into weatherboards and scantlings for rough building purposes. The bark is more lasting than that of *E. obliqua* for roofing. (F. v. M.)

93. *Eucalyptus melliodora*, Cunningham.

YELLOW-BOX. (Sect. *Hemiphloia*.)

Especially in the S.E. and E. ranges of the colony on low open ridges particularly of the miocene formation. Yields a valuable timber of a light colour and greasy nature, which is remarkable for the hardness and closeness of its grain, its great strength and tenacity, and its durability both in the water and when placed in the ground. It is largely used by coachmakers and wheelwrights for the naves of wheels and for heavy framing, and by millwrights for the cogs of wheels. In shipbuilding it has numerous and

important applications, and forms one of the best materials for treenails, and for working into large screws in this and other mechanical arts. (*Jurors' Report*, 1866.) Specific gravity of wood, 1.081 to 1.125. There is a sample of kino from this species in the Museum. Weight of a cubic foot of dry wood, from 67 to 70 lbs.

94. *Eucalyptus obliqua*, *L'Herétier*.

MESSMATE STRINGYBARK TREE. (*Sect. Pachyphloia*.)

In vast masses, constituting the prevalent timber on the more barren ranges in nearly all parts of our territory. A large, often a gigantic tree, the largest ranging from 300 to 400 feet in height. (F. Mueller.) Bark very thick, rugged, and fibrous. Timber hard, straight-grained. Although of an inferior class, it is used for a great variety of building purposes notwithstanding some liability to warp or twist. It splits with facility, affording posts, rails, and palings for fencing, also shingles for roofing. (*Jurors' Report*, 1866.) Supplies a good deal of second-class sawn timber in the market. Specific gravity of wood, 0.809 to 0.990. The paper prepared from the bark of this tree is not merely suited for packing, but also for printing, and even writing. It may also be employed for mill and pasteboards. The pulp bleaches readily. The bark is used for thatching in the Australian bush. Samples of wood-spirit, acetic acid, tar, and charcoal, prepared at the Phytochemical Laboratory, under the direction of Baron von Mueller, are in the Museum. Weight of a cubic foot of dry wood, from 50 to 60½ lbs.

95. *Eucalyptus odorata*, *Behr*.

One of the PEPPERMINT-TREES. (*Sect. Rhytiphloia*.)

In the coast-limestone formation towards the South Australian boundary; also in South-east Gippsland. Not a large tree.

96. *Eucalyptus oleosa*, *F. v. Mueller*.

(*Sect. Hemiphloia*.)

WATER-ROOTED GUM-TREE. WEIR-MALLEE.

In the Mallee scrub. A shrub or small tree, the bark of the trunk rough and persistent; that of the branches smooth. The essential oil, of which the yield is large, is employed chiefly in the manufacture of varnishes. It is a perfect solvent of Indiarubber without

heat. Potash from this species is also contributed. The root retains much aqueous fluid even in the driest season.

97. *Eucalyptus pauciflora*, *Sieber*.

One of the White-gum trees. MOUNTAIN WHITE-GUM TREE. (*Sect. Leiphloia*.)

Mountain or marshy forests, ascending in the Alps to 5000 feet, where it forms rather extensive woods. A tree attaining sometimes a considerable height; exterior bark deciduous, the inner smooth and whitish. Wood not much valued; leaves in dry seasons eaten by cattle and horses. (Woolls.) Kino from this species available.

98. *Eucalyptus pilularis*, *Smith*.

The BLACKBUTT, or FLINTWOOD.

(*Sect. Hemiphloia*.)

Occurs in East Gippsland. A tree of considerable size, with dark-coloured rough or somewhat furrowed persistent bark towards the base. The bark smooth and falling off in flakes upwards and on the branches. This wood, which is of a clear grain and a reddish colour, is less known to our artisans than its apparent quality would seem to merit. It is excellent for house carpentry, ship building, and indeed for any purpose where strength and durability are required. Specific gravity has been given at 0.897 and 0.803. (*Jurors' Report*, 1866.) A sample of essential oil will be found in the Museum. Weight of cubic foot of dry wood, 50 to 56 lbs.

99. *Eucalyptus piperita*, *Smith*.

WHITE STRINGYBARK-TREE.

In the ranges of Gippsland, but not common. A large tree; the wood not quite so good as that of some other kinds of Stringybark-trees, though fissile and used in the same manner. The foliage is available for profitable oil distillation. (F. v. M.)

100. *Eucalyptus polyanthema*, *Schauer*.

RED and GREY BOX-TREE and POPLAR-LEAVED GUM-TREE. (*Sect. Rhytiploia*.)

Near the Pyrenees, on Upper Yarra, the Ovens, Broken River, and some other spots on open ridges. A tree sometimes small,

sometimes attaining 40 to 50 feet, exceptionally rising much higher. (Falk.) Has an ash grey, persistent, rough and furrowed bark. Timber used by wheelwrights for naves, felloes, and spokes. It is of a brown colour towards the centre, very hard, tough, and extremely strong. One of our best woods for fuel.

101. *Eucalyptus rostrata*, Schlechtendal.

THE RED GUM-TREE. One of the so-called Flooded-gums of N.S.W. (*Sect. Leiophloia*.)

Along river-flats and open valleys almost everywhere. (F. v. Mueller.) A tall spreading tree; bark greyish-white, smooth and separating in thin layers, rarely persistent, and rough. A very hard, compact wood, possessing a handsome, curled, but rather short grain; it is of a brown-red colour, and suitable for veneering purposes, for furniture, etc. It is largely used for fence posts. It is less subject to decay than most of the other timbers. When properly selected and seasoned, it is well adapted for many purposes in ship-building—such as heavy framing beams and knees. It is also used in the construction of culverts, bridges, wharves, and by wheelwrights for the felloes of heavy wheels, and is much approved of for railway sleepers and engine-buffers. It is almost entirely free from tendency to longitudinal shrinkage, which is so characteristic of many other species of the Eucalypts, and is almost indestructible in damp ground or in water, either fresh or salt. Its defects are its short grain, which makes it untrustworthy for horizontal bearing timber in any but very short lengths; and it cannot easily be procured in long lengths and of a moderately small diameter—a point of some importance in piles, where it is desirable to have the whole section of the tree with its waning intact. Still, within a reasonable limit of length, it makes the best of all piles for engineering works, in consequence of the resistance it offers to the attacks of the *Teredo navalis*, and it cannot be surpassed for any purposes, either in engineering or building, where a resistance to sheer downward pressure is desired. It makes unequalled planking for bridges or wharves, and none but red-gum sleepers are considered first-class. (*Jurors' Report*, 1866.) Specific gravity of this wood has been stated at 0.858 and 0.923. Samples of essential oil, wood spirit, acetic acid, tar and charcoal, obtained from this tree, are in the Museum. Paper prepared from the bark of this species proves much coarser than that of *Eucalyptus obliqua*; the pulp may be either used in admixture with that for packing paper and pasteboard, or in the composition. (F. v. Mueller, in *Jurors' Report*.) The kino from *E. rostrata* is preferred to that from other species as a therapeutic astringent.

A ton of dry wood yields approximately 4 lbs. of pearlash or $2\frac{1}{4}$ lbs. of pure potash. Weight of cubic foot of dry wood from $53\frac{1}{2}$ to $57\frac{1}{2}$ lbs.

102. *Eucalyptus Siberiana*, F. v. Mueller.

One of the so-called MOUNTAIN-ASHES; also named sometimes GUM-TOP and IRON-BARK TREE.

At the Upper Yarra; also in various parts of Gippsland. A tree attaining a height over 150 feet. Wood, light, tough, and elastic. (Howitt.) Used for carriage and dray shafts, boat-building, and many other purposes. It can readily be split, and is also otherwise easy to work. For fuel it is excellent also, burning well even when freshly cut. (F. v. M.)

103. *Eucalyptus stellulata*, Sieber.

One of the BOX-TREES, WHITE-GUM, LEAD OR GREEN GUM-TREE of East Gippsland. (*Sect. Leiophloia.*)

Ascends into the sub-alpine regions from the Fern-tree gullies; Stoney Hills towards Lake Omeo sub-alpine ranges near Mount Barkly ranges, on the Macalister River and on the Upper Genoa River. A small tree, the furrowed bark coming off at length in layers (F. v. Mueller); rugose below, very smooth above, and of a lead colour.

104. *Eucalyptus Stuartiana*, F. v. Mueller.

APPLE-SCENTED EUCALYPT. (*Sect. Hemiphloia.*)

Occupies many moist, sandy tracts in the plains, as well as low ridges, extending to the western frontier. A tree of medium size. Bark rough and fibrous. The timber of this species is both durable and tough. Occasionally used for fence posts, but mostly for fuel. A sample of oil from the leaves of this Eucalypt may be seen in the Museum. The bark of this tree furnishes good material for packing paper and pasteboard, and has yielded, according to the published researches of Baron von Mueller and Mr. Hoffmann, 4.6 of tannic, and 0.7 per cent. of gallic acids.

105. *Eucalyptus tereticornis*, *Smith*.

Variouly called GREY GUM-TREE, BLUE GUM-TREE, FLOODED GUM-TREE, RED GUM-TREE. (*Sect. Leiophloia*.)

Occurring on Snowy River, Mitchell River, and elsewhere in East Gippsland. A tall tree, with smooth whitish or ash-coloured bark, shedding in thin layers. This wood is prized in some districts more than others, but when Ironbark cannot be procured it is always considered suitable for rails and posts, as well as for fuel. (Woolfs.) An excellent timber, much used for plough-beams, poles and shafts for drays and carts, spokes of wheels, as well as in ship-building. (Moore.) This species is very closely allied to *E. rostrata*.

106. *Eucalyptus uncinata*, *Turczaninow*.

One of the MALLEE GUM-TREES. (*Sect. Leiophloia*.)

Desert of the Murray River, Wimmera, and Avoca. A tall shrub, with smooth or ash-grey bark coming off in coriaceous plates. Yields from the foliage a comparatively large quantity of oil by distillation.

107. *Eucalyptus viminalis*, *Labillardière*.

THE MANNA GUM-TREE, DROOPING GUM ;
called WHITE GUM-TREE. (*Sect. Leiophloia*.)

A middle-sized tree, scattered extensively over rather open grassy ridges and plains, impressing on them often a park-like appearance ; in moist forest valleys attaining an enormous height. Outer bark frequently rough and deciduous. The wood is not much esteemed. Specific gravity of timber has been stated as 0·685 ; 100 lbs. of fresh leaves yielded only 5 1-7th drachms essential oil. A sample of kino from this species will be found in the Museum. A ton of dry wood yields about 3¼ lbs. of crude potash or 1¾ lbs. of pure potash. Weight of cubic foot of dry wood, about 43 lbs.

108. *Eugenia Smithii*, *Poiret*.

(*Acmena floribunda*. D. C.)

MYRTLE TREE. *Natural Order—Myrtaceæ*.

Not rare from Sealers' Cove to east boundary of the colony, along rivers and glens. A splendid tree, with remarkably dark

and shady foliage, attaining a height of 120 feet. Specific gravity of wood, 0.898 to 0.935. The bark yielded of tannic acid 16.9 per cent., and of gallic acid 3.6 per cent. Weight of dry wood per cubic foot, 56 to 58 lbs. (*Jurors' Report*, 1866.)

109. **Eupomatia laurina**, *R. Brown.*

Natural Order—Anonaceæ.

Occurring only in the most eastern part of Gippsland, where the tree attains the height of 40 feet. (F. Mueller.)

110. **Exocarpus cupressiformis**, *Labillardière.*

NATIVE CHERRY-TREE. *Natural Order—Santalaceæ.*

Widely distributed over the more fertile open ridges and through both barren and fertile forest ranges. A small or middle-sized tree. Wood suitable, from the closeness of its structure, for many of the purposes of the cabinetmakers and turners. It is soft, fine-grained timber, and the best for carving. (Lockhart Morton.) It is also used for tool-handles, spokes, gun-stocks, etc. (W. Archer, in *Tasmanian Report*, 1862.) Specific gravity of wood (Victorian specimen), 0.756 to 0.845. Weight of a cubic foot of dry wood, from 47 to 53 lbs.

111. **Exocarpus spartea**, *R. Brown.*

In the desert country on the Murray River. Of weeping habit. Specific gravity, 0.813.

112. **Exocarpus stricta**, *R. Brown.*

Through the greater part of the colony. Rather of shrubby than arborescent growth.

113. **Fagus Cunninghami**, *Hooker.*

THE EVERGREEN BEECH, sometimes called
NATIVE MYRTLE TREE. *Natural Order—
Cupuliferae.*

In the most secluded recesses of the mountains, from Dandenong to Mount Baw-Baw, on the various remote sources of the

Latrobe River, at Wilson's Promontory, and in the Cape Otway Ranges. A magnificent tree, attaining a height of 200 feet. On the Mount Baw-Baw Ranges this beech mainly constitutes the forest for many miles. (F. v. Mueller.) It has a reddish coloured wood, much employed by cabinetmakers for various articles of furniture. Very large planks of it are obtained of a highly beautiful grain and figure, and when polished its ornamental character is sure to attract attention. It is also used for the cogs of wheels by millwrights. Average specific gravity, 0.883. Weight of a cubic foot of dry wood, about 55 lbs.

114. *Ficus scabra*, Forster.

THE NATIVE FIG TREE. *Natural Order—Urticaceæ.*

Here restricted to the most eastern regions of Gippsland. An evergreen tree of medium size. Height up to 100 feet. Timber brittle. Fruit edible.

115. *Geijera salicifolia*, Schott.

Natural Order—Rutaceæ.

With us confined to the desert on the River Murray, where it is only a small tree or shrub. The wood is close, tough, light brown in colour, and nicely marked.

116. *Goodia lotifolia*, Salisbury.

Natural Order—Leguminosæ.

In many parts of the colony. A small tree or shrub. Foliage hurtful to cattle and sheep. (Dr. Lloyd.)

117. *Grevillea variabilis*, Lindley.

Grampians, Wimmera, and on a few adjacent plains. A shrub often many feet in height.

118. *Hakea acicularis*, R. Brown.

Natural Order—Proteaceæ.

Wilson's Promontory, Macalister River, and ranges near Steiglitz. Shrubby or seldom arborescent species. Source of a gum-resin.

119. **Hakea eriantha**, *R. Brown.*

East Gippsland. A tree of small size.

120. **Hakea flexilis**, *F. v. Mueller.*

North-west districts of the colony. A tall shrub or small tree of about 20 feet.

121. **Hakea nodosa**, *R. Brown.*

In the southern portions of the colony. Shrubby only.

122. **Hakea pugioniformis**, *Cavanilles.*

In many localities. Shrubby only.

123. **Hakea leucoptera**, *R. Brown.*

THE WATER TREE.

In the desert regions. Never a tall tree. Good drinking water is got from the fleshy roots of this bush in the arid districts in which it grows. The bark is useful for tanning; the wood takes a good polish, and is used for making tobacco-pipes, cigarette-holders, etc. Specific gravity of wood, 0·818; weight of a cubic foot, about 51 lbs.

124. **Hakea ulicina**, *R. Brown.*

Not uncommon. Only of shrubby size.

125. **Hedycarya Cunninghami**, *Tulasne.*

NATIVE MULBERRY. *Natural Order — Monimiaceæ.*

Following the rivulets of our humid southern ranges. A small or middle-sized tree, with comparatively soft wood of a beautiful shade quite available for cabinetwork. (*Jurors' Report*, 1862.)

126. *Helichrysum ferrugineum*, *Lessing*.*(Ozothamnus ferrugineus, R. Brown.)**Natural Order—Compositæ.*

Common in the southern and middle districts of the colony.
More a shrub than a tree.

127. *Heterodendron oleifolium*, *Desfontaines*.*Natural Order—Sapindacæ.*

Mallee scrub on the Rivers Murray, Wimmera, and Avoca. A tall shrub. Specific gravity of wood, 0·858; or weight of a cubic foot, 53 lbs. Timber hard and heavy; used for rollers and rolling-pins.

128. *Howitta trilocularis*, *F. v. Mueller*.*Natural Order—Malvaceæ.*

On bushy declivities of the Victoria Ranges at Mount Arapiles; on shrubby ranges around Lake King; in coast ravines towards Cape Howe; on the banks of the Lower Genoa River. An erect, flexible shrub, attaining under favourable conditions the height of fully 20 feet.

129. *Hymenanthera Banksii*, *F. v. Mueller*.*Natural Order—Violarinæ.*

Not rare in the southern and south-eastern parts of the colony from the marshy lowlands to the highest summits of the Australian Alps. A stout shrub, many feet high, except in alpine localities. The wood is of a bright yellow colour and exceedingly hard.

130. *Kunzea corifolia*, *Reichenbach*.*Natural Order—Myrtacæ.*

Wilson's Promontory, Genoa River, Glenny Island. A tall shrub.

131. **Kunzea peduncularis**, *F. v. Mueller.*

Snowy River and Macalister River. A tall shrub or sometimes a small tree. The wood is tough, and is used by the aborigines for weapons.

132. **Leptospermum flavescens**, *Smith.*

Natural Order—Myrtaceæ.

Buffalo Ranges, Yarra, Goulburn, and Ovens Rivers. Usually a tall shrub. The wood is hard, close-grained, and tough.

133. **Leptospermum lævigatum**, *F. v. Mueller.*

THE COAST TEA-TREE. (*Fabricia lævigata*,
Gærtn.)

Everywhere on the sandy coast. Never a large tree. Most important for fixing coast-sands.

134. **Leptospermum lanigerum**, *Smith.*

Widely distributed in moist localities, particularly along rivers and around swamps. The wood is hard, heavy, and durable. Used for hop-poles.

135. **Leptomeria aphylla**, *R. Brown.*

Natural Order—Santalaceæ.

Grampians, Murray River, and Mount Korong.

136. **Leucopogon Richei**, *R. Brown.*

(*Styphelia Richei*, *Labillard.*) *Natural Order—*
Epacrideæ.

On sand and rocky sea-coasts, common. A tall shrub or small tree. Exceedingly heavy. Used for the knees of boats.

137. *Livistonia Australis*, *Martius*.

Our FAN-PALM. *Natural Order—Palmæ.*

East Gippsland. Attaining a height of 80 feet. Its terminal bud affords the palm-cabbage, whilst the leaves are sought as material for the manufacture of hats.

138. *Lomatia Fraseri*, *R. Brown*.

Natural Order—Proteaceæ.

In the deep ravines of our southern and eastern ranges, in forest valleys, especially among Fern-trees, but ascending to high cold elevations along the rivulets; not very common. A good-sized tree, the wood tough and durable, serviceable for furniture. Specific gravity of dry wood 0.678, in one experiment.

139. *Lomatia longifolia*, *R. Brown*.

A tall shrub or small tree. In irrigated forest valleys, particularly of the uplands. A light-coloured wood, very hard, with a beautiful small figure; works well for turnery. (Extracts from *Jurors' Report*, London Ex., 1862.)

140. *Melaleuca armillaris*, *Smith*.

Natural Order—Myrtaceæ.

Known in Victoria only from East Gippsland. A small tree. Wood hard and durable; useful for underground, inside, or water work.

141. *Melaleuca decussata*, *R. Brown*.

Common on river banks on the south-eastern extremity of the colony. A tall glabrous shrub, sometimes a small tree. This wood is hard and tough; used for poles. Its leaves and branchlets yields an essential oil. Specific gravity 0.938.

142. *Melaleuca ericifolia*, *Smith*.

THE SWAMP TEA-TREE.

The so-called Tea-tree, though never used for preparing any beverage. It fills most of our brackish as well as freshwater

swamps, and lines also innumerable watercourses. It is seldom a large tree, but, on the contrary, generally small, though it may be seen occasionally 50 to 60 feet high. The wood is close-grained. In Tasmania it is used chiefly for turnery. It yielded on experiment—charcoal, about 28 per cent.; crude wood vinegar, 46 per cent.; and tar, 7 per cent. The friable lamellar bark can be converted into an excellent blotting, perhaps also filtering paper; 100 lbs. of leaves and smaller branches gave by distillation 5 ozs. of an essential oil, resembling that of cajuput, from *M. leucodendron*. The material in enormous quantities is obtainable in most parts of the colony. A ton of dry wood yields about 16½ lbs. of crude potash, equal to 4½ lbs. chemically pure potash. (F. v. Mueller.)

143. *Melaleuca parviflora*, Lindley.

(*M. curvifolia*, Schl.; *M. Preissiana*, Schauer.)

Observed along the coast-tracks, particularly on sand, and also in the sub-saline desert parts of Victoria. A small or middle-sized tree. Specific gravity of wood, 0.993; 100 lbs. of the leaves and branchlets of this species yielded about 6 ozs. of an essential oil, resembling that of cajuput very closely. The material is largely obtainable in the Murray desert and also on the coast. (*Jurors' Report*, 1861, page 40.) Weight of a cubic foot of dry wood, about 62 lbs. The wood is heavy, white, close-grained, and durable.

144. *Melaleuca squarrosa*, Smith.

Moist heaths and marshes, not rare. A tree developed in morassy forest glens to the height of 80 feet, the stem attaining then a diameter of 2 to 3 feet, usually, however, shrubby, the bark consisting of innumerable friable papyraceous layers.

145. *Monotoca elliptica*, R. Brown.

Natural Order—Epacridæ. (Styphelia ellipticæ, Sm.)

In heathy coast tracks not rare. Never of large size. Wood useful for tools, particularly for planes and mallets; works well, and is indeed superior to English beech for such purposes. (Extracts from *Jurors' Report*, London Ex., 1862.)

146. *Myoporum Cunninghami*, *Benth.**Natural Order—Myoporine.*

In the north-west desert. A small tree. The timber is soft, light, and tough.

147. *Myoporum deserti*, *Cunningham.**(M. dulce, Benth.)*

Restricted to the north-western portion of the colony; shrubby merely. This appears to be a well authenticated poison plant, but apparently only when in fruit.

148. *Myoporum insulare*, *R. Brown.*

In considerable quantity, available in the marshes and sand-tracts of the coast, also in the somewhat saline portions of the desert; over other parts of the colony but sparingly distributed. A small or middle-sized tree. Yields a beautiful light-coloured wood, which has been used for inlaying. Specific gravity, 0.809 to 0.819; or weight of a cubic foot, 50 to 51 lbs. The berries are edible.

149. *Myoporum platycarpum*, *R. Brown.*THE SUGAR-TREE (*Disoon platycarpus*, *F.M.*)

In the Mallee scrub. A small tree, exuding from its bark a saccharine substance. Specific gravity of wood, 0.840, or weight of a cubic foot, 52½ lbs., according to a solitary experiment. It is suitable for veneering and cabinetwork.

150. *Myrsine variabilis*, *R. Brown.**Natural Order—Myrsineæ.*

In the forest glens, and on river banks in the southern and eastern parts of the colony. Generally a small, occasionally a middle-sized tree. Specific gravity of wood, 0.714, or weight of a cubic foot, 44½ lbs., according to one experiment by Mr. Osborne. Wood is yellow, hard, and tough.

151. **Nephelium leiocarpum**, *F. v. Mueller.**Natural Order—Sapindaceæ.*

On the south-eastern boundary of the colony. A beautiful tree. The timber sometimes ornamental.

152. **Notelæa ligustrina**, *Ventenat.*SPURIOUS OLIVE. *Natural Order—Oleaceæ.*

Found on shady torrents in the southern portion of the colony, but seldom elsewhere. A tree of small dimensions. This is the Heartwood of Tasmania. Wood very hard, and yields a very peculiar figure. (Extracts from *Jurors' Report*, Lond. Ex., 1862.)

153. **Panax Murrayi**, *F. v. Mueller.*PALM-PANAX. *Natural Order—Araliaceæ.*

In Victorian territory only to be found on the south-eastern boundary of New South Wales. The slender, palm-like stem attains seldom above 1 foot in diameter, though not rarely a height of 80 feet. The wood is singularly light and soft; is white and has a large pith. Specific gravity, 0.348, or weight of a cubic foot nearly 22 lbs., according to one experiment.

154. **Panax sambucifolius**, *Sieber.*

In forest valleys, particularly in the Fern-tree gullies. A small tree only; in Victoria it constitutes the variety *hypoglama*.

155. **Persoonia arborea**, *R. Brown.**Natural Order—Proteaceæ.*

In the Fern-tree gullies, only on the south-western base of our Alps. The tallest of all the species of this genus, reaching a height of fully 30 feet. A handsome timber.

156. *Persoonia linearis*, *R. Brown.*

Not extending westward of Gippsland. A small, crooked tree, singular for the scarious lamellæ of its red bark. Wood close, prettily marked; will yield handsome veneers. (Sir William Macarthur.)

157. *Persoonia rigida*, *R. Brown.*

Grampians, Mount Alexander, Buffalo Ranges, and mountains on the Hume River. A shrub of good size, but never a tree. Used for tool handles.

158. *Pimelea microcephala*, *R. Brown.*

Natural Order—*Thymeleæ.*

In the north-western desert. A tall shrub. Bark extremely tough and acid. Specific gravity of wood, 0·883.

159. *Pittosporum bicolor*, *Hooker.*

WHITEWOOD. *Natural Order*—*Pittosporeæ.*

Chiefly in Fern-tree gullies. A small or occasionally a middle-sized tree. Wood valuable for handles of implements, and has been used for wood-engraving by Mr. F. Grosse. It is yellowish-white, very hard, and of uniform texture and colour; used in turnery. Once used for clubs by the Tasmanian natives. The tree yields a pale useful gum. Specific gravity of wood, 0·874, or weight of a cubic foot nearly 48 lbs.

160. *Pittosporum phillyroides*, *De Candolle.*

Restricted to the desert tracts—on sandy or barren stony declivities and plains, chiefly on limestone subsoil. A small tree, bitter in all its parts, yielding a gum similar to gum-arabic. Cattle are fond of the leaves.

161. *Pittosporum revolutum*, Aiton.

On lightly-timbered undulations and ridges near the south-eastern boundary of Gippsland. A shrub from several feet high attaining in favourably sheltered forest ravines the size of a small tree. White, dense wood.

162. *Pittosporum undulatum*, Ventenat.

FRAGRANT PITTOSPORUM.

In the humid forest glens from Western Port and Dandenong eastward throughout Gippsland. Attains in favourable localities a height of 80 feet, and a stem-diameter of 2 feet. The wood is tough, but easily worked. (*Jurors' Report*, 1862.) Wood excellent for turnery, and apparently adapted for wood-engraving, and favourably reported upon by Mr. De la Motte as to its suitability for this purpose. (*Jurors' Report*, London Ex., 1862.) The bark only yielded tannic acid 1·2 per cent., and gallic acid 0·7 per cent.; 100 lbs. of flowers gave on distillation 2 ozs. of essential oil of exquisite fragrance. (F. v. Mueller.)

163. *Plagianthus pulchellus*, Gray.

One of the Currijongs. *Natural Order*—*Malvaceæ*.
(*Sida pulchella* Bonp.)

Not rare along banks of rivers and rivulets in the southern and middle parts of the colony. A tall, somewhat graveolent shrub, attaining a height of about 30 feet. Bark of the branches tough, and formerly worked up by the aborigines into cordage.

164. *Pomaderris apetala*, Labillardière.

Natural Order—*Rhamnaceæ*.

In forest glens and along wooded river banks; not rare in the southern and eastern parts of the colony, but never seen away from moist, shady, and sheltered forest valleys. A soft, useful wood, of pale colour, adapted for carvers' and turners' work (*Jurors' Report*, 1862), and, according to Dr. George Bennett, may be profitably employed in wood-engraving. Specific gravity of wood 0·772, or weight of a cubic foot 48 lbs.

165. *Pomaderris betulina*, *Cunningham*.

Genoa River. A shrub, or occasionally a small tree.

166. *Pomaderris elliptica*, *Labillardière*.

Following the course of rivers, particularly within the mountains; excelling *P. apetala* in height; of less extensive distribution: when away from the gullies reduced to shrubby growth.

167. *Pomaderris subrepanda*, *F. v. Mueller*.

In the southern parts of the colony, along the water-courses. A small tree only.

168. *Podocarpus alpina*, *R. Brown*.

Natural Order—Coniferae. (*Nageia alpina*, *F. v. M.*)

On the Snowy Mountains. Usually depressed on the exposed summits of the Alps, erect in the nearest valleys, never tall; our only Alpine Pine. The wood is tough, silky, and fine in the grain; very durable.

169. *Prostanthera lasianthas*, *Labillardière*.

MIN'T-TREE. *Natural Order—Labiatae.*

One of the most widely-diffused trees of our forest valleys, varying where well developed from 30 to 60 feet in height; diameter of stem about 1 foot, exceptionally 2 feet. The wood hard and tough. Specific gravity, 0.809. (*Jurors' Report*, 1862.) The saplings locally used for fishing-rods. Weight of a cubic foot of dry wood, 50½ lbs. The leaves of this and its many congeners afford aromatic oils on distillation. (*F. v. M.*)

170. *Prostanthera nivea*, *Cunningham*.

Mountains of Bacchus Marsh, Mount Korong, Mount Hope, Station Peak, etc. A beautiful shrub, but never large.

171. **Pultenæa altissima**, *F. v. Mueller.**Natural Order—Leguminosæ.*

East Gippsland. A tall shrub, but never truly arboreus.

172. **Sambucus xanthocarpa**, *F. v. Mueller.*THE NATIVE ELDER-TREE. *Natural Order—
Caprifoliaceæ.*

East Gippsland. Wood soft, light, and pale-coloured.

173. **Santalum acuminatum**, *De Candolle.*NATIVE PEACH or QUANDONG. *Natural
Order—Santalaceæ.*

In the Mallee scrub. Always a small tree. Specific gravity of wood, 0·828. Quandong nuts are strung for bracelets and mounted for pins. The fruit is of an agreeable acidulous taste, and usually every alternate year richly produced. The kernel of the fruit, which is also edible, is oleaginous. Wood probably fit for wood-engraving. (Moore.) Weight of a cubic foot of dry wood, about 51½ lbs.

174. **Santalum persicarium**, *F. v. Mueller.*

NATIVE SANDALWOOD.

In the Murray desert. A small tree. Specific gravity of wood 0·747, according to a solitary experiment by Mr. Osborne. The bark yields tannic acid.

175. **Senecio Bedfordii**, *F. v. Mueller.*

NATIVE DOGWOOD.

*(Bedfordia salicina, D.C.)**Natural Order—Compositæ.*

In Fern-tree gullies and in other shady and springy glens. A hard, pale-brown, well-mottled wood; good for turnery. (*Jurors*?)

Report, London Ex., 1862.) Specific gravity 0·896 (Osborne). The down on the leaves may be of commercial value.

176. **Sponia aspera**, *Decaisne*.

(*Trema cannabina*, *Lour.*)

Natural Order—*Urticæ*.

East Gippsland. A small tree. Produces an excellent strong fibre. The wood might be used for making gunpowder charcoal.

177. **Teloepia oreades**, *F. v. Mueller*.

VICTORIAN WARATAH. *Natural Order*—*Proteaceæ*.

East Gippsland, on the highest mountains. A small tree : highly ornamental.

178. **Tristania laurina**, *R. Brown*.

Natural Order—*Myrtaceæ*.

Along the rivers of East Gippsland. Generally a small tree, but stems of 3 feet basal diameter have been met with. (C. Walter.) Wood close-grained, tough ; used for machinery purposes, and apparently well adapted for the same. (*Jurors' Report*, London Ex., 1862.) Wood acquiring an exceedingly hard and bony texture when carefully seasoned ; very apt to split if not dried with great precaution. A most valuable wood of its dimensions, and believed to be unmatched for cogs of wheels in machinery. (Sir W. Macarthur.)

179. **Viminaria denudata**, *Smith*.

Natural Order—*Leguminosæ*.

On swampy ground in the southern and eastern portions of the colony. A small tree or tall shrub. Wood soft and spongy. Specific gravity 0·623. (Osborne.)

180. **Vitis hypoglauca**, *F. v. Mueller.*THE NATIVE GRAPE-VINE. *Natural Order—Viniferæ.*

East Gippsland. It attains to the size of a tree, with a comparatively stout stem. Wood soft and spongy, and of a grey colour.

181. **Xanthorrhœa Australis**, *R. Brown.*GRASS-TREE. *Natural Order—Liliacæ.*

In some heathy tracts extremely abundant. Stem varying from a few feet to 10 feet in height, usually crooked. The fragrant resin from this species, which is soluble in spirit, is of a deep amber colour, and is employed for staining wood to imitate cedar, for preparing varnishes, and as a source of picric acid.

TABULATED STATEMENT

OF THE

TRANSVERSE STRENGTH AND OTHER PARTICULARS OF AUSTRALASIAN AND OTHER TIMBER

Experimented upon by the Timber Board at the Victorian Railways Workshops, Newport, January to April, 1884.

The Samples tested were each 7' 0" in length by 1 7/8" square; the distance between the bearings was 6' 0"; and the weight was gradually applied in the centre till the sample broke.

Distinctive Mark of Sample.	Local Name.	Botanical Name.	Locality where Grown.	By whom Sent.	Approximate Date when the Timber was Cut.	Dimensions of Tree.	Date of Testing.	Weight of each Sample in lbs.	Average Weight of Samples in lbs.	Average Weight per Cubic Foot in lbs.	Average Specific Gravity.	Total Average Specific Gravity.	Breaking Weight of each Sample in cwt., qrs., lbs.	Average Breaking Weight of Samples in lbs.	Total Average Breaking Weight.	Deflection at Point of Rupture in inches.	Average Deflection in inches.	Total Average Deflection in inches.	Average Specific Strength.	Geological Formation where the Trees grew.	Elevation.	REMARKS.
20 " } G " } P " }	Blackwood.	Acacia Melanoxylon.	Mirboo, Victoria.	Charles Ogilvie.	6/1/83	2' 11" diameter.	31/1/84 7/2/84 7/2/84	8 1/4 8 1/2 8 3/4	8'50		0'797		9 3 8 8 3 24 8 3 6	1030'0		5 4 1/4 4	4'58			Mezozoic	700 feet above sea level.	NOTE.—Specific Strength = $\frac{W.L.}{4.B.D.^2}$ W = Breaking Weight in lbs. L = Length in inches. B = Breadth in inches. D = Depth in inches. The average specific strength of Blackwood tested by Baron von Mueller was 1709. Nearly double this strength was shown by some of the samples tested by the Board, which was doubtless due to their having been grown in more elevated localities and suitable soil. An experienced saw-miller in the Waterloo District considers that the strength of Blackwood grown on the flats near Waterloo Station is only half that grown on the high back ranges.
	Do.	Do.	Range South of Waterloo, Victoria.	South Gippsland Tramway Co.	-/4/83	3' 0" diameter.	24/1/84 Do. 7/2/84	8 1/4 11 9 1/4	9'50	53'28	0'891	0'854	7 1 26 6 3 27 5 2 2	746'3	956'3	4 1 6 4 1 6 3	3'68	4'41	2010	Mezozoic	About 1300 feet above sea level.	
	Do.	Do.	Do.	Mr. Perry.	Seasoned at least 12 months.		31/1/84 Do.	10 1/4 8 3/4	9'50		0'891		6 3 24 7 2 6	813'0		4 1 2 4 1 2	4'25			Mezozoic	About 1200 feet above sea level.	
	Do.	Do.	Do.	Mr. Alcock.			31/1/84 4/2/84 7/2/84	8 1/2 8 3/4 9 1/2	8'92		0'837		10 0 0 11 1 18 11 2 22	1236'0		5 7/8 4 3/4 4 3/4	5'12					
A2 " } "	Do.	Do.	Tasmania.	Loco. Superintendent, Melbourne.	Seasoned at least 12 months.		24/1/84 31/1/84 4/2/84	7 1/4 7 7 1/4	7'16	41'89	0'671	0'671	7 2 4 7 3 7 7 0 18	840'3	840'3	3 3/4 4 3 3/4	3'83	3'83	2294			
21 " } " } K " } "	Blue Gum.	Eucalyptus Globulus.	Mirboo, Victoria.	Charles Ogilvie.	23/12/82	4' 4 2/3" diameter.	7/2/84 28/1/84 31/1/84	11 10 1/2 10 3/4	10'75		1'008		9 1 25 9 3 13 10 1 21	1111'6		3 1/2 4 1/4 4 1/4	4'16			Mezozoic.	700 to 800 feet above sea level.	The average specific strength of Blue Gum, tested by Baron von Mueller, was 2666.
	Do.	Do.	Range South of Waterloo, Victoria.	South Gippsland Tramway Co.	-/4/83	3' 6" diameter.	31/1/84 Do. 4/2/84	11 11 1/4 11 1/2	11'42	65'18	1'071	1'045	9 3 24 8 3 6 8 2 17	1023'6	1112'1	4 1 2 3 1/2 3 1/2	3'83	3'99	3036	Mezozoic.	About 1250 feet above sea level.	
	Do.	Do.	Corner Inlet.	Mr. Perry.			24/1/84	11 1/4	11'25		1'055		10 2 25	1201'0						Granite.		
Z 2 " } "	Do.		New South Wales.	Hudson Bros.	Seasoned at least 12 months.		24/1/84 31/1/84 4/2/84	10 3/4 11 10	10'58	61'91	0'992	0'992	8 1 20 6 3 9 7 2 6	851'6	851'6	4 1/8 3 3/4 4 1/4	4'12	4'12	2325			
12 " } "	Do.	Eucalyptus Botryoides.	Queensland.	Queensland Railways.	Seasoned at least 12 months.		28/1/84 4/2/84 Do.	11 10 3/4 11	10'92	63'89	1'023	1'023	6 3 7 6 2 22 7 1 8	777'6	776'6	4 1/2 4 1/4 5 1/4	4'83	4'83	2123			

Distinctive Mark of Sample.	Local Name.	Botanical Name.	Locality where Grown.	By whom Sent.	Approximate Date when the Timber was Cut.	Dimensions of Tree.	Date of Test.	Weight of each Sample in lbs.	Average Weight of Samples in lbs.	Average Weight per Cubic Foot in lbs.	Average Specific Gravity.	Total Average Specific Gravity.	Breaking Weight of each Sample in cwt., qrs., lbs.	Average Breaking Weight of Samples in lbs.	Total Average Breaking Weight.	Deflection at Point of Rupture in inches.	Average Deflection in inches.	Total Average Deflection in inches.	Average Specific Strength.	Geological Formation where the Trees grew.	Elevation.	REMARKS.	
M M 1 M 2 M 3	Gippsland Mahogany.	Eucalyptus Botryoides.	North-Eastern Gippsland.	Samuel Richardson.	Seasoned at least 12 months.		4/3/84 Do. Do. Do.	$\left. \begin{matrix} 10 \\ 9 \\ 9\frac{1}{2} \\ 9\frac{1}{2} \end{matrix} \right\}$	9'50	55'59	0'891	0'891	$\left. \begin{matrix} 9 \text{ } 0 \text{ } 16 \\ 7 \text{ } 1 \text{ } 20 \\ 9 \text{ } 0 \text{ } 8 \\ 7 \text{ } 2 \text{ } 14 \end{matrix} \right\}$	931'5	931'5	$\left. \begin{matrix} 5\frac{1}{4} \\ 4 \\ 4\frac{1}{2} \\ 3\frac{1}{4} \end{matrix} \right\}$	4'25	4'25	2543		Miocene.	Low-lying Ground.	
10 " "	Becch.	Fagus Cunninghami.	Queensland.	Queensland Railways.	Seasoned at least 12 months.		28/1/84 31/1/84 4/2/84	$\left. \begin{matrix} 6\frac{1}{4} \\ 6\frac{1}{4} \\ 6\frac{1}{2} \end{matrix} \right\}$	6'33	37'04	0'593	0'593	$\left. \begin{matrix} 6 \text{ } 0 \text{ } 21 \\ 6 \text{ } 0 \text{ } 5 \\ 6 \text{ } 0 \text{ } 14 \end{matrix} \right\}$	685'3	685'3	$\left. \begin{matrix} 3\frac{1}{2} \\ 3\frac{3}{8} \\ 3\frac{3}{4} \end{matrix} \right\}$	3'54	3'54	1871				
F " " Z 1 "	Do.	Do.	Near Black Spur, Victorian State Forest.	Jno. Holland.	19/1/83	2' 6" diameter.	28/1/84 4/2/84 Do.	$\left. \begin{matrix} 8 \\ 8\frac{1}{4} \\ 7\frac{3}{4} \end{matrix} \right\}$	8'00	53'69	0'750	0'861	$\left. \begin{matrix} 4 \text{ } 2 \text{ } 25 \\ 5 \text{ } 2 \text{ } 24 \\ 5 \text{ } 2 \text{ } 2 \end{matrix} \right\}$	595'0	548'8	$\left. \begin{matrix} 3\frac{3}{4} \\ 4 \\ 4 \end{matrix} \right\}$	3'92	4'14	1498	Felspar Porphyry.	About 1600 feet above sea level.		
O & L "	Do.	Do.	Do.	Do.			24/1/84 4/2/84	$\left. \begin{matrix} 10\frac{3}{4} \\ 10 \end{matrix} \right\}$	10'37		0'972		$\left. \begin{matrix} 4 \text{ } 0 \text{ } 6 \\ 4 \text{ } 3 \text{ } 18 \end{matrix} \right\}$	502'0		$\left. \begin{matrix} 3\frac{3}{4} \\ 5 \end{matrix} \right\}$	4'37						
O & L "	Do.	Do.	Tasmania.	Mr. Oldfield.			7/2/84 Do.	$\left. \begin{matrix} 8 \\ 7\frac{1}{2} \end{matrix} \right\}$	7'75	45'35			$\left. \begin{matrix} 6 \text{ } 0 \text{ } 6 \\ 6 \text{ } 1 \text{ } 6 \end{matrix} \right\}$	692'0	692'0	$\left. \begin{matrix} 2\frac{1}{2} \\ 3\frac{3}{4} \end{matrix} \right\}$	3'12	3'12	1889				
Z 3 " "	Blackbutt.	Eucalyptus Piperita.	Range near Fernshaw.	Jno. Holland.	19/1/83	2' 6" diameter.	28/1/84 14/2/84 Do.	$\left. \begin{matrix} 11\frac{1}{2} \\ 12\frac{1}{4} \\ 11\frac{3}{4} \end{matrix} \right\}$	11'83	69'22	1'109	1'109	$\left. \begin{matrix} 4 \text{ } 3 \text{ } 0 \\ 4 \text{ } 2 \text{ } 2 \\ 5 \text{ } 1 \text{ } 17 \end{matrix} \right\}$	547'6	547'0	$\left. \begin{matrix} 2\frac{1}{4} \\ 2\frac{1}{4} \\ 3 \end{matrix} \right\}$	2'66	2'66	1495	Felspar Porphyry.	A few hundred feet above sea level.	This tree resembles in some respects the Blackbutt of New South Wales (Eucalyptus Pilularis), but it is, botanically, quite distinct therefrom.	
	Canary Wood.	Eucalyptus Hemiphloia.	Queensland.	Mr. Alcock.	Seasoned at least 12 months.	Abt. 2' diameter.	31/1/84 Do.	$\left. \begin{matrix} 8 \\ 8\frac{1}{2} \end{matrix} \right\}$	8'25	48'27	0'773	0'773	$\left. \begin{matrix} 8 \text{ } 3 \text{ } 22 \\ 8 \text{ } 2 \text{ } 8 \end{matrix} \right\}$	981'0	981'0	$\left. \begin{matrix} 3\frac{3}{4} \\ 4\frac{1}{2} \end{matrix} \right\}$	4'12	4'12	2078				
Z 6 " "	Cedar.		New South Wales.	Hudson Bros.	Seasoned at least 12 months.		28/1/84 7/2/84 Do.	$\left. \begin{matrix} 5\frac{1}{4} \\ 5 \\ 6 \end{matrix} \right\}$	5'42	31'71	0'508	0'508	$\left. \begin{matrix} 4 \text{ } 3 \text{ } 9 \\ 4 \text{ } 1 \text{ } 4 \\ 4 \text{ } 0 \text{ } 18 \end{matrix} \right\}$	495'6	495'6	$\left. \begin{matrix} 4\frac{5}{8} \\ 4\frac{1}{2} \\ 4\frac{1}{2} \end{matrix} \right\}$	4'54	4'54	1353			Very suitable for panels of railway carriages.	
O & L " " " P P 1	Messmate (Hardwood).	Eucalyptus Obliqua.	Trentham, Victoria.	Mr. Oldfield. Mr. Perry.	Seasoned at least 12 months.		7/2/84 Do. Do. Do. 31/1/84 Do.	$\left. \begin{matrix} 9 \\ 8\frac{3}{4} \\ 9 \\ 9 \\ 12 \\ 12 \end{matrix} \right\}$	9'96	58'28	0'933	0'933	$\left. \begin{matrix} 9 \text{ } 2 \text{ } 10 \\ 9 \text{ } 1 \text{ } 10 \\ 5 \text{ } 2 \text{ } 12 \\ 4 \text{ } 1 \text{ } 8 \\ 7 \text{ } 0 \text{ } 0 \\ 6 \text{ } 3 \text{ } 15 \end{matrix} \right\}$	797'8	797'8	$\left. \begin{matrix} 3 \\ 3\frac{3}{4} \\ 4 \\ 2 \\ 3\frac{3}{8} \\ 4\frac{1}{2} \end{matrix} \right\}$	3'44	3'44	2178	Upper Volcanic.	About 2200 feet above sea level.	The average specific strength of Eucalyptus obliqua, tested by Baron von Mueller, was 1436.	
B 1 " " B 2 " " Z 4 " "	Ironbark.	Eucalyptus Siderophloia.	New South Wales.	New South Wales Railway Department.	Seasoned at least 12 months.		24/1/84 7/2/84 Do.	$\left. \begin{matrix} 12 \\ 12\frac{1}{4} \\ 11\frac{3}{4} \end{matrix} \right\}$	12'00		1'124		$\left. \begin{matrix} 8 \text{ } 3 \text{ } 16 \\ 9 \text{ } 1 \text{ } 6 \\ 9 \text{ } 1 \text{ } 10 \end{matrix} \right\}$	1028'0		$\left. \begin{matrix} 3\frac{1}{6} \\ 4\frac{1}{4} \\ 4 \end{matrix} \right\}$	3'81						
	Do.	Do.	Do.	Do.			24/1/84 28/1/84 7/2/84	$\left. \begin{matrix} 12 \\ 12\frac{1}{2} \\ 12 \end{matrix} \right\}$	12'16	71'50	1'139	1'145	$\left. \begin{matrix} 7 \text{ } 3 \text{ } 14 \\ 8 \text{ } 2 \text{ } 7 \\ 8 \text{ } 2 \text{ } 12 \end{matrix} \right\}$	935'0	1045'6	$\left. \begin{matrix} 4\frac{5}{8} \\ 4\frac{1}{4} \\ 4\frac{1}{4} \end{matrix} \right\}$	4'37	4'21	2854			The average specific strength of New South Wales Ironbark, tested by Baron von Mueller, was 2859.	
	Do.	Do.	Do.	Hudson Bros.			31/1/84 7/2/84 Do.	$\left. \begin{matrix} 12\frac{1}{2} \\ 12\frac{1}{2} \\ 12\frac{1}{2} \end{matrix} \right\}$	12'50		1'171		$\left. \begin{matrix} 10 \text{ } 0 \text{ } 14 \\ 10 \text{ } 2 \text{ } 20 \\ 10 \text{ } 2 \text{ } 16 \end{matrix} \right\}$	1174'0		$\left. \begin{matrix} 4\frac{5}{8} \\ 4\frac{1}{2} \\ 4\frac{1}{4} \end{matrix} \right\}$	4'46						

Distinctive Mark of Sample.	Local Name	Botanical Name.	Locality where Grown.	By whom Sent.	Approximate Date when the Timber was Cut.	Dimensions of Tree.	Date of Testing.	Weight of each Sample in lbs.	Average Weight of Samples in lbs.	Average Weight per Cubic Foot in lbs.	Average Specific Gravity.	Total Average Specific Gravity.	Breaking Weight of each Sample in cwt., qrs., lbs.	Average Breaking Weight of Samples in lbs.	Total Average Breaking Weight.	Deflection at Point of Rupture in inches.	Average Deflection in inches.	Total Average Deflection.	Average Specific Strength.	Geological Formation where the Trees grew.	Elevation.	REMARKS.
18 " } "	Ironbark.	Eucalyptus Siderophloia.	Queensland.	Queensland Railways.	Seasoned at least 12 months.		31/1/84 4/2/84 Do.	11 1/4 } 10 3/4 } 10 3/4 }	10.92	63.90	1.023	1.023	7 1 15 } 6 0 22 } 4 1 20 }	672.3	672.3	4 1/4 } 3 3/4 } 4 1/4 }	4.08	4.08	1835			
X V 11 3 4 5 }	Ironbark	Eucalyptus Leucoxylon (Mueller). Eucalyptus Sideroxylon (Cunningham).	Toongabbie, Gippsland.	Railway Department.	1872.		24/4/84 Do. Do. Do. Do. Do.	13 1/4 } 13 } 12 3/8 } 12 } 12 3/8 } 12 1/8 }	12.52	73.26	1.173	1.173	9 0 26 } 8 2 26 } 8 0 24 } 8 3 0 } 8 1 20 } 7 2 14 }	951.67	951.67	4 } 4 3/8 } 4 } 5 1/2 } 5 } 3 3/4 }	4.44	4.44	2598	Lower Palaeozoic.	A few hundred feet above sea level.	Average specific strength of Ironbark Eucalyptus Leucoxylon tested by Baron von Mueller was 3063.
	Bastard Box.	Eucalyptus Goniocalyx.	North-Eastern District.	Mr. Perry.	Seasoned at least 12 months.		24/4/84 Do.	12 } 12 5/8 }	12.31	72.03	1.152	1.152	7 0 24 } 7 0 6 }	799.0	799.0	5 1/2 } 5 }	5.25	5.25	2181	Palaeozoic.		Average specific strength, Baron von Mueller, 1597.
	Gumtop Stringybark.	Eucalyptus Sieberiana.	Tasmania.	Mr. Perry.	Seasoned at least 12 months.		24/4/84 Do.	9 } 10 1/8 }	9.56	55.94	0.896	0.896	7 3 8 } 7 3 8 }	876.0	876.0	4 } 5 }	4.50	4.50	2391			
A 3 " } " }	Jarrah.	Eucalyptus Marginata.	Western Australia.	N. Levi.	Seasoned at least 12 months.		31/1/84 Do. 4/2/84	9 1/2 } 9 1/2 } 9 }	9.33		0.875		7 0 10 } 7 3 0 } 7 2 10 }	837.3		3 3/4 } 3 5/8 } 3 3/4 }	3.71					
A 4 " } " }	Do.	Do.	Do.	Do.			Do. Do. Do.	9 } 8 3/4 } 9 }	8.92		0.837		7 0 19 } 7 1 14 } 7 2 20 }	829.7		3 1/2 } 4 } 4 1/2 }	4.00					
A 5 " } " } " }	Do.	Do.	Do.	Jarradale Timber Company.			24/1/84 28/1/84 31/1/84 7/2/84 Do.	10 } 10 } 9 3/4 } 9 3/4 } 9 1/2 }	9.80		0.918		6 2 25 } 6 1 27 } 7 3 10 } 6 2 0 } 5 2 22 }	744.8		3 1/2 } 5 } 4 1/2 } 4 }	4.25					
A 6 " } " }	Do.	Do.	Do.	Do.			Do. Do. Do.	9 1/4 } 9 1/4 } 9 }	9.16	54.36	0.858	0.870	6 0 2 } 5 1 22 } 4 3 22 }	612.6	726.1	4 } 4 1/4 } 3 1/2 }	3.92	4.09	1982			
A 7 " } " }	Do.	Do.	Do.	Do.			Do. Do. Do.	9 } 9 1/2 } 9 }	9.16		0.858		5 2 0 } 5 0 12 } 6 2 24 }	646.7		3 5/8 } 3 } 3 1/2 }	3.37					
A 8 " } " }	Do.	Do.	Do.	Do.			Do. Do. Do.	9 3/4 } 9 1/2 } 9 1/4 }	9.50		0.891		6 3 12 } 6 3 18 } 6 1 12 }	751.3		5 } 5 3/4 } 3 1/2 }	4.75					
A 9 " } " }	Do.	Do.	Do.	Do.			Do. Do. Do.	9 1/2 } 9 } 9 }	9.16		0.858		5 1 4 } 6 0 14 } 6 1 4 }	660.7		3 1/2 } 6 1/2 } 4 }	4.66					

Distinctive Mark of Sample.	Local Name	Botanical Name.	Locality where Grown.	By whom Sent.	Approximate Date when the Timber was Cut.	Dimensions of Tree.	Date of Testing.	Weight of each Sample in lbs.	Average Weight of Samples in lbs.	Average Weight per Cubic Foot in lbs.	Average Specific Gravity.	Total Average Specific Gravity.	Breaking Weight of each Sample in cwt., qrs., lbs.	Average Breaking Weight of Samples in lbs.	Total Average Breaking Weight.	Deflection at Point of Rupture in inches.	Average Deflection in inches.	Total Average Deflection.	Average Specific Strength.	Geological Formation where the Trees grew.	Elevation.	REMARKS.
19 } " } " }	Karri.	Eucalyptus diversicolor.	Western Australia.	N. Levi.	Seasoned at least 12 months.		31/1/84 4/2/84 31/1/84	10 1/4 } 9 1/2 } 11 1/4 }	10'50	61'44	0'988	0'988	8 2 16 } 8 0 8 } 9 0 0 }	960 0	960'0	4 1/2 } 5 1/2 } 3 3/8 }	4'54	4'54	2621			
O & L } " }	Kauri.	Dammara Australis.	New Zealand.	Mr. Oldfield.	Seasoned at least 12 months.		7/2/84 Do.	6 1/4 } 6 1/4 }	6'25	36'57	0'585	0'585	6 1 6 } 6 2 12 }	723 0	723'0	2 1/2 } 2 3/4 }	2'62	2'62	1974			Average specific strength, Baron von Mueller, 1555.
J } " } " } " }	Mountain Ash.	Eucalyptus Amygdalina regnans.	Range south of Waterloo, Victoria.	South Gippsland Tramway Company.	-6.79	5' diameter.	24/1/84 Do. 28/1/84 31/1/84 Do.	8 1/2 } 7 1/4 } 6 3/4 } 7 1/2 }	7'50	47'54	0'703	0'761	6 3 6 } 6 0 22 } 7 1 5 } 7 1 4 } 7 0 19 }	778'4	965'3	4 1/2 } 4 1/2 } 3 3/4 } 3 1/2 } 3 5/8 }	3'87	3'93	2635	Mesozoic.	1250 feet above sea level.	Average specific strength, Baron von Mueller, 1622.
14 } " } " }	Mountain Ash.	Do.	Black Spur, Victorian State Forest.	Jno. Holland.	Seasoned at least 12 months		24/1/84 7/2/84 Do.	9 } 8 3/4 } 8 1/2 }	8'75		0'820		10 2 11 } 9 3 20 } 10 1 10 }	1152'3		4 1/2 } 3 1/2 } 4 }	4'00			Felspar Porphyry.	About 1500 feet above sea level.	
13 } " } " }	Spotted Gum.	Eucalyptus haemastoma.	Queensland.	Queensland Railways.	Seasoned at least 12 months.		28/1'84 31/1/84 4/2/84	12 } 11 3/4 } 11 1/2 }	11'75	68'75	1'101	1'101	8 0 4 } 6 3 24 } 7 1 8 }	833'3	833'3	3 } 2 3/4 } 3 }	2'91	2'91	2275			
Z 5 } " } " }	Tallow Wood.	Eucalyptus Microcorys.	New South Wales.	Hudson Brothers.	Seasoned at least 12 months.		24/1/84 Do. 28/1/84	9 1/4 } 10 1/2 } 10 1/4 }	10'16	59'45	0'952	0'952	6 2 20 } 6 2 24 } 7 1 17 }	776 3	776'3	5 1/4 } 4 } 4 1/2 }	4'58	4'58	2119			
A 1 } " } " }	Teak.		Moulmein, India.	Loco. Superintendent, Melbourne.	Seasoned at least 12 months.		24/1/84 31/1/84 Do.	6 1/4 } 6 1/2 } 6 1/4 }	6'33	37'54	0'593	0'601	6 2 14 } 5 2 20 } 6 0 18 }	689'6	713'1	3 7/8 } 2 3/4 } 3 5/8 }	3'42	3'37	1946			
	Do.			Workshops, Newport.			7/2/84 Do. Do.	6 1/2 } 6 1/2 } 6 1/2 }	6'50		0'609		6 1 6 } 5 2 14 } 7 3 6 }	736'7		3 } 3 } 4 }	3'33					
15 } 15 } 15AA }	Tuart.		Western Australia.	N. Levi.	Seasoned at least 12 months.		28/1/84 4/2/84 Do.	12 } 12 } 11 3/4 }	11'92	66'06	1'117	1'058	10 0 23 } 10 0 2 } 9 3 0 }	1119'0	1108'0	3 5/8 } 4 } 3 3/4 }	3'79	4'02	3025			
16 } 16 } 16A }	Do.		Do.	Do.			31/1/84 4/2/84 Do.	10 3/4 } 10 1/4 } 11 }	10'66		1'000		9 3 11 } 9 2 6 } 9 3 26 }	1097'0		4 1/2 } 4 } 4 1/4 }	4'25					
11 } 11 1 } 11 2 }	Silver Wattle.	Acacia Mollissima.	Waterloo, Victoria.	South Gippsland Tramway Company.	-4.83	2' 0" diameter.	28/1/84 Do. Do.	9 } 8 1/4 } 8 1/2 }	8'58	50'20	0'804	0'804	6 1 9 } 6 1 4 } 7 2 3 }	752'3	752'3	6 1/2 } 5 3/8 } 3 3/4 }	5'29	5'29	2053	Mesozoic.	About 1200 feet above sea level.

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