

5.01 *The Timber Trade*

- a. early New South Wales
- b. the south-east
- c. Queensland
- d. native pine
- e. Western Australia
- f. classification
- g. intercolonial trade
- h. foreign imports
- i. markings
- j. recycled timbers

a. early New South Wales

Captain Cook had written that there were only two or three sorts of tree 'that can be call'd Timber', and identified two of them as the gum tree, which grew all over the country, and something resembling an English pine but with wood resembling American Live Oak, which he saw in perfection only at Botany Bay.¹ Apart from anything which may have been done by Cook's party, the first timber was felled and pit sawn by Europeans in 1788 at Point Sutherland, Botany Bay,² before Phillip moved his colony to the present location in Port Jackson. In his first despatch Governor Phillip complained of the 'large gum tree' which 'splits and warps'.³ In the same year William Bradley stated that the gum tree, though it grew large, was short in the grain and 'neither strong nor durable',⁴ while Major Ross wrote home that 'not one bit of timber have we yet found that is fit for any other purpose than to make the pot boil'.⁵ John White commented similarly:⁶

... the timber of the country is very unfit for the purpose of building. Nor do I know any one purpose for which it will answer except for fire-wood; and for that it is excellent: but in all other respects it is the worst wood that any country or climate ever produced.

¹ Philip Cox & J M Freeland, *Rude Timber Buildings of Australia* (London 1969), p 10, n 2, quoting James Cook.

² John Vader, *Red Cedar, the Tree of Australia's History* (French's Forest [New South Wales]1988), p 11. This irritating book is unreferenced, and information from it must therefore be treated with suspicion.

³ *** *Historical Records of New South Wales*, I, part II, p 128.

⁴ William Bradley, *A Voyage to New South Wales* (Sydney 1969), p 144, entry for October 1788, quoted in Helen Proudfoot, 'Fixing the Settlement', in Graeme Aplin [ed], *A Difficult Infant: Sydney before Macquarie* (Kensington [NSW] 1988), p 59.

⁵ J Copley, *Sydney Cove: Australia's First Five Years* (Sydney 1980), I, p 254, quoted in Ian Evans, *The Australian Home* (Sydney 1983), p 48.

⁶ John White, *Journal of a Voyage to New South Wales*, p 118, quoted in Alfred Barbara, 'Terra Cotta in Sydney Architecture 1788-1914 (2 vols, BArch, University of New South Wales [1978]), I, p 3.

The cabbage palm [*Livistona australis*] plastered with clay, which was used in 1788 for the cottage of Richard Johnson, the Chaplain,⁷ and generally for infilling the walls of buildings in Sydney, entirely merited these comments. Governor Phillip recognised this as being only a temporary expedient, because the wood was so perishable, and all the more so as it was being used green.⁸ David Collins spoke generally of the timber available as being 'shaky and rotten',⁹ though the she-oak [*Casuarina*], which Collins called 'the pine of this country' (and was the same pine-like timber mentioned by Captain Cook), was pit sawn for posts and plates,¹⁰ and was rather better. She-oak was also used for shingles, and it has been claimed - almost certainly incorrectly - that it provided bark for roofing and cladding.¹¹ Overall:¹²

The timber that had been cut down proved in general very unfit for the purpose of building, the trees being for the most part decayed; and when cut down they were immediately warped and split by the heat of the sun. A species of pine appeared to be the best, and was chiefly used in the framework of houses, and in covering the roofs, the wood splitting easily into shingles.

Only one in forty trees of the Sydney redgum [*Angophora costata*] were wholly sound, and fewer than one in twelve were usable at all: it was found to be so twisted in the grain or riven by gum veins as to be unworkable, and the timber obtained from it warped and split almost immediately.¹³

Cedar was first discovered in December 1789, and in February 1790 Phillip wrote to Lord Sydney of these as yet unnamed trees, which were similar to and about the size of a large walnut, and gave a light timber.¹⁴ By 1791 *Cedrela australis*, which Bradley described as 'mahogany' was being used for doors, windows and skirtings, and by 1795 it was called cedar and was in common use, even being exported to India.¹⁵ The Australian cedar was not the same as the Lebanese, or the deodar of India, but there was a genuine resemblance. Frances Perry said in 1848 that it had 'no scent like our [*sic*] cedar, but is a pretty-looking wood. Having no scent it does not keep away insects as ours does; so that boxes of it are not of the same use and value.'¹⁶

Cedar cutting had begun on the Hawkesbury, but by 1801 there was cedar camp at Maitland,¹⁷ and in 1803 cedar from the Hunter was on sale in Sydney.¹⁸ In 1820

⁷ Copley, *Sydney Cove*, I, p 254, quoted in Evans, *The Australian Home*, p 48.

⁸ Arthur Phillip, *The Voyage of Governor Phillip to Botany Bay* (London 1789) p 145.

⁹ David Collins [ed Maria Collins, James Collier], *An Account of the English Colony in New South Wales* (Christchurch 1910 (1798 & 1802; 1804), p 22.

¹⁰ Collins, *An Account of the English Colony*, p 23.

¹¹ *Australian Antiques: First Fleet to Federation* (Sydney 1977), p 25, quoted in Evans, *The Australian Home*, p 48.

¹² Collins, *An Account of the English Colony*, p 28.

¹³ Philip Cox & J M Freeland, *Rude Timber Buildings of Australia* (London 1969), p 17, ms 22, 23, 24.

¹⁴ Vader, *Red Cedar*, p 18.

¹⁵ Earnshaw, *Early Sydney Cabinetmakers*, pp 14-15, quoted in Evans, *The Australian Home*.

¹⁶ Frances Perry, 24 January 1848, in Frances Perry [ed A de Q Robin], *Australian Sketches. The Journals and Letters of Frances Perry* (Carlton [Victoria] 1984), p 69.

¹⁷ Vader, *Red Cedar*, p 29.

¹⁸ *Sydney Gazette*, 17 July 1803, p 1.

gangs were working the upper reaches of the Hunter River, by about 1816-17 at Port Stephens, and soon up to 160 km inland from the port: and by the later 1820s at Clarence Town, on the Williams River north of Newcastle. South of Sydney it was cut at Shoalhaven by 1811, and soon as far as Ulladulla, the traditional southern limit of its growth. Further north the timber was being cut by 1823 at Port Macquarie and by 1826 the Manning River, by 1830 in the vicinity of Brisbane Water, about 1836 the Macleay River, by 1841 on the Clarence River, 1842 the Nambucca, and soon after the Bellinger, extending by the 1850s as far inland as the Dorrigo district.¹⁹

In the 1790s the boat builder Daniel Paine is said to have had an Aboriginal in his timber-getting party, and this has been taken to indicate that Aboriginals showed the European settlers species suited to their requirements - in this case boat building.²⁰ This is putting too strong a construction on it. Aboriginals did not have saws or woodworking tools, they did not build boats or houses in the European sense, and they could have known little of the properties of native timbers. But they could and did help locate stands of species once the settlers had decided which were to be sought. Paine described the main timbers (again, from a boat building perspective) as red, white and blue gum, amongst which the blue gum provided some good timber; stringybark, which was often sound; turpentine, which was good but liable to shrinkage; and 'mahogany' [our cedar], more durable but less attractive than that of America.²¹ By 1792, according to Irving, some use had also been made in Sydney of the wattle [*Acacia*].²²

In 1803 Governor King issued a proclamation which responded to the increasing problem of illegal timber gathering, and attempted to preserve as much as possible for the use of the navy. It usefully summarised the timbers which had been found in the colony King's proclamation read (in part):

Timber in this Colony includes She and Swamp oaks, Red, Blue and Black-butted Gums, Stringy and Iron Barks, Mahogany, Box, Honeysuckle, Cedar, Light-wood, Turpentine, &c. --- The Property of all which, and every other kind of Trees fit for Timber, or likely to become so, lies in the Proprietor of the Land, either by Grant or Lease, excepting Timber fit for Naval or other Public Purposes ...²³

This was followed in subsequent months by a series of advertisements in the *Sydney Gazette*, in which owners of land along the Parramatta River sought to discourage the predators. In 1804 the *Experiment* was loaded at Newcastle with a thousand logs of timber, mainly cedar, pear, ti-tree and sheoak, in addition to ten thousand feet [24 m³] of she-oak plank, 'mostly fine wood'.²⁴ This is probably the same timber as was offered for sale in Sydney a few weeks later, including cedar logs 660 mm in diameter.²⁵

¹⁹ Vader, *Red Cedar*, passim.

²⁰ Daniel Paine [ed R J B Knight & Alan Frost], *The Journal of Daniel Paine 1794-1797* (Sydney 1983), p xx.

²¹ Paine, *Journal*, p 28.

²² Robert Irving, 'The First Australian Architecture' (MArch, University of New South Wales, 1975), p 153.

²³ *Sydney Gazette*, 16 June 1803, p 1.

²⁴ *Sydney Gazette*, 7 October 1804, p 3.

²⁵ *Sydney Gazette*, 25 November 1804, p 4.

King's own report of the Sydney timber in 1807 is markedly favourable, by contrast with earlier accounts:

The iron- and stringy-barks are straight, from 40 to 80 feet [12-24 m] high, and 18 to 20 inches [450-510 mm] diameter, generally sound throughout without much crooked or compass timber. It is heavy, but the latter not much more than oak. Both are well adapted to the different purposes of keels, beams, uprights and floor timbers of large scantling, and many other purposes where straight and durable timber is required. ...

The box is a very fine timber and grows in great abundance about Parramatta, quite straight, from sixty to a hundred feet [18-30 m] high, and from eighteen to twenty-six inches [450-510 mm] in diameter, tapering but little. The crooked wood, being the branches, are of small size; but this timber answers every purpose of the foregoing species, except that growing so very straight it might not answer so well for floor timbers; but for every kind of straight work, gun-carriages, etc., it is equal to any wood in the world. ...

The blue and black butted blue gum are in New South Wales esteemed good woods, and some vessels which answer extremely well have been built principally of these woods from their affording good crooked timber and cutting well into planks ...²⁶

In 1820 Patrick Riley, a carpenter at Newcastle, reported that most types of wood were better there than at Sydney, except for the stringybark. He recommended cedar for 'fittings', pine for flooring, 'gum tree' for roofing, and beefwood [she-oak] for shingles.²⁷ The range of timber used in Sydney had expanded by 1831 to include blackbutt [*E. pillularis*], logs of which were floated down the Lane Cove River to provide the flooring for Elizabeth Bay House.²⁸

Though at first seemingly limitless, cedar was cut so rapidly that as early as 1795, and again in 1802, Hunter issued regulations to control its cutting on the Hawkesbury.²⁹ and in 1819 Macquarie attempted to restrain illegal cedar-getting in the Illawarra district, though more for the protection of government revenue than as a conservation measure.³⁰ At Coal River [Newcastle], W C Wentworth reported in 1819 that cedar and rosewood were obtained, but the cedar had been so depleted near the coast that it was necessary to go 240 kilometres upstream, where there were still large quantities. The cut logs were formed into rafts and floated down.³¹ In 1848 the Rev J R Wollaston, in Western Australia, sent to get New South Wales cedar from Adelaide,

²⁶ King to the Commissioners of the Board of Revision, quoted Cox and Freeland, *Rude Timber Buildings*, pp 30-1, n 42.

²⁷ Evidence of Patrick Riley, undated, c January 1820, in John Ritchie [ed], *The Evidence of the Bigge Reports* (2 vols, Melbourne 1971), I, p 112.

²⁸ Barrie Dyster, *Servant and Master* (Kensington [NSW] 1989), p 131.

²⁹ Vader, *Red Cedar*, pp 18, 19.

³⁰ Vader, *Red Cedar*, p 36.

³¹ W C Wentworth, *Statistical, Historical, and Political Description of the Colony of New South Wales, &c* (London 1819 [facsimile, Adelaide 1978]), p 57.

where it was plentiful on the market, and cheap.³² However, the timber was scarce by the end of the century, and even in 1889 it was reported that 'the magnificent Cedar forests of the Richmond and Clarence districts are practically cut.'³³ One of the later uses of cedar on a substantial scale was in the mansion 'Oma', Toorak, of 1889, where the vestibule, cortile, staircase, gallery, and principal rooms, were all finished in french polished cedar, 'harmoniously blended with choice exotic woods'.³⁴

b. the south-east

At first things seemed more promising in what is now Victoria. James Grant found a forest 'of stately trees' at Westernport Bay in 1801: 'these were slender and light wood, seeming to me very fit for the scantling of houses'.³⁵ Next year his successor, John Murray, entered Port Phillip, and made an excursion with his carpenter to investigate the timbers: 'None, however, were found of Use, the Trees being almost invariably Oak [that is, *Casuarina*], and other Wood Quiet [*sic*] common at Sydney'.³⁶ A few weeks later Matthew Flinders and Grimes were at Port Phillip, where Flinders noted the *Casuarina* and eucalyptus as the commonest timbers, to which Grimes added the banksia and mimosa - 'but the timber,' said Flinders, 'is rarely sound, and is not large'.³⁷

This adverse judgement probably reached England too late to deter the British authorities from a plan to establish a settlement at Port Phillip. They needed timber for ship-building, and they would have received optimistic accounts of New South Wales timbers generally, though not those of Port Phillip in particular. A nexus was being established in which convicts were to be sent out twice a year and timber freighted back in the same vessels.³⁸ Captain Hunter supported the plan, and wrote favourably of the box as a straight and sound timber, the crooked limbs of gum trees generally as suitable for ship's ribs, of the cedar, and of the she-oak as an ornamental wood.³⁹ Naturally when Lieutenant Governor David Collins reached Port Phillip with his party, the search for timber was a major concern of Captain Woodriff. It was unsuccessful, for he wrote back in November 1803 that the timber around Port Phillip was very defective and that 'sufficient sound timber' could not be got 'to construct one line of Battle Ship'. The soil was too sandy, water too scarce, and most serious of all, the Aborigines regularly burnt the whole countryside.⁴⁰

³² J R Wollaston [eds C A Burton & P U Henn], *Wollaston's Albany Journals (1848-1856)*, (Perth 1954), p 61.

³³ Centennial International Exhibition 1888-1889, *Official Record* (Melbourne 1890), p 769.

³⁴ *Argus*, 26 April 1890, p 3.

³⁵ James Grant, *The Narrative of a Voyage of Discovery Performed in His Majesty's Vessel the Lady Nelson* (London 1803), p 135.

³⁶ Murray, in the log of the *Lady Nelson* for 16 and 20 February 1802, quoted by F P Labillière, *Early History of the Colony of Victoria* (2 vols, London 1878), I, pp 88, 92.

³⁷ Matthew Flinders, *A Voyage to Terra Australis* (3 vols, London 1814), I, p 219.

³⁸ See the correspondence reproduced in Paine, *Journal*, pp 77-94.

³⁹ Captain Hunter to the Under Secretary of State, 22 March 1802, Public Record Office, London, CO1/1, reproduced in Paine, *Journal*, p 82.

⁴⁰ Captain Woodriff to the Secretary of the Board of Admiralty, 15 November 1803, Public Record Office, London, ADM 1/2695, reproduced in Paine, *Journal*, pp 90-91.

G P Harris, who was with Collins's party at Port Phillip, and then at Hobart, noted the contrast in 1804:⁴¹

... beside the most beautiful and romantic Country I ever beheld, it is not merely fine to the eye only, as was the case at Port Phillip, the soil in general is excellent - plenty of fresh water and forests of astonishing large Trees fit for every purpose consisting of the Red and Blue Gum, Stringy Bark, Mahogany, Oak, Honeysuckle & Pine ...

The discovery of Port Davey in the south-west of Tasmania in 1816, revealed 'great quantities of the timber named Huon pine – the superior value of this wood for every purpose of Joiners' and Cabinet Work, from the closeness, regularity and beauty of its grain is generally acknowledged.'⁴² The wood is particularly resistant to water, and logs which have been immersed for years remain in excellent condition.

Tasmania developed a timber export trade in the 1830s, mainly of commoner timbers, especially in the form of split shingles, palings and laths,⁴³ and in 1837 it was reported that the greater part of Melbourne was built of Van Diemen's Land timber.⁴⁴ In north-western Tasmania timber was cut by the Van Diemen's Land Company, and in 1840 H L Button of Launceston employed sawyers and splitters at Devon to obtain timber for export to the South Australian and Port Phillip markets.⁴⁵ During the 1840s the mouth of the Forth developed as the main port in the area for exportation of split timber.⁴⁶ Bluegum, which grew in large sizes on the north side of the Mount Wellington Range,⁴⁷ does not seem to have been a significant export, probably because of the difficulty of getting it out. But 'Hobart Town palings' were exported even to timber-rich Brisbane in the early years,⁴⁸ and Tasmanian timber - probably from Circular Head rather than Hobart - swamped the Victorian market. From the later 1850s James Smith located stands of red pine, pencil pine and celery top in the hinterland of Devonport, and in 1862 he cut the first red pine to float down to the coast. The regular flows which allowed logs to be floated down North American Rivers were not available here, but they could be stacked in suitable locations and released in times of flood, though this allowed many to escape to the open sea.⁴⁹

By 1850 the 'importation of sawn stuff from Tasmania' was so immense that the Port Phillip sawyers and splitters came out on strike.⁵⁰ Local sawmills were all closed,

⁴¹ G P Harris [ed Barbara Hamilton-Arnold], *Letters of G P Harris 1803-1812* (Sorrento [Victoria] 1994), p 61.

⁴² *Hobart Town Gazette*, 15 June 1816, p 1. The following February Captain Kelly was reported to be making [another] trip to Port Davey and Macquarie Harbour to get a cargo of the pine: 22 February 1817, p 1.

⁴³ Miles Lewis, 'Tradition and Innovation in Victorian Building 1801-1865' (3 vols, PhD, University of Melbourne, 1972), I, pp 14-6.

⁴⁴ Thomas Winter to William Swainson, late 1837, in T F Bride [ed, re-edited Stuart Sayers], *Letters from Victorian Pioneers* (Melbourne 1969 [1898]), p 194

⁴⁵ James Fenton, *Bush Life in Tasmania Fifty Years Ago* (London 1891), p 43.

⁴⁶ Fenton, *Bush Life in Tasmania*, p 60.

⁴⁷ London, Great Exhibition of the Works of Industry of all Nations, 1851, *Official Descriptive and Illustrated Catalogue* (3 vols, London 1851), II, p 999.

⁴⁸ Donald Watson, *The Queensland House* (ms, Brisbane 1981), p 4.3.

⁴⁹ Fenton, *Bush Life in Tasmania*, pp 168-9.

⁵⁰ *Argus*, 27 November 1850.

and they stayed closed because of the gold rushes, so that nearly all the timber used in Victoria was imported from Europe, America and Tasmania, plus a little from Western Australia. But in 1853 seven mills opened or re-opened in Melbourne and Geelong, and a year later thirty-four were operating in different parts of Victoria.⁵¹ Meanwhile Adelaide timber merchants were indignant in July 1854 at the fact that Tasmanian timber was arriving short in measurement.⁵²

Because very much the same species were indigenous to the two colonies, the Tasmanian trade to Victoria dwindled to almost nothing by the 1870s, in the face of protectionism. But Victoria was not the only market, and in 1865 'H.T.' [Hobart Town] box palings were being advertised as far away as Rockhampton⁵³ However by 1867 the volume of exports, which had been mostly to the neighbouring colonies and especially to Victoria, had reduced to less than one half that of 1854. So had the value per super foot, and for certain items to less than a quarter of the original level.

Tasmanian timber exports (in super feet)⁵⁴

	1854	1858	1863	1867
battens	no return	297,000	260,092	22,427
sawn	17,648,324	12,690,245	7,172,165	4,369,293
palings	7,214,983	7,079,293	5,805,592	7,602,448
laths & shingles	13,499,088	10,122,500	7,626,900	4,520,700
posts & rails	518,887	740,386	44,885	67,420
beams, spars & piles	2,759	no return	61	12,320
hewn	no return	no return	641,800	148,235
TOTAL	38,884,041	30,929,424	21,551,495	16,742,843
VALUE (£)	*£303,857	**£108,867	£69,856	£51,747

* includes other items worth £9,046 ** includes 'pieces' worth £460

The depletion of the more distinctive Tasmanian timbers was already apparent in the 1880s, and in 1887 new regulations prescribed the minimum girth of felling trees as 4 ft 6 ins [1.35 m] for 'Huon Macquarie pine', 3 ft 6 ins [1.05 m] for King William pine, and 3 ft 0 ins [0.9 m] for 'Celery-up' [presumably celery top] pine.⁵⁵ The Oyster Bay pine was newer of more than local significance, as will appear below. In 1884 the Victorian sawmiller J S Lee inspected the Duck Valley forests in the vicinity of Circular Head, and in 1885 he opened a sawmill on the Duck River at what became Leesville. He constructed a wooden tramway which opened up large areas of forest for his mill and for others which followed, for it was taken over by the Tasmanian government. Lee himself, and his sons, developed a large business, with a wharf at

⁵¹ Lewis, 'Victorian Building', I, p 138.

⁵² *South Australian Register*, 19 July & 17 August 1854, cited in E & R Jensen, *Colonial Architecture in South Australia* (Adelaide 1980), p 107.

⁵³ *Bulletin* [Rockhampton], 2 February 1865.

⁵⁴ J E Calder, *Tasmanian Industries* (Hobart 1869), p 60.

⁵⁵ *Australasian Builder & Contractor's News*, 29 October 1887, p 393.

Pelican Point and a fleet of trading ships. It failed in 1944 and was bought by the Kauri Timber Co, of which more below.⁵⁶

Of all the colonies, South Australia was, as it still is, notoriously short of timber. As G S Kingston said in 1837: 'Timber for building is what we are most deficient in. There are hundreds of acres without a tree.'⁵⁷ More generally, he described Australian timbers as 'very heavy, hard, and difficult to work', but 'excellent material for the heavier part of a house, such as roofing and flooring.' Softer timber could be used for windows and fittings.⁵⁸ But these remarks probably embraced the timbers of adjacent colonies rather than being specific to those of South Australia. It was doubtless the dearth of local timber that encouraged the development of plantations in South Australia before the neighbouring states. By 1925, when the prospectus of South Australian Pine Forests Limited was published, there were a number of government plantations but still few private ones. The promoters estimated that good profits could be obtained from *pinus insignis* harvested at twenty-five years, and *pinus maritimo* at thirty or thirty-five. The favoured locations were Mypouga and Kuitpo.⁵⁹

c. Queensland

The search for cedar quickly led from northern New South Wales into what is now Queensland, and revealed not only the cedar but the great Auricularian softwood scrubs. Thomas Pamphlett, John Finnegan, Richard Parsons and John Thompson sailed from Sydney on 21 March 1823 for the Five Islands or Allowrah [now Illawarra] to collect cedar, but were blown off course. Thompson died, but his companions reached Moreton Island, built a canoe to cross Moreton Bay, walked to the mouth of the Brisbane River, and travelled up it. It was on the basis of their information that John Oxley, Surveyor-General of New South Wales, himself sailed up the river, and then in 1824 returned to form a convict settlement there.⁶⁰ Cedar was plentiful. 'Bellevue' homestead at Wivenhoe was built in about 1847 and fully lined and floored in cedar.⁶¹ Other homesteads such as 'Castleholm' of about 1876, continued to use cedar for weatherboards and other components.⁶²

Moreton Bay gave its name to the timber Moreton Bay pine (*Auricularia Cunninghamii*, otherwise colonial pine or hoop pine), of which Sir Thomas Brisbane commented in 1824:

⁵⁶ Kerry Pink, *Kauri 100 Years: the Centenary of Kauri Timber Company Limited 1888-1988* (Smithton [Tasmania] 1988), p 26.

⁵⁷ Donald Langmead, *Accidental Architect* (Sydney 1994), p 113, quoting G S Kingston to Rowland Hill, 12 February 1837.

⁵⁸ Langmead, *Accidental Architect*, p 114, quoting G S Kingston to G F Angas, 25 December 1837.

⁵⁹ South Australian Pine Forests Limited, *Prospectus of South Australian Pine Forests Limited* (Adelaide 1925), passim.

⁶⁰ Clem Lack, *Newstead House* (Brisbane, no date), pp 2-3.

⁶¹ Stephen Murray, 'Bellevue Homestead Coominya History Review' (National Trust Queensland, Brisbane 1987), p 3. A second house built some time before 1853 (when there was a flood) had cedar posts and at least some cladding of wide cedar chamfer boards: *ibid*, p 5.

⁶² Murray, 'Bellevue Homestead', p 4.

There are endless quantities of these most beautiful trees, many of which I measured from nine to ten feet in circumference, and from eighty to one hundred feet in height, perfectly straight without knot or branch.⁶³

The *Sydney Gazette*, reporting on Brisbane's visit, also referred to the size and abundance of one species, doubtless the same,⁶⁴ and in the following year the first cargo of hoop pine logs was sent to Sydney.⁶⁵ By 1836 the price of timber had risen so high in Sydney that bluegum, cedar and stringybark were shipped from Moreton Bay for the construction of the powder magazine on Goat Island.⁶⁶ In 1840 a Sydney dealer was advised that the timbers available at Moreton Bay included ironbark, stringybark, box, forest oak, swamp oak, three types of 'yellow wood', tulip wood, rosewood and bluegum.⁶⁷ But by 1859 the usable timber in the vicinity of Brisbane had all been cut out, and the sawyers and splitters had been obliged to move a considerable distance inland.⁶⁸

Brisbane was fortunate in having the hoop pine to provide the majority of building timber. The Leichardt trees which grew along the Fitzroy River yielded a soft and easily worked timber which was used for the early buildings of Rockhampton.⁶⁹ The woolshed at 'Jondaryan', a property well in from the Queensland coast, was built as late as 1859 with walls of local ironbark slabs, and pens and other components were of cedar. The source of the beams and rafters is unknown, but the story that they were imported from Britain, and were so long that they had to be strapped to the side of the ship that brought them, is without foundation.⁷⁰ The bunya pine [*Auricularia Bidwillii*] was sacred to the Aborigines and remained relatively unexploited until the later 1870s, when the exhaustion of hardwood and cedar near Brisbane, combined with a building boom to break down the old inhibitions. The Blackall Range was eventually logged in the 1880s after a large mill was established at Petrie Creek.⁷¹ Queensland maple was also exploited and was used, for example, in the State Savings Bank, Sydney, in 1928.⁷²

⁶³ Quoted by Donald Watson, *The Queensland House* (typescript report, Brisbane 1981), p 2.2.

⁶⁴ *Sydney Gazette*, 21 December 1824, quoted in J G Steele, *Brisbane Town in Convict Days 1824-1842* (St Lucia [Queensland] 1977), p 20.

⁶⁵ Dimity Dornan & Denis Cryle, *The Petrie Family: Building Colonial Brisbane* (St Lucia [Queensland]), p 25.

⁶⁶ Ian Evans et al, *The Queensland House: History and Conservation* (Mullumbimby [New South Wales] 2001), p 19, ref Colonial Architect to Colonial Secretary, 15 June 1836, and statement of timbers required for powder magazine, Goat Island, 27 June 1836, both in Colonial Secretary, Moreton Bay letters.

⁶⁷ Evans, *The Queensland House*, p 19, ref 'Description of the Undermentioned Timbers growing at Moreton Bay', 18 August 1840, New South Wales Archives Office.

⁶⁸ *Moreton Bay Courier*, 12 March 1859, quoted in Watson, *The Queensland House*, p 2.7.

⁶⁹ *Sketches of Old Rockhampton* [extract only sighted, publication details unavailable, c 1980], p 23.

⁷⁰ Janet Hogan, *Building Queensland's Heritage* (Brisbane 1978), pp 79-80; Australian Heritage Commission, *The Heritage of Australia* (South Melbourne 1981), p 4/38.

⁷¹ Dornan & Cryle, *The Petrie Family*, p 158.

⁷² *Building*, 12 December 1928, p 62.

d. native pine

The native pine, *Callitris*, includes about fourteen species endemic to Australia, and tends to be important in vernacular architecture, especially in the inland. The most important is the Murray pine or white cypress pine [*C hugelii*], which is found in all mainland states, grows to sixty metres or more, and is largely resistant to termite attack. *C columellaris* is a good straight tree found in Queensland and New South Wales, and *C preissii*, known in Western Australia as Rottnest Island pine, is a similar tree growing in all mainland states and giving a soft but durable timber.

Towards the end of the century cypress pine was increasingly in demand in Brisbane as a termite-resistant timber, and likewise on the settlement of Darwin in the early 1870s the discovery of a stand at Bynoe Harbour was important, as the local ironbark had proved too hard to work.⁷³ In reality, it appears, neither cypress pine nor any other timber is totally impervious to the termite, though it is true that the animal has a preference for other species, as well as for specific parts of the log.⁷⁴

e. Western Australia

Western Australia, despite its remoteness and general stagnation, managed to export some timber to the eastern colonies, and indeed further afield. After jarrah [*E Marginata*] had been used successfully to repair the *Sulphur* in 1829 the British Admiralty sought and obtained two cargoes of the timber, in 1831 and 1837.⁷⁵ Jarrah, and perhaps kauri [*E Diversicolor*] were at first known locally as mahogany – a West Indian timber which they somewhat resemble⁷⁶ – and were exported under that name, but the timbers which are still called mahogany today are found in the eastern states. In 1834 Dr Collie described his house in Perth as having doors of the 'mahogany of this country',⁷⁷ and even in the 1870s the shingles of Perth Town Hall were described as being of mahogany.⁷⁸

By 1844 the Scott and Clifton families of Bunbury were exporting timber, and in 1848 Henry Prinsep attempted to export sleepers to India, failing only because the ship was wrecked.⁷⁹ Jarrah staging was used in the keeper's quarters of the Port Adelaide lighthouse in 1852-5,⁸⁰ and by 1853 some timber was being sent to Melbourne.⁸¹ In 1864 E F Du Cane published a paper on jarrah in the *Papers* of the

⁷³ Harriet Daly, *Digging, Squatting and Pioneering in the Northern Territory of South Australia* (London 1887), pp 110-111.

⁷⁴ Peter Bell, *Timber and Iron* (St Lucia [Queensland] 1994), p 162.

⁷⁵ Jenny Mills, *The Timber People* (Perth 1986), p 6.

⁷⁶ I H Boas, *The Commercial Timbers of Australia: their Properties and Uses* (Melbourne 1947), pp 183- 6.

⁷⁷ Ingrid van Bremen, 'Fired Clay Brick', *Architect* [Western Australia], 4 (Housing 2004), p 10.

⁷⁸ Ingrid van Bremen, 'Fired Clay Brick 2', *Architect* [Western Australia], 2 (Summer 2005), p 12.

⁷⁹ Mills, *The Timber People*, p 7.

⁸⁰ E & R Jensen, *Colonial Architecture in South Australia* (Adelaide 1980), p 336.

⁸¹ In April 1853 Archdeacon J R Wollaston noted a ship at Bunbury taking on timber for the Melbourne market: J R Wollaston [ed C A Burton & P U Henn], *Wollaston's Albany Journals (1848-1856)* (Perth 1954), pp 154, 189.

Royal Engineers.⁸² Although an average of a thousand loads of timber was exported annually between 1850 and 1870, these were mainly telegraph poles, piles and sleepers,⁸³ and the finer qualities of the local timbers had yet to be much appreciated elsewhere.

But in 1879 Baron von Mueller reported very favourably on the jarrah and the karri, and soon jarrah was again being sent to the east.⁸⁴ Some logs which had been cut in 1845 by W Pearce Clifton, and left by the Bunbury jetty, were dug out in 1880 and sent to the Melbourne Exhibition, having proved to be in very good condition despite being variously buried and exposed to the elements and soaked at different times in fresh and salt water.⁸⁵ Mills were established by the Jarrahdale Timber Company at the eponymous location, and in fifteen months from January 1880 extracted and exported over 12,000 tonnes of jarrah.⁸⁶ By 1889 the export drive had revived. The Jarrahdale Timber Mills had sent two cargoes to London, where a jarrah fence around Baron Knopp's mansion in Forest Hill attracted much attention.⁸⁷ The eastern colonies had not done so well. In 1887 R Kemp, a timber merchant of St Leonards, New South Wales, had sent a batch of timber, mostly blackbutt, to London on an experimental basis. Nothing more is heard of the venture, and it must be presumed to have failed.⁸⁸

Meanwhile sawmills had been established at Toodyay and Denmark in 1884, by the firm that was to become Millars' Timber and Trading Co. Limited.⁸⁹ Charles and Edwin Millar were sprigs of the family which operated the old established Scottish business of Robert Millar & Sons, Montrose. They had set up in business in Melbourne early in the 1880s, and in 1884 obtained the contract for the Southern Railway, or Albany to Beverley line, in Western Australia. The sawmills supplied timber for the construction of the line, and though they were closed at the end of the contract, they re-opened to fulfil an order from Melbourne for karri building timber, and then in 1889-90 one mill was dismantled and re-erected at Albany. During the 1890s, under the managership of Henry Teesdale Smith, the company expanded in various directions.⁹⁰ A large contract was obtained to supply the Melbourne harbour works, and this kept the company busy for three years, while its representatives promoted its karri timber in London and elsewhere in Europe. In 1894 John Coughlan was brought from Victoria to investigate the available resources of karri,

⁸² E F Du Cane, 'Notes on the Jarrah Timber of Western Australia, *Papers on Subjects Concerned with the Duties of the Corps of Royal Engineers*, new series, XIII (1864), cited in John Weiler, 'Colonial Connections: Royal Engineers and Building Technology Transfer in the Nineteenth Century', *Construction History*, XII (1996).

⁸³ Mills, *The Timber People*, p 7.

⁸⁴ Ferdinand von Mueller, *Report on the Forest Resources of Western Australia* (London 1879), quoted in Mills, *The Timber People*, pp 5-6.

⁸⁵ Letter in the *West Australian*, quoted in the *Australian Building and Engineering News*, 2 August 1880, p 22.

⁸⁶ *Australian Building and Engineering News*, 1 May 1881, p 211.

⁸⁷ *Australasian Builder & Contractor's News*, 11 May 1889, p 448.

⁸⁸ *Australasian Builder & Contractor's News*, 13 August 1887, p 208.

⁸⁹ Ambrose Pratt [ed], *The National Handbook of Australian Industries* (Melbourne 1934), pp 562-4.

⁹⁰ A C Staples, *They Made Their Destiny* (Harvey [Western Australia], 1979), pp 311-327, quoting a number of sources, including articles in the *Bunbury Herald*, and W C Thomas, 'Outlines of the Western Australian Timber Industry', *Journal of the Royal Western Australian Historical Society*, I, part V (1929).

and he influenced the company to begin sawmilling on a large scale and to focus its activities at Denmark.⁹¹

In 1894 George W Shepherdson brought his mill and equipment from South Australia and set it up five kilometres south of Mundaring, opening in January 1895 as the Adelaide Timber Company.⁹² His sons followed, and in 1896 he returned to South Australia and left them in charge. In 1898 the business became a limited company, and in 1899 operations were moved to a site ten kilometres east of Greenbushes, 240 kilometres south of Perth, which involved the transport of:

- 1 steam engine
- 8 saws
- 2 saw spindles
- 1 loco portable steam engine
- 1 vertical saw plant
- 1 ATCO patent road block cutting machine
- 1 log trolley
- 6 trucks
- 2 winches
- 1 trolley
- 1 dray
- 1 horse jinker
- 1 emery machine
- 5 horses and harness
- 10 bullocks and tackle
- 2¹/₂ cwt of iron
- quantity of coal and wire coils
- 270 empty bags
- 20 ft of 8 in belting
- 2 screw jacks
- 2 tons galvanised iron
- 10 gallons oil
- 112 ft steel piping
- 32 steel rails
- 2 belts
- 1 barrow
- 11 axes
- 2 hammers and wedges
- 1 large water pump
- 1 small water pump
- 2 band saw
- 1 sawdust elevator
- blacksmithing tools
- 14 tools and various sundries
- stores, new iron, 2 tanks
- 1 set of bellows
- 1 saddle and bridle⁹³

⁹¹ Pratt, *National Handbook of Australian Industries*, pp 562-4.

⁹² David Mack, *The Shepherdsons: Timber Milling in Australia 1849-1984* (Camden Park [South Australia] 1986), pp 5-6.

⁹³ Mack, *The Shepherdsons*, p 8.

Operations were again shifted in 1907 to North Greenbushes or Padbury Hill, and then in 1908 to Wilga, or Wilgie Springs, where the company continued to operate until 1984.⁹⁴

In 1897 the Millar business was floated on the London market as Millars Karri and Jarrah Forests Company Limited, but in 1899 to 1900 there was a slump in the timber trade, in response to which seven other operators merged with Millars to become Millars Karri and Jarrah Company, the biggest timber enterprise in Australia during the first quarter of the twentieth century.⁹⁵ By the 1930s it controlled fourteen sawmills, exported more hardwood than all the export firms in the other states put together, and was thought to be possibly the largest hardwood company in the world.⁹⁶ The only other major firms now remaining in Western Australia were Bunning Brothers and Whittaker Brothers.⁹⁷ Between the wars black bean, jarrah and karri became recognised on the British market, along with New Zealand kauri.⁹⁸

f. classification

An attempt to collect and classify Australian timbers in a systematic manner had been made in New South Wales by Sir William MacArthur and Charles Moore in 1854 with the object of providing specimens for the Paris Exhibition of 1855. Moore commented:⁹⁹

The most experienced among the sawyers have no names for a great number [of species], and can give little information to be relied upon with regard to the qualities of the timber. They have been in the habit of confounding together numerous species under the general designation of brush trees. It requires careful and laborious investigation on the part of a stranger in these brushes to distinguish trees, even of very different families. The foliage is often so far overhead, and so intermingled with that of neighbouring trees and climbers, their trunks are so covered with epiphytes and the light is so imperfect that the tree often requires to be cut down before it can be identified.

The unravelling of this confusion is far too long a story to pursue here, but stringybark should be mentioned as one timber which, though important in building, and important as an article of intercolonial trade, continued to defy precise definition well into the twentieth century. In 1860 the Philosophical Institute of Victoria described half a dozen species of timber which had come into use for building purposes, including 'stringybark' or *Eucalyptus fabrorum*, a tall, straight, fissile timber, abundant in mountain areas. It was readily split into shingles, palings and rails, but decayed when used for fence posts.¹⁰⁰ The *Official Record* of the

⁹⁴ Mack, *The Shepherds*, pp 10-11.

⁹⁵ Staples, *They Made Their Destiny*, pp 311-327.

⁹⁶ Pratt, *National Handbook of Australian Industries*, pp 562-4.

⁹⁷ Staples, *They Made Their Destiny*, pp 311-327.

⁹⁸ B H & R G Knight, *Builders' Materials* (London 1948 [1939]), pp 55, 59, 63.

⁹⁹ W H Warren, *Australian Timbers* (Sydney 1892) p 1.

¹⁰⁰ 'Report on the Resources of the Colony of Victoria', in *Transactions of the Philosophical Institute of Victoria*, IV, part II (September-December 1860), pp 21-4.

Intercolonial Exhibition of 1866-7 identified stringybark as *E obliqua*, a hard, straight-grained timber resembling the blue and white gums. It was of an inferior class and notorious for warping, twisting and dry rot, but was used for a variety of building purposes, and readily split for posts, rails, palings and shingles. The *Official Record* also described messmate, *E fissilis*, which again had many of the characteristics of white gum, was hard and straight-grained, and was readily split for the same purposes as the stringybark.¹⁰¹ In fact these three timbers were one and the same, *E obliqua*, subsequently known as messmate stringybark in contradistinction to the stringybarks of the other colonies.

R T Baker's *Hardwoods of Australia*¹⁰² in 1919 marked a watershed in the description and promotion of Australian timber, in that it was a lavish volume copiously illustrated with colour plates showing the detailed appearance and grain of each species. Though biased towards New South Wales it was surprisingly national in character, and comparable with the same author's *Building and Ornamental Stones*. There was to be no further work on this scale, but from the late 1920s the Council for Scientific and Industrial Research produced a multitude of small publications on all aspects of the properties of Australian timbers, their seasoning, their shrinkage, the effectiveness of preservative treatments, and other topics. In the 1930s the CSIR Forest Products Division began to publish in instalments its work upon the first comprehensive key to the identification of eucalyptus timbers.¹⁰³

It was soon afterwards, in the face of potential wartime shortages, that the CSIR addressed the question of wasteful over-design in the first edition of Thomas & Langlands's *Building-Frames Timbers and Sizes*, of 1941.¹⁰⁴ The first issue was that all timbers had been treated as if they were the same. Thousands of buildings had been constructed of oregon, hoop pine and cypress pine, and it would be reasonable to assume that stronger and stiffer hardwoods could be used in smaller sizes.¹⁰⁵ The second issue was that, except for discarding rubbish, it was not the practice to grade Australian timbers¹⁰⁶ - in marked contrast to Baltic timbers (as reflected in the markings discussed below). The third issue was what performance it was reasonable to expect - as sizes were reduced to the minimum required in structural terms, rigidity decreased and vibration and noise increased correspondingly. With these issues in mind the authors produced tables for the sizes of bearers, joists and other members, according to the class of construction required, for different spans and categories of live loading, and for four classifications of timber, each in either standard or common grade.

¹⁰¹ Intercolonial Exhibition of Australasia, 1866-67, *Official Record* (Melbourne 1867), pp 215-6.

¹⁰² R T Baker, *The Hardwoods of Australia and their Economics* (Sydney 1919).

¹⁰³ H E Dadswell & Maisie Burnell, *Methods for the Identification of the Coloured Woods of the Genus Eucalyptus* [CSIR Division of Forest Products technical paper no 5] (Melbourne 1932); H E Dadswell et al, *Methods for the Identification of the Light-Coloured Woods of the Genus Eucalyptus* [CSIR Division of Forest Products technical paper no 12] (CSIR, Melbourne 1935).

¹⁰⁴ A J Thomas & Ian Langlands, *Building-Frames Timbers and Sizes* [CSIR Division of Forest Products pamphlet 112 & technical paper 36] (CSIR, Melbourne 1941).

¹⁰⁵ Thomas & Langlands, *Building-Frames Timbers and Sizes*, p 7.

¹⁰⁶ Thomas & Langlands, *Building-Frames Timbers and Sizes*, p 8.

h. intercolonial trade

The reliance of the colonies upon timber imported from Europe, from America, or from each other, varied enormously. In broad terms, New South Wales, Tasmania, Western Australia and Queensland had a good range of building timbers. So did Victoria, but the colony was prosperous, but much of the time the local cost of labour was so high as to make importation pay. South Australian timber was very limited, but adequate during the early years, when native pine was cut in 'the Pine Forest' which is now the Adelaide suburb of Nailsworth.¹⁰⁷ Local joinery timber was virtually confined to the cedar of New South Wales and Queensland until local hardwoods became fashionable after the 1890s, and therefore the other colonies imported either the cedar or other timbers from overseas.

New Zealand timber began to reach Port Phillip in quantity in the 1830s. Some kauri was imported from New Zealand at least by 1836,¹⁰⁸ and in 1838 J P Fawkner was advertising New Zealand pine logs and flooring boards for sale in Melbourne.¹⁰⁹ The source may well have been Gilbert Mair of Wahapu, who exported kauri to the United States at about this time.¹¹⁰ In 1847 G S Brodie was advertising 'Superior Cowrie Plank' brought by the *Teazer* from Auckland, in one to two inch [25-51 mm] thicknesses.¹¹¹ Later in the century much of the New Zealand timber trade was controlled from Melbourne, and only in a technical sense was the timber obtained from it an overseas import.

The New Zealand industry had suffered a recession in the 1870s and 1880s, with too many small and under-capitalised mills competing in over-supplied domestic and foreign markets. An alliance was therefore formed between Auckland's leading timber merchant, George Holdship, and David Blair, a leading Melbourne timber miller and fleet owner, and these two, together with others such as the Melbourne timber merchant John Sharp, inaugurated the Kauri Timber Company.¹¹² The company was formed in Melbourne in 1888 to take over a large number of New Zealand timber companies and their extensive estates, both freehold and leasehold.¹¹³ The second ordinary general meeting in May 1889 was told that there were 124 million super feet of logs and sawn timber in stock, promising responses were coming from London and Glasgow, and a local board of directors had been established in Auckland to mind the company's interests.¹¹⁴ Soon the *Blenda* was despatched to Glasgow with a cargo of very carefully selected kauri fitches, to test the market.¹¹⁵ In 1906 there were eighty-three sawmills and joinery factories in Auckland province,

¹⁰⁷ J W Bull, *Early Experiences of Life in South Australia* (2nd ed, London 1844), p 131.

¹⁰⁸ J B Cooper, *Victorian Commerce 1834-1934* (Melbourne 1934), p 11.

¹⁰⁹ *Melbourne Advertiser*, 8 January 1838, quoted in Robert Moshel & John Witorz, 'Building Material imported into Victoria from the first Settlement until 1856' (BArch, University of Melbourne, 1971), p 46.

¹¹⁰ William Toomath, *Built in New Zealand* (Auckland 1996), p 18.

¹¹¹ *Port Phillip Herald*, 12 May 1847, p 3, quoted in Moshel & Witorz, loc cit.

¹¹² Kerry Pink, *Kauri 100 Years: the Centenary of Kauri Timber Company Limited 1888-1988* (Smithton [Tasmania] 1988), pp 9-10.

¹¹³ Andrew Lemon, *The Young Man from Home* (Melbourne 1982), p 91.

¹¹⁴ *Australasian Builder & Contractor's News*, 1 May 1889, p 449.

¹¹⁵ *Australasian Builder & Contractor's News*, 1 June 1889, p 508.

and more than five thousand employees. By the late twentieth century, however, the company was focussed on the hardwood forests around Circular Head in north-western Tasmania.¹¹⁶

Kauri and Rimu pine came from New Zealand in large logs; jarrah from Western Australia; cedar from New South Wales and Queensland¹¹⁷ (the Tweed, Bellingen, Nambucca and Richmond Rivers); pine from the Richmond; and hardwoods including ironbark, blackbutt, blue gum, flooded gum, spotted gum, tallow wood, and turpentine, from Port Stephens, Brisbane Water and elsewhere.¹¹⁸ By the 1880s Victorian imports from the neighbouring colonies were running annually at about seven million super feet [650,000 m²] of kauri, two million [186,000 m²] of cedar, and four hundred thousand [37,000 m²] of white pine.¹¹⁹ In 1886 the first shipment of what was described as a cedar reached Melbourne from New Guinea on the *Diamond*, and a party led by one Page had cut two million feet [47,000 m³] of the timber.¹²⁰

Although Western Australia was a timber exporter the surge in the demand for building timber was met in 1885 by importation from the eastern colonies. Indeed much of the timber worked by Bunnings was from further afield: New Zealand kauri, white pine, Californian redwood and cedar, American doors and shelving, and so on.¹²¹ This is not quite as surprising as it might sound given that even local timber would have to be shipped by sea to many Western Australian destinations, thus substantially reducing the price differential between the local and the imported product. In Queensland up to World War I, according to Watson, only the stumps, floor joists and studs of a house were of hardwood: after the war the external walls, roof framing and flooring might be as well.

i. foreign imports

Hardwoods were not much favoured for building purposes in the nineteenth century, and in the coastal cities a large proportion of building was done with imported timbers such as Baltic pine, and later oregon from America. Peter Bell reports on an incomplete sampling from a wooden cottage at Burra, South Australia, of 1849. The weatherboards and skirtings are of spruce [*Picea* sp], which is common to both Europe and North America; the studs of yellow pine [*Pinus strobus*] from the eastern seaboard of North America; and the braces of Baltic pine [*Pinus silvestris*].¹²² Such a mixture would appear to be the rule rather than the exception.

The issue of low-priced American joinery was important. James Robinson of Geelong was an exception when he advertised in 1858 that he could produce sashes

¹¹⁶ Pink, *Kauri 100 Years*, pp 9-10.

¹¹⁷ Victorian Intercolonial Exhibition, *Official Catalogue*, pp 26-7.

¹¹⁸ *Sydney Mail*, 21 November 1874, quoted in Bobbie Hardy, *Their Work was Australian* (Sydney 1974), p 16.

¹¹⁹ *Lord & Hughes's Monthly Circular* (Melbourne, 2 June 1884), passim.

¹²⁰ *Australasian Ironmonger*, 1 April 1886, p 21.

¹²¹ Ingrid van Bremen, 'The New Architecture of the Gold Boom' (PhD, University of Western Australia, 1990), pp 139, 141.

¹²² Peter Bell, 'An Early Timber Cottage at Burra' [typescript], p 11.

and doors to compete with the imports in both workmanship and price,¹²³ but in 1860 a Melbourne carpenter complained about the imports to the Select Committee on the Tariff:

Doors, windows, mouldings of every description, sawn and plain boards, interfere with us. The Boards are planed ready for making shelves, so that there is the least possible labour of the carpenter required.¹²⁴

The development of protectionist policies in Victoria, as distinct from New South Wales and the other colonies, was probably what fostered the numerous joinery and moulding works of subsequent decades, but the raw timber for such work was almost all imported until the 1890s.

The imports tended to be sawn timbers from Britain and America and 'deals', or large pieces which still required to be sawn up, from Baltic ports: these would often be broken up into boards by mills near the wharves in the various colonies. Regardless of botanical distinctions, any red or white timber from the Baltic might be referred to as 'fir' (or Scotch fir if sawn in Scotland), any red or yellow timber from America was called 'pine', and any white timber from either place was called 'spruce'. 'Scotch flooring' was Baltic red or white deal which had been sawn by mills in Scotland, and weatherboards sawn in Britain were similarly imported.¹²⁵ An unusual reference in 1853 is to '100 Uffers in lengths 15 to 26 ft. long', apparently of Baltic origin.¹²⁶ An 'upher', as Gwilt spells it, is a fir pole of four to seven inches [100-180 mm] diameter, twenty to forty feet [10-20 m] long, usually partly squared off, for use in scaffolding, ladders, and, when split, in common roofs. Other spellings are 'juffer' and 'ufer'.

At the mid century local practice, especially in Melbourne as the biggest importer, closely reflected that of Britain. Nearly all the fir timber used in Britain was obtained from Baltic ports, mainly Memel, Riga, Dantsic [Gdansk] and from Sweden. Memel was regarded as the most convenient to use, Riga as the finest, Dantzic, if knot-free, the strongest, and Swedish as the most durable. Deals were also brought from Norway, Russia and Prussia. The best for framing were the Norwegian, especially battens from Christiana [Oslo], and Christiana whites were good for panelling. Christiana, Petersburg and Onega timbers were favoured for flooring. Yellow pine was regarded as inferior, especially where strength was required or damp was a problem, but by the mid-century red pine was accepted as about equal to the Baltic timbers.¹²⁷

From the United States amounts of sawn oregon varying from about three to nearly seventeen million feet were imported, together with substantial quantities of sawn pitch pine, clear pine, white pine shelving, and Californian redwood. Some shingles were also imported from America, appearing even at Rockhampton (along with Tasmanian ones) in 1865.¹²⁸ Up to 52 million running feet [1.5 million linear metres]

¹²³ John Tanner, *The Geelong Directory for 1858* (Geelong 1858), p 267.

¹²⁴ Victoria. *Votes & Proceedings of the Legislative Assembly*, 1859-60, II, 237, D 26: Progress Report from the Select Committee on the Tariff, p 82, evidence of Henry Scott.

¹²⁵ Victorian Intercolonial Exhibition, *Official Catalogue of Exhibits* (Melbourne 1875), pp 26-7.

¹²⁶ *Auction Mart*, 25 April 1853, p 1.

¹²⁷ *Kelly's Practical Builder's Price Book, &c* (Thomas Kelly, London 1853), p 5.

¹²⁸ *Bulletin* [Rockhampton], 21 January 1865.

of floorboards were imported from the United Kingdom and the Baltic, anything from twenty to nearly a hundred thousand red deals from the United Kingdom, and about seventy thousand deals from the Baltic.¹²⁹

More exotic imported timbers are harder to trace, because both of inadequacies in the statistics available, and of inconsistencies in the naming of them. In the 1840s and 1850s, however, considerable numbers of buildings were imported from Singapore, usually made of what was described as cedar, and/or of teak, which generally meant meranti or dedaru, though rengas, a superior timber, is also found in some surviving examples. Meranti is has been identified in both prefabricated and other buildings of the 1850s.¹³⁰ In 1853-4, when the importation of Singapore houses was at its peak, some separate consignments of timber appear as well, as in February 1853 when William Tennent & Co of Melbourne offered by auction:

2253 planks of 16 ft [4.8 m] 10 x 1 [250 x 25 mm] Singapore cedar
 5514 do of 11 ft [3.3 m] 10 x 1 do, the whole planed and edged
 100 posts of 7 ft [2.1 m] 6 x 3¹/₂ [150 x 85 mm] ditto
 300 rails of 9¹/₂ [2.1 m] 6 x ditto
 All morticed and ready for use. Terms at sale.¹³¹

In April an advertisement appeared for 5,700 planks of Singapore cedar, assorted scantling, two hundred beams (enough for about twenty houses), and two thousand flooring tiles.¹³² In August another auctioneer offered 60,000 feet [1,700 m³] of timber from Singapore, consisting of boards, planks, scantling etc.¹³³ An advertisement in January 1854 offered Singapore cedar boards in fairly small quantities, but also deals of 12 x 3 inches [300 x 75 mm], 10 x 3 [250 x 75], and 9 x 3 [225 x 75],¹³⁴ which is significant, as it meant that they would be broken down into scantling or boards by local mills, and that the resultant sizes would reflect local rather than Singapore practice.

At Nugent and Gosling's hotel at Queenscliff, Victoria, an advanced building in the Queen Anne style by Reed, Henderson & Smart, the ceilings were reportedly panelled in 'polished Russian pine',¹³⁵ but as Baltic timbers are not usually identified by their particular countries of origin, this may refer to something more distinctive than common deal - perhaps larch. However one of the most puzzling references comes as late as 1939 when a house overlooking Wattle Park, Melbourne, was reported to be the first to use Baltic pine boards on the exterior.¹³⁶ Whether this may have been a reference to some new form or profile is unclear, for the material was a very traditional one. Imported beech was used to build the stalls in stables at 'Glenalvon',

¹²⁹ *Lord & Hughes's Monthly Circular* (Melbourne, 2 June 1884), passim.

¹³⁰ The weatherboards of a house of the 1850s at 370 Malvern Road, Prahran, Victoria, have been identified by Dr J Ilic of the CSIRO as L R Meranti (*Shorea sp.*). Meranti has also been found in a Singapore-made house, now at 136 Sackville Street, Collingwood, and in the lining boards of the house 'Seafield', Port Fairy, Victoria. Miles Lewis, *370 Malvern Road, Prahran* (mimeograph report, Melbourne 1989), p 12.

¹³¹ *Melbourne Auction Mart*, 7 February 1853, p 5 [Townsend Index].

¹³² *Melbourne Auction Mart*, 25 April 1853, p 1.

¹³³ *Melbourne Auction Mart*, 26 August 1853, p 1 [Townsend Index].

¹³⁴ *Argus*, 6 January 1854, p 7 [Townsend Index].

¹³⁵ *Australasian Builder & Contractor's News*, 22 October 1887, p 380.

¹³⁶ *Herald*, 26 July 1939.

Mururundi, New South Wales, by J H Hunt in 1873-4,¹³⁷ for it was fine grained timber, easily worked, and favoured for uses such as door handles and furniture.¹³⁸ It was unlikely to splinter, and here all the edges were rounded to avoid injury to the horses. Early in the twentieth century James Moore & Sons were selling imported English oak, pin or coffee oak, first and second growth ash, common hickory, walnut, basswood or poplar, Japanese oak and ash. and 'special woods' including English becon, hornbeam, lancewood, ebony, greenheart, lignum vitae and turkey box.¹³⁹

In 1928 Millar's Timber & Trading Co were selling Philippine mahogany and Pacific maple, mainly for panelling, joinery and furniture.¹⁴⁰ So were A C Ingham & Co of Sydney.¹⁴¹ In 1936 Andrew Cook & Sons of Newcastle were able to import Lamson brand Philippine maple from Mindanao Island direct to Newcastle, and they also stocked red lanan, white lanan and tanguile.¹⁴² In 1941 the price list of the Timber Merchants' Association of Melbourne and Suburbs (perhaps a cooperative marketing arrangement to meet wartime requirements) listed Borneo cedar, Pacific maple, Philippine mahogany, Bataan mahogany and Japanese oak.¹⁴³

As milling operations developed in the north of the state, California, so recently an importer of timber from Australia, by 1853 became an exporter. It seems to have been in about 1853-4 that massive imports from North America killed off the boom in Tasmanian timber which had resulted from the Victorian gold rushes.¹⁴⁴ The first large shipment from San Francisco, which reached Melbourne at the end of 1853, consisted of six hundred cubic metres of timber and 100,000 laths.¹⁴⁵ A year later two ships carrying 613 cubic metres reached Sydney,¹⁴⁶ and soon Sydney's importations came to exceed Melbourne's. With the development of circular sawmills in California these quantities increased further. By the mid-1850s 'Sacramento cedar' was being advertised in Sydney, but later much of the imported timber was described as 'oregon', a term embracing various species, but principally douglas fir [*Pinus douglassii*], which came especially from Puget Sound.¹⁴⁷ One ship reached Sydney in 1860 with a cargo of 2055 cubic metres. Exports from Puget sound continued into the twentieth century, and shipments of redwood in excess of two thousand cubic metres were common. Even larger quantities arrived from San Francisco, and others from Eureka, California; Chemainus, British Columbia; and Vancouver.¹⁴⁸

¹³⁷ Peter Reynolds & Joy Hughes, 'Private Practice: Works 1869-1904', in Peter Reynolds, Lesley Muir & Joy Hughes [eds], *John Horbury Hunt: Radical Architect 1838-1904* (no place [Sydney] 2002), p 111.

¹³⁸ [Francis Young], *Every Man His Own Mechanic* (London, no date ?c1882 [c 1875]), p 19.

¹³⁹ James Moore & Sons Pty. Ltd., *Price List 96 August 1913* (Melbourne 1913), p 5.

¹⁴⁰ *Australian Home Beautiful*, 1 December 1928, p 84.

¹⁴¹ *Building*, 12 October 1928, p 12.

¹⁴² Andrew Cook & Sons Ltd, *Price List* (Newcastle [New South Wales] 1936), p 33.

¹⁴³ Timber Merchants' Association of Melbourne and Suburbs, *Price List of Timber, Joinery, Etc 21st June 1941* (Melbourne 1941), p 11.

¹⁴⁴ Fenton, *Bush Life in Tasmania*, pp 89-90.

¹⁴⁵ *Argus*, 12 December 1853, p 4, quoted in Peter Barrett, 'Building through the Golden Gate: Architectural Influences from Trans-Pacific Trade and Migration between Australia and California 1849-1914' (Master of Planning & Design, University of Melbourne, 2001), p 57.

¹⁴⁶ *Sydney Morning Herald*, 15 & 20 December 1854, p 4, quoted in Barrett, 'Building through the Golden Gate', p 57.

¹⁴⁷ Barrett, 'Building through the Golden Gate', p 58.

¹⁴⁸ Barrett, 'Building through the Golden Gate', p 85.

'Clear pine', pine shelving, tongued and grooved lumber, laths and pickets were imported from the United States; pine shelving, tongued and grooved timber, spruce flooring, laths and pickets came from Canada. Oregon came in sections up to 600 mm square and lengths up to twenty-seven metres.¹⁴⁹ In the 1870s Hudson Brothers of Sydney stocked American pine, Quebec oak, and oak planking, in addition to the local timbers.¹⁵⁰ Rather oddly, in about 1880 John Sharp's Australasian Mills in Melbourne were selling 'Michigan and Californian red and white Pine'.¹⁵¹ Red pine linings were used throughout the 1892-4 extensions of 'Pastoria' homestead near Kyneton, Victoria.¹⁵² At the luxury end of the market, American walnut was used instead of deal for the bulk of the interior work at the Melbourne headquarters of the E S & A Bank, at the insistence of the client, Sir George Verdon.¹⁵³

In 1883 a Melbourne firm was offering at auction a number of Elford's Patent Portable Houses. They were said to consist of three rooms, measuring in all 20 by 24 feet (6 x 7.2 m), made mainly of Californian redwood, and with the pieces numbered so that they could be built by unskilled labour.¹⁵⁴ In 1884 John Ryrie bought from George King & Co of Sydney an American-made redwood building which is identified in his correspondence as an Elford house, at a cost of £100. He put it up in March-April 1884,¹⁵⁵ and it still stands at his property at Maffra, via Dalgety. Although nothing more is heard in Australia of the Elford houses or of other identifiable American makers, in about 1895 another house made of redwood was imported to Western Australia and put up at 11 Saladin Street, Swanbourne.¹⁵⁶

The rebuilding of San Francisco after the earthquake and fires of 1906, together with a building boom in Los Angeles, Pasadena and elsewhere in southern California, absorbed the greater part of the Oregon and redwood production of the west coast until about 1913.¹⁵⁷ In 1916 the Master Builders Association of New South Wales claimed that the cost of building in imported timber was close to that of brick and concrete, which now accounted for about 75% of the market.¹⁵⁸ But as the local demand in California eased, the pressure to export revived. From this phase is an imported bungalow at 161 The Esplanade, Brighton, South Australia, which seems to have been built in 1913, when the site was bought, or soon afterwards. Though it is

¹⁴⁹ Victorian Intercolonial Exhibition, *Official Catalogue of Exhibits* (Melbourne 1875), pp 26-7.

¹⁵⁰ *Sydney Mail*, 21 November 1874, quoted in Bobbie Hardy, *Their Work was Australian* (Sydney 1974), p 16.

¹⁵¹ *Sydney Mail*, 21 November 1874, quoted in Bobbie Hardy, *Their Work was Australian* (Sydney 1974), p 16.

¹⁵² Inspected 2002.

¹⁵³ Robyn Riddett, 'A Building "Worthy of the City"', in U M de Jong [ed], *W W Wardell: the Architect and his Era* (Geelong [Victoria] 2000), p 116, citing W W Wardell to Verdon, 17 August 1886, William Wardell letterbook, ff 602-9.

¹⁵⁴ *Australasian Steam Joinery, Saw, Planing, & Moulding Mills, Collins Street West. Melbourne, near Victorian Railways John Sharp* (Melbourne no date [c1880]), rear cover.

¹⁵⁵ First identified by Suzannah Plowman of Berridale, referring to King's letters and diaries held by the owner, Mrs Betty Osborne.

¹⁵⁶ Ian Kelly, 'The Development of Housing in Perth (1890-1915)' (MARCH, University of Western Australia, 1991).

¹⁵⁷ Barrett, 'Building through the Golden Gate', p 117, ref J S Ross, 'A Pioneer Lumberman's Story' (unpublished ms held by the Mendocino County Historical Society [1972]), p 30; *Sydney Morning Herald*, 27 July 1907, p 2.

¹⁵⁸ Barrett, 'Building through the Golden Gate', p 17, ref *Sydney Morning Herald*, 25 December 1915, p 4.

rumoured to be Canadian it seems more likely to be Californian, for it has redwood cladding on an oregon frame.¹⁵⁹ Two or three years later a very interesting example arrived: a Pasadena style bungalow called 'Redwood', made completely of Californian redwood including its stained weatherboard cladding and its shingle roof. It was brought to Sydney in 1915 and erected the next year by the Redwood Export Co and built as a demonstration model near the Rosebery Racecourse. It was then promoted by Stanton & Son Ltd (the Sydney real estate agent Richard Stanton), as agents for the Town Planning Co's model suburb in the area.¹⁶⁰ It was demolished in 1968.¹⁶¹

j. markings

The markings on timber are often a source of great confusion, but they usually fit into one of three broad categories: they are to do either with the production, the shipping, or the assemblage of the material. Production markings include those of the timber mill or the prefabricator, like 'Skillings and Flint, Boston'. There are also marks of quality and origin, which have been little reported in Australia. The most elaborate series of markings were those for red deals, which had different codes according to whether they were from:

Christiana [Oslo], Norway
 Drammen, Norway
 Fredericstadt, Norway
 Laurvig, Norway
 Skien Porsgrund, Kragero, and Throndjem [Trondheim], Norway
 Gothenburg, Sweden
 Gefle [now Gävle], Sweden
 Soderham, Sweden
 Hudiksvall, Norkoping, Sundswall, Stockholm, Lojune and Mo, Sweden
 Uleaborg, St Petersburg and Bjorneborg, Russia
 Dantzig [Dantzig], Prussia.

Many of these ports supplied timber in five grades of quality, one to four, plus one and two mixed. There were up to nineteen letter / numeral combinations used within a single grade from a single port. Deals from Russia and Finland were branded with the blow of a hammer, but those from Sweden had stencil markings in red paint.¹⁶² Even in the early twentieth century idiosyncratic distinctions persisted - for example Riga timber was marked with a triangle, meaning 'best middling', a cross formed of double lines for 'good middling', or the same cross in a circle for 'common middling'.

¹⁵⁹ Information from Peter Malatt, March 2000, and data sheet from McDougall & Vines, Brighton Heritage Review (1998). Andrew Hapek, the current owner, advises that oral tradition, through a former owner, dates the house to the 1890s. This is possible in the sense that the land was already at that time held freehold, in eighty acre [32 ha] lots, prior to close subdivision: however the style and form support the later date.

¹⁶⁰ *Building*, October 1916, reproduced in Graeme Butler, *The Californian Bungalow*, p 30. See also J M Freeland, *Architecture in Australia: a History* (Melbourne 1968), pp 228-9.

¹⁶¹ Max Kelly et al, *Demolished for the Public Good* (Glebe [New South Wales] 1988), p 74.

¹⁶² P B Eassie, *Wood and Its Uses* (Gloucester 1874), pp 5-8.

There were other codes for Dantzig timber, and there were also codes which combined the identity of the shipper and the quality, such as 'P.B.2' for St Petersburg timber of Peter Belaieff's second quality.¹⁶³ During the twentieth century the system seems to have been somewhat simplified, but additional marks were introduced for other timber-producing countries such as the United States, Canada and Japan. Already by 1901 there seem to have been generic markings for American timbers, for Leaning's *Buildng Specifications* recommends specifying American whitewood only of the type branded 'M' in a horizontal diamond, and wal;nut similarly branded 'K'.¹⁶⁴

A house in South Australia has one or more weatherboards stencilled 'www' on the rear, which would suggest that the timber was 'sixths' or the lowest grade, from the Wifsta Warfs Bolag, a sawmill in the Sundswall district of Sweden.¹⁶⁵ In this case, however, there is a problem, as the boards are believed to be of redwood and the house to have been imported from America in about 1913.¹⁶⁶ The markings may therefore be those of a sawmill in America, or simply the initials of the consignee - the person to whom it was sent. For the range of markings goes well beyond those of the timber producer.

Shipping marks might include the name of the shipper or the ship, stowage instructions, the symbol or initials of the consignee, and finally identification marks for each bundle. Gromoff Petersburg deals were marked 'C. and Co.' for the shippers, Clark & Company.¹⁶⁷ The name of the ship was usually stencilled, as 'VORWARTS'; stowage instructions like 'stow aft' may be painted or stencilled. The consignee might be indicated by a triangle, oval or other shape containing initials of a company, as in 'C T & Co' (for Caldwell, Train & Co), or a private person such as 'E de C' for Edward de Carle or 'J A G' for J A Gregory. Edmund Bowman, in Adelaide, wrote to his father in Van Diemen's Land:¹⁶⁸

dear Father, if you should happen to send any goods be sure to put a mark on the bags so they will be known. Like this, E.B. You will need three bills of lading, one for the Captain to keep, one must come to me in a letter, and the other you must keep.

This is really only the most elementary level of identification, because usually the consignee's initials will be augmented by combinations of letters, numbers, symbols and shapes, which would appear on the package or the outermost board or piece in the bundle, and would match an entry made in the margin of the bill of lading, allowing the consignment to be checked.

It is interesting to compare two prefabricated buildings imported to Melbourne from Robertson and Lister of Glasgow in about 1853. The timber lining of 399 Coventry Street, South Melbourne, has markings such as a diamond containing the letters 'RAP'

¹⁶³ P N Hasluck [ed], *Cassell's Carpentry and Joinery* (Philadelphia 1912), pp 43-6. See also Henry Adams, *Cassell's Building Construction* (London, no date), pp 7-8.

¹⁶⁴ P N Hasluck [ed], *Cassell's Carpentry and Joinery* (Philadelphia 1912), pp 43-6. See also Henry Adams, *Cassell's Building Construction* (London, no date), pp 7-8.

¹⁶⁵ Hasluck, *Carpentry and Joinery*, p 52.

¹⁶⁶ The house is 161 The Esplanade, Brighton, South Australia.

¹⁶⁷ Hasluck, *Cassell's Carpentry and Joinery*, p 45.

¹⁶⁸ Elizabeth Warburton, *Martindale Hall* (Adelaide 1979), p 20.

followed by a dollar sign with angled slashes, then a numeral. RAP are the initials of the consignee, Robert A Patterson. The Brown Brothers store at Geelong has a diamond, a 'g', a similar dollar sign, and a numeral. The diamond contains a symbol consisting of two Bs, one reversed so that they share a common vertical, and presumably standing for Brown Brothers. The 'g' may refer to Geelong. In this case a similar code appears on the corrugated iron sheets, confirming that it is to do with the identification of the consignment rather than being anything specific to the timber trade.

Carpenters framing a building traditionally identified each piece with Roman numerals, originally introduced in medieval times before the introduction of Arabic numerals, and continued into the nineteenth century because they could be cut with a chisel. Some Arabic numerals were used in the early fifteenth century, despite the difficulty of cutting them,¹⁶⁹ but these are of no relevance to Australia. In the Roman numerals the number of strokes was economised by eliding figures, so that XV might become a V with an extra slash through the left arm,¹⁷⁰ and XX, became two parallel strokes in one direction intersected by a single stroke in the other. Numerals like IX and XI, which could be mistaken for each other when seen upside down, were replaced by other versions, like VIII. Because V was often inscribed upside down, even IV and VI would be confusing, so four became III.¹⁷¹ These markings appear comonly in buildings of local construction, especially in principal members such as those of roof trusses.

In Germany another system of marks was used to identify particular rooms.¹⁷² In the south-west and some neighbouring areas the plan was considered not as a sequence of bays as in Britain, but also as a series of parallel naves, so that timbers had to be identified by both bay and nave. Numbering started at the *Stube*, or principal heated room at one corner of the house. The orientation of the timber was indicated by the face upon which the mark appeared. Each timber was given a Roman numral indicating what type of member it was – main post, intermediate post, &c. Then it was given a tag to indicate its location: a number of triangular notches representing the number of bays along the building, and a number of lines indicating how far across the building. To indicate the floor level other triangular notches were made, quite detached from the numerals. According to Stefan King all these marks were cut with a knife rather than a chisel.¹⁷³ Such markings are used in German-built houses such as 'The Heights' at Geelong and 'The Chalet', Sydney, in each case beautifully cut.¹⁷⁴

¹⁶⁹ Daniel Miles, 'Arabic Assembly Marks on Frames', *Mortice and Tenon*, 7 (Spring 1998), pp 14-15.

¹⁷⁰ Huddle reports this at 'The Heights', Geelong, together with V//, XI and V. Lorraine Huddle, *The Heights* (Belmont [Victoria] 1985), p 48.

¹⁷¹ Trudy West, *The Timber-Frame House in England* (Newton Abbot [Devonshire]. no date), pp 60-61.

¹⁷² W H Tishler, 'Fachwerk Construction in the German Settlements of Wisconsin', *Winterthur Portfolio*, XXI, 4 (Winter 1996), p 281, after Karl Meyer, *Fachkunde fur Zimmerer in Fragen und Antworten* (Karl Meyer, Hamburg-Rissen, no date [1930s]). I have noted triangular flecks as illustrated by Meyer in a reconstructed outbuilding of 1821 at the Hohenloe Frielandmuseum, Germany.

¹⁷³ Stefan King, '18th Century Carpenters' Marks in South-West Germany', *Mortice and Tenon*, 2 (July 1995), pp 6-7.

¹⁷⁴ Huddle, *The Heights*, figs 42, 49, 50.

These marks (either English or German) need not be confused with the sometimes similar versions of Roman numerals used on logs to indicate cubic content,¹⁷⁵ for the latter are not chiselled but in chalk. In prefabricated buildings lettering is often painted on: for example, each joint is assigned a number, and that number is hand painted (rather than stencilled) onto every member where it runs into that joint. Sometimes the members rather than the joints are numbered sequentially, and for this purpose stencilling may be used. Sometimes the labels were more descriptive, like 'bottom plate' or 'window head'.

Similar questions arise in relation to the prefabricated Chinese houses brought to Australia in the 1840s and 1850s. Some have Chinese or other characters on the timber, and one in particular has been as fully researched as possible. This is a house built in East Melbourne in 1853, moved to Mentone in 1899, and from there moved in recent years to its temporary accommodation in Collingwood. Almost every original member carries markings of two sorts. The first is a stencilled letter 'A' accompanied by a sort of star consisting of four slender leaf-like shapes at right angles. The star may have been the brand of a particular manufacturer or carpenter, and the A reference to identify the timbers for this house in particular, but the reverse is also possible. The second is a Chinese character. Most of the characters are not otherwise helpful, as they translate into words like 'gold', 'birth', 'beauty', 'water', and 'road', but there are some which might be construed as instructions, such as 'double', 'connection', 'secure', and 'fixed' and there is one proper name, 'Lee'. In some cases the characters of adjoining members match at the junction, suggesting that they were intended as a guide to assembly, though as the match is in other cases not found, the instructions cannot have been closely adhered to.

Some locally built structures are rumoured to be the work of Chinese carpenters, often, it is claimed, executed by the Chinese while on their way to the goldfields.¹⁷⁶ Such stories should generally be viewed with great scepticism, for there is nothing to suggest that many of the peasant Chinese goldseekers were trained carpenters. But at 'Egalabra' woolshed, New South Wales, there appear to be Chinese characters on the framing timbers.¹⁷⁷

Hewing marks, such as X, N and M, have been reported in Britain,¹⁷⁸ but not in Australia, no local examples of plumb and levelling marks have been reported, though as they were used in England¹⁷⁹ it seems likely that examples will be found in due course. Ritual marks, to protect a building from witchcraft, are less likely to be found because they barely persisted beyond the eighteenth century in Britain itself.¹⁸⁰

¹⁷⁵ Hasluck, *Cassell's Carpentry and Joinery*, p 49; Adams, *Building Construction*, p 9.

¹⁷⁶ Because the Victorian government imposed a poll tax on Chinese immigrants many were landed across the South Australian border at Robe, and travelled overland to the goldfields.

¹⁷⁷ Harry Sowden, *Australian Woolsheds* (Cassell, North Melbourne 1972), pp 84-5.

¹⁷⁸ Richard Harris, 'Hewing Marks at Singleton', *Mortice and Tenon*, 5 (Spring 1997), p 10.

¹⁷⁹ Henry Russell, 'Plumb and Levelling Marks at Charlton Court Barn?' *Mortice and Tenon*, 1 (June 1995), pp 4-7.

¹⁸⁰ Timothy Easton, 'Ritual Marks on Historic Timber', *Mortice and Tenon*, 7 (Spring 1998), pp 6-9.

g. recycled timbers

There is quite extensive evidence of the use of recycled timber in Australia, as might be expected in a place where labour has been expensive and where much of the timber in use was originally imported. A further factor was the practice of fitting out ships for the use of emigrants travelling in them, then stripping this work out for the return voyage in cargo. A South Australian settler reported in 1837 that he had been out to a ship moored in Holdfast Bay and 'purchased all the wood of the fittings of emigrants' cabins on board, including fifty doors with jalousie upper pannels'.¹⁸¹ And occasionally, it is at least alleged, timbers from wrecked ships have also reappeared in terrestrial structures.

Doors of exceptionally small size at the Robe Hotel, South Australia, are credibly held to have come from ships, as are elements of Blood's Cottage, near Melbourne. Studs and similar elements with beaded edges also seem to be of maritime origin, especially as they often appear in buildings and locations where the beading is neither visible nor functional. A piece can have a quirked bead on anything from one to four arrises, which would make sense in the confined spaces of a ship, where sharp edges might be uncomfortable, and also vulnerable to splintering. Examples of such timbers are found in the roof framing of 'Woodbine', Port Fairy, Victoria, in the stable partitioning of 'Black Rock House' near Melbourne, in two rafters only of a building at 370 Malvern Road, Prahran,¹⁸² and in a shed at 8 Glenelg Street, Portland.¹⁸³

Probably more common, if less easily recognised, is the use of rough boarding, either from cabin linings, or from packing cases or dunnage, as a wall lining. This was a convenient material to give some rigidity beneath a hessian or other fabric lining designed to take wallpaper.

¹⁸¹ *South Australian Record*, 8 November 1837, quoted in Gilbert, *Pioneers*, p 131.

¹⁸² Inspected 1989.

¹⁸³ Inspected 2004.