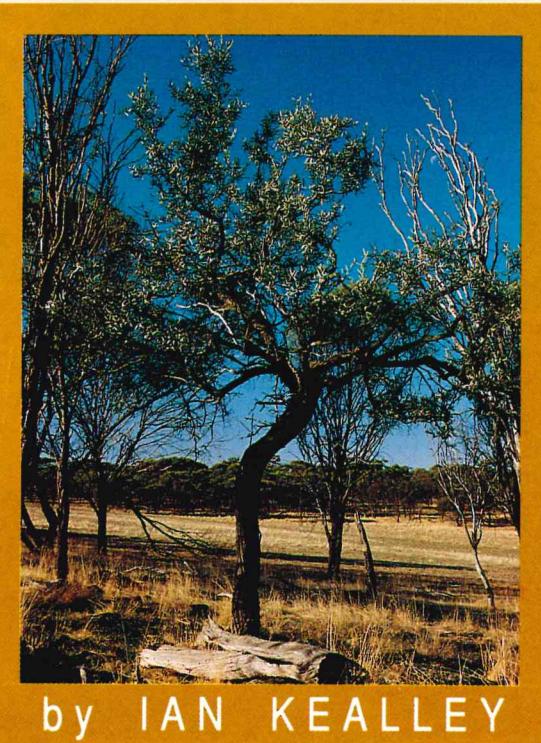


SANDALWOOD



DEPARTMENT OF CONSERVATION AND LAND MANAGEMENT

Fragrant Harvest



by IAN KEALLEY

Sandalwood conjures up many images. For some, it excites memories of Asian holidays, exotic fragrances and carvings. Older generations of farmers, prospectors and "bushies" think of the tough breed of sandalwood pullers who worked from bush camps. For the few remaining pullers it's a living. Sandalwood harvesting, one of W.A.'s first export industries, continues to thrive in remote parts of the State.

SANDALWOOD (*Santalum spicatum*) is a small tree or shrub 3 to 8 m tall and 10 to 30 cm in diameter, with sparse irregular spreading branches and dull grey-green fleshy leaves. It is a root semi-parasite associated with a range of hosts, and is slow growing, but well adapted to drought. The heartwood is highly valued for its aromatic oils.

The genus *Santalum* contains several species found in Asia, Australia, Indonesia and South Pacific Islands. Quondong (*Santalum acuminatum*), bitter quondong (*Santalum murrayanum*) and false sandalwood (*Santalum lanceolatum*) are close relatives. All occur in W.A.

Sandalwood is distributed from the W.A. coast and Wheatbelt through the drier areas of W.A. and S.A. to north of the Flinders Ranges. It grows on a wide range of soils with the best stands found where vegetation types mix, providing a wide range of hosts.

Growth is very slow. In the more arid regions, it takes 50 to 90 years for a sandalwood tree to reach 125 mm in diameter. Flowering depends on rainfall and can occur in any season, and the

small, primitive, pungent flowers develop into fruits with red-brown leathery skin.

Sandalwood seeds germinate after rain cracks the nut. Only 1 to 5 per cent germinate. Germination and survival is greater in research areas and plantations, but still generally less than 20 per cent. This, along with sandalwood's susceptibility to fire and grazing by

domestic and feral animals has resulted in low levels of regeneration outside conservation reserves.

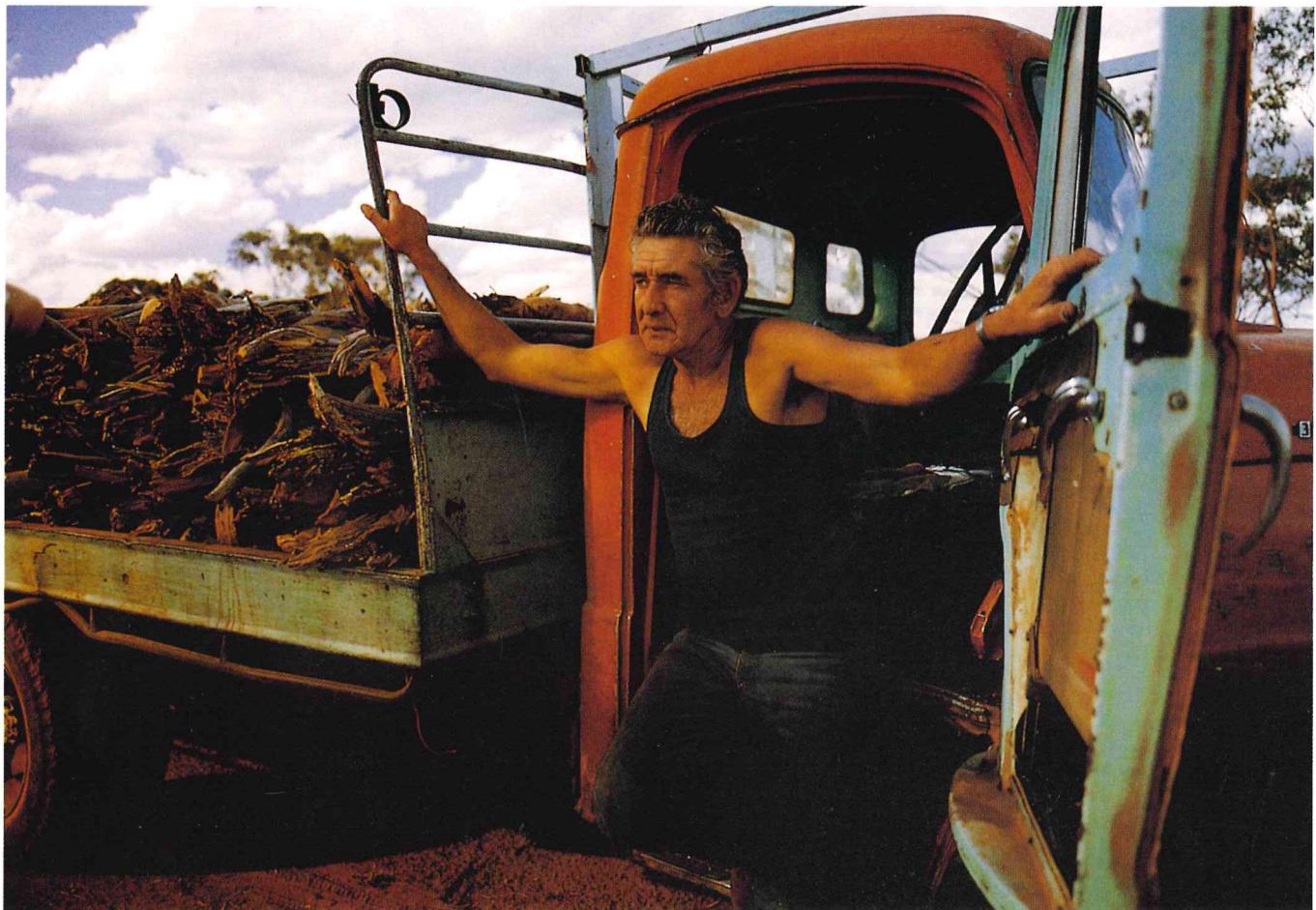
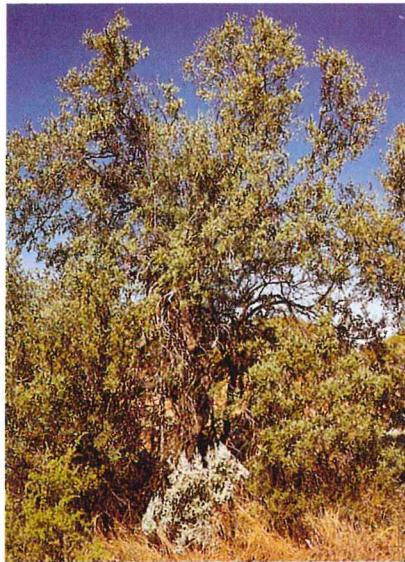
Once widespread in the Wheatbelt, today sandalwood is mainly found over 42 million ha of pastoral properties and vacant Crown land of the Eastern Goldfields, Murchison, North-Eastern Goldfields and Central Desert (Map 1).

The W.A. sandalwood industry has an annual export value of around \$10 million. The wood is exported to Taiwan, Hong Kong, Singapore, Thailand and Malaysia, where it is used to manufacture joss sticks used in religious ceremonies.

In arid regions sandalwood trees take up to 90 years to reach commercial size and natural regeneration is low, so harvesting is strictly controlled. ▲

Sandalwood pullers are a rugged breed: they often work from isolated bush camps in the outback. But the rewards can be high. Pullers receive at least \$900 per tonne for dead or green sandalwood.

Photo-Cliff Winfield ▼



EARLY HISTORY

In the early part of the nineteenth century there was an enormous trade imbalance against the Western Australian colony. In 1843 the value of native sandalwood was recognised and settlers were instructed to salvage and store wood for possible export.

In early 1845 a group of settlers shipped 4 tons to the Far East. When they received the excellent price of \$20 per ton, the Western Australian sandalwood industry began. By 1848 exports had leapt to 1335 tons, earning 45% of the colony's export income and making sandalwood the colony's primary export industry. For the rest of the nineteenth century, about 3000-4000 tons of sandalwood was exported each year, providing the colony with badly needed income.

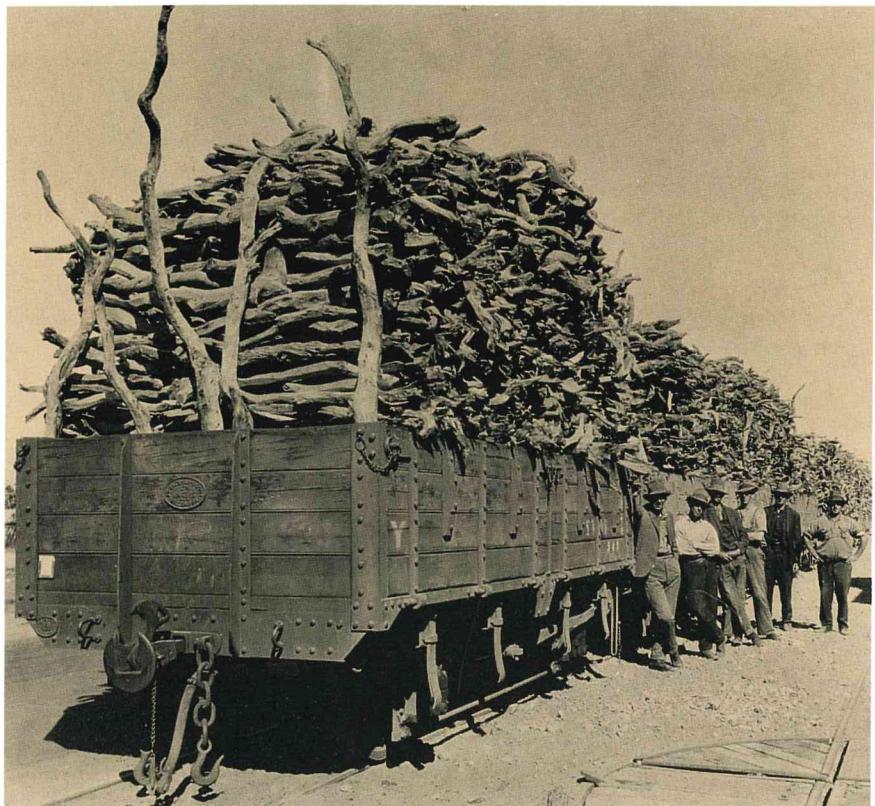
In those days, sandalwood harvesting was time consuming; it had to be cut, cleaned and hauled to the coast by bullock or horse teams for export from Fremantle, Bunbury, Albany or Geraldton.

The export trade picked up around 1900. Pullers were quick to capitalise on the opening of the Eastern Goldfields Railway in 1896, which gave access to large areas of uncut sandalwood in the interior. Sandalwood harvesting provided essential supplementary income for many prospectors and gold miners, and opened up many areas in the State's Goldfields.

In the late 1920s and early 1930s four companies were exporting sandalwood and competing for markets in China. There was no restriction on prices or quantities and pullers were usually only paid a subsistence wage.

When civil war broke out in China the market collapsed, and huge stocks of sandalwood accumulated at Fremantle and country rail sidings. Pullers were not paid and the industry was in chaos. To rationalize the industry and provide funds to pay the pullers, who were in dire straits, the Government agreed to underwrite the sandalwood stocks if the four companies merged. In 1929 a Sandalwood Act was passed and in 1930 the companies were amalgamated into the Australian Sandalwood Company.

In 1932 a Sandalwood Export Committee was set up, with representatives from the Western Australian and South Australian Governments, the Australian Sandalwood Company and the Co-operative



Sandalwood Company (S.A.). The Committee still operates, but without South Australian involvement, as the State no longer exports sandalwood.

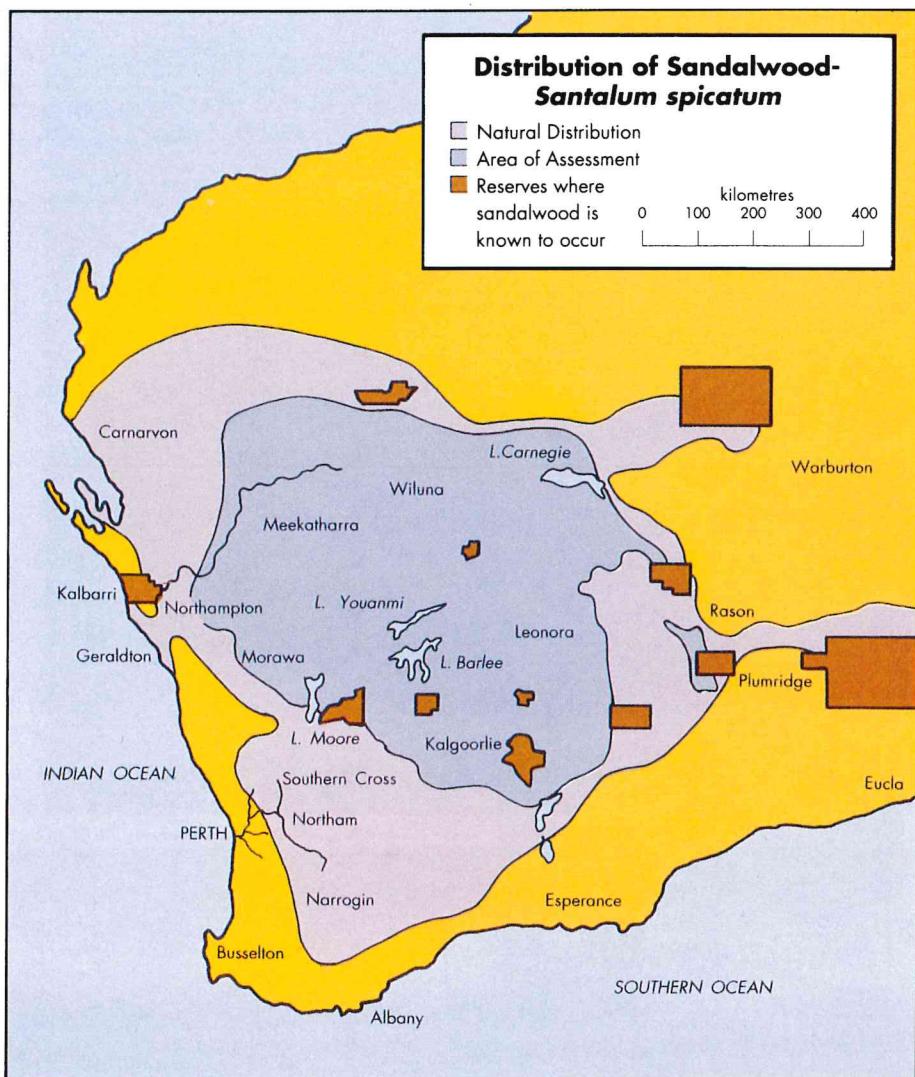
The Export Committee co-ordinates the industry. It determines policy, harvesting and management and sets an annual export quota based on availability, market needs and conservation. Although market demand for sandalwood is greater than the current export quota of 2000 tonnes, this figure ensures top returns and market stability.

CURRENT INDUSTRY

The W.A. sandalwood industry is now stable and profitable. The annual export quota is filled by full and part time contractors operating from mobile bush camps under CALM license. There are currently 21 licence holders with quotas from 5 to 300 tonnes per annum.

In earlier times, sandalwood pulling was a common activity associated with agricultural clearing. Now only a few people are licenced to harvest the tree. ▲▲

The new rail service to the Eastern Goldfields in 1896 opened up large areas of the Goldfields to the sandalwood trade. ▲



Contractors employ a further 50 people, and operate in the Goldfields, Murchison and Yilgarn and, to a lesser extent, at Shark Bay, parts of the Central Desert and in the North-Eastern Goldfields. Harvesting is strictly controlled by licence conditions.

Sandalwood is harvested as either green barked logwood or deadwood. No useful part of the tree is wasted. Trees are pulled or pushed from the ground, not felled or cut, because the roots, butts, stems and branches all contain valuable heartwood. Green wood was originally cleaned down to the heartwood with an adze; now only the bark is removed with a machine. Loose bark, dirt and charcoal are cleaned from deadwood.

Once cleaned, the wood is packed into pallets and transported to the Australian Sandalwood Company shed at Spearwood, where it is processed, sorted and packed for export to South-East Asia. Products include trimmed green and dead logs, butts, chips and powder.

CONSERVATION

Conservation is of paramount concern. Sandalwood may only be harvested if there is no damage to young plants, or alteration to the distribution or conservation status of the species.

Strict controls, including a minimum size for harvesting live trees are applied. No harvesting is allowed within a certain distance of water points, homesteads and outbuildings, main roads and access tracks. Seeds must be planted when harvesting green stems, and there are incentives to take a greater amount of deadwood and salvage dead trees (the proportion of deadwood was 61 per cent of the quota in 1988). Harvesting is restricted or banned in areas of high conservation value. These measures have greatly improved sandalwood conservation.

However, outside Crown reserves, grazing by animals like sheep, goats and rabbits prevents regeneration, and sandalwood, like a number of other species,

is declining as a result. It is also extremely fire sensitive, and more frequent fires since European settlement have had an effect.

RESERVES

Through sandalwood's range, 7.3 million ha of statutory reserves contain varying amounts of sandalwood.

Widespread harvesting before controls were introduced significantly reduced the sandalwood resource in the Wheatbelt and adjacent areas, and today there is a lack of suitable land for reserves in some pastoral areas, especially in the Murchison and Gascoyne.

Conservation reserves of representative sandalwood stands are adequate in the Goldfields, Yilgarn and Central Desert. Additional reserves are needed in the North-Eastern Goldfields pastoral areas.

RESEARCH

Initial research and experimental planting of sandalwood in the 1920s and 1930s at sites in the Wheatbelt and Goldfields revealed low germination rates, poor survival (around one per cent) and problems with grazing. Best results were achieved in water-gaining sites on good loam soils, where sheep and rabbit grazing could be prevented.

From 1980 to 1984 the Forests Department compiled comprehensive resource data, mapped the occurrence of sandalwood and calculated the total remaining resource. A major study on the regeneration requirements of the species was also carried out. This information is now used to manage the industry.

SCARP PROJECT

In September 1988 the \$1 million Sandalwood Conservation and Regeneration Project (SCARP), funded by the sandalwood industry and aimed at improving the conservation status of sandalwood, commenced in WA.

The priority is to conserve representative areas of sandalwood with viable populations of plants in an effective reserve system. Pastoral leases will be purchased for reserves and grazing will be removed. Reserves are being fenced to keep out feral animals.

Sandalwood plantations will also be developed. Trial plots have been

established and fenced in the Greenough Region, and a 40 ha block has been purchased in the Wheatbelt (near Narrogin) for a trial plantation in 1990. Site preparation and irrigation has been completed within the Ord irrigation area in Kununurra for planting of 8 ha of Indian sandalwood (*Santalum album*) in May 1990, and further 12 ha in May 1991. Plantings in remnant woodland on farms in the Merredin, Katanning and Greenough districts will also be encouraged.

Research will be carried out and existing research utilised to ensure the best possible management.

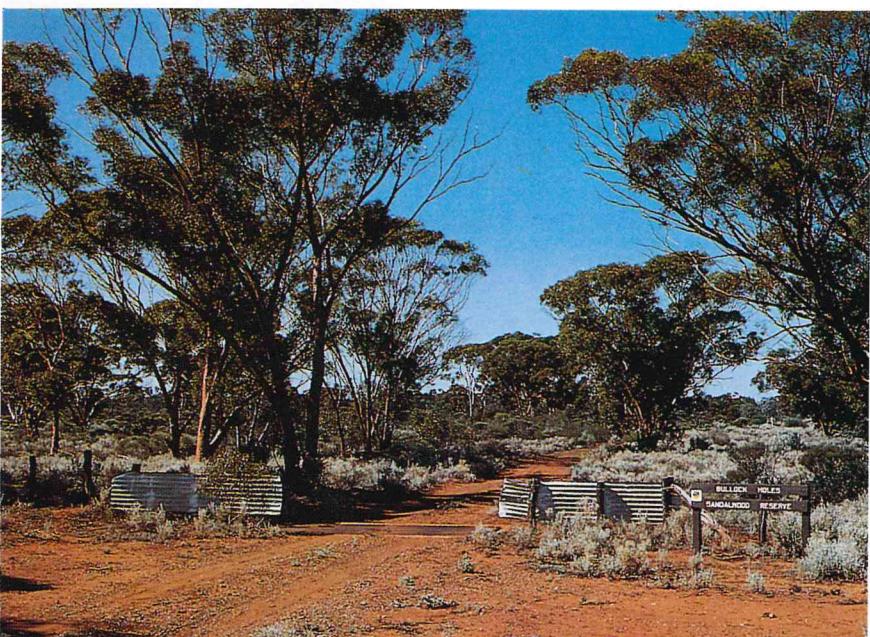
The project will also promote general awareness of sandalwood conservation and regeneration through publicity, information and interaction with landholders and the public. A permanent sandalwood display recently opened at the Museum of the Goldfields.

Sandalwood has played a vital role in W.A.'s history since it was first exported in 1845. Today it is still shipped from Fremantle and forms a living link with the past. Conservation through management and initiatives such as the SCARP project guarantee the sandalwood heritage will survive for future generations. □



It takes two workers about a day to harvest and clean one tonne of green sandalwood. The bark is removed with a machine before the wood is carted to Perth. ▲

Sandalwood reserves, like this one at Bullock Holes, offer the best chance for natural regeneration, as they can be fenced to keep out grazing animals. ▼



Characters & Rogues

Eighty five year old Bill Savage, who still pulls sandalwood 140 km east of Kalgoorlie with his "modified" 1927 Chev truck, is typical of the characters associated with the sandalwood industry.

The industry, by its very nature, attracts the rugged independent type prepared to rough it in the bush while gathering the next load. Bill, who has pulled sandalwood on and off for most of his life,

harvests his 50 tonne annual quota of deadwood from a rustic bush pole tent camp. Like many others, he works a two week shift before returning the 140 km to Kalgoorlie for supplies.

As well as the many characters there were a few rogues. My grandfather, Herbert Booth, relates the story of one unscrupulous puller operating around Kondongorring in the mid-1920s, when sandalwood pulling was associated with agricultural clearing and was a common activity.

The puller was only licensed for certain properties, but made a practice of employing "new chums" off the boats, setting up their camp on the boundary of his area and neglecting to mention the harvesting restriction on adjacent properties. Once pulled, the owners had little option but to sell the sandalwood.

The same puller was known to take the sandalwood buyers from the city, who measured the stacks in the field for payment, to his three stacks. That is, stack one, stack two then, by a circuitous route, back to stack one. The buyers were none the wiser and the puller increased his earning by a third.



WOODEN GOLD



Early Days of the Sandalwood Industry
by Len Talbot

Sandalwood has been used extensively in the Orient for many centuries; particularly in India and China where, because of its aromatic properties, it is highly prized for use on ceremonial occasions when joss sticks made from it are burned as incense.

Just when the sandalwood trade between India, China and the Indonesian Archipelago began no-one seems to really know, but it is certain that Europeans became involved in the trade almost as soon as they appeared in the area. In 1511 the Portuguese occupied Malacca and established a trading base there from which they hoped to be able to monopolize the spice trade between the East Indies and Europe. It wasn't long before Portuguese merchants from Malacca were sending their ships down to Timor and Flores to buy sandalwood for the trade they had established with China.

By the early part of the nineteenth century, the British were involved in the trade, having established sandalwood plantations in Mysore, India. Their chief market for the wood was Singapore, and it was this trade that indirectly led to the establishment of a sandalwood industry in Western Australia.

In 1843 a report reached Perth of the high prices being obtained in Singapore for the wood of a tree very similar to one found growing east of the Darling Range.

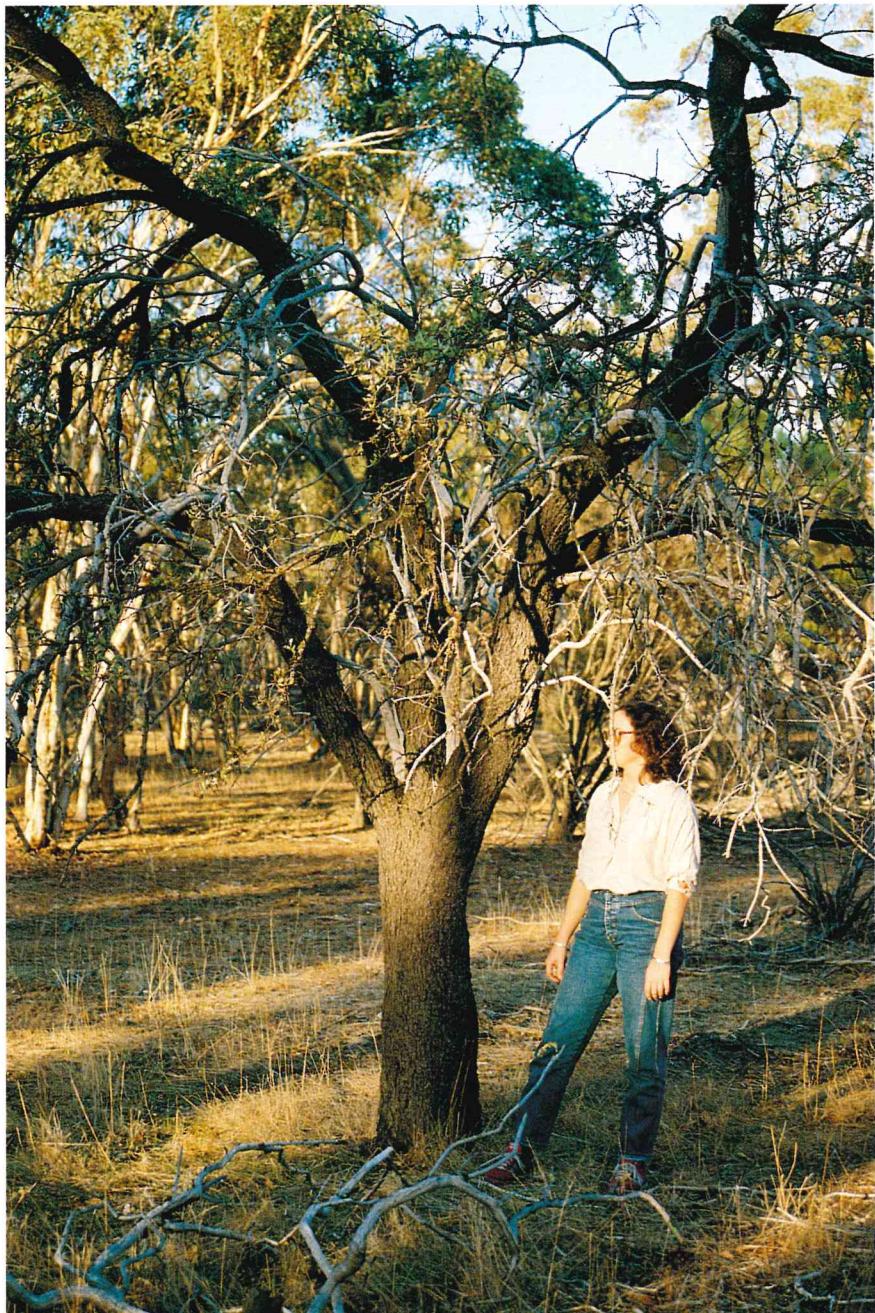
Up until that time the settlers in the Avon Valley, being ignorant of its value, had been using sandalwood for firewood and as a building and fencing material, or else simply grubbing it out and burning it when clearing their land. This was occurring at a time when the colony was desperate for an increase in exports to help balance its trade.

Governor Hutt, delivering a speech at the opening of the Legislative Council on 15 June 1843, spoke of the enormous imbalance of trade against the colony, which, he explained, had to be paid for by spending money out of the colony, or by issuing extra Treasury Bills. He emphasized that the colony could not continue to trade under such circumstances, and that it was essential some additional commodity be exported to help overcome the imbalance.

It was thought the best chance of increasing exports would be to use the limited capital available to exploit the still untapped, but abundant, resources

of the forests. Although several former colonists, particularly Sir James Stirling, Mr Dale and Mr Bland, had been working zealously to popularize the colony's timbers in the Old Country, very little had come of several attempts made to start a jarrah export industry. Sandalwood had been tested by an expert in England and pronounced equal to the East Indian wood, and settlers were advised that it should be possible to sell large quantities of it in England at "enormous prices".

It is no wonder then, that upon receiving the report, the Governor hastened to initiate enquiries into the possibility of exporting sandalwood to



This magnificent sandalwood tree grows on private property north-east of Perth. Sandalwood of this size is now a rarity in Western Australia.
Photo - Cliff Winfield

the Far East. At the same time, he notified the settlers of the report and instructed them not to burn or use sandalwood for any other purpose, but when clearing to stack it aside and have it available for export when required.

Early in 1845 a group of settlers set about establishing a sandalwood trade themselves. As an experiment they shipped four tons to the Far East and were delighted to receive for it what was then the excellent price of \$20 per ton. So began Western Australia's sandalwood industry.

FINANCIAL BOOM

By the end of 1846 another 32 tons had been exported and sold for \$640, and an additional 200 tons were cut and ready for export. In 1847 the 370 tons exported earned \$8888 at an average of \$24 per ton.

By then the industry was booming - the young colony's first, real financial boom - and all those who were able to do so, mainly Avon Valley settlers, became involved in sandalwood gathering. Consequently, in 1848 exports leapt to 1335 tons and earned \$26 706 of the colony's total exports of \$59 196. The other main items of export were: wool \$19 332 and whale oil \$7142. Sandalwood, therefore, only three years after the initial experimental export shipment, had

become the colony's primary industry.

In spite of the success being enjoyed in the industry, and the prosperity it was bringing to the colony, it was not without its critics. It was claimed that settlers in the Avon Valley were neglecting their properties and flocks while they were away in the bush cutting sandalwood.

It was, indeed, a very time-consuming occupation, and it would often have been necessary for a settler to be away from home for a fortnight at a time, or even longer. For, after having cut and cleaned the wood, it had to be loaded into wagons or drays and hauled to the coast by bullock or horse teams. Several early accounts indicate that many settlers carted their own wood.

HAULING

From those early accounts, too, it is apparent that bullock teams were used in preference to horse teams. Bullocks, although much slower than horses, were better suited to this type of work, especially in the very early days when roads were at best mere winding, narrow tracks. While horses needed a fairly straight line to work, and tended to become frightened and excited in soft ground, bullocks were easier to handle, could weave around obstacles better, work in awkward places, and would pull steadily under any

circumstances. They could live mainly off the rough bush plants, whereas horses required good grass, or else bran and chaff had to be carted to feed them, thus taking up valuable freight space.

Many accounts of journeys with bullock teams show that on the rough roads, 16 kilometres a day was about a normal day's journey. In the 1840s the roads from York and Toodyay to Fremantle were very rough indeed. In summer the deep, soft sand of the coastal plain, between the foot of the range and Fremantle, would have been as difficult to traverse as the boggy flats and creeks in the hills during spring and winter. Teamsters often travelled in groups so that they could help each other through the difficult stretches, sometimes having to hitch two teams together to pull the wagons through the worst patches.

Sandalwood at the foot of William Street, ready for shipment to China, 1864.
Photocopied from Batty Library Pictorial Collection, No p 20164.



There were other difficulties to be contended with. Bushfires, for instance, must often have caused concern by burning the scrub on which the bullocks could be grazed, and therefore making it necessary to locate new overnight stopping places where there was still feed for the team. Camp sites had to be near sufficient water for the team, and sometimes it would have been necessary to erect a temporary yard to stop the animals straying during the night. Perhaps the worst problem of all would have been the dreaded York Road poison, a pretty pea-flowered plant that was fatal to stock and which still grows abundantly in the Darling Range.

In time, regular stopping places and roadside inns were established along the roads; but the pioneer sandalwooders of the 1840s would have had to fend for themselves. It is not to be wondered at then that, under such conditions, a return journey by bullock team to Perth or Fremantle took a fortnight or even longer. No doubt the critics were justified in claiming that sandalwood-getters were neglecting their properties and flocks. Very likely though, the money they made compensated for it. Certainly it helped the colony at a time when such help was sorely needed.

TAXES - AND THE INDUSTRY DECLINES

Governor Hutt was succeeded by Governor Clarke in 1846, and the new Governor, desperately short of funds for public works, put an export tax of \$2 per ton on sandalwood early in 1847. The money thus raised was to be spent on the upkeep of roads. This provoked such a public outcry that the tax was soon dropped, but in its place a system of sandalwood licences was instituted, and then, only three weeks later, another Bill was passed, imposing a toll of \$1 per ton on all sandalwood prepared for export. The penalty for failure to pay the toll was a fine of \$100.

Not long afterwards the Governor re-introduced, and passed into law, his tax on sandalwood.

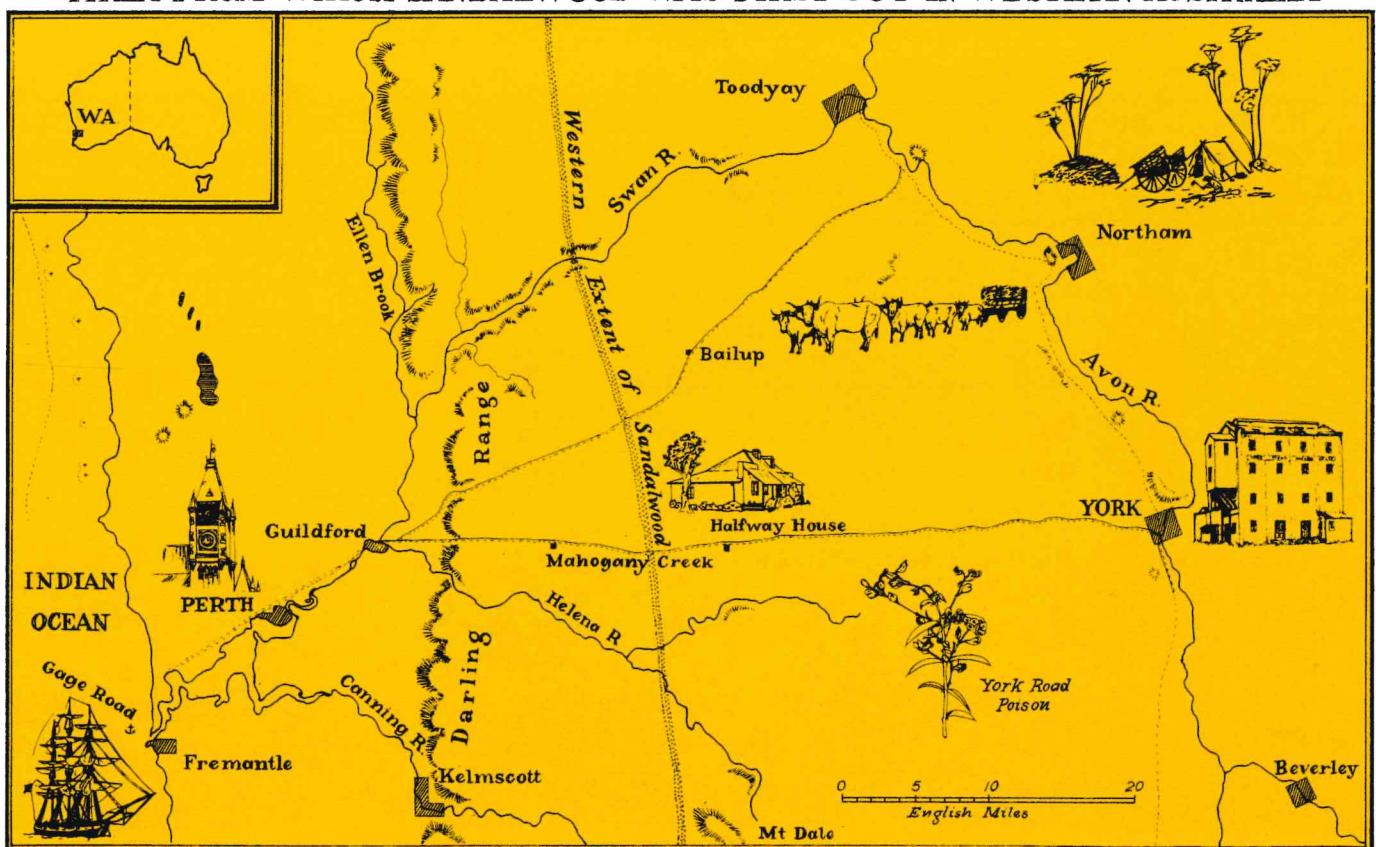
For the settlers this was the "last straw". Some even threatened to leave the colony over the harsh taxes. They claimed that after paying taxes, tolls and licences plus freight, which was \$8.25 to China and \$4.50 to Singapore, and commission on sales, there was not much left for them. It was shown that expenses, without the Government's charges, amounted to \$17 per ton.

A meeting was held in July 1848, between the Governor, the Chief Secretary, the Chairman of the Central Board of Works and representatives of the farmers and cutters. It was pointed out that the price had fallen slightly because of over-supply. The Governor was reminded that sandalwood had virtually saved the colony, and that it was ridiculous to aggravate the people engaged in the trade.

The Governor agreed to drop the tax again, but he retained the licences and the toll. It was also agreed at the meeting to meet the challenge from competitors by exporting a better class of log, and to end the practice of bartering sandalwood for tea; a practice, it seems, that was more advantageous to the merchants in China than to local exporters.

Area from which sandalwood was first cut in Western Australia.

AREA FROM WHICH SANDALWOOD WAS FIRST CUT IN WESTERN AUSTRALIA



Waiting for the ship in the 1890s.
Photocopied from the Battye Library Pictorial
Collection, No p 20165



Perhaps the Governor's harsh taxes helped to kill the industry, or perhaps it was entirely due to the competition from other sources, such as India and the Pacific Islands, but, whatever the cause, the sandalwood bubble had burst so far as Western Australia was concerned. After 1848 no more sandalwood was exported for eight years, except for 219 tons in 1851. The trade was resumed in 1857 when 280 tons were exported.

THE TRADE RESUMES

In between the collapse of the trade in 1849 and its resumption in 1857 many significant changes had occurred in the colony. The most important change was that Western Australia had become a penal colony. By 1857 about 5000 convicts had arrived, and in the same period a similar number of free immigrants came, thus trebling the 1848 white population of 4622. The wool industry had prospered and grown, more land had been opened up for farming, and flocks and herds had also increased considerably. Gangs of convicts had been put to work on the main roads, such as the York, Toodyay and Albany Roads, building small bridges and widening, straightening and realigning them. Overall, there was a general air of prosperity that had been lacking a decade earlier.

It is certain that by this time many of the original sandalwooders would have become prosperous farmers and graziers, or at least would have been well on the way to becoming such. This being so, it is doubtful that many of them would have been interested in returning to the sandalwood trade. One imagines that they would be fully occupied and happy

enough at this stage, nurturing their flocks and improving their properties.

But there were new settlers who would still have been struggling to develop their farms and who would, like so many of the original settlers, have welcomed the opportunity to make some quick money to help tide them over until their farms became viable. So, although there was now a new type of cutter entering the trade, the majority of sandalwooders would still have been settlers. There were, more full-time teamsters who could be hired to cart wood for them, so that long absences from the home would no longer be necessary.

A HARD LIFE

But as time went on, more and more full-time cutters joined the industry. There are descriptions on record of some of these men that give us a few glimpses into their lifestyle. They were mainly itinerants, living in tents or some temporary dwelling, who moved along the rivers at first, but later, as the wood got scarcer, went further and further out in their search for new sandalwood country. Often, it seems, they were married men who took their families with them.

They lived a hard life. There was no schooling for their children, nor was there any doctor or nurse closer than a day or two's travel. They lived off the land as much as they could, depending mainly on kangaroo for their meat. All cooking was done in camp ovens over an open fire.

Life must have been especially hard for the women. There is an account recorded of a cutter's wife who bore seven children, two of them in drays on the way

to seek a midwife.

Often a woman would be left alone with her children while the husband carted the wood, perhaps all the way to Perth, but more often to the nearest town, where he sold it to the local storekeeper or agent in exchange for stores. Some women spent much of the time they were alone at the back-breaking work of cleaning the sandalwood their husbands had already cut ready for the next trip. Heat and flies in summer, cold and damp in flimsy dwellings in winter, loneliness, sickness in themselves and among their children, and certainly sometimes even the death of a child through diphtheria or whooping cough, was their lot.

SANDALWOOD CUT OUT BY 1882

Sometime about the 1870s restrictions were placed on the export of sandalwood from India. The Mysore plantations had failed.

With the competition from India reduced, local exports increased dramatically, almost trebling between 1872 and 1882. In the latter year, 9605 tons were exported and earned \$192 000 (an increase from 3942 tons and \$63 072 in 1872). This peak was not surpassed for almost 40 years, until in 1919, 8998 tons exported brought in \$234 144 and the next year, 13 945 tons earned \$467 162.

After 1882 exports dropped away and though this was sometimes due to market factors, such as a fall in demand following oversupply, or outside events like the Sino-Japanese War of 1894, the main cause was the increasing difficulty cutters were having in locating new stands of

sandalwood; it having been almost cut out from accessible areas.

Cutters were going back over the same ground again and again, cutting smaller regrowth trees and pulling out stumps and roots left by the earlier cutters. In the early days only the log part of the tree was utilized, but later, limbs, butts and roots were utilized too, and then it became customary to pull the tree out by its roots.

The more determined cutters - or pullers - were pushing out further beyond the settled areas in their search for virgin sandalwood country. Some wells had been sunk for their benefit, but as they continued to push further out they camped on water holes and gnamma holes (hollowed out caverns in rocks) that they found, or were led to by Aborigines, or else they dug and timbered their own wells. In this way, the sandalwooders pioneered the way into much of the country that was later to become the Wheatbelt. The surveyors, who came later, were able to follow the tracks they had made and to set up their bases on the wells and water holes the cutters had established.

Meanwhile, things had changed down in the capital, too. By the 1860s there were many boats on the river plying between the bustling river ports of Guildford and Perth and the seaport at Fremantle, transporting cargo from overseas vessels up the river, and taking produce to them from the inland.

Guildford was the port for sandalwood. In one eight-month period in 1868, 3000 of the 3256 tons exported that year were shipped down the river from there. When sandalwood exports doubled over the next decade, it is reasonable to assume that Guildford retained its share of the trade.

Teams coming down from Toodyay, the Victoria Plains, York and Northam and beyond, and Beverley and the Dale would transfer their wood on to the boats at the busy riverside wharf, thus saving themselves the long trek down to Fremantle. Whatever merchandise they required for back loading could be purchased too, from stores at Guildford. It goes without saying that the colourful, hard-drinking teamsters would have patronized the local inns during their stopover in town, and certainly ale, porter, wines and spirits would have featured

prominently in their purchases for back loading. Even so, the journey back over the hills would not have been unnecessarily dry, for by that time there were roadside inns at Mahogany Creek, The Lakes and the Nineteen Mile on the York Road and at Balingup on the Toodyay Road.

THE COMING OF THE RAILWAY

However, this whole scene was to change again, quite dramatically, after the opening of the Guildford to Fremantle railway in 1881. Within a few years the lines had snaked up through the hills, first to Chidlow and then by 1888 on to York, Northam, Toodyay and Beverley. The transportation of inland freight by rail quickly led to the demise of the river traffic and the importance of the river ports. By the end of the century, the railways had been extended eastwards beyond Kalgoorlie to Kanowna, south to Albany and Busselton, north to Northampton, to link up with the first Government line established there in 1879, and from Geraldton inland to the Murchison Goldfields. Those railways were to play an important and lasting role in the expansion of the sandalwood industry.

The opening of the Eastern Goldfields Railway in 1896 gave access to vast areas of uncut sandalwood country hitherto inaccessible and the cutters were quick to capitalize on this. The effect is clearly reflected in the export figures for the decade 1892-1901, which show how the trade had been declining in the early

nineties, and then the sudden pick-up that came with the opening of the railways.

Perhaps the temporary wane in the late nineties was due to cutters joining in the gold rushes while the easily-won surface gold lasted.

GOLD

The life of sandalwooders in the Goldfields and Great Southern districts before the Great War would not have been so very different from that of the cutters of the 1870s and 80s except of course for the advantages brought by the railways. However, the wood close to the lines was soon cut out and the cutters had to move further and further out from the towns; so it was still a hard, lonely life. They still, of necessity, had to keep moving camp and to live in tents or makeshift homes. Furniture consisted largely of kerosene cases. Water, always a problem in the dry inland areas, had to be carted from the railway or else some other supply located. In the Goldfields in particular there was much sickness: barcoo rot, dysentery and, in towns at least, typhoid. Accidents and infection were not infrequent.

Poor diet, bad water and flies were the main cause of illness - not just for sandalwooders of course, but for the many thousands of men who had flocked to the area during the gold rushes. Damper and "tinned dog" comprised the staple diet, sometimes supplemented by tomatoes or potatoes; but, more often than not, there were no vegetables available.

Year	Tons	Value in \$
1892	5716	85740
1893	3893	64320
1894	2784	46860
1895	3851	61726
1896	6848	131600
1897	5852	98960
1898	4349	63624
1899	4084	59438
1900	5095	78076
1901	8864	147862

WOOD AND GOLD - HAND IN HAND

Charlie Cable comes from a line of gold prospectors and pioneers. His grandfather was on the Californian goldfields and in the Eastern States' "rushes". Charlie's father was identified with every goldfield in Western Australia from the Kimberley to Kurnalpi, and Charlie himself worked several mines, the chief one at Burtville near Laverton.

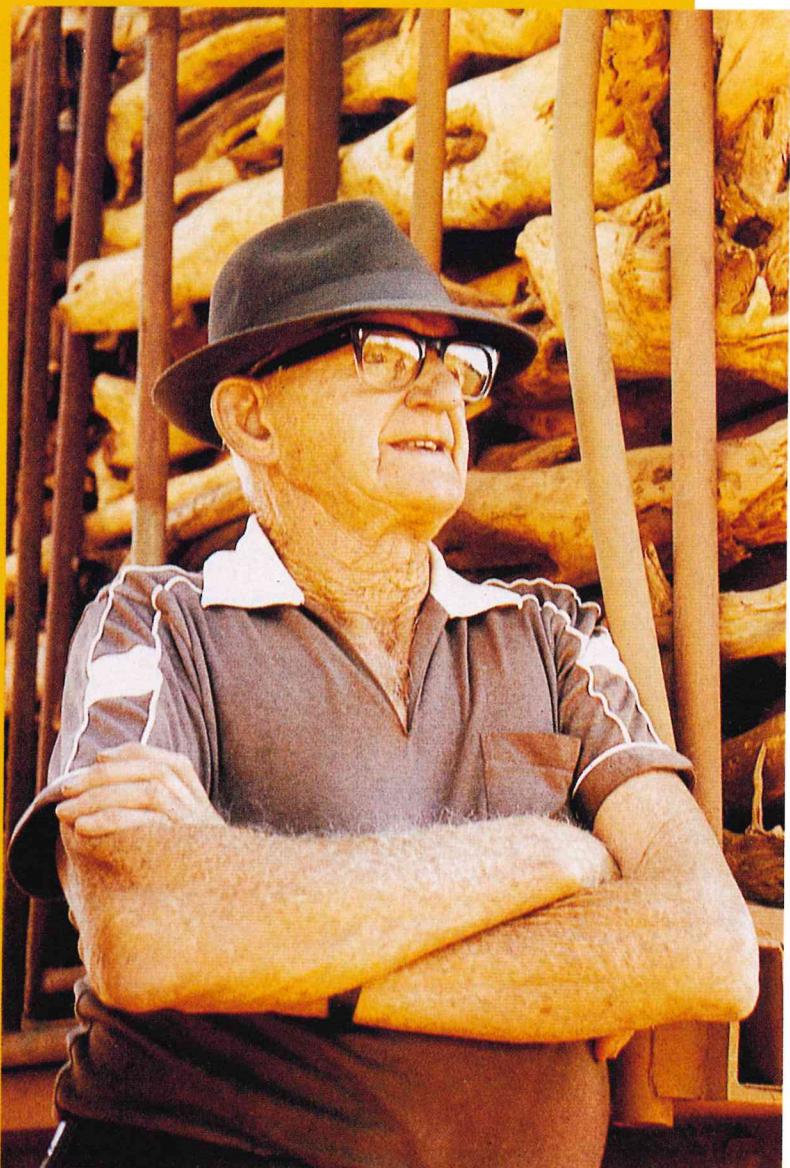
But the search for gold gives results sporadically. Charlie's father had realized the potential of sandalwood early this century, and began business transporting the wood from Kanowna to Fremantle on the newly constructed rail line.

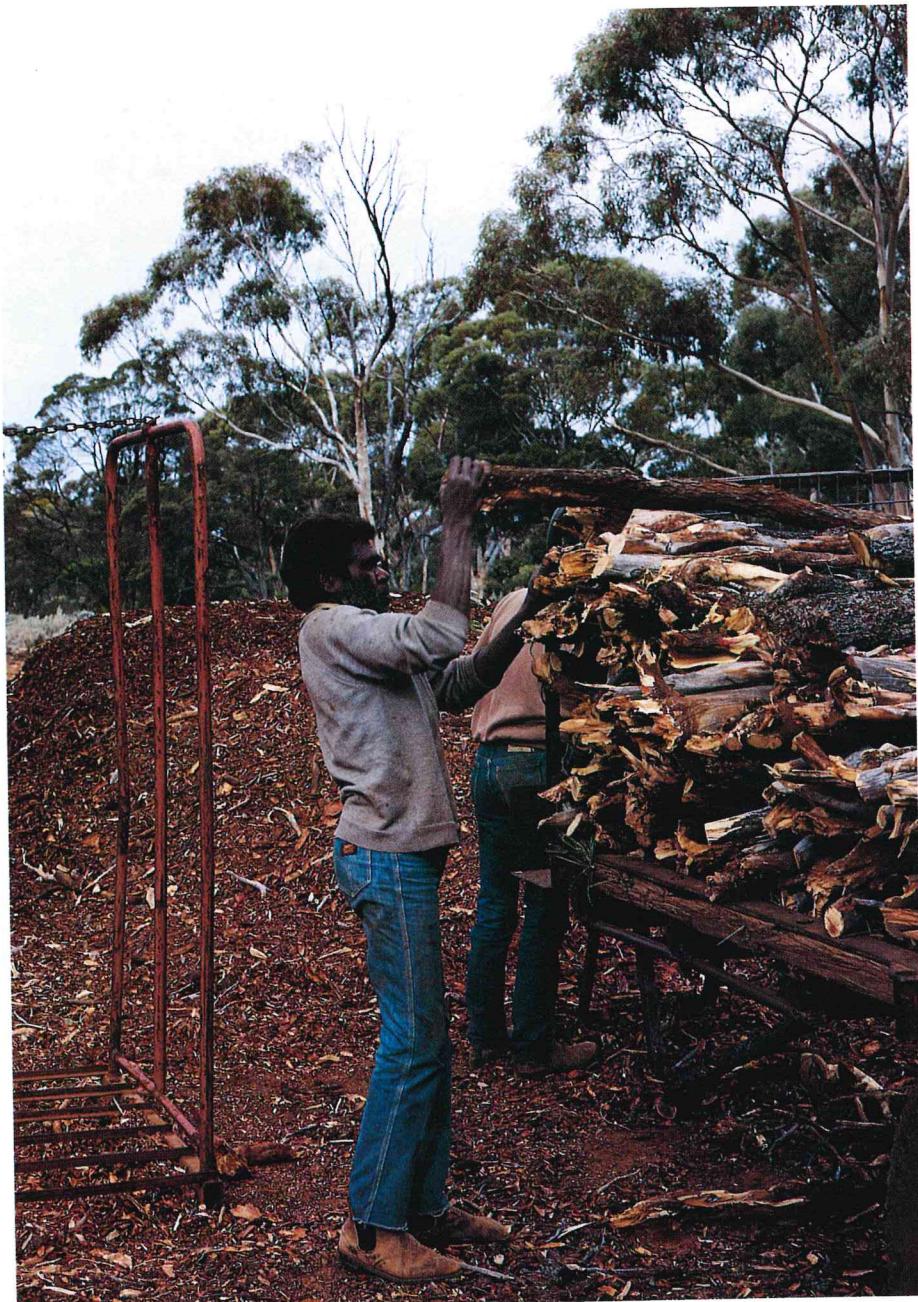
Charlie began pulling sandalwood as a boy of 14, and supplemented his gold income with valuable sandalwood returns for the next 60 years. "It's different to the old days," he says. "Now they've got two-way radio and generators out at the camps, even television...And there's the Flying Doctor, that's important."

In 1930 Charlie and his brother Douglas led an expedition out to the Warburton Ranges, 800 kilometres north-east of Kalgoorlie, looking for gold and pastoral country. They brought two tonnes of stores, and a small boring plant, to bore for water in the Gibson Desert. They also brought the first wheels in the Warburton area, all drawn by a team of camels.

On the way from Kalgoorlie, the Cables discovered an outlying patch of sandalwood, on an area known as Plumridge Lakes, located between the Nullarbor Plain and the Great Victoria Desert.

Charlie later returned for the sandalwood. Today, Charlie's son, Bob Cable, is working in this area.





Malcolm Jamesion unloading sandalwood. Today no useful part of the tree, including the roots, is wasted.

Of the many thousands of men who rushed to "the fields" in the nineties, only a handful succeeded in finding the El Dorado all had hoped for. Some of the less successful miners turned to gathering sandalwood to earn a living, often combining it with prospecting, a practice that has continued to the present time. During the 1920s, when the price of gold fell, and again in the Depression years, the Forests Department reserved a percentage of the annual cut for genuine prospectors who were temporarily down on their luck. Licences for small quantities were issued to such men to enable them to earn enough to live on for a while, until they were again in a position to support themselves from prospecting and from working their "shows".

CUTTERS EXPLOITED

From time to time, cutters complained about the low price paid to them, and of the big profits made by the exporting companies. In the early days settlers, with government assistance, made their own exporting arrangements, but by the 1880s cutters were finding it convenient to sell to local buyers or agents and so spare themselves all the hassles associated with such transactions. It wasn't long before the middle men were exploiting the producers - or so it was claimed.

In 1909, James Mitchell, the Minister for Lands and Agriculture, wrote to the Secretary of Woods and Forests, which was a section of the Department of Lands at the time, asking if he could suggest any means by which the industry could be improved, both for those engaged in it and for the State. The request was referred to the forestry officer in charge in the Eastern Goldfields, Forest Ranger Kelso, who was the Department's expert on sandalwood.

Kelso failed to see that there was any problem. According to him, 1908 had been a near record year, the best since 1882; the price was governed by the price received in "The East" and sandalwood was being brought down from Kookynie to Fremantle (808 kilometres) at a profit. About \$14 to \$16 a ton on rail at Fremantle was always considered a good price in the Eastern Goldfields, and about \$2 less in the agricultural areas. At that time, he reported, the Goldfields cutters were being paid about \$15 and those in the agricultural areas about \$13. He pointed out that the price was to a large extent controlled by the demand and that the opening of the Great Southern, Eastern Goldfields and Norseman lines and the timber tramways was an important factor in the supply situation. He considered that the cutters had it in their power to control the supply by holding out for better prices. This had often been done, some men holding out for two or three years for a higher price.

Kelso added that years before, when he had recommended imposing a royalty on sandalwood, he had made careful enquiries into profits. Much ado had been made at the time by cutters about excessive profits big buyers were making on the China market. He had found that in the 1880s there were big profits - up to

36 shillings a pekul (about \$62 a ton) being obtained- but the price was nothing like that now. He understood that the real control of the trade was in the hands of very wealthy Chinese merchants, who were the distributing agents.

This belief, that big profits were being made by a "Chinese Ring", seems to have been widely believed in the Goldfields. It was to be the subject of an investigation after the Great War.

CONTROLLING THE INDUSTRY

But, if the cutters were being exploited, so too was the sandalwood resource. As early as 1876 legislation was passed aimed at preventing the unwise over-exploitation of this valuable wood. The new act prohibited cutting of "miniature" sandalwood, and provided for the establishment of large Sandalwood Reserves. In 1895 John Ednie-Brown, a professionally-trained forester, was appointed Conservator of the newly formed Department of Woods and Forests, which had been formed within the Department of Lands.

Unfortunately, Ednie-Brown died suddenly in 1899, and it was not until the Forests Department was founded in 1918, with Charles Lane-Poole as Conservator, that any serious steps were taken to properly control the industry, or that



any worthwhile research was done.

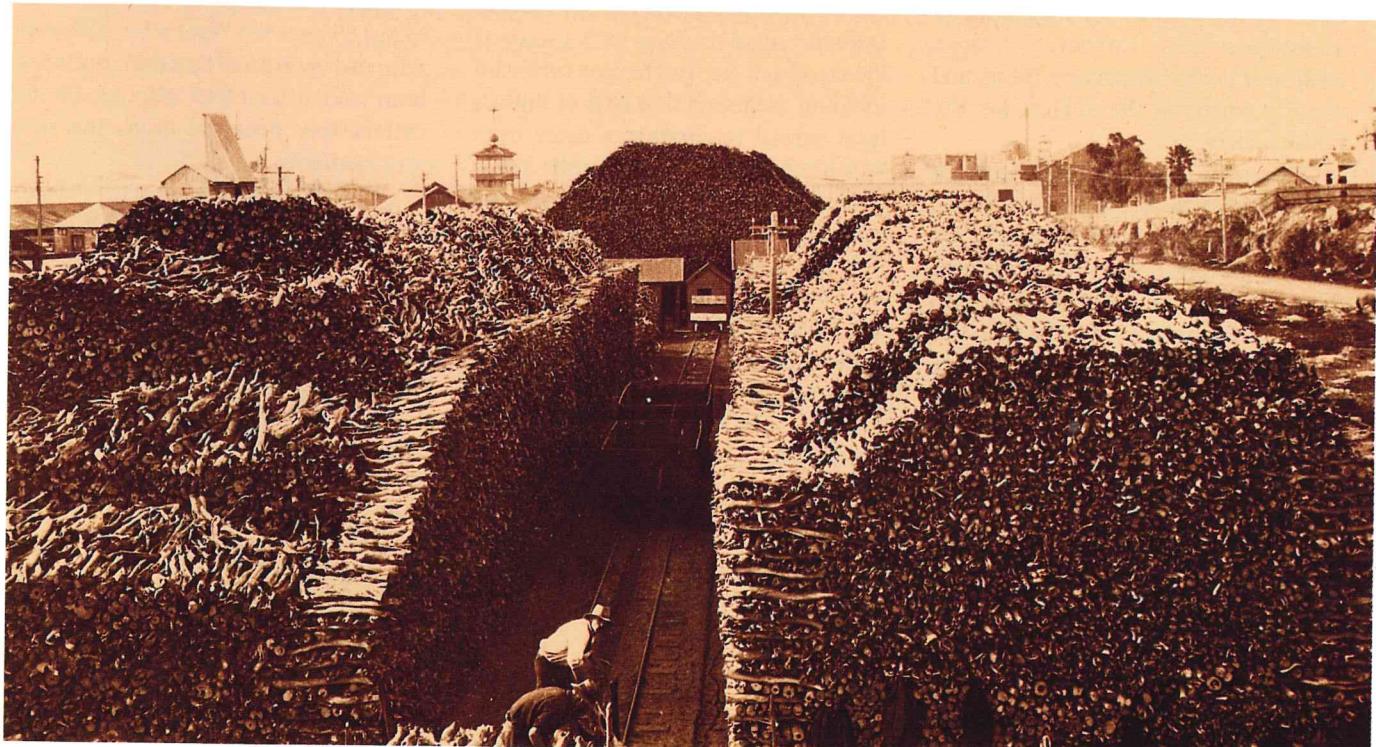
Soon after the war, Lane-Poole sent Geoffrey Drake-Brockman, a young engineer who joined the Department soon after being discharged from the army, to familiarize himself with every aspect of the sandalwood industry. Drake-Brockman read everything on the subject that he could get hold of. He journeyed to the Wheatbelt and Goldfields, familiarizing himself with the practical side of the trade, and inspecting the old sandalwood plantations established in Ednie-Brown's time.

It was while inspecting an old plantation at Meckering that he noticed

Preparing sandalwood for stacking at Fremantle in the 1920s. Note the marks on the wood made by the use of an adze to clean the bark and the sapwood from the stem. Now sandalwooders are obliged to remove the bark only.

Photocopied from the Batty Library Pictorial Collection, No p 28574.

An oversupply of sandalwood stockpiled at Fremantle in the 1920s. Photocopied from the Batty Library Pictorial Collection, No p 28588.





The fruit of the sandalwood tree (*Santalum spicatum*).
Photo - Cliff Winfield

that all of sandalwood trees that had survived were growing close to raspberry-jam trees. He assumed the "jam" trees were host plants and the sandalwood trees parasites. Lane-Poole sent the Government Botanist C.A. Gardner to investigate this further. Gardner confirmed Drake-Brockman's theory and wrote a paper on the subject for the Royal Society.

These investigations led Lane-Poole to believe that sandalwood trees could be grown successfully in plantations if host species, of which it was soon discovered there were several, were planted with them. To obtain seed with which to start the first plantations, an appeal was made to school children to supply them at sixpence per pound (about 12 cents per kilogram). In his book "The Turning Wheel", Drake-Brockman said that the nuts rolled in like a brown avalanche until there were tons more than could possibly be used and the offer had to be cancelled.

After the war, there was a boom in sandalwood and many men joined the industry. The demand was always around 6000 tons per year, but in 1920, 14 355

tons were cut and in 1921, 10 839 tons. Inevitably a slump followed. Large stocks built up at Fremantle and it was years before this stock pile was cleared. Claims about the Chinese Ring controlling the market re-emerged and Lane-Poole sent Drake-Brockman to China to try to unravel the situation there. This he soon succeeded in doing. He found that 80% of China's total annual requirements came from Western Australia and that while in WA it bought from \$16 to \$24 per ton, it was sold in China at \$100 to \$200. He reported that the cutters in Western Australia, who roughed it in lonely camps in dry and isolated areas, received only a base wage rate, the State Government collected only a small royalty and the distributing firm in China earned only a small percentage on the selling price of the wood; it was obvious that the exporters from Western Australia made a huge profit. So much for the mysterious Chinese Ring.

Drake-Brockman proposed that the cutters and the Western Australian Government should benefit more from the industry. He considered that even if the royalty was increased sharply, it should

not affect the levels of exports. He recommended that the State Government should control all sandalwood cut from Crown land and share the profits with the cutters on a sliding scale as the price varied. He estimated that the State Government profit would amount to \$200 000 per annum and thus enable the Forests Department to afford to establish large plantations of sandalwood so when the natural supplies cut out, the plantations would supply the market requirements.

Lane-Poole accepted the recommendations without question, but the Premier of the National Party Government, James Mitchell, rejected them. He said "It savours too much of a trading concern".

Eventually, 6000 tons were rationed to a panel of exporters, with the Government receiving \$24 per ton. Thus its share would be \$144 000 per annum instead of the few thousand dollars before Brockman's visit to China.

Later the exporting companies had to pay \$50 per ton royalty but \$32 were refunded upon proof that the cutters had been paid at least that amount. So the cutters too, benefited from the new arrangements.

It is not possible in an article of this length to deal with every aspect of the industry. The part the Forests Department played in controlling the industry and in researching and protecting sandalwood, could alone provide sufficient material for an essay of this length. Nor has any attempt been made to cover cutting in the North-West, the use of camels and donkeys in the industry in the north; the sandalwood oil industry, or the effects of grazing, insect pests and rabbits on young sandalwood plants, for instance. Instead this paper has been confined to giving a brief outline of the development of the industry and some insight into the lifestyle of the people who engaged in it.

FURTHER READING

For additional background on the sandalwood industry and its interesting history the following references are recommended.

Donovan, R.J. (1954) A history of sandalwood cutting in Western Australia. Perth. Typescript (Facsimile) Batty Library, 10 H7 Hr.

Drake-Brockman, G. (1921) Report on sandalwood trade in China and Malay States. W.A. Forests Department report.

Loneragan, O.W. (1990) Historical review of sandalwood (*Santalum spicatum*) research in Western Australia. Research Bulletin, Department of Conservation and Land Management.

Oats, A. (1989) The story of sandalwood. Museum of the Goldfields, Kalgoorlie 1989.

Richmond, P.C. (1983) The sandalwood trade. Information Sheet 26, W.A. Forests Department.

Robertson, J.R. (1958) The Government regulation of the sandalwood industry of Western Australia: a brief history. W.A. Forests Department report.

Statham, P. (1988) The Australian sandalwood trade: small but significant. Working Paper No. 100. Working Papers in Economic Histor, Australian National University.

Underwood, J. (1954) Sandalwood industry of Western Australia. Lee Steere Essay, Batty Library, Perth.

Ware, H.G.J. (1975) The sandalwood industry of Western Australia. A paper presented to the Eastern Goldfields branch of the Western Australian Historical Society. Batty Library, Q 338 174973.



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