

'A little world apart...': Domestic consumption at a Victorian forest sawmill

PETER DAVIES

Previous studies of forest-based sawmilling in Victoria have focused on steam technology and timber tramlines. The material culture and social history of mill camps, however, has been largely neglected. Survey and excavation conducted by the author at Henry's No. 1 Mill in 1997 and 1998 sought to expand the scope of forest history. Henry's Mill operated between 1904 and 1928 in the West Barwon watershed in south-west Victoria. Its isolation meant that around 100 people lived permanently on site. The mill settlement featured huts and houses for mill workers and their families, along with a school, store and post office. This paper outlines the main results of fieldwork and uses material evidence to examine aspects of domestic consumption at the site. Reuse and recycling is identified as an important part of mill life. The paper concludes with a discussion of the physical isolation of Henry's Mill and the ways this was overcome by workers and their families.

INTRODUCTION

Timber-getting was among the earliest and most important extractive industries conducted in Victoria. Widely regarded as an inexhaustible resource, forests and woodlands were heavily exploited from the beginning of European settlement in the 1830s. Huts and houses, stockyards, mining timbers, railway sleepers, carts, barrels and immense quantities of firewood all derived from forest resources. The timber industry was dominated from the 1850s until the 1930s by numerous sawmills scattered through the bush. Often small and mobile, mills were connected to railheads by tramlines or bullock tracks, providing vital employment opportunities and transport infrastructure in remote forest areas. Several thousand forest mills were established in Victoria during this period, highlighting the scale and significance of the industry (Brinkman & Farrell 1990: 175–9; Evans 1993, 1997; Storey & Davies 1995).

Although the technology of the timber industry has been well documented (e.g. Evans 1994; Houghton 1975, 1992; McCarthy 1987, 1993), the material culture and social history of small settlements which clustered around bush mills remain little known. These places were home to large numbers of working men and their families, who formed small communities in isolated rural areas. Forest-based mills and camps were mostly short-term and ephemeral in nature, generating few written records of their operation. Physical evidence thus represents a vital resource for expanding knowledge of people in a major rural industry. This paper explores the material culture and social history of one such place, Henry's No. 1 Mill, to recall a way of life now almost forgotten.

Henry's Mill operated between 1904 and 1928 in the Otways State Forest of south-west Victoria. Norm Houghton has documented the operations and technology of the mill, which were broadly typical of sawmills in this period (Houghton 1975, 1995, forthcoming). Detailed investigation of the site helps to reveal daily life in a remote forest settlement. A brief history of the mill and its regional context are outlined below, followed by the major results of fieldwork conducted at the site by the author in 1997–98. Analysis of archaeological material presented here focuses on aspects of domestic consumption by mill workers and residents, and the importance of reuse and recycling in daily life. Consideration is also given to the ways in which people at Henry's Mill were both isolated from and integrated with broader spheres of social and economic activity.

OTWAYS TIMBER INDUSTRY

The Otway Ranges were characterised in the nineteenth century as a rugged and broken tract of country, traversed by hill ridges, deep gorges and creek and river valleys. The flora of the area was noted for its extensive stands of blue gum and blackwood, along with grey gum, mountain ash, messmate and stringybark (Report 1874; Report 1899). Pastoral development of the ranges began in 1839, and the earliest timber-getting began at Apollo Bay and Lorne in 1849, supplying railway sleepers and wharf timbers. Most timber was pit sawn and dragged to the beach, before being floated out to sea and loaded onto ships bound for Geelong and Melbourne. Although this trade lapsed in the 1860s due to inadequate loading facilities, the construction of a new jetty at Apollo Bay in the early 1880s prompted a resurgence in the local industry (Brinkman & Farrell 1990: 74–6; Hebb 1970: 377).

The opening of rail links between Birregurra and Forrest in 1891, and between Colac and Beech Forest in 1902, with an extension to Crowes by 1911, initiated a boom in timber production in the Otways (Figure 1). The new lines permitted sawmillers from the Ballarat area to move into the Otway forests between 1895 and 1905, ensuring the huge supplies of timber required on the central Victorian goldfields. Extensive sawmilling operations were established at Forrest, Birregurra, Beech Forest, Barramunga, Barwon Downs, Gellibrand and numerous other settlements. The Otways rapidly emerged as a major source of timber for Victoria in this period, second only in importance to the mountain ash forests of the Upper Yarra district.

Timber tramlines provided the essential transport links between forests, sawmills and railways, gradually replacing the bullock teams of the nineteenth century. Bullock tracks in the area were renowned for becoming quagmires in the winter, sending freight costs soaring and seriously hampering the movement of goods and people (Houghton 1975: 32–3). Tramlines, however, could operate all year round. They were constructed of wooden or steel rails laid over closely packed sleepers, with trolleys drawn by horses or small locomotives carrying logs and sawn timber to the nearest station or jetty. Isolated sawmill settlements in the depths of the Otway forests depended on tramlines for almost all of their needs. By 1919, 300 kilometres of timber tramways had been laid to the Otway railways (Houghton 1988: 295).

The use of steam and animal power in the Otways gradually declined in the 1930s, as diesel trucks began transporting greater quantities of logs and timber. The Timber Strike of 1929

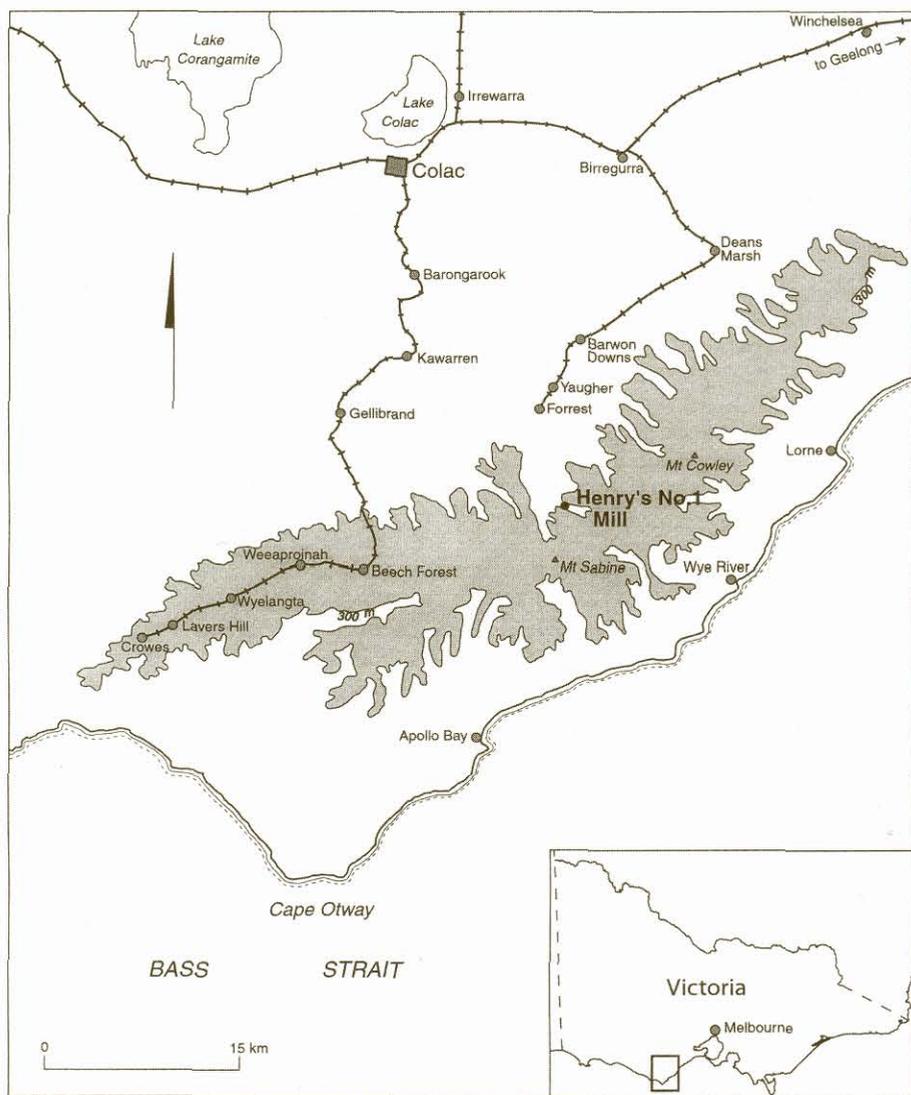


Figure 1. Otway railways

and the devastation of the 1919, 1926 and 1939 bushfires combined to reduce timber outputs from the region. By the Second World War, tramways had become outmoded, and gradually deteriorated through age, fire and neglect. Sawmills and associated settlements were moved out of the forest and into nearby towns, rendering the old ways of life in the bush obsolete.

SITE HISTORY

Henry's No. 1 Mill was one of several hundred bush sawmills to operate in the Otway forests (Brinkman & Farrell 1990: 175–9). It began as a partnership in 1901 between timber merchants Thomas Cowley, James Whitelaw and John McGregor. Their sawmill on Noonday Creek lay 6.5 km south of Forrest and employed around 30 men. Large reserves of high quality, untouched forest had been identified nearby in the West Barwon valley, offering a secure supply of timber for up to 20 years (Report 1899: 1). Access to such a resource, however, required construction of an expensive tram tunnel through a spur separating the Noonday and West Barwon valleys. William R. Henry was invited to join the partnership to secure the necessary finance. A plumber by trade, Henry had achieved success in gold mining at Kalgoorlie and Ballarat before buying into the business 'Otway Sawmills' in 1902 (*Geelong Advertiser* 26 Nov. 1957; Houghton 1975: 51–3). The tunnel, 950 feet (290 m) long, was dug by a team of Ballarat gold miners at a cost of over £1000. Eight feet (2.44 m) high and timbered throughout with props 'like a main drive in

a mine', the tram tunnel was one of only three ever built in Victoria (*Colac Herald* 22 July 1902). In October 1903 the tramline was laid through the tunnel and extended along the river to the new mill site, which occupied the only wide and relatively level area in the valley beyond the tunnel. The mill lay ten kilometres south of the railhead at Forrest, and began operating in 1904. It rapidly developed as one of the largest in the Otway area, cutting up to 10 000 superfeet (23.6 cubic metres) of timber per day. Henry soon bought out his partners' interests, and began trading as 'Henry & Son' in 1907 when his son, Ernest, joined the business (Houghton 1975: 51–6; Sands & McDougall 1907).

Horses were initially used on the access tramline between the No. 1 Mill and Forrest. In 1911, however, Henry purchased a small Beyer Peacock locomotive from the Wallaroo and Moonta Mining and Smelting Company in South Australia. It was soon evident that the engine was underpowered for the hauling required, so a new, more powerful locomotive was ordered from the Hunslet Engine Company of Leeds. Nicknamed the 'Little Green Beetle' for its olive green colour, the engine was based at the Forrest railway station. It made a daily return trip to the No. 1 Mill, taking out empty trucks, supplies and passengers, and returning with sawn timber to the railhead (Houghton 1995).

The isolation of the mill meant that around 100 people lived permanently on site. The workforce of between 50 and 60 men included at least a dozen who brought their families to

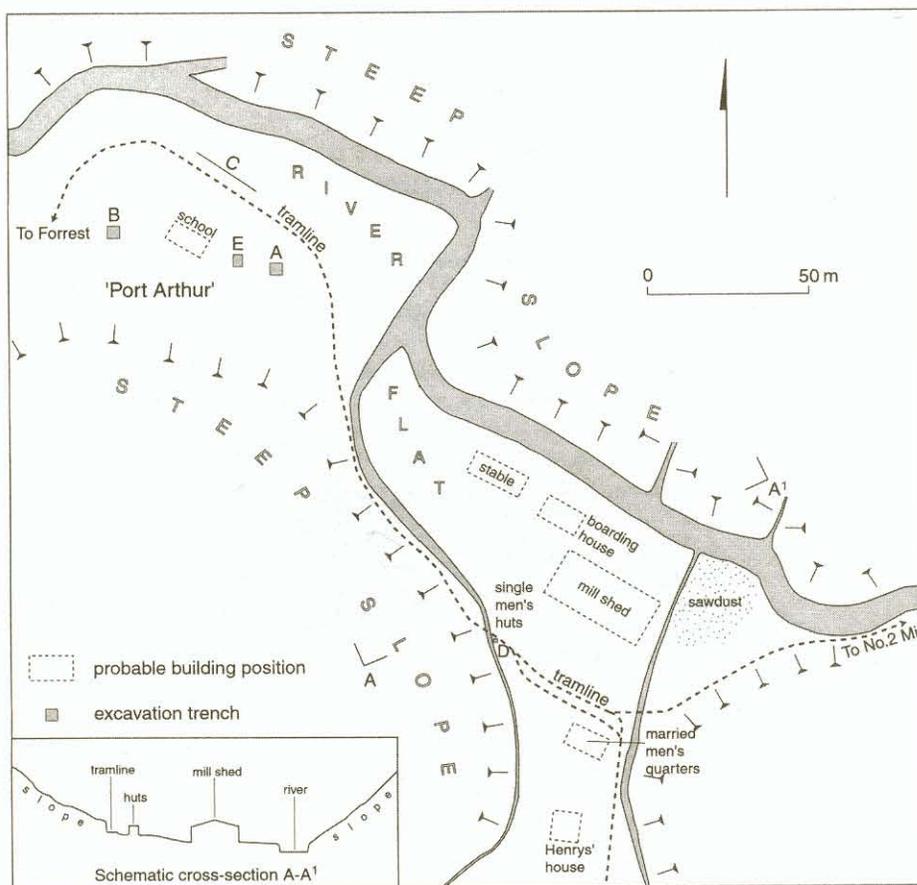


Figure 2. Site plan of Henry's No. 1 Mill

live with them at the mill. Men with resident families rented small timber cottages which lay in a discrete area known as 'Port Arthur', several hundred metres north-west of the mill shed (Figure 2). A boarding house provided meals, but not accommodation, for unmarried workers. Huts for these men were built close together in a shallow gully at the foot of a steep spur. A school for the mill children opened in 1909, with almost 40 pupils enrolled by 1923 (VPRS 795/2812/3601, 23 Feb. 1923). A receiving office for mail deliveries was established at the mill in 1913, upgraded to a post office in 1921 (AA B5846/1 Box 39). The mill settlement also featured a small general store and a billiard room, while a polling station operated at the site during state and federal elections (e.g. CGG 5 Dec. 1917; Davies in press).

The years immediately before and after World War I saw strong demand for Otways timber. The main market for the No. 1 Mill extended throughout the Western District from Geelong and Ballarat to Port Fairy and Hamilton. Henry installed a second mill in 1911, located high on a spur near the Otway divide. About a dozen employees lived and worked at the site, known as 'Siberia' because of its isolation from the No. 1 Mill. The No. 2 Mill was destroyed by bushfire in 1919, along with its tramline and bridgeworks (*Argus* 20 Feb. 1919). A third mill was established nearby in 1921, and operated until 1925. Thereafter it was shifted one kilometre south into the headwaters of Carisbrook Creek, operating for the next three years (FCV 29/474; Houghton forthcoming: 131).

By 1927, however, the future of Henry's No. 1 Mill was in doubt. Good quality forest timber was in diminishing supply. Fire and flood damage to uninsured mill equipment, wage disputes and royalty negotiations exerted increasing financial pressure on the business. In addition, isolation from markets eroded the capacity of Henry's to compete with sawmills in more favoured parts of the state. Thus when the No. 1 Mill

shed was destroyed by fire in October 1927, a process of gradual, planned withdrawal from the valley began. The school continued to operate until Christmas of that year, while the post office remained open until October 1928. The No. 1 Mill settlement was gradually dismantled, with huts and houses worth saving broken into panels and taken to another mill for temporary re-use. The remaining houses which were too dilapidated to remove were abandoned to the elements. Logging operations shifted to nearby mills to cut out the remaining timber. By December 1929, everything salvageable from the West Barwon had been removed, including sawmill plant, boilers, rails and winches. The portals of the tram tunnel were collapsed, and timber-getting in the valley finally ceased.

SITE CONTEXT

Henry's No. 1 Mill extends about 400 metres along the south bank of the West Barwon River, 230 metres above sea level. Rainfall in the vicinity of the site generally ranges from 1400–1600 mm per annum. The mill lies in a zone of riparian wet sclerophyll forest, dominated by an overstorey of manna gum (*E. viminalis*) and an understorey of smaller trees, ferns, herbs and climbers. Inclusion of the West Barwon valley in the regional water catchment system has ensured minimal post-1929 disturbance of the No. 1 Mill site by fire and logging. Dense forest regrowth on and around the site, however, retards easy movement and severely restricts surface visibility. Field survey in 1997 aimed to map the geographical and cultural boundaries of the site, as no historical plans of the mill and settlement are known to be preserved (Figure 2). Survey in the industrial part of the site yielded evidence of tramway earthworks, pits and discarded bricks and tram wheels. In the main residential area to the north-west lay scatters of domestic debris and low mounds of clay, stone and brick rubble. Linking these two areas of the site was the earth cutting for a tramline.

Excavation in 1998 aimed to recover material evidence relating to consumption patterns, domestic architecture and responses to the physical and social environment. Three house sites (Houses A, B and E) were exposed in the family residential area, along with a small test pit in the area of the single men's huts (Sounding D), and an intensive surface collection below the tramline embankment along the river flat (Dump C). A total area of 71.5 m² was exposed during excavation, with the maximum depth of cultural deposits reaching twenty centimetres. Damp and acidic soil conditions meant that organic preservation was poor. No excavation in the industrial part of the mill was undertaken.

EXCAVATION RESULTS

Two separate hearth features were revealed in House A. The northern feature consisted of a clay platform, 30 cm high and 1.50 m square. Charred wood on the south and east sides suggest that the platform was originally framed with timber. Above this platform was built a small square brick structure, a single course in height, measuring 80 cm by 70 cm across. The central part of the structure was burnt and friable, with a black charcoal stain on several vitrified bricks. A short length of iron rail lay on the western edge of the bricks. A similar length of rail lay several metres to the south-east, apparently removed from its original position. This clay and brick feature appears to have functioned as a simple open hearth, with the rails forming a makeshift grate.

A similar feature was revealed immediately south of this hearth structure. It also consisted of a clay platform, measuring 1.40 m by 1.10 m, on top of which was built a simple brick emplacement. This structure formed a U-shape, with nine bricks laid flat and end to end. These bricks probably formed the base for a kitchen stove, with iron oven components identified on the surface nearby. Around the north, south and west sides of the oven a substantial clay, brick and stone packing was erected for insulation and protection. Both hearth features in House A appear to be contemporaneous. Each was built over an underlying, mixed deposit of cultural material which included glass, ceramic and ferrous fragments. This deposit may have resulted from general domestic discard in the area prior to the construction of the building, or have been used as material to level an uneven surface. A 1913 halfpenny recovered from this deposit supports the post-1913 construction of the hearth features. Apart from occasional wood fragments, however, no other architectural features were identified.

Excavation of House B, located 70 m west of House A, also revealed a pair of hearth features, partially distorted by the growth of several large trees. To the north-west, a one-metre long 'wall' of mortar-bonded brick was preserved up to seven courses in height and two courses in width. North of this wall was a low platform built from three to four rows of brick. Several brick types were used in the construction of this feature, including examples from the Hoffman (Melbourne), Knights (Lal Lal) and Gartcraig (Scotland) brickworks. On the south side of this brick construction was a packing of compact clay, into which were set large stones forming a loose border. Fragments of several burnt floorboards were also revealed adjacent to this structure, from one of which a small piece of linoleum was recovered. Two pot hooks and a length of chain were also recovered in this area. These features together indicate the remains of a substantial hearth structure, oriented north-east, with a brick platform and backing wall.

Several metres to the south-east lay a more intact hearth feature. A neat brick and cement enclosure was backed with a substantial packing of clay and stone. Artefacts typically associated with children were recovered from the fill within the structure, including a game counter, a tea set saucer, a ceramic doll's head and a piece of lined slate. Iron stove com-

ponents on the surface nearby suggest that this feature served as the foundation for a kitchen oven. The clay and stone packing to the rear probably formed the foundation for a chimney.

An L-shaped alignment of stones was revealed south-west of these hearth features, consisting of a double row of small river cobbles, 3.20 m in length. The relationship of the cobbles to the brick and clay hearths is uncertain. They may have functioned as a garden border behind the house, or served as part of a rear verandah or similar shelter over an external doorway.

A pair of hearth features also dominated the physical remains of House E. The northern hearth consisted of a rectangular bed of clay, 1.20 m by 1.60 m across. Burnt traces of a wooden frame survived on the north and east sides of the clay bed. The sides of the fireplace were constructed of flat stones and half bricks, packed with clay mortar. The southern hearth in House E also consisted of a squared clay platform framed with timber. Several metal plates remained in position on top of the clay. Stove components discarded nearby indicate the likely function of this feature as another oven enclosure. A layer of charcoal and three carbonised floor stumps appear to be the remains of a wooden floor which originally related to both hearth features.

Investigation in the area of Dump C was restricted to the collection of surface material. This resulted in the recovery of 84 artefacts, mostly large bottle fragments. The area was subject to river flooding and weed infestation, and appears to have been used as a general discard zone for the family houses nearby. Sounding D, in the area of the single men's huts, yielded a very small amount of material. This may reflect the limited area of excavation, or the less intensive build up of refuse relating to the domestic activities of unmarried workers.

Archaeological and documentary evidence from various mill sites combine to provide general impressions of mill structures. Housing at Henry's was built from unpainted timber freshly sawn in the mill shed. Large quantities of wire-cut nails recovered during excavation indicate the wooden construction of huts and houses. Low stumps and joists supported roughly cut floorboards covered with linoleum. Windows were small, either glazed or covered with a simple canvas blind. Newspaper pasted over hessian cloth was nailed on the inside of walls to keep out draughts (Evans 1994: 109). Fireplaces were also prominent, reinforcing the importance of warmth and light in a generally cold and damp environment. The position of oven enclosures suggests they were built as part of kitchens at the rear of the north-facing houses, while the general-purpose open fireplace dominated the common living area. The separation of kitchen ovens from other hearth features may represent a direct response to the environment of the West Barwon valley. Summer kitchens with ovens in lean-tos attached to the rear of houses helped to dispel excess heat. In winter, Dutch ovens, pot hooks and chains were used to prepare food over an internal open fire, while the rear kitchen was used to dry off wood, wet clothes and boots (Davies 1999: 256).

The form and fabric of housing at Henry's was typical of accommodation at mill settlements in Victoria during the later nineteenth and early twentieth century. Huts and houses were constructed quickly and cheaply to provide basic accommodation to mill workers. The size and arrangement of mill housing reflected a common understanding of the minimal requirements of a rural family in this period. Houses for mill families generally featured a central front door under a verandah, giving onto a main living area. Two small bedrooms made up the rear part of the house, often with a lean-to kitchen at the back. Huts for unmarried workers were much smaller, each consisting of a single room 3 m by 4 m across, often with two men billeted to each hut. The physical separation of family houses from the huts of single men was typical of mill settlements in this period (Davies 2001b: 102–3). A path,

tramline or creek was often used to divide the living space of each group, a spatial arrangement reinforcing the social separation based on marital status.

FOOD AND DRINK

Excavation of house sites at Henry's Mill yielded large quantities of domestic refuse. At least 100 artefact forms and 19 separate fabrics were identified among the 12 000 artefact fragments recovered (Table 1). Although this material was dominated by glass, ceramic and ferrous objects, the range of items indicates ready access to a wide array of commercial goods. In spite of their geographical isolation, workers and residents at Henry's routinely acquired the products of mass consumption. The following discussion treats specific elements of consumption at the No. 1 Mill, focusing on food, drink, and reuse and recycling.

Archaeological evidence in the form of animal bone, glass bottles, tablewares and other material provides important insight into the diet of mill workers and their families. Faunal remains from the site include 267 bone fragments (Table 2). Analysis of this material indicates that cheap cuts of mutton were the most common form of meat consumed at Henry's. The basaltic plains to the north and west of the Otways were, and are, renowned sheep-carrying country, providing ample supplies of mutton within the district. Beef, however, appears to have played a fairly minor role in the mill diet. Pig bone was rare in the faunal assemblage, but pork may have been consumed as bacon, leaving little archaeological trace. The recovery of rabbit bone, along with shotgun shells, rifle cartridges and a complete rabbit trap suggest that rabbits were also hunted and trapped in the hill country around the site.

Vegetables grew well in the rich mountain soil around Henry's Mill, providing abundant produce on a seasonal basis. Many households maintained a small vegetable plot to supplement food supplies brought in from outside. The stone arrangement exposed adjacent to House B was consistent with the border of a kitchen garden. Children were also encouraged by schoolteachers to cultivate vegetables in the schoolyard (VPRS 795/2812/3601, 18 May 1918). An informant recalls the 'enormous' garden maintained by one mill worker, Oscar Henrikson, whose wife, Eva, ran the mill boarding house. Their efforts provided a fresh, cheap and nutritious diet for the mill's unmarried workers (R. Henry 12 June 1999). This pattern of one very large garden at a mill settlement and numerous smaller ones is also found in the Rubicon Forest in the Victorian Central Highlands. At Clark and Pearce's No. 1 Mill a Macedonian worker kept a market garden, while other residents maintained their own more modest gardens as well (Evans 1994: 109-110).

A variety of other foodstuffs were also available to mill residents. Bulk commodities, including sacks of flour, sugar, potatoes and onions, along with tins of jam and boxes of tea,

Table 1: Artefact summary counts from Henry's No.1 Mill.

	Artefact fragments	MNI	Weight (g)
House A	7 621	2 263	59 121
House B	3 149	918	36 360
Dump C	84	47	14 400
Sounding D	15	6	2 152
House E	1 123	292	10 596
Surface	20	9	533
Totals	12 012	3 535	123.162 kg

Table 2: Taxa represented in the faunal assemblage from Henry's Mill.

Species	Common name	Identified specimens	MNI
<i>Bos taurus</i>	Domestic cow	2	1
<i>Ovis/Capra</i>		69	3
inc. <i>Ovis aries</i>	Domestic sheep	4	2
<i>Sus scrofa</i>	Domestic pig	3	1
<i>O. cuniculus</i>	European rabbit	38	3
Aves	bird	6	1
Pisces	fish	1	1
Unidentified		148	
Total		267	10

were delivered along the tramline from general stores in Forrest and Birregurra. A dairy herd was grazed in the forest around the No. 1 Mill by Donald Macpherson to provide fresh milk and cream, and the opportunity to churn butter. Honey, blackberries and fish gathered from surrounding forest areas provided occasional food supplements, while chickens may also have been kept by individual households for eggs, and possibly meat. There is no documented or archaeological evidence, however, that the birds were eaten. Most women baked their own bread in kitchen ovens, as well as scones and cakes. Numerous condiment bottles indicate the use of sauces, oils, extracts and essences (Table 3). It is unclear, however, whether the rusted fragments of metal cans recovered during excavation originally contained food. The large number of ceramic cups and saucers indicates the importance of hot drinks, especially tea, in the daily diet (Table 4).

In a context of hard physical labour, geographical isolation and limited financial resources, food meant comfort, happiness and security. Historical photographs show, however, that very few timber workers were overweight. Although large meals were typical for workers in the industry, strenuous work and the need to maintain body temperature in a cold and often wet environment meant that calories burnt off quickly (Conlin 1979: 167-9; Radforth 1987: 97). In spite of generic com-

Table 3: Glass container MNI counts from Henry's Mill.

	House A	House B	Dump C	Sounding D	House E	Totals
Beer/wine	19	3	20	4	9	55
Condiment	18	2	7		1	28
Medicine	25	8	3		2	38
Aerated water	1	3	2	1	1	8
Spirit	1	2	2		1	6
Ink	2					2
Poison	1					1
Perfume		1				1
Jar	3	3			1	7
Unidentified	9	3	7	1	2	22
Total	79	25	41	6	17	168

Table 4: Ceramic tableware MNI counts from Henry's Mill.

	House A	House B	Dump C	Sounding D	House E	Totals
cup	20	4	2		5	31
saucer	21	8			5	34
teapot	2	1				3
plate	29	5			3	37
dredger	2					2
egg cup	1					1
tureen	1					1
bowl	3	2	1			6
jug	2	1				3
spoon		2				2
jar	2					2
Unidentified	30	9				39
Total	112	33	3		13	161

plaints by the Timber Workers' Union about the quality of food available in mill camps (e.g. *Timber Worker* 8 Dec. 1913), the evidence from Henry's indicates that a reasonably varied, ample and nutritious diet was enjoyed by mill residents.

The timber industry was renowned for heavy drinking among its workers. Archaeological and other forms of evidence from Henry's Mill provide insight into the nature and extent of alcohol consumption at bush sawmills. Conventional historical accounts emphasise the drinking that occurred in town pubs on weekends. Norm Houghton, for example, notes that hotels in the western Otways were a 'perennial attraction on Saturdays', with pubs at Gellibrand, Beech Forest and Lavers Hill thronged with thirsty workers getting over a hard week's work (Houghton 1992: 85). Informants acknowledge the role of alcohol at forest sawmills as well. Jim Biddle, for example, who worked at Henry's Carisbrook Mill in the 1930s, remembers that there was 'always grog at the mills' (J. Biddle 2 Nov. 1998). He recalled a story of W. R. Henry, who originally provided an 18-gallon keg at Christmas for the No. 1 Mill workers, until the day when one drunk chased another around the mill with an axe, and the practise was stopped. Other tales circulated of splitters and mill workers returning home on Sunday nights aboard tramway trolleys festooned with bottles and kegs (Houghton 1976: 7).

Archaeologically, a total of 55 beer/wine bottles, four whiskey and two schnapps bottles were recovered from the three excavated house sites and Dump C nearby. Although there was no pub at the mill, nor evidence for on-site production of alcohol, this did not seriously inhibit its acquisition by workers and residents. Equally, however, the quantities recovered during excavation suggest that the option was neither heavily nor frequently taken up in the main residential part of the site over its 24 years of occupation. Bottled alcohol purchased at town hotels and intended for later consumption may often have been consumed on the way back to the mill, with bottles discarded in the bush. Most alcohol consumption appears, in fact, to have occurred off site, at local town hotels, which bush and mill workers could visit at the end of the working week (Davies 2001b: 165-7).

REUSE AND RECYCLING

Sawmills frequently acquired equipment, including saws, frames, boilers, engines and iron rails secondhand from mining companies, nearby mills or government railway authorities. This minimised the cost of purchase and often meant shorter distances to convey heavy machinery to a new site. Archaeology provides further evidence of the reuse and recycling of materials in domestic contexts at forest sawmills. For example, bricks from a variety of sources have been recorded at sawmill sites, suggesting that they were frequently scavenged from other mills when they closed or relocated, or were

purchased secondhand in small lots. At the New Ada Mill in the Upper Yarra area, bricks from the Hoffman, Gamble, Clifton, Fritsch & Holzen, South Yarra and Darby brickworks have been recorded (Vines 1985: 149). Bricks appear to have been brought to Henry's on a limited and occasional basis. In 1913, for example, a teacher requested 100 bricks to repair the back of the school fireplace (VPRS 795/2812/3601, 27 Sept. 1913). Garteraig firebricks were found in domestic hearths at Henry's, deriving originally from West Ayrshire in Scotland, probably arriving in Australian ports as ballast in ships. Knight's bricks came from Lal Lal, south-east of Ballarat, but must have been in circulation for some years before arriving at Henry's because the brick company went out of business in 1898 (Jack & Cremin 1994: 62). Half bricks were also retained and used in the construction of several features, including the lining of an open fireplace in House E and a hearth base in House A.

The same hearth in House A also featured two iron rails, cut to length and fitted as a rough grate. Rails did not necessarily require sophisticated techniques to alter. They could be cleanly cut by making a deep nick around the piece with a hammer and chisel, before being dropped onto, or hit with, another metal object. Five short lengths of iron rail recorded in Houses A, B and E at Henry's Mill betrayed three different profiles, indicating their varied origins and the ad hoc nature of acquiring such materials. The incorporation of industrial items in domestic contexts is also indicated by an iron fire bar, salvaged from a boiler, inserted into the rear of the open fireplace in House E as a structural support.

Residents at Henry's Mill also altered and reused glass bottles. Eleven examples were recovered of alcohol and condiment bottles which had been cut down to form storage jars: seven from Dump C, three from House A, and one from House E. Iain Stuart has described two similar processes involved in reducing a beer bottle to a jar (Stuart 1993: 18). The bush method involved filling the bottle with water to the desired level. A string soaked in methylated spirit or other fuel was wrapped around the outside at the same level and set alight, causing the glass to crack in a horizontal line and creating a smooth break. Alternatively, a 'P' shaped iron ring was fitted over the neck of the bottle while the other end was heated. The heat was transmitted through the iron, causing the glass to crack.

The examples from Henry's Mill had the neck of the bottle removed at the shoulder, leaving an opening which varied from 55 mm to 70 mm in diameter, slightly smaller than the internal diameter of the bottle. The inside and outside edges of the fracture typically show tiny flake scars, which may result from the deliberate blunting of the sharp edge left by the neck removal, or subsequent use and wear of the altered bottle. The lack of a formed rim on the resulting jar meant that a

threaded, hinged or crown closure could not have been applied. Stuart notes that such items could not have contained a product under pressure, such as beer or carbonated drinks, as there was no means to hold the closure in place (Stuart 1993: 19). Instead, these jars were probably sealed with either wax or brown paper and flour paste.

The likely contents of such jars were jams, sauces or other preserves made from locally grown fruit and vegetables. Unaltered bottles could also have been refilled with sauces or drinks. Canning was an important part of women's work in this period and a source of pride and satisfaction. It provided the opportunity for display and competition in domestic skills, in terms of both the quality and quantity of food preserved. The recycling of bottles into jars is also consistent with other examples from the site of artefact reuse and adaptation, the archaeological signatures of self-reliance and improvisation. This kind of domestic production endured as an extremely important part of many Australian households well into the twentieth century, representing an ethic of thrift and self-sufficiency.

ISOLATION AND INTEGRATION

Although physically isolated, workers and residents at Henry's Mill were not entirely cut off from the outside world. A three-hour walk down the tramline to Forrest brought them to a rail terminus and from there the world beyond. Their isolation and integration broadly reflected the experience of many people in rural settlements during this period. Most lived and worked in remote locations, but still participated in broader social, cultural and economic spheres of activity. The following discussion considers some of the ways in which people at Henry's Mill negotiated the tension between life in a remote forest camp and involvement in the wider world.

The timber tramline was the main practical access between the No. 1 Mill and the railhead at Forrest. It provided a vital thread linking mill workers to local districts, regional towns and urban centres. Tram trucks delivered people, goods and mail to the mill and carried timber away to market. Although the tramline provided the primary means of transport, a rough bush track also linked Henry's Mill through steep and isolated forest country to the township of Barramunga, eight kilometres to the north-west. The Parliamentary Standing Committee on Railways, however, regarded the route between the Barwon River and Barramunga as 'almost inaccessible' (Report 1904). Many of the 'roads' in the Otways at this time were in fact nothing more than tracks winding between the forest trees. In its first year of operation, the No. 1 Mill school was worked on a part-time basis with the Barramunga state school. The teacher, Leo O'Kelly, was obliged to trek the distance each week on foot 'through excessively rugged and mountainous country', a journey 'attended by a large element of risk' (VPRS 795/1927/3601, 23 Oct. 1909). Three miles an hour on horseback was classed as good travelling in such terrain.

Teachers complained frequently about the remoteness of Henry's Mill. Fifteen successive teachers taught at the school during its 19 years of operation. Their letters and reports to the Education Department reveal mostly negative responses to the physical and social environment of the No. 1 Mill. Clifford Stanford, for example, argued that the mill was in 'an out-of-the-way place, and is far from being a pleasant place to live in' (VPRS 640/2328/3601, 28 Nov. 1911). Bernard Flood applied for transfer in 1914 on account of the extreme isolation of the mill settlement and the impossibility of doing further study, along with the poor accommodation, damp climate and its effect on his health. He felt that

For months at a time, a teacher is practically a prisoner in the gully, for he cannot get away, even on weekends, on account of the remoteness of the district (VPRS 640/2423/3601, 27 Oct. 1914).

In several cases, teachers simply ceased duty without permission or explanation, apparently unable to tolerate the delay in appointing a replacement. Others were dissatisfied with the board and accommodation available, which involved either a hut in the schoolyard or boarding privately with one of the mill families in their three-roomed cottages. William Morris, for example, teacher for a short stint in 1912 and 1913, was reduced to sleeping in a bed with one of his students (VPRS 640/2328/3601, 7 Oct. 1912). Several of the teachers, all of whom were men, were also intent on marriage and were reluctant to bring their brides to a school without a proper dwelling. A similar concern was expressed by soldier settlers on isolated blocks between the wars, conscious that a tent or humpy was not a fit dwelling for a woman (Lake 1987: 155).

The isolation of mill settlements was also evident when injury or illness struck. Doctors, for example, almost never made house calls to forest sawmills. The nearest doctor for residents at the No. 1 Mill was at Birregurra, 42 kilometres away. Timber trucks were used to transport mill workers needing emergency care. Those medics who did brave the bush elements in this period charged highly for their efforts. When the young son of a tree faller in the west Otways was blown up by a detonator cap, a doctor was called from 40 kilometres away, but by the time he arrived the boy had died. The doctor charged £12/12/- for his 'service', at a time when a faller earned less than £5 per week (*Timber Worker* 31 Aug. 1925).

Pregnant women would leave the bush a month or two before their baby was due and board at a town nearby, returning two or three weeks after the birth. Women were also called on at times to minister to horrific wounds resulting from logging and milling accidents. In the absence of antibiotics, however, the risk of infection from such injuries was acute. Wounds could only be swabbed with alcohol and dressed, in the hope that infection did not develop into septicaemia.

Patent medicines were a popular response to isolation and illness among workers and residents at Henry's Mill. The remains of at least 35 medicine bottles were recovered during excavation, at least 17 of which could be identified from inscriptions moulded into the glass (Davies 2001a). Remedies recovered from the site were those typically marketed as providing relief from upper respiratory illness, and assisting with infants' and children's ailments. In spite of the high alcohol content of many patent medicines, they do not appear to have been consumed as a covert or socially acceptable form of alcohol at Henry's Mill. There was no shortage of beer or wine bottles discarded around house sites, suggesting that there was little social sanction against drinking at the settlement which required discretion in the form of medicinal preparations. The diversity of patent medicines recovered suggests that residents readily turned to self-medication when necessary. Their isolation from orthodox medical treatment meant they generally had little alternative to employing proprietary nostrums to aid digestion, soothe children and ease coughs and colds.

Patent medicines express well the dynamic between geographical isolation and involvement with broader social and economic spheres. Commercial remedies manufactured in distant industrial centres were purchased by mill workers to help alleviate their remoteness from medical help. This engagement with wider society, however, was expressed in numerous other ways as well, with a wide array of manufactured goods available from a variety of sources (Table 5). The manufacturing origins of artefacts recovered from Henry's Mill provide some indication of the trade networks with which workers and residents at the site were connected.

Internationally, the main source of consumer goods was the United Kingdom. Artefacts included ceramic tablewares from the Staffordshire potteries and ammunition from London and Birmingham, along with Scottish firebricks and Irish

Table 5: Manufacturing origins identified at Henry's No.1 Mill.

Item	Manufacturer	MNI	Location	Country
brick	AR & FB Co	1	South Yarra, Vic.	Australia
brick	Knights	1	Lal Lal, Vic.	Australia
brick	Hoffman	2	Brunswick, Vic.	Australia
brick	Gartcraig	1	Ayrshire	Scotland
medicine bottle	California Fig Syrup Co.	1	San Francisco	U.S.A.
medicine bottle	Robert Greathead	1	Melbourne	Australia
medicine bottle	W. H. Comstock	3	Sydney	Australia
medicine bottle	Barry's Tricopherous	1	New York	U.S.A.
medicine bottle	Joseph Bosisto	2	Melbourne	Australia
medicine bottle	A. J. White	1	Sydney	Australia
medicine bottle	Curtis & Perkins	1	New York	U.S.A.
medicine bottle	D. B. Jenner	2	Melbourne	Australia
medicine bottle	Chamberlain	1	Sydney	Australia
condiment bottle	Rosella Preserving Co.	8	Melbourne	Australia
condiment bottle	Holbrook & Co.	3		England
whiskey bottle	Irish Imperial Whiskey	2		Ireland
whiskey bottle	Mitchell & Co.	1	Belfast	Ireland
aerated water bottle	J. J. Trait	3	Geelong	Australia
aerated water bottle	Bollington Hop Beer Co.	1	Geelong	Australia
condiment bottle	Jonathon Reeves	1	Ballarat	Australia
aerated water bottle	Cawsey Menck	1	Melbourne	Australia
condiment bottle	Taylor Bros. Co-op.	1	Melbourne	Australia
condiment bottle	Longmore's & Co.	1	Melbourne	Australia
bottle	United Glass Bottle Manu.	1	London	England
beer bottle	Volum Brewing Co.	2	Geelong	Australia
beer bottle	Abbotsford Brewery	1	Melbourne	Australia
medicine bottle	Felix Kruse	1	Melbourne	Australia
condiment bottle	The [Stonyfell? Oliv]E Co.	1	Adelaide	Australia
cup	'W'	1		Austria
toothbrush	Hygienic	1		England
shotgun shell	Eley	9	London	England
shotgun shell	Kynoch	1	Birmingham	England
saucer	Triple Crown China	2		England
plate	Ridgways	1	Shelton, Staff.	England
plate	J. & G. Meakin	1	Hanley, Staff.	England
plate	Pountney & Co.	1	Bristol, Glouc.	England
plate	W. H. Grindley & Co.	1	Tunstall, Staff.	England
bottle		3		Japan
teapot		1		China
jar	Solomon Solution	1	Melbourne	Australia
stove	D. & W. Chandler	1	Melbourne	Australia
doll	Armand Marseille	1	Kopplesdorf	Germany

whiskey. Only three items were identified from the United States: a Fig Syrup bottle from San Francisco, as well as a Barry's Tricopherous bottle and a Mrs Winslow's Soothing Syrup bottle from New York. In addition, a ceramic doll from Germany, a cup from Austria, a Dutch schnapps bottle, a Chinese teapot and three small amber bottles made in Japan indicate wider import origins represented at the site. Within Australia, the national market provided olive oil produced in Adelaide and patent medicines from Sydney. Melbourne, as an important national centre of manufacture, produced a wide variety of building materials, bottles, foodstuffs, chemicals, beverages, machinery, clothing and leather goods (Davison 1978: 41-71; Linge 1979: 232-3). Regional Victorian towns, including Geelong and Ballarat, were represented at Henry's Mill by bottles for beer and aerated waters.

Residents at the No. 1 Mill acquired these items in a variety of ways. The most common method was to have goods brought out from Forrest along the tramline. Orders were sent down in an envelope with the engine driver to either Green's or Archibald's stores in town, with goods delivered the following day. The Henrys also maintained a small general store on site, which was mostly patronised by single men to purchase small items such as tobacco and matches. Several employees obtained pump trolleys for their personal transport, enabling them to get their own supplies in Forrest. Residents may also have taken advantage of regular mail deliveries to the No. 1

Mill by ordering goods from mail order houses such as Lassetter's, Hordern & Sons or Foy & Gibson. Alternatively, travelling hawkers, who still traded to distant corners of Victoria in the 1920s, offered small and desirable consumables such as sweets, medicines, cloth and tobacco (Bilimoria & Gangopadhyay 1988: 546).

CONCLUSION

Life and work at a forest sawmill such as Henry's presented numerous challenges. Mill camps were often located in isolated terrain. Frequent wet weather, poor domestic hygiene and dangerous working conditions meant that injuries and illness were common. Housing was small and cramped, though probably little different to that of most rural people at the time. Personal mobility was high, as men moved frequently in search of work and better conditions. Some left the industry as soon as they could, while others stayed for years. Most, however, remained long enough to create a transient kind of home in the bush. In spite of such difficulties, life at the mill had its compensations. Food was ample and reasonably varied, and basic amenities were available. The Henrys were, by most accounts, good bosses to work for, and paid salaries a margin above the basic wage. Within the broader context of rural life, working 'in the timber' was a respectable occupation.

Sawmills and timber workers formed a prominent part of Victorian rural industry in the later nineteenth and early twen-

tieth century. Their activities transformed forest environments and provided the materials for use in a vast array of domestic, commercial and industrial contexts. Mill workers and their families created settlements which were an integral part of rural landscapes of the period. Henry's No. 1 Mill was only one of thousands of such places. Its detailed investigation helps to reveal a forgotten chapter of Australia's heritage, and a way of life now on the edge of living memory.

ABBREVIATIONS

AA	Australian Archives
CGG	Commonwealth Government Gazette
FCV	Forests Commission Victoria
VPRS	Victorian Public Record Series, Public Record Office of Victoria

BIBLIOGRAPHY

The title quote is taken from C. J. Dennis 1976 (1915). 'The Year Around in Timber-Land', in B. Watts (ed.) *The World of the Sentimental Bloke*, Angus & Robertson Publishers, London, pp. 80–82.

AUSTRALIAN ARCHIVES B5846/1, Victorian Post Offices Box 39, 'Otway' file – Otway Saw Mills.

BILIMORIA, P. and R. GANGOPADHYAY 1988. 'Indians in Victoria', in J. Jupp (ed.), *The Australian People*, Angus & Robertson, Sydney, pp. 546–547.

BRINKMAN, R. and S. FARRELL 1990. *Statement of Resources, Uses and Values for the Otway Forest Management Area*, Department of Conservation and Environment, Melbourne.

CONLIN, J. R. 1979. 'Old boy, did you get enough of pie?', *Journal of Forest History*, October 1979, pp. 164–185.

DAVIES, P. 1999. 'Henry's Mill: The archaeology and history of an Otways sawmill settlement', in J. Dargavel and B. Libbis (eds), *Australia's Ever-changing Forests IV*, Centre for Resource and Environmental Studies, Australian National University in association with Australian Forest History Society Inc., Canberra, pp. 247–259.

DAVIES, P. 2001a. 'A Cure for All Seasons: Health and Medicine in a Bush Community', *Journal of Australian Studies* 70, pp. 63–72.

DAVIES, P. 2001b. *Isolation and Integration: The Archaeology and History of an Otways Forest Community*, Ph.D. thesis, La Trobe University, Melbourne.

DAVIES, P. in press. 'Forest Communities: Real or Imagined?', in J. Dargavel (ed.), *Australia's Ever-changing Forests V*.

DAVISON, G. 1978. *The Rise and Fall of Marvellous Melbourne*, Melbourne University Press, Melbourne.

EVANS, P. 1993. *A Report to the Australian Heritage Commission on Sawmill and Tramway Sites in the Central Highland Forests of Victoria*, Department of Conservation & Natural Resources, Melbourne.

EVANS, P. 1994. *Rails to Rubicon: A history of the Rubicon Forest*, Light Railway Research Society of Australia, Melbourne.

EVANS, P. 1997. *A Study of Historic Sawmill and Tramway Sites in the North East Forest Region Victoria (Excluding Box-Ironbark Area)*, Environment Australia & Department of Natural Resources & Environment, Victoria.

FORESTS COMMISSION VICTORIA 'Put Away' Files Box 55, File 29/0474: 'W. R. Henry & Son'.

HEBB, I. 1970. *The History of Colac and District*, The Hawthorn Press, Melbourne.

HOUGHTON, N. 1975. *Sawdust and Steam: A history of the*

railways and tramways of the eastern Otway ranges, Light Railway Research Society of Australia, Melbourne.

HOUGHTON, N. 1976. *Forrest: The First 85 Years*, Light Railway Research Society of Australia, Melbourne.

HOUGHTON, N. 1988. 'Rail or Road? The State's Policy Dilemma on Timber Transport in the Otway Ranges 1890–1955', in K. J. Frawley and N. M. Semple (eds), *Australia's Ever Changing Forests*, Special Publication No. 1, Department of Geography and Oceanography, Australian Defence Force Academy, Campbell, ACT, pp. 291–299.

HOUGHTON, N. 1992. *The Beechy: The life and times of the Colac-Beech Forest-Crowes narrow gauge railway 1902–1962*, Light Railway Research Society of Australia, Melbourne.

HOUGHTON, N. 1995. 'Henry's Locos, Forrest, Victoria', *Light Railways*, January 1995, pp. 6–11.

HOUGHTON, N. forthcoming. *Sawdust and Steam: A Sawmilling History of the East Otway Ranges*.

JACK, R. I. and A. CREMIN 1994. *Australia's Age of Iron: History and Archaeology*, Oxford/Sydney University Press, South Melbourne, Vic.

LAKE, M. 1987. *The Limits of Hope: Soldier Settlement in Victoria 1915–38*, Oxford University Press, Melbourne.

LINGE, G. J. R. 1979. *Industrial Awakening: A Geography of Australian Manufacturing 1788 to 1890*, Australian National University Press, Canberra.

McCARTHY, M. J. 1987. *Bellbrakes, Bullocks and Bushmen: A Sawmilling and Tramway History of Gembrook 1885–1985*, Light Railway Research Society of Australia, Melbourne.

McCARTHY, M. J. 1993. *Settlers and Sawmillers: A History of West Gippsland Tramways and the Industries they served, 1875–1934*, Light Railway Research Society of Australia, Melbourne.

RADFORTH, I. 1987. *Bushworkers and Bosses: Logging in Northern Ontario, 1900–1980*, University of Toronto Press, Toronto.

REPORT 1874. 'Papers Relating to Forest Conservancy', *Papers Presented to Parliament (Victoria)*, vol. III, no. 86.

REPORT 1899. 'Fifth Progress Report of the Royal Commission on State Forests and Timber Reserves. The Otway Forest: Its Resources, Management, and Control', *Papers Presented to Parliament (Victoria)*, vol. III (2), no. 45.

REPORT 1904. 'Report From the Parliamentary Standing Committee on Railways on the Proposed Railway from Forrest to Barramunga', *Papers Presented to Parliament (Victoria)*, vol. I, no. 2.

SANDS & McDUGALL 1907. *Melbourne, Suburban and Country Directory*, Melbourne.

STORY, A. and P. DAVIES 1995. *Historic Forest and Forest-Based Places in South-West Victoria*, report to the Victorian Land Conservation Council.

STUART, I. 1993. 'Bottles for Jam? An Example of Recycling From a Post-Contact Archaeological Site', *Australian Archaeology* 36, pp. 17–21.

VICTORIAN PUBLIC RECORD SERIES 604, Primary Schools Correspondence Files 1878–1962, Victorian Public Record Office, Melbourne.

VICTORIAN PUBLIC RECORD SERIES 795, School Building Files 1868–1975, Victorian Public Record Office, Melbourne.

VINES, G. 1985. 'The Historical Archaeology of Forest Based sawmilling in Victoria 1855–1940', BA (Hons) thesis, La Trobe University, Melbourne.