# Australian Forest History Society

**Newsletter No. 88**
**April 2023**

*"... to advance historical understanding of human interactions with Australian forest and woodland environments."*

*The engine in this enlargement from a postcard depicting an unidentified Australian sawmill can be none other than the type built by Barrows & Stewart of Banbury, England. The firm was making portable engines up to 12 "nominal" horsepower with the cylinder at the smokebox end by 1868, and the engines retained this form until at least 1872. The word "nominal" to describe the horsepower is important for statistical reasons – see pp11-13.*

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## MEMBERSHIP

Membership of the Australian Forest History Society (AFHS) Inc is A$25 a year for Australian and New Zealand addressees or A$15 a year for students. For other overseas addressees, it is A$30.

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## NEXT ISSUE

The newsletter is normally published three times a year, with the occasional special issue. The next issue should be out in August/September 2023.

**Input is always welcome.**

Contributions can be sent to fintan_olaighin@yahoo.com.au.

Contributions may be edited.

## IN THIS ISSUE



## PRESIDENT'S NOTE

*By Juliana Lazzari*

I congratulate Peter Evans on compiling this issue of the AFHS newsletter, and thank the contributors – including Peter – who have provided the articles. The scope of this issue emphasises the diversity of subjects that can be classified as "forest history". As always, the newsletter covers a wide array of topics. There is a standing invitation for members to write for the newsletter, long or short, on any subject that catches your interest.

I would also like to congratulate our founding president, John Dargavel, on yet another book, *Anthropocene Days* (see p16). This is at least the thirtieth book that he has written, co-written, edited or co-edited – the National Library of Australia's catalogue lists 25 publications, but does not include the proceedings of four of our forest history conferences which he co-edited (conference nos. II to V). *Anthropocene Days* is being launched in Canberra on Tuesday 18 April 2023 at the Australian National University. I hope to see some of you there. Details are on the Fenner School website at https://fennerschool.anu.edu.au/news-events/events/book-launch-anthropocene-days.

On the subject of prolific authors, our members Robert Onfray and Peter McHugh have websites which are frequently updated – www.robertonfray.com and victoriasforestsbushfireheritage.com. As has been observed in a previous issue of the newsletter, there is a lot of forest history being produced and it's sometimes hard to keep up.

And on this topic, to close the circle (as they say), Peter Evans has another three works in progress to add to the dozens listed on his website at www.peterevans.com.au/historic_research.htm. While I often associate Peter with forest history and railway history, his interests are broader than that, and his published work includes a 2017 book titled *Sunbury: Australia's Greatest Rock Festival.*

## ROAD SURVEY AND DESIGN TIMES IN THE UPPER ALLYN RIVER FORESTS, DUNGOG, NSW

*By Terry Beath*

*All images courtesy Terry Beath.*

*(Warning: Historically Accurate Language Ahead.)*

### *Road Survey with Mick McGuire's Crew*


We had the bridge work well underway, and so I was then assigned to join up with Mick McGuire and his road survey crew, consisting of Bob Dean (Deannie) and a young chain man, Andy, a local boy who was typical of the area, a hard worker and helpful young man, a keen roll-your-own smoker and our Land Rover driver. We were to survey and design a road up into the unlogged forests of Chichester State Forest near the Allyn River. Like the rest of us, he was to work hard with the brush hook and axes clearing the various survey lines through the leech and mosquito infested temperate rainforest.

*Andy on the Land Rover near our sophisticated base camp (in the background).*

The new primary access road we were to survey (and for me to design once the survey work was done) was through some temperate rainforest-type bush.

As a student doing field work, I'd previously worked with Deannie when he was in Fizzer Fields' crew on road survey work just on the other side of the Barrington Tops range. We were surveying an access road across Barrington Tops and camped up in the bush, just out of Moonan Flat Village (and pub!). Each Wednesday we went into the village to get fresh bread, milk and meat and had a few cleansing ales at Cyril's Moonan Flat Pub. Cyril liked a yarn and, as the pub was pretty quiet most days, there was time to chat. The tactic Fizzer developed was for me to engage Cyril in discussion of politics, or whatever. As he was a keen man-of-the-world he loved a chat. We'd buy our first round of pint glasses and as we got close to the end of the glass, Fizzer would say "come on boys, drink up, we've got to get back to camp." At this, Cyril invariably was halfway through making a profound point of argument to me and would top up our glasses for free. How we made it up the rough, bush track each night has still got me buggered.

Fizzer got his nickname due to his stutter and his predilection for the curse "fuck", which came out as "fu, fu fu, fucking thing" or something similar. On one other occasion, Deannie had just opened a new tin of tobacco and rolled a smoke. Fizzer pretended to drop something in the tin. Deannie was a bit pissed off and asked "what was that you put in my tobacco tin?" Fizzer, with a wicked smile said "navel fluff" (the fluff that builds up in your belly button from your clothes). At which, Deannie threw the whole new tin of tobacco into the scrub. Not happy!

### *Back to Mick McGuire's team*

Mick's dad had been a ganger with NSW Government Railways when Mick was a kid doing his schooling. They regularly moved around, so Mick had been dragged from one school to the next and his formal education had been badly affected. However, he was a very intelligent bloke and along with his excellent work ethic he made a very good road surveyor. The Forestry Commission of old seemed to attract many good such people who were very dedicated and loyal workers. Mick had married a daughter of George Gaudry, who was another commission employee, based at Kendall, NSW. I had spent about four months in Kendall during my field year and got to know George and played cricket with him in the Kendall team. George eschewed all safety gear and batted without pads, batting gloves and proceeded to carve any loose deliveries into the outback. His young son also played and scored a century in the grand final. Sadly, the young man went to further his training in Newcastle and collapsed and died just a short few months later.

I know it's hard to believe for many these days, where computing, calculators etc, are ubiquitous, but apart from some prepared tables on pages of the survey manual, no other help was available and so numbers etc, had to be worked manually. Much of the survey work involved quite complicated maths and trigonometry, so in the second week with the gang I brought along my dog-eared, school and university logarithmic and trigonometry tables (that still sits somewhere in my bookcase, only about 60 years old). When we had to do calculations, I introduced them to Mick, who was very quick on the uptake and a keen and clever learner. As soon as I could, I bought a set of tables for Mick, and he was proudly able to do his work so much quicker and more accurately than previously. I also still have my *Forestry Commission of NSW Tables for Forest Officers* issued in October 1966. It is a bit worn with time and use. Maybe the National Parks and Wildlife Service needs a similarly practical guideline or two to increase the practical effectiveness of its officers?

The survey work involved reconnaissance surveys, grade line running and then doing a grade line that was rough-pegged and surveyed, and then recorded. Back at camp we would plot the grade line and see what it looked like on paper. The maths came in when we then looked at straightening it on paper and returned to the field to check and peg this work out in the field. This involved pegging the centre line of the road, and from the paper-straightening, also marking and pegging the curves. If things looked okay, we would then dumpy peg and level the line and topography either side of the centre line. This was the base data for doing a first-cut design. As it had to be manually done, it was a very tedious and

demanding job without the modern day computers and calculators. This was the first and last time I did one of them, and only three miles (4.8km), thank goodness.

Cuts (depth of excavation) and fills would be calculated so that earthworks and then costs could be estimated. Cuts delivered cubic metres of material; fills were calculated at 20% more than the estimated cut material as there would always be losses and compaction. Catchment details above the road line were also examined so that the size of culverts or bridges along the road could be worked out and costs estimated. Should problems arise with the figures, it was back to "shank's pony" to re-do grade lines etc.

*An early view of the grade line work. Down below in the tangle, the team (circled) are clearing a line with brush hooks and axes. Hard work, feeding time for the leeches, it was what we did.*

As our job was through rainforest-wet sclerophyll forests, the grade lines also had to be cleared with axes and brush hooks to get line-of-sight clearance. We had constant companions in leeches, ticks and the odd snake or two. Wombats also had the annoying habit of coming along our centre-line's dumpy pegs at night and parking their cube-shaped scats on the pegs, making it necessary to clear them off before we could do the levels.

One of Deannie's mates had a farm and mice and rats were a problem with his hay shed. One day we came across a diamond python snake in the bush near our survey line. Deannie used one of our sugar bags that we'd been carrying marker pegs in to catch it. As it was about lunch time he tied the bag up and left it in the back of our Land Rover. When we finished for the day, the bag was still in the Land Rover, but the snake was gone. We searched the vehicle (gingerly, I might add, for my part) but never located the snake. We were all a bit jumpy as we drove back to our campsite than night.

We were camped near a decent creek that provided drinking and washing water and had a basic kerosene fridge to keep our meat and milk coolish. Bread was initially kept on our table in one tent that we used for meals and the fridge and food boxes. However, the bloody currawongs soon located our camp, and when we were away for our eight or nine hour working days, they got into the tent and rifled through all our unsecured food items. Unfortunately, they didn't differentiate eating from their toilet activities and the tent was a hell of a mess. After that we used to try and secure things, but they were very clever darn birds and we had on-going minor incursions. We camped out all week, with one trip allowed to the nearest town for fresh bread and meat on Wednesday night (in our own time, but we could use the commission's Land Rover!). Friday, we usually went to the office to catch up on office work, leave current survey data there, and each fortnight pick up pay cheques.

One weekend, tragedy struck. Andy and friends were out on the town on the Saturday night and had a serious car crash. Andy was killed. It hit us all badly. When you work and live closely with someone for a period of months, it was a terrible shock for us all. We were allowed to go to Andy's funeral at Sandgate Cemetery and what a shocker it was. The priest made some remarks about Andy that I and the others really resented, and although I can't remember exactly what he said, I vowed never to go near one of those churches again.

*Me, minus mortar-board hat at graduation, 7 May 1970. We all returned to Canberra for a couple of days to receive degrees and to catch up with many old mates from our then five years of study and field work. Left to right: Dave Evans (NZ), Les Hawkes (Qld), moi, the late Ian Robertson (NSW), Frank Somi (Tanzania), Frank Whitelaw (HDA Eden) and Peter Paunovic (NSW), all so young and innocent!*

It took quite a while for things to normalise again after Andy's death, and I was glad to be dragged away for a couple of weeks in Taree at the NSWFC's Air Photo Interpretation training course.

During my Dungog posting I had been travelling to Newcastle regularly at weekends to train and play field hockey with the Merewether Club and the Newcastle representative squad. We were scheduled to go to Cowra for the NSW State Championships on the long weekend on 6-8 June 1970.

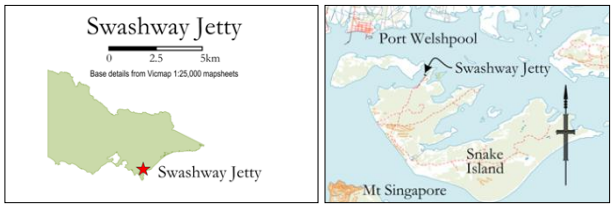
About a week before the long weekend, I was advised that I was to take up a position at Bermagui South sub-district on 9 June and organise a major land-use and forest-volume-typing survey between the Bega Valley and north of Bodalla, and also become second forester there. Just a few hundred thousand hectares, and a new chapter of life and learning …

## SWASHWAY JETTY: THE WOODPECKERS

*By Peter McHugh* [1]

Snake Island is Victoria's largest sand island and is named after its elongated serpent shape, rather than the many slithering "danger noodles" that often lurk in the thick ti-tree scrub. The place also abounds with introduced hog deer, migratory birds, koalas and gazillions of pesky mozzies.

The uninhabited island is situated within Corner Inlet in the shadow of the Prom (i.e. Wilsons Promontory), while Port Welshpool has the closest boat launch. For over 100 years local farmers had been driving cattle across the shallows at low tide to graze on the island. With a tidal range of two metres, the remote island was badly in need of a jetty. The only suitable spot being the Swashway, a shallow channel between Snake and neighbouring Little Snake Island where the cattle once crossed between the two.




The idea of building a timber jetty had its genesis during a work visit with Fisheries & Wildlife staff to the island in the late 1970s by then Major Rob Youl, Commanding Officer of the Army Reserve's 91 Forestry Squadron (the Woodpeckers).

*Rob Youl in 2018. Photo by Peter Evans.*

The local cattlemen and deer hunters were very generous with their support and advice on the jetty proposal. After some frustrating years of discussion, planning, design, dealing with bureaucracy, getting approvals, as well as garnering support from the Forests Commission Victoria (FCV) as their main sponsor to supply the logs, the Woodpeckers embarked on an ambitious project to build a new timber jetty at the Swashway on Snake Island.

Initial designs were rejected by the Ports and Harbours engineers as not being robust enough. In hindsight, this insistence proved to be justifiably wise given the hostile coastal environment. But the new strengthened design for the 53m long jetty required larger logs and heavier equipment causing a last-minute organising rush from the Royal Australian Engineers (RAE) cadre staff. Eventually, all the "ducks lined up" and the project was set for September 1982 as part of the Woodpeckers' annual bivouac.

Firstly, a small portable "Forestmil", manufactured by MacQuarrie Boundy, was established by the Woodpeckers in the nearby state forest at Alberton West and the highly durable yellow stringybark (*Eucalyptus muelleriana*) logs were felled and sawn. But it quickly became apparent that the army's sawmill was seriously underpowered and struggled with the larger log sizes, so hasty arrangements were made with a local Yarram sawmiller for the sappers to finish the job in time. Some larger 9m logs and other sawn timbers were also delivered to the nearby Bulga National Park for the 39 Electrical and Mechanical Squadron from Yallourn to replace the Corrigan Suspension Bridge a few months later.

Two large LCM-8 landing craft, operated by the 35 Water Transport Unit from Sydney, were delayed after they made a perilous journey along the wild and rugged coastline to Port Albert and needed to shelter from heavy gales at both Eden and Lakes Entrance. The Ports and Harbours depot at Port Welshpool was chosen as a marshalling yard, with another base camp on Snake Island, which added to the many logistical challenges.

*LCM-8 landing craft used for transport. Photo used with permission from the RAE Association: https://raevictoria.com*

The LCM-8s, which could carry up to 60 tonnes, transported a bulldozer and forklift and landed them across the island's gooey mudflats at high tide with the aid of beach mats constructed by the sappers. The bulldozer then cleared the site for the jetty and cut a new 800m access track, as well as sinking some fire dams. Four smaller LARC-V amphibious landing craft, or Army Ducks, from the Melbourne Water Transport Division were also used, but they were prone to getting bogged in the mud and soft sand.

Smooth scheduling of the deliveries of logs and sawn timber from the state forest at Alberton West to Port Welshpool, and then to Snake Island in the heavy landing craft to match the tides, was crucial to the project's success.

The challenge of driving piles into the coastal mud without heavy equipment was ingeniously solved by the sappers using long galvanised metal probes connected to a boat mounted pump. The nozzles on the end of the probes washed high pressure water under the ends of the piles which then sank about 3 metres under their own weight. With a Bailey Bridge jack and dumpy level to

[1] This article is taken with permission from the Victoria's Forests & Bushfire Heritage website. For more photos, see https://victoriasforestsbushfireheritage.com/2023/02/26/swashway-jetty.

make some final adjustments, and following a few tide changes, the timber piers settled perfectly square and rock solid.

*Unloading logs ready for transport. Photo used with permission from the RAE Association: https://raevictoria.com*

*Erecting jetty piers. Photo used with permission from the RAE Association: https://raevictoria.com*

Decking and handrails were also sawn in the bush and added to the structure. Timber abutments to protect the jetty from the relentless waves and tide were essential in the overall design. The wet and windy weather wasn't altogether kind, but the jetty was completed in only nine days with a crew of 30 Woodpeckers. Many visitors came to the site including some WW2 forestry veterans who confirmed that things were just as they remembered, as well as the Victorian Minister for Conservation, Evan Walker MLC, with the local media in tow.

*The jetty nearing completion. Photo used with permission from the RAE Association: https://raevictoria.com*

A year later, the bolts were tightened because the timber had shrunk a bit as it dried. Then, in 2004, the Woodpeckers returned to install some replacement timber and sandbag the abutments to protect the structure from the elements.

The Woodpeckers confronted some significant technical and logistical difficulties to build the Swashway Jetty. It also required the combined efforts of about 160 regular and reservist soldiers from other army corps and units. When they now gather for a cold frothy or two, the old Sappers from the 91 Forestry Squadron often reminisce about this rewarding and worthwhile achievement with well-deserved pride.

*Maintenance work on the Swashway Jetty. Photo used with permission from the RAE Association: https://raevictoria.com*

Some decking is now due for replacement by Parks Victoria, but the Swashway Jetty still stands after 41 years as an enduring testament to the Woodpeckers' incredible ability to simply Get Stuff Done (GSD). But, best of all, the bush where yellow stringybark logs were selectively harvested from state forest at Alberton West is now a stand of thriving regrowth and well on its way to growing the timber needed for a replacement Swashway Jetty when the time comes.

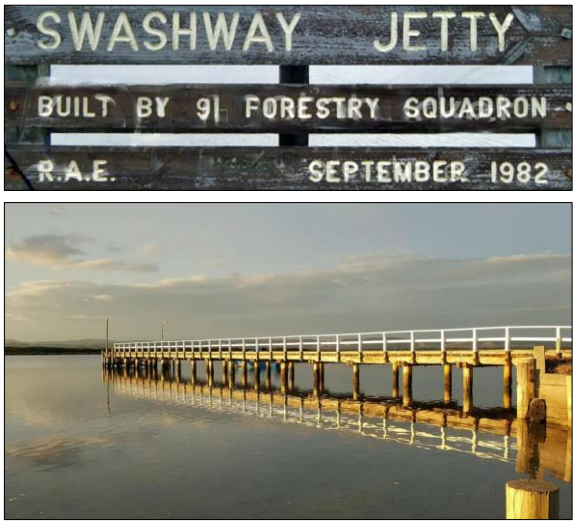



*Photo by Jenny Bland 2023.*
*Snake Island Cattlemen's Association.*

Source: Rob Youl, 1995. *Swan Street Sappers 1860-1996: A history of the Engineer Training Depot, Swan Street, Melbourne and of Sappers in Victoria.* ISBN 0646065912. https://raevic.tidyhq.com/public/shop/products/swan-street-sappers-compiled-by-ltcol-rob-youl-rfd

## TRIAL SAWMILLS, BALLARAT

*Submitted by Norman Houghton from the* Ballarat Miner & Weekly Star *of 18 and 20 February 1857. Spelling, capitalisation and punctuation of the original are retained.*

Among the many natural resources of the Colony yet to be developed, the one most intimately connected with the progress of settlement, and the social comfort of the population, is that of the production of an adequate supply of native timber, suitable for building and other purposes. It was a great advance upon the original slab-hut with a bark roof of the pioneers of the country when sawn timber, paling, weatherboard, and shingles were introduced from Tasmania. For a long period, the enterprise manifested by the sawyers and splitters of the Colony, enabled them to command the entire hardwood timber trade of Victoria.

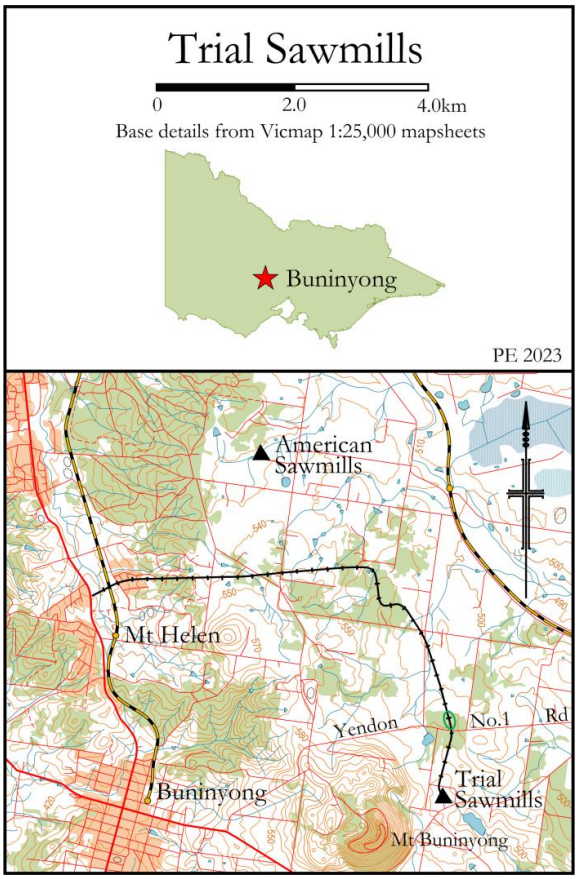
With the advent of the gold discoveries, and the influx of emigrants in 1852-3, the demands made upon the Tasmanians increased to such an extent that, during one season, the average price at the ports of delivery rose to 45s. per 100 feet, running measurement, of the usual 4 by 3 inch stuff; all other kinds being in proportion. Such a price, with the probability of a continued and increasing demand, naturally attracted the attention of our own colonists, and the exertions of the Apollo Bay Company – the only company in existence – received an additional impetus. The consequence of this state of things was that, in the interior, the settlement of people, even after the permanency of the gold-fields became recognised, was for a long time retarded, from the absolute impossibility of obtaining timber for building purposes, at other than enormous cost.

It will appear strange to those unacquainted with the peculiar state of the Colony at the period referred to, that no effort was made by individual labor to supplement the supplies of sawn timber from the immediate neighbourhood when the return seemed so extravagantly in advance of the usual value for the labor required. All absorbed as the people were however in speculative operations, connected only with gold digging and the commerce it afforded, in the immediate neighbourhood of the gold-fields, it was not too impossible to withdraw men from their independent avocation's, or by the offer of any comparatively reasonable remuneration to induce them to combine by their labor for the production of the commonest necessaries, though the raw material was lavishly scattered around them.

The attention of a few capitalists in Geelong was ultimately attracted, and to the very feeling of antipathy to co-operation, and the interference of capital with the independent and unaided individual exertions of the mining community then exhibited, it is that we owe perhaps the first adventure in the production of timber from the forests of the interior, and more particularly of this district.

It was a marked event in the history of Gold Mining when the first steam engine was erected on 'the diggings'. To Messrs Bray, Cowie, Wood and others of Geelong, the colonists were indebted for the first attempt to improve upon the old method of working the auriferous soil, and however unsuccessful they may have been in contending at the outset with the ignorance and prejudice of the miners then located here.

The adventures of this first steam engines we will not now relate – suffice it to say that after a year of loss and anxiety the proprietors very wisely withdrew it, and removing it to a well selected spot on the eastern side of Mount Buninyong at its base, they, in the year l855, commenced the erection of the necessary buildings in connection with the operations of a steam saw mill. The precise spot was chosen as much for the prospect it presented for affording a permanent supply of water as for its contiguity to a growth of forest timber suitable for building purposes.




It may not be out of place to mention here that an additional inducement to the embarkation of the large amount of capital required to carry on successfully such an undertaking, was suggested by the Government to give a trial to the system of plank roads in a district destitute at convenient distances of the ordinary metal used in Macadamising. The Trial Sawmills proprietors tendered for and succeeded in obtaining the contract for the supply of the sawn planks required between Corduroy Bridge and the Meredith Terminus.

The mill site is at an elevation of upwards of 1700 feet above the level of the sea, and the water supply is derived from a number of small water-courses and gullies which, during the rainy season, discharge themselves into a miniature lake about two acres in extent. The outlet from

the reservoir has been dammed up and by withdrawing the fallen and loose timber and occasional deepening and clearing, a permanent supply of very good water has been obtained. The present buildings have been the growth of time as also the machinery.

The original Golden Point engine, after rendering good service in driving the saws, was removed to another locality and replaced by one of more improved construction and greater power. The latter has during the present season, been superseded by one still larger and more efficient – a high-pressure engine, much resembling the larger kind used for locomotive purposes. It was built by Holt, of Manchester, and is capable of working up to thirty-five horse power, with a pressure of seventy pounds to the square inch of steam. At present, this engine drives two vertical and two horizontal saws; draws up the logs into the sawing room, on an incline-tramway, of the gradient of one in fifteen feet; pumps up the water it requires from the tank, and it is intended to add a chaff-cutting machine and an additional saw for cutting firewood. The great drawback to obtaining the full force of the mechanical power of the engine arises from the want of more efficient fuel, it being found almost impossible to obtain the full degree of heat required for generating a powerful steam, by the use of wood alone.

The mill itself is a substantial timber building of two stories 100 by 45 feet; the lower portion of it is occupied by the driving gear and sundry offices; the upper portion contains the table and tramways for sawing operations, the average work turned out in ordinary measurement being upwards of 75,000 feet of sawn timber of all kinds per week, of six days ordinary working hours. Within the mill yard are the requisite stabling for twenty-five horses; barns for storage of twelve months' fodder; cart sheds; blacksmiths; wheelwrights' and carpenters shops; a veterinary forge; offices for the clerks and engineer, with multiple accommodation for the family of the managing proprietor. A well, upwards of sixty feet in depth has been sunk, and a permanent supply of pure water obtained. Immediately surrounding it are a number of neat and substantial huts and cottages, and several small gardens for the use of the workmen and their families.

The operations of the mill afford employment to about fifty men in all, consisting of sawyers, lumberers, engineers, blacksmiths, carpenters, wheelwrights, carters, bullock-drivers, clerks, and labourers; about twenty horses and forty-eight bullocks being constantly employed, and an additional number of the latter are kept in reserve. The labor of hauling the immense logs of timber, renders it necessary to withdraw them after short intervals of work. A station is maintained in connection with the saw mills on some good fattening ground near Mount Egerton with 1300 acres of purchased land a large portion of which is arable. There all the hay, grain fodder, and bread stuff are grown for the establishment; and the bullocks, and horses are sent down to it from time to time to recruit.

The horses generally speaking are a fine set of animals and in excellent condition, their food being a full allowance of good oaten chaff and grain. The horses are used on the tramway, and the bullocks in the Forest. With the exception of the castings of wheels and axles, all the material for building the tram-trucks, timber carriages, carts, wagons etc. are fashioned on the premises, affording constant employment to the mechanics engaged. Practical working and experience have from time to time suggested improvements in the forms and methods of construction, and the implements and vehicles turned out seem admirably adapted for the work for which they are used. The necessity of securing, at an early period, the command of the available timber within a reasonable distance of the mill site, induced the proprietors of 'The Trial Saw Mills', soon after the works were established, to commence the construction of a tramway through the best portion of the forest and in the direction of Ballarat.

**The Tram Road**

In the dry seasons the difficulty of carriage, whether of logs to the mill or timber to market, over an undulating and somewhat moist track of dense forest, was very great, and, in winter, next to an impossibility. In fact, it became ultimately a matter of absolute necessity, the carriage of timber from the mills to Ballarat having risen in a single season to 80 shillings per 100 feet. A line, therefore, was cleared some ten feet in width, and a wooden tramway laid down of narrow gauge, which now extends for a distance of four miles, as far as the branch saw mill belonging to the same company at the Green Hills, and within one-and-a-half miles of the Plank Road. The cost and method of construction of this excellent specimen of colonial enterprise and industry, and a notice of the other saw mills in the district, we must defer to our next issues.

In whatever direction productive labor seeks remuneration, one of the first considerations taken into account in estimating the probability of profit from the venture, is the prospect of a market, and the means of access to it. The want of good roads is an almost insuperably connected with the opening up of the resources of a new country. It rewards progress, perhaps, in a greater degree than anything else; and, in the estimation of many observers, it is held to be a sound stroke of policy, to make a road first, and trust to settlement following in its wake. Soon after the Trial Saw Mills were started in Buninyong, it became apparent that, even for the short distances over which it was requisite to haul the logs, some provision for a better road than that afforded by nature would be required. At the same time, the difficulty of transporting the sawn timber to market was every day becoming a question of vital interest. The example of the construction of a tram-road was early afforded by the proprietors of the Warrenheip Saw Mills, and the present tram was in a great measure carried out upon the data which that afforded.

As a general rule, the levels upon which the tram-road is laid are those afforded by the natural surface. The line is marked out in the direction offering the fewest difficulties from irregularity of surface, and the sleepers, six feet lengths of ordinary forest timbers from eight to twelve inches in diameter, are laid down upon it at a

distance of two feet between each other so regulated as to bring one of them directly under the joint of the rails at every 12 or 14 feet. These sleepers are grooved across by the saw and adze, at a width of about 4 feet 6 inches between the grooves. Into these grooves the rails are laid, and secured by wedges driven in opposite directions to the rails, themselves being sound pieces of full cut 4 x 3 stringy bark, varying in length from 12 to 14 feet.

*Forest historian Norman Houghton photographing remnant sleeper impression on a surviving section of the Trial Sawmills tramway running 400m north of the Yendon No. 1 Road (circled in green on the preceding map – see p7). Photo by Peter Evans.*

Originally the old method of securing the rails to the sleepers, by treenails, was adopted. It was found, however, that the boring weakened them and treenails were an obstacle to their expeditious replacement in case of accident. This method was therefore abandoned, and the plan of wedging substituted: and, after a lengthened trial it is found to answer for every requirement of the traffic. The rails themselves, though slight, are capable of bearing a considerable amount of traffic, three tons being the ordinary weight placed upon a single car.

In the construction of the earlier portions of the line, in order to avoid gradients as much as possible, constant curves were resorted to; in many spots, however, to an extreme degree, so much so as greatly to impede the steady and continuous working of the traffic. The first curve, starting from the Trial Mills, is a forcible illustration. At this point, the curve is so sharp, that in order to get over it, the outer rail is elevated some eight inches above the inner one. A heavy brake is obliged to be employed on one set of wheels, and the line of draught shifted causing an immense additional strain upon the horses, impeding the progress of the trucks and subjecting them to frequent accidents from getting off the rails. The whole of these difficulties however will be obviated by enlarging the curve, and diverting its course somewhat nearer the base of the Mount. Several of these sharp curves occur at intervals, and were prompted by a notion that it was much easier to travel round a curve than up a gradient.

Subsequent experience has shown that this does not hold good as a general rule, and that it is easier to travel up a stiff gradient than over a sharp curve. There is less wear and tear of the roadway, less friction on the wheels and less loss of time. As they became accustomed to the traffic the drivers found that they could ascend the straight gradient of 1 to 40 much easier than they could travel round a curve, requiring the application of a heavy brake upon the wheels, with the horses drawing from the side of the truck. In the recently constructed portions of the tram, therefore, the curves have been in a great degree abandoned and the line carried straight over the surface wherever the ascent was at all practicable with the usual horse power and dead weight in the distance travelled. …

But little ballast is used, nor is the line packed, except at intervals. A small quantity of earth, saw-dust, and bark refuse from the mill, is used for filling in between the sleepers. The traffic is over the line is at the rate of about forty-five tons per day, the usual load being from two and a half to three tons, on one truck, with a pair of horses, travelling at the rate of five miles per hour. With a load of one ton, ten miles per hour can be accomplished without difficulty. Along the line are a number of landing stages, to which the fallen logs are brought by the carters, from which the returning trucks are loaded. The cost of this line hitherto has been about 300 pounds per mile, exclusive of the value of the sawn timber. The rates of labor and the value of timber at the present time would not admit of that sum covering the whole cost; and there is no doubt but that a road of this description might be carried over all ordinary country, exclusive of special bridges, for that sum. The success of this undertaking offers incontestable proof that, as the pioneer of traffic through an unseated country, the wooden tram-road has advantages over all the present methods of road construction of no ordinary character, and is deserving of the special attention of the colonists.

*The surviving tramway formation is approximately 2 metres across and raised 300mm above the surface of the ground on either side. Distinct sleeper impressions spaced about 900mm apart can be discerned along much of the surviving formation, which includes a gentle curve at the northern extremity. The condition of the surviving remains is remarkable given their great age. Photo by Peter Evans.*

## A MOUNT COLE "CHOPPING WAR"

*By Peter Evans*

The Mount Cole Forest is situated in western Victoria on the north-western outliers of the Great Dividing Range before it dies out in the great northern plains. The ranges here are rugged and broken, with little in the way of arable land. However, the hills are clothed in one of the finest messmate and blue gum forests in Victoria. The combination of a large surrounding mining district and a limited area of timber meant that the forests were over-cut for nearly half a century during which the lax control of Victorian forests allowed timber to be treated more as something to be mined than as a renewable resource to be carefully harvested. Grazing leases were granted in all of these forests and, with the graziers came fire. Fire swept part of these forests in almost every summer in the second half of the nineteenth century.[1]

Official supervision was generally lax and often in the sole hands of the local Crown Lands Bailiff. Mapping, apart from parish plans, was generally non-existent, and the Crown Lands Bailiff was generally not conversant with the technology. Indeed, it would appear that several of these public servants lacked even the basic ability to distinguish the correct points of the compass. So the official rule that sawmills were to be a minimum of two miles apart was not always enforced.

One of the best areas of timber at Mount Cole was in the headwaters of Fiery Creek on Long Gully in a location that became known as "The Glut". The first known mill in that location was occupied by the Tunbridge Brothers. Richard Tunbridge (aged 29) and Charles Tunbridge (aged 30) arrived in Melbourne aboard the ship *Kent* in July 1855.[2] By the early 1860s, the Tunbridges were timber merchants in Ballarat with a large establishment on the corner of Sturt and Doveton Streets.

They also established their own sawmilling interests to ensure a secure supply of timber. The partners held the lease of the American Sawmills at Bullarook from 1861 to 1862, and it may have been the loss of this lease due to the insolvency of their sub-tenant James Wallis that prompted a move to a new site in Long Gully, north of Raglan.[3] In March 1863, the Tunbridges applied for a licence for the steam sawmill site they had occupied since early 1862. The site was six miles from the Raglan Hotel and situated in an area studded with granite boulders. The mill machinery had been purchased from a Mr Franks of Geelong and a further £1500 had been expended on its installation and improvement. All of the logs were coming from the top of the range high above the mill and most of the sawn timber was being used in the mines on the "Wet Lead" at Raglan. The installation of the mill had effected a great reduction in the price of timber in the locality.[4]

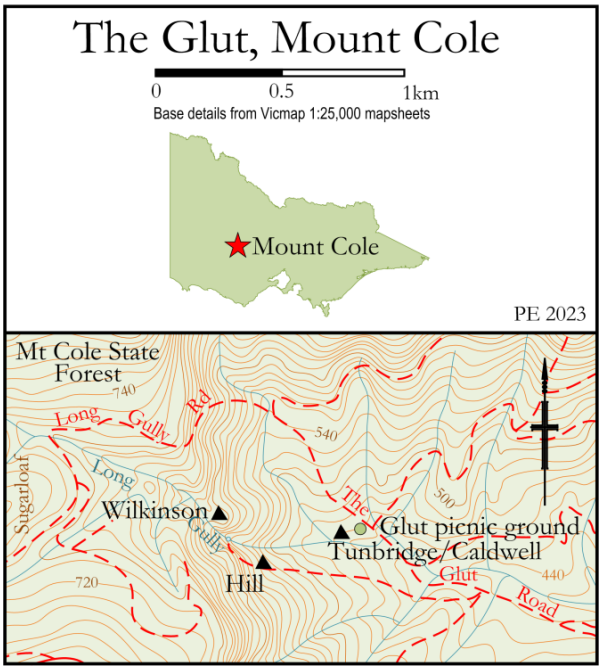

*Tunbridges' extensive timber yards on the corner of Sturt and Doveton Street, Ballarat. Photo by Solomon & Bardwell, 1861, State Library of Victoria image H2060.*

The new mill site at "The Glut" was difficult to work in the winter and, in 1869, a winter site was obtained in the Charlton Ranges to the north, while the "The Glut" site was retained for summer working.[5] In February 1871, Charles Tunbridge purchased 107 acres of land astride Long Gully which included the current Glut mill site and, in May of the same year, purchased an isolated area of three acres further up the creek to the west to use as a future sawmill site.[6] It was said that a man could get anything from soda water to champagne to drink at the Glut mill. Sometimes, after a night out, the men could not be induced to return to work the next morning without being supplied with a bottle of rum. Occasionally, the mill would stop work to allow the sawyer and other men to attend a cock-fight.[7] Probably due to such largesse, Charles Tunbridge was declared insolvent on 8 October 1878[8] and, shortly afterwards, the sawmill site was in the hands of Davis Calwell. This mill site was to become the scene of one of the more potentially violent "jumping" incidents in the Mount Cole Forest in 1880.

Caldwell had held a splitting licence in the area since the mid 1860s. After taking over Tunbridge's mill site, Caldwell constructed a log chute descending from The Sugarloaf, investing £1000 in improving the mill and expanding the business. The enterprise was trading as "The Glut Saw Mills" and apparently doing well until the site was "jumped" by John Hill. The Lands Department had approved a new site for Hill in April 1880. The official plans were consulted, and it was determined that there was no other sawmill within two miles, so the site was approved. Had Hill erected his mill where he said he would, there would have been no further trouble. Instead of in its proper place, the mill was erected within 18 chains (360 metres) of Caldwell's mill in August 1880. As soon as Caldwell discovered Hill's intentions he lodged an immediate protest with the Lands Department. Hill had placed his mill right next to a "choice belt of timber" towards which Caldwell had been constructing an expensive track. This placed the worthy officers of the Lands Department in a rather awkward position. Lack of local supervision had resulted in Hill breaking his word and erecting his mill in an unauthorised position. At the same time, the bureaucrats were now in a position where they were asked to defend a mill established on private

[1] VPP: *Twelfth Progress Report of the Royal Commission on State Forests and Timber Reserves*.
[2] PROV inward passenger list database, fiche 096 page 003.
[3] PROV, VPRS 44, unit 41, item 62/F8830.
[4] PROV, VPRS 44, unit 62, serial 63H/3521.
[5] PROV, VPRS 44, unit 197, item 69/U5370.
[6] Raglan West 'put-away' parish plan R_3_1_002.
[7] PROV, VPRS 11563, unit 129, item 35/2063.
[8] *VGG*, Friday 25 October 1878, page 2595.

property and obtaining its timber for the cost of only fallers and jinker licences against one on Crown land and paying a hefty site licence fee as well the fallers and jinker licences. Some sort of compromise which did not set any dangerous precedent was called for.




While the Lands Department officers were trying to come to a decision, the dispute escalated. In May 1881, Hill sent his men to clear a track to some timber near Caldwell's mill. When Caldwell heard of this, he sent his men to the site and threatened violence if Hill did not desist. Hill called for the Lands Department to protect his interests as a Crown licensee. Crown Lands Bailiff Andrew Bannerman was sent to adjudicate. After much negotiation, a formal agreement was signed between the two sawmillers in June 1881, the timber was divided equally between them, and a line of demarcation was blazed between the two sites. The peace was short-lived. In August 1881, Hill claimed he was out of timber. An investigation showed that the real reason for the shortage of logs was the condition of Hill's single log extraction route where his horses were working up to their bellies in mud. Despite being told to abide by the agreement, Hill sent his men into Caldwell's area in December 1881. By this time the Lands Department officers were sick of the whole affair and declined to intervene.[9]

The outcome of this "chopping war" is not known. Licensing records show that Hill retained the licence for his sawmill until January 1883 when it was transferred to Charles Wood who, in turn, held it until at least the end of 1885. The closure date of Davis Caldwell's mill is not known, but he still listed his occupation in the Post Office directories as sawmiller at Raglan in 1885-6. A mill further west and perched high on the escarpment was opened by Allan Wilkinson in 1895 and operated until 1899.

The Glut precinct is particularly rich in remnant features including mill sites, log chutes, and waggon tracks.

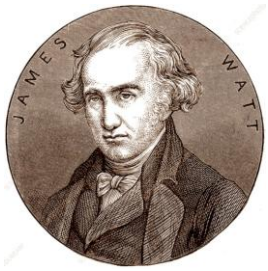
[9] PROV, VPRS 5357, unit 4736, serial 658/47.

## A Note on Steam Horsepower

*By Peter Evans*

The steam horsepower for sawmills quoted in historical government statistics and in the files of bodies controlling forest operations will, following British practice, always be *nominal* horsepower (nhp). The later figures quoted for diesel and electrically powered mills will always be *brake* horsepower (bhp) and, therein, lies a trap for the unwary seeking to compare the two.

The concept of "horsepower" was introduced by James Watt in the late 1700s, superseding "duty" as a marketing tool to help sell his steam engines. In 1843, Frederick Walter Simms presented a paper on practical experiments with working horses to the Institution of Civil Engineers. The paper concluded that a horse could just about work at the rate of one horsepower, but if it did so, it tended to drop dead at the end of its shift. One of those who made comments in the ensuing discussion on Simms' paper said that, when Watt defined a horsepower as 33,000 foot-pounds per minute, he was in the business of selling steam engines. Mr Watt, the speaker pointed out, sold his engines on a "satisfaction or your money back" guarantee. "Being a Scotsman, he wanted to make sure he never had to give the money back, so he defined a horsepower at a level somewhat above what an ordinary horse could do." As a result, when he sold an engine rated in horsepower, the new owner was pleased to find it could actually do more work than the equivalent number of horses.




*James Watt (1736-1819) engraved in 1876.*
*Science Photo Library image C0451602.*

Confusingly, there are three types of steam horsepower. The type of horsepower historically quoted by British engine manufacturers to the customer is nhp, and is calculated entirely from the diameter of the cylinder, ignoring many other important factors. A common measure is one tenth of the area of the piston in square inches multiplied by the number of cylinders. (A similar rule of thumb equates 10 square feet of boiler heating surface, regardless of its design, efficiency, or the calorific value of its fuel, with one boiler horsepower.) When the Forests Commission Victoria demanded a minimum "16hp" engine as a condition for issuing a licence for a sawmill, it meant nhp. However, the figure quoted does not define the exact quantitative output of the engine.

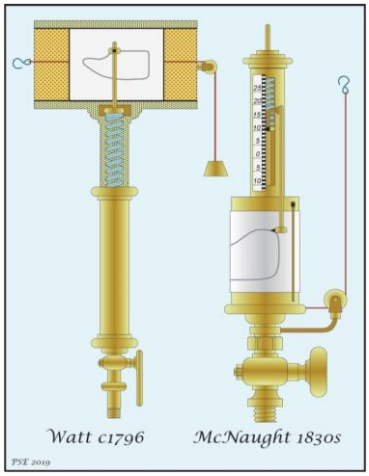
A more accurate figure for the output of steam engines is obtained by calculating the *indicated* horsepower (ihp) using a device known (appropriately enough) as an "indicator"; ihp depends on such factors as the boiler pressure, regulator setting, accuracy of valve setting and amount of "cut-off", condition of the gland packing and rings, and the design of the steam inlet and exhaust

passages. The concept of the steam engine indicator is generally accepted to have been initiated by James Watt to better understand what was happening to the steam inside his cylinders. Watt started with mercury tubes to record pressure changes in the cylinder, then graduated to a small cylinder and piston which communicated with a pointer (which was returned by a spring). This device could both register a positive pressure and a partial vacuum.


*Even some early gas engines were sold on nominal horsepower. This advertisement for the Otto gas engine of Crossley Brothers includes a table of comparisons between nominal and indicated horsepower for various engines. The sizes range from ½ nhp/1.1 ihp to 35 nhp/100 ihp. The discrepancy between the two (by double to almost triple) is readily apparent.* The Engineer*, Friday 6 October 1882, page xv.*

Around 1796, Watt's assistant John Southern added a moving tablet to measure the position of the piston, and a pencil to provide a permanent recording of pressure against longitudinal travel. In this device we find the basic form of the steam engine indicator; the world's first autographic recorder, and a precursor to the future development of quantitative thermodynamics for heat engines. The firm of Boulton & Watt equipped its engine erectors with the indicator, as it was recognised that it provided a means of accurately timing valve operation to maximise the efficiency of an engine. The device was kept secret for a time but, inevitably, became more widely known and, by the 1830s, was being manufactured by others.

John Walter, in his history of the steam engine indicator, gives credit to either Maudslay Sons & Field or John McNaught for the replacement of the moving tablet with a revolving drum. Whoever came up with the concept, it was McNaught who manufactured the device in quantity and certainly popularised its industrial use in his coaxial indicator in the 1830s. It was also McNaught who, in response to rising pressures in the mid-1830s, offset the drum from the body containing the cylinder. In this form (but minus any amplifying mechanism) we have what is recognisably the steam engine indicator of today.

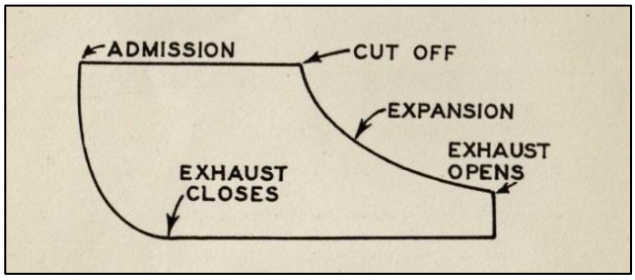



The great drawback of the device was that the piston and its rod have mass (and therefore acquire momentum) and that springs are inherently "bouncy". With the advent of higher pressures and faster engine speeds, these faults detracted from the accuracy of the indicator diagram. The response was to make the piston and rod smaller and lighter, and to use much "stiffer" springs. This of necessity limited pencil travel, and hence an amplification mechanism was needed. At the behest of Charles Porter (inventor of the Porter governor and co-developer of the Porter-Allan high-speed engine), this problem was solved by Charles Richards and patented in 1862.

*Richards' indicator serial #17273 from the writer's collection, manufactured by Elliot Brothers, London (the box contains the firm's label) but sold by and engraved for Heath & Co of Crayford, London (marine instrument makers). The high serial number suggests this indicator was made in the 1880s. The basic concept of the indicator mostly stayed the same, but a variety of amplification methods were employed, among the most popular of which was the Thompson (with various modifications, especially that of Crosby). Photo by Peter Evans.*

The Richards indicator employed an amplification system (based on Watt's parallel motion) that amplified the piston movement fourfold and retained a very close approximation to linearity. The Richards indicator became immensely popular and sold in large numbers, especially in the USA, where engines tended to be sold on ihp rather than nhp.

A critical component of ihp could be determined directly from the indicator diagram, and a variety of specialist planimeters were developed to aid in its calculation. "Mean effective pressure" in the cylinder is determined from the area of the indicator diagram in square inches (as measured with either a planimeter or parallel dividers) divided by the length of the diagram in inches, the result to be multiplied by the designated travel of the spring in pounds per inch.




*Theoretical steam engine indicator diagram. From* Newnes Marine Engineering*, poster C11, Peter Evans collection.*

IHP = (P x L x A x N) ÷ 33,000, where:
P = Pressure (mean effective pressure) in lbs/□ inch (for a double-acting engine sum cards from both ends)
L = Length of stroke of piston in decimal feet
A = Area of piston in □ inches (less area of piston rod)
N = number of strokes (in plus out) per minute).

This figure is still not the definitive measure of the output of the engine. The real output of the engine is determined by the bhp measured on a dynamometer, and takes into account all of the above including frictional losses in the engine, and represents the true power available to perform work at the engine's final drive. The dynamometer was invented in 1798, but only became readily available for the measurement of engine output in the 1930s. Recent experiments in England using a dynamometer on restored portable steam engines suggest that, as a rough rule of thumb only, the bhp is approximately *seven times* the nhp for most portable type engines. Unless dynamometer measurements are available for a steam engine, it is better to stick to the Imperial figure and state which type of horsepower is quoted.

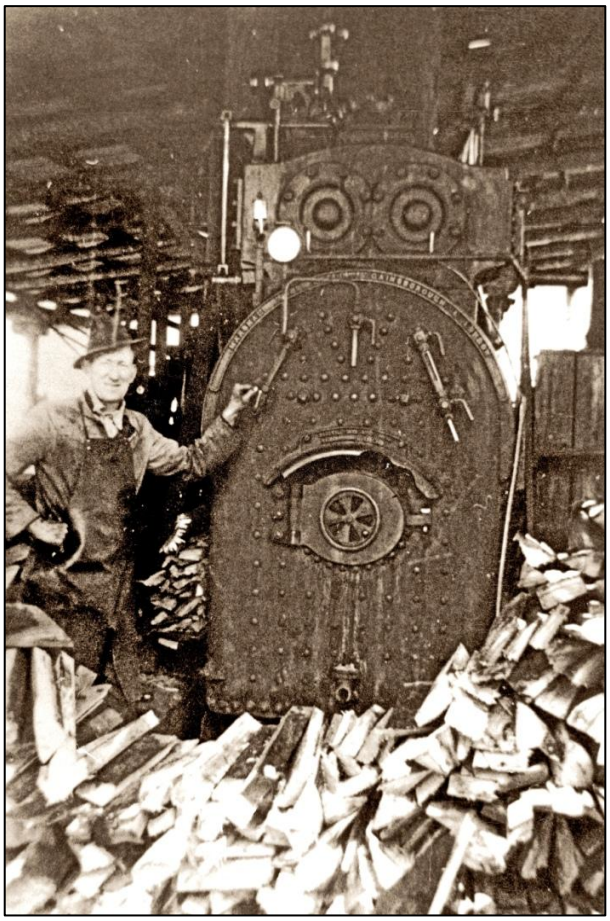
With the ready availability of dynamometers for testing, practically every diesel engine and electric motor used in a sawmill will be specified in bhp. I would suggest that the growth in power of sawmill engines during the transition from steam to diesel and electricity is perhaps less dramatic than initially apparent. And certainly, any conversion of nhp to metric would be entirely misleading.

*Hopkinson patent swivel-arm non-amplifying indicator serial #217 built to a patent of 1869. Of the some 1200 believed built, only seven of these indicators are confirmed in existence today world-wide, and this example (cased with its complete set of accessories including a whalebone ruler) resides in the writer's collection. Photo by Peter Evans.*

*A selection of American planimeters from the writer's collection. These were used to measure the area of an indicator diagram as the first step in determining the mean effective pressure in the cylinder.*

*From top, the Willis planimeter (patented 1896), the Bushnell (or improved Coffin) planimeter (patented 1903), the Lippincott planimeter (patented 1896), and an Amsler planimeter (invented 1854) and manufactured by the American Steam Gauge & Valve Manufacturing Coy.*

*Photo by Peter Evans.*



*Engine driver Owen Brett with the 16nhp Marshall portable engine at Clark & Pearce's No. 4 sawmill in the Rubicon Forest (its remains are still there today). Peter Evans collection.*

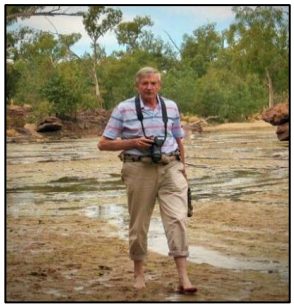
## OBITUARY: KEVIN WAREING

*From Victoria's Forest & Bushfire Heritage Facebook group, courtesy Peter McHugh.*

Known to many forestry students, Kevin Wareing passed away on 23 February 2023. Kevin graduated from the Victorian School of Forestry (VSF) in 1957. His career included Research, Nowa Nowa; HO Working Plans (1964); Traralgon – forest management, 1966-1969; at Orbost; 1973 to 1982; lecturer at VSF in forest measurement and inventory; then HO OiC Working Plans Branch (1982-83).

*VSF graduating class, December 1957: L to R – Kevin Wareing, John Wright, Conrad Wood, Bob Graham, Malcolm McDougall, Ted Stuckey, Andy Banks.*

## OBITUARY: ARNIS HEISLERS



Former Victorian forester Arnis Heislers died on 18 January 2023. Born in Riga, Latvia, in 1939, Arnis' life was launched straight into wartime Europe with both Russians and Germans alternately claiming the land in which he was born. In mid-1944, the family escaped to Poland by barge to live with relatives. Following the war they spent three years in a displaced persons camp near Hamburg. In 1949 they managed to emigrate to Australia aboard the USAT *General Langfitt*. Diverted to Melbourne in June 1949 by a dock strike in Sydney, the family spent time at the Bonegilla migrant camp before settling at Mirboo North in Gippsland. Arnis was a good student and quickly learned English.

Arnis Heislers graduated from the Victorian School of Forestry in 1960, and earned a BSc from the University of Melbourne in 1963. He worked with the FCV in forest assessment, in the Bright Forest District as Assistant District Forester, and then in Fire Research at Daylesford and Creswick, before joining the Ministry for Conservation in 1974 to work in Environmental Assessment. From 1977 to 1991 he worked for the National Parks Service, overseeing the research program. He then worked on planning projects as an environmental consultant, and as the Director of the Trees for Profit Research Centre with Melbourne University for several years, before fully retiring in 2003.

Arnis was a keen environmentalist, photographer and historian, His wife Una predeceased him, and he leaves a sister, Anita, and children David, Chris, Simon and Jen as well as eleven grandchildren. His legacy is enhanced by publications covering a wide range of subjects. The National Library of Australia lists the following publications involving Arnis (no doubt there are others in the "grey literature").

Heislers, Arnis, 2003. *Wings over Western Port: three decades surveying wetland birds, 1973-2003*. Nunawading: Bird Observers Club of Australia.

Heislers, A., Lynch, P. and Walters, B. [editors], 1982. *Fire ecology in semi-arid lands: proceedings of a workshop held at Mildura, Victoria, 24-29th May 1981*. Melbourne: CSIRO.

Dexter, B.D., Heislers, A. and Sloan, T., 1973. *A history of the Mt. Buffalo fire, 14th December-26th December, 1972*. Melbourne: Forests Commission, Victoria.

Dexter, B.D., Heislers, A. and Sloan, T., 1977. *The Mount Buffalo fire*. Melbourne: Forests Commission, Victoria.

Hodgson, Athol, and Heislers, Arnis, 1973. *Some aspects of the role of forest fire in South Eastern Australia.* Melbourne: Forests Commission, Victoria.

Miles (nee Glover) Jill and Heislers, Arnis, 2018. *The art of living: life and artistry of James Glover*. Wonthaggi, Victoria.

Suckling, G., Heislers, A., Neumann, F.G. and Backen, E., 1973. *A study of the flora and fauna of radiata pine, Pinus radiata D. Don, plantations at Myrtleford, II second progress report*. Melbourne: Forests Commission, Victoria.

## PEOPLE'S FOREST ORAL HISTORY PROJECT – INTERVIEW WITH ANSIS (JOHN) HEISLERS

Arnis's father, Ansis (John) Heislers, was also involved in the forest industry and was interviewed by Gregg Borschmann in May 1983 as part of the "People's forest oral history project" (*https://nla.gov.au/nla.obj-216994100*).

The summary on the library's catalogue page *https://catalogue.nla.gov.au/Record/1234203* is below.

> Ansis (John) Heislers was born in Latvia in 1910. Heislers recalls his education at forestry school and forestry methods used in his district. He talks of the impact of World War II, and relocating his family to safety before emigrating to Australia in 1949. Once in Australia, John began working in the Australian forestry industry - he compares Australian practices of the 1950s and 1960s with that of his homeland, and the treatment of the landscape. John lost his house in Masterton in 1983 during a bushfire, rebuilding in Gisborne, Victoria. He also talks about family life following his family's emigration to Australia.

## ROBERT ONFRAY'S BLOGS

Robert Onfray continues his accounts on three different topics each month – stories about Surrey Hills (Tasmania), travelling around Australia, and forestry or land management issues. While the newsletter tends to focus on the Surrey Hills and forestry blogs, his travel articles are also worth checking out. His website is at www.robertonfray.com and includes details of how to subscribe to his e-mail list.

The following articles have been published since our December 2022 issue.

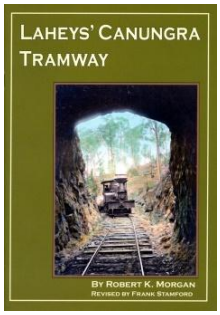
***Surrey Hills***

**January:** A public spat
**February:** A fiery summer in north-west Tasmania
**March:** The formation of Bush Watch in Tasmania and its direct links with Surrey Hills

***Forestry***

**December:** Origins of woodchopping as a sport
**January:** A case study in folly #2 – the 2003 Canberra firestorm
**January:** What does a forester do? (Part 2)
**February:** A case study in folly #3 – the 2013 Wambelong fire
**March:** Another emergency disaster failure – the 2022 New South Wales floods in Northern NSW
**April:** Why on earth do we continue to celebrate Earth Day?

## NEW BOOKS AND PUBLICATIONS

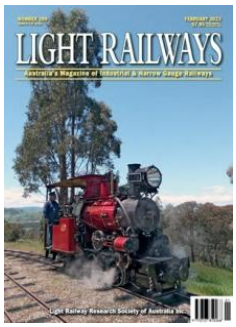



Morgan, Robert K., 2023, (3rd edition). *Lahey's Canungra Tramway*. Soft cover, 32 pages plus 4 page card cover, A4 size, 26 photographs, three maps and two diagrams, references, and index. Published by Light Railway Research Society of Australia. ISBN 0909340605. Price $10 plus postage. Available from https://shop.lrrsa.org.au/product/laheys-canungra-tramway-3.

*From the publisher's notes.*

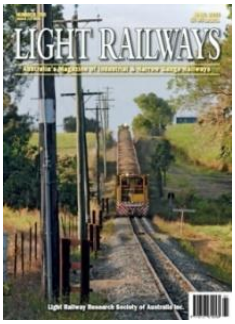
This booklet describes Queensland's largest timber tramway. It was originally published as a special edition of *Light Railways* (No. 54, Summer 1975-76). Laheys Canungra Tramway was a 3 ft 6 in gauge timber tramway in south-east Queensland which operated from about 1903 to the early 1930s. It used one B class Climax locomotive, and two A class and one B class Shay locomotives. The tramway ran through superb scenery, and included one tunnel through rock, and a 1 in 12½ (8%) grade for over half a mile. The second edition was completely revised, with additional material, more photographs and maps, and a larger page size to give better presentation. This third edition (revised by Frank Stamford) includes some originally hand-tinted photographs, and a brief update covering the situation in 2022.

*Light Railways: Australia's Magazine of Industrial & Narrow Gauge Railways*, February 2023 (LR289) and April 2023 (LR290). Light Railway Research Society of Australia. ISSN 0727 8101. www.lrrsa.org.au and www.facebook.com/groups/LightRailwaysAustralia.




LR289 has an article by Peter Evans on the Good Hope Mine, Crooked River (Gippsland, Victoria) which mentions firewood and mining timber procurement from the forests in this rugged mountainous region.

There is also a report of an LRRSA tour to Timboon (Victoria) in the heart of the former Heytesbury Forest. Timboon became a centre of intensive sawmilling after the opening of a branch railway to the town in 1894, but these sawmills were always just as much about creating dairy farms as they were about producing timber. The Heytesbury Forest is now almost non-existent. Peter has a book about the forest in preparation.




LR290 has another article sourced from oral history carried out by author Nick Anchen. The subject this time is Ken Fall (son of a Powelltown loco and logging winch driver). Powelltown (Victoria) was the site of a major sawmill, and had an extensive steam-operated tramway system approaching those of Western Australia in scale. Ken Fall listened to the stories his father told him and also ended up working in sawmills for a time. Oral evidence of this kind is particularly valuable as it fleshes out history unobtainable from official files and newspaper accounts.

In the letters section, there is a report of the only known South Australian timber tramway at Mount McIntyre (near Mount Gambier). The horse-hauled tramway served a mill cutting shooks for fruit cases from plantation timbers. There is also a letter and additional photographs relating to Longworth's timber tramway at Laurieton (NSW).

The Heritage & Tourist section carries a report of the restoration for display of a Shay locomotive operated by A&D Munro and bringing logs to their mill at Palmtree (Qld).

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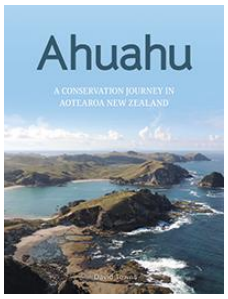
All back issues of *Light Railways* are available from the LRSSA's website, either as free downloads (nos. 1 to 275) or for $7.95 each (nos. 276 to 290).



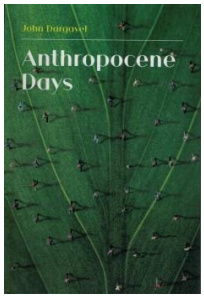

David Towns, 2023, *Ahuahu: A conservation journey in Aotearoa New Zealand*. Published by Canterbury University Press, NZ. 384pp, softback with flaps, 280 x 210mm. ISBN 9781988503264. www.canterbury.ac.nz/engage/cup/new/ahuahu-a-conservation-journey-in-aotearoa-new-zealand.html

*From the publisher's notes.*

This book uses the Mercury Islands as central characters in an engaging account of progress in understanding New Zealand biodiversity, and improving ways to protect it. These islands are particularly instructive, as they range from the large, inhabited Ahuahu (Great Mercury Island) down to several small uninhabited islands. The book shows how Polynesian and European colonists altered the landscape of New Zealand, and brought passengers (intentionally or not) including three species of rats. Gradually, it was recognised that rats could fundamentally change the ecology of islands, both directly (e.g. by predation on invertebrates and reptiles) and indirectly (e.g. by eliminating nesting seabirds, which previously dropped huge quantities of marine fertiliser in their guano). This motivated the remarkable, almost heroic, development of methods for eradicating invasive mammals from islands – at first small tentative attempts, then large bold programmes.

All this is told first hand by David Towns, who first visited the islands in 1971. At that time, only the two smallest islands in the group had no pests. In 2014 the last mammals were eradicated from Ahuahu, making the entire group pest-free. The book documents the remarkable subsequent recovery on these islands, and gives many other relevant examples from elsewhere in New Zealand. It also details the importance of social attitudes, with sections on the benefits of bicultural approaches to conservation, greater community involvement in conservation action, and dealing with opposition to conservation use of toxins. The book finishes with an optimistic view of the future potential benefits from our new-found ecological proficiency. For anyone involved in conservation projects, this book provides a scientific basis for, and social history of, their efforts.

David Towns did his MSc and PhD at the University of Auckland. After six years overseas at universities in the USA and Australia, he returned to New Zealand in 1982 to work with the New Zealand Wildlife Service as a conservation scientist. In 1987 the Wildlife Service became part of the newly formed Department of Conservation (DOC). He stayed with DOC until 2012, when he began a shared appointment between DOC and Auckland University of Technology (AUT), teaching conservation there as a Professor of Applied Conservation. David won the Charles Fleming Award for Environmental Achievement from the Royal Society Te Apārangi for his pioneering research in conservation and island ecosystem ecology in 2019. David retired from AUT as Professor Emeritus in 2020, which gave him time to distil the key messages from a lifetime's conservation experience into this book.




John Dargavel, 2023. *Anthropocene Days*. Published by White Horse Press. ISBN 9781912186686. Available from whpress.co.uk. Price (HB) £40 / A$55 / €45 / A$70 plus postage.

*From the publisher's notes*:

*Anthropocene Days* gathers 27 easy-to-read short essays about the environment and climate change in everyday life. While the world and governments are beset by the great woes of changing climate, deforestation, species extinction, air pollution, fouling oceans and so on, we go about individually and locally as best we can from day to day. *Anthropocene Days* contends that these two domains, so apparently separate, are essentially connected.

The book looks at the diverse and mundane activities of daily life to show how the environment is experienced, and does this very personally by drawing its observations from the author's life. It is part memoir, part recent history – a medley of short essays with themes of landscape change, forests, trees, war, fire, pestilence and the domestic life of housing, dusting and clutter. Motivated by present concerns, some reach back to the 1940s. They are set in Australia, Britain, India, Singapore and America.

*Anthropocene Days* is a deceptively easy read. It does not hector readers on what to do, but its ruminations, drawn from long engagement with environments, encourage reflection on how we pass our everyday lives while the planet changes.

John Dargavel (b. 1932) has been deeply engaged in forests, environments, science, people, politics and history. Inquisitive and impatient at established boundaries, he has been drawn into biography, cultural landscapes and the place of trees in remembrance. He has written papers, books and a play, and has edited collections. His most recent book on the history of forest science over the last three centuries, *Science and Hope: a Forest History*, was written with Elisabeth Johann and published in 2013 by White Horse Press, followed by a German edition in 2018. His most recent collection, *Restoring Forests in Times of Contagion: Papers to Celebrate John Evelyn's 400th Birthday*, was edited with Ben Wilkie and published online. John was born in London, trained as a forester in Scotland and has worked in different regions of Australia. He was a founding member of the Australian Forest History Society. He is an Honorary Associate Professor in the Fenner School of Environment and Society at the Australian National University. He now lives in Melbourne.

*Editor's note:* Anthropocene Days *will be launched at the Australian National University on Tuesday 18 April 2023. Details at https://fennerschool.anu.edu.au/news-events/events/book-launch-anthropocene-days.*