

# **LIGHT RAILWAYS**

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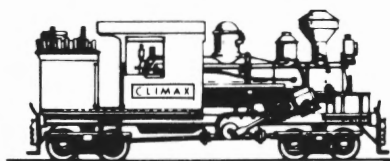
**Ben Bullen Limestone Tramways, NSW  
Cheney Spark Nullifier**

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**Light Railways Editor:** Bob McKillop, 10A The Bulwark, Castlecrag NSW 2068; Phone and fax (02) 958 4516. Articles, photographs and letters welcome.

**Cover Photo:** The romance of Australian logging tramways is brought to life in this fine photograph. It is believed to depict the B-class Climax locomotive in original form on Lahey's Canungra tramway in SE Queensland, circa 1903 - see Letters column, page 22.

Courtesy John B Scott

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## EDITORIAL

As New South Wales LRRSA members will be aware, the limestone quarries and tramways at Ben Bullen have been the subject of research by our President, Jeff Moonie, over many years. The Division has conducted tours over the site under Jeff's expert guidance and we have been looking forward to the product of his research into this interesting topic. Receipt of an article from John Reid on the Ben Bullen tramways resulted in some pressure from the editor for Jeff to finalise his material for publication in Light Railways.

That is now with us and I have decided to run both articles in this issue. The outcome is an examination of the operations of an early industrial enterprise from different perspectives. The authors have drawn on varying documentary and oral sources, thus providing different flavours to their interpretation of early activities. Thus, we have a good illustration of how varying approaches to his torical research can provide new and interesting perspectives on subjects which are often considered to have been thoroughly covered. Perhaps that railway cum industrial enterprise near you which has previously been covered in a "definitive" article deserves another look?

Paul Simpson provides some further information on the efforts of Western Australian engineer S Cheney to combat the problem of steam locomotive sparks in forest areas. Regular research notes and letters columns complete the issue.

A number of LRRSA members are actively engaged in research projects to record the history of Australia's industries and the railway ventures which served them. Accordingly, I have a good supply of interesting articles for future issues. However, I would be pleased to receive good quality photographs which might be suitable for *Light Railways* covers.

# THE LIMESTONE QUARRIES AND TRAMWAYS OF BEN BULLEN, NSW

by Jeff Moonie

## Introduction

Ben Bullen is a small quiet roadside settlement. The Aboriginal translation of its name is "high quiet place", which aptly describes Ben Bullen. The village is situated 43 km (27 miles) north of Lithgow (and 194 km from Sydney) on the railway line from Wallerawang to Mudgee.

Our interest, and this story, lies in the limestone quarries to the west and the tramways that served them. There were three quarries, the largest and most distant being located 3 ½ miles (5.2 km) from Ben Bullen.

## Early Settlement

Settlement in the Ben Bullen area dates from 1839. Some of the first land portions were taken out by Messrs Bowman (1839), Anderson (1839), Cadell (1854) and Corlis (1861)<sup>1</sup>. The early settlers were attracted by pastoral lands, but other enterprises soon emerged.

Timber-getting was an early industry, supplying mine props, railway sleepers and firewood. There were also a number of mining ventures. A slate quarry was opened around 1887 in the Como Valley Estate by a Mr Kearns. The venture was short lived, although Kearns made a return visit in 1917, taking test samples with the intention of re-opening<sup>2</sup>.

To the west, gold discoveries at Ophir and the Turon River in 1851 were reshaping the colony's future. The Turon soon became the major goldfield in New South Wales. Later, gold was discovered near Ben Bullen in Jews Creek, a tributary of the Turon. As a result, a gold-mining venture, the Golden Knob, was started in September 1907<sup>3</sup>. It was located between Jews Creek and the O'Farrell's residence. Machinery was railled in for use in the mine, but the extent of its success is not known.

Coal and shale were known to exist in the sandstone country to the east of Ben Bullen, and a number of attempts were made to exploit these seams. In 1913, Mr Toyer of the Ben Bullen Lime Company, was granted a 100 acre lease a few hundred metres from the railway line<sup>4</sup>. A Mr Carr applied for shale and coal leases between Ben Bullen and Jews Creek in 1919, and east of the railway station in June 1921.

The only significant development came in the 1940's, with the development of a large open-cut coal mine at Ben Bullen by the Joint Coal Board. Coal was trucked to newly constructed sidings on the up side (east) of Ben Bullen station. The

operation lasted into the 1950's. Today the area is a mixture of farming and pastoral holdings. A range of horticultural products, grain, wool, fat lambs and cattle are produced in the district.

## Railway Construction

Ben Bullen railway station (NSWGR No.154) was opened on 15 May 1882, when the line from Wallerawang was opened to Capertee<sup>5</sup>. A brick station building was provided, which still stands. A dead-end siding was constructed on the down side of the line. This was used by the NSW Lime Company from 1889. The siding was extended and turned into a loop, but by 1914, a new public siding was provided on the up side. This allowed the original loop to be used exclusively by G&C Hoskins for their lime shipments. The yard then had standing room for 53 4-wheel wagons. The loop was again extended by 540 ft (165 m) on 30 January 1918<sup>6</sup>.

A Standard Unattended Crossing Loop with automatic electric staff working was installed on 7 July 1919 to help ease rail traffic congestion in the area. This resulted in further changes to the yard layout<sup>7</sup>. Access to the Sydney end of the Hoskins' siding was via a trailing point off the new up loop, and crossing the now down loop by means of a "K" crossing. Catch points were provided at the end of the siding.



*Ben Bullen railway station still stands as a reminder to an earlier era when the yard was busy with limestone traffic from the nearby quarries.*

*Photo Jeff Moonie*

With abandonment of the quarries in 1922, the points of the sidings were disconnected and material removed on 6 April 1926<sup>8</sup>.

## LIMESTONE QUARRIES

### New South Wales Lime Company

The first limestone leases in the Ben Bullen area were taken out on portion 45 in 1884 and portions 46 and 47 in 1886 by Messrs T Larken, J Buchanan and T Betteson<sup>9</sup>. By 1889, the New South Wales Lime Company had secured possession of the leases. They started quarrying stone immediately at a site 3¼ miles (5.2 km) from Ben Bullen station. A kiln was erected to burn the limestone, but was little used.

To transport the lime and limestone from the quarry to the railway station, a tramline was constructed<sup>10</sup>. To date, no information on track gauge, type of rail, rolling stock or motive power have come to light, though it could be presumed to be horse-drawn. A considerable quantity of limestone was dispatched, presumably for flux.

By all reports, the NSW Lime Company venture was not successful and the operation closed in the

late 1890s. The tramline was lifted.

### Joseph Edwards

In mid-1900, Mr Joseph Edwards, then manager for the Australian Kerosene, Oil and Mineral Company<sup>11</sup>, acquired the old NSW Lime Company leases and began preparatory work to reopen the quarry.

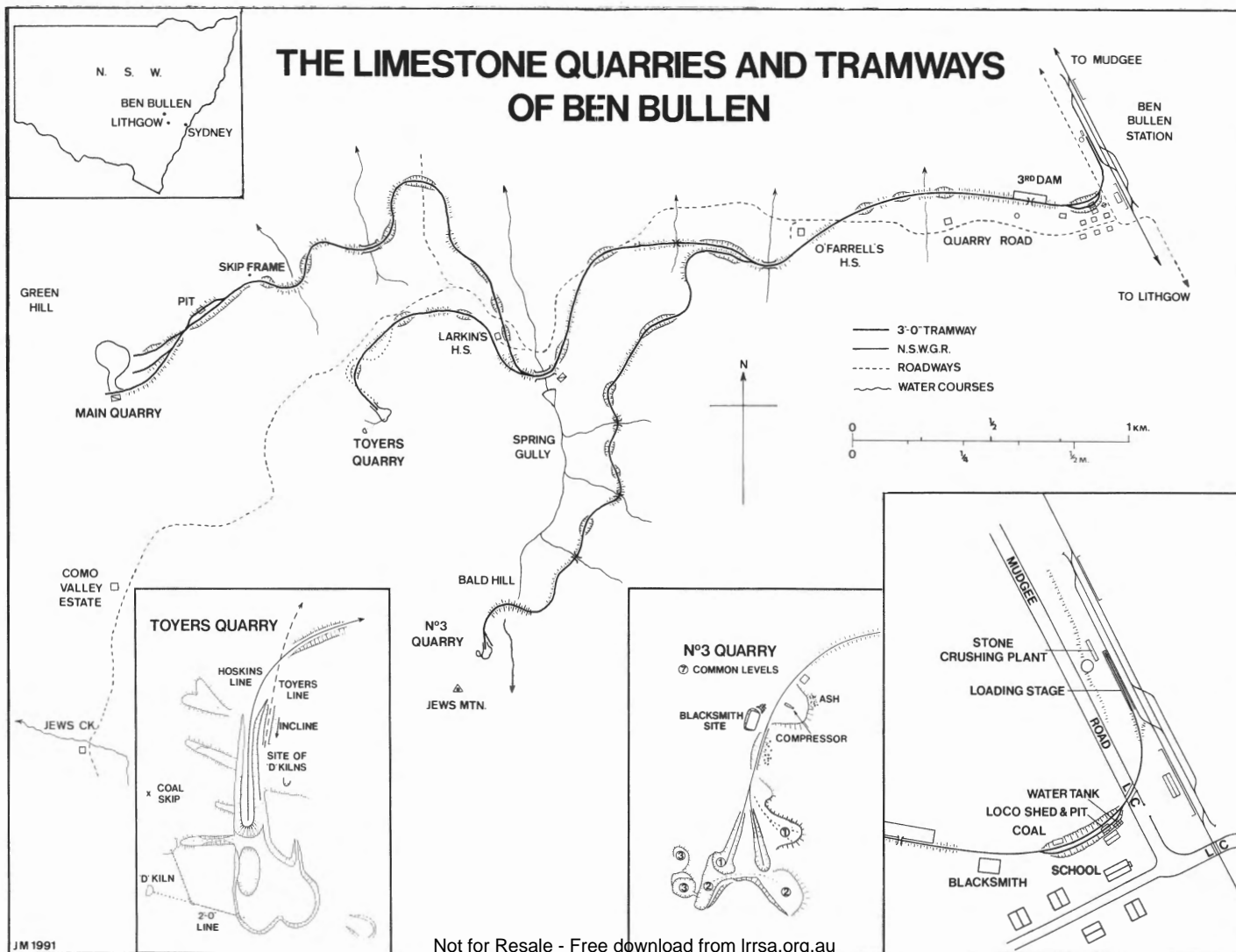
By the following year, Edwards secured new orders for lime from the fertilizer plant at Cockle Creek, near Newcastle<sup>12</sup>. He had the tramline relaid from the quarry to Ben Bullen station to a gauge of 3ft (914 mm). By then, two bottle-style kilns, 15 x 20 feet in diameter, were erected to burn the limestone<sup>13</sup>. The burnt lime was loaded in 'V' bodied skips at the quarry. Two to three skips were hauled the 3¼ miles to the station by the same number of horses<sup>14</sup>. The grades were mostly in favour of the loaded skips, so that the normal practice was for the skips to be coasted downgrade using sprags to check their speed. The horses gave assistance up the grades when required. After unloading, they hauled the empty skips back to the quarry.



*Quarry men working at the face of the "Main Quarry", c.1914. Some of the lightly laid 3 ft gauge track is in the foreground.*

*Source: Department of Minerals & Resources, The Blue Book, April 1915.*

# THE LIMESTONE QUARRIES AND TRAMWAYS OF BEN BULLEN





Edwards also met with limited success with his quarry venture and the quarry only operated spasmodically under his ownership<sup>15</sup>. It was taken over in 1908 by Messrs G&C Hoskins Limited of Lithgow. A kiln containing 120,000 bricks was demolished in March 1914 and the bricks were used to construct the homestead at *Como Valley* for Mr Charles Larken<sup>16</sup>.

### G&C Hoskins Limited

G&C Hoskins Limited became involved in the production of iron and steel at Lithgow by default after the failure of William Stanford Limited, who operated the Esbank Iron Works. Iron was first produced at Esbank in 1874, but the Works closed in 1882. A cooperative was formed in 1883 to reopen the works. In 1892, the manager, William Stanford, purchased the enterprise which comprised a foundry, rolling mills, auxiliary shops, colliery and estate.

Stanford was able to negotiate a contract with the NSW Government to supply all their iron and steel needs for seven years from 1907. He constructed a

blast furnace which commenced operations in May 1907. However, the company was in financial difficulty and the Commonwealth Bank issued a foreclosure notice on 8 December 1912. The State Government turned to George and Charles Henry Hoskins, who operated a successful engineering firm in Sydney, to take over the Esbank Iron Works.

The manufacture of iron and steel requires limestone for flux. G&C Hoskins purchased the Ben Bullen quarry from Edwards in 1908 and set about expanding the operation. By late 1909, they had repaired the tramline and installed loop lines at the quarry and station<sup>17</sup>. The loading stage was increased by 100 feet (30.5 metres) to accommodate more skips<sup>18</sup>.

The new owners planned the introduction of a steam locomotive. To supply water, two dams were built and bores were drilled<sup>19</sup>. Six water tanks of 400 gallon capacity, a locomotive shed and 15 ft long pit were constructed on the outer loop at the railway station and a 10 ft pit on the quarry loop.



*AB 311/1888 was a sister unit to the diminutive 0-4-2ST used at Ben Bullen. It is photographed at Nayook West on the Victorian Hardwood Company tramway in 1918. Photo: F Rayment*

## Locomotives

The first locomotive used at Ben Bullen was a diminutive 0-4-2ST which carried Kerr Stuart B/N 538/1896, but was actually built by Andrew Barclay (B/N 310/1888). This loco and a sister were ordered from Kerr Stuart in England by the Cullen Bullen Lime & Cement Company in 1896. The 4 ton loco-motives were originally built by Andrew Barclay (B/N 310-11/1888) to 2ft 9in gauge (809mm), with driving wheels of 2ft diameter and a boiler pressure of 130 lbs<sup>20</sup>. Kerr Stuart regauged or reconditioned the engines and placed their own builder plates (538-9 of 1896) on the locomotives.

The Cullen Bullen Lime & Cement Company subsequently became the Commonwealth Portland Cement Company. The locomotives were used on their 3ft gauge lines from the lime works to Portland station, and from there to Ivanhoe Colliery at Pipers Flat. AB 310 is reported to have been called *CULLEN BULLEN*<sup>21</sup>, but no evidence has come to light to confirm this. The 3ft gauge lines were replaced by standard gauge railways and the locomotives were sold in 1909. AB 311 went to the Warburton Timber Company in Victoria, and it subsequently went to Powelltown in 1913<sup>22</sup>.

AB 310 arrived at Ben Bullen in November 1909 when final construction and trackwork were still in progress<sup>23</sup>. It worked the line single handed until the arrival of *BEN BULLEN*. At some stage during its career, the cab was extended backwards, a small bunker provided and the distinctive Andrew Barclay tank replaced by a square ship's tank<sup>24</sup>. My informant (Mr T O'Farrell) cannot remember seeing two locomotives working the line at the same time, so the whereabouts of the tiny Barclay from 1912 until its reappearance at the steelworks in 1920 is a mystery.

The second locomotive was an 0-6-0 tank engine built by the firm of Hawthorn Leslie and having their builders number 2840 of 1910<sup>25</sup>. It was apparently purchased new by G&C Hoskins.

This locomotive was named *BEN BULLEN*, the name being inscribed on brass plates on its tank sides, and was painted in a dark shade of green<sup>26</sup>. The new loco arrived at Ben Bullen by early 1912. It was reported in the local press to have been:

of a much more substantial character than its predecessor, besides being more comfortable and up to date<sup>27</sup>.

## Tramway Operations

The locomotives always pulled the skips from the main quarry to the railway station. Here the locomotive would run around the train and propel the skips across Mudgee Road to the wooden loading stage. The same procedure was used in returning the skips to the quarry.

*More skips were purchased in 1912 to bring the total to 27*<sup>28</sup>. The opening of a second blast furnace



*BEN BULLEN operating on the Briggsvale tramway at Dorrigo, NSW, c.1926*

*Photo: J Briggs, courtesy I McNeil*

at Esbank in 1913 further increased the demand for limestone flux and, accordingly, the quarry workings were expanded. A new siding was opened around the base of the quarry to allow for new levels of workings to be opened. Additional locomotive watering tanks were installed at the quarry and beside the tramway in Spring Gully, about half way along the line.

Water was hand-pumped into these tanks by a German, Bill Plauzer, from the nearby dam.

## Toyers Quarry

The smallest of the quarries at Ben Bullen is Toyers Quarry, located some thirty chains (600 m) east of the main quarry on portion 48. A lease was taken out in 1884. The limestone deposit was initially developed by Mr George Toyer of Portland, manager of the Ben Bullen Lime Company, who was a master brick maker.

The quarry was opened early in 1912<sup>29</sup> and construction of kilns started in May<sup>30</sup>. The first shipment of lime from the new kilns was transported by horse-drawn wagons to the station in June 1913<sup>31</sup>.

Below is an edited description of the early operations which appeared in *The Lithgow Mercury* of 9 September 1912, under the heading "Ben Bullen Lime Company Works":

These works, some two and a half miles from the railway station, are situated on the side of a hill. The works consist of two large kilns for converting the stone into lime, and a quarry adjoining. The kilns have a capacity for holding 75 tons of stone and present a fine spectacle when alight, as there are three furnaces (or openings) to each kiln. The

shrinkage on burning of 75 tons generally represents 10 cwt to the ton. Both kilns are "D" shaped and are 11 feet high inside, with a frontage of 15 feet outside to allow for the furnace and flues. The lime produced represents a percentage of 99.5 when tested and such a high percentage speaks for the quality. Usually it takes from 48 to 54 hours to burn the lime, and this necessitates the constant attention of the two burners, who work on two shifts of 12 hours.

The company has a lease of 6 acres, and it is practically of all limestone. Each week some forty tons of lime are sent away, while later when other kilns are erected, 100 tons will be sent. The quarry has a face of from 27 to 30 feet and is 50 feet long.

Shortly too, a tramline will connect the Ben Bullen Lime Company's works with those of Hoskins Limited, and this will greatly facilitate supplies, as the cartage over such rough country and fearful roads means no small item in such an undertaking.

At present about eleven men are employed in different capacities, but later, when three other kilns are erected, the coal ease opened, and the quarry expanded, more labour will be employed.

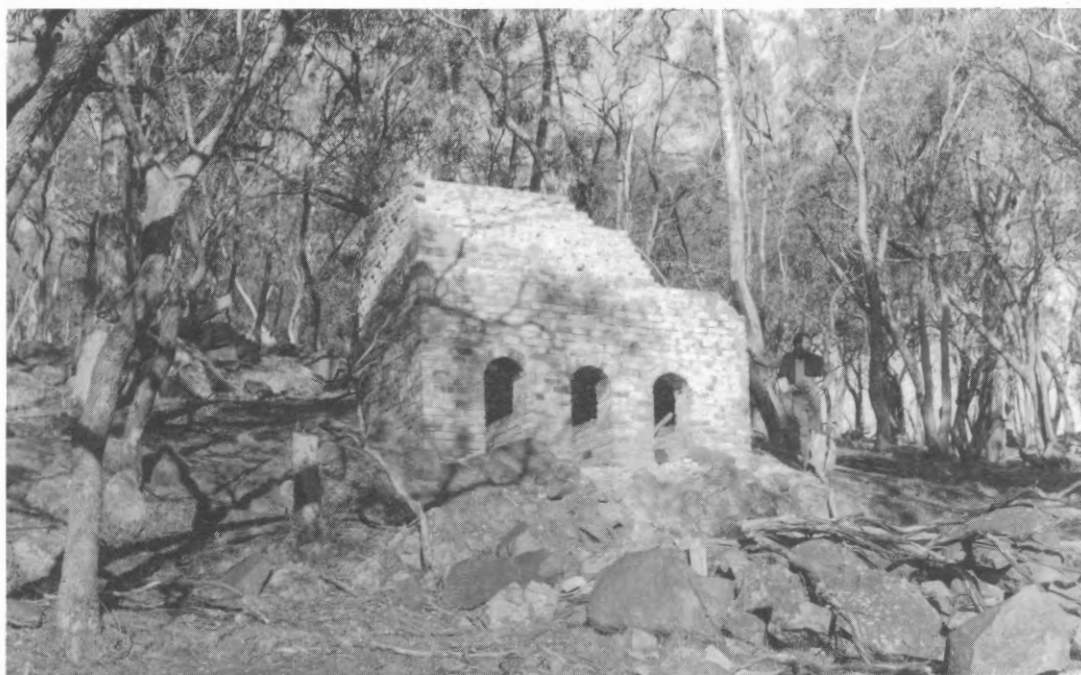
In the quarry, dynamite was used for procuring the stone. After blasting, the limestone was broken up by spawlding hammers or another small blast. The stone was then taken out in a trolley and tipped near the top of the kilns, which were about fifty yards away from the quarry. The limestone had to be built into arches on the bottom of the kiln so that firewood may be placed inside <sup>32</sup>.

The burnt lime was at first transported along

Quarry Road to Ben Bullen station by horse-drawn wagon. Mr Case of Mt Lambie had the contract for this <sup>33</sup>. Quarry Road at this time was in very poor condition due to continued use by lime wagons, so other means of transport were considered. One was the use of a traction engine to haul the lime <sup>34</sup>. It was decided to construct a tramway to connect with the Hoskins tramway.

The Ben Bullen Lime Company tramway was over half a mile long (860 metres) and had minimal earthworks of light cuttings and fills. The line junctioned from Hoskins' line 1 m 50 chains from Ben Bullen station, directly after crossing a trestle. It branched to the left and started to climb using an embankment to pass behind the now existing Larkins house (the main line passing directly in front of the house), then turned west to crest a hill in a shallow cutting. It then paralleled Quarry Road to arrive via a reverse curve at the base of an incline used to raise the skips to the kilns. The Ben Bullen Lime Company purchased their own skips and arranged for the Hoskins locomotive to haul them to the station <sup>35</sup>.

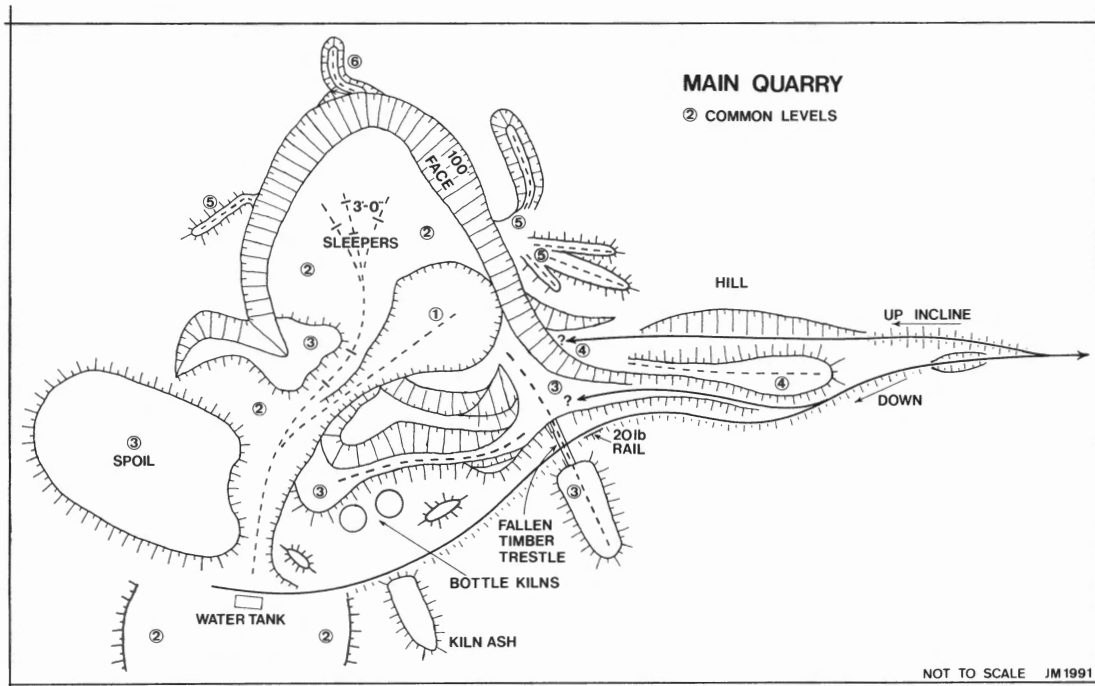
Due to slow markets at the end of 1912, the Ben Bullen Lime Company ceased operations. After re-augmenting itself, the company resumed production in February 1913 with two employees <sup>36</sup>. The



*The "D" shaped brick kiln erected in 1947 on the western side of Toyers Quarry*

*Photo: Jeff Moonie*





company tried to develop and improve its enterprise and, in April 1913, it was granted a 100 acre lease near the station to mine for coal 37. The intention was to use the coal for the kilns. The company added three new skips and a new winding engine in June for working the skips at the quarry 38.

Mr Toyer retired as of the works in late 1913, to be replaced by Mr Field 39. Soon after, the quarry closed again pending the formation of a larger company. By 1914, the company was working again and accepted a tender from Mr G Kirby to sink a test shaft on their coal lease 40. Operations continued until May 1915, when the Lime Company decided to dispose of its interests at Ben Bullen. The quarry and tramline, as well as 14 acres on Bald Hill recently purchased from Messrs CG and T Larking, was sold to G&C Hoskins Limited in December 1915 41.

After Hoskins acquired to tramline, they rebuilt sections to a better alignment with its terminus in the quarry floor. They discontinued burning limestone and transported the raw stone direct to the station. The quarry was not heavily worked due to the poor quality of the stone. It is believed to have been abandoned well before 1922.

### Jews Mountain Quarry

No.3 quarry, the second largest, was situated on the

north eastern side of Jews Mountain (1060 m) at an elevation of 970 metres. It was part of the 14 acres (5.9 ha) of limestone land that G&C Hoskins acquired when they purchased the Ben Bullen Lime Company in 1915 42.

Construction of a tramline to No.3 quarry commenced in late 1916. Work was undertaken by men from the main quarry made surplus by the low demand for limestone due to a recent strike, along with additional men with their horses and drays to assist with the earth works 43. This is an impressive branchline, taking a sinuous route to climb continuously to the quarry gaining a height of 80 m above its junction on an average grade of 1 in 25. The line was 2 km in length.

The branching point was situated on an upgrade directly after crossing a wooden trestle, about a mile from Ben Bullen station. The line then paralleled the main line to gain height, with the main line now on a falling grade, to swing away sharply to the left on a three chain curve, then through a nicely formed 'S' bend to gain the eastern side of Spring Gully. The line then ran in a southerly direction, twisting in and out of gullies and making good use of cuttings and fillings. Wooden culverts were used to bridge the deeper gullies.

On gaining the watershed between Jews and Crown Creeks, the line swung west to cross the watershed. It then swung back to the south east to enter the area in front of the quarry, which is nestled between Jews Mountain and Bald Hill. Passing a hut and the compressor with its portable engine on the left, then a level area on the upper right for a blacksmith, the line continued forward to enter the quarry itself. A siding diverged to the left. The fettle for the line was Mr Freestone, who lived in the village behind the blacksmiths shop.

The limestone here was of a hard nature and interwoven with veins of granite. This required the use of pneumatic tools for drilling the holes for the explosives used to gain the limestone. A compressor was installed at the quarry to power these tools <sup>44</sup>. It was driven via a belt from a portable engine. Both were housed in an open fronted shed on the eastern side of the line.

The boiler was coal-fired. The attendant from 1919 was Robert Birney, who came from Hoskins' Tallawong ironstone quarry. Light-up time was 5.30 am. One unsolved puzzle was how the water was brought to the quarry for the boiler.

A story I was told about an elderly gentleman who often came to Birney's home for a bit of a nag. On leaving one evening, he was lent an electric torch to guide him to his humpy. This was the first time he had seen a torch. On returning the torch the following morning, he thanked the Birney's for its use and said no matter how hard he blew it, it would not go out, but it was alright now as it went out by morning!

### Stone Crushing Plant

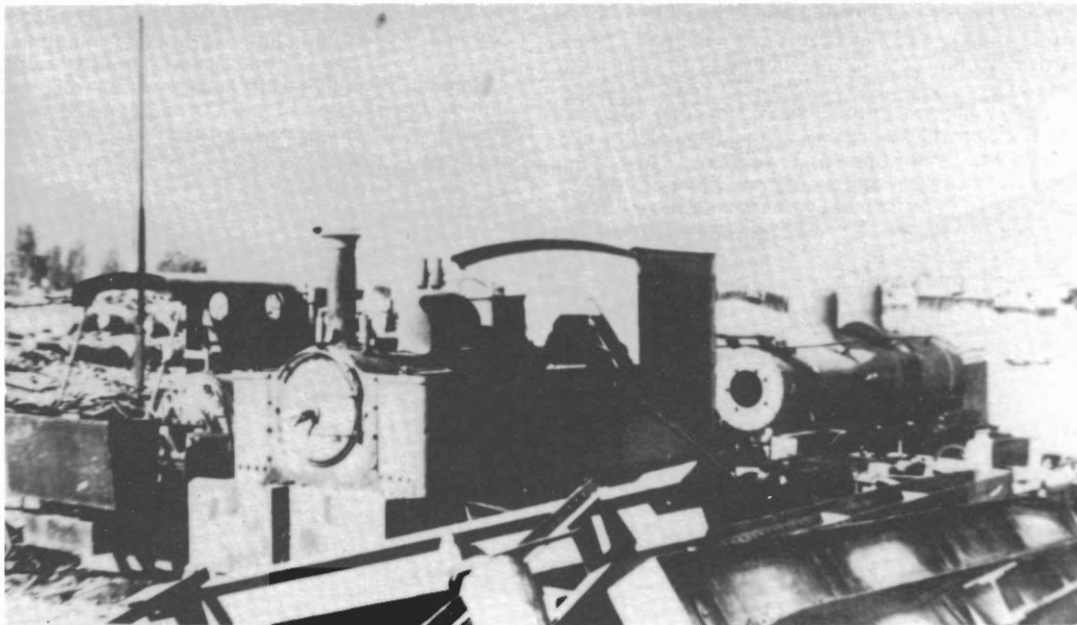
It was first rumoured in June 1917 that a stone crushing plant was to be erected near Ben Bullen station to help reduce freight charges <sup>45</sup>. Construction did not commence until early 1919 <sup>46</sup>. The crusher was in operation by February 1920, although there were some initial teething problems. These were overcome by April and the crusher was reported as "providing a great success in breaking up the solid masses of limestone in its capacious maws" <sup>47</sup>. However, the machine was often idle due to technical problems.

The steam-powered crusher was situated at the Capertee end of the loading stage. Its boiler was



*Looking across the main line (behind the fence) at the "S" bend at the start of the branch to Jews Quarry.*

*Photo: Jeff Moonie*



*In 1922 the locomotives from Ben Bullen, together with a Shay from the Burranga tramway, were stored in the yard at Hoskins Esbank steelworks. A number of photographs were taken by them there. Note the cab extensions and bunks on the Andrew Barclay locomotive on the left.*

*Eardley Collection, via C Wilson*

coal-fired and the water was stored in a ground-level concrete tank. Full skips from the quarries were positioned beside the crushing plant and their load tipped into the crusher. The machine was made up of a series of parallel rollers, the gap between each pair narrowing to the lowest pair<sup>48</sup>. The crushed limestone was lifted by an elevator, which was positioned to allow the stone to be dumped into waiting NSWGR open wagons<sup>49</sup>.

The stone crusher ceased operations at Ben Bullen on 20 May 1921. It was shifted to Hoskins' quarries at Excelsior to treat the limestone there<sup>50</sup>.

## DECLINE AND CLOSURE

### G&C Hosking Limited

G&C Hoskins purchased the Excelsior Quarry, 18 km north of Ben Bullen, from Goodlet and Smith of Sydney in 1919<sup>51</sup>. Limestone output from the Ben Bullen quarries was reduced and, in June 1919, No.3 quarry was closed<sup>52</sup>. Limestone continued to be won from the main quarry and, in mid-1920, No.3 quarry was reopened<sup>53</sup>. No. 3 quarry worked for another 15 months, only to be closed in September 1921 for the last time<sup>54</sup>. The tramway and equipment stood idle until the rails and sleepers were lifted in August 1922 and sent away for use elsewhere<sup>55</sup>.

The main quarry at Ben Bullen closed in November 1922. All plant was removed by the end of the year and the locomotive was stored at the Lithgow steelworks, together with a Shay locomotive from Burranga. The Andrew Barclay is not known to have moved to any other location after this period and, because of its poor condition, it can be assumed it was later scrapped at the steel works. **BEN BULLEN** was to have a new lease of life. It was purchased by GL Briggs & Sons in March 1925 for use on their tramway at Briggsville near Dorrig<sup>56</sup>. The boiler was removed from its frame to power the BT mill in 1932 and the rest of the locomotive was apparently scrapped. However, there were reported sightings of small locomotive wheels at Briggsville Mill in the 1970's<sup>57</sup>.

### Revival?

A further attempt was made to mine limestone from Toyers' Quarry in 1947 by three teenage youths, brothers Noel and Brian Craven and Brian Byles of Portland. They constructed a 'D' shaped brick kiln on the western side of the quarry. To transport stone from the quarry floor, a 2ft gauge tramway was constructed using Barlow (bridge) and flat bottom rail. A wooden-bodied mine skip from Irondale Colliery was used. It was originally intended to



**Above:** View from the loop site to “Main Quarry” with the incline branch, centre right, to the higher levels of the quarry. **Below:** The substantial concrete dam constructed in 1917, with the loop formation in the cutting beyond. The white building is Ben Bullen rail way station.

*Photos: Jeff Moonie*



terminate over the kiln, but was diverted to terminate over a light timber frame for loading direct into road trucks.

The kiln was never used and only a small amount of limestone (about 100 tons) was quarried. It was trucked to Ben Bullen station and railed to Bexley Lime & Cement in Sydney. By 1953, the boys realised the venture would never be financially successful, so it was abandoned.

### Acknowledgements

I wish to thank Mr Tom O'Farrell, Miss M and Mr J Birney and Noel Craven for their first hand knowledge. Thanks also to the Lithgow Regional Library, SRA Archives and my friends in and out of the LRRSA for their continued support and encouragement.

### References

1. Parish map of Ben Bullen, County of Roxburgh, 6/10/1966
2. *Lithgow Mercury*, 10 January 1917
3. *Lithgow Mercury* 8 April 1907; 2 February 07
4. *Lithgow Mercury* 18 April 1913
5. *ARHS Bulletin* No.363 of 1968, p.10
6. NSWGR Local Appendix -/5/1918, SRA Archives
7. SRA Archives
8. NSWGR Local Appendix -/23, SRA Archives
9. *Geology & Mineral Resources of the Western Coalfields* (Crane, 1908), p.243
10. *Ibid.* p.244
11. *Lithgow Mercury* 19 July 1901
12. M Allen, *The Western Industrial District*
13. Interview, Mr Tom O'Farrell, Ben Bullen, 4/1990
14. *Ibid.*
15. Allen, *op. cit*
16. *Lithgow Mercury* 9 March 1914
17. *Lithgow Mercury* 10 November 1909
18. *Lithgow Mercury* 29 November 1909
19. *Lithgow Mercury* 10 November 1909
20. RT Horne, 'Andrew Barclay Locomotives in Australia, New Zealand and Fiji', *ARHS Bulletin* No.560, June 1984, p.123, 129.
21. JL Southern and HJ Wright, *Industrial Locomotive Society Journal*, Vol XXVIII, No.126
22. FE Stamford *et al*, *Powelltown*, LRRSA 1984, p.98
23. *Lithgow Mercury* 10 November 1909
24. Horne, R "Letters", *Light Railways* No.111, January 1991, p.23.
25. Southern and Wright, *op cit*
26. Interview J & M Birney, April 1990
27. *Lithgow Mercury* 8 March 1912
28. *Lithgow Mercury* 31 August 1912
29. *Lithgow Mercury* 3 May 1912
30. *Lithgow Mercury* 13 May 1912
31. *Lithgow Mercury* 24 June 1912
32. *Lithgow Mercury* 13 September 1912
33. *Lithgow Mercury* 13 August 1912
34. *Lithgow Mercury* 24 June 1912
35. *Lithgow Mercury* 1 November 1912
36. *Lithgow Mercury* 7 February 1913
37. *Lithgow Mercury* 18 April 1913
38. *Lithgow Mercury* 6 May/9 June 1913
39. *Lithgow Mercury* 18 September 1913
40. *Lithgow Mercury* 31 July 1914
41. *Lithgow Mercury* 3 December 1915
42. *Lithgow Mercury* 3 December 1915
43. *Lithgow Mercury* 22 December 1916
44. Interview with J and M Birney April 1940
45. *Lithgow Mercury* 22 June 1917
46. *Lithgow Mercury* 10 February 1919
47. *Lithgow Mercury* 23 April 1920
48. Interview with J and M Birney, April 1990
49. Interview with T O'Farrell, 1990
50. *Lithgow Mercury* 25 May 1921
51. *Lithgow Mercury* 2 May 1919
52. *Lithgow Mercury* 16 June 1919
53. *Lithgow Mercury* 5 May 1920
54. *Lithgow Mercury* 23 September 1921
55. *Lithgow Mercury* 21 August 1922
56. I McNeil, "Timber Tramways of the Dorrigo Plateau", *Light Railways* No.100, April 1988
57. Siting by Ian Seers

## BEN BULLEN LIMESTONE TRAMWAYS, NSW, 2

by F John Reid

### Introduction

In 1824 James Walker was given an grant of 2000 acres (810 ha) of land at Wallerawang, while nine miles to the north, at Cullen Bullen, Robert Dulhunty, from Paignton in Devonshire, England, was also given a grant of 2000 acres. Dulhunty then took up a further tract of land about five miles further north at Ben Bullen. Peter McPherson, followed Robert Dulhunty into the Cullen Bullen area, and was granted 640 acres (259 ha) in 1828.



The 0-6-0T locomotive BEN BULLEN worked at the Ben Bullen quarries from 1912 to 1922. It then went to a timber operation at Briggsvale on the Dorrigo Plateau, where it is pictured in 1926.

Photo: J Briggs, courtesy I McNeil



The township of Portland now stands in this area. Dulhunty, it appears, was in close contact with the aboriginal population. In some Aboriginal dialects, Cullen Bullen means "lyre bird" and Ben Bullen means "high, quiet place". Henry Lawson stated that Ben Bullen was derived from a bullock driver of that name, who prospered selling potatoes at the time of the Mudgee gold rush.

Limestone for local building purposes was obtained in the district, probably from the earliest days of settlement. Peter McPherson quarried limestone on his property which he used to build his house and the place became known as Limestone Flat. James Walker, the original grantee of the Wallerawang Estate, is reported to have obtained the stone from Limestone Flat and the deposit was regularly utilised from 1864 onwards. The opening of the railway between Wallerawang and Capertee in 1882 provided the opportunity for mining activities. The Wallerawang Coal Company's siding (later known as Irondale siding) was opened in 1883. Carson's siding (later renamed Cullen Bullen) opened on 1 May 1889 for the Cullen Bullen Coal Company. The station of Ben Bullen was opened with the railway on 15 May 1882, and three years later the Ben Bullen limestone deposits were developed.

#### LIMESTONE TRAMWAYS

The first move to quarry limestone at Ben Bullen was by Messrs T Larkin, J Buchanan and T Betterton in 1885-6. The quarry passed to the New South Wales Lime Company in 1889. It appears that the Company ceased operations at Ben Bullen during 1899<sup>1</sup>.

The quarry passed to James Edwards, mine manager of Katoomba, the following year. Edwards entered into an agreement with Michael Corlis



*This axle and wheel of a 3ft gauge tramway skip in the main quarry at Ben Bullen serves as a reminder of a former era.*

*Photo: FJ Reid*

(farmer) of Ben Bullen to construct a tramway over a strip of land<sup>2</sup>. The lease was for a term of 15 years from the 27 December 1899. For the first three years, the rent was five pounds per annum, rising to ten pounds for the residue of the term. The tramway was of 3 ft gauge.

The quarry and tramway were taken over by G&C Hoskins Iron & Steel Company Limited, who operated steelworks at Lithgow. Limestone from Ben Bullen was required for flux in the smelting of iron ores.

Sir Cecil Hoskins states that their first steam locomotive at Ben Bullen (which he affectionately calls "a very small puffing billy locomotive") drew six skips of limestone at a time<sup>3</sup>. He also states that each skip had a carrying capacity of about one ton. The reference indicates that the Ben Bullen limestone was of good quality, but the deposit proved to be patchy and hence the company eventually abandoned the quarry.

#### Tramway Operations

Initially the tramway was horse operated. Mr T O'Farrell writes:

Yes, horses were used as motive power. The contractor was one Michael Collins. The skips were spragged downhill. No other raking was used.

There were two steam locomotives used at the quarry by C & G Hoskins. The first locomotive is described by Mr T O'Farrell:

It was a very small puffing billy locomotive heavily lagged with asbestos and plaster of Paris to help retain the boiler heat, so we as boys were told by the engine driver, one Edward Turner with his son Ernest as offside. The engine functioned for few years and was then replaced.

The second locomotive was a "brand new engine brought in from England with the name BEN



*The remains of a tramway skip at Ben Bullen.*

*Photo: FJ Reid*

**BULLEN** in large brass letters along each side" writes Mr O'Farrell. With the introduction of this locomotive, a new driver took over - a Mr Jack Hendren who had many offsideers. He stayed on until the closing of the quarry.

The skips used on the line were U-shaped. Sir Cecil Hoskins says they carried about one ton of limestone, while Mr T O'Farrell says "two and a half tons". The length of each skip was approximately 5 ft 8 inches (1666 mm) and the length of the drawbar 6 ft 9 in. At each end of the drawbar was a hook and a small length of chain served as a coupling. Each skip had a lever which enabled it to be tipped sideways. Braking on the train was carried out by the locomotive only. Iron members of a skip remain on one of the properties, consisting of two end members and a drawbar. In the main quarry there is a 3ft gauge axle with wheel attached. Inscribed on the inside flange is "HADFIELD'S BEST CAST IRON STEEL, SHEFFIELD" and the number U 57076.

### Reminiscences

Locals refer to the tramway as the "skipline", from the skips of limestone which were hauled on the line.

The first locomotive caused some grass fires on the grazing land through which it passed. These fires occurred on days of hot westerly weather and the miners had to assist in extinguishing them - a divergence from the quarry face.

The first driver, Edward Arthur Turner, retired from Ben Bullen with dust on his lungs. His son, Ernest Arthur Turner (born 1889) became a refrigeration engineer and installed snap freezing equipment at Narooma Fisheries, NSW and did engineering work in South Australia, before joining Lever Brothers in Sydney<sup>4</sup>. He was invited to be a Fellow of The Institute of Engineers.

Ben Bullen had a small school during the tramway era. The empty train working from the storage bins to the quarry served a purpose for the school children who lived adjacent to the line as they would get a ride home on the locomotive. On the quarry to bin working, the children preferred to race the iron horse to school.

On 29 November, 1922, Hoskins Iron & Steel Company officially notified Mr Corlis of their intention to terminate the tramway lease. The Hoskins' siding was abandoned on 27 June 1923. The company turned to Excelsior, 12 miles north of Ben Bullen, for their limestone supplies.

### A Historical Legacy

The route of the Ben Bullen tramway can be readily followed to day. The main line left the Ben Bullen Lime siding on the "down" side, then crossed Mudgee Road on the level. It had its right of way through grazing property, heading in a westerly direction for about 700 yards, then swung SW for

about 500 yards. This section is easily visible, as a narrow sealed shire road skirts the formation on the southern side.

The line then crossed the shire road again in the level and entered another pastoral property, continuing on its own right of way or 1200 yards, before crossing Spring Gully trestle (one post still visible). On the other side of the bridge an embankment remains. Spring Gully has its headwaters on Cleared Hill and drains into Ridge Creek, which in turn drains into the Turon River. From here, the line again crossed a road and proceeded in a westerly direction for half a mile, again through grazing property, before swinging in a general SW direction to the quarry. The approach to the quarry was on an embankment with a slight "up" grade. The last half mile of the tramway formation affords some outstanding views of the Turon River headwaters.

Opposite Portion 47 can be seen the remains of the miners' boarding house. Bricks are scattered on the ground and there are fruit trees, namely an apple and a cherry. Miners came from Capertee and Dark Corner to work at the quarry.

The tramway to the quarry at Portion 48 linked with the Hoskins line on the western side of the trestle bridge at Spring Gully. This line was about three quarters of a mile long. It was on a gently rising grade from the trestle and the formation is still visible.

The quarry operations at Ben Bullen are now of the past ... Perhaps on a clear, frosty night there is a whistle and a cloud of steam emanating from a phantom engine that has long since vanished from this mining venture that was established, long ago, on a "high quiet place".

### References

1. Mineral Resources No.25, *The limestone resources of New South Wales*, by JE Carne, FGS, and LJ Jones, Sydney, Government P Printer, 1919.
2. Indenture - between Michael Corlis of Ben Bullen and Joseph Edwards of Katoomba, dated 8 April, 1909.
3. Hoskins, Sir Cecil, *The Hoskins saga*, Halstead Press, Sydney, 1969.
4. Mrs D Knight, Mullumbimby, daughter of EA Turner.

### Other References:

Singleton, CC, "The Wallerawang-Gwabegar branch line: I, Wallerawang-Mudgee", *ARHS Bulletin*, No.363, January 1968. Carne, JE, "Geology and mineral resources of the Western coalfield", with maps and sections. Sydney, William Applegate, Government Printer, 1908. McGrath, Brian, "The history of Cullen Bullen", monograph, Cullen Bullen Public School, 1973.

### Acknowledgements

Mr TG O'Farrell, *Woodlands*, Ben Bullen, for his comments about Ben Bullen quarry, the locomotives and engine crews.

Mr EA Corlis, *Innesfail*, Ben Bullen for showing me over the skipline on his property.

Mrs D Knight, Mullumbimby, NSW, daughter of EA Turner, for information on his career.

## APPENDIX

### LIMESTONE TONNAGES, BEN BULLEN

| Year | Limestone<br>tons | Year | Limestone<br>tons | Year | Limestone<br>tons |
|------|-------------------|------|-------------------|------|-------------------|
| 1889 | 10                | 1901 | 12 296            | 1912 | 31 034            |
| 1890 | 18                | 1902 | 13 608            | 1913 | 31 340            |
| 1891 | 14                | 1903 | 13 498            | 1914 | 37 034            |
| 1893 | 63                | 1904 | 15 123            | 1915 | 39 269            |
| 1894 | na                | 1905 | 16 809            | 1916 | 40 695            |
| 1895 | 3 522             | 1907 | 16 886            | 1917 | 35 987            |
| 1896 | na                | 1908 | 19 852            | 1918 | 41 643            |
| 1897 | 4 597             | 1909 | 22 431            | 1919 | 45 738            |
| 1898 | 4 524             | 1910 | 17 749            | 1920 | 35 897            |
| 1899 | 8 017             | 1911 | 29 152            | 1921 | 44 612            |
| 1900 | 8 096             | ..   | ..                | 1922 | 3 701             |

Notes: Figures supplied by JH Forsyth, Archives Officer of PTC, NSW. These figures come from Annual Reports, which indicate that Ben Bullen was under the control of Capertee station and Ben Bullen returns were mixed with those for Capertee. Although no mining was done at Capertee, the returns could include output from Excelsior Quarries.

## CHENEY SPARK NULLIFIER AT POWELLTOWN

by Paul Simpson

Recently some information came my way in relation to the Cheney spark nullifier and its use in Victoria on the Powelltown tramway. This invention was the topic of an article in *Light Railways* No.76 covering a demonstration on a Baldwin steam locomotive at Bingera sugar mill in Queensland. However, the tests at Powelltown, on 23 December 1926, preceded the Bingera demonstration by almost a year.

The information is contained in a letter, dated 10 February 1927, from S Cheney, engineer and managing director of Cheney Spark Nullifier Limited to the manager of the Portland Cement Company at Geelong. The letter solicits sales of the nullifier after the test at Powelltown.

The nullifier is described as a novel apparatus fitted on the top of the engine funnel. It claims it is absolutely fireproof and assists with keeping a regular head of steam and improving fuel consumption. Cheney states that he was demonstrating in the eastern states of Australia and that locomotives at Western Australian sawmills had installed the nullifier. Approval had been obtained from the Victorian Forests Commission and they were communicating with all locomotive users under their authority refitting their engines with the nullifier. The price of the device was 50 pounds f.o.b. Fremantle, while maintenance costs were estimated at 5 pounds per annum.

Cheney supported his letter with a report from the Melbourne *Argus* of 29 December 1926. Under the title "Spark Nullifier: Successful trial at Powelltown" it made the following points:

Since the disastrous bush fires which swept the heavily timbered areas in the vicinity of Powelltown in February 1926 the Forests Commission of Victoria, in common with sawmillers and others, has given considerable thought to the question of bush fire prevention.

Just how many bush fires, with their attendant loss of life and destruction of valuable timber, have originated as the result of a spark emitted from one of the steam engines puffing its way through the heart of the bush cannot be estimated, but it is certain that some have had their genesis in this way.

It would seem therefore that the spark problem must be solved or traction entirely must be confined to other forms of power. Millers consider the steam engine the most practical for the purposes of their industry, but in the Yarra Junction district, although many spark-arresting devices have been given a trial they have not been satisfactory.

In the case of the Cheney device, however, it is claimed that all objections have been overcome. Already in New Zealand, South Australia and Western Australia, the "nullifier", as it is called, invented by Mr Samuel Cheney, has been tried with so much success that in the first two states it is proposed, it is said, to introduce legislation making the use of the device compulsory on steam engines.

The spark nullifier, which is distinct from a spark arrester,



*The locomotive Powellite, as fitted with a Cheney Patent Spark Nullifier in the 1930s, heads for Yarra Junction with a train of timber.*  
*Photo: LRRSA Archives*

was demonstrated for the first time in Victoria at Powelltown on December 23 at the request of the Forests Commission, the Victorian Hardwood Company co-operating.

The demonstration was made on one of the engines owned by the company on the varied grades which exist between Yarra Junction and the bush country at Powelltown, and was attended by the chief inspector of the forests (Mr D. Ingles) and the chief forester for the district (Mr Gailbraith), as representing the Forests Commission, the manager of the Victoria Hardwood Company (Mr John Ingram), Mr J Fall, mill manager and a large number of others interested in the timber industry.

A beginning was made from Powelltown at 8 o'clock in the evening, it being explained that the locomotive was fitted with a Cheney spark nullifier. Ordinarily when a trip of this kind is made in open trucks with their heavy loads of timber, the flying sparks play havoc with the clothes of the passengers, as well as the parcels carried on the trucks; but on this occasion the improvement in this respect was at once noticeable.

There were just a few light sparks or "floaters", as the bush men describe them, and these were so broken or "nullified" after passing through the attachment that they became spent in mid-air. Even on heavy gradients, where the engine was called upon to do its utmost, the sparks were under complete control.

At Three Bridges the nullifier was removed. The effect was noticeable, for as the train resumed its journey showers of

sparks were ejected from the funnel of the locomotive, and also those dull red discs, denoting the dangerous incandescent charcoal which causes fires. About two miles from Black Sands the nullifier was replaced, and on the heaviest grades of the trip between that point and Yarra Junction again proved very efficient.

The Forests Commission representative expressed the view that the nullifier was the best device he had yet seen. Mr Ingles remarking that he had not seen thrown from the engine while the device was attached any spark which could be remotely suspected of causing a fire in mid-summer. He further expressed the view that the nullifier reduced the danger of bush fire by at least 95 per cent.

It is claimed that the nullifier, by reducing the very high velocity of the waste gases from the furnace caused by exhaust discharges, or "puffs", when the engine is working hard, tends to make the draught continuous instead of sharply intermittent, and that in this way the tendency of the exhaust to tear fuel from the fire and eject it in the form of sparks and incandescent charcoal from the funnel is reduced with a consequent saving in fuel. The mechanical action of the nullifier is that of a baffle plate, and sparks and incandescent charcoal impinging against it with great force are broken into such minute particles that they are burnt out almost immediately they leave the funnel.

It is assumed that the locomotive used for the test was *Powellite*. In the Powelltown book, on pages 104 and 112, are photos of *Powellite* fitted with the

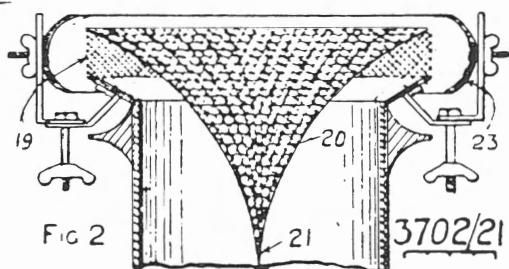
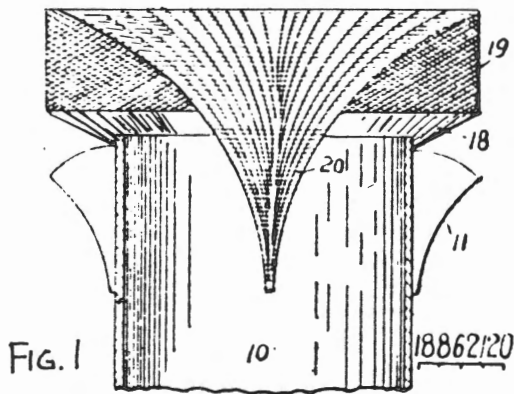
Cheney device, while on page 130, *Coffee Pot* is so fitted.

After the funnel on *Powellite* was replaced with the somewhat larger funnel (from a Victorian Railways loco) the nullifier was refitted. The caption for the photo on page 112 mentions a date of 1930 and that on page 104 states a date of 1940. If these dates are correct, then *Powellite* ran at least ten years with the nullifier fitted.

To give readers a clear picture of the Cheney spark nullifier, I have obtained the following drawings of three Patents appertaining to this device. They were obtained during my research in the Sydney Patent Office. The first was the original concept of 1920 and the next two were of modifications and improvements. The official description is also given for each patent which illustrates and numbers the components of the device.

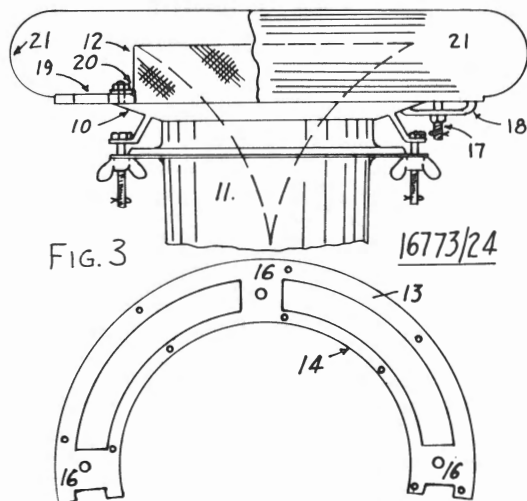
The first Patent, No. 18,862, was granted on 22 November 1920 to S Cheney, D Dorizzi and OCH Wittorff of Western Australia for a spark arrester, Class 17.8. The description is:

To provide a spark arrester which will not impair the efficiency of the draft [sic], a hollow gauze cone 20 is attached to or formed integral with a gauze ring 19 fixed to a hollow truncated cone 18 which is secured by means of bolts and brackets to a ring which encircles the flared top 11 of the funnel 10.



A further modification was made in 1924 when S Cheney was granted Patent No. 16,773 on 10 March viz:

To, prevent cinders falling from between ring 12 and baffle 21 a spark arrester as described in No. 3702/21, a horizontal gauge ring 19 of fine mesh is placed over a double ring supporting member 14, 15 and is secured on its inner side by a ring 20 by means of studs to the ring 15. Each bridge 16 [of the double ring] has a stud 17 to carry clamps 18 that by means of its appurtenant parts to and against flaring extension 19 of the funnel 11.

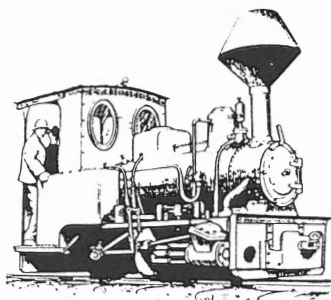


It is not known if any locomotives in New South Wales were fitted with the Cheney device. The only photographs published so far have depicted the nullifier on locomotives in Queensland and Victoria.

On 26 September 1921, S Cheney and EO Cheney were granted Patent No. 3702/1921 for modification of the device holding bracket as follows:

A spark arrester in which gauze ring 19, as in 18,862/1920, is surrounded with a baffle member 23 which functions to prevent lateral movement of unquenched small sparks, and assists in quenching them. The gauze cone 20 is also provided with a solid renewable point 21.





### KAURI TIMBER COMPANY

Colin Harvey advises that the records of the Kauri Timber Company Limited [LR.111 p.20] are held in the University of Melbourne Archives. The company was formed in 1888 by a group of Melbourne businessmen to take over timber interests in Auckland Province, New Zealand. Its operations spread to other areas, particularly the Solomons (where the company merged in 1925 with San Cristoval Estates Ltd to form the Vanikoro Timber Company) and Western Australia (1888-1965). The archives has 70 shelf-metres of material, including maps and photographs of operations in Western Australia and the Solomons. The Editor would be interested to hear from any member who has the time to research these records.

### METROPOLITAN GAS COMPANY, WEST MELBOURNE

Fraser Brown of Kew, Victoria advises that he has recently obtained copies of four site plans of the old West Melbourne Gasworks from the Gas and Fuel Corporation of Victoria. They are as follows:

1. A General Plan of Land Buildings and Plant as at May 1904 - Scale 42ft to 1in. This shows the elevated wharf in the form it remained in until demolished, and the earlier horizontal retort house. Also shown is an extensive ground level narrow gauge tramway which appears to have been used for ash disposal.
2. The West Melbourne Works, Gas Inquiry Board 1912 - Scale 40ft to 1in. This shows the works undergoing several major changes, the first vertical retort replacing the horizontal retort and a change in the works boundary.
3. An unlabelled large plan of tramway rearrangements for the vertical retorts bunker and crusher (ie, the arrangement shown in the 1928 photograph on p.13 of LR.90). It is just possible to make out the earlier track and trestling arrangements where they have been erased from the drawing.
4. Gas Works Plan as Arranged in 1937 - Scale 64ft to 1 in. This is a very clear plan of the works following the introduction of the

## RESEARCH COLUMN

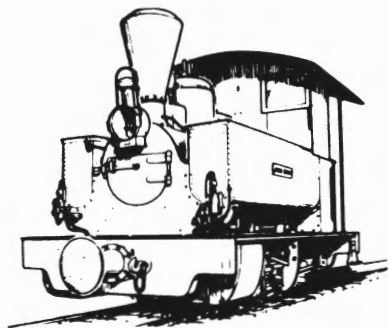
conveyor belt system when the tramway was used at peak demand periods only. The arrangement lasted until the tramway was closed and further modifications were made to the plant, such as the introduction of oil-gas producers.

Should any reader of *Light Railways* be interested in following up this matter, they should contact Fraser Brown at 13 Alfred Street, Kew 3101.

### CSR ARCHIVES

The extensive holdings of CSR records in the National Archives of Business and Labour, Canberra [see LR.110, p.] is proving to be a valuable research base for LRRSA members. Gerry Verhoeven has spent many hours pouring through boxes of material extracting information on CSR locomotives in Queensland and Fiji. Gerry has forwarded his material to David Mewes and John Browning in Queensland who are updating and revising records of CSR locomotives. This task has also benefited from the location of the "CSR Locomotive Data Book" in Sydney. This provides locomotive drawings and details of major repairs and maintenance, transfers etc. for individual locomotives. It provides information on early John Fowler, Decauville and Motor Rail locomotives, although there are inconsistencies with other records.

In early 1991, the Archives of Business and Labour advised of the "discovery" of very early "Reports on operations of the Colonial Sugar Refining Company Sugar Mills". These are annual reports on operations, beginning with Southgate Mill, Clarence River 1870, and from 1871-1913, the other mills at Chatsworth, Harwood etc are included. The 19th Century reports are handwritten and in excellent condition. Bob McKillop has been researching them to trace the origins of the central sugar milling system in Australia. The early reports provide a fascinating insight into the detailed reporting and vision of EW Knox during the period when CSR were pioneering the sugar milling on the NSW North Coast.



## LETTERS

### EARLY FOWLER LOCOMOTIVES: LR.81, 92

Ongoing research into light railways in Hawaii has uncovered a locomotive which appears to be a John Fowler product. The accompanying photograph is of the locomotive at the Kahului pineapple cannery on Oahu Island in 1913. The plantation was established in the windward side of Oahu around 1900 by the Hawaiian Development Company and became known as the Koolau Fruit Company. In 1911 Libby, McNeil & Libby gained control of the Kahului lands and built a large-scale cannery on the site. The company used a narrow-gauge railway to move the canned fruit to a wharf at the Walkane Landing, from where sampams took the product to Honolulu for transshipment to other ports.

The locomotive in the Bishop Museum photograph has not been identified. I was struck by its likeness to the John Fowler locomotives used by the Great

Cobar mine, as depicted on page 26 of *Light Railways* 92. Perhaps readers can comment on the likelihood that one of the Cobar locomotives found its way to Hawaii?

**JC Conde**  
Hawaiian Rail Historian  
Santa Mateo, Ca, USA

[Ed. From early John Fowler records, six 2 ft 6 in gauge Patent 2-4-0T locomotives (B/N 4370-3/1882 and 4631-2/1883) were supplied to the Great Cobar Mining Company [LR.81:22]. John Shoebridge [*ARHS Bulletin* No. 383: 1969] only accounts for four of the locomotives.

These were stored at the mine between 1889 and 1903, then returned to work until 1909. The two unaccounted for locos were probably disposed of prior to 1903, but Jay Conde's photo clearly depicts an 0-4-2T locomotive. Perhaps some reader can offer some additional information?]



*The Bishop Museum photo (CP 102905) of the Libby McNeil & Libby pineapple cannery at Kahului, Oahu in the Hawaiian Islands in 1913. Any information on the identity of the 0-4-2T locomotive is welcome.*

## REMINISCENCES OF THE CAVE HILL TRAMWAY: LR.111

I found Ralph Alger's article on the David Mitchell Estate's Cave Hill tramway most interesting, but would like to make some comment with regard the locomotives.

To the features referred to that distinguish Bendigo steam tram motors built by Baldwin from those built by the Phoenix Foundry (see *LRN.5*, page 3) can be added another. Photos of the motors in use in Bendigo show that the larger, Phoenix ones had higher front dashes and rear water tanks than the Baldwin ones, these being level with the bottom of the side windows. On this basis alone, the Cave Hill loco shown on page 12 of *Light Railways* No.111 was undoubtedly built by Phoenix. Additionally, KS King in his book, *The Bendigo Tramways* (ARHS, Vic Division, 1972) states that the Baldwin motors had 9 x 12 in. cylinders with 30 in. diameter driving wheels, whereas the Phoenix motors had 10 x 14 in. cylinders with 36 in. driving wheels.

The locomotive shown on pages 3 and 10 may well be derived from a Bendigo motor, but it is a most curious machine and it is clear that Ralph Alger did not look closely at the new (to me) photo on page 10. This shows that the locomotive is *gear* driven through a series of cog wheels to the rear axle only. The front wheels are of solid disc design, quite unlike those used on the Bendigo motors (more reminiscent of wagon wheels) and the locomotive can best be described as a 2-2-OTG.

The boiler and smokebox bear no resemblance to those on either Baldwin or Phoenix motors. Indeed, it is hard to see where the smoke box door is and what the "arch" under the smokebox front is. Doubtless scrutiny of the original photo would help. Note, too, that the cylinders are sloping although the steam chest is horizontal, a combination not found in the tram motors. Although the truth may never be known, there must be an equally strong possibility that this locomotive was rebuilt from an orthodox locomotive rather than a Bendigo tram motor.

**Richard Horne**  
South Croydon, Surrey, UK

I was most interested to read Ralph Alger's "Reminiscences of the Cave Hill Tramway" and congratulate him on his research and discoveries, particularly in the David Road area.

I can add a little to the story and correct a couple of photo captions. On page 3, the locomotive pictured is an 0-4-0WTG which is believed to have arrived at Cave Hill c.1886. This is almost certainly Mitchell's first engine and is the same one as pictured on page 10. [This correction applies equally to *Tall Timber and Tramways*.] The builder

is unknown to me: maybe one of our English friends can help; or is it a local effort?

On page 12: I doubt that the Phoenix Foundry ex-Bendigo Tramways No.8 is in storage as the condition in which it appears is typical of the mid-1920's prior to it receiving a new cab. By 1925, only the Phoenix locomotive was operating and, unless it was temporarily out of use due to holidays, weekends or repairs, I imagine it would have been in fairly constant use. I don't believe there ever was an ex-Bendigo Baldwin motor at Cave Hill; although any information to the contrary would be gratefully received.

In addition to the 4 ft 8½ gauge of the firewood line, the quarry used 3 ft gauge lines extensively, both in the quarry floor and up an incline around the kilns. At least one, but possibly two TACL rail-tractors were in use on these lines by 1930.

Jack Stock and myself have accepted Ralph Alger's challenge (page 9) and are keen to do further research into David Mitchell and his enterprises with a view to future publication. May I appeal to readers for any information, photos, possible sources of either or corrections to previously published articles. Please supply these either through the "Letters" section of *Light Railways* or directly to Jack or myself, c/- the Society's PO Box 21, Surrey Hills Vic 3127. All letters acknowledged and expenses cheerfully refunded.

**Phil Rickard**  
Ringwood, Vic

On Ralph Alger's fascinating account of the Cave Hill tramway, may I be permitted a peripheral comment - one that has not too much connection with railways of the lighter kind?

How many recall that David Mitchell, owner of the Lilydale lime kilns and tramway, was also father of one of Australia's most famous singer (most famous person, some would argue), Nellie Melba -- *alais* Helen Porter Mitchell? My mother, who was in Melba's Grand Opera Company, could recall the diva phoning her father at Lilydale, inviting him to the theatre while adding "and for Gawd's sake, put on a clean shirt!"



Helen Porter Mitchell, Australia's beloved Melba

Included in that record-setting career, Melba could also be regarded as one of the world's great train travellers of her era. Her trip down the north-east line before the start of her triumphant 1902 Australian season had all the hallmarks "of a royal progress" [*Australian Dictionary of Biography*, Vol. 10]. But did Helen Porter Mitchell ever sample the fun of riding on the Cave Hill track? Certainly she made her home at Coldstream, where Coombe Cottage was designed and built by John Grainger, father of that other musical prodigy, Percy.

A touching moment in the warm relationship between Melba and Davie occurred on that 1902 train journey from Sydney to the border. At Culcairn a telegram delivered to the Express advised Melba that her father, who had come up on the broad gauge the previous day with the idea of travelling south with his daughter, now lay seriously ill in the house of an Albury doctor. Melba "sobbed bitterly" on seeing her father's condition [*Argus* 22/9/1902], but David Mitchell was a tough character (his daughter likewise) and he survived.

It could be said that Melba was a rail traveller to the end. She died at St Vincent's Hospital, Sydney in 1931. When the special train bearing her remains rolled by, station masters along the north-east were advised by the Commissioners to "admit the public to the platforms" so that a sorrowing people could pay their last respects [*Age*, 25/2/31]. As a small boy, I can remember standing at the Cotham Road tramstop with my mother and watching the funeral procession that seemed to take hours to pass by, on its way to the Lilydale burial ground.

Back in the late 'forties, Roger Jefferies and I walked part of the Cave Hill right-of-way, found a few dogspikes and remains of sleepers, but never a rail. One sometimes speculates - did David Mitchell build his tramway to the unusual standard

gauge (why not the timber tramways' 3 ft or the VR's broad width) because locomotives and wagons of that gauge were available, or was it the other way around?

David Burke  
Burradoo, NSW

### MUNRO'S TRAMWAY, QLD: LR.61

I refer to the excellent article on Munro's Hampton tramway by RK Morgan in *Light Railways* No.61 of July 1968. Page 7 of that article showed the track layout in Hampton station yard. Queensland Railways has established a Railway Historical Centre on The Terrace, North Ipswich in a brick building which, I understand, was a former tarpaulin depot. It contains archival material and is open to the public.

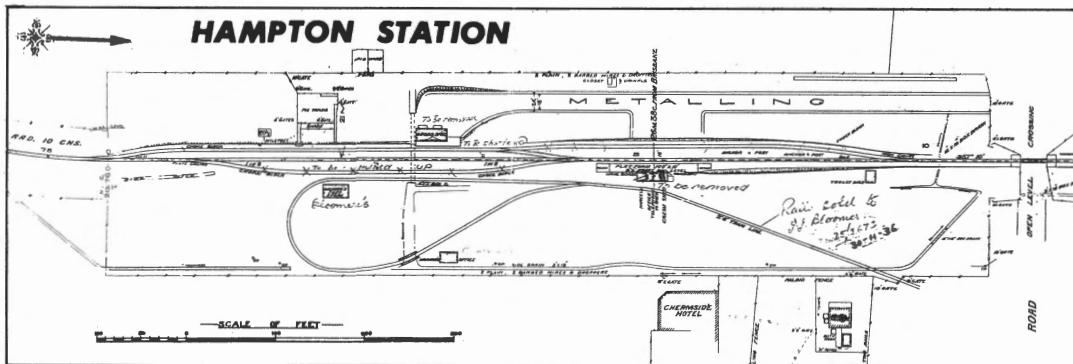
Recently, while searching through archival material at the Centre, I obtained a copy of the station yard diagram at Hampton on the former Crows Nest branch (which closed on 1 July 1961). The diagram shows the location of the tramway and also of the Chermide Hotel, which still operates. At the site, the heavy logs of the station platform (which faced the tracks) are still in situ, but other traces of the yard are not easily determined.

D Behan  
Sherwood, Qld.

### LAHEY'S CLIMAX LOCOMOTIVE: LR.54, 113

I am enclosing prints of two old photographs which were retrieved from a junk pile in an old house at Queenscliff, Victoria (now long demolished) nearly 30 years ago.

The photograph of the train on a bridge depicts a style of construction which is readily recognisable in photographs supporting RK Morgan's article, "Lahey's Canungra Tramway" in *Light Railways* No.54. The locomotive depicted matches Richard



Dunn's drawing, published with the article, showing Lahey's first locomotive, a B-class Climax in its original state. Morgan states that the locomotive first ran on 1 September 1903 and received boiler modifications between 1905 and 1908. The photographs would therefore have been taken prior to these modifications.

From the photographs, Lahey's 3ft 6in gauge tramway has all the appearances of having been a most attractive and thoroughly delightful line. It had those alluring attributes of being unusual, extremely simple and closely blended with the natural surroundings. It may be observed that this is a combination which has, so far, largely eluded railway preservationists of to day.

**John B Scott  
Hoppers Crossing, Vic**

[Ed: John Scott's photograph of the Climax on the bridge is reproduced on the cover of this issue. The other is badly damaged and un suitable for publication, but the front three-quarter view of the locomotive shows the original Climax boiler with diamond smoke stack and bell. The appearance is very different from the locomotive after boiler modifications as depicted on page 19 of *LR.113*]

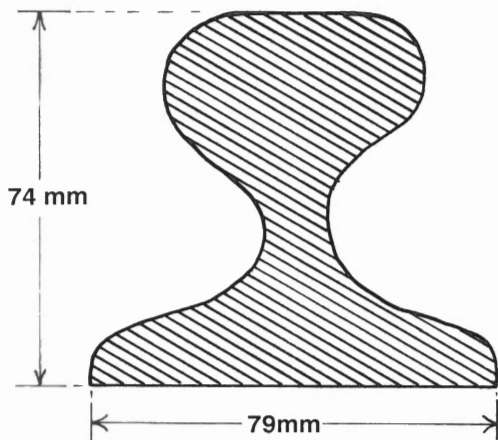
#### IDENTIFICATION REQUESTED

In 1982, a 20 foot section of rail (about 45 pounds per yard) was located near a tramway loading point in the Mount Disappointment State Forest. This rail was probably used in the 1890's. The cross section and approximate dimensions are shown below. The rail web was marked:

**D I Co LM**

Can anyone suggest the origin of this rail? I suspect that D I Co stands for "Dowlais Iron Company".

**Colin Harvey  
Reservoir, Vic**



#### THE PORTLAND TRAMWAY: LR.22

Further to Keith Turton's article on tramway proposals in the Portland district published in LR22, recent investigation has shown that the formation of the tramway is still readily apparent in the vicinity of Gorae Loop on the Ararat to Portland railway. At two points near the loop the railway has been constructed on a different alignment than the tramway in order to obtain better curve alignments. One of these deviations was foreshadowed in a report the Portland and Northern Tramway Company's engineer, Samuel Parker, dated 30 May 1867. Referring to the already formed tramway from Portland to Heywood he stated that:

...a very small outlay, comparatively speaking, will put the 16½ miles from Portland to Heywood in a fit state to receive the ballast and permanent way. The formation through the forest has been well preserved, and that portion from the crossing of the main road to Heywood can be reformed at a trifling cost. I desire, however, to recommend the Directors to sanction two deviations on the present Tramway, -- one to avoid a very objectionable curve at the 7-mile creek, and the other nearer the Portland end. It will also be necessary to erect a bridge over the 7-mile creek at the proposed alteration.'

The "very objectionable curve" is located in the parish of Bolwarra about eight kilometres north of Portland (at grid reference WC5 26638). The formation at this point is still very clear due to the lack of intensive agriculture and the retention of tree cover on the cuttings and embankments. The southern approach to the 7-mile creek bridge is by a substantial embankment. It appears (viewed from the railway) that this bridge was about 30 metres long and five metres high. Other, smaller, embankments and cuttings were used to achieve a better grade than the later railway.

At the northern end of Gorae Loop the railway also deviates from the tramway formation in to achieve a larger curve radius. At this point, although the formation is quite clear, only shallow earthworks were necessary.

**Colin Harvey  
Reservoir, Vic**

**Back Cover:** Colin Harvey's map of the remaining Portland tramway formation at Gorae Loop on the Portland to Ararat line.



# PORTLAND TRAMWAY

## BOLWARRA

