

‘Specimens liberally studded with gold’: The Mining History of a Remote Otago valley

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Introduction

Hills dotted with adits and shafts, the moonscape of old sluice workings and the untidy piles of mullock that mark a former quartz mine are all typical elements in a landscape shaped by a gold rush. In Otago the prevalence of such landscapes means that for many places, the full history detailing gold yields, mining enterprises, technologies employed and the miners that worked them, are largely lost or forgotten by locals.

Otago’s Rise and Shine Basin has been taken as an exemplar landscape to explain its mining history, especially the layers beneath what is readily apparent to the visitor. This required a combination of archaeology, exploration of archival and newspaper sources and the re-acquisition of knowledge of nineteenth century mining techniques. Every battery site, tramway, water race, adit, shaft, mullock pile and sluice area was located, identified, examined and linked to the archival material to produce a complete historic record. This article is the product of research covering nine decades of Central Otago mining history.

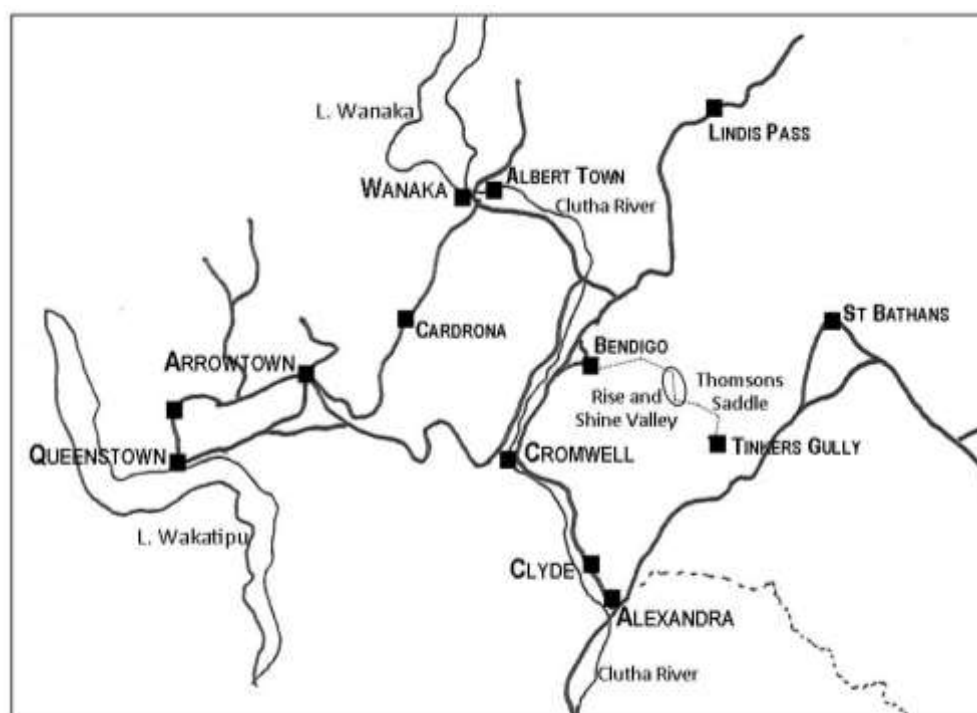


FIGURE 1 *Location Map*

A Remote Central Otago Valley

The Rise and Shine Valley is the headwaters of Bendigo Gully, three miles north-east of the richest quartz mine in Otago, the Cromwell Company (1866-1906).¹ Sluicing and quartz claims were developed in the valley and in a unique example of the long-term exploitation of a key mining resource, each of the assorted companies and syndicates utilised the same resource to power their operations: the Rise and Shine water race.

The Rise and Shine Sluicing Syndicate

The Rise and Shine Valley was named after a syndicate of mainly Scandinavian miners who worked a sluicing claim there for 35 years.² They were not the first miners to the valley; prospectors using the old Maori greenstone trail over Thomson's Gorge, heading from the Manuherikia to the Albert Town punt paused to test the gravels, but found ground so poor, they did not stay.

But poor ground can pay if a sluicing is possible. The syndicate was formed in mid-1864, when Christian Hanson and five partners built a race to bring 12 sluice heads (a sluice head comprises 20in with 7in pressure, about half a cubic foot of water per second which over ten hours gives nearly 112,500 gallons to a head³) of water across Thomson's Saddle to their claim.⁴ It took a year to build, but the sluicers' ground paid immediately and consistently, each shareholder earning £7-10 per week.⁵ Goldfields Warden Vincent Pyke described them as 'noteworthy for their engineering and success'.⁶ There were downstream benefits to their work, as miners moved to Bendigo Gully to take advantage of the increased flow in Bendigo Creek and began developing claims that the previously problematic water supply had prevented.⁷

When the first quartz boom erupted at Bendigo in 1869, construction of Logantown and its hotels, bakery and stores spurred the Rise and Shine men to build a four mile bridle track to the town to reduce their reliance on the dangerous track east to Drybread.⁸ However, despite the frenzy of quartz prospecting and share speculation swirling around Bendigo, Hanson and his mates were remarkably focused on the proven worth of their sluicing claim, ignoring the temptation to develop quartz.

The first such temptation came when Sam Williams discovered an auriferous reef in late 1869⁹ and registered a claim on a spur one mile downstream from the Rise and Shine sluicing ground. His reef caused a great deal of interest because it seemed to be on the same bearing as the Cromwell, Aurora and other lodes at Bendigo. Quartz adhering to the gold recovered in the Rise and Shine tail race indicated a reef nearby and in July they found it.¹⁰ The *Cromwell Argus* declared that this was 'likely to prove the greatest discovery, so far, in the annals of quartz-reefing in Otago,' but the rival *Dunstan Times* downplayed the find, concluding that the reef was unlikely to be developed.¹¹

They did not ignore the potential of quartz; eventually curiosity prompted them to sink prospecting shafts, organise an assay and strip the reef along the spur with their sluice guns, but they concluded that the results were indeterminate.¹² When drought slowed them in 1871, they sank two shafts at each extremity of their alluvial ground, finding stone that was 'very hard, but gold visible throughout',¹³ but were not persuaded

to develop this. Another drought two years later prompted them to build a dam¹⁴ on their claim and re-examine quartz, but they still opted to sluice.

This reticence to develop quartz was unusual, especially given the profusion of ventures at Bendigo in 1870, but several factors prompted this. Under the legal requirements a quartz mining lease required a £20 deposit, an official survey (costing about £16¹⁵) and rent of £2 6s per acre per year, which gave them the right to apply for a claim along 400 yards of the quartz vein and 200 yards across the lode.¹⁶ If they raised this sum, they had to secure a battery and water wheel (at least £1500 plus transport and construction) or use the public battery at the Aurora near Logantown, where transportation and crushing charges required nearly an ounce per ton of stone to cover costs.¹⁷ They would need ‘practical miners’ to raise good stone, a mine manager to oversee them and a mill manager to run a battery. The decision to commit to such expenditure must be compared with the alternative of continuing to work a consistently-profitable sluicing claim where all the costs of sourcing, maintaining and utilising their water resource were either behind them or were a small annual imposition. The Rise and Shine continued hydraulic mining until 1888, when sluicing magnate John Ewing purchased most of their water right for his claim at Tinkers,¹⁸ bringing to an end one of the longest-lived gold sluicing enterprises in Otago.



FIGURE 2 – *Rise and Shine Cottage* – L. Carpenter, 2010

The Rise and Shine sluicing area is a remarkably well-preserved example of a water-worked landscape. Stone ruins near the road and in the workings mark where miners lived. Three wide, shallow gullies were developed 90 metres back from the initial face, each with a flat, fan-shaped tailings mound marking the terminal points of the tailraces. Extensive, steeply-raked sluice scarps mark the upper bounds of the workable area, reflecting the limit of the water pressure or indicating a diminution of

gold returns. Within the two largest gullies are two of the adits used to examine quartz (a third is found near ground discussed below). On a spur between the two main gullies is the dam from 1873 and the water race may be seen curving around the hillsides south-east of the sluicing area, extending back ten kilometres east to its intake on Matakanui Station.

Rise and Shine Valley Quartz Ventures and Adventures

The Alta

In late 1869, Sam Williams named his newly-found quartz claim in the lower Rise and Shine Valley the 'Alta,' went into partnership with Brian Hebden of the Cromwell Company, registered the claim and sank shafts, tracing a reef which was 'highly crystalline and well impregnated with fine gold' for forty feet.¹⁹ Williams sold his half-share, gaining £275 from each of three investors who felt the Alta was 'rising in repute.'²⁰

Unlike Thomas Logan of the Cromwell Company who, with his two partners developed their ground on starvation wages over two years of hardscrabble effort,²¹ the Alta shareholders were all 'monied'²² men: John Alves was a Dunedin-based architect, builder and inventor;²³ James Hazlett was a Dunstan storekeeper and commercial agent, an inaugural Dunstan Councillor and Mayor of Clyde for 1868 – 1872, Justice of the Peace and a director of the Carrick Range Water Supply Company;²⁴ William Fraser was the member of the Provincial Council for the Dunstan area 1866 – 76, member for the Dunstan on the Vincent County Council as Chairman 1878 – 93 and entered parliament in 1894 for Wakatipu to become minister for Public Works;²⁵ Charles Frederick Johnson was an Otago Mounted Constable who went mining on the West Coast and returned to the Dunstan to farm and work in clerical roles for the court at Clyde and Arrowtown and in 1877 began working for the Colonial Bank of New Zealand, where he was promoted to manager of the Ophir branch;²⁶ Lewis Grant was a long-time miner at Bendigo, resident at the town of Bendigo;²⁷ James Patterson operated the Old Bendigo Family Hotel at Clyde, briefly opening an hotel of the same name at Logantown in early 1870, before shifting to Dunedin to run Dunedin's Australasian Hotel,²⁸ and Charles Roberts was a landowner and businessman in Dunedin.²⁹

These men confidently and profligately spent their funds. They rented the Rise and Shine Syndicate's tail-water, cutting an intake near their tail-race and surveyed a water race to traverse along the valley to reach their battery site a mile downstream from the Rise and Shine ground.³⁰ To cart ore for testing at the Aurora public battery at Logantown they widened the Rise and Shine's bridle track.³¹ In their most reckless use of company funds, they purchased a new battery, began construction of roads and then, seemingly as an afterthought, called for tenders to shift twelve tons for a trial at the Aurora public mill.³² This confidence had its reward as two shareholders sold their shares for £500, pocketing a £225 profit each for their four month dalliance with quartz claim ownership.³³

Dray road finished, they completed the trial crushing which 'came up to expectations', advertised for tenders to erect their battery, raised another 100 tons of stone and secured Robert Reid, the engineer responsible for erecting the Cromwell and

Aurora machines, to build theirs.³⁴ By December the Alta machinery was on site, but getting it there was not straight forward: ‘there was some difficulty in getting teams to cart the heavy pieces of machinery up the hill and then, when on top, it had to be sent down a dangerous siding, for a distance of 370 feet, by means of a windlass, buggy-truck, and turnpole’.³⁵

Construction of the Alta’s water race site took several months, but before they crushed the first quartz, the Alta Company enlarged their machine to ten stamps although initially only five worked due to a lack of water.³⁶ This demonstrates how freely they spent, since by comparison the Cromwell Company took a year to add five stamps to the Solway Battery and the Aurora only doubled their capacity when they determined that they could operate half as a public machine.³⁷ It took until March to operate all ten heads at the Alta.³⁸ They constructed a sloping tramway from the main adit in their mine to the spur above their machine and built a self-acting double line from the top of the spur to the battery site. This enabled one man to shift twenty-five tons of stone a day so the crushing plant would ‘work ceaselessly’.³⁹

Shareholders had spent over £3000 on their survey and lease, the road to Logantown, two water races, a tramway, the wages of three shifts of miners⁴⁰ and a massive battery, and at a meeting held in met in early 1871, they decided to limit their spending. They reduced miners’ wages from £4 to £3 10s per week, a policy quickly adopted by every other company at Bendigo. There was ‘quite a furore created among the men employed in the various claims ... [and] great dissatisfaction expressed and strike threatened; but, when it was seen that the companies were firm, the men (with but few exceptions) accepted the reduced rate.’⁴¹

Notwithstanding the reduction in spending, hopes for the Alta were undiminished and the company revealed that their first crushing of 100 tons yielded a ‘highly satisfactory’ 91 ounces of gold in a fortnight.⁴² In April 150 tons of quartz produced 113 ounces of gold which was not as rich as Cromwell stone, but was still a highly remunerative fifteen pennyweights to the ton. The Alta mine was reportedly ‘working in a most systematic and economical manner ... [and] a very low average yield can be made to pay a dividend the stone they are at present crushing looks better than any yet bought to light, and has every appearance of going to an ounce and a half.’⁴³ Their expenses were less than a third of the gold yield from the mine, making it one of the most profitable at Bendigo.⁴⁴ The by-water of their race had value, because it was rented by the Koh-i-noor syndicate, who built an intake just below the outfall of the Alta mill and erected fluming across the gully to a new water race which took the water to their claim on the low-lying spurs between Shepherds Creek and Bendigo.⁴⁵

When snow froze their water race in June 1871, the Alta Company workforce was paid off and the directors waited for water to flow again.⁴⁶ But all was not well; visitors in mid-August noticed that despite ‘a fulsome supply of water’ and ‘several hundred tons of promising-looking stone scattered across the claim’ the battery stayed silent.⁴⁷ In early September they recommenced operations, but the directors were aghast to find that the next week’s crushing of 200 tons yielded just 30 ounces of gold. They precipitately discharged all employees except for a skeleton crew to run the battery on

all the stone at grass, but this was no better than the previous yield and the mine was closed.⁴⁸

In March, 1872 a notice in the *Otago Daily Times* appealed to ‘Owners of Quartz Reefs, Speculators and Others’ advising that tenders were sought for ‘the purchase of the whole of the crushing plant of the Alta Quartz Mining Company.’ Listed in the tender were ‘a turbine wheel, battery, copper plate and ripple [sic] tables, amalgamating barrel and shaking table, ripple boxes and tools, a wood and iron blacksmith’s shop ... and a ten-by-thirteen foot weather-board house which included an iron safe [which was] the most perfect plant possible for working a mine’.⁴⁹ The *Argus*, possibly because one of the newest of the Alta shareholders was George Fache, editor of their bitter rival the *Dunstan Times*, began what would be years of anti-Alta invective, derisively talking of ‘mere surface workings’ and challenging them to give the ‘proven reefs ... of payable stone’ another trial.⁵⁰ Unmoved, the shareholders appointed a liquidator in early 1873 and re-advertised the plant for sale. A sign of how parlous the finances had become came in a notice advising creditors to register with the receivers to attempt recovery.⁵¹

Hints that Alta Company shareholders would finally see their plant sold emerged in 1875, with news that the race, tramway and battery were being overhauled to facilitate a trial crushing by the nearby ‘Coromandel Syndicate’ under H.C. Daniels, who was determined to open a reef found in 1873.⁵² Three months after Daniels had proved that his claim contained nothing but his shattered hopes and finances, the owners of the Eureka Syndicate purchased the entire plant.⁵³

The Eureka

The Eureka Syndicate appeared in late 1874 when a group of Cromwell, Dunedin and Bendigo investors headed by Cromwell hotelier John Marsh⁵⁴ formed a company to work a newly found reef on the line of the reef found by the Rise and Shine sluicers in 1872.⁵⁵ The Eureka was another well-financed syndicate⁵⁶ and they spent in a way that indicated that the lessons at the Alta were not heeded.

They secured a lease, took out an option on the Alta plant and began construction of a mile-long tramway from their claim to the battery, rented the tail water of the Rise and Shine sluicers, reconditioned the old Alta race and began driving an adit.⁵⁷ After six months of development and exploratory work they found that ‘first-rate gold is visible along the whole length so far, improving as they near the hill It is the greatest body of stone in the district, being eight to ten feet in width, with gold throughout.’⁵⁸ Mine manager George Douglas oversaw the construction of the tramway to the old Alta machine, finding another reef (‘specimens liberally studded with gold’) on the lease boundary. They developed it as an opencast operation, reporting ‘magnificent prospects washed from the rubble and [that] gold is plentiful in the solid stone.’⁵⁹

In September 1876 they celebrated when the tramway was completed and the first crushing yielded 45 ounces from 80 tons of stone, reporting that ‘the lode shows a thickness of at least three feet, with gold freely distributed throughout’ and were cheered by a steady flow of Eureka stone trucked to the battery.⁶⁰ They deepened their

shaft and set up a whim to lift the stone, but just as things looked promising a flood defeated them.⁶¹ The Eureka abruptly disappeared from the local papers, although an 1897 article disclosed that gold in Eureka stone could not be freed from the pyrites with it so flooding may not have been the only problem.⁶²

The Come in Time

The failure of the Eureka slowed quartz prospecting in the Rise and Shine Valley for four years. There were limits to the capacity for investors to absorb a new 'greatest quartz find' and its attendant costs and risks. This changed in mid-1880 when Bendigo resident and coal carter John Kane found auriferous stone on the ridge between Shepherd and Rise and Shine Creeks. The *Argus* enthused, calling it 'a promising quartz discovery' which had a 'very promising appearance on the surface. The lode ranges from two to eight feet in width, and shows gold very freely.'⁶³ Kane carted five tons to the Cromwell Company's Matilda battery at Bendigo for nearly 7 ounces of gold.⁶⁴

Assured their initial enthusiasm for the new venture was merited, the *Cromwell Argus* re-found their stock of hopeful mining phrases:

the 'Come in-Time' ... is looking remarkably well, and promises to be a sure fortune to the lucky discoverers. It certainly is the most remarkable quartz discovery made in Otago as yet, and in a career of 16 years' quartz-mining I have seen nothing like it. I hardly know how to describe it. It is undoubtedly a true lode, but it's immense size when compared with anything previously found in Otago throws me or anyone else that has seen it completely astray.⁶⁵

Again tail-water of the Rise and Shine's race offered the means to power a water wheel and battery, albeit after it was re-routed from the Alta/Eureka race to a new one they cut into the steep face on the northern side of the valley. They also cut a small race from Shepherd's Creek to provide clean water to run their tables. In August 1880 Kane and company formed a joint stock company and purchased the old Eureka (formerly Alta) battery, which they relocated to their ground on the opposite side of the valley. Thomas Rooney, late manager of the Cromwell Company and pioneer of the Hit and Miss Quartz Company at Bendigo joined the enterprise, paying £100 for a one sixth share, and he and his fellow-shareholders paid an additional £100 each into the company coffers to meet expenses.⁶⁶

The relocated battery was overhauled and erected 150 yards below the adit, and the company installed a double tram from the mine to the battery, allowing full trucks to pull back empties.⁶⁷ Men cutting the tramway reported that the whole spur was a network of quartz and conglomerate, carrying an average 'half an ounce per ton'.⁶⁸ Like Williams at the Alta, John Kane was offered so much money that he sold his share to Bendigo miner William Cameron, buying land at Grandview where his descendants still farm.⁶⁹ Cromwell storekeeper David Jolly also bought a share.⁷⁰ In just eight weeks the Come in Time battery began reducing stone and at the end of December, the company announced that 350 tons of stone had yielded 110 ounces of gold, which after costs,

returned the shareholders £10 each.⁷¹

But then just as it did for the Eureka Company, the newspapers suddenly forgot the Come in Time Quartz Mining Company. In his memoirs published 25 years later, even David Jolly offered no reason for the company's failure. Despite low operating costs, solid capitalisation, experienced 'practical miner' shareholders and consistent returns, they ceased operations in 1881. In early 1882 their battery was sold to the Last Shot Quartz Mining Company, who dismantled and re-erected it on their claim near the old Elizabeth ground at the Carrick Range.⁷² But the Last Shot was a lost hope and the Come in Time Company was forced to sue for payment.⁷³

The Eureka is Reborn: The Jubilee Company

The Eureka claim was not the last on that site in the Rise and Shine Basin. At the northern end of the Eureka ground there are extensive mullock mounds and the unmistakable foundations of a quartz battery.

In June 1888 William Lidston, who worked as pitman for the Cromwell Company, took advantage of the short hours created by a lack of water to go prospecting. He found a reef in the old Eureka ground, which he traced and investigated with a 7ft prospecting shaft. He announced that it showed 'splendid prospects, as much as 6gr of gold to the dish from the casing of the reef ... and [that] the stone, a dark-yellow colour, shows gold freely.'⁷⁴ Lidston sold a quarter share each to Bendigo Gully storekeeper Charles O'Donnell, Carrick storekeeper (and former shareholder of the Come in Time Company) William Bennett and Rise and Shine Sluicing Syndicate member W. Gilbert Mouat. The new company bought a two-head quartz battery which they planned to run on the remnant flow of the Rise and Shine water race which Lidston had pre-emptively secured before the sluicers sold it to Ewing in 1888.⁷⁵

Lidston and company's 'Jubilee Gold-mining Party' had the (by now) familiar *Otago Witness* correspondent's appraisal that 'the new quartz reef ... is likely to be much richer than was at first anticipated ... [it] is well defined, and is about 18in thick. Gold can be seen plainly on the surface of the stone.'⁷⁶ The *Cromwell Argus*, which had toned down its reporting, noted that they had found 'some splendid prospects ... two ounces to the ton stuff.'⁷⁷ The shareholders ordered timber for a waterwheel,⁷⁸ but unlike the previous companies, the Jubilee Syndicate proceeded cautiously. The *Witness* approved, noting that 'the Rise and Shine ... has been for many years looked to as being a good reef-bearing country, several rich leaders having been long ago discovered, though not large enough to pay.'⁷⁹

In early November 1888 the Jubilee Company celebrated starting battery operations, sending invitations 'to everyone in the district within a radius of fourteen miles'⁸⁰ to hear Lidston give a speech and to see the battery christened with a bottle of champagne. After three months the Jubilee began building up a 'quarry of payable stone' and expressed their frustration with a two-head battery.⁸¹ With their shaft down to 40 feet they ran their mill 24 hours a day and dug along the reef, in addition to their quarrying work.⁸² In January 1889 a 34 ounce cake showed that they were on the right track, despite water shortages blighting their summer.⁸³

In May when yields fell to 9dwt per ton,⁸⁴ they suspended operations and went prospecting, finding good stone high above Thomson's Saddle on a spur of Mount Moka. They picked the best of this, packing eight tons by horseback to their battery, but after this proved barely payable, abandoned it to focus anew on their own area. The remains of these high altitude workings are near the old Alta roadway of 1871, high above the valley floor. They are a parallel series of long shallow open cuts across the westward spur from the peak. Near the largest pits are a ruined stone hut and a scattering of miner's



tools, including buckets, a pick, frying pan and old bottles. The effort required to get to them now is considerable; the work of packing ore by horseback to the valley floor defies imagination.

FIGURE 3 a & b The Jubilee workings, Mt Moka, Thomsons Gorge, looking northwest, L. Carpenter, 2012.

Back at their original claim area, they issued reports that 'the tables look well'⁸⁵ and the inconsistent results were forgotten with the announcement that they would erect a five-head battery. They shifted and renovated the battery from the Young Elephant claim in Thomson's Gorge which had been abandoned since 1877.⁸⁶ The Jubilee's last report was in a newspaper article from June 1890, which said that the company were 'getting out quartz and stacking it until the winter is over. They have a quarry that will take some time to work out, and every piece of stone contains gold.'⁸⁷

According to the journal of William Gilbert Mouat, when the quarried stone was processed the mine was abandoned, not because it stopped paying, but because Lidston's wife could not abide living in the cold, remote Rise and Shine basin and insisted on moving.⁸⁸ Given that Tarras historian Geoffrey Duff reports Bendigo Rocky Point ferry Hotel proprietor John McLaughlin working there after the Jubilee ceased, it is likely that he bought it from the shareholders.⁸⁹ Certainly someone was still mining quartz in 1891, because the *Otago Witness* reported that 'five heads of stampers are kept going, [on] a long shift every day,'⁹⁰ but nothing more is mentioned in newspapers or archives.

The Alta is Reborn

August Sorenson, a Norwegian-born quartz miner with experience at the Longwood reef in Bendigo, Victoria and the Cromwell reef in Bendigo, Otago, was working as part of William Pengelly's tribute at the Cromwell mine in the 1890s. He took out a lease on the Alta ground in 1897. He found stone which, after a trial crushing promised to 'return 4 oz to the ton.'⁹¹ and even the cautious *New Zealand Mines Record* talked up the prospects, with estimates from stone hand-crushed in Cromwell running to 30oz per ton for one sample and 10oz per ton for the second.⁹² In mid-1898 Sorenson decided to get twenty tons crushed as a trial, carting stone to the Cromwell Company's Matilda battery.⁹³ His syndicate declared their intention to float a public company, but nothing came of this. Gold was found, with some 'good patches' of stone, but not in quantities that paid the cost of raising and crushing it, so Sorenson abandoned the Alta at the end of 1898.⁹⁴

Undaunted by Sorenson's setback Lidston returned, organising another Alta syndicate in 1899 and crushing an eight ton parcel of rock at the Cromwell company battery for nearly 13oz, or 'well above wages'.⁹⁵ Lidston and his miners were all tributors working the old Cromwell Company mine and when a patch of better stone at that mine was found, they abandoned the Alta.⁹⁶

After a year of inactivity at the Alta, in 1903 'Mr Holmes and five other working miners' drove a cross-cut in the sixty foot shaft sunk by Sorenson, and in a repeat of the previous history at the Alta, found gold.⁹⁷ But Holmes found consistent stone and purchased the old 5-head Jubilee battery.⁹⁸ Using the Eureka tramway, they moved the mill to their ground at the western end of the Alta open-cut. In a first for the Bendigo area, this was driven by a 7-hp diesel engine. This was a small-scale operation, running a hand-fed battery part-time. Their stone came from the old Alta mine, from an adit driven into the side of the hill opposite the main area and from a spur to the south, where they found a new reef.⁹⁹ Holmes and Company had the greatest persistence of all the Alta incarnations,¹⁰⁰ although the *Mines Reports* said that while the scattered patches of payable stone yielded poor returns, a rich lode of scheelite had been found.¹⁰¹ Despite their diligence, by mid-1905 the last miner was gone and the Alta mine closed.¹⁰² The battery was left engineless, thanks to the liquidation of the company assets entailing the sale of the engine to Morven Hills Station for electricity.¹⁰³



FIGURE 4 Alta 1903 workings and battery. L. Carpenter 2009.

The Cameron brothers (sons of Come in Time shareholder William Cameron) acquired the lease in early 1908, although they could have been in the area as early as 1906.¹⁰⁴ John Cameron applied for a quartz mining lease on fifteen acres at the Alta, yet did not specify that it was only gold he sought.¹⁰⁵ He ignored the Alta's lauded-but-failed gold prospects to develop scheelite. In this pursuit they found auriferous quartz in a seam which was – following well-established pattern for Alta cant – declared to have 'every prospect of ... turning out a great success.'¹⁰⁶ There are no records of how much gold the Camerons found, but they mined scheelite successfully, clearing £100 in one notable week in 1908.¹⁰⁷ In 1909 a group of Cromwell investors announced the formation of a small company, predicting that 'there is every prospect of a mining revival at Bendigo' and that 'work will be started shortly'.¹⁰⁸ This came to nothing. Again.

The Come in Time is Reborn.

Mechesidec Bospednic (Dick) Edwards was a skilled quartz miner who worked for the Cromwell Company for many years. He and fellow Cornishman William Pengelly were employed as prospectors for the Cromwell Prospecting Association in 1885–87¹⁰⁹ and both worked in a tribute team in the mine at Bendigo throughout the 1890s.¹¹⁰ Edwards retired in 1897 to take over the lease of Cromwell's Temperance Hotel¹¹¹ before returning to mine in the Nevis in 1898.¹¹² From the frequent mention of him in the *Cromwell Argus* and *Dunstan Times*, it is apparent Edwards was well-respected locally.

In July, 1908, Edwards announced he would reopen the Come in Time Mine. Local investors became interested and David Jolly led a group of local businessmen accompanying Edwards to take samples to for assaying at the Karangahake School of Mines. When these averaged 13dwt gold and 8dwt silver per ton the excitement was considerable. A company was formed with a registered capital of £2000, which acquired the now defunct Cromwell Company's machinery and shifted ten heads of the Matilda

Battery from Specimen Gully at Bendigo to the Come in Time site.¹¹³

For all the careful testing by the School of Mines and the calibre of Edwards as a promoter, the new Come in Time venture proved to be a financial disaster that eclipsed all past failures in the area. In June 1910 the *Cromwell Argus* announced that in 1909 a total expenditure of £508 17s 3d had earned just 1oz 19dwt 18 grs. To make matters worse, they admitted that in the most recent six months – after investing £1394 5s 4d more and exceeding the paid-up capital by £500 – the earnings were a tiny 4ozs 13dwt.¹¹⁴

Despite this disastrous result, in 1910 J. Dunnery and M. Birley purchased the company. They crushed 350 tons of stone for 50oz in September and in October crushed 77 tons more for gold worth £54,¹¹⁵ which led them to conclude that the mine had nothing more to offer and they ceased work.

The Alta is reborn. Again.

In 1913 the shareholders of the latest reincarnation of an Alta Syndicate found a new reef. They constructed an aerial ropeway to convey selected stone to their newly-acquired Come in Time battery on the other side of the valley.¹¹⁶



FIGURE 5 a & b Alta Aerial ropeway bucket and ropeway tension unit (1913), L.Carpenter 2011

They re-fitted the mill and crushed some Alta stone from their ropeway, but switched their attention to the much larger outcrop of the Come in Time lode on the Shepherd's Creek side of the claim. They mined this as an open cut, crushing 100 tons of ore in 1913, but quickly abandoned the claim.¹¹⁷

The last owner of the Alta mine was David Betts, who in 1933 leased the Come in Time site in response to the excitement generated by the newly-formed Bendigo Rise and Shine Company (see below). When the new company emerged in 1934, Betts offered them the Come in Time battery for £50. The Rise and Shine's Frank Austen

wrote dismissively that the machine ‘is in a dilapidated [sic] condition, having been robbed of most of its fittings. It is of an old, obsolete type [which would] make the



FIGURE 6a & b the old and the Repaired 1908 Come in Time Quartz Battery, L. Carpenter 2012

cost of reconditioning higher than the cost of a new battery.’¹¹⁸ It remained standing in the Otago weather until it was reconditioned in 2008.¹¹⁹

Betts was one of several miners who prospected around the Rise and Shine area in 1932 and 1933, working on an Unemployment Board subsidy whereby miners were paid a weekly wage of 15 shillings (single men) and 30 shillings (married) in return for ten per-cent of any gold found. Only one group of these unemployed miners properly developed a quartz claim in the Rise and Shine Valley in the 1930s.

The Eureka is Reborn: The Bendigo Rise and Shine Claim 1932 – 42

Frank Saxby Austin, William Cameron and George Logan were unemployed miners in their sixties, working on the Unemployment Board work scheme.¹²⁰ All had links with Bendigo: Cameron was born there, had worked the Alta claim in the early 1900s and his family was the last to live at Logantown; Logan was a son of Thomas Logan, the prospector who found the rich Cromwell Company claim on Bendigo, while Austin was the son of a miner who had worked at Cardrona in 1863 and Bendigo Gully in 1864.¹²¹ According to the *Otago Daily Times*, Cameron acted on the enthusiasm of his late father who had declared that there was a rich reef in the Rise and Shine area for a prospector to find.¹²² The group had a hard life; as well as living under canvas in the bleak Rise and Shine Valley, they had to carry their tools eight miles back to Tarras for re-sharpening, fixing and re-pointing, while the nearest functioning battery for test crushing quartz samples was at the Callery brothers’ Golden Point mill, 120 miles away at Macraes Flat.¹²³

In the old Eureka claim the three men found the shaft that had been sunk to thirty feet in 1872 by the Rise and Shine sluicers and deepened to eighty feet by the Eureka Company in 1875. They cleaned it out and sank a further nine feet, driving a right-angled cross-cut along the face of the lode and exposing twenty feet of the



FIGURE 7 *The Bendigo Rise and Shine Mine, 1933 Photograph from ‘Quartz Mining in Otago – Unemployed Strike it Rich’ New Zealand Free Lance, 28 March 1934.*

footwall. This revealed hard, close-grained blue quartz indicating good gold.¹²⁴ In late 1932 they commissioned an assay, which yielded a remarkable 3oz to over 9oz gold per ton. These results were so high that Cromwell mining engineer G.W. Lowe visited the area to verify them, but he was playing catch-up with the canny miners who ‘accidentally’ let slip the results to the local newspapers. Lowe found more realistic results which were not enough for an Unemployment Board subsidy to cart stone to Macraes Flat for testing.¹²⁵ In August of 1933 the miners completed the requirements for a prospecting license and mining survey.¹²⁶

With what seemed a rich mine and no funds to develop it, Austin, Logan and Cameron leased their claim for one shilling to the Otago Gold Prospecting Company Limited, who employed them and five more miners.¹²⁷ The company agreed to purchase the three men’s claim outright for £7500.¹²⁸ They commissioned another assay by Dr Andrew of the Otago School of Mines with remarkable results: the sample from the south drive at 62 feet yielding 14oz and another from the opposite end showing a staggering 26oz per ton,¹²⁹ or potentially the richest stone found in Otago. The Otago Gold Prospecting Company floated a new £50000 company to buy processing machinery and to ‘to expose some 50 to 60 thousand tons of ore’ and confidently declared that ‘when this development policy has been carried out the Company will be [proven to be] on extremely valuable assets and, to the investing public, will be more in the nature of an investment than a gamble.’¹³⁰

In May, 1934 the prospectus for the Bendigo Rise and Shine Gold Mining Company, Limited was issued.¹³¹ ‘Bendigo’ was appended to the name by director J.M. Stewart, who hoped people would think it was associated with the Cromwell Company mine ‘so investors would assume it being a continuation there-of’.¹³² This prospectus was sufficiently packed with imprecise hints, misdirection, pseudo-history, quotes from Prime Minister George W. Forbes¹³³ and selectively-quoted assays and excerpts from Dr Andrew’s report to get the directors arrested today.¹³⁴ Much was made of the rich Cromwell Company’s mine at Bendigo, implying that the Bendigo/Rise and Shine area was contiguous geographically (it is not), similar in geology (they are not) and that the claim would be worked in the same way as the successful Bendigo company had been (they would not be).

The company applied to the Unemployment Board for assistance, deepened their drives and built a four room manager’s house and huts for the workmen (See Figure 8).¹³⁵ Unhappy with the earlier blindsiding over assays, Cromwell-based Lowe took a close look at the company and their prospectus. He expressed alarm at the over-stated, misleading and overly-optimistic rhetoric of the prospectus, noting that Andrews, far from hyping their prospects had recommended extensive additional prospecting before development, suggesting it might ‘prove the mine to be a vastly different proposition from what the promoters claim it is going to be’. In his report, Lowe concluded that ‘the locality is well worth trying, but does not yet justify either a plant or a company, on the scale set out in the prospectus’, and ‘having considered the loading of this company, the exaggerated statements regarding values and prospects and the intentions of the directors re the future working and equipment of the mine, I recommend that the Board

declines the company's application for assistance.' ¹³⁶ In December 1934 the Commissioner of Unemployment wrote to the company refusing any assistance. ¹³⁷

Undaunted, the company announced extravagant plans to 'establish an up-to-date battery and operate on a major scale,' but the reality of dwindling funds restricted them to a plant consisting of a crusher, ball mill, Wilfley table, berdan pan and a 10hp motor to drive it. ¹³⁸ This smaller setup had a capacity of 20 tons per week, much less than the ten tons per day originally envisaged. ¹³⁹ It proved efficient, with a return of almost 15oz for the first week of December 1935, followed by nine tons for nearly 2oz per ton in the following week. ¹⁴⁰ An additional berdan was installed, improving returns further with a mid-December return of 27oz from 36 tons of ore, or 15dwt per ton. ¹⁴¹

While the directors pursued a subsidy through the Unemployment Board the company developed the open-cut at the old Eureka lode and installed an inclined tram line with a winder hauling trucks to the ore bin. They had to spall large stone blocks by hand, which prompted them to install the first ore roasting plant at Bendigo. ¹⁴² A rich pocket of stone was found and in the three months leading up to June 1936 the company made a £100 profit each month, wiping out the accumulated debt and catching up on wage arrears. ¹⁴³

In June just 33 tons were crushed at the mine due to winter ice blocking the races, but with a yield of 40oz the claim was far from a lost cause. ¹⁴⁴ They spent the rest



FIGURE 8 The Bendigo Rise and Shine Mine huts and manager's house, 1933 Photograph from 'Quartz Mining in Otago – Unemployed Strike it Rich' New Zealand Free Lance, 28 March 1934

of the year expanding the drives, adits and winzes of their mine, which would see the Unemployment Board authorise the Mines Department to pay a subsidy. In November 1936, £800 was agreed to in the form of a debenture secured over the assets of the

company¹⁴⁵ and the mine began to pay its way with something like the consistency the promoters had hoped for when it was first floated. In January 1937 they gained 124oz from 128 tons of ore, but this obscured what was going on. The ore crushed represented nearly all the auriferous stone available in the Rise and Shine: in February no stone was crushed and in March the battery ran intermittently, with 31 tons yielding 19oz.¹⁴⁶

With a balance sheet clear of debt, the directors decided that the lode they sought – which had eluded both the Eureka and Jubilee – remained lost and concluded that more money was needed to fund ‘a policy of immediate mine development if the operations are to be continued for any length of time.’ They bowed to the inevitable, passing the resolution ‘that accordingly the company be wound up voluntarily.’¹⁴⁷

From November 1935 to April 1937 an average of 24.2 tons of ore per month was processed. Overall 436 tons yielded 359oz of gold, or 16dwt per ton, so the mine was provably payable and the liquidator offered the mine as a going concern.¹⁴⁸ In November 1937 Southland investors formed the Shine Again Gold Mining Company to work the Rise and Shine/Eureka/Jubilee ground.¹⁴⁹ Their prospectus stated their intention to ‘crosscut the North-South lode at the 63-foot level and crush the ore in this lode available on the surface estimated at 3,000 tons, and after that to carry out further prospecting on the East-West lode with the intention of definitely proving the value of this area and opening up a mine capable of proper development on a large scale.’¹⁵⁰

In January 1938 their first crushing of four tons yielded 2oz, but 16 tons more produced a more encouraging 10oz. In April of 1938 they obtained a five head quartz battery from Stone Burn and shifted it to a lower site in the valley, enclosed it in a ‘wooden framed galvanised iron building’ and laid a tramway to the mine. The shaft was dewatered and a Lister engine procured to drive the mill and a Fordson tractor drove the air compressor for rock drills.¹⁵¹ The first few crushings were hardly economic, ranging from 2oz from 22 tons for the first week and 4oz from 42 tons in the next, up to a ‘high’ of 3oz from 20 tons a week later. They re-commissioned the ore roaster to pre-treat their stone, installed a ball mill and renovated their Wilfley table. In October they crushed 60 tons per week, for a consistent 7 to 8oz each week, or 2dwt per ton.¹⁵² Their claim area had very low-grade stone and for the period October 1938 to February 1939, won little more than 3dwt per ton or half of what the company expected.¹⁵³ They spent the winter of 1942 crushing scrappy stone from various open cut workings across their claim area, finally closing when the government declined an application for a subsidy to extend the eastward area of the original drive. With the August closure of the Shine Again mine, the last quartz mining venture at Bendigo ended.

The Heritage of 90 Years of Mining at the Rise and Shine Valley

One of the benefits of the harsh, low-rainfall climate and remote location of the Rise and Shine area is that the evidence of 90 years of mining is largely preserved. The most spectacular remains are found at the Come in Time site. Visitors park on a flat area on the ridge between Shepherd’s and Rise and Shine Creeks. From there the open cut work of the 1913 Alta Company can be seen to the north, on the Shepherd’s Creek side. Across the road, a Department of Conservation track drops down to the 1880 Come in

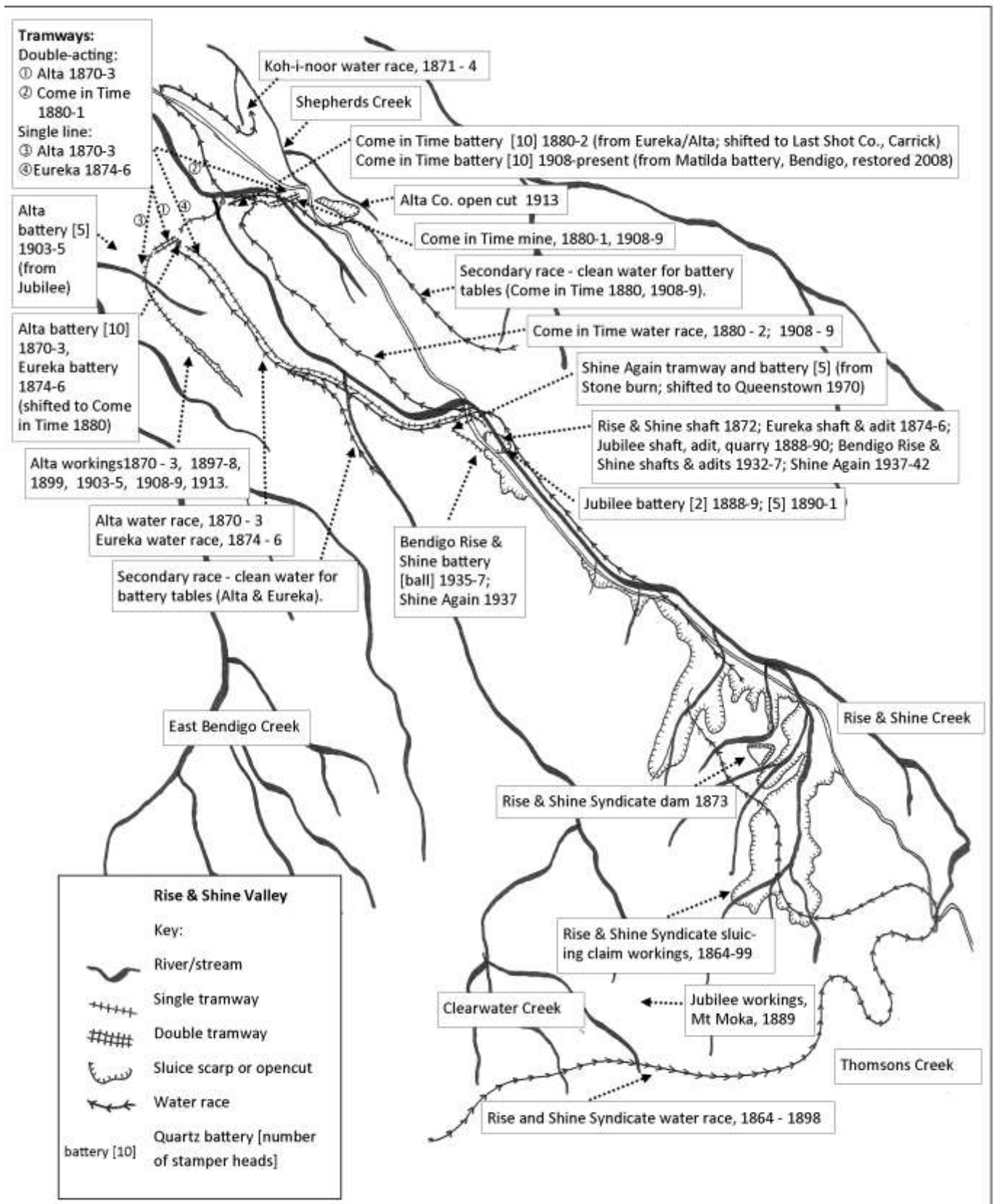
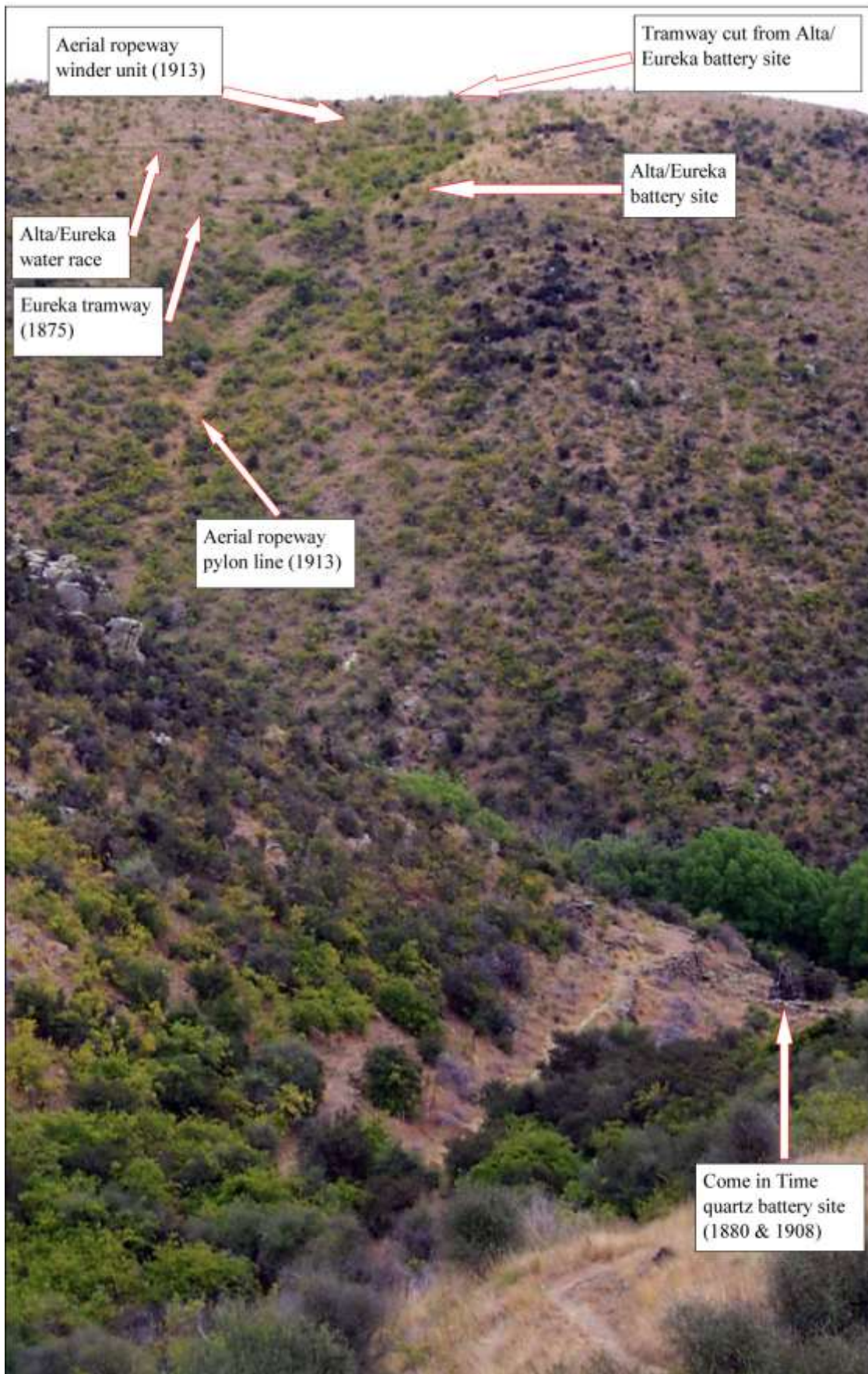


FIGURE 9 Rise and Shine Mining History Map (L. Carpenter)

Time adit 20 metres below the road. The track leads past a second adit from 1881, to M.B. Edwards' 1908 Come in Time stamper battery. This battery was extensively renovated in 2008.



From the battery site, the view across the valley to the south shows the Alta workings. Two lines traverse the slope of the hill from the east, terminating at a patch of dense briar on the hillside. The upper line is the water race, built in 1870 to convey Rise and Shine water for the Alta Company; the lower is the Eureka tramway from 1875. The briar at the end of the race and tramway mark the site of the Alta/Eureka battery, a location which reveals why the original builders found its construction so difficult. Above this is the header unit of the winding plant, the only remaining piece of the aerial ropeway built in 1913.

The Alta ground itself is a densely overgrown open-cut, which hides deeper workings below mullock piles. The stone hopper and the formerly-diesel-powered battery from Holmes and Company's 1903 operation may be seen on a spur to the west of this. A chimney in a gully SE of the workings is from the 1870 Alta house, while a chimney near the Alta/Eureka battery site marks the location of the blacksmith's shed built by the Eureka Company in 1874.

East along the Thomson's Gorge Road is the Shine Again battery foundations, then in succession, the 1930s Bendigo Rise and Shine mine adit, then on the left, across the road is the series of adits, foundations and shafts which mark the Eureka/Jubilee claim area. A kilometre further west leads to the Rise and Shine sluicing area and the houses built by that intrepid group of Swedish pioneers.



FIGURE 10: The Alta battery, 1903

Conclusion

The Rise and Shine Valley saw prospectors braving extremes of topography and climate as they dreamed of emulating the success of the Cromwell Company quartz mine at Bendigo. They found enough gold to be hopeful but not enough to pay. They formed companies, solved engineering challenges, built roads and developed a small residential community in this remote location high in the Central Otago hills. It is only in the modern era that quartz ores of Otago are proving remunerative to mining companies and

in 2012 Peel Mining commissioned a new study of the Rise and Shine Valley for possible future quartz development.

The mining history of the Rise and Shine Valley is typical of quartz mining efforts in Otago which, with the exception of the Cromwell Company mine at Bendigo, the Scandinavian claim near the Shotover and Bullendale mine at Skippers Canyon, were largely uneconomic despite significant investment and the use of mining expertise. It is an atypical history in that for over 80 years, nearly every mining enterprise in the valley was powered by the same water race, the Rise and Shine Company's race.

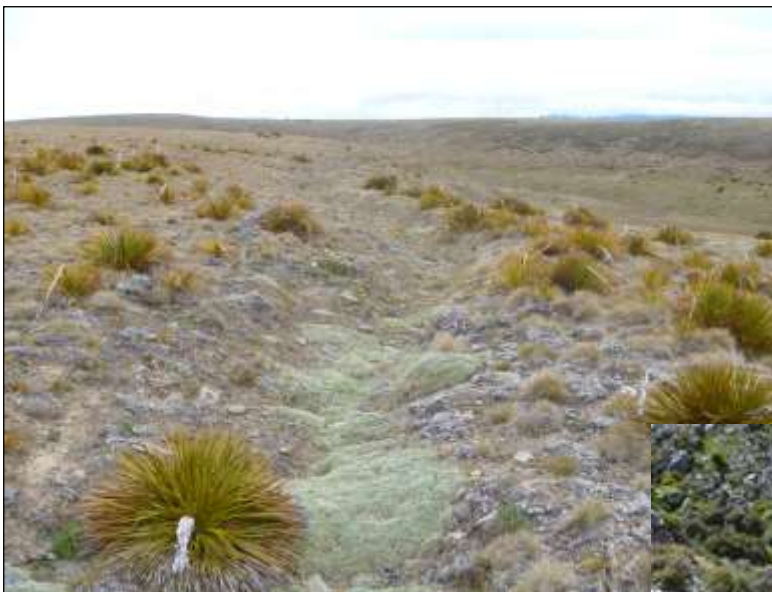


FIGURE 9a, b & c The Rise and Shine Water Race, Matakanui Station, east of the Rise and Shine Basin. Photograph courtesy Shar Briden, Department of Conservation, Dunedin, Matakanui Station Tenure Review files, 2011

My survey of the Rise and Shine Valley begs the question how much history is contained in the relatively rich, long-worked areas like Quartz Reef Point, Kawarau Gorge, Skippers Canyon, Manuherikia Point, Bannockburn and the Arrow field (to name just a few), and how viewing a landscape of anonymous piles of mullock, stone cottage ruins or sluice tailings hides a wealth of stories and mining heritage.

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- ¹²² 'Mining', *Otago Daily Times* 12 April 1933, quoted in Ordinary Prospecting Licence 308/32, Mines Dept Correspondence, Commissioner of the Mines Department and G.W. Lowe, 27 April 1933, ref. G.B. 11/7/23, ANZ-W.
- ¹²³ Mining Reports - Returns From Quartz - Mines Otago, Central Otago Area 1904-1939, ANZ-D, AATJ9163D345 box 152/f; G.W. Lowe to Mr A.H. Kimbell of the Mines Dept, Wellington, 11 March, 1933, Ordinary Prospecting Licence 308/32, , ref N. 9/148, ANZ-W.
- ¹²⁴ *Cromwell Argus*, Bendigo Items, 12 May 1875.
- ¹²⁵ Donovan, Dominion Analyst report to G.W. Lowe, 21 April 1933; Lowe to Kimbell, 27 April 1933 ref N.10/13/604, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹²⁶ Kimbell to Mining Registrar, Cromwell, 24 August 1933, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹²⁷ Aitchison of the Otago Gold Prospectors Co. to Ferens and Jeavons, Dunedin, 11 January 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹²⁸ memo 11 April, Ordinary Prospecting Licence 308/32, 1934, ANZ-W.

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- ¹²⁹ Minister of Mines to Chas. M. Barnett, lawyer for Cameron, Logan and Austin, 21 February 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³⁰ Ferrens and Jeavons to Kimbell 15 February 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³¹ Mining Licence - Bendigo Rise and Shine Gold Mining Company, ANZ-D R421837AATJ 9160D345 140/g 1/85.
- ¹³² Messrs Aitchison and Stewart, memo, 15 March 1935, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³³ Prime Minister GW Forbes 1934-1934; Diary entry, 20 January 1934, ANZ-W, PM10 2/6 (Forbes visited the claim in January 1934).
- ¹³⁴ Ordinary Prospecting Licence 308/32, (A 4 December 1934 memo to Commissioner of Unemployment, A. Tyndall said 'the references to the Unemployment Board and to the Prime Minister were to say the least unfortunate'), ANZ-W.
- ¹³⁵ Aitchison to the Commissioner of Unemployment, 10 September 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³⁶ Lowe to Under-Secretary, Mines Dept, Wellington, 26 November 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³⁷ Memo U.B.11/9/78 to Bendigo Rise and Shine Gold Mining Company from Commissioner of Unemployment, 11 December 1934, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹³⁸ 'Mining News', *The Evening Post*, 17 January 1935, p.14.
- ¹³⁹ T.W. Dobbie to Under Secretary for Mines, 4 October 1935, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹⁴⁰ 'Mining Returns', *The Press*, 11 December 1935.
- ¹⁴¹ 'Mining Returns', *The Press*, 18 December 1935.
- ¹⁴² Memo to Mines Under-Secretary, 1 May 1936, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹⁴³ 'Mining', *Otago Daily Times*, 8 June 1936.
- ¹⁴⁴ 'Mining Returns', *The Press*, 30 June 1936.
- ¹⁴⁵ A. Tyndall, Under-Secretary of Mines to secretary, Bendigo Rise and Shine Gold Mining Company 25 November 1936, Ordinary Prospecting Licence 308/32, ANZ-W.
- ¹⁴⁶ Mining Reports - Returns From Quartz - Mines Otago, Central Otago Area 1904-1939, March 1937, ANZ-D AATJ9163D345 box 152/f.
- ¹⁴⁷ A. Jeffery, *The History of Quartz Mining at the Bendigo and Carrick Range Goldfields, Central Otago, New Zealand*, Ministry of Economic Development Crown Minerals Mineral Report Series MR4062 1986, (Minutes and Lowe's report quoted), p.30.
- ¹⁴⁸ C. Aldridge, *Examination of Rise and Shine Mine area PL 31576, Otago*, for Bronze Boulder Mining & Development Co Ltd, Ministry of Economic Development Crown Minerals Mineral Report Series MR1951, 1983, (Mines Division File no. 1/65, Dunedin quoted), p.3.
- ¹⁴⁹ Mining Reports - Returns From Quartz - Mines Otago, Central Otago Area 1904-1939, ANZ-D.
- ¹⁵⁰ A. Jeffery, *History*, p. 30.
- ¹⁵¹ 'Mining Reports', *Otago Daily Times*, April 18, 1938.
- ¹⁵² 'Mining Reports - Returns from Quartz - Mines Otago, Central Otago Area 1904-1939', ANZ-D.
- ¹⁵³ C. Aldridge, *Examination*, p. 3.