AUSTRALIAN MINING HISTORY ASSOCIATION

16th Annual Conference

Greymouth, New Zealand

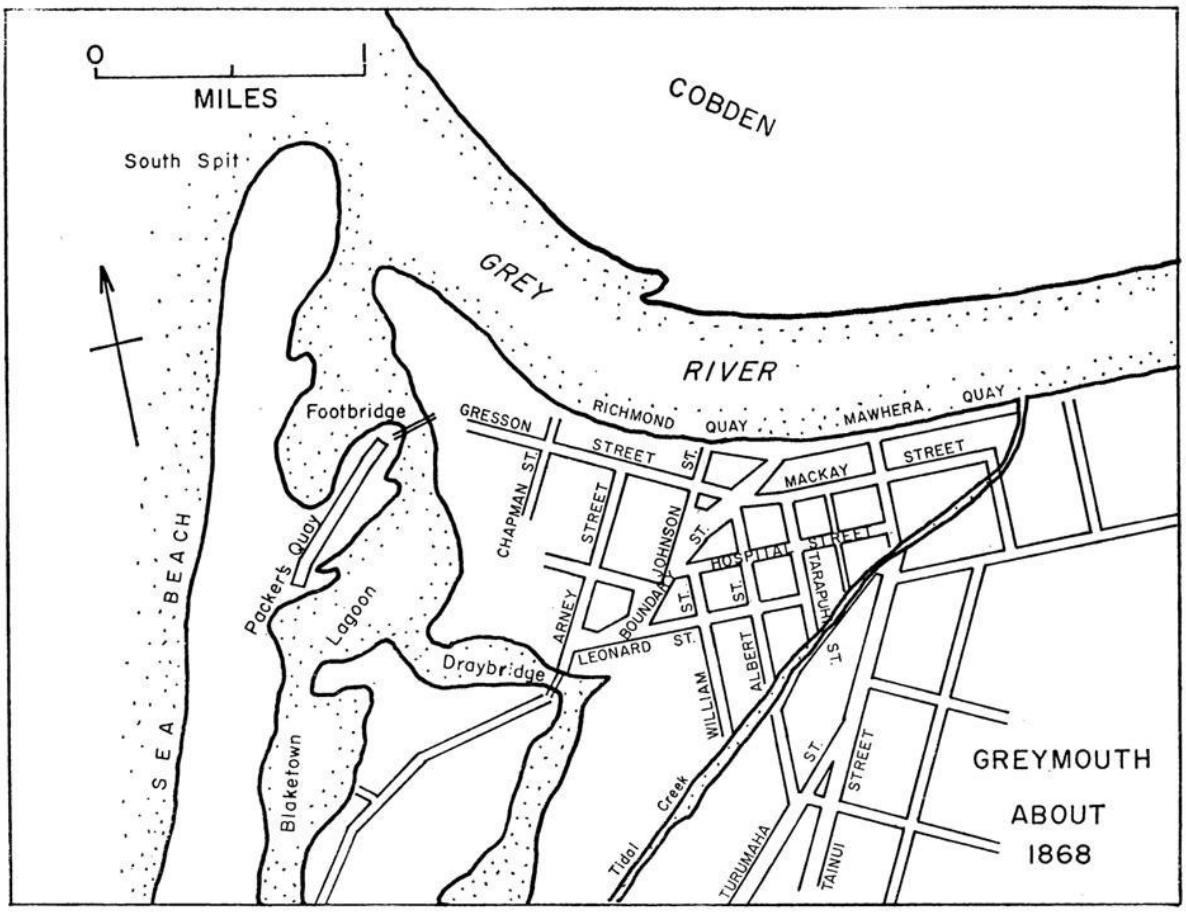
4 -11 July 2010

Blackwater Mine's Snowy River mill at Waiuta

MAYORAL MESSAGE

AUSTRALIAN
MINING
HISTORY
ASSOCIATION

PRESIDENT'S FORWARD



Philip Ross May *The West Coast Gold Rushes* (Christchurch 1967) p. 430

HISTORIC BREWERY TOUR

Prospecting and mining is arduous work, and the early miners on the West Coast had prodigious thirsts which were rapidly catered for by a myriad of unlicensed grog shanties early on, and then by licenced victuallers. Because of the high transport costs, it was apparent that it was economical to brew beer locally rather than ship it in from elsewhere: water, the main ingredient of beer, was copiously available in plentitude on the West Coast, while the ingredients that had to be shipped in, malt, hops and sugar, comprised only a minor proportion of the finished product, so naturally within a couple of years of the discovery of gold on the West Coast a series of breweries was soon flourishing.

Attendees of the 2010 AMHA conference will be able to visit the sole surviving brewery. This is the 142 year-old Monteiths Brewery, which has been operating in Greymouth since it was established as the Phoenix Brewery by the Monteith family in 1868. Four tours of this historic brewery have been arranged. The first two, for those arriving in Greymouth on Sunday, 4 July, will be on that day at 4pm. Those booking brewery tours with their registration will find their tour tickets in their individual conference bags. A registration desk will be open for registration when bags will be handed out from 1-4 pm on Sunday at the conference venue in the Kingsgate Hotel, Mawhera Quay. The other brewery tours will be at 6 pm on Wednesday, 7 July, and on the evening of the last day of the conference, Saturday, 10 July, also at 6 pm. The tour costs $13.50, and there is an optional hotel meal voucher bringing the total cost to $25 a person. The meal voucher can be used before or after the brewery tour that evening at the Railway Hotel, the Recreation Hotel, or Revington's Hotel.

The tour lasts about one and a half hours, and there will be a half an hour devoted to tasting the brewery's seven products. On the tour you will see the coal-fired boilers and the open vats where the beer is brewed in batches by ancient handcrafted methods. The knowledgeable guide will not only explain the brewing processes, but also give considerable information on the history of the brewery, and of brewing on the West Coast, detailing the Monteith family's connection with the gold rush.

As the AMHA does not have transport available for these tours, those participating will have to find their own way there and home again. There is a taxi service (tel. 03 768 7078). The brewery is located on the corner of Turumaha and Herbert Streets, an easy 800 metre walk from the conference venue; if confused, the friendly locals will be pleased to direct you. From the Kinsgate Hotel, turn left and proceed west down Mawhera Quay to the Regent Theatre, a local landmark on the corner of MacKay and Herbert Streets. Then turn left into Herbert Street; the brewery is located 500 metres up this street, on the right.

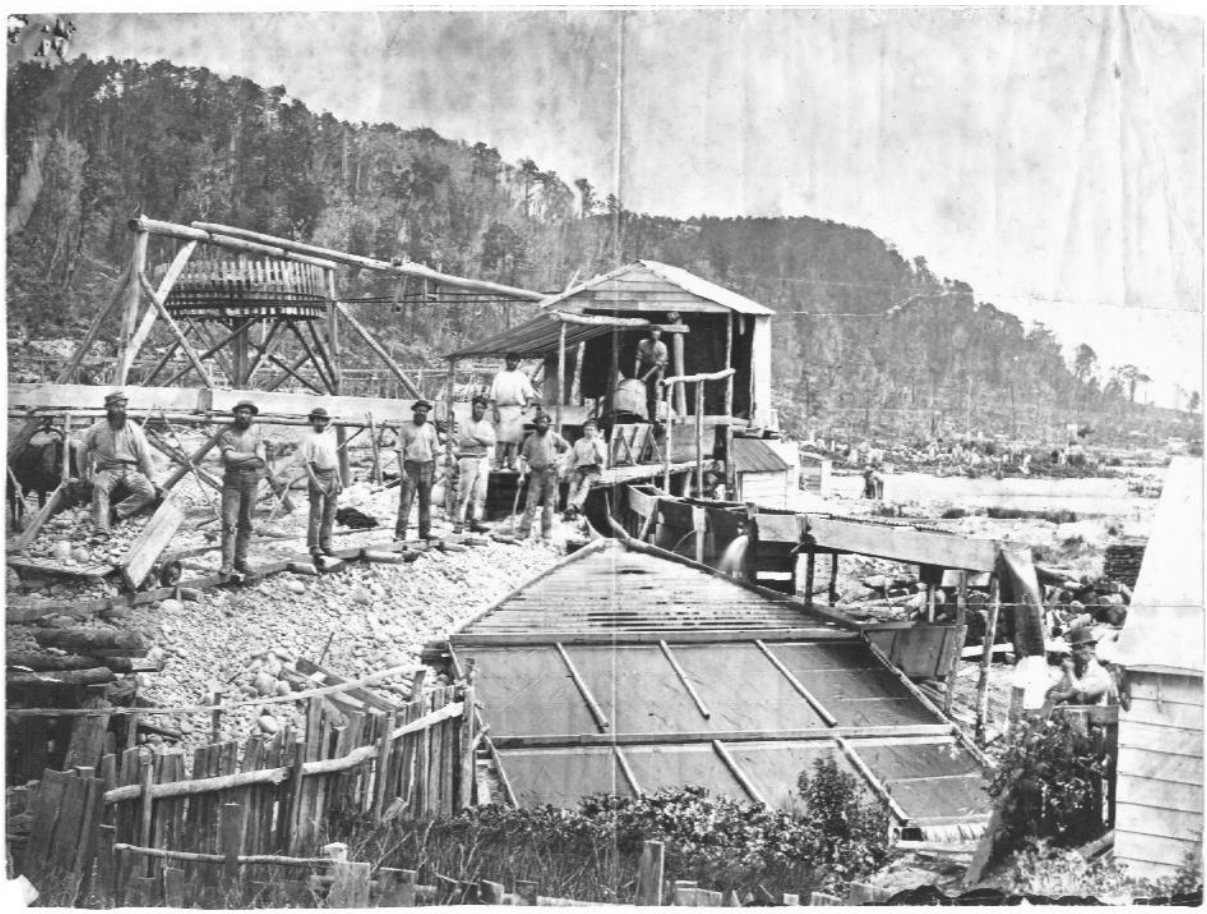
In the early days local hotels were the scene of some ribaldry and considerable carousing, with the proceedings enlivened by dancing girls. Sadly perhaps, the enactment of the 'Blue Stocking' legislation in the 1870s banned dancing girls from licensed premises, and after this the hotel bars must have provided somewhat drab entertainment. However the miners' thirst continued unabated if not unquenched: in the 1880s there were 56 hotels in Greymouth, 16 in Reefton, and 105 in Hokitika, with 87 of these on one street. These, and the many others scattered about in smaller centres, were well catered for by a series of breweries including the Monteith family's Phoenix Brewery in Greymouth, three breweries in Hokitika, two in Reefton, and one in Kumara.

In 1927 most of these breweries amalgamated into Westland Breweries Ltd, formed by Monteiths, which acquired Mandl's Brewery in Hokitika, Pearn's Brewery in Kumara, Davies Bros, Crown Brewery in Hokitika (which had earlier acquired Klappe and Kortegast Brewery in Hokitika), and Montieth's Phoenix Brewery in Reefton. The Kumara brewery closed in 1942, and the Reefton brewery in 1959. In 1948 there was a three month 'Beer Boycott' on the West Coast as drinkers protested rising prices. During it a suspicious fire damaged the Greymouth brewery and bottling plant.

In 2001 the national brewing company, DB Breweries, which had acquired the Greymouth brewery, announced its closure for economic reasons. Local protests were so vehement that within four days this decision was revoked. The felicitous result is that AMHA conference attendees will be able to visit this historic brewery and sample its prize-winning products. Cheers!

FURTHER READING: Leslie Hobbs, *The Wild West Coast* (Christchurch, 1959); Conrad V. J. Bollinger, *Grog's Own Country: The story of liquor licensing in New Zealand* (Auckland, 1963).

Brian Hill



Addison's Flat, West Coast, 1881 – Courtesy of John Tully

Wealth of Nations battery, Black's Point, Reefton, late nineteenth century – Courtesy of John Tully

The Grey River Dredge, West Coast, South Island

R J Cotton[1] and A Birchfield[2]

ABSTRACT

The Grey River Dredge, also known as the Birchfield Dredge, mined alluvial gold in the Grey River near Ngahere, 20 km inland from Greymouth, between 1992 and 2004. It worked a total of 220 hectares, processing 44 Mm^3 of alluvial gravel to produce 55 000 fine ounces of gold. The gold was mined using a bucket ladder of 104 0.57m^3 buckets. Two 10 m diameter radial (trapezoidal) jigs were used for primary gold recovery on the dredge, with further concentration by jigs. The dredge, the last alluvial gold mining bucket ladder operation in the Southern Hemisphere, is now in care and maintenance.

Keywords: gold, alluvial gold, placer, mining, bucket ladder dredge, Grey River, West Coast.

HISTORICAL BACKGROUND

The Grey River Dredge (Figure 1), also know as the Birchfield Dredge (Gregg, 1994), started life as the Kaniere Dredge, working terrace alluvium 7 km east of Hokitika over a period of 15 years (1938-1953) (Plate V, Williams, 1965). It was then relocated to Kumara and worked in the bed of the Greenstone and Taramakau Rivers between 1956 and 1982. The dredge was then transported to Ngahere (Figure 1), 20 km inland from Greymouth, with the intention of re-establishing it in the bed of the Grey River. This proposal foundered, and apart from assembly of new pontoons, the dredge sat idle until 1986. In that year, Kaniere Gold Dredging Limited was purchased by Grey River Gold Mining Limited (GRG), a joint venture between the R A Hanson Company of Spokane, Washington, USA (RAHCO) and Giant Resources Ltd of Australia. The dredge was radically redesigned and construction was completed in 1989. GRG converted the dredge to run a prototype suction cutter system for overburden removal, associated with a traditional bucket line to recover basal gold bearing gravels. In practice the dredge proved difficult to operate when both systems were running together. Reliability was low and the design throughput of 1500 m^3/hour was never achieved. Matching the mining rates of the two components, keeping both operational for extended periods and maintaining a stable platform for the on-board gold recovery circuit proved to be impossible. Gold recovery also never met grade expectations based on many years of drilling in and around the mined area. After ten months of commissioning, and a total expenditure approaching $50 million, the dredge was mothballed.

In late 1992, the assets of Grey River Gold Mining Limited were purchased by Birchfield Minerals Limited, of Greymouth.

1. MAusIMM, Westland District Council, Private Bag 704, Hokitika 7900, New Zealand. Email: richard.cotton@westlanddc.govt.nz
2. Birchfield Minerals Ltd, Dredge Road, Ngahere, New Zealand.

FIG 1 - The Grey River dredge operated by Birchfield Minerals Ltd at Ngahere. The dredge is 150 m long from the front A frame to the end of the stacker and reaches 30 m above the water line.

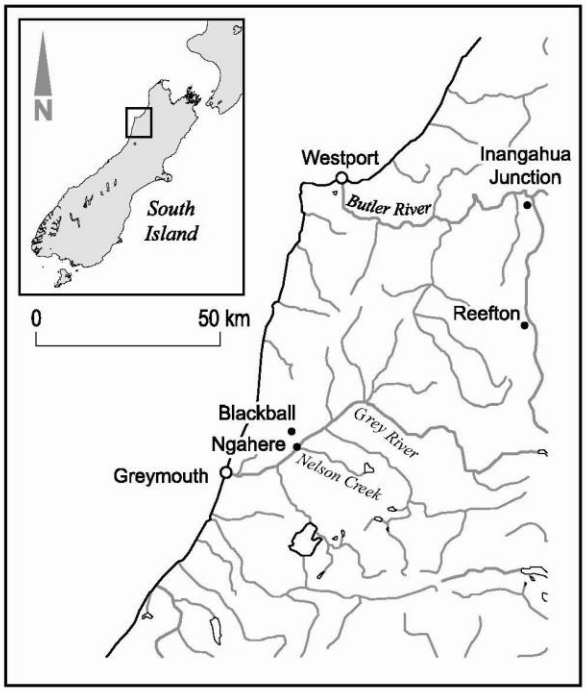


FIG 2 - Location of Ngahere where the Grey River dredge operated between 1992 and 2004.

The dredge was converted back to a traditional bucket line configuration, and the overburden system was removed. The stacker was extended, the operation placed under tight financial control, and a significant drilling program was carried out to more closely define the dredge path.

GOLD MINING

The redesigned dredge processed all the material dredged from the bed of the Grey River at a rate of 850 m^3/hour. The gravels ranged between about 20 and 22 m in depth and had an *in situ* grade of 100 mg/m^3. Recovery averaged about 75 per cent for a final recovered grade of 75 mg/m^3. The gold recovered was consistently 930 fine. Contrary to the grade distribution model upon which Hanson had designed the dual mining system, gold proved to be present at low grades throughout the mined interval, although the best grades were on the 'bottom', which is composed of Pliocene Old Man Group Gravels and Rotokohu Coal Measures (Johnson, 1987).

The resource worked by the dredge was contained within a 379 hectare mining licence issued in 1980. A total of 1000 boreholes were drilled in this licence area by Kaniere Gold Dredging, RAHCO and Birchfield to define the mineable resource. Most of these boreholes were small diameter (75 mm) percussion RC holes drilled with a Becker casing hammer. Reliability, repeatability and comparability with other forms of drilling were all low, but the large number of samples and hence large statistical database allowed reasonable correlations between average borehole grade and dredge returns, and provided for an accurate definition of the dredge path.

Between 1992 and 2004, the dredge worked a total of 220 ha, processed 44 Mm^3 and recovered 55 000 fine oz of gold, an average recovery of 160 kg per year. It employed a staff of 18. The land mined was all initially rough riverbed on the south-eastern bank of the Grey River (Figure 3). Mined land was restored to rolling pasture as tailings were re-contoured and developed into grazing land.

FIG 3 - The Grey River dredge at Ngahere, with the Grey River beyond (photo courtesy of Birchfield Minerals/ Stewart Nimmo Photography).

The dredge worked a path downstream of the confluence with Nelson Creek, which had hosted very successful dredges in the 1930s. The basal gold concentration was probably derived from the Nelson Creek catchment, with a lesser gold input from the Grey River, mostly restricted to the upper 10 - 15 m of the gravel column.

Once the economically mineable areas on the southeast side of the Grey River had been mined, the intention was to move the dredge to the northwest bank, close to Blackball, and mine the area at the confluence of the Grey River, and Fords and Blackball creeks. A combination of difficult consent conditions, a buffer zone to be left around the active channel of the Grey River, and some vocal opposition to the proposed mine plan all militated against this proposal and the dredge ceased operations in April 2004. The dredge, the last alluvial gold mining bucket ladder operation in the Southern Hemisphere, has again been put onto care and maintenance.

GOLD PROCESSING

Gravels were mined with a line of 104 0.57 m^3 buckets at a rate of 25 per minute (Figures 4 and 5). The dredge was capable of a maximum digging depth of 30 m. Oversize boulders were scalped over a grizzly and dropped to the bottom of the pond through a well in the centre of the dredge. Sub 300 mm material was passed to a 3 m diameter polyurethane lined trommel screen with oversize discharged via a 70 m long stacker to the rear of the 150 m long by 300 m wide dredge pond (Figure 6). The dredge was controlled by a headline system, rather than spuds.

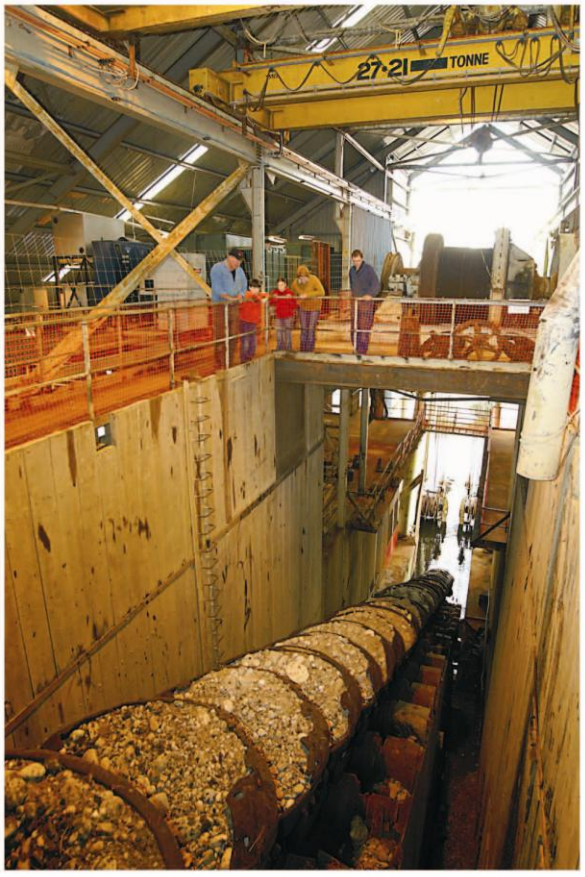


FIG 4 - Bucket line with 0.57 m^3 buckets (photo courtesy of Birchfield Minerals/Stewart Nimmo Photography).

Gold was separated from the trommel undersize and concentrated on two 10 m diameter radial (trapezoidal) jigs (Figure 7) mounted on either side of the trommel. Secondary concentration was by conventional Panam jigs. Hanson used an on-board Wilfey table for tertiary concentration, but Birchfield installed a series of Knudsen bowls, and later secondary and tertiary jigs, on the plant to produce a gold concentrate, which was taken ashore and processed over a Wilfey table.

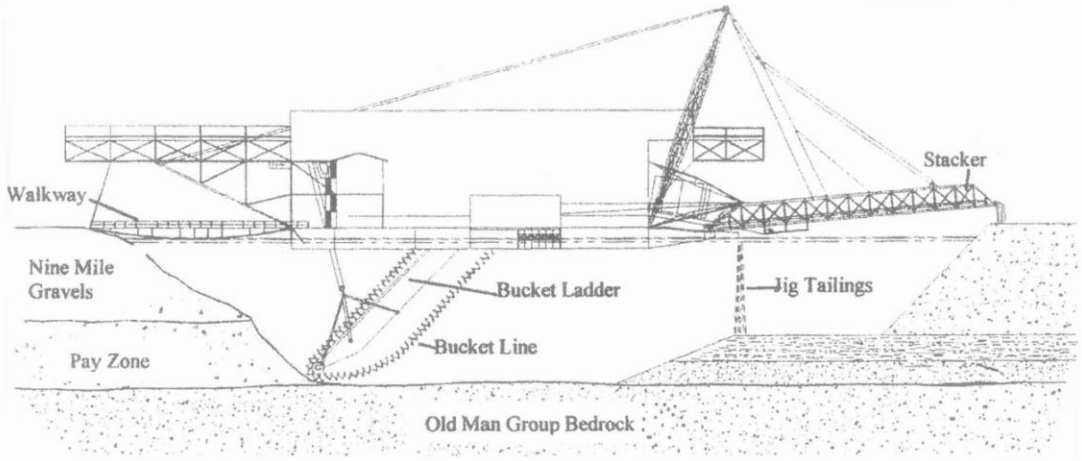


FIG 5 - Schematic cross-section of the Grey River gold dredge.

FIG 6 - Stacker depositing fine tailings (photo courtesy of Birchfield Minerals/Stewart Nimmo Photography).

FIG 7 - Radial jig in operation (photo courtesy of Birchfield Minerals/Stewart Nimmo Photography).

FIG 8 - Restoration to high-quality pasture behind the dredge.

Restoration

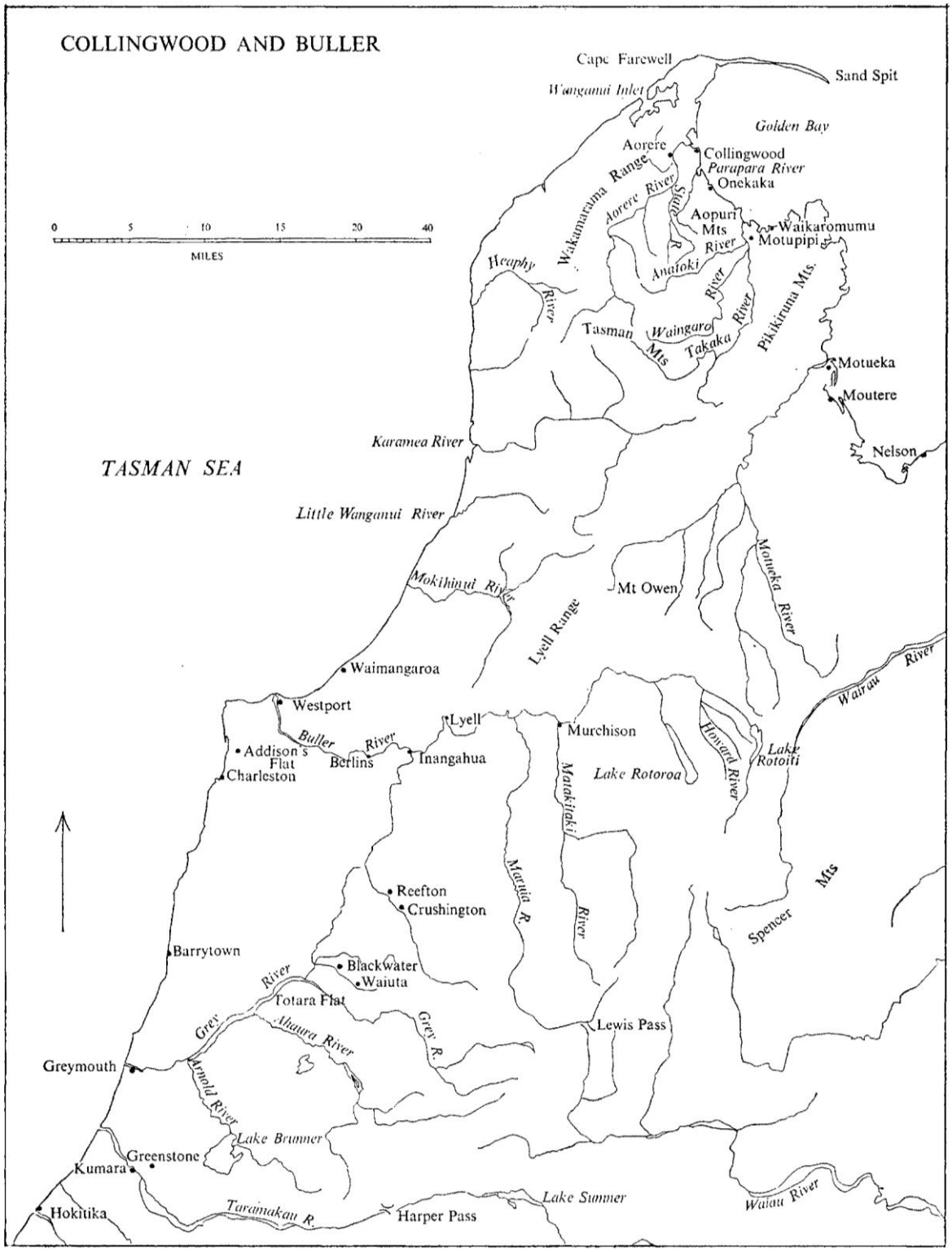
The land prior to dredging was predominantly poor quality pasture within 1 - 3 m of river level. It carried grazing cattle and was regularly flooded by the Grey River. Topsoil, where present, was stripped prior to dredging and carted behind the plant to be placed and spread over levelled and contoured tailings. Close to the river, a stopbank was built to minimise flooding during mining. This wall was incorporated into the final contour of the land, which was raised 3 - 5 m by the 'swell' caused by the loose packing of the tailings. The restored land has been converted to high-quality pasture grazing dairy cows, is now protected from flooding and is much more productive due to the well drained contours that were developed across each cut the dredge made parallel to the main channel of the river (Figure 8).

REFERENCES

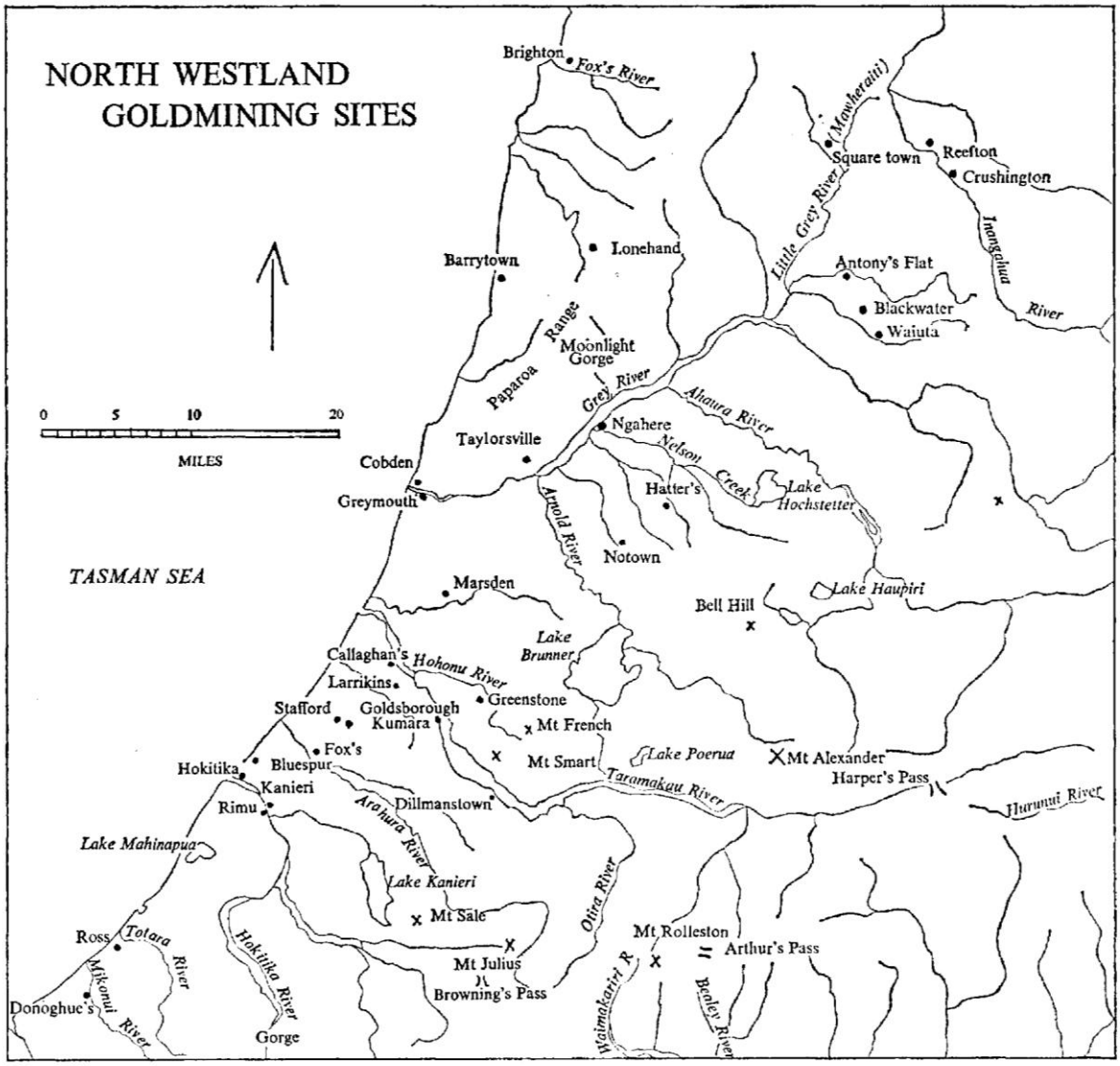
Gregg, R, 1994. The Grey River Dredge – A kiwi success story, *New Zealand Mining*, 15:8-11.

Johnson, M, 1987. The Rotokohu coal measures, MSc thesis (unpublished), The University of Canterbury.

Williams, G J, 1965. Economic Geology of New Zealand, *Eighth Commonwealth Mining and Metallurgical Congress, Volume 4* (The Ausralasian Institute of Mining and Metallurgy: Melbourne).



J. H. M. Salmon *A History of Gold Mining in New Zealand* (Wellington 1963) p. 31



J. H. M. Salmon *A History of Gold Mining in New Zealand* (Wellington 1963) p. 130

PROGRAMME

SUNDAY 4TH

1.00-4.00: Registration at Kingsgate Hotel.
2.00-4.00: 'The History House' (Greymouth Museum) open especially for those on pre-conference tour.
4.00: Two Monteiths tours for pre-conference tour group.

MONDAY 5TH

Bus leaves Kingsgate Hotel at 8.30 for pre-conference tour. Visit Dobson-Brunnerton coal mining area, morning tea at Nelson Creek, and lunch at Waiuta. Talk and tour of Waiuta ghost town. Overnight stay at Reefton.

TUESDAY 6th

Leave at 8.00 for Globe mine tour, Blacks Point, museum, battery, and Reefton School of Mines, with lunch at Reefton Oddfellows Hall. In the afternoon, visit Pike River coal load out and coal processing facility.

For those arriving in Greymouth on this day, 'The History House' will be open until 4.00.

EVENING

6.00: Mayor's Civic Reception, Grey District Council Chambers, Puketahi Street [just off Tainui Street, which runs down to Mawhera Quay]. Commences with refreshments accompanied by Mike Williams' photos of AMHA's Lithgow Conference. Then performance by Greymouth High Kapa Haka Group, welcome by Mayor Tony Kookshoorn, and presentation by Les Wright, of Punakaiki, aka 'The Tin Man'.

WEDNESDAY 7th

8.50: Welcome by Peter Bell, President of AMHA.

West Coast Coal Mining

Chair: Peter Bell

9.00: Stuart Henley, 'King Coal on the West Coast: The rise and fall and revival of the West Coast coal mining industry'.
9.30: Brian Wood, 'West Coast Coalmining Communities: Using Genealogical Sources for Historical Analysis'.

10.00: Morning tea.

West Coast Gold Mining and its Legacies

Chair: John Barry

10.30: Gareth Thomas, Paul Thomas, and Les Wright: 'Around the Globe and Back Again'.

11.00: Jim Staton, 'Waiuta Gold: Environmental Legacy'.

11.30: John Green, 'Banbury Tourist Mine and Tramway Development Plan'.

12.00: Lunch

Miners and Their Experiences

Chair: Barry McGowan

1.00: Simon Nathan and Les Wright, 'The Photography of Joseph Divis: Blackwater mine and the Snowy River battery in the early 1930s'.

1.30: Daniel Davy, 'Ethnicity, Masculinity, and Diggerdom: Identity Formation in the Otago Goldfield Letters of William and John Walker'.

2.00: Anne Both, 'From Plants to Miners' Hats and Magnetic Exploders'.

2.30: Leonie Knapman, 'A Coal Miner's Daughter'.

3.00: Afternoon tea.

Tasmania

Chair: Ross Both

3.30: Roger Kellaway, 'Reacting to Otago: The Search for Gold in Tasmania 1861-1865'

4.00: Peter Brown, 'The Track is Their Story: Reading the People into the Artifact'.

4.30: Greg Dickens, 'The Mines of Western Tasmania'.

6.00: Monteith's tour.

THURSDAY 8th

Mining at Waihi and during the Great War

Chair: Philip Hart

8.45: Doreen McLeod, 'Newmont Waihi Gold's Oral History Project: Telling it the way they saw it'.

9.15: Sue Baker Wilson, 'The New Zealand Tunnelling Company'.

9.45: Morning tea

Dredges

Chair: Brian Hill

10.15: Nic MacArthur, 'The New Zealand Gold Dredge – A Macro-innovation?'

10.45: John Barry and Margaret Mort, 'Two Shillings a Minute: Operations of the Rimu Gold Dredging Company 1921-1953'.

11.15: Nic Haygarth, 'Golden Fleece? Tasmania's disastrous trans-Tasman dalliance with gold'.

11.45: Lunch

12.30: Depart for Brunner Industrial Site and Blackball, guided by Brian Wood. Visit to Birchfield's gold dredge, guided by John Barry. Afternoon tea at Blackball.

FILM EVENING

Chair: Mel Davies

7.15: Robin McLachlan, 'Fracas, Fizzle and Fortune: South Island Miners on the Klondike, 1898-1899', followed by his film *The Letter* (17 minutes).

8.10: David Sims' film, *After 90 Years* (15 minutes); (copies of David's 60-minute DVD, *On Denniston*, are available for purchase at Shantytown).

8.25: *Waihi: Gold Town 1948* (20 minutes)

8.45: *Miners at War: Relatives Remember* (15 minutes)

FRIDAY 9th

9.00: Leave for Shantytown.
[There will be a sale table at Shantytown for both books and DVDs].

12.00: Lunch

Miners and Mining Buildings

Chair: Leonie Knapman

12.30: Julia Bradshaw, 'The "Chinese Invasion" of the West Coast Goldfields'.

1.00: Jo Hart and Paul Kearns, 'The Runanga Miners' Hall Project'.

1.30: John Isdale, 'The First 125 Years of the Thames School of Mines'.

2.00: Peter Bell, '150 Years at the Wallaroo Smelters'.

2.30: Afternoon tea

Oil

Chair: Ken McQueen

3.00: Adrian Hutton, 'Mining Joadja Creek Kerosene Shale, New South Wales: A Salute to Perseverance'.

3.30: Jim Enever, 'Mining for Oil in Victoria: The Lakes Entrance oil shaft'.

New South Wales

Chair: Ann Both

4.00: Ken McQueen and Robert Barnes, 'The Maitland Bar Nugget: A Key Link to the Gold Rush Heritage of New South Wales'.

4.30: Barry McGowan, 'Diggers, Dredges, and Dancing Girls: the Araluen Goldfield of New South Wales'.

5.00: Return to Greymouth

6.30: Leave for Shantytown for Conference Dinner

10.00: Return to Greymouth

SATURDAY 10th

8.00: Leave for Punakaiki
12.00: Lunch

Australasia, the USA, and Fiji

Chair: Adrian Hutton

1.00: David Branagan, 'Six Personalities Seeking for the Pot of Gold: Australasian Connections: Practical and Academic'.
1.30: Peter Clayworth, 'Pat Hickey's Apprenticeship: An education in mining and militancy in New Zealand and the USA, 1900-1908'.
2.00: Aert Driessen, 'A History of the Emperor Gold Mining Company, Vatukoula, Fiji'.

2.30: Afternoon tea

Mining in Far Off Places

Chair: Roger Kellaway

3.00: Ross Both and Antonio Angel Perez, 'Mining Heritage of the Linares-La Carolina District, Spain: From Bronze Age to the Twentieth Century'.
3.30: Peter Maciulaitis, 'We've Always Preferred Lucky Geologists to Good Ones'.

4.00: AGM
6.00: Monteith's tour.

SUNDAY 11TH

Leave at 8.30 for post-conference tour to Kumara, Goldsborough, Stafford, Arahura River, Hokitika, Ross, and sites en route.

Note: As a DVD of the conference is to be produced, could all participants with photos from the conference and the field trips who are willing to have them considered for inclusion in the 'conference activities' slide show please send copies to Ross Both (rosannb@bigpond.net.au).

ABSTRACTS

Two Shillings a Minute: Operations of the Rimu Gold Dredging Company 1921-1923

John Barry
Consulting geologist, and
Margaret Mort
Researcher, History House, Greymouth

By innovation and change the gold dredge in New Zealand evolved into an efficient gold-saving appliance. Introduced into California by Robert Postlethwaite, the technology was 'beefed up' by American mining engineers. North American successes prompted British and American mining houses to search worldwide for dredgeable deposits.

In 1918, Robert Cranston visited New Zealand on behalf of a New York mining company and purchased dredging properties held by Rimu Options Ltd south of Hokitika. Funded by American capital, the Rimu Gold Dredging Company was registered on 12 July 1920, and dredging commenced on 12 September 1921. By 1930 the wooden pontoon required replacement, and as much low-grade ground remained the dredge machinery was upgraded and transferred to a new steel pontoon. The western edge of the license was reached on 8 April 1953, and as no further ground had been found the dredge was advertised for sale.

From 47,851,000 cubic metres dredged, 319,345.3oz of gold bullion was recovered. The company also supplied Hokitika with electricity from its Kanieri Forks power station. Total dividends were £759,802, most of which went to the American owners. The company was a just employer and its American management was highly regarded.

150 Years at the Wallaroo Smelters

Peter Bell
Historical Research Pty Ltd

The Wallaroo smelters, in the heart of South Australia's Copper Triangle, operated for 65 years from 1861 to 1926, producing 333,000 tons of copper and significant quantities of other metals. This paper describes those decades of production as the smelters' technology evolved from Welsh reverberatory furnaces through waterjacket blast furnaces to electrolytic refining and converters. It also traces the smelters' next 84 years through a long process of closure, demolition, and abandonment. For about 50 years the site was a derelict and rather noxious wasteland.

More recently, its immediate surroundings have been transformed by a marina, a ferry terminal, and a housing development, and plans are afoot to develop the smelters site itself. Since 2007 the author has been involved in a project to define the extent of the heritage site and open it up to visitors by a pedestrian access path combined with an historical interpretation trail.

From Plants to Miners' Hats and Magnetic Exploders

Anne Both

In the seventeenth century, John Tradescant the Younger obtained samples of a tropical tree which yielded a rubber-like substance which he named 'Mazer' wood. Its commercial potential was not developed until its reintroduction in 1843 by William Montgomerie, who recommended that it could be used in surgery.

Palaquium gutta provided the Industrial Revolution with Gutta-Percha, subsequently developed into many new products. Its insulating properties were used by cable and telegraph companies, and many domestic items were produced. In mining, it was promoted as increasing safety and reducing costs, and products made from it such as suction pumps, clack seals and lathe bands could be found on most nineteenth century mine sites world-wide. It is still used in the manufacture of some mining products.

Mining Heritage of the Linares-La Carolina District, Spain: From Bronze Age to the Twentieth Century

Ross Both
Formerly of the Economic Geology Department, University of Adelaide, and current member of the South Australian Mining Heritage Group,
and *Antonio Angel Perez*
Oretania Institute of Secondary Education, Linares, Spain

Mining in the Linares-La Carolina district in Jaen Province, southern Spain, can be traced back 4,000 years, when the Bronze Age Argaric people mined outcropping veins of copper. Iberians, Carthaginians, and Romans later mined copper and lead. There are no references to mining during the Moorish occupation or the Middle Ages, but mining revived after 1563 and increased after the Crown became involved in the Arrayanes mine in 1749. Installation of a Cornish pumping engine on El Pozo Ancho mine in 1849 led to a mining boom that transformed the local economy. Most mines were equipped with Cornish steam engines, which dominated the landscape. Many new mines were financed by British, French, German, and Belgian capital, the Spanish government retaining the Arrayanes mines, the largest in the Linares district. After the last mine closed in 1991, the Colectivo Proyecto Arrayanes was formed to record, conserve, and interpret the mining heritage.

The 'Chinese Invasion' of the West Coast Goldfields

Julia Bradshaw
Interpretation Manager, Shantytown, West Coast Historical and Mechanical Society

The Chinese were one of the many different nationalities to come to the West Coast in search of a fortune. Although during the gold rush and for many years afterwards the Chinese were the largest minority group on the Coast, until recently very little has been known of their story.

This paper explores the arrival and distribution of the Chinese, details of their mining experiences, and their successes and failures. Included are stories of some interesting

individuals such as Young Hee, who organized an important anti-opium petition, and Lily Chow Fong, the wife of a Chinese merchant, who ran her own business in Greymouth.

Six Personalities Searching for the Pot of Gold: Australasian connections: practical and academic

David Branagan
School of Geosciences, University of Sydney

In view of the relative proximity of Australia and New Zealand, it is natural that there was frequent interchange between many individuals and companies interested in mining and geological activities. This paper discusses the work of six personalities, Georg Heinrich Ulrich (1830-1900), Frederick Wollaston Hutton (1836-1905), Joseph Campbell (1856-1933), James Malcolm McLaren (1873-1935), Robert Alexander Farquharson (1883-1959), and George Herbert Watson (1894-1963), covering a wide range in time and interests, with links in time and space. All had major interests in gold, and worked in both New Zealand and Australia.

The Track is Their Story: Reading the people into the Artefact

Peter Brown
University of Tasmania

The Mole Creek Track, also known as the Innes Tract, was made between central Tasmania and Rosebery on the West Coast in the 1890s. 120 kilometres long, it was cut over two summers by gangs of day labourers working for the Public Works Department. The standard of construction varied, partly because of the differing nature of the ground, partly because the track was cut from both ends at the same time, and partly because of the varying quality of supervision and the morale of the workers. The two gangs worked in different labour markets with significantly different expectations. Inefficiencies at the western end were increased by a partial breakdown of the organizational structure, and standards at the eastern end varied despite consistent work gangs and supervision, resulting from decisions made by the overseer.

Pat Hickey's Apprenticeship: An education in mining and militancy in New Zealand and the USA, 1900-1908

Peter Clayworth
Freeland historian, Wellington, working on the Labour History Project

Patrick Hodgens Hickey, union organizer and socialist activist, was one of the most colourful and militant leaders of the 'Red Feds', the Federation of Labour. Hickey first came to national prominence leading the Blackball strike of 1908, and went on to try to create One Big Union to overthrow capitalism. He had a leading role in the Red Fed challenge to the arbitration system, which sparked the most intense period of class confrontation in New Zealand, culminating the Waihi strike of 1912 and the Great Strike of 1913.

Although born in New Zealand, Hickey acquired both his activism and many of his mining skills as an itinerant worker in the USA in 1900 and 1903-1906. This paper, based on Hickey's letters from both America and Denniston, on the West Coast, outlines how he acquired the skills that made him an experienced miner in both hard rock and coal mines and examines his education in politics and union organization by the militant Western Federation of Miners. Hickey's mining skills combined with a good reputation amongst fellow miners as a good worker was essential for his being taken seriously as a union activist. His story illustrates the role of mines around the English-speaking world as bases for militant activism.

Ethnicity, Masculinity, and Diggerdom: Identity formation in the Otago Goldfield Letters of William and John Walker

Daniel Davy
Doctoral student, University of Otago

Recent studies of the New Zealand gold rushes have tended to view miners' identity through an ethnicized or gendered lens. Whilst these approaches have proved useful, they largely ignore the interdependence of ethnic and gendered identities as well as the importance of identities formed by familial ties, religion, and the collective digger culture. This paper draws on the letters of two Otago brothers to show that gold miners' identity was an interlaced collection of identities, sometimes complimentary, sometimes contradictory, which were constantly reworked through daily experiences both on and off the goldfields. It draws on the work of Charlotte Erickson, David Fitzpatrick, and Angela McCarthy by treating the gold miner letter as a literary work, in hopes of reconstructing the ordinary experiences on the goldfields. It is hoped that this paper will contribute to a greater problematization of both the miner and the migrant through an appreciation of the layer nature of migrant identity formation.

The Mines of Western Tasmania

Greg Dickens
Formerly worked on mining heritage for Mineral Resources Tasmania

Mining in Tasmania has a long and varied history. Aborigines mined flints, salt, and ochre, and after 1803 the early settlers mined sandstone, limestone, and clay for building materials and coal for fuel. The first major mineral find was in 1871, when tin was discovered at Mount Bischoff. This led to further exploration and the discovery of other major mineral fields.

Western Tasmania contains several highly mineralized zones, and Mount Bischoff, Renison, Mount Lyell, Rosebery, and Hellyer are world-class mines in both size and grade. For the past 140 years the region has been the lifeblood of Tasmania's mining industry, currently about 50% of the state's total export income. This paper provides a chronology of the exploration and development of the principal mines.

A History of Emperor Gold Mining Company Ltd, Vatukoula, Fiji

Aert Driessen
Freelance geologist

Sporadic reports of alluvial gold in the Tavua area, on the northern side of Viti Levu, circulated in Fiji from around 1872.

Patrick Costello, owner of the Shamrock Hotel in Lautoka and a passionate prospector, funded prospecting parties in 1915, 1924, and 1928, without success. The Tavua basin, a collapsed caldera some 50 kilometres east of Lautoka, was probably not covered in any of these explorations. In the latter part of 1932, Costello grub-staked his 72 year-old Scottish-born foreman, Bill Borthwick, to prospect it. On 5 November, Borthwick traced alluvial gold to an outcrop, and within a week Costello pegged out a prospecting license of 200 hectares. On 23 November, Costello informed the Colonial Secretary of his discovery, which he named Vatukoula, meaning Golden Hill. Costello offered the prospect to Waihi Gold Mining Company of New Zealand for development, but by dallying they allowed events to overtake them.

In Sydney, recently-ousted Federal Treasurer Edward Granville Theodore ('Red Ted') read of the find, contacted Costello, obtained samples, formed a syndicate with John Wren, Patrick Cody, and Frank Packer, and arrived in Fiji on 30 May 1933. By 1934 there were three mines, Emperor, Loloma, and Koroere, all effectively controlled by the syndicate, and by the end of 1935 Theodore had accumulated more wealth than he could have imagined as a boy.
In December 2006, after some 70 years of operations and 7 million Troy ounces of gold, the Emperor mine, the last to operate, was placed in care and maintenance, with the loss of 1,700 jobs. But the 5.6 million ounces still remaining at a time of rising gold prices was bound to attract attention. In 2009, Vatukoula Gold Mines was floated on the Alternative Investment Market in London, and by 2011 it expects to be producing at the historical levels of 100,000 ounces a year.

Mining for Oil in Victoria: The Lakes Entrance Oil Shaft

Jim Enever
Retired mining engineer

From 1940 to 1950, a novel attempt was made to recover oil from a sand horizon at about 360 metres depth near the town in Lakes Entrance in East Gippsland, Victoria. At that time, the Lakes Entrance Oil Field was the only source of liquid 'well' oil known in Australia. Encouraged by the need for an indigenous supply of petroleum during wartime, the Commonwealth Government tried to induce private enterprise to undertake a trial of an innovative development method involving the drilling of horizontal holes into the producing zone from the bottom of a vertical shaft. When private enterprise struggled to raise the necessary finance, the Government, in conjunction with the Victorian Government, stepped in and ran the project itself. A shaft was sunk through the soft, water-bearing strata, and a number of short horizontal holes drilled into the sand to test the oil flow. Disappointing results from these tests, combined with a reappraisal of the potential of the field and the end of the war, led to the governments terminating their direct involvement. Handed back to private enterprise, the project was seen through to completion, but by 1951 it was clear that

commercial production would never be achieved. The project was abandoned at the end of that year.

The Banbury Tourist Mine Development

John Green
Department of Conservation

The Department of Conservation has undertaken to give initial protection to all historic heritage sites over 30 years old on land it administers until an assessment of significance is completed to determine whether to include them in its inventory. Avoidance of adverse effects of human activities is the appropriate management regime for 90 per cent of the heritage assets managed by the department. Areas such as Denniston have a distinct physical nature, and the deterioration of historic sites is a consequence of climatic extremes rather than human threats.

The vision for Denniston is a well-orientated, well-informed, and enjoyable visitor experience which will encourage people to stay longer in the area and leave with a greater understanding of the historic values unique to this special place. Development will consist of three main components:

- Coaltown/iSite at Westport, interpreting the mining industry and acting as a gate way to the Denniston experience.
- Banbury mine underground experience, to be developed adjacent to the brake head/incline, conveying the story of workings and workers and transporting visitors deep into the heart of an historic mine by tram and following the journey of coal from the face to the port.
- Friends of the Hill Museum will focus on the life of a miner and the mining community with emphasis on the stories of past residents.

The Runanga Miners' Hall Project

Joe Hart and *Paul Kearns*
Members of the Runanga Area Association

The Runanga Miners' Hall is central to the mining heritage of the region, and is a significant building in terms of the history of industrial unionism on the West Coast and in Australasia. The presentation will cover the history of the coal mining town of Runanga, the hall, and plans for its restoration and the development of a museum of mining heritage.

Golden Fleece? Tasmania's disastrous trans-Tasman dalliance with gold

Nic Haygarth
Freelance historian and consultant

A piano-tuning, potato-growing ex-Prussian engineer named Rudolph Wachsmuth sparked a hydraulic gold sluicing craze in Tasmania during the 1890s, encouraged by Government Geological Surveyor Alexander Montgomery. Both men had experienced the success of hydraulic sluicing in Otago, and predicted good results in Tasmania. Several New Zealand 'hydraulicers' were recruited. Lavish expenditure and ludicrous ambitions, however, could not disguise that the Tasmanian goldfields chosen were too small to be worked economically. Shareholders found out the hard way.

King Coal on the West Coast
(The rise and fall and revival of the West Coast coal mining industry)

Stuart Henley
Senior geologist, Solid Energy

Since 1880 coal mining has been the life blood of the West Coast economy. While it was gold that lured thousands of people to the region in the 1860's, the gold rush was short-lived and it was the coal mining industry that contributed most to the development of the West Coast. Coal was first discovered by Brunner near Greymouth in 1848 and in 1860 thick, high quality coal seams were found in the Buller Coalfield. Exploitation was initially hampered because of a lack of infrastructure but by the 1880's the ports of Westport and Greymouth, supported by railways, were in operation and the coal industry rapidly expanded.

West Coast coal was renowned for its superior steaming qualities and was used to fuel the emerging New Zealand economy. In 1914 coal production (all from underground mining) reached 1.34 million tonnes with 2550 people employed. After WW 2 a major decline set in with hydro-electricity and diesel fuel becoming readily available. A number of larger underground mines closed in the 1960's and by 1989 there were only 72 coal miners left in the Greymouth Coalfield.

Interest by Japanese coking coal buyers lead to a major revival with most of the production increase being exported. In 2006 coal production was a record 2.86 million tonnes (80% from opencast mining) and there are now over 1000 people directly employed. With a number of new mines coming into production, the future for the West Coast coal mining industry looks bright.

Mining Joadja Creek Kerosene Shale, New South Wales: A salute to perseverance

Adrian Hutton
School of Earth and Environmental Sciences, University of Wollongong

Joadja Creek kerosene shale produced one of Australia's first, if not the first, successful petrochemical industries. This shale, up to one metre thick, occurs in a coal seam, cropping out around the sides of the valley.

Exploiting the shale required hand-mining techniques strongly influenced by the geology of the deposit. Immediately above the seam the thick coarse sandstone provided an excellent roof unless there were rock falls. The seam lensed out quickly, and mining heights were somewhat restricted near its extremities. Initially all mining was based on the 'pick and shovel' method, with two men working the seam from adits driven from the valley sides or from drives from these adits. Efforts to mechanize the work were limited by the nature, thickness, and shape of the shale lens.

This paper examines the geology and mining techniques used.

Thames School of Mines

John Isdale
Historic Places Trust

Initiated by the government to improve mining and increase revenue, and opening at Thames in the late nineteenth century, the Thames School of Mines was one of over 30 such educational institutions in New Zealand. My paper explores:

- The growth of this institution since 1886, the addition of specialized buildings to meet various needs, and success in developing better extraction processes and training people to work these technologies.
- The additions to the curriculum that were so successful that the school continued for another 40 years rather than close when mining ceased, effectively, in Thames in 1914.
- The survival of this unique complex, achieved with the help of Australian and Canadian mining companies, and the work of my late parents, A.M. and J.A. Isdale.
- Some of the people who worked in, for, against, or benefited from the school, including James Black, the founding father, and Hugh Crawford, the last director.

Today the buildings, including the unique 110 year-old mineral museum, are one of 15 manned Heritage Destination sites owned and operated by the New Zealand Historic Places Trust.

Reacting to Otago: The search for gold in Tasmania 1861-1865

Roger Kellaway
University of Tasmania

In early 1862, the *City of Hobart* stopped in that city on a trip from Dunedin to Melbourne. On board were 125 passengers, mainly diggers returning to Victoria from the Otago goldfields. Some took the opportunity to join an expedition to check reports that a valuable outcrop of gold had been found near the lighthouse at the entrance to the Derwent River. This Iron Pot gold rush on 13 February 1862 was the shortest in Tasmanian history: it was all over by 10 pm that day.

This event illustrates a growing problem. Otago was playing the same role as Victoria in the 1850s by causing many, mainly males, to leave Tasmania. In September and October 1861, 1,204 had left for Otago on ships sailing directly to Dunedin, and an unknown number went via Melbourne. Although many returned, increasing numbers of women and children went to join their husbands. Other opportunities, mainly town-based, attracted other emigrants, and empty houses were increasingly common in both Hobart and Melbourne.

This paper examines three strategies designed to counter emigration by developing a Tasmanian goldfield. One was to encourage men with Otago experience to mine in the Fingal Valley or prospect for gold elsewhere. Another was to promote prospecting by the public funding of a reward. The third was to redirect the efforts of the Colonial Geologist towards searching for gold on the West Coast. The effect of these policies ranged from negligible to limited in the short term, but may have had some longer term impact.

A Coal Miner's Daughter

Leonie Knapman
Author and historian

In 1940, and only a few weeks old, a baby in her mother's arms entered a coal mine at the base of Macquarie Pass, west of Wollongong, for the first time. After this, many a weekend passed with mother and baby accompanying the miner as he prepared the mine for the men to work it on Monday. When only a few months old, the family moved to Glen Davis, where her father worked at the shale mine in the new township. As an experienced operator, he later opened up the coal mine downstream to supply the power station. Most weekends were spent at the coal mine, with the now young girl taking messages or lunches into the mine for her father.

In 1954, Glen Davis closed, the family moved to Mittagong, and the miner started working the anthracite mines which had been abandoned in the 1880s because the heat from the anthracite was too intense for the Mittagong iron work, built in 1848. Weekends were often spent at the mine or in the yards where the anthracite was being prepared for export. At the same site petrol was being made from Joadja Creek shale and sold to Ampol and Peters Ice Cream for their fleet of trucks.

Now somewhat older, the miner's daughter wonders whether any child would be allowed inside or even near a coal or shale mine today.

The New Zealand Gold Dredge: A macro-innovation?

Nic MacArthur
Mining engineer

From 1890 to 1930, British and Australasian mining writers recognized the New Zealand gold dredge, developed in Otago, as a world-first. More recently, English mining historian Roger Burt's review of international mining technology in the nineteenth century has confirmed this dredge as the first of its kind. He classifies is as one of only seven 'macro-innovations' that transformed mining throughout the world in the latter half of that century.

Burt appears to base much of his case on something known as a Ball dredge. This was not a bucket ladder dredge, the essential characteristic of the New Zealand one, but a cutter suction one, described by the New Zealand Mines Department's Inspecting Engineer as a 'mere toy'. This paper investigates whether 'the New Zealand dredge' was a macro-innovation or not, using detailed local information and reviewing its evolution, extensive capabilities and efficiencies, and the rapid diffusion of its technology around the world. It appears that Burt may have been right for the wrong reasons.

Burt also questions why the dredge was developed in New Zealand when better deposits existed in California. Unusually, world-class technology had been created in a small, isolated region with limited resources. This indicates that the huge physical and technical resources of the United States were not necessarily an advantage in technological innovation if operations, engineers, and engineering workshops were in reasonable proximity. The New Zealand gold dredge is of greater significance in technological history than has generally been recognized.

Diggers, Dredges, and Dancing Girls: The Araluen goldfield in New South Wales

Barry McGowan
Visiting Fellow, Australian National University

The Araluen goldfield was the largest alluvial field in New South Wales and one of the most productive and enduring in Australia. Mining commenced in 1851, with a long boom beginning in 1858. By the mid-1860s, the population was 10,000 or more, and small syndicates of working miners had given way to large companies with subscribed capital. Notwithstanding a succession of debilitating floods, the main boom lasted until 1871, when floods wiped out many claims. Araluen then commenced a slow but steady decline until 1900, when mining revived with the advent of bucket dredging and the help of New Zealand expertise and capital. The last dredge clanked to a halt in 1926.

Araluen was famous for more than its gold. In the 1860s, its alleged saturnalias and orgies, along with the depredations of bushrangers such as Ben Hall and the Clarke gang, gave much concern to the authorities. Hotel owners hired teams of dancing girls, the new arrivals taking to the floor after an obligatory footbath in tubs of champagne. This paper addresses the unusual and intriguing history of this field and discusses the dichotomy between the alleged excesses of the miners and other reports which portray Araluen as firmly in the grip of such middle class values as respectability and domesticity.

‘We’ve Always Preferred Lucky Geologists to Good Ones’

Peter Maciulaitis
Heretical geologist

In 1982, Franco Nevada Mining Corporation Ltd (FNMC) was created by Seymour Schulich to test the entrepreneurial skills of young metals analyst Pierre Lassonde. FNMC went public in 1983, and over the next 20 years grew into the world’s fifth largest gold mining company as measured by market capitalization.

FNMC operated with a very small staff of employees and consultants. Initially, it attempted to achieve cash flow by finding and then mining a deposit. Attempts to develop reserves at an inactive gold mine and later by drilling a low-grade gold resource both failed. In 1986, two consulting geologists alerted Lassonde that the underlying royalty on the Goldstrike property in Nevada was for sale. It was producing only 42,000 ounces of gold per year. By acquiring the royalty FNMC gained instant cash flow without a discovery or mining. A few months later, American Barrick Resources Corporation purchased the operations, and Goldstrike was on the road to becoming the largest gold mine in US history.

In 1985, FNMC commenced grassroots exploration. As royalty income quickly increased, FNMC feared becoming a passive foreign investment company, and accordingly with a sister company provided its consulting geologists with a budget of $600,000-$1,000,00 (Canadian) per year. In 1993-4, a high-grade deposit was found, helping to double the value of the companies.

Fracas, Fizzle and Fortune: South Island Miners on the Klondike, 1898-1899

Robin McLachlan
Charles Sturt University and Times Past Productions

South Island miners, particularly from the West Coast, figure prominently among the more than 200 New Zealanders known to have gone to Canada’s Yukon to take part in the Klondike gold rush of 1898-1899. This presentation recounts the experiences of some of these men and gives their assessments of ‘the last great gold rush’. Amongst them are Dr Edwin Dunn, Westport doctor and founding president of the Yukon Medical Association, and John Donnellan, whose arrival in Greymouth was unlike that of any other returning Klondiker.

The research for this paper draws on ‘Diggers on the Klondike’, a project exploring the experiences of Australians and New Zealanders.

The Letter

Film researched and written by *Robin McLachlan*

Hundreds of Australians and New Zealanders were among the thousands who responded in 1898 to the call of the Klondike. Drawing on letters sent home, *The Letter* offers in storytelling form a true record of experiences common to many. *The Letter* is a tale of adventure, of climbing the icy Chilkoot Pass and riding the wild Yukon River, of anger aroused by corruption on the goldfields and of awe at the magic of a Yukon winter. But, as with all adventures, there is sometimes a price to be paid.

Newmont Waihi Gold's Oral History Project: Telling it the way they saw it

Doreen McLeod
Manager, Newmont's visitor centre 'Waihi's Gold Story'

Since 2005, Newmont Waihi Gold has carried out an oral history project, interviewing people from all sectors of the Waihi community aged from 8 to 80 and beyond. To date, 65 interviews have been recorded and transcribed which, along with the photographs collected, provides a comprehensive documentation of Waihi's social, cultural and economic heritage. The project provides research material on the people, social history, early and current mining practices, and the role of mining in shaping today's district.

The project seeks the anecdote, the yarn, and the description of the everyday event, the lived experience. First-hand accounts capture the ordinary – sometimes extraordinary – lives of people, giving a voice to those who are often left out of historical records.

Maitland Bar Nugget: A key link to the gold rush heritage of New South Wales

Ken McQueen
University of Canberra, and
Robert Barnes
Industry and Investment, NSW

On 17 June 1887, three alluvial miners, Jonathon Thorpe, Isaac Holmes and Frederick Leader, discovered a large gold nugget near Maitland Bar on Meroo Creek, 22 kilometres southwest of Mudgee in central NSW. It was unearthed at a depth of 3.4 metres from a terrace mined during the 1851 gold rush. After being displayed at Mudgee, it was sent to Sydney for display there and at exhibitions in Adelaide and Melbourne.

The nugget, containing 313.093 ounces of gold, was purchased by the government for £1,236 and until 1996 was kept at the Department of Mines' Geological and Mining Museum. When this closed, responsibility for it was transferred to the Department of Mineral Resources, and it is now kept in a vault at the National Australia Bank in Sydney. Over the years it has been displayed at important exhibitions, including the World's Columbian Exhibition in Chicago in 1893 and the 'Gold and Civilisation' exhibition in Canberra and Melbourne during 2001. It is the last remaining large nugget known from the New South Wales gold rushes, and is a key physical link to that state's gold rush heritage. Its present value exceeds $A1 million, but its

heritage and scientific value far exceeds this amount. It is important that the nugget be preserved and treasured.

The Photography of Joseph Divis: Blackwater mine and the Snowy River battery in the early 1930s

Simon Nathan
Convenor, Historical Studies Group, Geological Society of NZ, and
Les Wright
Local historian, Punakaiki

The Blackwater mine at Waiuta worked a narrow but persistent gold-bearing quartz reef, producing over 22 tonnes of gold from 1908-1951. The ore was processed at the Snowy River battery, 900 metres from the mine, until 1938. After being crushed, a slurry was passed over copper amalgamating plates coated with mercury, after which the courser residue was crushed again, passed over Wilfley tables, roasted, and finally treated with cyanide.

A huge investment was needed to develop the mine and build the battery. A modern plant when opened, and progressively modified over the years, by the early 1930s it was out of date and a significant percentage of the gold was not recovered. In 1938 a modern plant close to the Prohibition shaft replaced it.

Expatriate Czech miner Joseph Divis took a series of photographs of the mine and battery for the *Auckland Weekly News* in 1931. These are a unique record of the machinery and processes used in the early part of the twentieth century.

Waiuta Gold: Environmental legacy

Jim Staton
Programme Manager – Historic, Greymouth Area Office, Department of Conservation

Waiuta produced gold from the Blackwater and Prohibition mines between 1908 and 1951. Ore was processed by stamper battery in Snowy River until 1938 and then by ball mill at the Prohibition site until 1951. Both sites used similar chemical gold recovery processes, of which various relics remain, mainly in the form of cyanide solution tanks and concrete foundations at the Snowy and the ball mill foundations at the Prohibition; an Edwards Roaster was used at each site. Not until 50 years after the mines closed was the toxicity of the sites determined, and another five years of sampling and analysis followed before any remedial work was begun by the Department of Conservation.

Scientific papers and a major thesis have helped to define the contaminated areas of most concern, and measures have been put in place to contain the most toxic sites. Currently the department is working with CRL to complete an analysis of downstream water quality with a six-month treatment trial of water coming from the most contaminated site. This will be followed up with the removal and containment of the primary source from the Prohibition site.

Oceania Mines

Paul Thomas
Operations Manager, Oceana Gold, and
Gareth Thomas
Operator of mining tours, and
Les Wright
Local historian, Punakaiki

Paul Thomas will explain Oceana Gold's mining operations at Reefton and how the commercial tour opportunities came about and their success. A DVD covers the history of gold mining on the West Coast, historic footage of the Blackwater mine, the development of the Oceana mine, mineral exploration, and environmental restoration after mining ceases. Les Wright will explain the uncovering, investigation, and recovery of historical artifacts, including the B shaft winder house, the aerial tramway terminal, and the double brick detonator store and explosives magazine. Gareth Thomas will participate in question time at the end.

The New Zealand Tunnelling Company

Sue Baker Wilson
Community Researcher

In September 1915 the Imperial Government requested that the Australian and New Zealand Governments raise an Engineer Tunnelling Company to counter the German underground war. New Zealand miners served underground in a secret war, driving tunnels towards enemy lines as the Germans were driving tunnels towards them. The first to complete their tunnel and detonated the charge would live; anyone underground when the charge went off would die from either the blast or carbon monoxide poisoning. Later the Tunnelling Company extended caves under Arras to house a hospital, billets, kitchens, and up to 20,000 men. Towards the end of the war, after three weeks at a bridge building school, they constructed the longest bridge ever built during the war, at Havrincourt.

The last of the Company arrived back home in April 1919. They returned to the mines, where their skills were urgently needed, and their story was forgotten. This paper will briefly detail the history of the company and its activities, and provide present day links.

West Coast Coalmining Communities: Using genealogical sources for historical analysis

Brian Wood
Local historian, Hokitika

The two communities are Brunnerton and Blackball and the events, the litigation that followed the Brunner mine disaster 26 March 1896 and the Blackball strike 27 February – 13 May 1908.

The analysis argues that country of origin, time of arrival, place of residence, ethnicity and colonial experience were significant elements in the composition of the litigants and the initiation and outcome of the strike.

PRE-CONFERENCE TOUR

5 - 6 July

Day 1 (5 July)
Departing the Kingsgate Hotel, at 8.30am, the tour will travel up the south bank of the Grey River, through Dobson township, to the Tyneside Mine site, which overlooks the historic Brunner Industrial Complex on the north bank of the Grey River. Facilities include a visitor shelter and photographic displays.

Morning tea will be at Nelson Creek, an old gold mining township, where the group will be able to cross a swing bridge to view tail races from abandoned sluicing claims on the terraces above the river. Returning to the main road the tour will continue up the Grey Valley, through the settlements of Ahaura, Totara Flat and Ikamatua to Hukarere, where the operations of the Snowy River Gold Dredging Company will be reviewed. The bus will then travel up the Blackwater Valley to Waiuta, site of the Blackwater hard rock gold mine. A "miner's lunch" will be served in the "Lodge" after a guided walk around the protected town site. On the return journey there will be a brief stop at the Waiuta turnoff to see the remnants of the Grey River gold dredge, which worked in the Grey and Blackwater valleys between 1938 and 1954. The tour will arrive in Reefton about 5.00pm. At 7.30pm, Simon Nathan will give a talk "Waiuta in the 1930's – Photographs of Jos Divis", in the Reefton Union Church. Jos was an amateur photographer who worked in the Blackwater mine.

Day 2 (6 July)
On Monday morning at 8.00am, the party will meet at the Broadway Tearooms & Bakery to collect safety gear for a tour of the Globe open pit gold mine. From Crushington we drive 300m uphill on the mine access road, to the pit lookout (pit access has yet to be confirmed), walk through the processing plant to the control room and view relics of the historic underground mining operations. Returning to the Inangahua Valley the group will visit the Blacks Point Museum and working stamper battery. A late lunch will be served at the Oddfellows Hall and participants will have the opportunity to visit the adjacent Reefton School of Mines. In the afternoon the tour returns to Ikamatua and crosses the Grey River to the northern bank. If approved, visits to the Pike River coal load-out and coal processing facility are planned. The group will then return to Greymouth via Atarau and Taylorville. Time permitting we will visit "Little Earth", a 1/12 scale model of Waiuta in the 1930's. Anticipated arrival time in Greymouth is 5.00pm.

Clothing
Oceania Gold requires that visitors have sturdy shoes, long trousers to the ankle and long sleeves to the wrist. People dressed incorrectly will not be allowed on site. Reefton can be very cold in July, so it is important that warm clothing is worn.

POST CONFERENCE TOUR

11 July

Departing Kingsgate Hotel at 8.30am, the tour will travel south to Kumara, an important mining centre after the discovery of gold in 1876. Leaving Kumara we follow the Stafford Loop Road to Goldsborough. Little remains of the once substantial gold mining settlement which had a population of 6000 in early 1867. Further down the valley is the twin town of Stafford, which in its heyday had 37 hotels, 17 stores, and 4 churches. A very large sluicing claim is just east of the town site, and the remains of the Stafford Gold Dredging Company's dredge is located nearby. Returning to SH 6 we cross the Arahura River and drive up the valley to view areas worked by the Arahura bucket ladder gold dredge and L & M Mining. The tour then continues to Hokitika via Blue Spur and Tuckers Flat. Lunch will be provided at the Woodstock Tavern following a visit to the West Coast Historical Museum. After lunch the tour will travel to the historic deep-lead gold mining field at Ross. A visit to Birchfield Ross Mining Ltd's beach sand gold mining operation is planned, after which the tour will return directly to Greymouth.

As participants will have the opportunity of walking through old alluvial workings, stout shoes should be worn.

CONFERENCE DELEGATES

AUSTRALIAN MINING HISTORY ASSOCIATION

The Australian Mining History Association acknowledges, with much gratitude, the sponsorship and support provided by:

SOLID ENERGY
Coals of New Zealand