

Crown Pastoral Land Tenure Review

Lease name : KYEBURN

Lease number : PO 197

Conservation Resources Report - Part 2

As part of the process of Tenure Review, advice on significant inherent values within the pastoral lease is provided by Department of Conservation officials in the form of a Conservation Resources Report. This report is the result of outdoor survey and inspection. It is a key piece of information for the development of a preliminary consultation document.

Note: Plans which form part of the Conservation Resources Report are published separately.

These documents are all released under the Official information Act 1982.

March

06

APPENDIX 3: HISTORICAL INFORMATION

MEMORIES OF THE GOLDEN ROAD

*A History of
The Presbyterian Church
in Central Otago*

BY

ALEXANDER DON

Moderator, 1907, and Foreign Missions Secretary, 1914-23,
of the Presbyterian Church of New Zealand.

Author of "Light in Dark Isles," "Peter Milne," "Under Six Flags," etc.

EDITED

With a Memoir of Alexander Don

BY

WILLIAM J. BENNETT

President N.Z. Y.M.B.C. Union, 1923.



PUBLISHED BY

A. H. and A. W. REED

DUNEDIN and WELLINGTON

33 Jetty Street 182 Wakefield St.

l yet, in the previous year. egation, he had said, " We neers; we have the honour hly proud of our position."

a task not entirely without nts were put into operation as soon as a tardy Govern- this remote district. From Molyneux have been filled to ing of the great snowfields ; or by the occurrence of d spaces of the Tasman Sea and ages that guard the urse. On January 9, 1866, a very heavy flood, the river the dreadful flood of July. erious loss of mining plant. sing waters.

iver in New Zealand. drains ca, and Hawea, and is about ; was known as the Matau: Otago Association called it rom Cromwell down, it is n old map referred to it as ae idea of the mighty giant inland mountains, and has me in the ranges, is gained ie relative volumes of some 000 cubic feet per minute; Nile, 1,380,000; Tay, 274,000:

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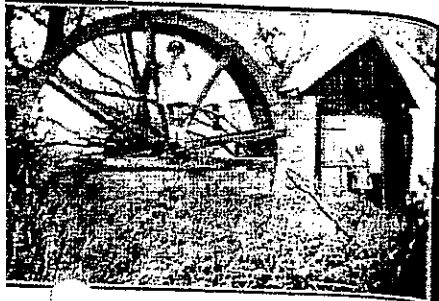
will be made frequently to t we may note here that the rly affected, being ill-equipped From their claims in remote week to bring supplies from g narrow, slippery paths, by sams, where a false step would

mean a broken limb or worse. In 1863 the Dunstan Hospital opened with accommodation for fifty patients, but this proving insufficient. other wards were set up beneath the friendly roofs of residents.

A miner says, " We rode one night from Cromwell to the Nevis, twenty-five miles, reached the river very late, and as it was intensely dark, walked up and down the bank till daylight. We were nearly perished with the cold, for it was freezing very hard. When day dawned, the first thing we saw was a foot-bridge some 300 yards away from the point where we had spent the night, with a ford beside it. Generally, the track over the Carrick Range is impassable in winter, and the Nevis goldfield is one of the most inhospitable regions in New Zealand."

A writer in the Otago Witness, July, 1863, describes the track between Teviot and Dunstan as passable for vehicles. " The whole length of the road from Tuapeka along the east side of the Molyneux and over the Knobby Range to Manuherikia, some seventy miles, has been marked by snow-poles, saplings ten or twelve feet in height, planted in the earth at short intervals, with a small black flag on top of each. In parts where the surface was very rocky, cairns of stones were built, with a tuft of tussock atop." The Mount Benger correspondent of the same period relates the death from exposure of a miner and the terrible privations of his mates before they reached shelter, frost-bitten, snow-blind, and thoroughly done up. The victim was William Pitts, but the occurrence revealed a hero in a digger named Neal, whose stout heart brought the others to safety.

On a high saddle between Mount Ida and the Kakanui Range was Mount Buster, where a white gravelly wash similar to that found at St. Bathans proved to be auriferous to a marked degree; in fact, at one time three companies operated there, getting ample supplies of water from the heavy winter snows which had drifted in some of the gullies to a depth of 80 or 100ft. Some assert that, while the more recent winters are just as hard, they are not as rough as those experienced in the days gone by. It was while returning to Naseby from Clarke's Diggings on the Buster that Sergeant Garvie perished. As he was descending from the uplands with two companions a fierce snowstorm swept down upon them, the track was obliterated, the landmarks disappeared, and in the deepening night and the bewildering drifts they became confused; the sergeant, differing from the others as to their true direction, pursued his own course, and when they reached safety and reported his plight a search party was organised without delay. Not until they were some 30 miles from the diggings did they discover his dead body, and his horse grazing close by. On the Kakanuis, too, a heavy snowfall gave rise to a tragedy even more serious. A boy having been lost on the range, volunteers braved the mountain heights to effect his rescue, but three of them were caught by a swift avalanche, from which their bodies were dug by a relief party from Naseby. On making further search they were attracted by the barking of two dogs that sat on a projecting rock on a distant hill. Beneath, the boy was found, frozen to death.



KINSMAN'S CHAFFCUTTING WHEEL.



HOGBURN UNION CHURCH. 1934.



MATTHEW N. COOPER AND FAMILY.

UNION CHURCHES

beds. Indeed, when an early driver had to take a bullock wagon from Dumtroom to Kyeburn he was compelled first to travel down country, and then up by the Shag Valley.

The prospectors who spread over much of this region during the latter part of 1863 soon discovered treasure along the Kyeburn, and even up to the present one may find a speck or two in the dish along this restless stream. Some claims were worked in an extraordinary place—on top of the Buster, a lofty ridge overlooking the area known as Kyeburn Diggings or Upper Kyeburn. On this saddle, which lay between Mount Kyeburn and the Mount Ida Range, good returns were obtained for many years, but operations depended on the water supply, mainly secured from the snow.

Buildings on the Kyeburn Diggings were chiefly of sun-dried brick or corrugated iron, the former being cosy and less costly. If one had time to give to the job, while the latter was requisitioned in many cases where it was desired to run up a structure in a comparatively short time. It was this material which was used in the erection of the Union Church, opened in September, 1869, the floor dimensions being 19ft by 14ft, and the height of the ridge just 11ft. Among those who preached there were Mr Flamank, the apostle of the Middle Taieri district, Mr McCosh Smith, of the Mount Ida charge, and Mr Wood, a Presbyterian worker who visited this part for a time. This tiny church continued to serve the mining camp for 12 years, and then, after the new Presbyterian Church was built (of sun-dried brick) in 1881, the old one became the library, and was used by the Anglicans for services. Year by year the weather has taken toll of the pioneers' handiwork about the diggings, and to-day few signs remain to tell the tale of the gold days at Kyeburn.

The Hogburn Union Church had been in use for nearly four years when the first notice about the building of an undenominational church at Upper Kyeburn appeared in the Chronicle in July, 1869. Evidently a suggestion was made that a church be erected by public subscription, but the record by C. S. Ross states that it was built by Mr D. Farquharson at his own expense. It was constructed of corrugated iron and stood in the cemetery reserve, but when the next church was erected it was removed to the site of the Kyeburn Diggings School, and was used as a public library. The opening service was conducted by the Rev. James Burchett, of Hogburn, on Sunday, September 19, 1869. In searching for further information about the establishment of Christian ordinances in this remote corner we were carried back through the years by the sight of the following letter, written on a single sheet of notepaper:—

Kyeburn, October 23, 1869.

To the Sec. of Church Committee, Naseby.

Dear Sir,

I am in receipt of yours of the 19th ultimo relative to the services of the pastor being granted to us here which I laid before the committee at our last meeting, and I am instructed by them:

took a great interest in the Chinese diggers who frequented the district, and was able to perform many useful services on their behalf.

In the beginning, the chief out-station was at Kyeburn Diggings, where a good deal of mining was carried on. Indeed, it is still possible to pan a bit of colour from the gravel along this stream. The population has now dwindled to very small proportions, but "where a few torn shrubs the place disclose," comfortable homes once nestled in sheltered gullies. Special interest attached to the claims on top of Mount Buster, which rose to a height of about 4000 feet. A fair supply of water was available from the snow that mantled the summit, and for many years good returns were secured from this elevated region. On a sharp autumn morning the early traveller climbing the tussock-covered ridges could look down on a milky sea of ruffled whiteness as the mist filled the plain to its farthest bounds. The upper Kyeburn was first known as Cows Creek from the herds that were pastured there for the warmer months, and taken to the lower country for the winter.

David Farquharson's church, referred to in Chapter III, was used as a place of worship for twelve years, and then, in 1881, the new church was erected, the proposal being first mooted by David McCready, who discussed it with his neighbours, Thomas Forgie, John Stuart, and W. Williamson, the last-named being one of the staunchest Presbyterians in the whole parish. The sum of £20 was received immediately, and then Miss Elizabeth McCready canvassed the district, travelling on horseback. By the time she had completed her task, nearly all the money required was in sight, and then, to make up the remainder, a meeting of ladies was held on August 4, 1880, to arrange for a social. In addition to the Misses McCready, there were present Mrs Williamson, Mrs McLellan, and, lastly, Mrs Young, the unfortunate woman who was murdered that very night.

Mr McCosh Smith had driven the old lady home from the meeting, Lee Guy carried her across the river, and she was last seen alive about 6 p.m. Apparently about 4 o'clock on the following morning, she was aroused by someone who contemplated robbery, for she was struck repeated blows with a huge rock, her death ensuing some nine hours later. She had accompanied her husband throughout his mining career, for some years in Australia, and then for twelve years along the Kyeburn, but Mr Young having died in 1878, she had wound up her affairs, and had intended returning to the Old Country. Suspicion immediately fell on Chinese, among them this Lee Guy, a neighbour of nearly five years' standing, who had tended Mrs Young's garden, and had received in return some goat's milk each morning. Finally another Chinese, Ah Lee, was found guilty and paid the supreme penalty, though to the last he quietly but firmly protested, "Me no killee Missi Young." In the early stages of the case, each side accused the other of attempted bribery; after the verdict, Bishop Nevill endeavoured to carry the proceedings further, since the so-called confession of the condemned man had evidently not been produced, nor even read over and interpreted to him. Judging by the subsequent actions of Ah Lee's countrymen, the

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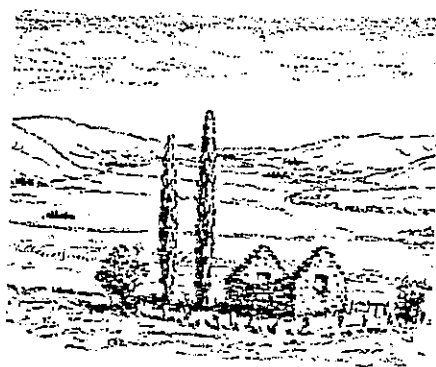
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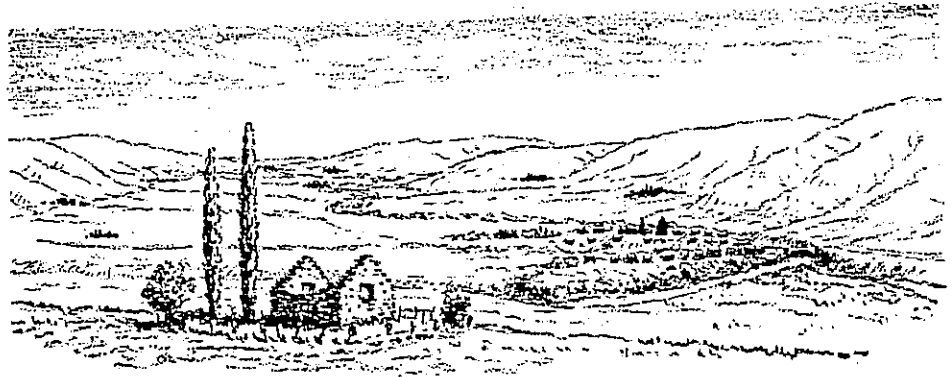
*A SYMPOSIUM TO MARK THE CENTENARY OF
THE 'GOLDEN DECADE' OF THE 1860s
IN CENTRAL OTAGO*

EDITED BY

R. G. LISTER
R. P. HARGREAVES



NEW ZEALAND GEOGRAPHICAL SOCIETY
1965



11 SETTLEMENT AND COMMUNICATIONS

J. FORREST

THE SETTLEMENT of Central Otago dates from the 1850s, when new waste land regulations allowed land outside the Otago Block to be leased at small cost for large pastoral runs. It was in the goldrushes of the 1860s, however, that the foundations were laid of close settlement and the modern network of road communications. Then agricultural development, born out of the goldrushes and supported during the later 19th and early 20th centuries by railway construction, in turn modified and built upon these foundations. Thus from the past, from goldrush, agricultural and rail development, come the formative influences which determine patterns of settlement and communications in Central Otago today.

GOLDRUSH SETTLEMENT

The majority of the settlements owe their genesis to the goldrush period, in close association with the three major types of auriferous deposit in Otago: first, the beds of the major rivers and adjacent beaches; second, Pleistocene gravels comprising drifts high above the present valleys in western Otago, and fluvial deposits at the base of the schist uplands—round the margins of the Cromwell, Manuherikia, Ida and Maniototo basins; and third, quartz conglomerates of Tertiary age, preserved from erosion along the base of the uplands by faults or limbs of anticlines. The overall effect of these depositional forms was to produce a twofold, riverside and hillfoot pattern of settlement,

SETTLEMENT AND COMMUNICATIONS

but nonetheless a pattern which lends itself to closer regional analysis (Figs. 32 and 37).

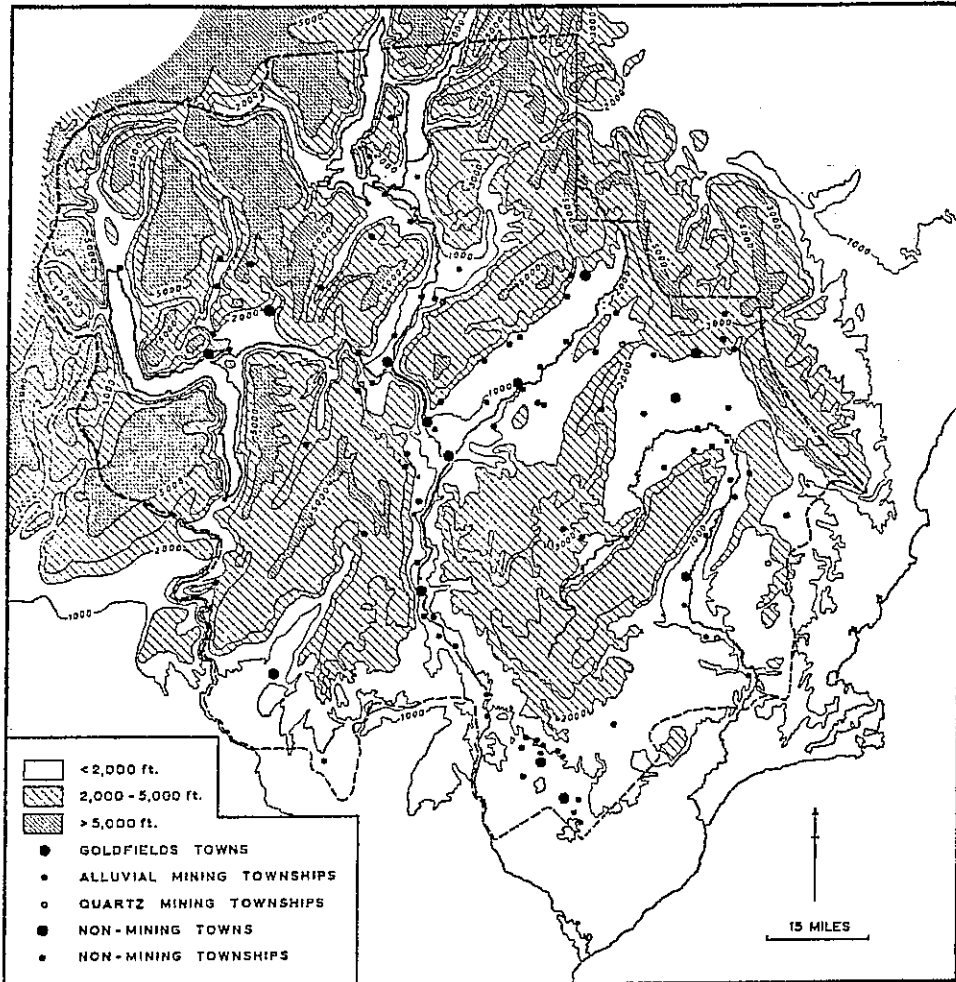


FIG. 32 The origins of settlements.

The riverside settlements associated with the first type of deposit could be divided into two main groups. The first consisted of the main centres of Cromwell, Clyde, Alexandra and Roxburgh, each the centre of rich mining districts. These also became the major supply and administrative centres for much wider areas. Cromwell, at the confluence of the Kawarau and Clutha

J. FORREST

Rivers, served the Bannockburn, Cardrona and Upper Clutha districts, while Clyde was the seat of the warden for the Dunstan, and in its early years inland terminus of the route from Dunedin. The second group was made up of the smaller mining settlements scattered along the riverbanks: Gorgetown, Cornishtown, Dumbarton Rock, Ettrick and Horseshoe Bend, for example. In the main these were transitory centres, quickly deserted by all but a few inhabitants as local gold resources were worked out.

Around the margins of the inland basins, towns like St Bathans and Naseby, and a host of smaller centres like Hyde, Hamiltons, Cambrians, Matakanui and Bannockburn were all situated where gold, washed down from the hard-rock uplands, had collected at the break of slope. Other pockets of gold were found at much higher levels, hundreds of feet above the basin floors: Serpentine settlement in a small basin 3400 feet up Rough Ridge; Clarkes [Mt Buster] 4000 feet above sea level to the north of Naseby; the Criffel diggings, near the head of the Luggateburn, also 4000 feet above sea level, and several others. The quartz-mining settlements, though few, were in similarly high-level locations. Carricktown and Quartzville near the Bannockburn reefs, for example, were 2000 to 3000 feet above the nearby alluvial diggings. Logantown and the Bendigo reefs were about 2000 feet above sea level, 1000 feet higher than the alluvial terrace workings. These high-altitude settlements were a unique contribution of the goldrush period. Since their desertion the high country has not again been occupied in such a manner.

Depositional forms on the Wakatipu goldfield could have given rise to a similar settlement pattern as on the eastern goldfields, but this was prevented by the physical character of the area. The river valleys of the Arrow and Shotover were long, narrow and tortuous, enclosed by precipitous walls of schist uplands rising to heights of 6000 feet and more. Thus apart from the basin-margin centre of Arrowtown, mining settlements were small and difficult of access, for example, Skippers, Arthurs Point, Macetown and Maori Point. Instead, Queenstown emerged as the main centre of supply, administration and winter refuge, some miles away from the principal diggings. Meanwhile on the Tuapeka goldfield, the presence of rich spur conglomerates brought about a marked concentration of small gully and spur settlements round the main supply and administrative centres of Lawrence and Waitahuna.

The growth of settlements not closely connected with goldmining during this period was rare. Most important of the exceptions were the small communications centres: Tuapeka Mouth, inland terminus for steamers plying up the Clutha; Millers Flat as a river crossing point on the route from Lawrence to Alexandra; Pembroke, Albert Town and Wakefield as river crossing points; and Kokonga, Waipiata, Kyeburn, Wedderburn and Becks

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as staging posts on the coach route from the coast to St Bathans or the Dunstan. These were very small, even as goldfields settlements went—only an hotel or accommodation house, a stable and one or two houses. There was only one settlement based on agricultural development—Middlemarch, centre of the Strath Taieri Hundred,—which even in 1881 consisted of but four houses and a school.

AGRICULTURAL DEVELOPMENT

As returns from goldmining fell from the peak levels of the rush period and as the processes of extraction began to require increasingly complex and expensive equipment, men began to turn from mining to commercial agriculture, especially market gardening. The effect of this gradual change away from mining during the 1870s and 1880s was twofold. First, because the main market for this garden produce was amongst the miners themselves, the initial concentration of agricultural activity was near the main goldfields towns. By 1870 market gardening was already well established in the Waikerikeri valley near Clyde, and about Alexandra. In the Queenstown-Frankton area, the Arrow Basin, about Cromwell, Macraes Flat and Waikaia, and along the Clutha River from Coal Creek Flat to Beaumont, as well as over a wide area on the Tuapeka goldfield, small farms producing fat sheep or beef cattle, and grain crops and vegetables, increased in both number and prosperity.

Second, with the working out of deposits in many areas, the population was gradually withdrawn from the higher or more inaccessible mining settlements down on to the valley or basin floors. Today Serpentine township is but a few heaps of stones and mounds of earth and sod where the houses once stood, while at Nenthorn 'a few stone walls and a single pine tree are all that is left.' Bendigo, Skippers, Conroys, Macetown, Campbells, these and many others remain now only in name, as a post office collection box, or perhaps an old hotel as at Arthurs Point which finally closed in 1964.

THE COMING OF THE RAILWAY

Until railway construction provided the means by which produce could be conveyed to the coastal cities and ports in bulk, agricultural development was severely restricted. Thus in the post-goldrush period settlement was governed less by agricultural expansion than by the railway. But progress on the rail connections was painfully slow; each faltering mile of track laying was dogged by local jealousies and indifference. The Otago Central line was begun in 1879 at Wingatui; it reached Middlemarch in 1891, Hyde in 1894, Ranfurly in 1898, Omapau in 1904, and Clyde, via Alexandra, in 1907. The extension to Cromwell was not opened until 1921. Similarly on the southern connection,

of some good claims being found in this locality if the ground was prospected. This is on the line of the run of the quartz drift, or what the miners in the locality term the granite wash. This drift extends up to the head of the Mount Ida Race, it can be seen in patches here and there, but very little prospecting has ever been done. If people would prospect this part of the country in the spring of the year there is always a good supply of water to be got from the Mount Ida Race, as at this season of the year the water in the several creeks above Pearce's Gorge are generally cut off up to about Christmas, and, therefore, the water is running to waste, and could be given to anyone who wished to carry on prospecting operations to test the ground.

Mount Buster.

The auriferous deposits at this place still continue to yield good paying returns to those engaged in working them. There is a considerable area of quartz drift favourably situated as regards actual sluicing and the disposal of the tailings; but, with respect to water-supply and the length of the season during which work can be carried on, the conditions are not so favourable.

The water-supply is limited and dependent on the amount of snow that falls upon the higher ranges during the winter and spring months; consequently, the period during which work can be carried on depends upon how early work can be resumed in the spring, all operations being suspended during the late autumn and winter months.

The auriferous deposit consists of sands and coarser drifts which are almost pure quartz. The lower part of the deposit is often of a coarser description, containing boulders of quartz up to 6in. in diameter. For the most part, the bedding is nearly horizontal, and the area covered by the quartz drift varies in breadth up to fully half a mile, and has a linear extension north—south of about four miles. The height above sea-level is approximately 4,000ft. The auriferous character of this deposit has been sufficiently commented upon in previous reports. All the available water is now in use, and at the present rate of working very many years must elapse before even the richer and better-paying parts of the deposit will have been worked away.

The great height of this deposit above sea-level might lead to the assumption that it belongs to a different formation than that to which belongs the quartz drifts of Livingstone and the eastern lower slopes of the Kakanui Mountains, or even those deposits of a like character that border the Maniototo Basin and appear along the margins of Ida, Poolburn, and the Manuherikia Valleys. Mr. McKay endeavours to prove that the quartz drifts of Mount Buster are of the age of the drifts at Livingstone, which are of Cretaceous or Lower Cretaceous-tertiary age, and that the beds in the two localities were once a continuous deposit, which in latter geological periods have been sundered and displaced vertically till the denuded fragments of the formation appear, some of them at or near sea-level, whilst others, like that on Mount Buster, reach to or exceed a height of fully 4,000ft. above the sea.

The displacements requisite to account for the presence of different parts of the same formation at such different heights above the sea are marked along certain lines of fracture, one of which, as described in Mr. McKay's report, runs along the eastern border of the Maniototo Plain, and to the northward crosses the saddle at Clark's into the Waitaki watershed. The amount of vertical displacement along this line is least in the north, and much greater toward the south, till it is intersected by another line of fracture, called the Waihemo Fault, beyond which intersection the Kyeburn Fault has not been clearly traced. The result is that along that part of the line which has been traced there is a difference of fully 2,000ft. in the levels at which the quartz drifts appear at different places along the line.

Upper Kyeburn.

A small patch of quartz drift is reported as occurring in the valley of the Kyeburn, about three miles above the upper township; but though this may be, it is hardly likely that such deposits ever extended east through the Maraewhenua Pass to make connection with the like deposits at Livingstone. Prior to the upheaval of the area out of the rocks, of which were sculptured the mountain ranges separating the Maniototo Plain from the Waitaki Valley, there may have been, and probably was, a connection and continuity of the quartz drifts of the now distinctly separated districts, and such fragments as are now met with in the intermediate mountain-space must be considered as having been so preserved, in spite of the enormous waste and removal of the rocks of the mountain-region in which these grits occur as the youngest rocks, other than gravels, &c., in process of translation to lower levels. Below the Upper Kyeburn Township the quartz grits, &c., show in the banks of the stream, and strike along the western base of the Mount Pisgah Range. As described by Mr. McKay, they would appear to form a double series; but, as neither of these appear to be worked for gold at this place, they are of less interest than otherwise they would have been.

Gold-workings at the Upper Kyeburn are confined to the recent alluvial deposits of the main stream and some of its tributaries, and to beds of older Pliocene age, consisting of heavy sandstone gravels ("Maori bottom") that form the southern part of the range of hills east of the Little Kyeburn, and separated from Kyeburn Peak by a valley depression that leads north to the foot of the steep slope by which the upper levels of Clark's and Mount Buster are gained.

This range, running along the east side of the Little Kyeburn Valley, seems to contain a variety of different deposits, the relations of which to each other are as yet improperly understood. At the southern end it is composed of the gravels which in this district are usually called "Maori bottom"—"old-man bottom" of the West Coast. In the middle part, at low levels along the banks of the creek, are stratified sands of a bluish-gray colour, containing ordinary concretionary-cement stones, while the higher part of this division of the range is strewn with immense numbers of huge blocks of quartz-grit cement, leading to the belief that the auriferous quartz drifts must form no inconsiderable portion of the whole. The auriferous quartz drifts, however, appear to be absent, and the marvel is whence came such an abundance of the cement blocks derived from that formation.

AJHR 1906

Government water; blocks and pillars, old ground; 1 man. Mee Hock—1½ heads of Government water; ground-sluing, old ground; 1 man. Robert Baxter—1 head of Government water; ground-sluing, solid ground; 1 man. J. McGrath—1 head of Government water; ground-sluing, solid ground; 2 men.

Mulholland's Gully.—Chinese—1½ heads of Government water; ground-sluing, solid ground; 3 men.

Home Gully.—Chinese—1 head of Government water; ground-sluing, solid ground; 1 man.

Robinson's Gully.—Chinese—1½ heads of Government water; ground-sluing, solid ground; 3 men.

Spec Gully.—I. Parfitt, jun.—1 head of Government water; ground-sluing, solid ground; 1 man. Ah He—1 head of Government water; ground-sluing, solid ground; 1 man. W. Hendrickson—1 head of Government water; ground-sluing, solid ground; 1 man. Chinese and a few fossickers—old-age pensioners.

Little Kyeburn.—Marchant and party—own water; ground-sluing; 2 men. Smith Bros.—own water; ground-sluing; 3 men. Phil. Brown—own water; ground-sluing; 2 men.

Upper Kyeburn.—M. and J. Brown—own water; ground-sluing; 4 men. J. Blanchard—own water; ground-sluing; 3 men. Beer's—own water; ground-sluing; 3 men. George Stewart—own water; ground-sluing; 1 man. McLellan's—own water; ground-sluing; 1 man. Parker's—own water; ground-sluing; 2 men.

Sluing is in a healthier condition in Naseby district than has been the case for some few years past. Reduced price of Government water to 10s. per sluice-head per week (one shift daily) has encouraged miners to open up ground which had hitherto been considered too poor to pay wages for working.

Mount Buster Gold-mining Company, Naseby (R. Law, Manager).—The old company went into liquidation during last year. The plant and claims were purchased and work continued in the usual manner, the claim being let on tribute to a party of working-miners, who are doing very well.

Dredging.—This form of mining is not now represented in this district. Roberts's Naumai dredge, formerly operating on Church Flat, Kyeburn, has been transferred to Victoria.

Hamilton's.

A few parties continue to work on this field with the small supply of water available.

Patearoa.

Patearoa Hydraulic Sluicing Claim (D. C. Stewart, Manager).—Sluicing operations have been steadily conducted during the year. The plant is now operating in the flat on ground about 20 ft. in depth. Good results have been obtained. The proposal to erect a dredge on part of the company's property has not yet been carried into effect. Six men are employed.

Drumwhandie Tunnelling and Elevating Company (J. T. and A. G. Crerar, Owners), (area of claim, 6½ acres).—Two men find employment driving out and sluing the wash. There are also a few other parties engaged in mining on this field.

Upper Taieri River.

Canadian Flat Hydraulic Sluicing and Elevating Claim.—It is now proposed by a large company to acquire this property and water-rights. The water-race will be completed and a large hydraulic sluicing and elevating plant at present in use at the Red Swamp, Teviot district, removed and re-erected on the Canadian Flat Claim. The water-rights attached to this property are taken from the Upper Taieri River, above the Taieri Falls. The claim consists of an extensive area of alluvial ground said to be payably auriferous.

Fortification Hydraulic Sluicing Company, Red Swamp, Lammerlaw Ranges (John Claffey, Manager).—This company has held a prospecting license over 100 acres of land, but results have not been satisfactory. The plant will in all probability be transferred to the Canadian Flat Claim.

Serpentine.

As indicated in last year's report, mining matters are still very quiet in this district. There is a large field here for the employment of prospectors for alluvial ground and mineral lodes.

Deep Stream.

Deep Stream Amalgamated Hydraulic Sluicing Company (Limited), (A. C. Buckland, Manager).—This claim continues working on the usual lines, but is very difficult to work on account of the uneven nature of the bottom, much of the ground being exceedingly shallow. Two elevators are generally in use. The plant is now opening out on a large area of flat land, which has given encouraging prospects. The ground worked during the year did not afford large returns, hence only one elevator is now in use until better ground is opened out. Fifteen men are generally employed.

Sutton.

Hibernia Claim, Natarals.—There was no one about on the date of my visit, but drives have been put into the face of the paddock, and evidently one man is engaged driving and blocking out the wash-dirt.

Rock and Pillar.

With the exception of prospecting work done by N. Maloney, mining matters are quiet on this field.

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No. 14.

Mr. Warden STRATFORD to the UNDER SECRETARY for GOLD FIELDS.

Sir,— Warden's Office, Naseby, Mount Ida, Otago, 31st March, 1874.

I have the honor to report upon the Mount Ida district under my charge, for the year ending 31st March, 1874. The statistical returns annexed contain such detailed information of the progress made in the various pursuits on this gold field, that in them the subject is well nigh exhausted; but as some localities are waning and others advancing, which the returns do not explain, I will endeavour to supply the deficiency in this my general report.

There are fourteen distinct mining localities in this district, which I shall describe in order according to their prospective importance, viz., **Naseby, **Marawhenua, **St. Bathan's, *Kyeburn, *Macrae's, Hamilton, *Serpentine, *Hyde, **Blackstone Hill, *Sowburn, Rough Ridge, Shag Valley, Cambridge, and Garibaldi. Those I have marked with two stars will, in my opinion, be places of great mining repute in a few years; those with one star, with present population permanently settled; and those unmarked, waning into insignificance. At St. Bathan's, Courts are held twice, and at Hamilton, Hyde, and Macrae's, once a month; at Marawhenua once in two months; and at Serpentine about four times a year.

The only changes I contemplate in this respect are, that when the Marawhenua races are completed it will be necessary to station a Receiver there, and that the Warden shall visit there once a month, at St. Bathan's three times a month, and at Hamilton once in two months. To perform these duties I now travel about 260 miles a month. The seasons have on the whole been favourable for the mining industry that prevails here,—that of sluicing. Water has been tolerably abundant. The winter of 1873 was perhaps rather longer than usual, but the frosts were by no means constant nor severe, and falls of snow late in the season served to secure supplies of water to the reservoirs, well into the summer; but although nature has been thus gracious, the past year has not been a prosperous one for this district, but to the contrary, as far as mining is concerned. The reason being that the numerous public works in operation in various parts of the Province have attracted men away who would otherwise have remained, ready to take advantage of full supplies of water as they became available. I refer especially to the class of miners who work for wages, but even claim-owners have been induced to seize the advantages of steady wages at high rates on public works. By this means the mining population (particularly in the neighbourhood of Naseby) has become considerably reduced. However, this decrease of population can only be looked upon as temporary, for as the public works verge towards completion, men will again resort to the old familiar occupation of gold mining.

The great public works in this vicinity are the Naseby sludge-channel and the water-race from the Manuhierikia River, which, when finished, will restore Naseby to the prosperous position it once before enjoyed, when the water-race companies first discharged their water into Hogburn Gully. Since the commencement of the public works here, doubts have been expressed at times as to the results; but if the sludge-channel is brought up at a depth sufficient to work the payable auriferous ground down Hogburn Gully (and it can be), I have no hesitation in expressing a decided opinion, that as soon as the Government water-race has performed its first duty of scouring the valley of the tailings that for years have choked up many rich pockets or basins of gold, despised in the early days on account of the still greater riches of the terraces, men will set to work with a will into virgin ground, well preserved under a great depth of sludge; will cut up tail-races into the terraces, right and left of the sludge-channel; and work claims alongside it to advantage for three miles down the valley. Fair prospecting, quite recently, has proved the ground worthy of trial, and if the channel is deepened as it ought to be (for all depends on this), the Government, I anticipate, will have reason to be satisfied with its investment. It is not at Naseby alone the benefit of the race will be felt, but at different places (not less than three) on the line of race diggings will spring up, where gold is known to be in payable quantities for sluicing, but to which water has not been brought because the expense would have been beyond private enterprise; but now that the water runs by, the ground will rise in value. I would here remark upon a singular fact, worthy of attention by geologists, and for practical purposes by the Government, who own the race, and the miners who claim to be permanent residents of Mount Ida, and it is this—that on all the neighbouring ranges—viz., Rock and Pillar, Lammerlaw, Rough Ridge on both sides, Raggedy Ridge, Blackstone Hill, and Mount Ida—rich deposits of gold have been found at the same level, and the diggings, as fresh discoveries have been made, have stretched out along the ranges, but at the same level or height above the sea; and, strange to state, the same rule applies to heavy dead timber on the places I have named, to which may be added Garibaldi and Cambridge, though the latter is outside the limits of the boundary my remarks apply to. This discovery should encourage belief in a run of gold along the whole course of the Government race, a distance of sixty miles, but especially at places which assume the same appearance as Naseby and Hamilton. The want of a large block of arable land is much felt by the inhabitants, who, with growing families, begin to pine for homesteads, with gardens, orchards, grass and oat paddocks, so indispensable for would-be domesticated people. It is this want that makes Naseby so purely a mining township, and its inhabitants unsettled. A change for the better could be brought about by the opening of land for the purpose, but it would considerably depreciate the value of the pastoral tenant's lease. I consider it right to mention this, in fairness to another class that has done so much towards settlement and the opening up of the country.

Water! water! water! is the cry everywhere, and capital to divert it around these rugged, rocky ranges. At Mount Burster, on the summit of Mount Ida Ranges, where the snow lodges from ten to thirty feet deep for six months each year, and, owing to the frosts, the miners can only work four months in the year, so rich is the yield of gold that six weeks' washing is sufficient to repay for eight months' complete idleness, and give the claim-holders besides a handsome return (not to exaggerate, I will say £500 a year a man) without fail. One man alone has been satisfied to spend seven years and £2,500 in bringing a water-race from Mount Domett, and cheerfully looks forward in another year to complete his race, and a few months afterwards extract from his claim his capital back and the multiple of it by three at least; and from my knowledge of the place, the man, and his practical experience, I believe his calculations to be correct. And Mount Burster is not a singular spot of

fabulous wealth. The Marawhenua gold field, immediately on the other side of the Mount Ida Ranges, and scarcely twenty miles from Mount Burster, has all the attractions possible for a large population: a beautiful healthy climate, where trees, plants, and flowers of all descriptions thrive most luxuriantly; where sickness in families is scarcely known; where from an elevated plateau can be seen the broad, magnificent Waitaki, winding its course through an extensive plain for forty miles to the ocean. And the ocean itself, at that great distance, lends enchantment to the view. Truly, scenery is only an acquisition, a luxury in New Zealand, and will not keep together a population; and even health, thriving plants and fruits, though desiderata, are not sufficient to create a city; but fortunately there are other essentials in abundance in that really beautiful place, to form out of the present nucleus of a township a large inland town, as it will be (against all obstacles) in less than five years. Firstly, there is a great extent (say 15,000 acres) of rich arable land (exclusive of 40,000 acres freehold, the property of Messrs. Borton and McMasters; said to be worth £5 an acre). Secondly, there is a vein of gold pretty evenly sprinkled over an area within a radius of four to five miles from the township as a common centre. In the richest finds, about 70 ounces have been sluiced out by three men in six weeks. In the poorest claims, miners are sharing from £5 to £6 a week each; yet the population is very small, and no likelihood of increase for at least one year. This can be explained easily. ~~The same reason I have no doubt nearly all the Wardens in New Zealand can give concerning these respective districts: that the day for poor men's diggings has gone by, and we are approaching the eve of a new one that Victoria has experienced—viz., gigantic operations and comparatively safe investments for capitalists.~~ An account of the result of investments at Marawhenua, and plain figures, will best help to confirm my statement in regard to that place, and, to my knowledge, equally applies to many other places I am familiarly acquainted with in Otago. To prove the richness of these diggings, I will mention that the few miners, perhaps thirty all told (though there are others cutting races), have sold upwards of 1,000 ounces during the last twelve months, with an indifferent supply of water for continual mining operations, owing to the incompleteness of the water-races, and the interrupted supply from the feeders. In regard to the races now in course of completion, the first one is the "Mosquito," with first rights to the Marawhenua River, in length twenty-seven miles. The owners are now constructing two immense reservoirs, which, when completed, will enable them to sluice the highest ground on the field. The Mount Pisgah race, with first rights to the Kakanui, is fast progressing, aided by Government money under the Public Works Act. The Golden Hill race, when completed, will be seventeen miles long; and to carry it into Marawhenua diggings, it will be necessary to erect twenty chains of box fluming, a suspension fluming of four chains, and a tunnel of eighty feet blasted through rocks. The Marawhenua Company have cut ten miles of their race, and the Band of Hope have nearly completed theirs. On the north side of the Marawhenua River there are several large races, viz., the Ben Lomond, the Fiery Cross, the Little Wonder, How and party's, and McCann and party's. When all these races and their discharge reservoirs are completed, which I believe we may expect in another year or eighteen months at the farthest, there will be steady employment for at least 300 miners, to which there will be added, I may almost say necessarily, 300 others of different occupations, including women and children. These calculations are based upon the supply of water now approaching the ground, the yields hitherto obtained, the prospects gained in many different places, the success of the small farmers and gardeners, and the genial climate.

In regard to the capital that has been and will be expended to bring about a township of 600 people, I may mention that £20,000 is rather under the mark. Of this the Mosquito Company spent three years and £4,000 to bring their race in. It actually only discharges two heads (though probably will eventually supply ten), and yet is very valuable property. The Golden Hill, only partly finished (fourteen miles), has cost already £3,900; and the other races in course of construction, it is estimated, will cost at the rate of about £200 a mile.

At the present time there is a check upon mining enterprise at this place, owing to an impending action against How and party by Messrs. Borton and McMasters, freeholders, through whose land the Marawhenua runs, and which has been polluted, it is said, by How's mining operations, to the detriment of sheep-washing at certain seasons by the freeholders. I do not anticipate any serious inconvenience to the miners should it become necessary to leave the river undisturbed, as it would only be for a short period once a year; and it would be practicable, if agreed upon, to carry a race of clear water (at least I think so) to the dip from different streams, independent of the Marawhenua. I do not desire to comment on the principle involved, I simply deal with facts touching their bearing on the prospects of the Marawhenua gold field, which, as I have already said, will be without a doubt, in a few years, one of the most picturesque and stirring inland gold fields towns in Otago. It is supposed that in one year the railway will be completed to within ten miles of the township, which will bring the people to within six hours' communication of Dunedin, supply them with daily mails, and Newcastle coal at £3 10s. a ton.

At St. Bathans, which is next in order on the list of mining localities, there is at present a very small population, not exceeding, perhaps, 200 persons, but a sludge-channel is about to be constructed from the Manuhirikia River, three miles up, to a large extent of auriferous ground, unused at present, so choked is the outlet with terrace tailings. The ground in question has been well prospected, and is known to be fairly payable for sluicing. There will be water in abundance, and employment for another 100 to 150 persons added to the present population. The sludge-channel will take probably two years to construct. It will cost say £1,000 a mile, and I believe the sludge washed out of it will almost, if not quite, pay the constructors the cost as they proceed, by the quantity of gold they will clean up out of the accumulation of wash-dirt swept down during the past nine or ten years. St. Bathans may be called purely a mining township, but, like the now far-famed Bendigo Gully on the north side of the Dunstan Ranges, its treasures seem inexhaustible.

The Kyeburn diggings have been steadily retrograding during the past year, owing to a rather scanty supply of water, the poverty of the ground, and the expenses in keeping the races in repair. There is no doubt, however, that there is a large extent of auriferous ground, which will in the future be considered payable enough though now despised, as £2 a week as return for six days' labour is

of Parker's discovery, it occurred to me that the district had been only very superficially explored;—indeed the main workings have been carried on in an eroded valley, from which it is more than probable that the richest deposits have long since been washed away. In my last annual report (p. 15) I referred to the fact that "gold of a much rougher and heavier description" was found towards the head of the Hogburn and contiguous creeks; and hazarded an opinion that "far richer deposits would be discovered nearer to their sources in the Mount Ida Ranges." Auriferous ground has since been opened on the very summit of the ranges, more than 3000 feet above the level of the sea, at a place improperly termed Clarke's Gully;—the diggings being on almost level table land. If some of the spurs and terraces towards the head of the Hogburn, and more immediately underlying the ranges were tested, I am strongly of opinion that very rich ground would be discovered.

Hamilton's.

33. On the opposite side of the huge natural amphitheatre, known as the Maniototo Plains, and exactly facing the Hogburn is the mining district of Hamilton's. In October, 1863, a miner named Brockleman, and three others, who had been working sometime at the Hogburn, had their attention attracted to the "made hills" on the northern slopes of the Rock and Pillar Ranges, and determined to try them as soon as their means would allow them to purchase a pack-horse. Two months, however, elapsed before they were able to effect this purpose, when they started with four weeks' provisions, and commenced working up towards a landslip in the face of the mountain. Fifteen holes were sunk by the prospectors with varying results—the average yield being a quarter of a pennyweight to the dish, with from 6 inches to 1 foot of washdirt. On the third day they obtained from another hole a prospect of 1 pennyweight to the dish, and immediately marked out a prospecting claim; and on the same day communicated the discovery to the Warden at Mount Ida. A rush set in, and a considerable area of auriferous ground was discovered. The deepest sinking is immediately under the landslip referred to, where a depth of from 70 to 80 feet is obtained, with thick deposits of payable washdirt. A very large extent of country yet remains unwrought in this district, which promises to be a very permanent field.

Sowburn.

34. Westward from Hamilton's is the Sowburn, on the banks of which some parties have been working for a considerable period. There is no doubt but that a considerable tract of auriferous country, consisting principally of "spur" or hill workings, remains to be explored between the Pigburn and this locality, and also beyond,—namely, round the Western slopes of the Rock and Pillar Ranges.

Murison's.

35. Bounding the Maniototo Plains to the westward are the Rough Ridge Ranges. Little has yet been done towards their exploration, but they present every indication of being rich in the precious metals. At the back of the Messrs. Murison's station a gully has been not unsuccessfully worked by a few miners, but the great wealth of this district, as indeed of the whole of Otago, will be developed rather in the spurs than in the gullies, which but too frequently present the least promising,—although the most readily chosen—field for mining operations. The miners have yet much to learn in this way: and I feel assured that when more attention is paid to the slopes of the ranges, (formed as these are by landslips from the adjacent auriferous rocks,) the produce of our goldfields—great as it now is—will be very considerably surpassed.

Hyde.

36. Under the name of Hyde is designated the district previously known by the inconvenient phrase of "The Nine Mile,"—a name so common on all goldfields as to cause the most extreme confusion. These diggings are not by any means a new discovery—men having been quietly working them since the winter of 1862. But the present rush has a more recent date, since it was only in January that any attention was paid to this remote and neglected, but exceedingly rich locality. There is now on the ground a population varying from 800 to 1000 men. The workings, which are situated on the eastern face of the Rock and Pillar Ranges, about eight miles below the Taieri Lake, are principally hill workings,—the miners following "the lead" from spur to spur towards Phillip's lower station. Many of the claims are very rich, and when water is brought in in quantity, larger results may be expected. I incline to the belief that a second floor will be found below the pipe clay, now regarded as "bottom."

rough stage.

Several parties of miners are at work in this locality, but the scarcity of water prevents them from making high wages. R. Johnston has a water-race from a branch of the Manuherikia River, which comes on to Blackstone Hill. If this race were extended, there is no doubt a great deal more ground would be worked profitably.

Garibaldi Company.—The ground that this company holds has been partially worked and held for nearly twenty years, but it is at so high an elevation that a constant supply of water cannot be obtained from any stream in the immediate vicinity. They have constructed two small dams on the range, but the supply when water is plentiful is said to be only about six sluice-heads. They cannot work during the middle of winter on account of the frost, which not only makes the surface of the ground unfit for sluicing, but also decreases the supply of water. This is the first season that the company has been at work, and nothing is known yet how the ground will turn out, although it is reputed by a great many to be richly auriferous. This company was formed a little over twelve months ago, with a capital of £4,000, in 8,000 shares of 10s. each, of which 3s. 3d. has been called up. They have a claim of sixty acres, and the depth of the ground is about 60ft.

Naseby.

The gold-mining claims in the locality of Naseby are in general not rich—the ground requires to be worked systematically to make them pay fair wages; and the water this season has been so scarce that many of those using water from the Mount Ida Water-race had not been able to get any for eleven weeks prior to my visit. This, together with the small amount of gold in the ground, prevents the miners from making wages. Any one visiting this place cannot help noticing the primitive manner in which hydraulic sluicing is carried on, and must also notice that many men have a hard struggle to gain a livelihood.

The best of the ground worked last year in this locality was in Home Gully. Barnet and party did very well. This was a party which went to some expense in the outset to get iron piping to work the ground, and utilised most of the head that could be obtained from the water-race. Several parties of Chinese are also said to have made very good wages. Some of the Chinese miners have substituted iron piping for the canvas hose, and are utilising the whole head of water. This is a step in the right direction, and one which will no doubt be followed by those who can afford it; but the scarcity of water and the general system adopted for working the ground show that it is a hand-to-mouth existence with a good many. The general desire in this neighbourhood is to have the reservoir at the Wedderburn constructed, which is calculated to cost about £10,000. Very little mining is carried on at Spec. Gully, owing to the want of water. The manager of the water-race states that there is very little water to supply the claim-holders in that locality, as he can sell the whole of the available water nearer Naseby.

The Hydraulic Elevating Company have worked a considerable area of ground in the bed of Hogburn Gully, and it is said to have paid them good interest on the capital expended on the plant. *Mount Burster.*—There are three claims on Mount Burster which have been worked for many years and have paid handsome dividends. Endor and Guffie's claim in former years produced gold to the value of £2,000 per man clear profit for eight months' work, and now averages from £7 to £8

man per week for each man employed. The claim-holders here store water in dams, and are able to command about ten sluice-heads of water in each claim for a certain season of the year. The ground in Endor and Guffie's claim is about 65ft. in depth, of which 20ft. is auriferous; the best of the wash-drift being under thin horizontal beds of clay. They still have about twenty acres to work, which they estimate will take them from thirty to forty years. Only one of the other claims has been worked this season, and that is said to pay very well.

CARDRONA DISTRICT.

Fat Boy's.—This is a field on the opposite side of Ludgate Creek from Criffel, and where the same run of the old quartz wash-drift occurs as that found on Mount Criffel. There was considerable excitement about the discovery of gold in this locality some sixteen months ago, and several claims were taken up; but these have nearly all been given up with the exception of Nauman and party, who are still working and said to be getting gold; but whether the ground is made to pay wages for working is a question upon which no definite information could be procured. However, this party is employing either two or three men on wages, and the inference from this is that the claim is a payable one—that is, if there is not a small company in connection with this claim who are merely prospecting the ground. The system of working—namely, taking in a narrow cut from the face—bears out the latter idea—that it is merely prospecting the ground with the hope that a lead of gold bearing wash-drift may be discovered. This old quartz drift-wash seems to run towards Mount Pisa, and probably another lead of gold will be discovered in this direction. Talboys and party have expended a good deal of money in prospecting the ground with boring-rods, and fair prospects were obtained in two of the holes at a depth of 90ft., and the holes were continued to a depth of 120ft. without finding any bottom. This party has suspended operations at present.

Cardrona.

About seven months ago a new rush set in on the terrace where some rich auriferous alluvial deposits have been discovered. This has given an impetus to mining in the

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being content to follow the methods of sluicing in the early days—namely, a canvas hose with very little head, the ground being broken with picks before turning on the water. This method of working poor ground cannot be advantageous to the claimholder. To any one visiting this district and observing the manner in which a great many of the claims are worked, the question would present itself to them: How can these claimholders make a livelihood? There is no doubt that there is a large area of drift-wash containing a little gold, but it requires a constant supply of water and all the improved hydraulic appliances to make this character of ground pay for working.

The present supply of water on this field is not sufficient for the number of men employed, and the ground being at a high elevation, subject to severe frosts in winter, there are at least about two months in the year that sluicing cannot be carried on, and, again, during the summer months, in dry weather, there is a scarcity of water. The principal supply of water is obtained from the Government water-race, which is managed by a Trust. This water-race takes its supply from the Manuherikia River and some of its tributaries. It is sixty miles in length, principally an open conduit, and this open cutting is carried across numerous wide shingle-beds of small creeks, coming out of the high mountains close to the race. Every flood brings down a quantity of gravel and shingle from the side of the steep range, filling up the open cutting, which has to be reconstructed before any water can flow down the conduit, and no doubt these breaks interfere considerably with the constant supply. Indeed, many of these shingle-gully beds should have been crossed with iron pipes. The expense in connection with the repairs to the open ditching in these gullies would have covered the cost of pipes long ago.

There is another thing which interferes with the supply of water for working the ground, and that is the quantity of flush-water required to work the sludge-channel in the bed of the Hogburn Creek. This sludge-channel is ten miles long, constructed partly on a gradient of 1 in 60, and partly 1 in 100. This channel requires a considerable quantity of flushing water, which could be used to work the ground in the vicinity of Spec Gully, where most of the sluicing will in future be carried on, the greater portion of the ground in the vicinity of the Hogburn Creek being worked out. The water for tailings from several parties having private head-races run into this sludge-channel. The great complaint in this locality is the want of water, and the necessity for the Government constructing a large reservoir in the valley of the Eweburn Creek is constantly being brought up. The question of the construction of this reservoir is referred to in my report on the working of the Mount Ida Water race, but, even if a larger supply of water were brought in, the day is not far distant when the water-race will have to be extended across Spec Gully and on towards Kyeburn.

There is a large extent of country between St. Bathans and Naseby, and the run of the old quartz-drift, which is successfully worked at Mount Burster, apparently traverses the country towards St. Bathans, and follows on round the foot of the high range to near Clyde. Some portions of this quartz-drift give high returns of gold for sluicing, and most probably a fresh discovery will yet be made between the Maunherikia River and Naseby. A prospecting shaft at the upper end of the Hogburn Valley was put down several years ago to a depth of about 120ft., which got into the quartz drift-wash containing a little gold, but this shaft was never bottomed. The same run of ground is found at Mount Burster, where some of the claims last year turned out very well, but these claims can only be worked for about six months in the year, owing to their high altitude.

Guffie and Inder's Claim.—This is one of the claims on Mount Burster which is about 4,500ft. above sea-level. This claim turned out very well last year, yielding about 400oz. of gold. Owing to the remarkably fine season, the workings were carried on for eight months, but part of that time the men working in the snow, having to tunnel through the snow in places along the line of the head-race in order to get the water through to the claim. The quartz-drift wash is about 90ft. deep here, the richest patches of gold-bearing drift being generally found near the bottom; and, wherever there are large blocks of the bed-rock projecting above the general level of the bottom, rich wash-drift is always obtained. The existence of this run of quartz-drift, and the manner in which the layers occur, containing in many places, as, for instance, at St. Bathans and Muddy Creek,

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layers or beds of leaves, trees, and logs of wood which are now turned into lignite, clearly shows that the configuration of the country has greatly changed since the deposit was made, as every place where it is found points to its being in the course of an ancient river or stream, but the question of the locality whence the deposit was carried from cannot be identified, as none of the mountains in the locality contain drift of this character, but it may be presumed that the whole of it has been denuded from the mountains and ground up by the force of currents causing the particles of material to roll against each other, producing a pulverising action.

CARDRONA AND CRIFFEL.

There has been no new ground discovered in either the vicinity of Cardrona or Criffel during the past year. At the former place there are about eighty miners employed, but the scarcity of water has greatly affected the yield of gold; nevertheless the miners may be said to have made fair wages, the approximate quantity of gold obtained being about 2,500oz. About 1,190 acres have been applied for as dredging claims. Some of these have been prospected with boring-tubes to a small extent, but no actual work has yet been done towards getting dredges on the ground. The Warden reports that, out of the area applied for, seven claims of an aggregate area of 678 acres have not been taken up, and 303 acres are under application for cancellation.

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It may be observed that this flat is at the foot of the Old Man Range, directly under the place where White's Reef and the reef now being worked by Crossan and Gray is situated. The whole of the face of the Old Man Range in this locality would pay for sluicing with a fair supply of water. Some very rich patches of gold was obtained by Mr. White in the alluvial drift before he discovered the reef, and the same can be said in regard to Crossan and Gray's discovery. The flat at the foot of this range has been prospected very carefully, and it is said that there is at least 70 acres of it that will pay handsomely for working with a fair supply of water and good appliances. The different gullies coming out of the Old Man Range in this vicinity were very rich in gold in the early days, as for instance Butchers' Gully; and all the flats at the foot of this range from Butchers' Gully to the lower end of Bald Hill Flat will yet prove to be payable for working with a good supply of water. Unfortunately some portions of these flats are freeholds; but some of these are now being worked, the miners having made arrangements with the proprietors. The most of those having claims on the flat have been doing a large amount of dead-work last year in constructing head-races and tail-races, but there should be a good deal of gold obtained from this locality during the ensuing year.

Mount Buster.

There are two claims being worked at Mount Buster, or what was known in the early days as "Clarke's Diggings," namely, that belonging to Messrs. Guffie and Inder, and a party known by the name of the Cornish and Scotch Company. Both of these parties have done a large amount of work and got a good deal of gold. The gold workings here are at an elevation of about 4,200ft. above sea-level, so that actual mining operations can only be carried on for about six, or at most seven, months of the year. Gold was first discovered here in 1863 in a small creek-bed known as Clarke's Creek, which runs into Deep Creek, forming a tributary of the Waitaki River. The ground was very shallow and easily worked, and in some parts of this creek-bed the auriferous wash-drift was found to be very rich. As soon as the shallow ground got exhausted, attention was directed to the higher ground on the east side of this creek, where a deep run of fine quartz-drift gravel was found, similar to that at St. Bathans basin, having a little gold through it in layers of concentrated material, showing that at one time this drift had been brought down by the action of a large river or stream, and that the work of concentration had been carried on from time to time, leaving the material of greater density in thin layers or bands before another deposit was brought down to undergo a similar process—namely, by washing away the lighter sands and material, while particles of greater density remained behind.

This run of quartz-drift is one of the most interesting auriferous leads of wash-drift there is in the colony, inasmuch as it can be traced for a distance of seventy miles almost in a continuous line, and all the material shows that it has been brought for a long distance, as it is ground up into small particles, and the gold found in it presents the same characteristics; but the question yet remains to be solved as to where this material came from. Nothing similar has been found in the mountain-range from which it has evidently at one time been denuded; nor is it certain what direction the river flowed at the time this deposit was made. The same run of quartz-drift can be traced in a northerly direction to the foot of Mount Donnett; but that mountain-range appears to cut it completely off, the same as if that range had subsequently been raised up through this ancient river-bed, and altered the features entirely of the surrounding country.

It was, however, very interesting to find, on my recent visit to Donald's Creek, in the Waimate County, that traces of the same character of quartz-drift appears here and there, and possibly may yet be traced into the mountain-ranges in a northward direction. At the southern end of the lead, near Clyde, the Clutha River seems to cut off all trace of it for a long distance; but the same character of drift is again found on the other side of the Old Man Range at Waikaia. Wherever this deposit came from, it has evidently been carried a long distance by the action of water, to be ground-up in the state in which it is found; also, that in all likelihood thousands of years have passed away since this deposit was formed—the topographical features of the country at that time being entirely different from what they are at the present day. It is evident, from the apparent magnitude of the ancient river-bed referred to, that there was more water in the streams than at the present time; and the inference by that is, that the mountains were at one time at a much greater elevation. Wherever this class of drift is found, there is almost invariably a little gold in some layer through it, although in many places there is not sufficient gold to pay for working it. At the same time, where such rich deposits are found, as at Mount Buster, St. Bathans, and Tinker's, the inference is that there are other parts of this land quite as rich, and probably even richer, than any portion of it that has been yet tested.

Guffie and Inder's Claim.—This claim is situated on the top of the saddle of the range dividing the watersheds of the Waitaki and Taieri Rivers. The ground is worked by hydraulic sluicing, and the tailings and tail-water can be sent down either into Clarke's Creek or the Kyoburn. These gentlemen have almost the whole of the available water that can be got at an elevation sufficiently high to command the ground so as to work it to advantage; but the whole of the water available is not sufficient for a good supply to carry on extensive sluicing operations during dry weather in summer. The supply of water depends entirely on the quantity of snow that falls during the winter months. If there is a heavy fall of snow, there will be a plentiful supply of water for the ensuing season; and, with a light fall of snow on the mountains, *vice versa*. One of the proprietors of this claim, who accompanied me to Mount Buster, stated that the returns from their claim is from 400oz. to 800oz. of gold for the season; but that for the season before last the return was not so good. At the time of my visit there was only one man employed at this claim, but I was informed that the supply of water was almost done for the summer months, at least they were depending on showers of rain. The depth of the quartz-drift in Messrs. Guffie and Inder's claim is from 30ft. to 70ft., but the best of the gold is found near the bed-rock.

Scotch and Cornish Company.—There was no work being carried on by this company during the time of my visit on account of the supply of water being exhausted. The face where they have been at work presents the same appearance as that of the adjoining claim, but I was informed that it was not so rich. This company have only a limited supply of water, and possibly cannot operate on so large a quantity of material as Messrs. Guffie and Inder, which would, in itself, account for less gold being got. It was, however, stated that this company holds some ground which can be worked into the fall of the Kyeburn Creek, which is likely to turn out very well.

This run of quartz drift has a break on the top of the saddle on the southern end of the workings on Mount Buster, but on going down the range into the flat large blocks of quartz and quartzite are seen following the line in which the lead ought to take. These can be traced here and there all along the foot of the Mount Ida Range, crossing the Manuherikia River to Muddy Creek and St. Bathans, and no doubt some rich finds will yet be made in this lead or run of drift; but it will require a good supply of water to work, as a large quantity of material has to be washed away which contains very little gold.

Kyeburn.

There are a few miners working in this locality, all said to be making fair wages. The most of them have water-races of their own, and, having acquired comfortable homes by a lengthened residence in the place, it will only be when the ground becomes too poor for them to make small wages that they will leave. There seems to be an auriferous belt of country from Naseby to Kyeburn, a little further into the flat than the place where the deep lead of quartz drift passes through, and probably some of the gold from this deep lead has been washed down into the lower-lying lands since the time the disturbance took place which altered the features of the country, and was finally covered up by more recent denudations from the present mountains. There seems, however, to be a belt of auriferous ground on the lower side of this deep lead, which the miners in the district consider would pay for working by hydraulic sluicing if a plentiful supply of water was available at a moderate elevation.

Mount Ida.

This field was first opened in 1863, and it still continues to supply its quota of gold from the alluvial drifts. There are still a few mining claims in the bed of the Hogburn (which is the creek where the gold was first discovered), and these are said to give the owners fair wages for working. One of these claims is known by the name of the "Deep-level," and is worked by a hydraulic elevator, the ground being from 12ft. to 20ft. in depth. To take the gold-workings in the immediate vicinity of Naseby—that is, alongside the Hogburn—the ground is getting pretty well worked out. A large portion of it on the south side of the Hogburn Creek was very shallow, being only from 1ft. to 3ft. in depth, the gold-bearing wash-drift being confined to the surface lying on older drift-gravel known as the Maori or Old Man bottom. In some places where this bottom has been sluiced away a little gold was found, but not sufficient to pay for working. This false bottom joined on to the schist rock about 20 chains up the Hogburn Creek from the township. The prospecting shaft sunk some five or six years ago went through this Maori bottom at a depth of about 200ft., and came into the old quartz-drift wash which is found on top of Mount Buster and St. Bathans, which contained a little gold. This shaft was small, and, in consequence of the influx of water in the drift, sinking had to be abandoned, as the horse-whim used for baling the water could not keep it down. It is to be regretted that the quartz-drift formation in this locality has not been tested, as in all likelihood it would be found to contain sufficient gold to pay for working in places. The great depth of Maori bottom overlying this material makes it expensive to prospect the ground thoroughly.

With the exception of the gullies adjacent to Naseby, there has been very little prospecting done, the reason being chiefly that the supply of water on the field is limited. As a general rule the ground is shallow, containing a little gold which can only be made remunerative for working by adopting the most approved methods, and this really means a plentiful supply of water. The present gold-workings are confined chiefly to the vicinity of Robertson, Enterprise, Coal-pit, Wet, Roche's, Home, and Spec Gullies, and the Hogburn, all of which are within a radius of three miles of Naseby. The ground being at an elevation of about 2,000ft. above sea-level, and the gold-workings within a couple of miles from the foot of the mountain-range, there is very little water to be had in dry weather, so that miners who have not water-races of their own are entirely dependent on a supply from the Mount Ida Water-race, and, although this race commands a large extent of auriferous country, it is not at a sufficient elevation to command the whole of it.

The largest extent of auriferous ground yet unworked in the immediate vicinity of Naseby is at Spec Gully. There is scarcely any of the ground worked in the low valley of Spec Gully, and from what Donnelly and party informed me when I was last in this locality there is a large extent of it which would pay to work by hydraulic-elevating. This party has opened out a paddock by using an elevator, and they assured me the ground would pay good wages for working on this principle. They are lifting the material about 25ft., the hydraulic head of water used to do this work being 200ft., the diameter of supply-pipe used being 11in., 10in., and 9in. diameter, and the elevating-pipe 15in. in diameter. This party are also working a claim on the face of the terrace on the side of Spec Gully next to Naseby. There are claims being worked on the other side of Spec Gully, on the face of the terraces between this and the Kyeburn, which are said to give fair returns for working when water is available; and apparently the same run of ground extends to the Kyeburn.

In Roche's Gully Messrs. Guffie and Inder are still working the old ground on the hydraulic-elevating principle, taking the whole of it in a face before them, and it is said to give very good returns for working, which shows that the ground here must have been very good in the early days, and that the former system of working was very defective. The whole of the ground appears to have been previously turned over, and one would hardly expect to be able to work old ground

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auriferous drift had lodged in a deep rocky basin, and had afterwards been covered with material. It is now proposed to get at it by tunnelling in through the rocky sides of this basin. Three strong parties of miners have been organized to work three special claims of twelve acres each. They expect to have to drive in tunnels of from 600 feet to 1,000 feet in length, for the drift is through solid rock.

10. The miners at Clarke's (or Mount Burster) have had a specially good season this year. Falls of snow have given them almost a second season of water. These workings are very profitable, mining can only be carried on for a comparatively small period in each year. In the depth of the frosts render any mining operations at that altitude out of the question; and as the only use is that derived from the melting of the snows, the advent of summer usually sees sluicing operations almost entirely suspended for want of the necessary element. In spite of these drawbacks, the claims at Clarke's are of great value, as was shown not long since in an action for dissolution of partnership when one outgoing partner was awarded over £1,000 for his interest, and those who remained in the claim paid him off out of the proceeds of a portion of their tail race, hastily washed up for the purpose.

11. The long-discussed question of the relative rights of miners, runholders, and freeholders in the use of natural streams assumed at Maerewhenua such a form as to lead to litigation between the holders there (who are also large freeholders), and a party of miners who were selected as representatives of the whole mining community. The decision being favourable to the rights of the freeholders, the case (Howe, appellant, v. Borton, respondent) was taken to the Appeal Court at Wellington, where the rights of the riparian proprietors were again maintained. The effect of this decision has been that the Maerewhenua miners were this year notified that they must refrain from polluting the river by sluicing into it during the period that Messrs. Borton and McMaster were washing their sheep. When the sheepwashing was over, they were allowed to resume their operations.

12. The experiment, long delayed in this district, of opening small areas of land in the vicinity of the mining centres for agricultural settlement, has been so far successful that most of the fairly culturable land has been taken up. At Hyde and Macrae's, very good crops have been raised, the land is exceptionally good; and elsewhere throughout the district, wherever there has been any cultivation, very fair returns have been obtained by the farmers. It is much to be regretted that facilities were not sooner given for persons desirous of cultivating the soil, as if such facilities had been afforded, numbers of persons who have made money in the district and gone away would now be settled on farms about the country, raising plenty of produce at a cheap rate, and thus enabling miners to live for themselves and so to work comparatively poor ground to a profit.

13. The Chinese are setting European miners a good example in the way of co-operative work. At the Kyeburn several large companies of them are systematically working large areas of ground in the bed of the river, and it is understood with good results. At Wet Gully, also, in the neighbourhood of Naseby, large parties of Chinese are working on a good scale, with long, deep, and well-constructed tail races. One party of these people has taken the Band of Hope Water Race on lease at a fair rental, and seems likely to make a good thing of the venture.

14. The revenue of the district has increased considerably over that of the preceding year, and it is worthy of remark that the accounts of that year showed a marked improvement upon those of the year that went before it. The actual collections for the year ending March 31st, 1876, were as follows:

Gold Revenue, including fees and fines of the Warden's Court and			
agricultural lease rents	£2,951	1	9
Resident Magistrate's Court—fees and fines	214	0	1
Rents received on lands on deferred payments	313	17	8
	£3,478	19	1

This shows an increase of nearly £800 over the revenue of last year.

I have, &c.,

H. W. ROBINSON,
Warden.

The Under Secretary for Gold Fields, Wellington.

WESTLAND GOLD FIELD.

No. 7.

Mr. Warden FITZGERALD to the UNDER SECRETARY for GOLD FIELDS.

Warden's Office, Ross, 3rd April, 1876.

SIR,— I have the honor to make the following report on the Totara District for the year ending the 31st March. Although just at present there is little actual change in mining matters since the date of my last report, yet from several points of view the prospects of the district seems to be brightening, and notably so as regards the construction of the Mikonui Water Race, on which the hopes of the residents have been for so many years centred as the turning point to better times. Though a considerable time must elapse before this work can materially benefit the district, yet the fact of its being commenced will tend to encourage the present population to remain, and no doubt will cause many of the old miners who know the district to return.

The important late discovery of a rich vein of galena ore on Mount Rangitoto may be next mentioned. The prospectors spent some months in prospecting the lode at the sacrifice of both time and money: happily their efforts have been crowned with a well-deserved success. They forwarded some of the ore to Melbourne to have it tested, and the result of the assay gives from 120 to 140 oz. of silver to the ton—an exceptionally large percentage of silver. The discovery of the ore and the result of its assay have caused quite an excitement in the province, as well as other parts of the colony. There

No. 16.

Mr. Warden Wood to the UNDER-SECRETARY OF MINES.

SIR,—

Warden's Office, Naseby, 11th May, 1886.

I have the honour to forward the annual report for the portion of the Otago fields District under my supervision. I regret to say that the year just passed has been an exceptionally dull one, consequent on the shortness of water during the summer months, which was caused by the very light fall of snow in the early part of last winter and the unprecedented drought for three months during the summer. The Naseby Subdivision suffered most, in consequence of an unfortunate accident to the Water Trust's race, which broke away, and several weeks to repair, by which time the best tributary creeks were almost dry; but it is worthy of remark that, although the district suffers in common with other portions of the colony in the general depression locally caused by the low prices of wool, grain, and rabbitskins, the revenue has increased by nearly a thousand pounds. This does not include Black's Subdivision, which is returned from Clyde.

Macrae's Subdivision.—In this locality the workings are confined to a few European and Chinese miners, who appear to be making small wages. Fullarton's, which may be considered as belonging to this place, is not being worked so successfully as when the large finds were made many years ago.

Hyde.—At this place there are only a few Chinese and European miners; but I do not hear of any party doing well.

Hamilton's.—The workings here at the end of last winter promised to turn out well, and it was anticipated that there would have been some good washings-up; but, owing to the extraordinarily dry season, none of the large claims washed up.

Kyeburn and Mount Burster.—The workings at the former place are quite up to the standard, after making allowances for the early falling-off in the water-supply. Mount Burster miners have been idle nearly the whole year for want of water, and there have been no washings-up in the large claims. However, if the frost keeps off, a little lee-way may be made with the present plentiful supply of water.

Serpentine.—This place is very dull. The quartz reefs that were expected to turn out well have proved a great disappointment.

Naseby.—The mining in this subdivision, as I stated before, has suffered considerably by the break in the Water Trust's race; and had the Trust had a good supply of water I believe the extension to Spec Gully would have given remunerative employment to a number of men, as I think it has opened up a considerable area of ground that will pay wages—say, from £1 10s. to £2 per week, after paying for water, with the prospect of doing better. This is not a high rate, but the work is comparatively easy.

Rough Ridge.—The Otago Central had one crushing; but it was rather a disappointment, not doing much more than paying expenses; but everything was put through the mill. Prospecting has been going on, and two more special claims applied for; and I expect next summer the place may provide labour for a number of miners.

Blackstone Hill.—There is no change to report in the mining going on here. The few men at work seem to be getting fair wages.

St. Bathian's and Cambrian's.—The miners at this place always appear to be doing well. Vinegar Flat has not realized as was expected after the bringing-in of the well-constructed channel, which was made altogether by private enterprise. The population keeps about the same. The completion of the St. Bathian's and Muddy Creek channels will provide fall for a large area of ground, when St. Bathian's should again come up to its former status as a rich goldfield.

Black's, or Ophir.—This has only been under my charge for the last six months, and was formerly attached to Clyde. The drainage-channel, which was commenced last year for the purpose of draining the extensive flat there, is now near its completion. During its construction several small leads of gold have been struck, and four or five claims opened out on its course. The holders being very reticent, nothing can be gleaned as to the returns. About a dozen men are occupied independent of those employed on the channel; and, should the pre-emptive right recently purchased by the Government prove, as it is hoped, payable, this number in a very short time will be considerably augmented. The quartz reef discovered by Mr. Green has not made much progress during the year. The owner, having failed to make satisfactory arrangements for floating a company to open it out properly, has elected to work it himself; and, as he is only assisted by one man, some time must elapse before any reliable opinion can be expressed as to its value. The specimens shown by Mr. Green are, however, very rich—in fact, are half gold.

At *Tinker's* mining matters remain much as they were last year, the Blue Duck still retaining its old reputation for richness. There are several other claims in this locality of considerable magnitude, all of which appear to be giving satisfactory returns. There are about a hundred men employed altogether.

Drybread, about a mile to the north of Tinker's, once famed for its rich deposits, has now become almost deserted. About twenty miners still remain, and are apparently satisfied with their returns.

At *German Gully*, on the Ida Valley side of the range from Black's, there are but few