

The Westland diggers worked the alluvial ground after the methods of the early Californian and Australian miners. When the wash dirt was close to the surface, it was bared by pick and shovel. In deeper ground shafts were sunk and the wash dirt driven out. When very rich it might be panned off in the prospecting dish at the nearest stream, or, in the case of beach leads, on the seashore. However, the miner generally managed to make a cradle, long-tom, or similar apparatus, close to his claim. Sometimes, when water was close at hand, he simply carried it in buckets, but this laborious method required fairly rich material. More often he brought in a supply of water from the nearest stream by means of a water-race, using timber-flumes wherever necessary. In favourable localities sluicing was practised.

TRANS-ALPINE ROUTE.

MR DOBSON'S DISCOVERY.

In 1857 Mr E. Dobson, the Canterbury Provincial Engineer, made an expedition along the river Hurunui, and over a low saddle to where the waters began to run westward. It appears that a Maori path had been always known from the East to the West Coast by the gorge of the Hurunui, at what is called Mount Noble, near Mr Mason's station, Waihi, and from accounts of Maoris, the existence of some level land in the interior had long been understood. A certain precipitous gully in the gorge above mentioned, which the Maoris crossed with flax ropes and ladders, has always been the obstacle to exploring expeditions in this direction. Mr Dobson endeavoured to find a passable road for horses along this route, and with Mr Mason, Mr Taylor of the Wairau, Mr Dampier, a shepherd of Mr Mason's, and, probably, another man, attacked the precipitous gully in question with spades and pick-axes. In four days a track was cut by which horses could be led from one side to the other, and the party pursued their way up the gorge, keeping a little above the riverbank on the south side. In a very short time they came upon flat land. This was the half-expected country superior to their anticipations in many respects. Dry, though well watered, open, grassy country, with clumps of wood standing upon it, and with corners of the forest running down to it from the mountain spurs, enclosed in hills, but containing more or less 60,000 acres of pasture land. A good deal of limestone and quartz prevailed in the neighbourhood. The timber trees were the ordinary varieties of pine and totara with some white birch. The general level was about the same as the great plain, perhaps at the highest 600 feet above the water level. The main branch of the Hurunui flowed slowly along the northern edge of the basin, forming the boundary of the province. On the southern side of

the basin another stream of the river flowed, and formed an island, which again was divided down the middle by a third watercourse.

On all the streams were lakes, and in number, to which the discoverers gave names; one of them, named Lake Sumner, is of considerable dimensions. The valley is picturesque, being low, grassy hills, and separating streams, with insulated mounds diversified by woods, and offsets of the mountains. Following this pleasant valley, the head waters of the Hurunui were reached, a low saddle was passed, and the party found themselves upon a tolerable stream running westward. They had thus passed the dividing range, and could have reached the sea without difficulty, but continuous bad weather stopped them. The stream running westward was the Brunner, only about thirty miles from the West Coast, and the highest point of the line was found to be only about 1000 feet above sea level. A few miles down the Hurunui, there was a branch valley also passing over a low saddle to the river Grey, said by Brunner to run through a valley sixty miles long, and full of lakes.

Mr Dobson's report and sketches of this newly discovered country brought instant applications for the land, and all that was available was at once taken up as sheep runs. Quartz, indicating gold, abounded on the western slopes of the mountains. It was decided that a road should be laid out through this route to the west.

This successful expedition soon produced others. Mr Torlesse reported a tour, and brought down a map of the country discovered by him in the upper valley of the Ashley, and a district lying between Harewood Forest and the Snowy range, dividing the Ashley from the Waimakariri, he had a good view of the country watered by the Waimakariri, and estimated the available land at 500,000 acres.

Soon after, Mr Leonard Harper, with a party, made an expedition to the Western Coast. They started on the 4th of November, 1857, from Mr Mason's out-station in the Waitohi Valley, and passed through the Maori gully along the south bank of the Hurunui. They then followed the south branch of the Hurunui to Loch Katrine, a small lake connected with Lake Sumner. Arrived at the north-western extremity of Lake Sumner, they thence ascended the eastern Teremakau, up to the saddle, which was then covered with melting snow. They then made their way down the north side of the western Teremakau, and followed the bed of the stream to the junction of the Oira, a south branch of the Hurunui. The natives informed them that, out of the Oira ran the river Waimakariri, and not from a lake, as was supposed. They next reached the Cross Range and a lake, out of which the natives told them a stream ran into the Grey, navigable for canoes. Embarking on a raft on the Teremakau, which they soon after reached, they were whirled among trees and bushes torn away by the torrent, to the Western Coast. Owing to delays, occasioned by bad weather, snow, and want of food, the journey from Mr Mason's to the Coast lasted twenty-three days, but they made the return journey in fourteen days, of which only eight were spent in travelling. The natives assured them that there was an easy way up the valley of the Waitanga to the East Coast, through an open country, but which does not yet seem to have been discovered. They found many wild dogs in the bush, which the natives tamed, and used for catching birds. These natives all professed Christianity, and had no pigs or wheat, but lived on potatoes, Maori cabbage, and fern, with eels and other fish.

THE EARLY DAYS.

BEFORE THE BIG RUSH

DESCRIPTION OF THE DIGGINGS.

Mr W. Seed, Collector of Customs, paid a visit to the Coast early in 1865, and the following extracts are taken from his report. They are interesting, but not authoritative, as Mr Seed was unable to obtain reliable information on many points:—

An Early Report.

"Gold in payable quantities has been found on all the rivers from the Buller to the Totara—viz., in the Buller, Grey, Saltwater, Paroa, Teremakau, Kapitea, Waimea, Arahura, Hokitika, and Totara (near Ross). Fair prospects have also been found as far down the coast as Mount Cook, so that, as far as is at present ascertained, the northern half of the West Coast of the Middle Island appears to be auriferous, Mount Cook being situated about midway between Cape Farewell and the southern end of the West Coast. I spoke to numbers of men on the Waimea, where the principal diggings are, and they all said that gold in small quantities could be found almost everywhere it was dug for. I saw seven different parties wash out prospects at various places along the banks of the creek, and in each instance they got gold to the extent of half a grain to a grain to the dish. Many experienced diggers who had been on the Waimea diggings for several months, expressed it as their opinion that the West Coast goldfields would last for many years, and that anyone who worked industriously on them would be sure of a certain amount of success. They all described them as 'a poor man's diggings,' meaning thereby that anybody could be pretty sure of earning a living from them, but that few would realise large sums, as the gold was very fine and was scattered over a wide extent of country. The want of roads by which supplies could be furnished at a cheaper rate than at present, is the greatest impediment that the diggers have to contend with."

"Just now it would be impossible to decide on better communication with the diggings, for the transport of supplies to them would be premature, as there may be two thousand diggers in one place to-day, and on hearing of some new rush they might be all away to some distant point in less than a week. Timber being everywhere so abundant and the land being level, it will be found, I should think, when the place becomes more settled, that wooden tramways will be the cheapest and most suitable roads that could be constructed. At the end of last month I estimate that there must have been about 7000 people in the district. Of these about

3000 were at the Waimea or Six Mile diggings; 2000 digging and prospecting in other places, and about the same number congregated at the port of Hokitika. Among the latter would be included the people who are constantly coming and leaving the diggings, the packers, storekeepers, and a considerable number belonging to a class having no particular occupation, but which seems always to be inseparable from the various rushes to new diggings. I found it very difficult to get any reliable information as to the yield of gold, for the diggers, as a class, are not communicative on this point. I saw, however, on the Waimea two parties of four men each, wash out between them for their day's work about five ounces of gold; this would yield about £2 7s per man. Very few were getting more than this, and many, no doubt, very much less. The amount of gold purchased by the various banks during the fortnight I was at Hokitika was about 5000 ounces. Estimating that there were 3000 people constantly at work—and this is perhaps rather above than below the actual number—the amount of gold I have named would give, on an average, £3 10s per week for each man. Owing to the nature of the country, it is a most laborious undertaking for men to have to prospect ground at any distance from the banks of the rivers and streams, on account of the difficulty of carrying their provisions and tools through the bush; it will therefore take a long time to ascertain fully the extent of ground that can be worked with advantage."

Mr Seed strongly advocated the construction of a mail coach road over what had just been discovered, and called the Teremakau Saddle, now better known as Arthur's Pass. He also strongly advocated the formation of a separate provincial district, pointing out to the Government he represented that the people then on the Coast had mostly come from Otago, Southland, Nelson, the northern provinces, and Australia, and they would have no more concern with Canterbury than with any other province. Though he dealt at some length with the harbour question, he placed more reliance on the Grey River as a port than he did on Hokitika, but was more impressed with the possibility of South Wanganui as the best of all sites for a harbour. However, to Captain Gibson was left the duty of reporting fully on this subject.

Having inspected the Brunner coal-mine, Mr Seed showed that the tunnel had been driven 110ft into the cliff on the north side of the river Grey, and that on an average 40 tons per week were being sent down to Mawhera, only one boat then being used.

Before leaving the Coast he reported that Mr G. S. Sale had been appointed Resident Commissioner. Mr W. H. Revell, Magistrate and Warden, and Mr T. Broham was in charge of a small body of thirty police as Superintendent. But nothing had been done towards the establishment of a postal or regular mail communication, which led to his making a recommendation for a postal officer to be sent from Nelson. A Customs officer, who acted also as the local treasurer for the Government, he also installed. Mr Seed had nothing much to say as to the possibilities of the Buller as a settlement, having apparently to limit his visit, so it is essentially one respecting Hokitika and the Grey, both of which places he appeared to dwell most upon. There is no doubt, however, that its effect on the General Government of the day, in which Mr Gisborne was Colonial Secretary, and of which Mr F. A. (afterwards Sir Frederick) Weld was Premier, was in favour of forming a separate provincial district.

However, these things being brought prominently before them, partly owing to so many leaving Canterbury and great benefit accruing to the province by an outlet being provided for surplus fat stock, an agitation took place, and a survey of the allegedly good thoroughfare across the Teremakau Saddle, which resulted in the start of that now popular road through the

Bealey, over Arthur's Pass, so named after the present city engineer of Christchurch, Mr Arthur Dobson (who made the survey) and down the famous Oira Gorge and the Teremakau river to Arahura and Hokitika. This work was proceeded with in a practical manner, and was opened formally early in 1866. But during its construction it had been largely used by drovers, diggers, and all classes, on account of its accessibility, as a route from the Canterbury Plains. A coach service, installed by the representatives of the Australian firm of Cobb and Co., was kept going regularly, and during the whole time it has continued to have been wonderfully free from accidents, the various proprietors who have at one time and another controlled it, having proved themselves equal to all emergencies, and possessed of the very best vehicles, horses, and drivers.

GEOLOGICAL REPORT.

DR. HAAST'S EXPLORATIONS.

GOLD PROSPECTS IN MAY, 1865.

The following passages give the more important part of a report by Dr. Julius Haast, F.G.S., F.L.S., Provincial Geologist, to the Secretary of the Public Works, Mr John Hall. The report consists of four letters written on April 6th, April 22nd, May 4th, and May 10th, 1865, respectively.

The Greenstone Field.

Dr. Haast says: "As the road by the lake promised to afford me more information than that by the river to the mouth of the Greenstone creek, I sent my horses down the river to that locality, and walked by the track cut along Lake Brunner to the Greenstone goldfields. Lake Brunner offers some striking features generally not observed in our other alpine lakes; its southern banks are formed by granite and metamorphic rocks, of which a bluish massive silicious schist is predominant. The contact of the granite, which in many instances invades in small ramifying veins those metamorphic strata, can be studied easily all along the track, which by extensive use is now in such a fruitful state that it is almost impossible to conceive its condition, and is unfit either for men or animals to travel upon."

"After a few miles the road leaves the lake, and rounding the north-western spurs of the Hohonu range, enters upon a table land of considerable extent, through which innumerable creeks run in deep gullies with often perpendicular banks on both sides. An examination of the banks of these watercourses revealed at once their peculiar character, and showed distinctly why the raising of gold in considerable quantities and over a great extent of country, may confidently be expected between Lake Brunner and the Teremakau.

"Whilst as shown for instance, in the Big Hohonu and the Greenstone creeks, the beds of these present watercourses consist mostly of large well-rounded boulders of granite and metamorphic rocks in close vicinity to the former, as well as the low terraces near them, which stretch to the high perpendicular cliffs by which these creeks are confined. I observed that the contents of the older alluvial formation consisted of subangular river shingle, mostly small and of an arenaceous nature, dioritic sandstones, pebble-beds, graywacke, etc., occasionally with small granitic shingle between them, such as are contained in a large river-bed coming from the central chain, which small tributaries joined from the more westerly ranges. It is evident that in such a river-bed as that of the present Teremakau, the more argillaceous schists containing gold in the laminae and veins of quartz would soon be destroyed, depositing it among those large fluvial beds often of a thickness of more than 100 feet. It thus became evident that the river-bed of a late tertiary age had here run along the Hohonu range, being bounded in a westerly direction by low tertiary ranges, and that, as by subsequent changes in the physical geography of that part of the Island these pleistocene fluvial deposits had become denuded, the gold contained amongst them had been redeposited more condensely in the newer watercourses amongst the boulders, gravel and sand, which form their beds, as well as in the low terraces only a few feet above the present level of these streams, by which they are bounded. Some of them are more than a quarter of a mile broad, and offer, as the creeks on this plateau are very numerous, ample room for a large mining population. The thin, scaly nature of the gold here extracted demonstrates at once that it has been subjected to continuous action of running water for a considerable distance. The power of the river has served already in a great measure to sluice the former deposits so thoroughly where they were removed that the remaining portion became fit for the extraction of the precious metal.

"It is true that no great finds will be made in this part of our goldfields, because the gold is distributed in small scaly flakes nearly evenly throughout the whole wash-dirt, but just that peculiar character insures the certainty of obtaining a fair amount of gold wherever the character of the country induces the miner to sluice or flume. It is, to use a miner's phrase, only a poor man's field, which to the steady miner, gives a fair remuneration for his labours, but I may add, that considering the fruitful state of the road and the present exorbitant price of provisions, brought by those so-called tracks to the diggings, the profits of the diggers become in most instances very small, and although the greater part of the present population seems to struggle manfully against all these disadvantages, many have left that part of the country in disgust, which otherwise would have offered them for a long period the means of a sure and independent living.

"This older alluvium reposes upon clay marls, belonging to our younger tertiary series, stretching with little interruption to the mouth of the Teremakau, and, as in many cases it will have been denuded, and the gold contained in it redeposited in payable quantities in the watercourses by which it is everywhere traversed, we may confidently expect that other localities, which will offer ample room for our mining population, will be discovered. I may here mention that the present workings are confined to the Greenstone Creek proper and some smaller tributaries, but I obtained some prospects in the Big Hohonu Creek, which induce me to believe that this river also will eventually, when properly examined, become a mining locality. In