

scale. A tail-race was constructed from the ocean beach for 33 chains in length, having a fall of 3in. to the chain. This enabled the tail-race to drain the ground 40ft. under the level of the surface at the workings. This tail-race is used in carrying away the water from the hydraulic-slucing operations which are carried on at this level. The whole of the tailings from the sluice-box pass into a well about 6ft. deeper than the tail-race, and from this well the tailings are lifted to a height of 77ft. with elevators, tipped on to a screen which separates the stones from the fine material and enables them to be run away in trucks, while the fine stuff falls into a sluice-box and is carried away with water on to the flat. The elevating-machinery is driven by a turbine water-wheel constructed on the Whitlaw principle, placed under a head of water 37ft. 6in. in height; but it is only in wet weather that sluicing operations can be carried on, as the quantity of water available is not nearly sufficient to work the machinery in fine weather. But an ample supply can be obtained by extending the head-race to the Mikonui River, which is estimated to cost about £4,000. The want of a good water-supply seems to be the mistake that a great many companies make, causing their property to become almost worthless, whereas otherwise it may be very valuable. This occurs through depending on men who do not sufficiently understand the principle of measuring flowing or running water, nor the force and power it has in driving machinery.

*Southern Fields.*—Between Ross and Jackson's Bay, a distance of nearly two hundred miles, there are a few people here and there working on the ocean-beach, river- and creek-beds. A few parties of miners, principally Chinese, are working the terrace alongside Duffer's Creek, and, from what I could hear, are making a fair living. At Waiteroa, where good patches of gold were found some years ago, there is only one man at work. At Lake Mapourika there are from twenty to twenty-five miners at work, some sluicing and some tunnelling. The gold here is of a coarser nature than that found in the river-beds. The wash-dirt is from 3ft. to 5ft. in thickness, and is full of large stones and boulders, something resembling the wash at Kumara. This place was first opened about thirteen years ago, and has since supported a small mining population. The Five-Mile Beach, which was one of the richest beaches on the West Coast, and supported a large population for a number of years, is now a thing of the past, and only four or five men are at work. These, they inform me, only make very small wages except when they get a chance of surfacing on the ocean-beach after rough weather, which sometimes gives them a few ounces of gold very easily. A little gold is got on the beaches between this and Gillespie's Bluff; but the few miners that are here have some cattle, and only work at mining when surfacing can be obtained. At Gillespie's Beach there are eleven miners at work, all the workings being confined to beach-leads. This is a beach that would support a limited mining population for some years if a supply of water were on the ground. A water-race was brought in here about fifteen years ago capable of carrying from ten to twelve sluice-heads of water. The ditch is still in good order; but the fluming, that had to be brought from the terrace across a swamp for 27 chains to the beach-workings, has long since fallen down and has never been replaced. The general system of working here is to lift the water with a common spear-pump into a trough at the head of the washing-box; and by this means the miners are able to wash the richest of the black-sand layers. There are some payable layers under water-level which cannot be worked advantageously without the aid of pumping-machinery. Gold has been got on the ocean-beach near the mouth of every river coming out of the main range between the Mikonui River and Jackson's Bay; but as yet no heavy finds have been discovered inland. Whatever payable auriferous ground has been worked is on the beaches and terraces alongside the banks of the rivers; which goes a great way to prove that the rich finds of gold that have been got on the ocean-beaches have been washed down the rivers out of slips from time to time from the main range. The character of the gold also indicates that it has been carried a considerable distance by the action of water, and ground up by large stones and boulders travelling down by the force of the current. This action can be seen plainly in the Waiho River. Some rich pockets of gold have been got in the river-bed up at the gorge, where the bed-rock is bare, and where large boulders prevented the gold being scooped out of the pockets and crevices by the current of the stream. Small auriferous deposits have also been obtained on the terraces here, which probably might be due to glacier action, as the gold is coarse and angular, showing that it has not been subjected to the action of a stream with stones and boulders, which would round off all the angular corners and to a certain measure grind it up. If the gold, therefore, came down these rivers, there is every reason to suppose that rich auriferous-quartz reefs will yet be found in the high mountain-ranges; but their inaccessible nature, high altitude, and inhospitable climate will always render the mountain-lands difficult to prospect; and even if large auriferous lodes were found, they would have to be rich to pay for the extra expense connected with the working of them. Granite, mica-schist, and micaceous slate adjoin each other in the ranges south of the Mikonui River, which bears every indication of a country where gold, silver, tin, copper, galena, zinc-blende, and bismuth may be found. I was shown some cassiterite that was found at Bruce Bay in the beach-wash which evidently has at some time been washed down the Mahitahi River. I was also shown specimens of copper-ores (erubescite and chalcopyrite) that were found in the Thomas Range, between the Blue River and the Haast. There is also a large seam of coal near the mouth of the Paringa River. At Hunt's Beach and Bruce Bay there are still a few miners working on the beaches. Some of them at the latter place have done