

MARLBOROUGH DISTRICT.

Waikakaho.

There has been a considerable amount of work done on the quartz-lodes in this district by the Ravenswood Company. The mine on the Waikakaho side of the range has been opened out on three levels. The upper level has been driven on the lode for 157ft., having 180ft. of backs. The second level is in 329ft., and 235ft. under the upper level, and the lower level is 159ft. under the second, and in for about 160ft. In constructing the lower level a new lode was cut carrying gold, running parallel with the main lode. These two lodes run in a northerly and southerly direction, and dipping to the eastward at about $\frac{1}{4}$ to 1. An uprise has been constructed from the lower level to the surface for about 100ft., which is connected with a chute from the second level, but there is no connection yet made with the upper level. Several hundred tons of stone are stacked at the mouths of the levels ready to send to the crushing-battery as soon as the aerial tramway is completed. The manager (Mr. Turner) and managing director (Mr. Logan) are very sanguine as to the payable results of the stone, which, they state, has been carefully prospected; but, judging from the appearance of the stone in the paddocks, rich returns need not be expected. Still at the same time, with the large quantity of stone available, and a good crushing-plant, low-grade ore will pay for working.

At the Mahakipawa licensed holding, which is about 30 chains from the saddle, on the Mahakipawa side of the range, an adit has been constructed for 400ft., where it cut some quartz, but no payable stone has yet been struck in this level. The lode on the surface does not appear to have gone down, or else there has been a break, and it is not cut yet. They are still continuing the adit, and are getting water in the face, which would indicate that they are near a quartz lode, or some watercourse. Even if payable stone be struck here it will take some time before it can be worked, as another tramway will have to be constructed to connect with the one from the lower level on the Waikakaho side of the range.

Aërial Tramway.—An aerial tramway has been constructed from the lower level on the Waikakaho side to the crushing-battery in the Waikakaho Valley for a distance of three miles, the fall being about 1,700ft., or 1 in 9.3. This fall is found to be sufficient to make the tramway self-acting. An overshot water-wheel, 27ft. in diameter and 3ft. 6in. breast, has been erected, to work the tramway at the battery end, the water after it leaves the Pelton wheels, which drives the crushing and concentrating appliances, being again used to work the overshot wheel; but after the tramway was completed they found the overshot wheel was not required. This aerial tramway is the longest yet erected in the colony, and, in addition to this, it could not be constructed in a straight line, as all the other tramways are that are in use in New Zealand; at about one mile from the crushing-battery it bends round an internal angle of about 115° . At this point there is one horizontal grooved pulley-wheel on top of the trestles similar to that used at the terminal end, and two pulley-wheels of the same diameter fixed on an incline, so as to form a sort of loop, bringing the rope which conveys the empty buckets about 10ft. under the rope carrying the full buckets, so as to allow the empty buckets to pass under the full ones. The rope coming from the inclined grooved pulley-wheels is again supported by vertical small pulley-wheels of the same diameter as those used for bearing-pulleys on top of the trestles. At the time of my visit they had commenced to put the buckets on the rope, and expected to be ready in about fourteen days from that date to send down quartz to the battery; but, judging from the manner in which the trestles are placed, some considerable alterations will have to be made before the tramway will work satisfactorily. The terminal end of this tramway at the battery, instead of being set at a high inclination so as to take up the slack of the rope, is placed truly horizontal, so that as the rope stretches it will have to be cut and spliced again.

Crushing-battery.—This is really a first-class plant, and well erected. It consists of a stone-breaker, ten heads of stamps, quicksilver-tables, and four Frue vanners. The ore is dumped from the buckets on the aerial tramway into a hopper; thence it passes from the top hopper over a grizzly, made of railway-rails, set about 1½in. apart, the flat side being upwards. The fine material passing through the grizzly falls into a second hopper, and the coarse pieces of ore fall on to a floor, and thence are fed into the rock-breaker. The crushed material from the rock-breaker falls into the same hopper as the fine material from the grizzly. This second hopper has two doors and chutes, from which the material passes into two Challenge ore-feeders, which in turn feed the stamps. The pulverised material from the stamps passes over quicksilver-tables about 12ft. in length, and thence into different pipes which convey it on to the Frue vanners. The whole of the machinery is arranged so that at every stage of the process the material passes from one to the other by gravitation; no manual labour is required, with the exception of feeding the ore-breaker. The whole of the machinery is substantially erected and well arranged. The stamps and rock-breaker are driven by a Pelton water-wheel 6ft. in diameter with 8in. face, and the Frue vanners are driven with another Pelton wheel of the same diameter having a 6in. face.

Water-supply.—The water for supplying the Pelton wheels and battery is lifted out of a branch of the Waikakaho Creek, and brought for a mile and a half in steel pipes of No. 12 B.W.G., 15in. in diameter, and, having a fall or head at the battery of 250ft., is capable of conveying about four sluice-heads of water. One-half of this quantity will be required to drive the stamps and rock-breaker at their proper speed. The manager has had a great deal of trouble with the water-pipes, sufficient supervision not having been exercised during their construction. They are now tolerably water-tight, but the pipes being laid in a tortuous manner, with a number of bends, will no doubt greatly reduce the head by friction, especially if they are required to convey water up to their carrying capacity.

There is no provision made for storing the tailings, but there is ample room on the battery-site for large pits to be constructed if it is found that there is sufficient gold left to pay for re-working them.