

mine began to show signs of being a paying venture. On the upper levels rich patches of gold were occasionally obtained; but the lodes were very broken and irregular, and the large expenditure involved in working a quartz-mine in a rough, broken country the same as where this is situated, together with its elevation, and the difficulty of getting machinery on the ground with no roads but pack-tracks, and even those had extremely steep grades, the quartz had to be extraordinarily rich to pay the expense incurred both in working the lodes and in crushing it. During the time the present proprietors have had this mine they must have expended many thousands of pounds on machinery and in carrying on the workings. They were working at the time of my visit on two lines of reef, and were making provision to work two additional lodes known to exist in their ground. The lodes that they were working are termed the main and middle reefs. The main lode averages about 15ft. wide, and is worked down to the water-level. The length of the streak or shot of gold in this lode varies from 50ft. to 100ft. The gold does not run uniformly through the whole width of the lode, but only in runs or streaks, generally near the foot- and hanging-walls. The stone, to a certain extent, that is taken from this lode is picked, and varies from one to six ounces of gold per ton of stone. The middle lode averages about 6ft. wide. The run of gold has been worked for about 300ft. in length along the lode, and still continues in a westward direction. The average return, taking the whole of the lode, is about 1oz. 8dwt. of gold per ton. It has a dip or underlie of about 1 in 1, and an apparent strike in a westerly direction. There is a sufficient quantity of payable stone in these two lodes opened out to keep the crushing-battery fully employed during the next two years. The lode that they are at present opening up is the Promised Land Lode, which is the next one north from the middle lode, and averages about 4ft. in width, with runs or streaks of gold about 200ft. in length. The whole width of the lode averages about 16dwt. per ton. The remaining lode is termed the Northern Lode, on which a deal of work has been done. This lode is about 2ft. in width, carrying rich quartz, averaging from 1oz. to 3oz. to the ton, and carries the run or shot of gold for about 300ft. in length. The whole of these lodes continue, and can be seen in a gully about one mile distant in an easterly direction from the place of operations, and they are again seen about three miles distant in a westerly direction on the eastern slope of Mount Aurum. The formation of the quartz reefs in this locality, as well as those at the head of Lake Wakatipu, are well defined, and do not occur in bunches or blocks nearly so much as they are found on the West Coast. The foot- and hanging-walls of the reef can be traced for a long distance; but the space between them is in many places filled with mullock. The quartz is not continuous, but occurs here and there at intervals along the line of lode. In all quartz lodes the gold runs in shots or streaks, and extends only for a certain distance along them, but, generally, by following the line of the foot- and hanging-walls auriferous quartz will again be found, although the value of the shot or run of gold may be entirely different from the one formerly worked. The four lodes in this company's ground run almost parallel with each other on a general east-by-north direction, the main or southern lode being 100ft. south from the middle lode, and the other lodes being about 30ft. apart from each other. The ground is well opened out, and the mine in every place promises to pay the owners handsomely for the large amount of money they have from time to time expended. Mr. F. Evans, the manager, assured me that he is confident of obtaining gold to the amount of at least £100,000 from the lodes that are at present opened up; and, judging from the appearance of the stone, with the large amount of gold that can be seen, I should not consider the estimate the manager has formed of the value of the quartz to be too high. An engine-shaft has been sunk on the main lode in one of the main drives, where winding- and pumping-machinery is about to be erected. The winding-engine and pumps will be driven by compressed air. The manager contemplates trying an experiment of making an air-receiver in the rock; but I am afraid the veins and fissures, although very minute, will prevent it being a success. This company experience great difficulty in getting water to work their crushing-battery at the place where it is erected; and in order to remedy this they are at present making arrangements to drive their battery by electricity. At the time of my visit in November last they had two of Pelton's hurdy-gurdy water-wheels erected in the left branch of Skipper's Creek, which will be worked by a head of water equal to 186ft., having two $\frac{7}{16}$ in. jets playing on each wheel. The quantity of water they contemplate using is six and a half sluice-heads, which, at 186ft. in height, is equal with these water-wheels to over 100 horse-power. The pipes leading the water down to the hurdy-gurdy wheels are 22in. in diameter at the intake end, and tapering down to a much less diameter at the bottom. This large amount of motive power is to be employed to drive two Brush dynamos, each of which is calculated to be capable of transmitting thirty-six horse-power. These dynamos are situated about two miles from the crushing-battery, and the current is to be transmitted by a No. 8 B.W.G. copper wire from the dynamo to a Victorian motor, which is placed in the same building as the crushing-battery; and from this motor the stamps are driven. The crushing-battery at the time of my visit consisted of twenty head of stamps, 7cwt. each, having 8in. drop, and making about eighty blows per minute. These were driven by a Leffel turbine, 16in. in diameter, working under a head of water equal to 51ft. Provision was being made to erect another ten heads of stamps as soon as the electric machinery is completed. Messrs. Fletcher and Co., of Dunedin, electric engineers, are erecting the machinery, and have guaranteed the company its success. It being the first crushing-battery that ever has been attempted to be driven by electricity, great