

contain the air-chambers, solution vat, the zinc towers or boxes, the receiving tank and sump. The force-pump and air-pump will be in the present building, and a 3in.-pipe will be used for sluicing out the vats and plant. It may be added that the timber for the buildings is all cut, and a portion of it on the ground, and a start has been made to clear the excavation for the foundations. The motive power is a Pelton wheel 6ft. in diameter, with 150ft. fall of water, delivered through a $\frac{7}{8}$ in.-nozzle, and not more than half the water is required for the present plant, so that there will be ample for the increased plant. The water is conveyed from the race through 850ft. of 10in. wrought-iron pipes, so that the work is a permanent one, which will not require renewing for many years to come. In fact, permanence has been kept in view in everything that has been done, and the main adit now being driven is no exception, for it is very high and wide, the intention being to use horses in it when required for trucking.

"A company has now been formed to carry on future operations, under the No-liability Act, in 24,000 £1 shares, fully paid up, and sufficient assets are being transferred to the company to complete the works now commenced, and to put in the low-level tunnel.

"The kilns are being excavated for roasting the ore before treatment. Of course, as the tunnel level is lower than the battery, the tramway from the mine will be considerably lower than the mouths of the kilns, and it will be therefore necessary to elevate the quartz to charge the kilns, as well as to again elevate the roasted ore from the outlet of the kilns to the stone-breaker on top of the plant; but, to meet these requirements, a hydraulic lift will be erected on the same principle as that at Waihi, which is most inexpensive, and which has already elevated some 15,000 tons of ore without showing the slightest sign of deterioration. Mr. W. H. Moore has charge of the mine and plant, and the success which he has already achieved under great difficulties shows that he is the right man in the right place."

The returns from this mine for the year ending the 31st March last show that 600 tons of ore was crushed, which yielded 1,632oz. gold.

Komata Company.—The return from this company's mine last year give fair results. From 1,708 tons of ore, 8,996oz. bullion was obtained, and 1,075 tons of tailings were treated by the cyanide process, which yielded 5,610oz. bullion. The total returns last year was, therefore, 10,071oz. bullion; and there was an average of thirty men employed about the mine and works. The principal mining operations which were carried on last year were from the No. 3, or low-level: on No. 1 lode, which is about 8ft. in thickness; and on No. 2 lode, which is about 6ft. in thickness. A winze has been sunk down from the low-level on No. 2 lode to a depth of 48ft., and a portion of the lode under the level is stoped out. This mine was originally purchased by Mr. T. H. Russell from the prospectors, but the property, including the crushing-battery and plant at Waitekauri, has since been purchased by a company.

Grace Darling Company.—This company's mine is situate on the spur leading down from the tramway which connects the Komata Mine with the crushing-battery. A considerable amount of prospecting has been done, and the mine opened out. The lode in the surface level is from 4ft. to 8ft. in thickness, and on No. 2 level the lode shows a thickness of about 7ft. Gold is seen freely in the stone; and the company are so satisfied with the prospects that it is erecting a crushing-battery of ten heads of stamps, and a cyanide-plant. It is intended to adopt dry crushing, which will necessitate drying-kilns to be made before crushing is commenced. It is expected that the plant will be completed by the end of June.

Waihi.

A good deal of attention has been directed to this portion of the Ohinemuri District since the purchase of the Martha Company's interest by the Waihi Gold and Silver Company. Previous to this it was looked on as a place where there were large lodes containing both gold and silver; but, as the average yield per ton of ore was very small, these lodes could not be worked at a profit. The Martha Company worked the Martha Lode from the surface downwards by simply quarrying it, for about eight years, and the average yield from the ore was just sufficient to pay working expenses, without returning any of the money that the shareholders had laid out in the erection of a crushing-plant, tramways, and opening-out the mine. After quarrying the lode down to such a depth as they considered safe to work, they constructed an adit-level, and drove on the lode for about 700ft., and stoped out what they then considered the best portion of the lode, when they sold the whole of the mine and plant to Mr. H. Russell for some £3,000, who afterwards sold it to the Waihi Gold and Silver Company for something like £20,000 in paid-up shares. Since this lode has been worked by the Waihi Company handsome returns have been obtained, instead of getting an average yield of from 4dwt. to 6dwt. of gold per ton, as was obtained by the Martha Company. The reason of this is solely due to the superior appliances for extracting the gold from the ore; but while the Waihi Company have extracted a larger percentage of the bullion from the ore than was done by the Martha Company, still the appliances they have formerly adopted only extracted about 65 per cent. of the gold, and about 35 per cent. of the silver; recently, however, they have erected a Cassel plant in connection with their battery, and are treating a portion of the pulverised ore in a solution of potassium cyanide; and a portion of it at the time of my visit was still being treated by pan-amalgamation.

It will be seen from this that, even with the superior appliances that the Waihi Company have been using, the percentage of bullion extracted is only very small. But what can be said of the appliances used by the Martha Company, who could only get about one-third of the bullion per ton of that obtained by the present company. This shows clearly the necessity of having ore carefully sampled and assayed, in order to ascertain its correct value. The natural sequence is that millmen who do not take the trouble to do this are under the impression that they are saving a fair percentage of the gold and silver, and that it is only time wasted, as well as extra expense, to carefully assay the ore. Had the Martha Company known the value of the ore in the lode, they would have found that, with the appliances they were using, they were not obtaining much above 20 per cent. of the bullion.