

Mr. H. Russell is now engaged in getting the forty-stamp crushing plant thoroughly overhauled. The following is a description of the alterations and additions, taken from the *Thames Advertiser* of the 20th April last: "I was first taken up to the tower which has been added to the building. It communicates with a self-acting tramway, mounted on tressels at an elevation of about 40ft. By this method the ore is run from the mine to the plant, and deposited on a gridiron made of $1\frac{1}{2}$ in. round iron bars, spaced at $1\frac{1}{2}$ in., thus allowing stone only $1\frac{1}{2}$ in. in thickness to pass through the griddle. The larger pieces of quartz fall upon the floor and are passed through the stone-breaker. This stone-crusher is Wheeler's rock-breaker No. 4, constructed at the Golden State Ironworks, San Francisco, on a new and improved principle, and I was informed it is the most powerful ever introduced into the colony. From here it falls into the quartz-bin, which automatically feeds the stampers by self-acting feeders, for the ore falls from the bin into the self-feeders, and thence into the stamper-boxes. It is then put through thirty head of stampers, and is ground to such fineness that it passes through a sixty-mesh grating, with 3,600 holes to the square inch. On leaving the gratings the crushing passes over a copper table—its width being that of an ordinary sheet of copper—and falls into a receiving-trough extending the whole length of the stamper-boxes. This delivers it into an elevator, which raises it to the roof, where four iron tanks, each 4ft. square and 8ft. deep, and constructed of $\frac{3}{8}$ in. iron-plate, receive it. These tanks were constructed by Mr. Judd at his foundry in Queen Street, Thames. The heavier portion of the sludge falls to the bottom of the tanks, from which it is liberated into the trucks, which convey it to the pans and settlers for amalgamation. The lighter slimes go into other tanks, one of which is 20ft. square, and the others, eight in number, are 15ft. by 10ft. There is a fall of an inch between each of these boxes, and the overflow is gradual from one to the other. From the last of these eight there is a fall of 2ft. into still another tank, which is enclosed with fine-mesh screen, and from this the overflow is by this time almost pure water, which is conveyed by pipes into the tank which supplies the stampers with water, so that all of it is again passed through the battery. By this method it is expected that the maximum quantity of the light or floating gold will be saved. The iron tanks stand at an elevation of 33ft. 6in. above the floor of great pits which are sunk in front of the battery, and the 20ft. tank is at an elevation of 28ft. 6in. from the pits, while the other eight are 16ft. above the battery-floor. In these pits are the amalgamating machinery, consisting of six of Howell's pans, constructed at the Golden State Ironworks, which go at the rate of eighty revolutions to the minute; and three of Howell's settlers, each 9ft. square, which go at the rate of fifteen revolutions to the minute, are to be erected. They are 11ft. deep, and will contain all the requisite machinery. The finishing touches are now being put to the works, and it is expected the plant will be in full swing in about four or five weeks' time. In fact, a trial of the stone-breaker and stampers was made on the evening of my reaching Waitakauri, and everything worked very satisfactorily. The motive-power is a fine overshot waterwheel, 36ft. in diameter. It was formerly used in working the old battery, and, as will be remembered by many of your readers, was constructed by Mr. E. M. Corbett, now residing at Waitakauri. The tramway leading up to the mine has also been put in a thorough state of repair, and underneath the last grade a very large hopper is being erected. In the mine itself the old workings have been cleaned out and repaired under the management of Mr. Hollis, formerly manager of the Martha Extended, at Waihi. A level is also being put in under the chamber where the gold was formerly lost."

At Marototo there are two mines being worked—namely, that belonging to the Marototo Company, and the Silver Queen Mine, which belongs to a Sydney syndicate. Some ore was forwarded last year to Sydney for treatment. During last year the Marototo Company treated 400 tons of ore in the Fraser pans, which yielded 7,000oz. of bullion, chiefly silver.

Mining operations at Karangahake are not carried on so briskly as they might be, but the difficulty here is the treatment of the ore, which contains a great deal of silver, which cannot be recovered in the ordinary wet-crushing batteries. Although the Cassell Company have a leaching plant erected on this field it is in connection with the Crown Company's crushing plant, and they cannot treat ore from outside parties unless arrangements are made with the Crown Company to either crush it or to send the pulverised ore to them. The position in which the plant is erected prevents the latter being done unless at a great cost; but the Cassell Company are contemplating erecting a crushing plant in connection with leaching-vats, &c., on the flat alongside the Ohinemuri River, below the township. If this is done it will be fully employed by the claimholders on this field.

There is some very rich ore in the Woodstock Mine; but it cannot be treated at present. During last year 27 tons was treated at the crushing-battery on the flat, which only gave 71oz. of bullion; while 60 tons of ore was sold at the mine, which realised £3,000, or an average of £50 per ton. There are several large lodes in this mine of low-grade ore, which no doubt will all be worked when a plant is erected in the locality to treat the ore in a satisfactory manner.

Adeline Amalgamated Company.—This company during last year has only had three tributers at work. Very rich gold-bearing quartz was obtained from this mine about four years ago; but the shot of gold seemed to run out, or, at least, it has never been picked up again. Last year 76 tons of stone was crushed, which yielded 257oz. gold. The great drawback to this locality is that the cost of transit from the mine to a crushing plant precludes any low-grade ore being worked.

Crown Company.—This company have opened out a low level on what is known as the Welcome Reef. This level commences at the side of the Waitewheta Creek, about 500ft. below the level of the Crown workings. When I visited the mine in December last this level was constructed for about 100ft. on the reef or lode, which is from from 2ft. to 4ft. in thickness, and which the manager estimated was worth from £7 to £10 per ton. This lode has also been cut on the north, or opposite, side of the creek, and an adit constructed on the lode for about 50ft., which shows the same character of ore,