

- by 18in. in depth, to opposite the crushing plant, and thence in a pipe 15in. in diameter to the Pelton wheel, having at this point 180ft. of head, which would be equal to about fifteen-horse power for every sluice-head of water used. The ore is conveyed by a tramway constructed along the side of the Tangiapakura Gorge to two drying-kilns, which are cut out of the rock in the form of an inverted cone, resembling to a great extent the shape of kilns for burning lime. The ore is drawn out at the bottom of these kilns and filled into trucks, to be taken to the floor on which the rock-breaker is placed.

The whole of the crushing plant is erected on framing, so that the ore passes through every stage of the process by gravitation. On bringing the ore from the kilns it is dumped on the floor, and fed by hand into the rock-breaker, which reduces it to the size of nuts. From this it passes into the Cornish rolls, where it is further reduced to the size of small peas, and then passes down to the pulveriser. As this is a new machine for reducing quartz, a description of it will not be out of place.

The pulveriser is one of Askam-Wilson's, being used in England for pulverising cement. It is in the shape of a cast-iron barrel about 3ft. 6in. in length, and about 3ft. in diameter inside, having wire-gauze on each end of sixty-mesh—3,600 holes to the square inch. A shaft passes through the centre of this barrel, on which are keyed two cast-iron arms having loose revolving rollers at their extremities. These rollers are about 8in. in diameter, and have a 5in. face. The hole in the centre of the rollers is much larger than the pin on which they revolve, which keeps them attached to the end of the arms. At the place inside the cast-iron cylinder opposite the end of these arms is placed a steel ring, on which the rollers revolve. Between the arms on the shaft there are placed what is termed "agitators," which tends to bring the material to the place on which the rollers work, and between the arms and screens at each end are fans for sending the dust through the wire-gauze or gratings. The material is fed through a small hopper fixed on the upper side of the pulveriser-casing, in the centre, and the pulveriser is driven at about 300 revolutions per minute. The rollers, being loose on the pins at each end of the arms, fly out against the steel ring inside the casing by centrifugal force, pulverising the material into the finest dust. It is calculated by those in charge of the plant that this machine will be capable of pulverising about 10 tons of ore per day.

The fine pulverised material is now taken to the

*Amalgamating-pans.*—These pans are a combination of the Wheeler and Watson-Denny pans. They are fitted with the same class of wings inside as the Watson-Denny, but have not a continuous discharge, nor the corrugated bottoms, the object being to treat each charge separately with chemicals and quicksilver by hot amalgamation. As soon as each pan is charged the cover is placed on the top of the pan, and the charge is heated inside by a jet of steam supplied from a boiler provided for the purpose. After working each charge for a certain number of hours, the charges in each two pans are drawn off into a settler, which is kept at work until another charge is ready. The quicksilver is then drawn off from the bottom of the settler, and the amalgam collected and strained ready for retorting.

The plant may be termed a prospector's plant. There appeared to be several defects: the framing on which it was erected was too slight, and required a considerable amount of more bracing to prevent vibration, and there was not sufficient provision made to confine the dust. The wear-and-tear of the pulveriser will necessarily be very great. It has not the appearance of an economical machine for this class of work, but it is a plant sufficient to test the ground and prove its value.

The following tabulated statement will give some idea of the work done on the field since it was opened. This does not include the prospectors' claim, which has already been referred to:—

Name of Claim or Company.	Length of Driving done	Particulars.
Prospectors' No. 2	...	2 lodes, one 7ft. and the other 3ft. 1 cwt. quartz from each lode, tested at Waiorongomai, yielded fair results of silver.
Ophir	112	1 lode, 18in. wide, carrying a little silver.
Kamo and Kamo Extended	200	Several lodes discovered with a little silver.
Just in Time	40	Lode 2ft. 6in. thick. 16cwt., tested at School of Mines, Thames, gave 9oz. 3dwt. silver. Several cuttings made on surface.
Young Colonial	232	1 lode 12 in., and another 3ft., both containing a little silver.
Wai Maria	200	1 lode 3ft., another 7ft., both containing a little silver.
Try Fluke	100	3 small lodes discovered about 9in. wide. Little silver.
United	80	2 lodes cut, containing a little silver.
Silver Fleece	150	A lode discovered.
Caledonia	80	Small leader found, showing a little silver.
Tupono	200	No lode cut in drive, but there is one showing on surface 5ft. thick.
Comstock No. 3	280	No lode cut.
Jubilee	150	2 lodes cut, showing a little silver.
No. 3 Company.	200	Lode 4ft. wide, and several leaders, showing little silver.
Luminary	200	Several lodes cut showing a little silver.
Ruby	120	Lode 3ft. wide cut, showing a little silver.
Caledonian	134	Lode varies from 18in. to 3ft. 16cwt., tested at School of Mines, Thames, yielded 5dwt. gold and silver bullion.
Lone Hand	...	No lode cut.
Khartoum	110	No lode cut.
Caberfeigh and Comstock	40	No defined lode cut.
Total, about	2728	