

rock-drills would have reached the line of the Komata reefs, and which is marked on the surface of the claims by a belt or channel of kindly country. These reefs, as they are followed towards the Waitekauri Union claims, appear to run in a rather more northerly course, which will entail correspondingly greater driving. However, as the face of the low level is still several hundred feet short of where the reefs were expected to be cut, it is no case of disappointment, but simply that the scheme of development as drawn up by Mr. St. Auburn, the consulting engineer, and carried out by Mr. N. D. Cochrane, the resident mining engineer, has not been completed. With an adequate amount of driving very fair prospects should await these claims. At the eastern group of claims very little has been done since last annual report, protection having been granted while the western claims were being prospected."

*Waitekauri Cross Mine* (Area, 100 acres; owners, Waitekauri Cross Gold-mining Company, Limited; mine-manager, Thomas James).—Mr. James gives the following account of the mine and workings during the year:—

"The whole of our energies are at present being directed to prospecting the large reef, known as the Taranaki, to a greater depth than our present adit-level, where a large amount of driving has been done by the present company, both on the reef and in cross-cutting the country. For this purpose we are sinking an underlie shaft in the hanging-wall portion of the lode, the angle of dip being 67°, and the dimensions of the shaft 10 ft. by 5 ft. The shaft is divided into two compartments, in one of which is fixed a permanent iron-runged ladderway; in the other, two steel-rail ways are fixed, on which the skips for hauling the broken material out of the shaft run. At the top of the shaft a self-tipping arrangement is fixed, whereby the material is tipped out of the skip into the truck without any further handling. The winding is done by means of an electric hoist, which is fixed in an underground chamber cut out at the head of the underlie shaft. The electric motor is a compound four-pole iron-clad type machine of 40 brake horse-power. The winding-drums are arranged in tandem; each is capable of raising 1 ton, *plus* the weight of the rope, up an incline of 60°, at the rate of 300 ft. per minute. The chamber, main adit, tip-head, and office are illuminated by electric lamps. A triplex-action electric pump has also been provided, which is geared to run at four distinct speeds, to suit the different depths and volumes of water met with; it is capable of lifting 2,400 gallons per hour from a depth of 300 ft. Water having been met with at 180 ft., which is making at the rate of about 500 gallons per hour, it is the intention of the management to open out at that level and test the reef there by driving north and south along its course. The pump above referred to will also be fixed at that level: it being a pump which has to work on a fixed bed, it is not capable of being used as a sinking-pump. A sinking-pump to lift to this one has been ordered, and upon its arrival sinking operations will again be resumed. The station at which the power for driving the above machinery is generated is situated at Maratoto, about two miles from the mine. The power is generated by two compound dynamos, which are driven by belts off massive fly-wheels, on either side of a 3 ft. Pelton wheel, which is supplied with water at 210 ft. of head, from two water-races, being connected to the penstock at the junction of these two races by iron piping 2 ft. in diameter. An elaborate switch-board contains all the necessary measuring instruments, switches, safety fuses, lightning-arresters, and magnetic cut-outs; spare instruments, switches, &c., being arranged to permit of the duplicating of the plant without any alteration. The current is conveyed to the mine by two pairs of copper cables, on fluid insulators fixed on cross-arms to the poles erected for their support. A distributing switch-board is fixed at the mine, for the proper control of the current in the different circuits, to hoist-pumps, lamps, stamps, &c. Telephonic communication between the mine and generating station is also established."

*Waitekauri Extended* (Area, 95 acres 2 roods 19 perches; owner, Waitekauri Extended, Limited).—During the year the low level has been advanced to the reef and communication been effected with the levels above. The reef, which varies in thickness from 25 ft. to 30 ft., is well opened, and stopping operations have been carried on. 1,011 tons of quartz was crushed, for a yield of 925 oz. 4 dwt. of gold, valued at £920 14s. 6d. The aerial tramway has been completed between the mill and the hoppers at the low level. This tramway is now one mile and a half in length, having seventy-two buckets capable of holding 160 lb. each. 35 tons of ore can be conveyed to the mill in eight hours. Forty-five men were employed.

*Grace Darling Mine* (Area, 90 acres; owner, Grace Darling Gold-mining Company; manager, Samuel Draffin).—Work in this mine has been confined to further developments in the levels already opened on the reef, which averages about 6 ft. in width, the greatest body of quartz being about 20 ft. in width. The company has had the property under offer to a syndicate, which is endeavouring to introduce capital for the more thorough working of the mine, and the erection of improved machinery for ore-treatment. Mr. Samuel Draffin, mine-manager, gives the following information about the mine:—

"No. 1 level has been extended 40 ft., and another rise has been put up a height of 40 ft., the ore from both places being of fairly good quality. In No. 2 level, five additional rises have been put up an average height of 38 ft. each. The ore from some of these rises is of good quality, the reef averaging about 6 ft. in thickness. The stone is of a friable description, and favourable assays are generally obtained, valued at £1 5s. and upwards per ton. Two winzes have been sunk from this level to a depth of 70 ft. and 50 ft. respectively. The ore in the deepest winze is of rather low grade, but the lode is about 20 ft. in width. In the other winze the reef is about 6 ft. wide, and some first-class ore has been obtained from it. These winzes have been suspended, owing to the influx of water, but this will be drained off as soon as the low level is extended. The Portsea low-level cross-cut has been cut down and enlarged for a distance of about 100 ft. When this has been completed it will form the main travelling-way in the projected scheme for future operations. The levels are all securely timbered and ready for stopping out the quartz. A large quantity of kauri timber has been felled and crosscut, which is intended for use