

factory to note that it is confined to the Martha, and that the Empire lode at the 1,151 ft. level shows ore of equal value to that in the upper levels. At the western face of the level this lode is 12 ft. wide, and contains very good ore. At the same level the Edward lode westward is a wide and rich ore-body; a winze therein sunk near the face to a depth of 100 ft., the deepest development on the gold-field, proved the value to descend unimpaired. The Royal lode at both faces of the level showed 14 ft. of ore of fair grade. An important development of recent date is the intersection of a new lode, the Dreadnought, at a depth of 1,236 ft. when sinking the No. 4 shaft. This lode, which occurs in promising hard dacite country, bears 33°, underlying about 1 in 3, N.W., and in the shaft is about 5.5 ft. in width, the assay value being payable. Unfortunately a considerable influx of water from the intersection of the lode system in the No. 4 shaft has caused a temporary cessation of sinking operations.

Good progress has been made with this company's Hora Hora hydro-electric power scheme. It is anticipated that during the current year power therefrom will be available at the Waihi Mine.

The Waihi Grand Junction Mine was similarly affected by the strike, this year's operations being confined to less than five months' work. At this mine an extension of the lode-system developed in the Waihi Mine occurs. None of the lodes in this mine as yet developed show signs of leaching, as in the case of the Martha lode at the Waihi Mine; but the Royal lode at the 1,082 ft. or deepest level is rubbly and crushed, is inclined to pinch, and the value is low. The Martha lode has been valueless below the No. 4 or 794 ft. level.

At other Waihi mines no development of importance occurred during the year.

On the *Karangahake Goldfield* the Talisman Mine worked throughout the year with profitable results, producing its record output, value £246,569, and declaring £125,062 10s. in dividends. At the deepest, or No. 14, level (being 700 ft. below the Waitawheta drainage adit) a considerable amount of driving north and south was carried out, and the Bonanza and Dubbo shoots were proved. Driving is being continued in search of the Talisman shoot, not yet proved at this level. Development at depth has been considerably retarded during the year owing to the heavy flow of water, but short drives on the lode north and south from No. 12 winze, sunk about 45 ft. below No 14 level, show the Dubbo shoot to split at the north face, and to be inferior generally to what was found in the level above. Unfortunately, this development has been suspended for some time owing to excessive water. The Woodstock shaft, which it is proposed to utilize as the main pumping and winding shaft for the mine, had at the end of the year reached a depth of 454 ft. below the engine-chamber. After sinking a further 50 ft. it is proposed to prepare a chamber for No. 14 level and to install the Cornish pumps (in two sections). Driving will then be proceeded with to connect with the principal mine-workings.

The New Zealand Crown Mine has suffered a decline both in the value of bullion produced and in the quality of ore treated; nor has mining-development disclosed anything of importance. A vacuum filter plant has been installed, by which an improved extraction is anticipated.

The Waihi-Paeroa Gold-extraction Company have been very successful with their newly laid-down gold-extraction plant, consisting of union vanners, twenty-two tube mills, pneumatic tanks, and vacuum filters installed on the banks of the Ohinemuri River near Paeroa, below the Waihi and Karangahake Mines, for the purpose of re-treating the sands discharged into this river from those mines. The Gold-extraction Company elevate the sand by air-lift from the banks and river-bed into barges of about 80 tons capacity, by which it is transported to the works, the air-lift system being generally adopted at the works. During the year 84,178 tons (of 2,240 lb.) were treated, for a return of £33,811, being an average recovery value of 8s. per ton, which is slightly less than the average return from the sand treated by the same company in their original works situated higher up the stream. The evidence supplied by this profitable reduction of the average Waihi tailing discharged into the sludge-channel is not favourable to the milling practice formerly in operation at Waihi. This company declared dividends amounting to £6,250 during the year.

*Thames Goldfield.*—During the past year interest in this once famous goldfield was almost solely confined to the Government-subsidized exploration of the 1,000 ft. level. Under an agreement dated the 8th February, 1910, between the Government and the companies interested, it was decided to drive a main crosscut at a depth of 1,000 ft. from the Queen of Beauty main pumping and winding shaft to a point directly under the Kuranui-Caledonian shaft, a total distance of 2,748 ft., and from such crosscut to drive subsidiary crosscuts, in length 1,300 ft., into the claims of the contributors. After the companies had expended £12,000 in terms of the agreement, the Government paid a previously agreed-upon subsidy of £5,000 for expenditure upon this work, which was subsequently continued by the companies, who, by the 20th August, 1912, had expended £15,754 in addition to the Government grant. On the 26th September a further grant of £1,000 was made by the Government, conditionally upon the companies providing a similar amount. When 2,362 ft. had been driven in the main crosscut, broken ground was encountered, presumably in the vicinity of the Moanataiari slide or fault. In the interest of life, and in compliance with the Mining Act (section 254), Mr. B. Bennie, Inspector of Mines, directed that a borehole should advance ahead of driving operations. Accordingly, a horizontal hole was projected by Government diamond drill, and at a distance of 128 ft. the main slide was penetrated, from which a powerful influx of water, mud, and gas occurred, which inundated the end of the drive, and caused the men to hasten from the mine. A pressure-gauge subsequently attached to a tube inserted in the borehole registered a pressure of 300 lb. per square inch, equivalent to a static head of 700 ft. As a result of this broken ground having been proved, it was decided to discontinue driving upon that course, and to divert the crosscut by driving direct from under the Waiotahi main shaft to a point 50 ft. west of the Kuranui-Caledonian shaft, the ultimate terminus, a distance of 650 ft., thereby keeping to the westward of the slide. In addition to 2,362 ft. of main crosscut driven, the subsidiary crosscuts had been driven therefrom at the end of 1912 in the Saxon Mine 400 ft. towards a point below the Saxon shaft. Towards the Moanataiari Mine 400 ft.