*Macetown District.*

*Premier Mine* (Area, 52 acres 3 roods 21 perches; owners, Glenrock Consolidated, Limited).—This mine is worked from an adit 2,000 ft. in length, from which, at a point 1,600 ft. from the entrance, an incline has been on the strike of the reef, with a grade of 1 in 4, the winding from which is done by an electric motor, the dynamo being driven at the battery, from which cables lead into the adit tunnel. Prospecting work is also being carried on at a level 180 ft. above the main working adit. Mr. W. J. Stanford, general manager and engineer, has given the following account of the works carried out and other matters in connection with the mine:—

"The past year's operations up to the present date have been most successful—in fact, it is the first year that the mine has been self-supporting. Not only has it been self-supporting, but at the present date has also remitted the sum of £3,150 to London clear of all charges. Since the golden chute was picked up again in October, 1896, it has continued steadily, on an even downwards pitch, up to the present date. The grade of the incline has never been altered from 1 in 4, and it has carried the bottom of the golden stone the whole way. A new and interesting feature in the occurrence of the chute is that, while before the fault was met with in 1895 the chute was in one continuous block of about 40 ft. wide, now below the fault the chute is apparently split in two, and there are, as it were, two separate chutes having exactly the same pitch one above the other, and separated by about 20 ft. to 25 ft. of mullock or barren-lode filling. It is an open question whether the two blocks of golden stone are not on two separate and distinct lines of reef. The foot-wall and hanging-wall in the incline are very well defined, but as we rise in the stopes they separate. The foot-wall, a hard strong wall, leads up to the upper block of "golden stone," while the lower block of "golden stone" carries the hanging-wall of the incline to form a separate pair of walls of its own. It is just as if there were two lines of reef, each with its own chute of gold, and the two lines converge and meet in the incline. Each block of stone is from 20 ft. to 25 ft. in width, but, while the lower block will only mill about 10 dwt., the upper block is good for from 1 oz. to 1¼ oz. to the ton. A crushing taken only from the upper block in May, 1897, yielded 516 oz. 17 dwt. 12 gr. from 400 tons crushed; value, £2,082 4s. 1d., or 1 oz. 5 dwt. 20 gr. to the ton. In October a similar crushing gave 434 oz. 11 dwt. 12 gr., or 1 oz. 3 dwt. 11 gr. per ton. We are now trying to equalise the returns by mixing the blocks as far as possible. The incline measured on the 26th February, two days after your visit, 724 ft., and is now about 150 ft. below (vertically) the adit level. The rate of hauling has been increased to 100 ft. a minute, and we are able to bring three trucks up at a time, each holding 12 cwt. of quartz, and, as the dynamo and motor are not now being driven anything like up to their full capacity, as we get deeper, by increasing the size of the rope, by driving the dynamo from a separate water-supply, we shall be able to haul up six trucks at a time. I think there will be no difficulty in going with the present gear to a depth of 3,000 ft., and, as it will take up fully six years to reach that depth, there is no immediate anxiety about our hauling capabilities. No other work has been done in the Premier Mine during the year outside the operations to keep the mill supplied, except repairs to main levels. There was a length of about 300 ft. close to the hauling machinery where the tunnel was fast closing in, and this has been retimbered throughout with strong timber. Again, the high level, 180 ft. above the low-level adit, having been abandoned for some years, was in a complete state of collapse, and £300 has been spent in four months' work before driving ahead to prospect the ground could be resumed. The quartz, after being hauled up the incline, is drawn by horse-power through the adit 1,600 ft. to the surface; thence about 100 yards to a quartz paddock, where the trucks are tipped, and return to the mine. A tram-line 200 yards in length connects the paddock with the mill. The trucks are filled by means of a shoot below the paddock, and run by a boy to the grizzly shoot at the mill. The grizzly is 10½ ft. long, and formed of 3 in. by ⅞ in. iron, the bars set 2½ in. apart. The whole grizzly is 3 ft. wide. The finer quartz passes through the bars, and is carried by means of side-shoots to the ore-bins behind the mill. The coarser stone goes straight on into the stone-crusher, which is a Blake-Marsden, 15 in. by 10 in. jaws. There are two ore-bins, one behind each ten head of stamps, and holding respectively 24 tons and 40 tons when full. The stone is fed into the mortar-boxes by the vibration of the mill, which works fairly well as long as the stone is quite dry, but directly the stone is sent at all wet the feeding is most irregular. Unfortunately, we are cramped for space and fall, and it is impossible to get in automatic feeders. During the past year the old shanks and tappets have been replaced by new and heavier ones, increasing the weight of each stamp from 600 lb. to 750 lb., and increasing thereby the crushing-capacity of each five head of stamps from 30 tons per week of 144 hours to 50 tons in the same time. The gratings used on the mill are punched Russia iron, 189–200 holes to the square inch, which is equivalent to wire-cloth of 725 holes to the square inch. The pulp passes from the boxes into a trough, and thence over blanket-tables. In front of each box there is first a length of 8 ft. by 6 ft. of table, divided into three strakes, and it is on these that the bulk of the gold is caught. These strakes discharge into a trough, and thence over another set of three 12 ft.-long blankets. The top blankets are washed every hour and a half, and the tail blankets every two hours and a half, and these concentrates are passed through berdans charged with 25 lb. of quicksilver. The concentrates, freed of all their loose gold, pass on in launders to the cyanide-works, where they are treated with satisfactory results. Samples of the mill tailings are taken at the tails of the blankets every hour, and these samples are assayed regularly, showing that the average total loss does not exceed 1 dwt. 7 gr. per ton. The cost of all milling charges, with only fifteen head of stamps running, averages 3s. per ton, one man and one boy being employed on each shift; and this very low cost will be considerably reduced next month when the other five head of stamps which is now being added to the mill is in running-order. The mill is driven by a 6 ft. Pelton wheel, under 560 ft. of pressure, using from 45 to 60 cubic feet a minute. In common with other companies who depend on water for their power, we suffer from the very dry months in summer and from the