

lost the shoot in this mine that had been traced without a break in January, 1896, just after we started sinking below our low-level adit. The shoot faulted on a cross-course, and all endeavours to trace it failed. As the line of reef did not fault, we continued sinking the incline on the reef on an even grade of 1 in 4. In May, 1896, we struck a little gold in driving, but further driving on this gold, and a rise put upon it, failed to disclose anything of value. From the top of the rise 25 ft. above the incline we put in a long cross-cut 70 ft. in length, following a cross-course the whole way, which led to a new line of reef, but no gold was discovered. The rise was abandoned and the incline continued. In October, however, there was a large fall from this abandoned rise, exposing a large body of ore. This was at once attacked and stoped out, and in order to get filling for these stopes the walls of the 70 ft. cross-cut were broken down, when another reef and large body of ore was exposed on the west wall. The May, 1896, prospecting works just missed these bodies by about 2 ft., and pure luck afterwards exposed them. The mine promises very well at present.

*The Gallant Tipperary Mine* (Area, 47 acres).—This mine has been protected, therefore no work is recorded.

*Farrell's Claim* is also held under protection for the purpose of flotation.

*Sunrise Mine* (Area, 56 acres).—This mine, which is situated at Advance Peak, at an altitude of 5,000 ft. above sea-level, is the property of the Glenrock Consolidated Company. The ground has been prospected by driving the low-level tunnel and prospecting near the old workings. The rock consists of broken schist country, and the quartz is found in broken blocks of rusty compact stone, very rich in some places but worthless in others. In extending the low-level tunnel and prospecting in old workings for gold one good block was struck during the year. A sample of 30 lb. yielded by amalgamation at the rate of 11 oz. per ton, but 4 tons crushed only yielded 1 oz. 3 dwt. gold. This mine can only be worked during the summer months—November to May—on account of its great altitude. The peak is covered with deep snow from June to November. Developments promise well, but a new adit is wanted at a much lower level to enable operations to be carried on all the year round. Four men were employed.

*Tipperary Mine* (Area, 105 acres).—This mine is owned by the Westralia and New Zealand Gold Explorers (Limited), and is situated in the Shotover district. It is opened up by a cross-cut adit 1,930 ft. in length. The reef, after being cut, has been driven on a distance of 490 ft. The reef is in mica-schist rock, and averages 4 ft. in width, with an underlie of 68 degrees, and strike of about 18 degrees north of west and south of east. Low-level adit struck lode on the 11th February, 1896, and since then 270 ft. has been driven west on reef and 220 ft. east; also connected with an unwatered old workings 62 ft. above low-level adit. The gold only occurs in narrow shoots or blocks of quartz. The shoot now being worked is 60 ft. in length and from 1 ft. to 8 ft. in thickness, and has been opened up through the whole of the distance between the two adit-levels. It has no pitch, but runs vertically, with the underlie through the lode. Except for these occasional shoots the rest of the lode is barren. Ten-stamp gravitation mill, 650 lb. stamps, recently replaced by new stems and tappets, American principle, giving 750 lb. stamps; power, Whitelaw turbine, driven by water, about three heads and 70 ft. fall, giving about sixty-eight to seventy blows per minute, and crushing 1·3 tons per stamp per day. When sufficient quartz is available, ten stamps are used. At the 31st March, 1897, 1,234 tons crushed produced 369 oz. 11 dwt.; value, £1,490 13s. 9d. The gold is caught on copper-plates immediately outside the mill, and then on a 24 ft. by 12 ft. blanket-table. The blanketings are passed through a berdan. Fourteen shillings per ton is the cost of mining, and the cost of crushing is 4s. per ton. All wages-men are employed, the number being variable, never less than six nor more than thirty, depending on gold and funds available.

This company has been recently reconstructed in London, and the name changed from the Tipperary Gold-mine (Limited) to the above. The new company is formed with a capital of £52,501 15s., divided into 210,007 shares of 5s. each, each share being credited with 3s. paid up, having a liability of 2s., of which 6d. has been called up to date. The new company was registered in London on the 1st January, 1896. Nothing of value was struck in this mine until October, 1896, when the shoot of stone at present being worked was struck in the No. 7 level, the lowest level of the old 1887 workings, 62 ft. above our new low-level adit. A crushing at the end of October, 1896, of 101 tons yielded 60 oz. 17 dwt. bar bullion, but since then the results have been most disappointing, the yield in bulk being only 5 dwt. to 7 dwt. per ton. There are now, however, signs of an improvement, the quartz coming to hand being worth about 11 dwt. per ton. There is still about 1,000 tons of quartz unstoped above our adit-level. We are shortly preparing to sink with a small pit-engine below the level. During the year two new water-races have been cut in, one 500 yards in length to assist the turbine water, and one 200 yards in length to supply water for the plates and blanketings. At the mill the old shanks and discs have been replaced with new and heavier ones, and an amalgamating-barrel and shaking-table have been put in to assist the berdan with the blanketings. A reverberatory roasting-furnace capable of treating 1 ton per day has been erected at a cost of £145, and a small cyanide plant capable of treating 5 tons in six days has been added to the mill plant, to treat the blanketings after having passed them through the berdan or barrel. The pyritical sand is heavily charged with arsenic, and is valued at from £7 to £8 per ton. Treatment was started in April, and at first was not at all successful, the first run of 22 tons only giving 51 per cent. extraction, and the second run of 15½ tons giving a 73-per-cent. extraction. After several modifications in the method of treatment complete success has been obtained, and we are now obtaining 100-per-cent. extractions by a combination of cyanide and amalgamation. After roasting the mercury would not touch the gold, though apparently free, and visible to the naked eye in the pan. Cyanide treatment only gave low extractions, but after cyaniding the residue was passed through the mill and the gold was then found to amalgamate freely. It takes a little over half a cord of wood to roast 1 ton, and costs £1 15s. without labour. Mr. Walter Stanford, the general manager, supplied the above information.