

gear, and the cages with safety appliances. A 10 in. diameter hollow plunger, with 3 ft. stroke, driven from a 30 ft. diameter water-wheel, raises the water direct to the surface. Mining operations are chiefly confined to the west side of the stream, from an adit 20 ft. above ordinary stream water-level. The quartz is passed down to the low level, which connects with the shaft. A considerable amount of prospecting in cleaning out and extending old workings has been done, but no developments of importance have been made, and all work has been suspended for some time past.

*Kirwan's Hill, Victoria Range.*

In October, 1897, the Anglo-Continental Gold Syndicate took up an option of four properties belonging to the Kirwan's Reward Gold-mining Company (Limited)—namely, the Lord Brassey, Earl Brassey, Lady Brassey, and Kirwan's Reward Special Claims. At the time the option was taken up a large amount of highly auriferous quartz was scattered over a considerable area on the surface of the Lord Brassey Special Claim. Gold could be seen freely in most of the stones, and the shareholders were in high expectation that a reef would be easily found. Since then a large amount of surface-prospecting, as well as tunnelling, has been carried on without a reef being struck *in situ*. The work now done shows clearly that a large slip has at one time taken place from the western ridge eastwards. Several shafts have been sunk on different portions of the property through broken rock for a depth of from 40 ft. to 60 ft. A large quantity of highly auriferous quartz has also been found, almost in the same position as it had originally occupied in the lode, 40 ft. below the surface, with broken rock and clay on top of it. At the place where this broken material joins the solid rock there is a layer of very soft puggy clay, indicating the direction the slip had taken. From what is now known of the quantity of rich stone that can be got on the surface, it is something like 1,700 tons, which is expected to average fully 1 oz. to the ton. There is an area of about 8 acres covered with fine quartz and clay, where good prospects of loose gold can be got. This material could all be treated with a profit if a small crushing plant were on the ground. The Anglo-Continental Syndicate has lately given up the option of the property, the reason assigned being that the price they originally arranged to pay is now considered far too high for the chance of finding a lode. They still, however, retain over one-third of the property, and have taken up their position as shareholders. A meeting of the Kirwan's Reward Gold-mining Company is to be held in June to decide as to the method of further working the property, and also to arrange for erecting a battery to treat the quartz now lying on the surface.

*Boatman's Exploration.*

On this property prospecting is principally carried on by sinking shafts 6 ft. by 3 ft. No. 1 shaft is situated about 4 chains east of Kirwan's Reward, and No. 2, 3 chains south of the Lord Brassey, and are sunk to depths of 12 ft. and 15 ft. respectively, and close-timbered. The ground sunk through is a formation of loose slate intermixed with small particles of quartz. Mr. J. McPafferty is mine-manager.

REEFTON DISTRICT.

*Crushington.*

*Hercules Mine* (Area, 16 acres 1 rood 37 perches; owners, Hercules Gold-mining Company).—Operations in this mine for the year have consisted in prospecting, which was principally carried on in No. 7 level. It is now proposed to do some prospecting in the No. 6 level, to further develop the reef formerly worked at this level.

*Keep-it-Dark Mine* (Area, 56 acres 1 rood 14 perches; owner, the Keep-it-Dark Gold-mining Company, Limited; mine-manager, Edwin Bray).—This mine is worked from two shafts, the depths of which are—main shaft, 500 ft.; No. 2 shaft, 525 ft.; the greatest depth of workings below the surface being 992 ft. from the brace of the main shaft, and 1,180 ft. from the outcrop of the reef perpendicularly. The number of levels opened is seven, but those in which most of the work is being carried on are the Nos. 1, 2, and 3. The principal operations for the year were the opening-up and developing of a new reef which was disclosed early in the year 1898 in close proximity to the main shaft. The reef was discovered while driving from No. 1 level (which is 150 ft. in depth from the brace), and is driven on in this level for more than 156 ft., and measures fully 9 ft. in width. In No. 2 level—which is 313 ft. down from the brace—the reef was also met with, and driven on for a distance of 174 ft., still maintaining the same width as in the level above, but showing a better quality of stone. A rise has been put up from this level to the No. 1 level, and from the No. 1 to the surface, which is the means of supplying good ventilation, and these rises will greatly facilitate the filling-in of the stopes with mullock from the surface as the reef is taken out. In the No. 3 level, which is 476 ft. in depth from the brace, a drive is being put in to intersect the reef, which is expected to be met with at about 60 ft. from the present face, and, should the lode prove to be of the same dimensions on this as on the two levels above, there will be a height of over 400 ft. of backs to be stoped out. The stone that was crushed during the year was that taken from the driving of levels and putting up rises on this reef, consequently the battery has only been running intermittently. By various tests which have been made of the tailings it is found that a very large amount of fine gold escapes, therefore the company is erecting an extensive plant for the treatment of the whole of the tailings by cyanide, which will no doubt greatly increase the yield. The mining machinery consists of one overshot water-wheel, 16-horse power, used for winding, and valued at £225. The milling machinery, which is driven by a Pelton wheel, consists of a twenty-stamp battery of 7 cwt. each stamp, and three berdans; value, £3,400. The total quantity of quartz crushed for the year was 2,184 tons, for a yield of 911 oz. 9 dwt. 13 gr. of gold; value, £3,639 15s. 11d. Thirty men were employed for the year.

The Keep-it-Dark cyanide plant, the erection of which is nearly completed, consists of six circular vats, each 22 ft. 6 in. diameter and 5 ft. deep. Each vat will hold for treatment rather over 50 tons of tailings. There are also three solution-sumps—one is 18 ft. diameter and two are each