

towards the Try Fluke ground, as they had some good ore near their southern boundary. The reef was followed from the point of intersection to a distance of 200ft., the lode widening out in some places to 12ft. in thickness. The reef has been stoped above this level for a rise of about 70ft. and for a length of about 40ft. Another block has been taken out for a length of about 30ft. and a rise of about 70ft. A winze has been sunk on the lode, at a point 160ft. north of the cross-cut, to a depth of about 50ft. Some ore which was sent to Ballarat for treatment was reported to have yielded bullion to the value of £11 per ton. Two tons were also sent to the Thames School of Mines for treatment by pan-amalgamation, and gave an assay-value of about £25 per ton. The lode has been followed in a southerly direction for about 200ft., and through a good-looking class of country, having the walls well defined. The lode itself lies at an angle of about 65°, and carries gold in a greater or less extent for the whole length—one vein, of a brownish colour and running close to the hanging-wall, being particularly good. The first indication of the vein was small and irregular in size, but it gradually widened out in going southward. A rise was put up on the lode at a point 160ft. south of the flat sheet in the cross-cut, when ore 2ft. in thickness, and of a rich quality was found, and showed gold freely. This seam is undoubtedly the richest portion of the lode; but, as a matter of fact, the whole of it carries payable ore from the foot-wall to the hanging-wall, although some portions near the centre are of a very low grade. The gold is similar to that found in the Try Fluke Claim, being of an extremely minutely-defined character, it being almost impossible to pan it off in a tin dish. After pounding up the ore in a mortar to try a prospect by washing it in a dish, if the dirty water from the washing be poured into another dish, it will be found that the quantity of gold carried away in the muddy water will be equally as much as that found in the first prospect.

*Surface Arrangements.*—A furnace has been constructed near the mouth of the cross-cut, and a 6-in. pipe leads from the furnace through the cross-cut and south drive up to the face. This exhausts the foul air; whilst another pipe, leading from the north drive, and giving a plentiful supply of air from the Try Fluke workings, is laid up the rise. A tramway from the drive is extended along a siding to a hopper into which the quartz is discharged. This hopper is capable of holding 200 tons of ore, and the latter is conveyed along a tramway, 12 chains in length, to two kilns, where the ore is dried ready for the crushing. Each of the kilns is 16ft. in diameter at the top, has a depth of 27ft., and is capable of treating from 70 to 80 tons of ore. The dry ore is removed from the bottom of the kiln and conveyed by trucks along a tramway, 4 chains in length, across trestle-work, to the top of the battery-house, where it is discharged into feeding-hoppers.

*Reduction Works.*—The reduction plant is what is known as the Austral-Otis Crusher or Grinder. The motive-power is supplied by a boiler and engine manufactured by the Austral-Otis Company, Melbourne. The boiler is constructed partly on the Cornish and partly on the multi-tubular principle, and is 12ft. in length and 5ft. 6in. in diameter. The engine is horizontal, and is of nominal ten-horse power. The Otis mill is 6ft. in diameter, 4ft. wide, and can be driven at a speed of twenty-five revolutions per minute. In addition to one coarse set of screens, it has two other sets, of forty-mesh wire-cloth, through which all ore has to find its way. Before reaching its discharge at the bottom, the pulverised ore is led into an iron cylinder, moving at the rate of twelve revolutions per minute. This revolving cylinder feeds the ore into an elevator at the rate of a ton per hour. The elevator is merely a belt with twenty buckets passing an enclosed box, and raises the pulverised ore to a height of 38ft., discharging it into a hopper, set diagonally, and capable of holding 30 tons of ore. This hopper has four discharging doors, from which the percolating cyanide-vats can be filled without either trucking or handling. There are four percolating-vats, each 16ft. 6in. in diameter and 4ft. in depth. The reservoir containing the cyanide solution is placed at a higher level, and of 11ft. 6in. in diameter and 4ft. 6in. in depth. The sub-vat, which is on the lowest level, is about the same size as the percolating-vats. The discharge from the percolating-vats is at the bottom, near the centre, and not, as is usually the case, from the sides. They were made in this manner as it was thought it would afford greater facilities for sluicing out. The plant is guaranteed to be able to treat from 15 cwt. to one ton per hour, according to the nature of the ore; whether it is capable of treating this quantity in the specified time can only be ascertained by future tests. Hitherto the Otis machine has not proved a great success, especially with hard ores, the wear-and-tear being very great, and the quantity which it has been found able to pulverise has failed to realise the anticipations of its inventor. It is considered that the engine-power in connection with the company's plant is more than sufficient to meet present requirements, and space has been left available for another plant of similar character, which can be erected if it is found necessary to do so.

*Red Mercury.*—The returns from this mine during the previous year were so disappointing that very little mining operations were carried on in the early part of the present year. The company being in financial difficulties had to succumb, and the property was sold, the purchasers forming what is now termed the Venus Company to work the property. Previous to the sale, which was effected in October last, only 18 tons of stone from the mine was crushed, which yielded 7½oz. of gold. Since the present company have commenced operations it has been working below the No. 2 level, and taking out a block of stone there, from which 180 tons gave a return of 307oz. 17dwt. of gold, making the total quantity of quartz crushed during the past year to be 198 tons, for a return of 315oz. 12dwt. of gold, while there has been on an average five men employed in connection with the mine.

*Great Mercury.*—The returns from this mine for the past year fall short of those of the previous year. The company owning it, having got into financial difficulties, suspended mining operations for six months, during which time the company was re-formed and fresh capital obtained to develop the mine. Since this reorganization took place the workings have been vigorously carried on from both