

2½ in. in diameter. Two of these nozzles with the head mentioned would discharge about 330 cubic feet of water per minute, and allowing that these wheels give 80 per cent. the power of the water, then the two dynamos required 82½-horse power to generate an electro-motive force capable of doing the work of 50-horse power. This is equal to the dynamos giving 60 per cent. of the power employed to drive them.

The power of the dynamos was increased by having new laminated armatures put on. These new armatures reduce the heat that was formerly generated with solid armatures, and turned it into electro-motive force; hence a greater amount of power now generated by the dynamos than was the case when they were first erected. This is worth knowing to any one who may make use of electrical machinery for mining, that the loss of power is not now so great as when the principle of driving a crushing-battery by electricity was first tested.

*Phoenix Extended Company.*—This company have sunk a shaft on the side of the creek, on the boundary of the Phoenix Company's ground, to a depth of 150ft., and have driven an adit-level from the bottom in a southerly direction to cut the south main lode that comes through the Phoenix Company's claim, but at the time of my visit they had not reached the distance at which they expected to find the lode. On sinking the shaft, two distinct lodes were passed through, but neither of them contained sufficient gold to pay for working. The shaft is 10ft. long by 3ft. 6in. wide, divided into three compartments—namely, two for winding, and one ladder shaft. The winding at the present time is done by a horse-whim, but if gold is struck it is the intention of the company to erect proper poppet-heads and winding-machinery. At the time of my visit there were six men employed.

*Maori Point Company's Mine.*—This mine is situated about two miles and a half below Maori Point, and about a hundred yards on the upper side of the road leading from Skipper's to Queens-town. The reef was first discovered in a small creek, where the water had laid bare the stone and showed a few specks of gold here and there. On the strength of this discovery, a crushing-battery of ten heads of stamps was erected. About 400 tons of stone were crushed, which yielded, on an average, 2½dwt. of gold per ton. Two low-level adits have been constructed, and only a trace of a quartz lode found in each of them. The company has let the mine on tribute, but from what I have seen there is little possibility of tributers continuing long at work in this mine. Indeed, the prospects of the mine never justified the erection of crushing-machinery, and its erection reflects very little credit on the judgment of those who were connected with its management and direction at the time. There were at the time of my visit six tributers, who have undertaken to pay 10 per cent. of the gold they obtain to the company.

*Gallant Tipperary Mine.*—This mine is situated on the southern side of the Shotover River, about a mile above the junction of the Skipper's Creek. It was known in former times as the Nugget, but on remodelling the company it got its present name. There is an adit-level driven into the range for about 1,500ft. before it cuts the reef, where the present shot of gold was found. The length of the shot of gold is from 100ft. to 120ft., and the reef is from 2ft. to 5ft. in thickness, which yields about 16dwt. of gold per ton. The reef has been stoped out for 80ft., and there is still about 200ft. of backs to work. There were ten men employed in the mine at the time of my visit. The workings are carried on in a haphazard manner, having little regard to the safety of the workmen employed in the mine.

Alluvial mining in the Shotover and Skipper's District is being carried on energetically; some of the claims are paying very well, especially Davis's claim on Pleasant Terrace and Johnston's and Aspinall's claims, at the junction of Skipper's Creek and the Shotover River. These claims have given very good returns during last year. There is still a large amount of alluvial ground in this district that would pay if a good supply of water could be brought on to the terraces at a sufficient elevation. This, however, is very limited at the present time, but I was told that a company has been formed to construct a water-race from Skipper's Creek to work the terraces below Aspinall's claim, and if this work is carried out I have no doubt that a deal of gold will be obtained. Any water-race having a good supply, and brought in at a high elevation, will be costly to construct; but unless this is done, the large quantity of auriferous drift in the terraces will never be advantageously or profitably worked, as the present water-supply is confined to the snow-water coming down the gullies from the mountains, and only lasts for a short season of the year. This season has been exceptionally wet, and has given an impetus to alluvial mining all over the district.

The large amount of gold obtained from the beds of Skipper's Creek and the Shotover River in the early days indicates that it came from slips off the sides of the mountain, and was deposited in the bed of the river by the light material being washed away, on the same principle as ground-slucing is now carried on, but on a far more gigantic scale; and the stones and shingles carried down by the force of the water have worn away a narrow deep channel in the rock. It is also evident from the large amount of river-drift on some of these terraces that the Shotover River flowed at a much higher elevation at one time than it now does. Even the loose material from slips which has never been affected by the river contains a large percentage of gold, which will be some day worked profitably when water is brought to bear on it. The more I see of this district the more I am convinced there is yet a very extensive field for hydraulic-slucing operations; but the great difficulty is obtaining a sufficient supply of water. The steep and mountainous nature of the country—in many places consisting of vertical rocky cliffs—renders a large water-supply a very costly undertaking; but the land is practically of no value except for mining and the gold that it contains, and every encouragement should be given to those undertaking the construction of a water-supply by granting large areas of ground as special claims at a cheap rental.

The time has gone by when individual miners can take up ordinary claims and work them profitably. Capital and labour must in the future go hand in hand to carry on mining on a systematic and intelligent basis. Companies with large capital only can cope with the difficulties that stand in the way of carrying on mining on commercial principles; and when sufficient attention has been given to this industry, and mining companies established on a proper footing, they will give