

interest is taken by the mining community in the erecting of the machinery. Should it prove a success it will open up a new means of utilizing the mountain-streams and rivers for motive power. The weakest point I observed in this was the wire that is taken between the dynamo and the Victorian motor: it did not appear to me to be sufficiently large enough to carry the current for the distance that the dynamos were situated from the crushing-battery; but I have recently learned that the electric appliance is now working very satisfactorily. The manager of this mine uses nothing at the present time but blankets for saving the gold coming from the crushing-battery. No attempt is made to save the pyrites beyond what adheres to the blankets; but the manager informed me that he has been conducting experiments for saving gold by a new process which so far have been very successful—viz., by using hydraulic troughs on something of the same principle as classifiers and pyramidal boxes for saving tin, but with this difference: that he intends to employ chemical action to convert the gold into a trichloride, and collect it in that state. This company is not sparing any expense where they consider any improvement can be made in crushing-machinery or gold-saving appliances. They are at present erecting a stone-breaking machine to pulverize the quartz as it is taken from the mine, previous to depositing it in the paddock near the battery. This will enable the crushing-battery to get through a much larger quantity of stuff. The pulverized quartz is taken from the paddock where it is deposited after going through the stone-breaker, into self-feeding hoppers, which act automatically and feed the stamps. As I have stated previously, it is only recently that this mine has shown signs of paying; but from February, 1884, to November, 1885, 6,400oz. of gold have been taken from the mine, while the total product is about 15,500oz. At the time of my visit there were seventy-eight men employed. The mine and crushing-battery being situated at a high elevation, it is only during the summer months that crushing can be carried on. There are several other quartz-leases taken up in this neighbourhood, but none of them have been so extensively worked as the Phoenix Company's mine; but now, when the quartz lodes have been fully proved to be rich in the precious metal, there is little doubt but what prospecting will be carried on with far more vigour than has been the case in recent years.

*Gallant Tipperary Reef.*—This quartz reef has been worked for about twenty years. Companies from time to time have been formed to work it—indeed, it may be said that the same company—the Gallant Tipperary—that is now at work took the ground up in the first instance; but, having expended all their capital, the company changed its name three times, and was re-formed with fresh capital. Nothing was obtained from this reef until about three years ago, when it was let on tribute, the company receiving 15 per cent. on the gross yields of gold. The tributors' time being up, and the mine promising to pay, the company are again working it, and are constructing a deep-level adit to work the stone advantageously, which will, when completed, give from 200ft. to 300ft. of backs. They have struck the reef in the deep level, which shows a little gold in the stone. The thickness of the reef varies from 2ft. to 4ft. This company has a crushing-battery of twelve heads of stamps, which is driven by a turbine water-wheel, the water being brought across the Shotover River in malleable-iron pipes hung on a wire rope. They use quicksilver and blanket-tables for saving their gold.

*Aspinall's Reef.*—This is a reef that was discovered about sixteen years ago, up Hardy's Gully, about half a mile higher up the range than the road from Maori Point to the sand-hills, by A. Olson, one of the original prospectors of the first quartz reef that was discovered in the Skipper's district. He sluiced the surface, and obtained about 60oz. of free gold by this process. Afterwards a company was formed to work the reef. This new company stoped out about 14 tons of stone, and sent it to a crushing-battery at Skipper's Creek, from which they obtained 48oz. of gold, after which they sunk a shaft on the lode; but, finding the quartz wedge out, they abandoned it. J. Aspinall took this ground up about four years ago, and has been prospecting it off and on ever since. Mr. Aspinall has driven 200ft. along the line of lode, and sunk several winzes, and has recently struck gold-bearing leaders about 18in. wide, which, from the appearance of the stone that is obtained from them, will average about 1oz. of gold per ton.

*Macetown Reefs.—Premier Company.*—This company are working a quartz reef up the right branch of Macetown Creek, about four miles above the junction with Arrow River. They constructed a tunnel from the face of the hill, at about 120ft. above the level of the creek, for 380ft. in length, when they struck a quartz reef containing payable gold. After striking this reef they drove 220ft. along the lode, and sunk a winze 60ft., from which they are now working. The lode is about 3ft. in thickness, and dips about 4ft. vertical to 1ft. horizontal, having a westerly strike, its course being about 290°, or west by north. The lode is being stoped out from the winze that is sunk in the main tunnel; and in the bottom-level the company is driving westerly along the lode on a dip inclination, conveying the quartz along from the passes on this level to the bottom of the winze in Cornish wheelbarrows, where the quartz is capsized and again shovelled into a small truck or bucket, to be hauled up to the main level, the winding being done by a small portable steam-engine placed at the mouth of the tunnel. The stone, by this means, which averages about 16dw. per ton, pays the company to work. It may not be out of place here to remark that the reason many of our quartz-mines do not pay for working is the extraordinary manner in which they are opened out and worked; which, I understand, is due in a great measure to the shareholders, who refuse to sanction any expenditure to open up the mines properly before commencing to stope the quartz out.