

Tipperary Quartz-mine, Macetown.—(14/9/96) : The low-level tunnel reached the line of reef some time ago, but up to date no reef at that level has been found. The supposed lode-line is still being driven on eastward, and will no doubt be continued for an indefinite distance so long as there is money available. There is a tunnel being driven westward on the level of the old workings, and at the time of my visit a small gold-bearing reef was making, but as yet no one can judge of its extent or value. In my opinion the continuation of the reef should be looked for to the westward and not to the eastward.

Sunrise Mine.—There is nothing being done at present on this reef in consequence of the large body of snow lying on the ground.

Lawrence Brothers' Quartz-mine, Bannockburn.—(17/9/96) : I found five men at the mine, three of them laying a tram on the surface from near the line of lode to a level a little above the battery plant. The other two men were sinking a shaft from the surface at the lode-line to a level that would admit of a truck being tipped on the battery floor. The shaft will be utilised as a shoot to hold and convey the stone to the battery trucks. The battery was idle at the time of my visit for the want of water, and the main adit on the lode was filled up with stone, so that I could not get into the mine.

Star Quartz-mine, Carrick Range.—(17/9/96) : Lawrence Brothers have purchased the old Star reef and battery plant of ten stampers, *minus* the engine and boiler, both of which were removed from the site some time ago. The new owners have already put in a tunnel 240 ft. to the reef at a level which will enable them to dump the stone from the tunnel-mouth into the bin in front of the stampers. The motive-power to be used will be a Pelton wheel, and the water is to be got quite handy, at a considerable elevation, from the Carrick Water-race, which gets its supply from Coal Creek. This creek empties into the Nevis. When the battery was working years ago the cost of coal delivered at the mine was £1 15s. per ton—£19 per week. The cost of water at the present time to do the same amount of work is estimated at £4 1s. per week; therefore, low-grade ore that would not pay to handle at this mine some years ago should now pay handsomely when crushed by water-power.

Golden Gate Quartz-mine, Carrick Range.—This old mine is in the neighbourhood of the Star Mine, and has lately been taken up. Some men are now engaged prospecting, with a view of getting out a trial crushing of a few tons. I did not visit the mine.

McCabe and Sons' Young Australia Mine.—(17/9/96) : This mine was worked extensively many years ago, and was eventually abandoned as not payable with a yield of from 6 dwt. to 7 dwt. per ton. McCabe and Sons, of Bannockburn, intend to give it another trial. An adit 60 ft. perpendicular below the floor of the old workings is now in hand, and at the time of my visit was driven 140 ft. in hard rock. The distance yet to drive to cut the reef is estimated at about 200 ft. It is said the lode is from 2 ft. to 3 ft. thick. If this statement be true, the mine should pay these men very well, since they can drive the battery by water-power at a probable cost of 1s. per ton for actual crushing. Timber is very costly delivered at the mine, which is situated on the top of the Carrick Range, where a body of snow was lying at the time of my visit.

Achilles Quartz-mine, Skipper's.—(21/9/96) : The working-places in all the levels (four) were examined and found in first-class order. The timbering in the main levels appears to be carefully attended to and renewed whenever found no longer able to stand the weight or side pressure. There is a fine body of stone, 8 ft. thick, at the bottom level, where gold is visible not only in the lode, but also in the laminated quartz schist 1 ft. or 2 ft. thick on the hanging-wall side of the lode, and this was particularly noticeable, I was told by the miners working at the face, where the schist is anticlinal in form. The gold in the laminations is thinly spread over the surface like paint. I could not find a specimen during the few minutes I was there, but the men and the mine-manager (Mr. W. G. Mowat) have promised to put a piece to one side for me, as an exhibit for the School of Mines or for my office in Dunedin. The battery plant is still being worked by the dynamo, but I understand it is the intention of Mr. Evans, the general manager, to utilise the water available in the locality on a turbine wheel, by which he anticipates getting sufficient power during the greater part of the year to drive the battery, and thereby he thinks the present cost of crushing can be very much reduced.

Leviathan Quartz-mine, Shotover River.—(22/9/96) : This mine is situate on the south side of Sawyer's Gully, about a mile above its junction with the Shotover, where the lode was opened. The first stone was crushed by the Gallant Tip battery, and the second lot by the eight-stamp battery lately erected on the spot, belonging to the company. This plant is fixed in the gully immediately under the line of reef, and is driven by a Pelton wheel with one head of water, having a pressure of about 300 ft. The outcrop of the lode is about 1,000 ft. above the Shotover, and is quite handy to a small forest of suitable mining timber. The stone is said to yield $\frac{1}{2}$ oz. to the ton. It is of good colour, and I saw gold in it. The stone is said to contain a considerable quantity of pyrites which carry a fair amount of gold. A second reef owned by the same company is named the Crystal Lode, and is situate on the opposite side, higher up the gully, and at a considerably greater elevation. Sixty tons of stone of the outcrop were crushed at the company's battery, and the yield was 12 dwt. per ton. An adit is now being driven to cut the lode, and at the time of my visit was driven 350 ft., which is supposed to be very close to it. The adit is supposed to be 4,000 ft. above the sea-level, and about 1,300 ft. above the Shotover. If the lode be cut by the drive, and if it be of equal value to the 60 tons crushed, it is proposed to erect an aerial tramway, probably half a mile in length, to the company's battery. The fall in that short distance is considerable.

SLUICING

Robert Johnston's Sluicing Claim, Shotover.—(22/9/96) : From Stony Creek the outer edge of the open face is about 600 ft. back. Mr. Johnston estimates the depth of gravel to be sluiced away as follows : From the surface, in places, there is 80 ft. of fine sand and gravel; then 40 ft. of fairly