

REPORT ON  
THE MINER'S DREAM MINE, MATHINNA

Introduction

The area enclosed by the boundaries of the leases of the Miner's Dream Gold Mining Company formed a part of the holdings of an English Company in operation here many years ago. This Company performed the first exploratory work, including the cutting of an underlay shaft and an adit. Ultimately this and the other holdings of the Company were abandoned.

About four years ago the Miner's Dream Gold Mining Company was formed in Hobart to re-open the mine, explore the vein, and if development proved satisfactory mine the ore and extract its content of gold. Early in the history of operations advice was obtained as to the best plan of action. It was considered that the prospects were such as to warrant the sinking of a main vertical shaft to cut the ore-body on its dip at a depth of 265 feet and the erection of a milling and concentrating plant. These works are now nearing completion. Having arrived at this stage the company considered that advice of the Geological Survey was desirable and the writer was detailed to undertake the investigation. The following report is the result of that work.

Situation

The properties of the Company, consisting of two 20 acre leases lie on the main fault line which extends through the new Golden Gate properties on the north-west side and the Jubilee on the south-east side. They are thus in the heart of the Mathinna goldfield.

Geologic Relations

The gold-bearing veins are contained in clay slates of the Mathinna series which form part of the great ordovician formation of sedimentary rocks. Granites and syenite granites of Devonian age - the intrusives responsible for the ore outcrop on both sides of the field and lie at no great depth below it. These granite rocks invading the older sedimentary formation fissured it and in the fissures thus formed silica and gold solutions were deposited. The upheaval and disruption of the sedimentary formation is marked by great fault lines which extend in a north-westerly direction through the field. The most prominent of these is that which passes through the Jubilee Miner's Dream and New Golden Gate properties. The disrupted part is 150 to 200 feet in width in which the minutely folded and puckered strata strike in a north-easterly direction. It is within the walls of this faulted ground that almost all the veins are found. Enclosed as they are the ore shoots are necessarily short, the fissures coursing a little north of west at an oblique angle to the direction of the fault walls. Along the walls of the fault, coursing north-westerly, more important bodies may be found. Favourable conditions for the circulation of solutions and deposition of ore are dependent upon the degree of lateral movement. In most places the channels along the fault walls, marked by much selvage,

are completely closed; in a few irregular veins of quartz fill the original fissures, but all the known bodies are unimportant and the quartz is nearly barren. The slates contained within the walls of the faulted ground are stained brown with iron oxide, those without are not.

### The Ore Veins

The underlay shaft sunk on the main ore vein is close to and parallel to the eastern wall of the fault. Short drives in that direction passed through the fault into barren ground. The vein where exposed is very narrow (6 to 12 in.) and consists almost wholly of quartz. Accessory minerals are pyrite, galena and gold. As the vein widens the proportion of gold decreases relatively. In some places the stone is very rich; in others it is so poor that it cannot be mined at a profit to the operator. Free gold is prominent in some sections, especially where galena is abundant. Pyrite and galena are precipitants of gold from solution. The vein courses in a direction a little north of west and dips at 30° to the south west.

### Development

The main mine opening is an underlay shaft sunk in a south-easterly direction a distance of 255 feet. From a point about 150 feet in drives were cut east and west, 70 feet and 38 feet respectively. That in the east side reached the wall in 20 feet and in the west drive the vein petered out in 12 feet. From the 250 foot wall the eastern drive passed beyond the vein at 10 feet, but on the western side the ore shoot continued to 107 feet. The stone, dipping at a low angle, is thin and rich to 45 feet; whence in the end it is wider and poorer and is inclined at a high angle. A little stone has been stoped above this level. A drive is now being cut on a thin section of rich stone a few feet above this level. Here the vein is sharply corrugated and its position is suggestive of an off-shoot from the main body. In this irregularly fractured county many branch veins are found.

The adit workings are 38 feet lower than the collar of the underlay shaft. They expose at 58 feet the end of a rich 15 foot shoot of ore about 8 inches wide. At this point a winze 22 feet deep exposes 12 inches of stone containing gold in the proportion of 12 dwt. per ton. From the bottom of the winze a south-east drive exposes a 12 inch shoot to 20 feet and a 4 inch shoot to 40 feet. The stone here is rather poor.

In the main shaft (215 feet deep) it is expected that the vein will be entered at 265 feet. This is a 12' x 4' shaft of 4 compartments. It is well equipped with the gear necessary to economical operation.

### Mine Equipment

At main shaft steam-driven winding and pumping plants and a three machine compressor plant for machine drills are employed, at the underlay shaft a steam winch and a small steam pump are in use.

### Milling and Concentrating Plants

These plants consist of a battery of 12 stamps

(each weighing 500 pounds) and two wilfley tables. Steam power is supplied to a small engine from a 20 horse-power locomotive boiler. The plant is well laid out and is comfortably housed.

#### General Remarks

The oft-repeated mistake has been made here of outlaying huge sums of money on unnecessary works. At this stage of development the erection of a milling and concentrating plant is not warranted. Again it is questionable whether the sinking of the vertical shaft is necessary - certainly not so until the one shoot is explored at greater depth from the underlay shaft. The prospects justify the extension of the underlay shaft, but not any other works. (It may be stated here that the greater number of the Rand Mines are worked through underlay shaft openings). There has been provided all the equipment for a big mine, yet at present it is a very small one, and the harrow vein to be opened on is short and erratic in its content of gold. The reserve of ore is sufficient only to keep the mill running on an 8 hour day basis not longer than four months. Moreover the cost of mining, transport, milling and concentration will be very heavy. Ore of lower average grade than one ounce of gold per ton is of no economic value to the Company. A parcel of ore weighing 14 tons, it is stated yielded gold in the proportion of 30 dwt. per ton. From ore of that quality a little profit may be obtained, but very little.

The Company now has no other safe course to pursue but crosscut from the main shaft in the hope that the vein widens at depth. From developments the indications point to that possibility. It cannot be expected that the vein will exceed 150 feet in length, but a fault-wall vein may be discovered in these explorations.

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