

REPORT

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*Richardson's*CHESHIRE'S PROSPECT AT GULLY, MANGANA.LOCATION AND ACCESS.

This prospect is situated on the north-eastern side of Richardson's Creek about three to four miles north-west of Mangana.

The nearest reefs are those of the Alpine and Buckland Mines situated about one half to one mile to the south-east.

Access is gained by a cart track from Mangana which follows the southern bank of Richardsons Creek. With a small amount of work (cutting of scrub, logs &c.) a car will be able to reach a point within half a mile of the prospect.

TOPOGRAPHY.

The country in the vicinity of the prospect represents a deeply dissected plateau. The streams have cut deep gorges into the plateau and have very steep sided valleys.

Richardson's Creek and a small tributary from the north have carried out the corrodng in the vicinity of the prospect. The reefs outcrop at a height of 200 - 300 feet above the bed of the tributary and thus offer good facilities for mining by adits.

GEOLOGY.

The rocks consist of the slates and quartzites of the Mathinna series which occur throughout the gold fields of north-eastern Tasmania.

Owing to lack of exposures the strikes and dips could not be determined satisfactorily. The strikes appear to be generally north and south and the dips are at high angles sometimes to the west.

ECONOMIC GEOLOGY.

A number of outcrops of quartz were located, many of these being, however, of the nature of loose fallen blocks. Numerous trenches along and across the outcrops in an attempt to expose the quartz reefs. These have given much evidence as to the number, extent and trend of the reefs, but they are not sufficient to definitely determine these factors.

The workings are arranged along a general line from N.N.W. to S.S.E.. Examination of the workings does not however show that there is one reef with such a trend but rather that there are a number of parallel reefs with a general north and south trend. The evidence at the time of the writer's visit tended to prove the presence of four reefs, though further work may cause an alteration in the number. It will be considered that four exist and in the following descriptions these will be called from west to east the Nos. 1, 2, 3, & 4 reefs.

NO. 1 REEF. - This is the most western reef and is exposed in the northernmost workings. Two irregular trenches have exposed the reef over a length of 10 yards. It is striking North and South and dipping to the west at 60°. The quartz was somewhat ironstained and had a sugary to glassy appearance. Two samples were taken across the reef. No. 1 was eight inches across and five feet below the surface (it included that portion of the reef which had previously assayed 26ozs. of gold per ton) and gave a result of 3dwts. 3grs. of gold and 20grs. of silver per ton. Sample No. 2 was two feet lower in the cut, but was 10 inches wide and gave only traces of gold and silver.

Three yards to the south a small trench exposed the reef which appeared to be vertical. The quartz contained cubes of pyrite.

Seven yards further south, an irregular excavation exposed numerous loose blocks of quartz on the line of the above reef. The quartz contains numerous fragments of unreplaced slate and free gold is visible in some specimens.

The No. 1 reef has, therefore, been exposed over a length of 13 to 20 yards. It has a high westerly dip at the northern end but appears to be vertical to the south. The two assays are not promising, but of course cannot be expected to represent the whole length. Further sampling should be carried out when the reef is opened up.

NO. 2 REEF. - This reef occurs about six yards east of the No. 1 reef and has been opened up in two places. At the northernmost excavation the relations are indefinite, but there appears to be a reef 2½ to 3 feet wide. It dips easterly and the slates of the hanging wall have a similar dip. Slates appear to the west, as do also loose (?) blocks of quartz apparently shed from the reef.

In the next opening to the south, only the eastern side of the reef is exposed and it has an easterly dip. The quartz is dark with unreplaced pieces of slate.

One yard to the south the reef is apparently in the solid and dips easterly.

Two yards further south pieces of quartz occur but the reef has not been exposed.

The No. 2 reef has, therefore, been exposed over a length of several yards. It has a general easterly dip. Sample No. 3 was probably taken from this reef and gave assay results of 10 dwts. 11 grs. of gold and 2dwts. 2grs. of silver per ton.

NO. 3 REEF. - Some seven yards to the east and four yards to the south of the south end of the No. 2 Reef, a trench was dug in slates but revealed no quartz.

Six yards further south, a trench along the reef exposed 20 inches of quartz. The reef was vertical or dipping at a high angle to the east the eastern wall being slates. Sample No. 4 was taken across the reef and gave a result of 2dwts. 2grs. of gold and 12grs. silver per ton.

The reef has not been traced further north or south.

NO. 4 REEF. - The remaining workings to the south of the last mentioned one all appear to be on one reef. Six yards south and three yards east of the last working loose blocks of quartz occur. Six yards further south an opencut has been excavated along the reef. The reef dips west at 40° - 60° and is 20 inches

wide at the northern end of the cut. Sample No. 5 from this place gave "Nil" results for gold and silver. The quartz contains pyrite, galena, chalcopyrite and possibly sphalerite. At the southern end of the cut a sample across 12" - 15" gave only traces of gold and silver on assay.

Between four and ten yards further south, loose pieces of quartz and the outcrop of the reef occurs. Gold is visible in many pieces of the quartz.

Two yards further south an excavation has revealed the eastern wall of the quartz which is dipping nearly vertically against slates. The quartz is whiter than in the more northern workings and does not contain unreplaced slates. Arsenopyrite is present in the quartz. Sample 7 across one foot of the reef gave results of 8dwts. 15grs. of gold and 2dwts. 21grs. of silver per ton.

Three yards further south an open cut was being started to expose the reef. This would be taken across the reef and then both north and south along it. Only slates were revealed at the surface on the line of the reef, but quartz was cut below them, indicating that the reef did not come to the surface or had altered in character to a flat spur.

Four yards further south a trench along a general North and South direction exposed a reef on the line of the above. The reef here is not so regular and trends more to the south-east and cuts across the bedding planes of the slates. The reef is 12 inches wide at the northern end of the trench but appears to split up or get narrower at the southern end. The quartz contains galena and chalcopyrite together with limonite (oxide of iron). Gold is readily visible in the quartz particularly in association with the limonite. This indicates the secondary origin of the gold. Sample No. 8 was taken across an eight inch vein at the southern end and gave results of 2ozs. 7dwts. of gold and 2dwts. 15grs. of silver per ton.

Along the line of this reef, quartz has, therefore, been exposed over a length of 25 yards. At the north end it dips to the west but towards the south it is irregular in dip and form. Gold is readily visible near the middle and the southern end of the reef, but it is of secondary origin.

#### CONCLUSIONS & RECOMMENDATIONS.

The work carried out to date has proved the existence of probably four parallel quartz reefs. These have a general north and south strike, and while Nos. 1 and 4 dip west, Nos. 2 and 3 dip east. The quartz is mineralised and contains pyrite, galena, chalcopyrite, arsenopyrite and probably sphalerite. Gold occurs in the quartz (primary origin) and in association with limonite (secondary origin). The gold content of the eight samples taken ranges up to 2ozs. 7dwts. per ton.

The conditions are generally such therefore, that a certain amount of further prospecting is warranted. The best gold values are near the southern end of No. 4 reef and this should naturally be the first place tested as is now being done. When the surface work is completed, work at greater depth should then be proceeded with. This is particularly important because the surface values cannot be expected to live down beyond the depth at which secondary enrichment ceases; and where values are those of primary reef alone. It is anticipated that this depth will be shallow and possibly within 50 feet of the surface.

A small amount of surface prospecting on the other reefs is also warranted and would naturally be followed by underground workings if results are satisfactory.

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GOVERNMENT GEOLOGIST.

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