

Introduction:

As a result of recent prospecting operations, it was claimed that indications pointed to the occurrence of free gold in the fine-grained porphyry of the Mount Mary area in the Cygnet district; so with the object of assessing the commercial possibilities of the occurrence a brief geological examination was made on Friday, 21st February, 1941.

The old Mount Mary mine workings are situated about three quarters of a mile south of the township of Cygnet and the area containing the prospects extend over a narrow tract of country west of the mine, a distance of approximately one mile, as it is wholly on private property, the prospecting rights are reserved under Permit to Enter, approximately 140 acres being held in the name of C. L. J. Hayes and 49 acres in the name of H. Nicholls.

Geology:

With one exception, the whole of the area examined consisted of typical, coarse-grained alkali-porphyry, with marginal areas represented by the fine-grained, dense porphyry. The porphyry is, without question, intrusive into the Permo-Carboniferous mudstones etc., which extend north for some miles; at one place only, was the actual contact observed, namely the most westerly of the trenches on D. Cripps' 49 acre block.

Prospects:

The prospects were confined to two zones, within the porphyry rock: these are known as the "Iron Blow" and the "Top of the Hill" prospects respectively.

THE "IRON BLOW" PROSPECT:

This occurrence is situated in a saddle on a prominent east-west ridge from Mount Mary, about 60 chains, west-south-west of the Mount Mary mine workings.

It was prospected, at least 16 years ago, by means of a small shaft which was stopped when the solid rock was reached; the present work was confined to cleaning the old shaft out and exposing a little more of the solid bottom. Some of the limonitic capping is strewn around the spoil heap but little remains in place to be seen; however there is sufficient evidence to make apparent the relationship between the limonitic capping and the pyritised porphyry that is the limonitic capping is an oxidation product of the pyrite with the consequent enrichment of the gold content. The primary gold content is indicated by the assay result of a sample taken across a two-foot section in the bottom of the shaft. Gold 0 oz. 0 dwt. 9 grs.

Evidence of the efforts to locate commercially important concentrations of the gold content, on the line of strike of the fissuring connected with the "Iron Blow" occurrence, is not lacking, a number of shallow cuts exist between the shaft, referred to above, and the small open cut approximately 10 to 15 chains north west of it. The open cut is the result of prospecting operations undertaken by two men - Dwyer and O'Brien - about 12 years ago and is situated near the centre of the old

mineral lease 34/830. The open-cut is approximately 142
70 feet long and eight to ten feet wide, with a maximum
depth of 15 feet to the floor of the cut. At the face
a winze has been sunk to an unknown depth though, evidently
no great depth, and was not accessible owing to water.
Prospecting, apparently located some iron capping which
soon cut out exposing a very narrow zone of pyritisation
associated with a fissure in the porphyry; this fissure
strikes south 25° east and is undoubtedly the continuation
of the line of mineralisation known as the "Iron Blow".

The value and behaviour of this prospect at depth
is not known and could not be determined but the evidence
suggests that results were not very encouraging.

"TOP OF THE HILL" PROSPECT:

This is situated on D. Cripp's private property,
20 chains north 58° west of the Mount Mary mine main
shaft and approximately 250 feet above the collar of it.

The most striking feature of this occurrence is
the erratic nature of the fissuring although there is a
preponderance of the north-east south-west orientation
with, apparently, two zones approximately 100 feet apart.
These prospecting operations have not demonstrated any
continuity or any visible relationship between exposures.

In the most western prospect hole the contact,
between the mudstones on the south and the porphyry on
the north, is seen to strike north 70° west. There is a
limonitic brecciated zone in the dyke-rock which strikes
north 20° east and dips west at 50°; this is undoubtedly
the oxidised portion of one of the pyritised fissure
zones.

That the gold is largely confined to the gossanous
enrichments is indicated by the following sample assays:-

Sample No. 1 - Across the north face of the cut (5 foot
section - Gold: 0 oz. 5 dwt. 18 grs.

Sample No. 2 - Across six inches of brecciated gossanous
material - Gold: 0 oz. 17 dwt. 2 grs.

Conclusions and Recommendations:

The evidence submitted, by means of samples, prior
to my examination, suggested that free gold may be contained
in the igneous material in such quantity as to render the
occurrence a low-grade one of such dimension that it may
be a commercial possibility. However, the examination
indicated that although auriferous pyrite is disseminated
throughout the eruptive it is directly associated with
zones of fissuring and, so far, prospecting operations
have failed to locate a zone of sufficient magnitude to
indicate the presence of a low-grade occurrence capable
of commercial exploitation.

It is quite evident that a true interpretation of
the high gold content of the limonitic material, whether
it be as a capping or a filling of a brecciated fissure
zone in the porphyry, is necessary to appreciate the economic
possibilities of the area. Therefore, as already has been
indicated, the extent of the limonitic capping is a
measure of the mineralisation, and as the amount of
limonitic material associated with the prospects examined

is very limited there is little encouragement to pursue prospecting operations. I did not see any prospect where much outlay could be advised; nevertheless moderate prospecting along the contact lines may disclose some deposit worthy of development.

FIELD GEOLOGIST

Mines Department,
HOBART.

12th March, 1941