

## TASMAN OPHIR GOLD MINING CO.

The property worked by this Company consists of freehold ground at Beaconsfield, being part of a freehold estate of 50 acres marked on the Government Chart under the head of John Owen pur. and which the present Company holds by tribute arrangements.

It is situated to the N.W. of the property of the Tasmanian Gold Mine, close to the main street of the town and distant by road miles from the port of Beauty Point on the River Tamar.

The property itself consists of a maiflat stretch of ground at the foot of the Cabbage Tree Hill which rises up from the S.W. boundary to a height of about 400 feet.

This hill is composed of slates and sandstones in its lower portion while higher up outcrops a conglomerate formation from which it has gained its name.

The strata lie conformably on each other and strike about N.W. dipping N.E. from 45 to 75.

The solid rock is showing close up to the boundary of the Tasman Ophir ground; in quarries and old surface workings. As the boundary is reached the surface alluvial increases in depth and a deep alluvial formation occurs in which most of the workings of the present Company and previous explorers have been carried on.

A sketch of the surface workings and section of the alluvial formation is attached showing the main features. The extent of the formation is difficult to define in view of the vague nature of any information respecting it. This is the more to be regretted in that its position at the foot of the hill on which the outcrop of the Tasmania reef occurs renders it of extreme importance to determine whether it is the bed of an old river or a chasm or rift in the country. It is the bed of a river concentration of the gold and gold bearing stone may be expected in it; if it is a chasm then little or no concentration can be looked for.

The material filling it consists of a sandy wash containing fragments of sandstone, slate, and conglomerate with some quartz, all evidently derived from the adjacent rocks: some of the fragments are waterworn and some still angular: in parts considerable organic matter is present approaching to a coal in the 200 foot level: its colour varies considerably and bands of black wash intrude irregularly in the more uniform whitish or reddish formation. I consider that this

discolouration is due to subsequent action and the percolation of waters after the wash was deposited. In no place could I discern any signs of definite bedding such as should if the deposit had been exposed to the action of running water and I consider that the detritus has far more probably been laid in a basin or chasm than in the bed of a stream of any dimension. Hence I should not expect the lowest portion of the wash to show any material enrichment over that above it. Considering the mode of occurrence of the limestone in the Tasmanian workings and in this mine as well, it is possible that the alluvial channel represents the original outcrop of a limestone formation which has been eaten away by the acid waters of the district, while the wastage from the hill has filled in the space which was formed by this decay. The abundant occurrence of carbonic acid gas in the various mines favours this view.

The mine workings in this detritus consist (1) a prospecting shaft S.W. of the the main shaft 74 feet deep from which workings have been extended, a plan of mine is attached. (2) a main shaft sunk for 300 feet in detritus or wash and for 160 feet in solid sandstone country. From these levels have been driven at 200 feet 300 feet, 400 feet, 418 feet, and 460 feet.

A separate plan is attached of the 200 ft. level. At 300 feet a short drive only is now open. At 400 feet the drive was extended through the sandstone into the wash but this is now inaccessible. At 460 feet a drive was pushed forward below the gutter and a rise put up at a point 190 feet from the shaft which went up 55 feet before reaching the gutter. It was believed the gutter lay beyond the rise but this proved that the far side had been reached and consequently the drive was turned right round and reached its deepest point between the rise and the main shaft as shown on the plan.

Unfortunately all the work done at the top of the rise has been choked and the wash has come down the rise and filled it and most of the level below. It was only possible to gain access to this wash as it lay in the level below and though I sampled it, I cannot draw any deductions from this solitary sample of material no longer in position. Definite information as to the wash derived from the lowest point of the gutter would be invaluable.

At the 418 feet level a drive has been

advanced on a lode formation which will be dealt with later.

A section is attached showing the probable extent of the wash and position of the deepest point. I found the information afforded from various sources as to the value of the work so contradictory that I discarded them all and have sampled the wash wherever I could gain access to it.

In all I have taken 36 samples of it and assayed them, as shown by subjoined list: this sampling does not pretend to be complete: I estimated that at least 100 samples would be necessary to settle the matter finally but I considered that by doing this amount a fair guide would be obtained to show whether future work was justified and in which direction it should take place.

The samples were practically all taken in the same manner: the face of the wash was roughly cleaned down: the wash was then broken down in vertical lines along the face: the large quantity taken was broken up at once on a flat sheet and quartered down: the sample taken was crushed fine in the laboratory and a portion assayed. The result are as follows:

PROSPECT SHAFT. Sides	Collar to 20 feet down	Trace Gold
"	20 ft. to 31 ft"	Nil "
"	31 " " 44 "	Trace "
"	44 " " 56 "	Nil "
"	56 " " 67 "	Nil "
Bottom as per plan	A face.	1 dwt. 5 gns. Gold
	B "	Nil "
	C "	1 dwt. 5 gns. "
	D "	6 " 0 " "
	E "	Nil "
	F "	1 " 5 " "
	G up rise	4ft by 4ft Nil about
		3 feet.
	H "	4 dwt. 9gns. "
	I "	Nil "
	J "	Nil "
Average for bottom		1 dwt. 11 gns "
200 ft Level - Bottom as per plan	A face	Nil Gold
	B "	" "
	C "	" "
	D "	Trace "
	E "	Nil "
	F "	1dwt 0 gns Gold
	G "	Trace Gold
	G "	Nil "
	H "	Trace "
	I "	" "
	J "	Nil "

200 ft level - Bottom as per plan L face

Trace Gold

M "	Nil	"
N "	"	"
O "	"	"
P "	"	"
Q "	Trace	"
R "	"	"
S up "rise 4ft 6in.	Trace	Gold
T " "	4ft 6in to 8'6"	Nil
U " "	8ft 6in to 16'6'	

461 Level. Assay of wash that had flowed into level.

It will be seen from this that the Prospecting Shaft given an average of about  $1\frac{1}{2}$  dwts: the 200 Level gives traces in many places but nothing of any real value while the bottom level assays shows that gold does exist in some parts of the wash there.

The assays were made carefully with due regard to the small quantities expected and I see no reasons to question the result either of those or the sampling.

The wash is very easily got now the ground is dry and a low value probably 2 dwts per ton could be made to pay working expenses, but the above results do not disclose any extent of wash approaching these values, and though definite facts as to the 460 Level were not available, I cannot from the information supplied and the general appearance of the mine view very favourably the hope of any extensive enrichment at this level.

As regards the occurrence of the gold I think that a certain proportion of very fine gold exists through most of the wash to the extent of 1 or 2 grains such as would not show in an assay. In addition to this fragments of quartz exist broken down from the Tasmanian lode and carrying good gold: it is to be inclusion of these that I think the two good assays from the Prospecting shaft are due.

To secure the gold it would probably be necessary to crush and then cyanide either with or without previous amalgamation.

In addition to the alluvial formation at the 418 ft level a drive has been extended on a lode formation for 56 feet. The lode bears N62W and dips away to the N.E. at an angle of about 50. At 6 ft from the shaft the foot wall is well defined composed of sandstone country rock: the hanging wall being of the same nature but not so clearly marked: the lode channel is filled with shattered sandstone bands alternating with

bands of quartz for a width of about 4ft 6in as follows:

At 25 ft 6 in from the shaft two cuddies have been put in right and left about 6 in to expose the width of the lode. The lode is of the same nature here and two samples were taken, one of the sandstone filling which gave 1 dwt 0 grs. and one of the quartz yielding 1 dwt 5 grs.

In the face of this drive the lode is about 2 ft 6 in wide mostly quartz: an assay yielded no gold.

The bearing of the lode is not of much importance as some of the profitable lodes of the district have the same bearing as the country rock, but it is an unfortunate feature that the lode also dips at the same angle as the surrounding strata and appears interleaved with them rather than a true fissure vein.

The quartz itself is hungry looking stone and appears to be practically barren, lodes are very uncertain and sometimes rapidly change their nature but I cannot see much in the appearance of this formation to encourage further work on it.

In addition to the work done by the Company various shafts have been put down in the property in the past. The Ballarat shaft is the chief of these, and in addition there are Tresizes, the Denmark, Walduck - and several smaller ones marked on the accompanying sketch plan. The information I secured in regard to the workings from these and the value of the wash was all so vague and contradictory that I do not think it should have any weight attached to it at all. If the Directors desire to test the value of the wash in other places I should advocate their doing so by bores, which with adequate precautions will give satisfactory results in this ground. I need hardly say that in view of recent developments the recorded results from past boreholes on this claim are impossible.

On a portion of the property marked on the plan a deposit of iron oxide occurs: it is impossible to define the extent of this in any way as only one small shaft has been sunk in it about 3 ft deep: on the surface it shows for a considerable length and width. It is associated at some parts with a peaty substance which burns on drying. I have little doubt that this deposit is on the site of a marsh or lake and that the iron was precipitated there in the same manner as the present day is occurring in Sweden and other parts. Quite recently the marsh was drained by the Tasmanian mine and the peat was burning in

situ only a few years ago. The iron occurs as fine particles and as nodules up to 8 and 10 inches in diameter: it is of fair purity as an iron ore, the sample I assayed from the small pit yielding iron 50.1%. I do not think it extends to any great depth or will prove of uniform quality.

#### MACHINERY

This consists of a portable engine and boiler combined which can be connected with either the winding drum or a fan for forcing pure air into the mine. The engine was made by Clayton and Shuttleworth with twin cylinders 7 $\frac{1}{2}$  in. diameter 1 ft stroke: the boiler is certified for 55lbs pressure. Winding drums are 4 ft diameter driven by pinion and spur wheel from the main shaft of the engine.

The fan is about 4 ft 6 in external diameter drawing in air at the axis on each side and expelling it at the circumference. It is driven by a belt from the fly wheel of the engine. This is very unsatisfactory and a small blower with engine attached would give as good results with much less consumption of steam, while the inconvenience and even danger of being unable to wind and ventilate at the same time would be avoided.

The winding plant serves its present purpose adequately but would need to be replaced if the mine was being worked with an output of any large dimensions.

In conclusion it appears to me that there is a possibility that the bottom level may contain payable wash a possibility which should be definitely settled, since so much work has been done, either by driving from the 400 foot level or by opening up the rise from the 460 ft level. There is also the possibility of that the gold bearing wash has kept to some certain line or horizon: if it is thought advisable to test this I should advocate a regular line of bores along and across the Company's property. I consider it practically proved that above the 460 level the wash is not payable as so far disclosed and offers little encouragement for further work. To be profitable the wash must either yield certain horizons of considerable value, or low grade values of great extent. Apart from the results of bulk tests before my visit, I cannot see how either of these conditions could have escaped my sampling. I regret that I am compelled to these conclusions but fail to see how the facts can be interpreted in any other way.

DEPARTMENT OF MINES  
HOBART

10th May, 1904

## STAMP BATTERY.

The following is a brief summary of the 10 head stamp battery the purchase of which is under consideration.

The battery consists of two boxes of 5 stamps each; made by Salisbury's Foundry Company Launceston.

BOX I - 4 ft. 8 in. by 2 ft. base overall:  
4 ft. high with 4 in. feed entrance extending full length of back.  
Discharge 5 in. in above actual bottom. Front worn and false frame bolted on to carry gratings. Back worn through and patched  $\frac{1}{4}$  inch iron plate and holes filled with cement.  
Sides badly worn but not perforated.

BOX II - Same as box 1 but in addition sides are worn through and patched with iron plate and holes filled with cement. In each case Stems 3 in diameter screwed to take bosses; screws in 4 stems badly worn; others in fair order.

Stems 11 ft. 6 in. long including head. Heads 10 in. long and 8 in. diameter. Probable weight with shoes and 750 lbs. Bosses ordinary. Guides at back cracked in one place.

Cam shaft 5 in. in diameter with spur wheel; cams worn somewhat. Main shaft 5 in. diameter with spur wheel and clutch.

Iron frame and water pipes and cocks apparently in good condition.

I cannot recommend its purchase for the treatment of the low grade material of the mine: the losses would certainly be great and the repair bill heavy. It would be false economy to attempt good work with this inferior machinery.

21st May, 1904.

F.J. Thomas Esq.,  
Tasman Ophir Mine,  
SYDNEY

Dear Sir,

I have to acknowledge the receipt of your letter of the 18th inst. referring to several points in my report of the 10th inst.

With regard to the Prospecting Shaft I was able to see no evidence that it bottomed on solid rock, the wash or big boulders showing in the bottom of this and the workings for it: at one point there was a question of the bottom having been reached on a mass of sandstone but the Manager told me that on sinking he found this was a disconnected mass. The shaft was sunk to its present level previously to your present Manager taking charge as shown by an old level at the bottom and I understood the statement that the solid rock was reached was tradition; if your Manager says he had the solid rock in clearing out the bottom of the shaft I am quite prepared to believe that the bottom takes a steeper grade from this point to the gutter, but you will bear in mind that this shaft was reported 90 ft. deep when actually it was only 74 feet, so that caution is needed in the case of these reports.

With regard to the rise up from the 460 ft. Level, I was not able either in this case or on my previous visit to go up this rise and greatly regret the fact. I enclose a tracing of the mine working plan by which I was guided and you will see from this that apparently the measurements were taken from the bottom of the drive. My notes of my previous visit seem to confirm this. At the same time I think if the measurements are as you suggest it rather confirms my view that the rise is beyond the gutter. As reported to me Mr. Murphy on reaching wash not unnaturally thought the gutter lay N.E.

He opened out this side with wash in his drive down about 6 in. from the roof; had the gutter been ahead of him this wash would have come down lower as his drive advanced but actually he got no wash at all but solid sandstone and a bore put up in the roof showed a considerable extent of sandstone was above him. He then

concluded the gutter was behind him and he could not safely open out both sides of his rose he turned his drive round and went S.W. towards the shaft. In this case the wash came lower down in his drive until it was 1 ft. from the bottom, but owing to the bad ground he was unable to connect with the old 400 ft. drives.

With regard to the wash being met with in the 460 ft. level beyond the rise, here again I have to go by heresay mostly. There seems to be evidence of a broken formation and curious cleft in the country possibly an underground water channel leading to a limestone cavern, but I do not think true wash has been proved beyond while the evidence is strong against the probability of its existence there.

Though more evidence would be very welcome I cannot help concluding that you have reached the lowest point of the wash on this section between the top of the rise and the main shaft; if I could be sure that limestone was found in the bottom of Orchard's shaft, I should feel certain that this was the case, but I rather doubt this tradition.

I would mention that though I looked for it most carefully I could find no evidence of true stratification in the wash; above ground in the surface working a well defined bed of white clay exists but underground I could trace no regular bedding in the pug that is met with, and I am inclined to think this pug represents either the filling of fissures formed while the ground was subsiding, or large masses that slipped down from a surface deposit. I may mention that a considerable subsidence of the surface took place on the claim not many years ago.

Regular lines of discolouration occur in the wash resembling stratification but I feel sure this is secondary.

In suggesting boring on your claim I did not of course mean within the area touched by the main shaft, but in the portion of your property so far unproven in any way.

With regard to your proposal to drive from the 400 ft. Level I certainly consider this the best plan; the wash should be somewhat drained here now and it should be possible to push the drive through though I expect it will not prove

an easy task. I would point out that most careful sampling will be necessary to obtain a real estimate of the value of the wash passed through; you will doubtless find certain parts carrying fair gold, sufficient to yield a fair bulk parcel, but unless a large quantity gives an average of over  $2\frac{1}{2}$  dwts. I donot think it will prove sufficiently remunerative.

I must thank you for the enclosure which I return and if I can furnish any further information I shall be pleased to do so. I do not think I can offer any suggests beyond those contained in my report.

Yours sincerely,

(Signed) HARTWELL CONDER.