

REPORT ON TANNER'S BAY TIN-FIELD - FLINDERS ISLANDLOCATION AND ACCESS:

This tin-field is situated one and three quarter miles north of Tanner's Bay in the north-west of Flinders Island.

Access is gained by means of the motor road from Whitemark to Palana which passes through the area at 21 miles from Whitemark.

TOPOGRAPHY:

An extension of the west coastal plain stretches inland from Tanner's Bay in a narrow belt through to Killiecrankie Bay. From the innermost point of Tanner's Bay the plain rises gradually in a northerly direction to an approximate height of 300 feet in a distance of  $2\frac{1}{2}$  miles, and then falls regularly to Killiecrankie Bay.

Small creeks running to both bays have slightly dissected the plain.

To the east of the area Mt. Boyes rises to a height of 880 feet and to the west the high country in the vicinity of Mt. Tanner reaches a maximum height of 1030 feet above sea level.

HISTORY:

The first discovery of tin on Flinders Island was made in this district in the year 1882. It was disclosed almost simultaneously by A. Smith at Killiecrankie Bay, and near Tanner's Bay by P. Brewer and F.T. Miles - mineral leases were obtained for both areas.

Prospecting at Killiecrankie Bay proved that area to be unprofitable but at Tanner's Bay alluvial tin has been won at intervals with variable success up to the present date.

GEOLOGY:

Everywhere in the district the bedrock consists of Devonian granite. The granite over the plain area is covered by Upper Tertiary grits, gravels and sands containing varying proportions of cassiterite. Two small areas of Tertiary basalt are poorly exposed at lower altitudes. The relation between the basalt and the grits etc. is doubtful but the latter appear to overlie the former. Granite occupies the surface of the higher country about Mt. Boyes and Mt. Tanner to the east and west of the plain respectively.

The Tertiary sediments were originally laid down on a sea floor between the granite masses, which, at that time, stood out as separate islands. A rise in the strand line has since brought the grits, gravels and sands to their present position above sea level.

Sand dunes of recent origin are forming inland from the bays, and gravels and alluvium are distributed over the lower parts of the stream beds.

THE WORKINGS:

The principal alluvial tin workings in the district are situated two miles north of Tanner's Bay and occur along the course of the small stream flowing southerly to the bay, Numerous mineral leases have been held in the past but at present only two are in existence. Section No. 11270/M of 20 acres in extent is leased by K.H. Blythe and south east and adjoining is section No. 11253/M of 5 acres held by F. Jackson.

The most extensive workings occur in these leases on either side of the creek bed now confined to bottom of the worked area and used as an outlet for tailings.

The sluiced area varies from one to two chains in width over a distance of 15 chains and has a maximum depth of 14 feet. The deposit here consists of quartz grits and sand with occasional narrow bands of clay. No well defined bodies of wash are in evidence but quartz pebbles from  $\frac{1}{4}$  inch to 3 inches in size are scattered through the grits and sands.

Topaz, locally known as "Killiecrankie diamonds" are plentiful and occur throughout the deposit but are more numerous in the bottom layers. Several feet of the bottom drifts are coloured black and contain varying amounts of lignitic wood in association with pyrite. In places the drifts have been cemented by infiltration of solutions carrying silica and iron oxides and appear in various stages of consolidation.

Granite bedrock is exposed in some portions of the workings but in others a small thickness of the bottom drifts is left unworked. In some instances this was probably due to lack of adequate water pressure to enable the cemented parts to be disintegrated. In other cases insufficient fall for tailings gravitation has been the deciding factor for the abandonment of the lower drifts. South of the leases there is ample fall in the creek bed for the disposal of tailings but becomes much flatter in bottom of workings. At the south end of section 11253/M a tail race has been excavated in granite to a depth of 8 feet over a short distance and has thus enabled portion of southern end of workings to be sluiced to bedrock.

If the remainder of the bottom drifts are to be mined it will either be necessary to deepen and extend the tail race or the drifts will have to be elevated to sluice boxes and the tailings stacked.

The tin contained in the deposit is fine in grain and generally of a black colour but small amounts of red and amber coloured tin occurs. The greatest quantities of the tin occur in the lower 7 feet of the drifts, particularly in the dark coloured portions with which are related the lignite and pyrite.

The leased areas are now being worked to a small extent by tribute parties ~~under~~ground sluicing conditions.

Immediately south of the leases the alluvial ground is much shallower over a length of 20 chains, where a number of small areas have been worked along the east side of the creek to an average depth of four feet. Underlying cemented grits, the bottom layer is here represented by a well defined bed of quartz pebbles of  $2\frac{1}{2}$  inches average size.

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In the valley of a small creek rising to the north of Mt. Tanner and flowing to Killiecrankie Bay, mineral sections aggregating 120 acres were held between 1893 and 1895 by W. Williams and others, and some prospecting pits were sunk with the object of testing the gravels etc. for their tin content. From 1914 to 1916/ acres of this land were leased by C.G. Robinson. At one stage a small amount of sluicing was accomplished, but with little apparent success

The area covered by the grits, gravels and sands extends for one mile to the east of mineral lease No. 11270/M and for one mile and a half to the west, where the boundaries in these directions are foothills of Mt. Boyes and Mt. Tanner respectively.

Two miles to the north, on the fall to Killiecrankie Bay, the grits etc. give place to Tertiary limestone.

Records of tin production for this area are not available but as no large-scale mining has been undertaken the amounts would be comparatively small.

In consideration of any future scheme for exploitation of the alluvial tin it is recommended that the area be thoroughly tested by boring as a preliminary to any further investigation.

WATER SUPPLY:

The creeks of the district have only small catchment areas and at no time of the year are any large quantities of water available for sluicing purposes.

Two short water races have been constructed from small eastern branches of the creek flowing south to Tanner's Bay.

Another race of over two miles in length taps Killiecrankie Creek to the north of the workings.

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Examination made in 1935