7TN/103-106

Report on Hard Luck Alluvial Deposit - Modder River Cape Barren Island

Geographical Position

Cape Barren Island is the second largest of the Furneaux Group of Islands at the eastern entrance to Bass Strait.

Flinders Island (the largest of the group) lies about 10 miles to the North of Cape Barren Island. The channel separating these Islands is known as Banks Strait which is navigable to small trading boats. Several smaller islands lie between Flinders and Cape Barren Islands. The latter is 25 miles by 10 miles at its widest points its longer axis having an east west meridian.

Access

Access to the Islands is by the small State owned steamers trading from Launceston making fortnightly trips, calling regularly at the North West Corner, at which place is a small settlement on the half-caste reservation.

The population of the Island does not exceed 150 inhabitants. Shipping facilities at the island are of a primitive character there being no jetties for landing or shipping cargo, which is lightered in small boats.

There are numerous small partly sheltered inlets on the coast line and a landing at almost any point can be effected in a small boat under moderately fine weather conditions.

History

It is many years since tin was discovered on the Island. Some fifteen years ago small areas of alluvial ground were worked for tin on the northern and southern sides of Mt. Munro. Some boring work was also carried out to test the alluvial areas, the result of this work, which was on a limited scale, is stated to have been very satisfactory.

In the aggregate a fair tonnage of tin oxide has been shipped from the island, but information respecting the approximate quantity is not available.

Hard Luck Valley Alluvial Area

Location

This area is situated in the valley of a small stream known as the Modder River which takes its rise on the Southern slopes of Mt. Munro flowing in a general south easterly direction to Half Moon Bay on South Coast of the Island.

Access

The area can be reached without difficulty from any point on the coast line in the vicinity where a landing can be effected in fine weather. An unmade cart road having practically a level grade connects the settlement

at the corners on the North West of the Island to the Modder River, the distance being about 5 miles. A short extension of this road is required to reach the Hard Luck area. The route of the road is through sandy country and although somewhat heavy would withstand moderately heavy traffic. A more direct route by sea can be made by landing at Half Moon Bay thence by road to the area.

Economic Geology

The "Hard Luck" alluvial area occupies a wide plain lying to the south of Mt. Munro, extending from the foothills of the latter to the Sea Coast. It is bounded on either side by low ridges of spurs extending from the mountain range in a southerly direction sloping off gradually towards the sea coast.

To the north of the area the ground rises moderately for some distance becoming steeper as the mountain range is approached. The higher ground above the plain consists of a series of ridges and valleys extending to the base of the mountain.

The country rock is composed wholly of granite of which considerable portions are tin bearing particularly the subsidiary peaks extending easterly from Mt. Munro, known as Lode Hill and Double Peak respectively.

The alluvial ground lying to the south of the mountain range has been deposited over a wide area, consists of the usual drifts of fine rounded quartz gravel intermixed with small quantities of clay, the whole showing an alternately bedded structure of the varying sized pebbles and clay bands.

Tin oxide and titanic iron being constituents of the granite are present in the drift in varying quantities.

The only exposure of the drift to be seen is in the old Sluicing Workings opened up on the foot of a terrace, on the northern portion of the area. This shows a face of gravel of an average depth of 8 ft. resting on a bed rock of decomposed granite. The upper half of this face carries a small but regular distribution of tin oxide associated with titanic iron. The lower portion particularly near the bed rock, occurs a band several inches in thickness carrying an enrichment of tin oxide. The grain size of the latter is fairly coarse approximately 1/32", in colour it is black and hard to distinguish from the Titanic Iron.

These workings extend for about a chain in length and so far as exposed the enriched layer is strongly represented.

Apart from the small opening referred to on the drift and narrow gutter worked in a creek bed for a short distance a little to the north of the old workings no other workings are to be seen. Some boring work is said to have been carried out some years ago on the terrace above the old workings over an area of 5 acres with very satisfactory results, proving the values exposed on the face to continue in that direction.

There is evidence of considerable denudation having occurred on the high ground of the tin bearing

granite area of the mountain, the debris being carried down the hillsides by the action of water and deposited on the low lying areas and comparatively level areas extending to the sea coast.

From the old workings to the sea the distance is 3 miles the average width of the plain is not less than half a mile. The plain itself is practically tree-less excepting for scattered grass trees and light undergrowth.

Former Workings

As already stated a small paddock of ground was worked in the northern portion of the area many years ago. The depth exposed averages about 8 feet. The face has been worked in an easterly direction for an average width of 20 feet over a chain in length. Good values of tin oxide are associated with the drift.

The following is a list of the results of five samples taken by the writer from various parts of the face. Assays were made at the Geological Survey Laboratory, Launceston.

		lb.per cub.yd.	Metallic Tin in Conts.
Total Depth 8 feet	No. 1 from surface down depth 4 ft.	2.12	4.56%
	No. 2 4 ft. section below No. 1	7.38	22.60%
9 feet	No. 3 surface section depth 5 ft.	4.38	3.45
	No. 4 4 ft. Section below No. 3	32.00	41.04
	No. 5 Depth 8 ft.	6.15	48.04
	No. 6 " 8 ft.	28.65	43.55

The above samples were taken in order to obtain a general idea of the value of the drift and the metallic tin content of the concentrates.

Half of the Upper Section of the drift is of no value the very low metallic tin content of the concentrate is due to the presence of titanic iron. The lower sections give a fair grade concentrate which could, without difficulty, be dressed to a much higher grade. Several tons of tin oxide have been obtained as a result of Sluicing operations here, the concentrate obtained is said to have averaged over 60% metallic tin. The appliances used for dressing the ore were of the crudest description. With the small amount of information available no definite statement can be made respecting the probable area and value of the deposit.

The area is extensive and prospecting by boring is well warranted.

Water Supply

The question of a continuous and adequate water supply is one which presents some difficulty. Several small streams which have their source at the base of Mt. Munro flow through the northern part of the property converging at a short distance below the old workings. The most easterly of these is known as the Modder River which is joined by two others to the west of the workings.

At the time of the writer's visit these water courses were practically dry, there being merely a soakage in beds with occasional shallow pools.

It is stated that during 8 months of the year that is from April to November, a plentiful supply of water for sluicing is available in these creeks.

A small water channel about ½ mile in length has been cut to convey water from the Modder River to the old face. This would not carry above 2 sluice heads, and to be of any practical use would need widening to more than double its present size. The ground traversed by the race consists of loamy soil, rendering race cutting comparatively inexpensive.

Approximately at a distance ½ mile North west of the old workings at a slightly higher elevation is a wide flat valley with a fairly narrow outlet. A survey of this area is necessary to ascertain the cost of constructing an embankment and the quantity of water that may be conserved.

Method of Working

The deposit of drift is well suited for working by hydraulic sluicing methods. Provision however would have to be made for the elevation of the material for the disposal of tailings owing to the flat nature of the surrounding country.

GOVERNMENT MINING ENGINEER