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Inspection of an alluvial tin prospect at Moorina

by D. J. Jennings

The site of Mr R. G. Hyde's mineral lease (116M/68), ½ mile upstream from the Ringarooma River bridge at Moorina, was visited on 17 April 1969.

Site

Here the river runs between steep banks with much granite outcrop and vast float boulders. An ancient rock bar has deflected the course of the Ringarooma River. Scouring on the outside of the bend has increased the deflection, whilst producing a classic placer deposit on the inside of the exaggerated bend. Over the last few decades, the effect of seasonal floodwaters has exceeded the addition of tailings in this stretch of the river and the accumulated deposits of heavy gravel are being depleted, with concentration of recent tin in the present river bed. In the past few months, Mr Hyde has recovered some 25 bags of tin from the pebble beaches formed between the lease area and Moorina bridge during winter floods.

Construction

A deep cut has been completed across the neck of the horseshoe bend and the river is directed through this channel. The cut was constructed by bulldozer in rotten granite (with rare 'eyes' of fresh rock) to a depth of some 25 feet and some blasting of the core of fresh bedrock below this depth has been carried out. The granite is strongly jointed and clayey partings aid rapid removal. A previous attempt to cut the rock bar was revealed during excavations, when the remnants of a tunnel was unearthed by the bulldozer.

Material from the cut has been used to form a levee across the river at the commencement of the horseshoe bend. The levee seems adequate to retain the water indefinitely at its present level but due to the constriction at the rock bar, would prove inadequate under flash flood conditions. Mr Hyde realises the potential danger of the situation and once he has all his heavy equipment within the loop of the river, he intends to breach the levee and redirect the Ringarooma along its old course for the coming winter, and utilise this convenient source of water for tin recovery from the older deposits within the horseshoe. Tailings from this part of the operation would be dumped into the deepest part of the river channel about the horseshoe outlet, to cause minimum inconvenience. In the meantime, an additional 6 feet depth will be blasted at the bar which will eliminate the present damming effect, remove the constriction in the water course and the risk of floods destroying the levee, when the levee is reconstructed in the spring. Systematic recovery of tin from the gravel in the floor of the dry river channel will commence at the horseshoe outlet.

Mr Hyde has a supply of pipes, nozzle and blower and requires a pump and tractor.

Sampling

Mr Hyde has skimmed some superficial layers of gravel from the beaches in the area where it is sufficiently rich for him to work profitably even when material is transported by wheelbarrow. Good values were obtained in the river bed wherever tested.

A bulldozer pit shows that some 10 feet of tailings sand overlies heavy wash in the central lobe of the horseshoe. The wash revealed is again extremely rich.

Factors of interest

1. The deposits are demonstrably rich and extensive.
2. The major risk in the project involved the feasibility of the deep cut required to bypass the horseshoe loop. Mr Hyde amassed sufficient capital by beaching operations to finance this, and enough confidence to take the risk himself.

3. The site being adjacent to the Ringarooma River should ensure a permanent water supply, and if worked progressively upstream tailings should present no problems.

4. Most of the material to be worked is clean tailings and heavy wash devoid of clay. An abundant water supply will be necessary and sluice boxes must be set up at high angles. A high proportion of the tin is medium to coarse-grained and retaining it in the boxes should prove no problem. A simple system of screen or grizzly before the sluice box might prove valuable when dealing with heavy wash, but if left unattended a form of trommel would be superior.

5. Mr Hyde is young and energetic. He lives at Moorina within a mile of the site. He made no suggestion of employing an assistant, but may require one for efficient operation.

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