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REPORT ON THE ARBA EXTENDED TIN SECTIONS AT BRANXHOLM.

Government Geologist's Office,
Launceston, 25th November, 1899.

SIR,

I HAVE the honour to report that, on the 24th instant, in accordance with instructions, I visited the two 20-acre sections at Branxholm held by the Arba Extended Tin Mining Syndicate, situate to the E. of the Arba Company's property, and distant 12 chains E. from Pearce's Cascade or Branxholm Creek. They are about a quarter of a mile S. of the road which runs from Branxholm to Derby, and are reached by a short bush-track from the creek.

The bed-rock is the coarse porphyritic two-mica granite common throughout the district, and this is covered all through the two sections with soil and wash varying in depth from 6 to 26 feet. The wash is stanniferous, at least in places, and has an average thickness of 3 feet.

The sections form rising ground at the eastern edge of the creek flat, and are flanked by granite hills on each side. On the S.E. side is Bullman's Bluff, which forms a feature in the landscape, and up which the granite bed-rock extends for some distance. The waste from this rock has no doubt contributed to the formation of the terraces of wash on the Arba Extended sections.

This wash is of a different description from that in the Arba Company's workings, and from its position I imagine it is of subsequent date. The difference between the two is readily seen by examining the Arba Company's old Red Face workings in the fork of the creek, to the W., or east of Pearce's Creek. The ground there is 30 or 40 feet deep to the gutter, and was worked by the Arba Company fourteen years ago, and by Chinamen, on tribute, up to six years back. It consists of a gravel of quartz and sandstone pebbles, cemented and coloured with iron oxide. The pebbles are often a good deal flattened in shape, and the whole deposit appears to be of fluvial origin. A remarkable feature is the occurrence of large granite boulders in the wash. There is one left there, which must be 15 or 20 feet cube. I do not think it is necessary to invoke glacial action or powerful streams for the transport of these immense rocks. I am disposed to believe that gravitation is quite sufficient to account for their position. Both here and in the Arba Company's main workings, where several of them were met with, there is a sudden drop from the granite rim into deep ground, and if such blocks became detached by any means from the parent precipice, they would naturally fall into these basins. Northwards, too, the granite rises to surface, so that this patch of alluvial fills a huge depression in the rock, some 30 feet deep. The fall in the granite further north forms the deep ground now being worked by the Arba Company, where the bottom of the gutter lies 120 feet below the surface soil. The whole of this area was doubtless formerly covered with basalt, perhaps flowing from Bullman's Bluff, but on this latter point I am not clear, as I could not make the ascent this time. The lava sheet has since been removed by denudation, and the oxide of iron, so abundant in the gravels, was very likely derived by percolation from the wasting superincumbent sheet. After the removal of the covering of

lava, the denudation of the re-exposed granite was resumed, and the Arba Extended terraces were formed.

The wash of these ledges consists of rounded, sub-angular and angular white vein-quartz, with tourmaline and water-worn black blende, tourmaline-quartz pebbles, &c., and gives prospects of tin oxide. Colours of gold are also found now and then. I examined the Chinamen's diggings a little further to the south, where six men are working on shift in the same run of ground. I found the basement rock there also porphyritic granite, carrying splashes of tourmaline-quartz, which form segregated patches in the granite a few inches in diameter. Quartz-veins one to two inches or more in thickness are here seen intersecting the granite, and such veins unquestionably furnished the quartz of the terraces.

There was not much to see on the Arba Extended ground at the time of my visit, as the excavations were filled with water, and the tunnel had caved in from the fall of a tree. The first sink was 10 feet by 7 feet, and about 8 feet deep. There is said to be about 3 feet of wash in the bottom, giving 6 ounces of tin ore to the dish. A little tin is visible in some of the wash thrown out.

A couple of hundred yards further E. is another sink, 6 feet deep, but this only reached the top of the wash, when incoming water stopped further work. A few yards to the E. of this a short tunnel was driven, which has fallen in and cannot now be inspected. Prospects of the wash have been sent to town, showing $\frac{3}{4}$ lb. per small dish.

A water-right of 2 heads has been taken up, and further 5 heads have been applied for. A tail-race 12 chains long will be required, and piping and nozzle for hydraulicking, which is the most effective and economical way of working the ground. It is said that the water may be expected to suffice for nine months in the year.

From what has been said, it will be seen that this is essentially a small prospecting claim. The most convenient ledges will have to be sought and attacked. Not very much is known yet as to the actual quantity of tin-bearing wash available, and as the works were covered up I could not take any prospects, but, judging from dirt lying about, I have no doubt that it is stanniferous in places, and there appear to be small terraces of such wash here and there on the property. The two men working before the tunnel fell in are said to have been making wages. The overburden is easy stripping. The proposition is only a small one, and the only means which I see of finding out whether it can be made a payable one is by risking a little outlay and testing it.

I have the honour to be,
Sir,
Your obedient Servant,

W. H. TWELVETREES,
Government Geologist.

W. H. WALLACE, Esq.,
Secretary for Mines, Hobart.