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Notes on Geological Features of

Track

at Weir's Surprise to Arthur and Hallier Rivers.

By T. H. Jones

Waratah

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Sir,

I beg to submit the following notes on the possibilities of production from a metalliferous point of view.

Starting from Weir's Surprise tail race, which is about 1½ miles north from the summit of Bischoff, the first 5 miles passes over alternating beds of slate and chert, serpentine being also largely represented. This is, no doubt, a continuation of the Whyte River and Magnet silver fields; in fact, the occurrence of the Silver Cliff lode, the Great Gossan Syndicate lode and other silver bearing formations in this belt of country is conclusive evidence of its argentiferous character; and there seems to be no reason why further discoveries should not be made to the north east, in which direction this belt of country seems to be trending.

The first six miles of the Arthur River, from Weir's, passes through extensive alluvial flats, in places bordering on a ½ mile wide. The flats on the Waratah River being worked by Weir's Surprise Co. are undoubtedly payable; and, as these empty into the Arthur, it seems reasonable to suppose that the flats on the latter river will also carry payable tin ore.

It is thought that the bar across the mouth of the Waratah River has prevented the tin from going down; but, in my experience, I have never known a bar to stop tin, or even gold, from travelling down stream. The only thing that might render the Arthur flats unpayable would be the admixture of barren detrital material brought down by other tributaries of the river. These flats are quite unprospected, probably owing to the depth of soil and wash, which would run into 15 and 20 feet of sinking. It is rather too big an undertaking for

individual miners. A syndicate, with a working capital of say £500, would most likely succeed in finding payable tin.

From the 5 miles to the 7 miles the bed rock is chiefly black contorted slate, and beyond this the slates become capped with conglomerate, which in turn is capped with basalt; the contour of the country being very steep and mountainous.

Granite boulders are very numerous in the wash of the large creeks, and have evidently been carried here by ice. At the 12 miles, the creeks become gold bearing, and continue so to the end of the track at nearly 20 miles. North of the 12 mile Creek the slates become very regularly stratified, and split so easily parallel to the bedding, as to suggest the possibility of a quarry of roofing slates being discovered. These beds have a dip of 10 degrees to the north, and are overlaid on the hill tops by conglomerate and basalt.

These conditions prevail as far as Thorne's Creek, except in the valley of the 15 mile Creek, where the conglomerate forms the bed rock, the slates rising to a height of 300 or 400 feet on either side, which looks as if an immense channel had been carved out in past ages, and subsequently filled in by detrital material, and consolidated into conglomerate.

At Thorne's Creek, the slates, which appear to be trending a north north east direction, leave the route of the track, which passes on to schist country. At the junction of the Arthur and Hellyer, the schists have a strike of about north 10 degrees east, and an easterly dip of about 70 degrees; It will thus be seen that the bedding of the schists and slates are unconformable; the former evidently belonging to an older geologic period. No fossils were observed in any of the stratified rocks.

The last 5 miles of the country passed over does not present many points of interest owing to the absence of any igneous intrusions; and, for that reason, it is not likely that any gold bearing or other metalliferous lodes will be developed, although this cannot be laid down as a hard and fast rule.

All the creeks from the 12 mile downwards are more or less gold bearing: several creeks both on the Arthur and Hillyer water-shed

watershed having been worked profitably. A very large portion of Thorne's Creek was worked some years ago, but much the larger part of it remains unworked, which may be equally payable. Two or three parties are now prospecting in the locality for alluvial gold with very encouraging results, the track being a great convenience to them. One of the men who was working on the track tells me he has got payable gold in a small creek; and, with a mate, has gone down to work it.

In my opinion there are no gold bearing reefs in the locality, the conglomerate is the probable source of the gold. As an amateur geologist, I beg to venture the theory that these immense deposits of conglomerate have been deposited by glacial action; the glacier having had its origin in, or having passed over in its course, a granitic and gold bearing area; the debris from this area would be deposited along the course of the glacier, and subsequently cemented into conglomerate by the heat and pressure of the basaltic overflow. The gold would later on accumulate in existing creeks and river beds by the disintegration of the conglomerate caused by the different streams in carving out their channels, and would then undergo a natural process of concentration.

The alluvial gold deposits of the Inglis, Calder and Cam Rivers, where I have had experience, are probably attributable to the same source. As a speculation, it is possible a glacier may have had its source on the western flank of the Meredith range (which is a well known gold bearing locality), may have passed north through the Rocky River, Whyte River, Long Plain and Specimen Reef gold fields; and, moving in a north easterly direction, have deposited the material eroded from these areas along its track.

It is probable that the beds of the Arthur and Hellyer Rivers for about 8 or 10 miles above the junction are much richer in gold than any of the tributaries; but, owing to the gorgy nature of these streams, the large volume of water to contend with, and their liability to heavy floods, the difficulties of extraction are very great.

I am

your obedient servant

T. H. JONES