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Owner
Minerals
Report by J.M.Mackay.
Read by

A PRELIMINARY PROSPECTING TRIP

IN

HARRISON LAKE AND LOWER LILLOOET VALLEY AREAS

INTRODUCTION

The Harrison Lake and Lower Lillooet River Valley areas were reported upon by C.E.Cairns in 1924. Unfortunately his map is now out of print so that the writer has transposed it to the New Westminster and Yale map (in pocket) issued by the B.C.Department of Lands.

Prior to the construction of the Caribou Highway the means of access to the Caribou goldfields was by way of Harrison lake and Lillooet valley thence across Anderson and Seton Lakes to the town of Lillooet - the jumping off point for the north. The road construction was comparatively simple but the transportation costs were high because of the necessary freight handling at so many points along the route so that it was soon abandoned in favor of the more direct one up the Fraser River.

Numerous prospects were discovered along the Lillooet valley in the early days. None proved of commercial importance and none were located farther than two miles from either the lake or the river, indicating a rather careless search particularly since the eastern contact of the Coast Range batholith lies, for the most part, some five miles to their west. The discovery of the Bridge river goldfields in the nineties led to the abandonment of practically all the prospects in the Lillooet valley and from that time to the present there has been little, if any, prospecting there. For some reason, not understood by the writer, the Lillooet river area has been frowned upon by many mining engineers and geologists. Possibly because nothing of merit has been found in that vicinity it has been assumed that nothing remains to be found; in other words, the district has gone "out of fashion". Also because of its relative accessibility it has been assumed to have been well prospected. Such is not the case.

FIELD METHODS

The writer examined Harrison lake and vicinity during October 1943 to determine if any part of it warranted detailed prospecting in the future. A rowboat was rented at Harrison Hot Springs and the majority of all the creeks entering the lake were panned and examined as they were encountered during the row up the lake. Weather was typical of October, that is strong winds with heavy rain-reminiscent of the west coast of Vancouver Island. Apart from the discomforts involved, the trip can be considered a distinct success since one creek-Sloquet was discovered to carry encouraging amounts of gold. It most definitely warrants detailed prospecting in the future.

MEANS OF ACCESS

Harrison Hot Springs, situated at the lower end of Harrison lake, can be reached from Vancouver,B.C. by car in a comfortable three hours; also by C. P.R.

train to Agassiz thence by taxi to the Springs, a distance of five miles. On the lake itself, the Paul Raake Transportation Company maintains a regular boat service leaving the Springs each Tuesday Thursday and Saturday for Tipella and Douglas which lie at the head of the lake. En route, the various logging companies, operating at many points on both sides of the lake are contacted. The return trips are made on Wednesday, Friday and Sunday. Five hours running time is required for the passage of the thirty eight mile long lake.

The original road from Douglas along the east side of the Lillooet river is, I believe, in good enough shape for wagons and possibly light trucks although some of the bridges have been washed out. A pack horse train skirts the east shore of Lillooet lake and connects with the wagon road leading north to the P.G.E.Railway.

GEOLOGIC NOTES The geological notes of C.E.Cairnes are given below in full since the writer can provide no better description and at the same time Cairnes has included the Lillooet river valley which, with the exception of the lower five miles, was not examined by the writer.

GLACIAL AND POST-GLACIAL deposits mantle much of the upland slopes and are thick and widespread in and near the main valley bottoms. Between Lillooet and Harrison lakes a succession of benches are occupied by Indian reserves and are partly cultivated. Morainic accumulations at the south end of Harrison lake have diverted Harrison river from its former southerly route to its present course.

The granitic intrusives form a part of the Coast Range batholith complex. They range from granite to diorite and differ in age and structure. A number of bodies of massive, fresh-looking, quarts diorite about the shores of Harrison lake and along Fraser river are among the younger intrusives.. In places they definitely intereect other granitic bodies some of which, as in the vicinity of Little Harrison lake, are notably foliated. In Lillooet River valley there is less direct evidence of more than one period of intrusion though in general two granitic types may be recognized, one of massive fresh-looking, granodiorite and quartz-diorite, as extensively exposed in the vicinity of Bear lake, and the other a more altered, commonly gneissic type varying in composition from granite to diorite and including, particulary in the vicinity of Lillooet and Tenas lakes, much quartz diorite and diorite. No batholithic contacts with formations definitely known to be Cretaceous have been observed nor have the older intrusive bodies been noted in contact with formations of known Upper Jurassic age though they intersect others that are, presumably Middle Jurassic. The younger intrusives, on the other hand, intersect Upper Jurassic rocks and also cut across structures developed in the older intrusives. All the granitic rock are consequently of Jurassic or (and) later age. They seem relate to the mineral deposits of the district and in explorations to date no particular type of intrusive has appeared unfavorable to mineralization.

LOWER CRETACEOUS andJURASSIC sediments occupy a number of areas about the shores of Harrison lake and in the valleys of Harrison and Fraser rivers. A large part of them are tuffaceous or otherwise of volcanic origin. They range from dense argillites to coarse conglomerates and include abundant cherty sediments, tuffaceous and feldspathic sandstones and coarse, abblomeratic beds. Diagnostic fossils have been obtained at several places, principally on Cascade peninsula, Long island; nthe mainland west of Long island; and on Harrison river.

Volcanic rocks of Jurassic age are widely exposed to the west of Harrison lake; form the greater part of Echo island; and occupy a considerable area between Harrison and Fraser rivers. They consist of green and grey, porphyritic and,

in places, vesicular flows; dense grey and greenish lavas; and fine to coarse textured tuffs and agglomerates. As mapped they include a minor proportion of intercalated cherty and tuffaceous sediments, from which a few, small and none too diagnostic, fissil collections have been obtained. With them are also grouped dykes and irregular, small masses of intrusives of probably different ages.

Lillooet River valley is partly underlain by an assemblage of sediments and associated volcanic rocks of presumably Jurrassic and (or) Triassic age. About equal proportions of sedimentary and volcanic types are represented on the one hand by, principally, argillites and tuffaceous argillites and on the other by greenish, massive to schistose, andesitic rocks. These formations are intimately intruded by the granitic formations and as a result have been considerably metamorphosed and, locally, mineralized. No fossils have been found in them but lithologically, they closely resemble formentions farther north that bear Triassic fossils and others about Harrison lake that are presumed to be a Jurassic age.

Much of the country east of Harrison lake is occupied by deformed and metamorphosed rocks of Palaeozoic and Mesozoic age. Similar rocks form most of Long island and also outcrop over a considerable area west of the lake, north of Long island. These formations are chiefly sediments. They include abundant slaty argillites with intercalated green schists of volcanic origin. Other members are bands of crystalline limestone and of micaceous, garnetiferous, talcose and graphitic schists. In places they are partly granitized by neighbouring intrusives. Their contacts with other pre-granitic formations are mainly fault contacts. Fossils of both late Palaeozoic and Mesozoic age have been found in them but are mostly too poorly preserved to permit precise determination. The rocks contain a variety of mineral deposits. End of quote.

TOPOGRAPHY The included photographs depict the rugged ascpect of most of the mountains of the area. Generally speaking, the volcanics and sediments occupy slightly lower peaks than the contacting intrusives to their west that vary from 4000 to 6000 feet in height. No glaciers are present on ahy of the mountains bordering Harrison lake although many exist at the headwaters of the Stave and Pitt rivers, some twenty to thirty miles to the west of the lake.

REGINAL GEOLOGY Harrison lake and Lillooet river areas are considered by the writer to be lying on the eastern flank of the Coast Range batholith. The band of volcanic, sedimentary and schistose rocks, which average from 5 to 6 miles in width, are practically continuous from the P.G.E. railway on the north to the Fraser river on the south. For the most part, the volcanic rocks, where they contact the intrusives to the west, are heavily mineralized with pyrite. The intrusives themselves are also so mineralized in some sectors, particulary the diorites. The more schistose rocks are to be found abutting granitic rocks on their east. In many places these intrusives are gneiesic and contain conspicuous amounts of small garnets. This eastern contact zone is less mineralized than the one on the west and the writer believes, therefore, that it is the poorer prospecting bet of the two zones. The panning results confirm this reasoning.

FLORA The vegetation is typical of the coast areas of British Columbia where rainfall is abundant and the weather mild. Timber grows to about 5000 feet in elevation and consists, for the most part, of Douglas fir, Hemlockmand Cedar with small amounts of Balsam, Spruce and Pine. Where timber is scanty, such as in the bottoms of steep creeks and on slide rock, devil's club, tag alder, vine maple and salmon berry are abundant.

LOGGING A number of logging companies are operating at present at many points along both sides of Harrison lake as well as in the vicinity of Tipella and Douglas. All of them use large trucks to haul out their logs since railroads are impractical in such rugged terrain. It has been found that trucks can readily handle logs up to 60 feet in length; such logs command a premium price over the standard 34 foot length; such logs command a premium price over the standard 34 foot length hauled in railroad operations. Unquestionably, all future logging operations in B.C., both large and small, will use truck haulage. Although no logging is now being conducted farther north than Fire Creek it is believed that within the next few years logging will be extended many miles farther up the Lillooet river valley thus providing easier access to the presumably favorable prospecting belt there.

PANNING RESULTS

Chehalis River From 2 to 4 colors were obtained at the mouth of the Chehalis river. The wash is largely volcanic rocks, most of which are heavily mineralized with pyrite. The remainder consist of a great variety of intrusive rocks.

Creeks flowing into Harrison lake

Strangely enough, all creeks entering Harrison Lake panned at the most, one color of gold and no other minerals of importance were observed in the pan concentrates. These creeks can, therefore, be condemned as prospecting bets in spite of the favorable geological conditions. They all show evidence of abundant pyrite mineralization so that it can be safely assumed that the pyrite is not auriferous.

Fire Creek Fire creek has been emntioned often in reports of the B. C. Department of Mines, with respect to the Money Spinner mine near Fire lake, as one worthy of intensive prospecting. The writer disagrees since this creek pans only 1 to 2 gold colors.

Sloquet Creek (locally called Spring creek)

The enclosed sketch map gives the panning results of a week's prospecting concentrated on Sloquet creek - the last one examined in the area. Besides the important amounts of gold encountered there, several important clues were discovered in the main wash. A piece of float containing about 20% fine-grained black sphalerite with lesser amounts of pyrite and chalcopyrite gave 0.08 ozs. gold/ton. Low value of course, but the type if mineralization is interesting. In other creek was any sulphide, other than pyrite, observed. Several pieces of diorite float were found that were fractured with quartz stringers which contained coarse pyrite and the odd bleb of galena thus indicating that it is probable that vein deposits will be found in the intrusives as well as the volcanics and sediments. Some five miles upstream from the end of the logging road the creek wash consists almost entirely of intrusive rocks of many different types. The others are mineralized volcanics. The writer believes that the source of the gold will be found to lie in the intrusives.

CONCLUSIONS AND RECOMMENDATIONS

6 The writer has never encountered a more interesting creek to prospect at such a short distance from transportation and believes that two weeks intensive prospecting, preferably in July or later in the season, will be sufficient to cover both the headwaters of Sloquet and Doodle creeks where good prospects should be found. The splendid truck road from Tipella up Sloquet creek was only constructed in the past two years, which probably explains why the area has been overlooked in

years past.

As mentioned previously, the writer did not extend his examination any further north than Fire creek. There is every likelihood that other favorable creeks will be found along both the Lillooet river and lake and it is recommended that this area be investigated in the spring months; along the valley itself snowfall is never great and some winters are free of snow. Old records indicate that at one time placer miners "rocked out" from 4 to 5 dollars per day per man on the Lillooet river below the lake. Obviously the side creeks must have furnished this gold. The area is most definitely not suitable for placer deposits; the rocks are too hard to have weathered readily and there is no evidence of deep erosion which is always a feature of any placer area.

"J.M.Mackay"
Nov. 10,1943.

Note in J.H. Hough's Handwriting: Dec 3rd,1943.

2 to 12 colors in panning a little mineralized (diorite ?) wash in creek bed.

This in N. fork and below fork of Slouquet Creek flowing W into Lillooet River immediately N of Harrison Lake.

Remarks

Nebulous - report based entirely on panning at relatively low elev.

J.L.H.