

INTRODUCTION

The Quesnel reconnaissance program of 1966 covered only a very restricted area of the Cariboo, mainly because the work was done in great detail and because much of the terrain was densely forested and difficult to traverse. However from our work we can draw some very important conclusions about the potential of the area and about the type of program that should be conducted in the future.

CONCLUSIONS

The Cariboo, especially the geologically potential part between Bonaparte Lake and Prince George was the object of silt sampling programs by numerous companies, some of which were supported by helicopters. It is too early to assess the outcome of this work but we believe that our program was more successful than most others in locating favourable mineralization.

The search for stockwork molybdenum deposits was disappointing and in the future we may place less emphasis on it when choosing our geological targets. However we automatically test all silt samples for molybdenum and late in the season we began to run the molybdenum-in-water test.

"Syenite copper" deposits could become a major asset in the Cariboo area. Certainly the one at Cariboo- Bell has aroused a lot of interest. These deposits are associated with "meta-diorite" and "meta-syenite" which are easily distinguished in hand specimen from the quartz-rich granodiorite. The coarse-grained hornblende syenites north of Spout Lake do have disseminated chalcopyrite in many places but at present do not appear very attractive. These rocks are also easily distinguishable in hand specimen both from the granodiorite and from the meta-syenodiorite series.

It is important to note that in most places the mapping done by the Geological Survey of Canada has grouped these three intrusive rock types under one formation, only occasionally depicting the syenite as a sub-group. Thus the large areas of Mesozoic acidic to intermediate intrusive rocks between Bonaparte Lake and Prince George and the areas of Mesozoic volcanics which are intruded by these rocks may contain some of the important meta-syenites or meta-diorites.

In general, the "syenite copper" deposits contain very little pyrite and at Peach Lake the chalcopyrite is essentially the only sulphide present. When no pyrite is present, oxidation is reduced to a minimum and mobility of the copper ions is almost nil. Thus the geochemical values obtained in streams are relatively low and an interesting mineralized zone could be easily missed in reconnaissance geochemistry.

RECOMMENDATIONS

The Cariboo reconnaissance geochemical program should be continued in 1967 but it should be altered to take advantage of our new knowledge of this area. In addition to doing a geochemical coverage of the geological targets that have been picked from the literature we should choose areas of meta-diorite and meta-syenite for a more detailed investigation. This detailed investigation would include geological mapping with prospecting on a scale of about 1" = ½ mile, detailed geochemical sampling of all gullies and creeks and possibly some soil sampling at chosen spots. In some cases it will be necessary to stake claims during this investigation.

There are two ways of finding the areas of meta-diorite and meta-syenite. One is to make widely spaced traverses, possibly at one mile intervals, in the areas that have been mapped as intrusive rocks. The other method would be to examine all the hand specimens collected in the Cariboo area by Drs. R. B. Campbell and Tipper of the Geological Survey of Canada. Dr. Campbell has his suite of rocks in Vancouver and Dr. Tipper has his suite of rocks in Ottawa. With regards to this latter proposal I would like to mention that, when visiting Dr. Campbell in Vancouver to discuss some rock types of the Cariboo area, I looked briefly through one of his trays of rocks and noted two specimens which he had included in his granodiorite group and which Dick Janes and myself have been mapping as meta-diorite. These rocks were from the northwest corner of Murphy Lake. On the same day, a prospector phoned Dick Janes to inform him that he had claims at the northwest end of Murphy Lake for sale and that he had found some disseminated copper on the claims.

The program should also include additional follow-up work on some small copper anomalies north of the Peach Lake claims.

The camp for the Peach Lake project will serve as a base for the Cariboo reconnaissance work.

The crew recommended for this work is as follows:

Geologist -- R. H. Janes

2 student geologists (graduate and undergraduate)

4 students for soil and silt sampling