

THE HOWEY-COCHENOUR-WILLANS GOLD DEPOSIT

In the recently issued report on the Lightning River area the geologists of the Ontario Bureau of Mines describe the deposit on the Howey-Cochénour-Willans property on which some work has been done. The accompanying sketch, taken from the report shows the lode structure at a depth of 35 feet. There is a "main persistent quartz vein, varying in width from an inch to 10 or 12 inches, with an average width of about 4 inches. Roughly paralleling this main vein there are a number of narrow veinlets, usually less than an inch in width, and more or less discontinuous, the whole partaking of the character of a sheeted zone produced by shearing that accompanied the formation of the fault. This zone varies in width from 2 to 3 feet." The quartz vein is in basalt at the westerly exposure and in rhyolite at the eastern. The shaft following down the vein dip of 23° was started in basalt and entered rhyolite at about 50 feet. Information furnished by J. W. Morrison, who was in charge of operations, indicates that the deposit lies along a fault of the thrust type.

"The quartz for the greater part is of a milk white color and, where not fractured by secondary movement, is rather coarse grained and characteristic of primary quartz in veins. Where the primary quartz has been granulated, usually in a direction roughly parallel with the walls, there is an abundance of secondary calcite with pyrite and a small amount of chlorite. Some pale colored zinc blende and galena are also present."

"The gold usually occurs in a fine condition with the pyrite, but samples from the main vein often contain gold in the quartz visible to the eye."

"Near the veins the wall rock, which is a basic lava, has been greatly altered by circulating waters to carbonate and chlorite, and is penetrated by veinlets of quartz, calcite and chlorite."



Sketch showing quartz veins at Howey-Cochénour-Willans gold prospect, Holloway township; east walls at depth of 35 feet in shaft. The length of vein system in sketch is about six feet. The main quartz vein is shown by the heavy black part; parallel stringers of quartz occur on each side of the main vein.—Bureau of Mines.

Mr. J. E. Spurr has been appointed editor of the "Engineering & Mining Journal," New York. Mr. Spurr is a geologist who has been notably successful in applying geology to mining. Recently he has been in charge of Mineral Investigations of the U. S. Bureau of Mines, a special staff having been engaged on this work for war purposes.

THE MACKENZIE RIVER BASIN

A map and report that will be very useful to those who explore the Mackenzie River Basin in Northwestern Canada has been prepared by Charles Camsell and Wyatt Malcolm and published by the Geological Survey of Canada. Mr. Camsell has had much field experience in this large area and those who explore it will do well to provide themselves with copies of the report.

As the area of the Mackenzie basin is about 682,000 square miles and the greater part of it practically unexplored, it would be a tremendous task to prepare a geological map of the basin. The purpose of the present compilation is to give a concise statement of the present knowledge of its economic possibilities, particular attention being given to the geological features and possible mineral resources.

The area shown on the map extends from Edmonton, Alberta, north to the Arctic and from Prince Albert, Saskatchewan, west to the Pacific Ocean. It includes large portions of the provinces of Saskatchewan, Alberta and British Columbia and of Yukon and the Northwest Territories. The known waterways are mapped and along the chief waterways the geological formations are mapped. Prospectors will find much to interest them in the map and the accompanying report.

Bituminous Sands.

On the Athabasca river there is exposed an immense body of bituminous sands. In the report some of these beds are described in detail. The results of the investigations made by S. C. Ells are summarized. Mr. Ells is of the opinion that the sands can be successfully used as a basis for satisfactory asphaltic pavements.

Clays.

Some of the clays along the Athabasca have been studied. In the report a summary of the results of tests is given.

Coal.

Coal is being mined in the Crataceous rocks along the Canadian National railway which crossed the southern part of the area mapped. In this report attention is directed to the more remote and less known seams, which lie further north. Coal seams on the Smoky River in the Kootenay formation are high grade bituminous "and at least one seam on Smoky river may be classed as anthracite."

A large number of thin seams are exposed in the canyon a few miles above Hudson Hope. Small seams occur also in Peace River canyon and on Getling Creek. On Johnson creek twenty seams are exposed, but only four exceed 2 feet in thickness.

Lignite coal is seen at a number of places in the banks of the Athabasca for 62 miles above Fort Assiniboine. Coal occurs also on McLeod river and near Wolf creek. A number of other occurrences of coal in the area are mentioned in the report.

Gypsum

"Gypsum is exposed at many points in the Mackenzie basin. The deposits that are most likely to prove of commercial interest are those occurring on Peace river and in the escarpment to the west of Slave river."

Petroleum and Natural Gas

"Boring operations have been conducted along Athabasca and Peace rivers where strong flows of gas were struck in two or three wells, and petroleum bearing strata on Peace river have been penetrated.