

COBALT---Portage Bay Extension Will Again Attract Attention---COBALT

COBALT IS IMPORTANT ON SCIENTIFIC GROUNDS

Writer in The Scientific American Points Out the Possibilities of Cobalt's Uses.

Alban Porter, writing in The Scientific American of Cobalt says: The new mining region which is being explored in Northern Ontario is perhaps as important from a scientific standpoint as from the fact that it is of considerable extent. While the principal output has been silver, it is now known beyond question that the percentage of the cobalt in the ores is so high that this interesting substance will probably be utilized to a far greater degree in industries than ever before. While many reports have been current about the mineral wealth of this region, fortunately its natural formation as well as the mines which have been discovered have been investigated by such experts as Prof. William Earl Hilden of the London Geological Society, Dr. Robert Bell of the Canadian Geological Survey, and Prof. Nikolai of the Canadian School of Mines. All of these mineralogists concur as to the extent of the ore veins and the percentage of metal which they contain.

It may be needless to say that the small quantity of cobalt utilized in industries has been almost entirely in the form of an oxide. While it is known to form an alloy of the highest quality, mixed with copper, iron, or manganese, and is superior to nickel for plating on metal, the difficulty in separating it from the elements with which it is usually combined has caused it to be employed almost entirely as a pigment. For example, it is used in the manufacture of the cobalt blue which is a beautiful tinted glass. In a single year such a small quantity has been produced that less than fifty tons of the ore are consumed by the various industries in America. The bulk of the oxide is imported, most of it coming from New South Wales, Switzerland, and New Caledonia.

Those who are familiar with the geology of Ontario are not surprised that the ore deposits in the vicinity of the Portage Bay extension are of high grade. The new mining centre is but ninety miles northeast of Sudbury, which, as is well known, is the seat of the greatest nickel-producing centre of the world. The rocks of the Lower Huronian age and the Keewatin formation come to the surface for a considerable distance in the vicinity of Cobalt. Outcroppings of ore have been found as high as 500 feet above Lake Temiskaming, while workings in the lake itself have also yielded ore of high grade. Also the principal mining operations at the present time are being conducted immediately around the town of Cobalt, over a distance of a percentage of not only cobalt and silver, but also some gold, has been found in the region about the Keewatin formation, while a vein has also been located thirty miles south, which gives a per cent. cobalt, 7 per cent. nickel, 23 per cent. arsenic, with a mere trace of silver, but averaging nearly 100 worth of gold to the ton. While the entire region about the Keewatin formation has been partially examined, the experts to whom we have referred believe that the Huronian and Keewatin strata, which contain the ore, extend near enough to the surface to make the cobalt-bearing region fully sixty miles in length and of unknown width.

As we have stated, the examinations of the veins thus far opened have been sufficiently exhaustive to give an idea of the character and grade of the ores, while a number of the mines has been opened to a sufficient extent to make a conservative estimate of the possibilities of the output. While silver is the principal output, the ores are remarkable for their diversity. They include native silver, smallite, niccolite, argentite, cobalt bloom, nickel bloom, native arsenic, galena, copper and iron pyrites and zinc blende.

The principal vein stone thus far found is calcite, which is a considerable quantity is taken out mingled with the ore. Some of the outcrops so closely resemble pure silver that the conservative statements have been made as to the richness of the field. It has been claimed that pieces of ore have been taken out that are practically pure silver weighing as much as 150 and 200 pounds, but as a matter of fact no nuggets of pure metal anywhere near these dimensions have been obtained in the opinion of the mineralogists. The analysis of quantities of ore taken from different portions of the field give the clearest idea of the proportions of the various metals. A carload of ore taken at random from a series of veins at Cobalt showed the following percentages when analyzed: Silver, 11.41; cobalt, 11.37; nickel, 3.78; arsenic, 44.38.

It will be noticed in this carload the percentage of cobalt nearly equaled that of silver. A carload of ore taken from a different series of veins at Cobalt showed the following percentages when analyzed: Silver, 11.41; cobalt, 11.37; nickel, 3.78; arsenic, 44.38.

The Silver Star Mining Company have effected the sale of their property in Coleman Township to Toronto capitalists. The sale was a good one and the company will at once declare a dividend of 50 cents per share. The company still holds another claim in Coleman Township which is supposed to be in a better position still.

Coleman Township. There is no portion of Coleman Township attracting greater attention at the present time than that in which are situated the properties of the Cobalt Union Mines, Limited. This company, as well as several other strong companies operating in the district, are actively pushing development work, and shafts are being sunk with every foot in depth showing more valuable minerals. There is no doubt that this section will very soon report a number of shippers.

percentage of metal which it carries. The veins thus far located throughout the district are not noted for their size. They average from 10 to 12 inches, in some two instances widening to 18 inches. The geologists are still in doubt as to the formation of the veins, but believe they were created by the action of highly heated water which permeated the narrow vertical fissures where they are found. These fissures cut thru the rocks of the geological area to which we have referred.

Owing to the presence of so much ore near the surface, mining operations in the Cobalt district are notable for the crude methods employed. As already stated, the majority of workings are practically on the surface, the earth and rock covering being stripped off and open trenches dug to conform to the size and direction of the vein. Some of the largest producers have not been mined to a distance of 25 feet below the surface as yet. The system usually employed in getting out the ore from these workings is to utilize explosives, sometimes the pick, to loosen the formation, when it is loaded into buckets and hoisted by means of a boom derrick to the top. The windlass operated by hand-power is one of the common methods. Sidings of tramways have been laid from some of the larger mines to the Temiskaming and Northern Ontario Railway, a line which the Canadian government has built thru this district from Toronto.

At La Roca and a number of the deeper mines where shafts have been sunk, the ore extracted from the chambers on the various levels is carried to the foot of the shaft by wheelbarrows, loaded in the buckets, then hoisted by windlass and cable to the surface, a steam engine of suitable horse-power being installed for this purpose. The buildings at the larger mines consist merely of the shaft-houses—a frame shed covering the mouth of the shaft and hoisting machinery—and stock house, where the ore is broken up into suitable sizes and sacked for shipping to the smelters. Some of the companies have not even provided storage for the ore, and it is a common sight to witness the ore containing 2000 and 3000 per ton in silver lying in bags in the open air awaiting opportunity to be hauled to the railroad station.

Owing to the difficulty of securing the cobalt and nickel by the process employed at the New Jersey smelters, it is understood that a very large proportion of these valuable substances is wasted in the effort to obtain all of the silver which is contained in the ore. A reduction works is now in course of construction at Cobalt in which the German process utilized in treating what is known as Saxon ore will be employed. It is known that by this process ores containing cobalt, arsenic and silver are so economically treated that nearly all the cobalt and silver are saved. The mining department of the Canadian government works are being constructed under the supervision of two German metallurgists who are familiar with the treatment referred to.

Readers of The Scientific American, however, are aware that Thomas A. Edison has been making an elaborate series of experiments for several years with the view of producing an electric storage battery which will be more economical and durable than the types now used for commercial purposes. From time to time reference has been made to the work which Mr. Edison is doing. It is known that during the last year he has made several examinations of mineral deposits both in the United States and Canada. In a recent interview he made the statement that he had discovered a substance for lead which would revolutionize the storage battery. The metal which he intends utilizing is a substance by which it can be secured from the ore in such a form that it is available for his purposes. The cobalt contained in the various nickel ores thus far exposed in the United States, however, is insignificant compared with the extent of the ore in the new mining district. As Mr. Edison made the statement he referred to after he had visited this section of Canada, it is probable that he will utilize a portion of its output in the new battery which he announces he is about to manufacture. The advantages of this battery over the majority of types in use is greatly appreciated when his statement is quoted: This is to the effect that for 2000 a battery can be constructed and equipped which will supply motive power to propel a vehicle for two passengers a distance of 100,000 miles before another need be substituted. The cobalt contained in the ore of cobalt, Mr. Edison believes he has found what might be called a permanent battery.

NIPISSING NEW OFFICERS.

Are Elected and President Earle Retains His Position.

New York, Feb. 4.—At a meeting of Nipissing Mines Company directors, held Saturday, Captain J. R. Delmar, A. Morrell, E. C. Converse and Col. Robert M. Thompson resigned, and in their place were elected W. B. Thompson, Eugene Meyer, Jr., Frank Sherman and J. G. Hopkins. President Earle remains not only as director, but as president of the company. It is estimated the value of the ore shipped by the Nipissing Mines Company in December aggregated over \$50,000, which is considered a good average, considering the severe weather.

Earnings of the Nipissing Mines Company for January were between \$50,000 and \$60,000. The company has \$50,000 cash on hand, including one in transit, which is valued at \$400,000.

An official of the company says that under the new management work of development will be pushed forward with vigour, and that in January, 1937, the company will pay 20 per cent. a year, the present rate, on a capitalization of \$60,000,000, requires \$1,200,000.

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TRETHEWEY WILL SHIP

Another Car of High Grade Ore This Week.

General Manager Frank Loring of the Trethewey Mining Company, Cobalt, is in town, and said Saturday morning that another car of high-grade ore would be shipped from the mine next week. Mr. Loring talks very optimistically regarding the Cobalt camp, and expects to see renewed activity, in fact, quite a boom, in the silver camp early this spring.

Sampler for Nipissing District. Samuel I. Silverman, a pioneer builder of sampling works in Montana, has prepared arrangements for the establishment of a 100-ton sampling plant at the station of Argente, Ont., in the Nipissing mining district. The capacity will be increased to 200 tons daily. This plant is to be operated upon an independent basis, and is designed to stand between the ore producer and purchaser.

Gilpin Claims Sold. A Buffalo syndicate, composed of Dr. Walter L. Savage, Aaron Fybus, attorney-at-law; John Voss, merchant; John A. Donaldson, Erie County Bank, and others, have bought the D. M. Gilpin claim on the north shore of Sasagynaga Lake, adjoining the Hudson Bay, Nipissing, and Cobalt development, and Ottawa, Cobalt, and close to Trethewey, Buffalo and Timmins Mines. The price paid for the property is said to be a consideration of \$125,000. Several veins have been found on the property, but the intentions of the Buffalo syndicate are at present a secret. They also secured an option on the Haskins Mine, close to Lucky, Godfrey, Alibiti and Cobalt and others.

Division Court List.

There is a long list of suits to be tried by Judge Morrison in division court to-day, being:

O'Hearn v. Gunns, \$15.85.
Singer v. Frazee, \$12.
Bedell v. Cain, \$4.40.
Singer v. McGee, \$18.
Allen v. Gallagher, \$10.50.
Ray v. Elliot, interpreter, \$9.01.
McGregor v. Ford, \$17.64.
Watson v. Forgie, \$39.99.
Wyer v. Canadian Pacific Railway Company, \$67.07.
Low v. Darleyson, \$40.
Hamilton v. Campbell, \$95.
Virtue v. Wallace, \$9.
Ward v. McCutcheon, \$50.
Hughes v. Babister, \$60.
Virtue v. Jones, \$15.
Jackson v. Curcio, \$5.
Gould v. Walsh, \$22.
Crutenden v. Rogers, \$3.35.
McKeegan v. Coffey, \$19.
Allyard v. Waters, \$100.
Singer v. McGee, \$42.95.
Harnden v. McMullen, \$17.50.
Export v. Can. Plano Co., \$30.
Berliner v. Alibiti, interpreter, \$28.07.
Cousins v. Macdonald, \$26.07.
Kortcos v. Turk, \$34.
Empire v. Bodes, \$11.01.
O'Malley v. Macdonald, \$18.
Anderson v. Standard, \$75.
Burrow v. Cooper, \$20.30.
Bates v. Co. v. Patrie, \$69.65.
Sinter Gas Co. v. Clary, \$158.80.
Inter. Harvester Co. v. Evertson, \$112.26.
O'Brien v. National Specialty Co., \$124.

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Heart of the Great Cobalt Silver Bearing District

of Coleman Township. Mining men will at once realize the value of these properties by the fact that the south lot adjoins on the north the promising Cleveland-Cobalt property, and also has the Hudson's Bay property on the east, and the

Big Veins of Silver Queen Mine

running west into this lot. The north lot lies in the midst of

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EXPERT'S REPORT

Mr. S. Lawrence, M.E., who submitted a report after examination of both properties, says that on the South property there is a "strong vein eighteen inches wide." The value of the North claim he submits, is "enhanced by the fact that on the claim next east on sinking is found native silver."

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