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CANADIAN MINING.

Local papers in various parts of the province have given, during the past year, descriptive accounts of the discovery of mineral veins, containing respectively copper, argentiferous galena, antimony, and even gold. There can no longer be any doubt, that large and valuable deposits of one or all of these minerals, have recently been brought to light, either in the vein rock or in the drift. In another part of this number, a description is given of gold mining in Lower Canada, and we now propose to make a few remarks on the lead ores and especially those which are reported to contain silver. A general knowledge of the distribution of argentiferous lead ores, will be valuable at the present time, as many persons who have discovered lead veins, are under the impression that they are necessarily argentiferous, and consequently possess a high value.

Lead ores occur in both the chrystalline or fossiliferous and in the unchrystalline or metamorphic rocks, those which being once fossiliferous, have been altered or changed by heat or some other metamorphic action.

Lead is found in the largest quantities in those rocks which have not been altered or rendered chrystalline by metamorphic action. The great lead-mining districts of Spain and the United States are in lower silurian rocks. The celebrated galena limestone of Wisconsin, Iowa, and Indiana, is of the same age as the Trenton limestone of Canada, a formation which occupies a large portion of the western province, extending from Kingston to Matchedash Bay on Lake Huron, and bounded on the south by Lake Ontario east of Port Hope. The Trenton limestone is also found on the Ottawa, and it is near its junction with the Laurentian Gneiss, at its northern boundary, that lead veins have been found in various localities. The great lead bearing rocks of the north of England, are found in the mountain limestone; a formation not represented in western Canada. Spain, the United States, and England, furnish nearly 70 per cent. of the whole amount of this metal raised in the world.

Lead is also found in metamorphic rocks, and it is well worthy of note, that in these older chrystalline rocks, the galena or lead ore, is generally argentiferous, and sometimes contains very considerable quantities of that metal. The fossiliferous or unaltered strata, are not so argentiferous, and do not generally contain enough silver to render the search for that metal commercially profitable, although where the best metallurgic arts are employed, as in England and Germany, as small a quantity as seven or eight ounces to the ton, are profitably obtained. This is about ·003 per cent. As a general rule, the older and more chrystalline the formation, the larger the amount of silver will be found in the ore. So that following this rule, we may expect to find the lead ores from the highly chrystalline rocks of Lake Superior, more argentiferous than those from the unchrystalized Trenton limestone. In New Hampshire, mines of argentiferous galena, have been long worked with indifferent success. The ore contains from 60 to 70 ounces of silver to the ton of 2,000 lbs. of lead.

It is well worthy of note that the lead ores of the vast deposits of Wisconsin, are almost destitute of silver. From numerous analyses that have been made, they are found to yield from ½ of an ounce to 9½ ounces of silver to the ton of 2,000 lbs. of ore. The highest of these values would not render them profitable as a source of silver in this country, where machinery is expensive and labour dear.

The lead ores of Cornwall, average about 23 ounces to the ton, they are contained in chrystalline rocks—those of Derbyshire yield only one or two ounces to the ton; these ores are from the unchrystalline rocks.

The lead ores of Missouri yield only ·001 or ·002 per cent. of silver, or less than one ounce to the ton, even in the most argentiferous specimens.

In 1858, the total value of the silver obtained from the lead ores of the United Kingdom, amounted to £142,336 sterling; the value of the silver bullion imported, amounted in 1857, to £397,441.

The following localities where lead ore is found in Canada, are enumerated in the Descriptive Catalogue of Canadian Minerals: (Sir W. F. Logan.)

1. Gaspé—Indian Cove—found in the Lower Helderberg Group, Upper Silurian.
2. Upton—Quebec Group, Lower Silurian.
3. Ramsay Mines—Calciferous Formation, Lower Silurian.
4. Landsdowne—Laurentian.
5. Bedford—Calciferous Formation, Lower Silurian.

From the foregoing statements it will be seen that argentiferous galena, susceptible of being profitably worked, is of comparatively rare occurrence in those fossiliferous rocks which have not been metamorphosed or rendered chrystalline, and