

a portion of fine snow, which it is intended, as far as possible, to exclude by a small ledge of tin on each side of the shutter.

The Beaufoy Circle which the Astronomical Society, as stated in the last Report, have agreed to lend to the Observatory, has not yet been received. The Trustees of Queen's College agreed to defray the expense of the repairs which it was found to require before its transmission to Kingston, and Messrs. Troughton and Simms were instructed to put it into proper working order, which will, no doubt, be done in the best possible manner. In consequence of Mr. Simms' illness, the repairs have been delayed longer than was expected. A letter, however, was received a few days ago from the Rev. Mr. Romanes, formerly one of the Professors in the University, informing me that it is now nearly ready.

A standard Barometer and Registering Thermometer, by Cassella, will be placed in the Observatory in the course of this month, and daily Meteorological observations made and recorded.

I have now the pleasure of stating that the debt of the Observatory for buildings, &c., has, by economical management of its limited funds, been paid off, and that the College has found itself in a position to make the appointment of an Assistant Observer, an appointment contemplated from the first to be made as soon as the funds would allow. Mr. Dupuis, a person of great mathematical attainments and mechanical skill, has been the successful candidate. He will attend at the Observatory every lawful day, for the purpose of assisting in making and recording the requisite observations, and will be ready once a week at certain hours to show the building and instruments to visitors who shall have notes of admission from any member of the Board of Visitors, or any of the subscribers in the Institution.

The observations since the receipt of the Transit, though numerous and occupying a very considerable portion of my time, have been chiefly confined to perfecting its various adjustments, as well as the more complete adjustment of the Equatorial, to the regulation of the clock and of the local time, and to preparations for establishing fixed meridian marks, one more near on the mainland, and the other more distant on Wolfe Island. Two public lectures in the City Hall, and illustrative lectures at the Observatory, have been given during the past year. Other two lectures at the Observatory will be given, one on Friday first, and the other on the following Friday. All which is respectfully submitted.

JAS. WILLIAMSON,
Directory of the Observatory.

4. 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 supposed 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 limestones 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 of 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 unchrystallized 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 analysis that have been made, they are found to yield from $\frac{1}{2}$ of an ounce to $\frac{9}{16}$ 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. E. Logan.)

1. Gaspé—Indian Cove—found in the Lower Heidelberg Group, Upper Silurian.
2. Upton—Quebec Group, Lower Silurian.
3. Ramsay Mines—Calceiferous Formation, Lower Silurian.
4. Landsdowne—Laurentian.
5. Bedford—Calceiferous 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 persons cannot be too cautious in accepting statements relative to the richness of lead ore or silver, until a proper analysis has been made from specimens which represent the general characters of the vein or metalliferous deposit.—*Journal of the Board of Arts and Manufactures for U. C.*

VI. Biographical Sketches.

No. 12.—SIR LOUIS H. LAFONTAINE, BART.

One of the most remarkable men which Canada has produced has died in middle age: Chief Justice LAFONTAINE, at the age of 58, has suddenly been called from the duties of active life to that bourne whence there is no return. Unlike the much-enduring and long-lived public men of England, and in this respect too much like the majority of those of America, he took but little exercise, and did not preserve the due balance between brain and muscular exercise. He was a heavy rather than a fat man, of large frame and massive head; bearing, in his countenance, an appearance suggestive of NAPOLEON the Great; while in size he was as great as possible a contrast to the great warrior who set the world in flame. His face was an unerring index to that strength of will for which, in so remarkable a degree he was noted.

M. Louis Hypolite Lafontaine was born at Boucherville, Lower Canada, in October, 1807 being the third son of A. M. Lafontaine. None of the other members of the family appear to have attained any celebrity: and perhaps the talent of the family chiefly centred in him. Applying himself to the profession of the law, he worked with assiduity and success: nor did he permit anything to distract his attention from his profession till he had acquired a competence. While he accumulated what was considered a handsome fortune, for a professional gentleman in Canada, he enhanced his social position by a marriage with a daughter of M. Amable Berthelot, who long held a seat in the Legislative Assembly of Lower Canada.

Coming on the stage when Papineau was in the zenith of his fame M. Lafontaine was counted among that gentleman's followers. The different characters and talents of the two men were ultimately to assign them to very different positions. A period of rivalry between them was to come; and after a short and sharp struggle the mastery was to remain undisputedly with M. Lafontaine. Till the period of the rebellion, M. Papineau was the leader, M. Lafontaine the follower. Few prominent men of the popular party, in Lower Canada, escaped imprisonment, at the time of the revolt. On the 4th of November, 1838, under a warrant issued by M. H. Edmond Barron, J. P., M. Lafontaine, *suspecté d'être suspect*, was ordered to be sent