

of Manitoba prefer importing coal to using the

inferior lignito which is found in the south-west

corner of their province. Under these circum-

stances, the possibility of finding, in many places,

a cheaper and better substitute in the form of

natural gas, may be hailed as a boon of no

small importance. This therefore unexpected

source of heat and 1 ght has been largely developed in some parts of the United States. especially in Pennsylvania. Obio and Indiana: and the question is naturally asked, have we anything of the sort in Canada? Lately this question has become of special interest to the citizens of Ottawa. Geologists tell us that wo have here the same formation which yields the apparently inexhaustible supplies of gas in Ohio, and that its thickness and character are such as to lead us to expect that it may produce this substance in large quantities. But it is not a question of production alone. T. gas must have also been retained in the strata through long ages in order that it may now be available. This again necessitates the existence of the natural reservoirs in which to store it; and it seems that these are only to be looked for under anticlinal atches and domes. The anticlinal theory, in reference to the accumulation of petroleum and gas, was first propounded by our own geologists, Logan and Hunt, in 1860. and the truth of this theory has been fully established. Indeed the physical laws governing matter make it impossible to be otherwise. The existence of available supplies of high pressure gas is therefore a question of geological structure as well as of the presence of the gasproducing strata. And both of these conditions would even prove unavailing without a sufficient cover to retain the gas; so that the concurrence of all three of these conditions is necessary to obtaining a supply of this valuable substance. Other conditions may also be mentioned, such as that the anticlinal must be an extensive one, otherwise the quantity of the gas and its pressure will be small in proportion. We see, therefore, that although the rocks

under the City of Ottawa, for example, may have been producing gas through a long geological period, it has all escaped as soon as formed, owing to the position of the strata and the want of a cover. This will naturally be the the case also everywhere near the outcropping edges of the Trenton formation. The Utica shale is scarcely of the character necessary to hold down gas under high pressure. What is wanted is a more plastic and impervious formation.

We see that it is proposed to bring "gas experts" here to point out the proper places to bore. It is, however, not a matter for "gas experts" to deal with, but purely a geological question, and we have surely talent enough nearer home to advise us in this matter. We will no doubt find plenty of wiseacres to tell us there is no use to look for natural gas within an available distance of Ottawa. In the United States natural gas is brought 20, 30 and even 40 miles. The burden of proof will rest with those who deny the utility of incurring the small expenditure necessary to try, provided the most likely places be pointed out by our geologists.

The city council of Ottawa has acted rashly in granting equal rights to two companies to lay pipes, etc., in our streets, A gentleman connectèd with one of them has suggested a way out of the difficulty by the city itself laying the pipes and allowing both of the rival companies to supply the gas simultaneously. But he should remember that *pressure* will have something to do with this arrangement. One company might not only be supplying all the gas, but be actually pushing it down the other company's well, which would become a mere safety valve to the other. Our city fathers must solve this problem, which has been of their own creating, in some other manner, and place no unnecessary barrier in tho way of the citizens enjoying the gift which nature has apparently placed near our doors.

## Production of Salt and Silver.

In the brief review last month of Mr. Coste's Statistical Report on Minerals in Canada, we were only able, from the limited space at our command, to glance at the general features of the work, without commenting at any length on several of its articles which are well worthy of special notice. Mr. Coste was materially aided in the preparation of this work by Mr. E. D. Ingall, R.S.M., to whom in large measure the inception of the undertaking is really due, and to whose assistance Mr. Coste gracefully alludes in his opening paragraph.

The article on salt, by Mr. Ingall, is especially worthy of notice, as it gives a concise history of the salt works of Canada from the start, and contains much valuable information respecting the process by which salt is manufactured from the brine. The causes which tend to depress this industry, and so limit the production of nativo salt, appear to be principally the competition of English salt coming into Canada duty free, and with discriminating freight rates in its favour. The Canadian demand is limited, whilst that of the States is large and rapidly increasing. The subject was treated very discursively in the Geological Survey Report of 1876-7 by Dr. Sterry Hunt, since which date we believe no official data have been given to the public until Mr. Ingall took it in hand. He states that the large area in Ontario underlain by the salt, would enable the Goderich district to supply all the salt demand of the Dominion for years to come. As the fish trade of the lakes increases, which every succeeding year shews to be the case, the demand for salt for curing purposes will increase likewise, and its production on the spot must materially tend to the ultimate use of the native product over the imported article. The tables compiled by Mr. Ingall and inserted at the close of his article will be found very useful for reference.

Another exceedingly well written article from Mr. Ingall's pen is that on Silver. From it we learn in as concise a manner as is compatible with a statistical abstract, the exports of this precious metal since 1873. Owing to the interest now attaching to the silver mining operations in the Port Arthur district, which