

iron mines. He next proceeded to describe the mode of occurrence of

Common Salt, and the circumstances which tend to regulate its price in any locality, as well as the various modes in which it is prepared for commerce. The quantities consumed in the States and Canada were mentioned; and it was argued that owing to various facilities existing in some parts of the Gulf of St. Lawrence, the establishment there of salt-works of a paying character was feasible enough.

Iodine was next referred to. The price of this substance, which is derived from sea-weeds, was said to have risen enormously within the last year or two. The sea-weeds which yield it in largest quantity are very abundant in the Gulf. It is worth from \$3 to \$4 per pound, the demand is unlimited, and there seems to be no reason why its manufacture could not be profitably carried on in the Gulf.

Magnesia, in its natural compounds, was mentioned as existing in great quantities in Canada, some of the deposits being of unusual richness and extent. It appeared, however, from the lecturer's statement that the manufacture of its salts would in the meantime be of doubtful advantage. But magnesium, the valuable metallic base of these salts, was now attracting much attention, a company having been formed in Manchester for its extraction; and our "magnesium ores" might some day prove of unexpected value.

Sal ammoniac, or chloride of ammonia, for various reasons which were mentioned, was thought capable of being profitably made from the ammoniacal liquors of the gasworks in our cities, in the manner which is now practised in Europe, and found to be highly remunerative.

Turpentine and Rosin were spoken of at considerable length. The processes of making these from the balsam of coniferous trees and from the distillation of resinous wood were fully described. It appears that a commencement has been already made in the manufacture of these substances, in Canada and New England, with the most satisfactory results; and the lecturer advocates the extension of this branch of industry. From authentic returns it was shown that in 1863 the amount of turpentine imported into Great Britain had fallen off to one-tenth of what it was in 1859, but that in the same time the price of the article has risen 232 per cent. The imports of turpentine and rosin into Canada are so large that it would probably be some time before we could do more than supply the home demand.

Aniline, which constitutes the basis of the so-called "coal-tar colors, such as mauve and magenta, and which are now displacing many other dye-stuffs, was shown to be capable of profitable manufacture in this country.

Acetic acid was said to be now made, on a large scale, almost entirely from the distillation of wood. Two of the most approved processes for that purpose were dwelt upon by the lecturer. From the fact that the wood best suited for this purpose is very much cheaper in this country than in Britain, and for other reasons it was claimed that we had

the advantage of the old country for the prosecution of this branch of industry. *Chloroform*, it was said, is made by distilling alcohol with bleaching powder, quick-lime and water. One gallon of commercial alcohol produces nearly three pounds of chloroform, and the cost of all the materials for this quantity would, probably, be less than \$3 60, while the chloroform produced would be worth \$4 95 at the present wholesale price in Montreal, thus leaving a margin of \$1 35 for every gallon of alcohol consumed. The labor required to make chloroform is very slight. The New York price is greatly below that of London, and considering the cheapness of alcohol in this country, as compared with either Britain or the United States, it is reasonable to suppose that the profit of making chloroform in Canada would be very large.

Pot ash is exported from Canada, as yet, only in the form of the carbonate, but it was shewn that various other compounds of this substance might be advantageously prepared for exportation abroad.

Sulphuric acid, was by far the most important of the chemical manufactures which the lecturer thought could be profitably carried on in Canada, since it forms, as it were, the ground work of many other chemical processes. Among them were mentioned the making of carbonate of soda (so essential in glass-making, &c.) together with hydrochloric acid from common salt; also, the superphosphate of lime from bones, or from the mineral *apatite*, which is abundant in Canada, for the refining of rock oil, and for use in other processes which were mentioned.

The English method of making sulphuric acid from iron pyrites, was described, and numerous places in Canada were referred to where this process could be carried out, and an abundant supply of pyrites obtained. In 1863 acids, mostly sulphuric, were imported into Canada to the value of \$80,000, and were some of the chemical works which the lecturer had enumerated, established in our midst, the quantity consumed would be vastly increased. There are various causes which render the price of imported sulphuric acid much greater than that for which it could be easily produced in our own country. A very large profit was, therefore, to be looked for by any one who had the enterprise to engage in this operation.

The lecturer then made some observations on the probable future of Canada in regard to what we might expect from agriculture, lumbering and the fisheries, and the increased prosperity to be derived from a greater variety of pursuits, and the establishment of more manufactories, among which some of the foregoing should be included. A judicious revision of the tariff, in regard to the importation of chemical substances, might assist in accomplishing this object. These works would not only be a source of gain to their proprietors, but would also afford employment to our increasing population.

In conclusion, the lecturer said, although this might not be a very interesting subject for a popular lecture, still if he had succeeded in directing the attention of others to an object of such practical importance, he should feel that this effort had not been in vain, and resumed his seat amidst loud applause.