the machinery, while chemistry has contributed no inconsiderable aid.

"A modern beet-root sugar factory, erected and fitted with all the new improvements, presents one of the most perfect processes conceivable. At one end of a low shed building of one story, the root is taken in as it comes from the field, and in twenty-four hours afterwards, the loaf-sugar obtained from it issues from the other end. The cost of such a manufactory, capable of working three tons of sugar per day, is for buildings, £2000, and for machinery, about £6000,—independent of working capital. One of the greatest improvements of late years, consists of the introduction of the centrifugal machine in more than one stage of the process, by which a better and more perfect extract is obtained. Formerly, (in 1842,) the largest extract of pure sugar from beet-root, was three per cent. Now, in Belgium, it exceeds six per cent., and if the Excise laws permitted the use of the carbonic acid process, it would be immediately increased to 7½ per cent.; so that about 13½ tons of beet-root, would give one ton of refined sugar." In France, the improved culture of the beet now produces from fifteen to twenty tons per acre. Another improvement lately introduced, is the following:—"Hitherto the beet-root factories have been able to work only about five months in each year, from October to March, while the root could be kept sound. Now, a means has been adopted of preserving the root, by cutting and drying it, without any detriment whatever to its saccharine properties; so that in *place of five months, a factory may be worked* the whole year; therefore, the same amount of capital sunk in buildings and machinery, will perform more than double the quantity of work.—By other improvements the molasses, which were formerly so bad, that they could only be used for feeding cattle, or for distilling into common spirits, which were rectified for manufacturing purposes, are now made into excellent gin, quite equal in quality to grain spirits."

In France the process is conducted on the same principles as in Belgium. But in some parts of Germany the mode of proceeding is somewhat different. Each grower, instead of selling the root to the manufacturers, makes it into a raw sugar, which he disposes of to the refiner; this perhaps is not so profitable, but may be better suited than the other method to the altered circumstances of individuals or neighborhoods.

That beet-root sugar will eventually displace altogether that produced from the cane, even in the most favored European countries, as regards labor, soil, &c., can hardly be expected. It is well known that the cultivation of the sugar-cane, and the modes now practised for extracting the saccharine matter, admit of very great improvement; and the competition got up by the manufacturers of beet-root sugar, will assuredly call out the active energies of those of the cane.—Already considerable improvements have been or are being effected in our West Indian colonies and as cane sugar will always possess advantage over all other kinds, for preserving and other purposes, we may fairly look forward with almost a moral certainty that the article of sugar which is at once both a luxury and necessary of life in all civilized communities, will be placed within the reach of the poorest classes of society.

Whether the growth of the beet, and its manufacture into sugar, could be made profitable in this Province, is a question very difficult to decide absolutely, apart from carefully conducted experiments. We hardly think that farmers could grow the roots at three dollars per ton, when the price of labor, and the casualties of weather are duly considered. In England the recent attempts to manufacture beet-sugar, have not proved, as we understand, very successful; but as regards Ireland, brighter anticipations are indulged in; and preparations are there being made, on an extensive scale. We should much like to see the thing fairly tried in Canada, by competent and trust-worthy parties.

At the last meeting of the British Association, Professor Hancock read a paper "On the Prospects of the Beet Sugar Manufacture of the United Kingdom, of which the following is an abstract:—Public attention had been directed to this manufacture by the effort to establish a public company in London for its *introduction into Ireland. He had learnt that,* at Maldon, the manufacture had been attempted by private company; but this attempt led to failure in short time. A manufactory had been recently established at Chelmsford, and contracts had been entered into with the farmers in that neighborhood. The prospects of the manufacture depended on the answers to three questions:—1st. What was the price of beet-root likely to be for a series of years? 2nd What was the price of refined beet-sugar likely to be after 1854? and 3rd. Would it be profitable to carry on the manufacture at these probable prices of the raw produce and manufactured article? As to the price of beet-root, its price varied in France from an average of 13s. 11d. per ton in the north-east of France, to 18s. 5d. per ton in the north-west of France. The average for the whole of France was 15s. 1½d. per ton. In Ireland the price stated to be contracted for the Sugar Beet Company was 15s. 6d. per ton, and the price at Essex was from 18s. to 20s. per ton. Thus it appeared that the present price in Ireland was higher than the average of France, and the present spice in Ireland was higher than the average of the highest-priced districts of France. What the future price in Ireland and England was likely to be was a difficult question, and had not been as yet fully investigated. As to the second question—the price of refined beet-sugar after 1854—it was necessary to take the year 1854, because at present there was a differential duty in favour of home-grown beet-sugar, which would diminish each year, and cease after July, 1854. After that time the short price of refined beet-sugar would most proba-