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The Field.

Beet Root Sugar.

INTRODUCTORY.

"Beet root sugar! Ah yes, we all know they make a great deal of it on the Continent of Europe, more particularly in France and Germany, but as no manufactory of it can be conducted except on an enormous scale, and with a heavy outlay of capital, it will not suit Canada where labor is so high, and the climate is unfitted for it."

This is the observation which the writer has had to combat in speaking of the subject with every tolerably well-informed person, while to those who knew nothing about it, the matter seemed to be enveloped in such a hopeless mystery that few could be got to approach it. After exhausting every other objection the caviller would say: "You do not understand the subject yourself; you have never made beet root sugar; book learning won't answer in a case of this kind;" and so on.

To meet these objections there was but one course, namely, to go at once into the practical manufacture of the article on a small working scale; to learn the whole business; and be able to reply to objections; my knowledge is derived not from books alone, but from practice as well. I make such an article of crude sugar that it is saleable to the refinery, in the following manner; obey my instructions and you may make it too.

As, however, it is important to carry the reader fully with me, I shall show how it was that Beet Root Sugar first came to be used, and why it has been considered a *sine qua non* that it should be made on a large scale.

Beet Root Sugar, as a national production and grand article, of domestic use and manufacture, originated, with the great Emperor Napoleon. His continental system, and the enormous wars attendant thereupon,

cut France off from communication with the tropic climates where the sugar of the world had at that time been produced, and thus deprived the nation of a grand necessity, as well as a grand luxury (for it is now considered by all that not only is sugar a luxury but a necessity in the broadest sense of the term), and Napoleon well understood that, although, a nation under certain circumstances will submit to be debarred from civil and political rights, yet touch the human family in any matter of daily use or daily indulgence, and they become ungovernable.

Under these circumstances he called the great chemists of France together and said, France requires sugar, the tropics are closed to us, our supply of sugar is cut off. It must be had as an article of French production and home industry; the nation requires it: the resources of the empire are at your command; but sugar must be had at any cost; make it.

The entire chemical talent of France was, therefore, turned to this point. At first they made a chemical sweet which was called sugar, but it was not sugar, and did not meet the public requirements. Then they turned their attention to the beet root, and they found that this root would yield the required substance.

But chemists as a body are governed by entirely different rules from mercantile manufacturers; chemists look chiefly to the success in their processes without counting cost; to the mercantile manufacturer everything else must bend to cost, his ultimate end is profit.

The French chemists not only had to supply sugar, but to supply it on an enormous scale, and the works were erected of a corresponding magnitude—the works were not calculated for profit but for supply—and as the manufacturers could in the first place demand their own price (as sugar, in France, could be obtained nowhere else) the works were made, in some measure, remunerative as well as to afford the public what was wanted.

After the continental war was closed, and the French were again able to enter the markets of the world, and get sugar as cheaply as any one else, the first real struggle of the beet sugar manufacturers commenced. They had to work against slave labor and against cane sugar, and also against the accumulations of stock and production and preparation for growth which had taken place while the continental markets were closed; and then for the first time it became a fair race between beet sugar and cane sugar. About that time also the beet sugar people got a great advantage over their opponents of the tropics by the abolition of slavery in the principal sugar producing countries, and it was then (with the exception of Cuba, Brazil, and the United States) free labor in the tropics with the sugar cane against free labor with the beet in Europe; and the beet sugar has ever since gallantly held its own against all opposition.

It was during this struggle that the enormous factories of beet sugar did good service to the cause; they had so much capital locked up in them that further expense to keep their position became a matter of necessity, and no cost was spared to produce efficiency, and it was then that the great improvements in the manufacture were made.

The processes were, however, kept as secret as possible, and the public was carefully indoctrinated with the idea that beet sugar could not be profitably made except in the enormous factories on the continent.

Modern science and enquiry, and the easy communication of nation with nation of the present day have gone far to open up the close corporation of the beet sugar manufacturers, and it will be seen by the following record that the mysteries so long shrouding the process, have been except a few of the full particulars that are now at a g.

The writer claims nothing as entirely new in the process set forth: the arrangement of the various processes is now; but more so