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The Sugar Beet.

Among the things which Napoleon Bonaparte is not remembered for is the establishment of the beet-sugar industry in Europe. It was his encouragement, given while he was the almost absolute ruler of the French Empire, which raised the making of sugar from beets from the field of struggling experiment, fitfully engaged in by men of science who were regarded as visionaries, to a practical position which has finally made it a larger and more important business, taking the world through, than the making of cane-sugar.

Although the great Napoleon was not the sort of man whom it was ordinarily safe to laugh at, he was ridiculed and caricatured on account of his faith that sugar could be made profitably from beets.

In 1811 the Emperor promised the French people that they should have sugar from beets if he excluded from France the commerce of England, including the sugars of the British West Indies. This promise led to the publication of a caricature, in which the Emperor and his little son, the King of Rome, were represented.

The Emperor was shown sitting in his boy's nursery, squeezing a beet root into a cup of coffee. The baby Prince sat near him, hard at work sucking a beet-root, while the nurse, standing close by, was represented as exclaiming, "Suck it, dear, suck it, your papa says it is sugar!"

This biting sarcasm did not prevent Napoleon from spending several million francs, at a time when his Empire was under a tremendous strain of expenditure, in bounties for sugar made from beets, and his sagacity has been vindicated at last by the fact that, within the past five years, the world's yearly production of beet sugar has risen above its production of cane sugar by more than a million tons.

By far the greater part of this beet sugar is raised and consumed in Europe. It is now the sugar ordinarily used there, just as cane sugar is the sort almost universally used in America.

Beet sugar may be bought in certain stores in our Eastern cities. To the taste, it cannot be distinguished from the best cane sugar, except by experts, who say it is richer in sweets than most cane sugar.

It is not made from the common red garden beet, but from a white beet—in some varieties verging upon a pink color—which has been developed by cultivation and selection until its juices yield a proportion of from ten to sixteen per cent of sugar.

Almost a hundred years of experiment and hard work were needed before the cultivation of the beet for sugar became profitable in Europe. No crop in the world requires more painstaking and scientific cultivation to make it a success, and none makes easy-going methods more promptly.

The sugar-beet, it is true, is not raised in Europe, as in most of a golden rather than an indigo color.

farmer can afford, as is often done in France and Germany, to put fifty dollars' worth of fertilizer upon a single acre of land in a single year.

Unlike some other expensive crops, the cultivation of beet sugar is very good for the land. A good deal of other produce is raised at the same time, and the quality and quantity of every other crop is greatly raised by the cultivation of the sugar beet. Its benefits are twofold.

The harvesting of the beets is done just at the height of their ripeness, and often after the first frosts have fallen. They are sometimes pulled from the ground by hand labor, but oftener by means of a sort of digging machine drawn by horses, not unlike an ordinary cultivator. Then the beets are carefully housed in cellars or silos constructed for the purpose, preparatory to being sent to the manufactory.

At the manufactory they are sliced by machinery, and the juice, in the best factories, is extracted from the slices not by crushing them, but by a process called "diffusion," in which the sugar is drawn out by soaking them again and again in liquids. This leaves the beets, deprived of their sugar, in a condition to be fed to cattle which are being fattened. The syrup obtained by the diffusion process is boiled down to sugar.

The cultivation of sugar beets has not been generally successful in this country up to the present time for several reasons. One of these is that we have almost at our very doors the cheaply made cane sugars of tropical countries. Another reason is that our farmers, as a rule, have not the time or patience to give to a crop the thorough and scientific treatment that the cultivation of sugar beets demands.

But a more important reason still is the fact that the necessary conditions of soil and climate have not been observed. According to the statements published by the Department of Agriculture, the sugar beet is at home, and able to do its best, only in a region which has a mean temperature of seventy degrees Fahrenheit for the three months of summer.

Such a summer temperature is found in a belt of country lying one hundred miles on each side of a line beginning at New York City, running up the Hudson to Albany, then striking westward through Cleveland, Chicago and St. Paul; then southward and westward through Colorado and New Mexico to the Pacific coast, and along that coast northward to Oregon and Washington. There is an immense and fruitful region in this belt, but not all the territory within it is suited to raising the sugar beet, because the rainfall is insufficient or not even enough, but there is, too good a deal of country outside the belt where, owing to local differences in the climate, the right conditions for the sugar beet will be found.

American farmers, when they introduce the cultivation of the sugar beet in good earnest, will have the benefit of all the costly experience of the Old World. If they avail themselves of the assistance of science, they may surpass the products of the Old World in this respect as much as they have done in many other respects.

They will have, however, a hard task to surpass the thorough methods of the European cultivator. A single fact well illustrates the methods of the Old World farmer, who looks for his profits to his own efforts more than to nature's friendly aid.

The French Government, being in need of added revenue, and having already taxed the process of manufacturing sugar from beets, placed a tax upon the beet itself. The farmers, finding that to raise more beets meant more taxation, set about getting more sugar without increasing the number of beets.

By heightening their cultivation, they succeeded in greatly increasing the richness of the French beet, which was their favorite variety, thus turning an oppressive government edict into an advantage.

In the operations of the French farmer and gardener, indeed, nature seems to play a small part compared with man's efforts. The tenant gardener of the region about Paris generally brings with him, when he takes a piece of ground, all the soil that he uses, and when he gives up his land, he takes the soil away with him.

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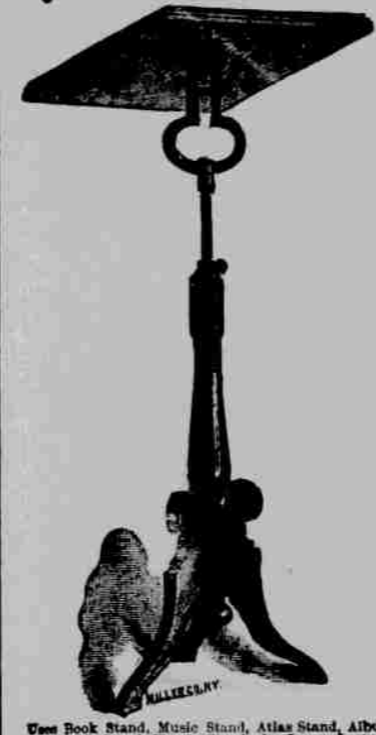
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