

be completely overcome, there cannot be the least doubt. Lime water applied to the juice as soon as it comes from the mill, one gill to fifteen gallons, was thought to produce the best effect. But experiments were made with various other things, such as milk, eggs, charcoal, &c.; these were used separately but nothing appeared to raised the scum as well, and render the juice as clear and well-flavored as the lime water. One experiment was made by filtering the juice through sand and charcoal; this rendered it very transparent and improved the taste, but there are very many objections to this process—the length of time required for the operation is a sufficient one.

STRAINING.—This operation is performed both before and after clarifying. The strainer used was a square yard of good new flannel, of fine texture; so great is the amount of mucilage, or very minute particles of the cornstalk contained in the juice, that the strainer has to be rinsed in water once or twice in straining a batch. The second time straining is rendered more difficult by the juice being hot, as the hands have to be used in forcing it through the cloth. As knowledge and experience is gained on the subject of clarifying, the straining will be dispensed with, except to pass the juice through a coarse strainer to remove some of the larger impurities. Some method will be discovered by which all this foreign matter will be removed in the operation of skimming.

BOILING.—This operation requires care and close attention, particularly when about ready to skin, and when the juice is concentrated to about the point desired. The more rapidly this operation is performed, the more perfect will be the crystallization. But, however necessary it may be, it is scarcely possible, with any apparatus that I have any knowledge of, to perform the whole labor of cutting, grinding, straining, skimming, and boiling, in the short space of one hour, as recommended by Professor Mapes, of New York. If this is ever done, it must be in very small quantities, or some very improved method must be adopted.

In boiling as soon as the scum begins to rise, the fire must be regulated with care, that time may be had for removing the scum before it shall be boiled in. If the operation of boiling and skimming be well performed, about one gallon of thick heavy scum will be obtained from a batch of fifteen gallons. The syrup, when it becomes thick and nearly done, has a very beautiful appearance, in every respect equalling the best of maple syrup. To boil to the crystallising point, (which is a very uncertain one,) requires considerable care and discrimination. The same tests that are used for maple sugar, are equally applicable to cornstalk; as for instance, when it will flake off, breaking short from a dipper or stick—or string out between the thumb and finger, from half an inch to an inch in length, is perhaps the safest test. Very great care is necessary here, that it be brought to the right point and no more; and also in managing the fire, as a little blaze, or too strong a heat is most sure to scorch, and this is fatal to crystallization.

CRYSTALLIZATION.—Difficulty has been found here by all that have made experiments with cornstalk sugar; but perhaps every one has obtained a sufficient quantity that was well grained to satisfy them, that the difficulty was somewhere in the process of manufacture.

From recent observation I am inclined to think that I have kept my sugar in too cold a place. Two small parcels, left partly by accident where they received the warmth of a fire, were found well

grained. But there is another difficulty after it is well crystallized, to make the molasses separate, or drain, as it is called: although the crystal appears to be as fine as ever was formed, still the molasses will not separate by any common methods used for maple sugar. As yet I have not been able to secure any better specimen than that exhibited at the State Fair.

AMOUNT FROM THE ACRE.—Although the quantity of stalks was so much diminished by the drought, yet six hundred pounds were obtained; this it should be understood, is weighed when taken from the fire and before graining has commenced. If it were well grained and the molasses separated, the weight of sugar would probably not be more than five hundred, and molasses one hundred.

In order more fully to determine the amount that might be produced from an acre of good corn, I measured two square rods of the best corn I had: the stalks were then cut, and their weight was 195 pounds; after grinding, the juice weighed sixty-nine pounds and measured nine gallons; from this I obtained twelve and a half pounds of sugar. By this it would appear, that had the whole acre been as good as the two rods submitted to the test, one thousand pounds would have been the produce. And it would seem that this must be a safe calculation as the stalks on the two rods were not as large as would be grown in a good season.

An equal amount by weight of large stalks of rank growth, and small ones that were grown thick, were ground separately; but as no material difference was found in the produce, my opinion is that the corn should be cultivated so thick that no ears will be produced.

[Here follows a list of items, which we omit, showing the expense of raising one acre of cornstalks, including rent of land, to be \$19 52.]

There is no part of the business so tedious as plucking the ears, stripping the leaves and cutting off the tassel. A part of this labor was performed for the fodder that might be obtained from it, but it was not sufficient to pay; as the labor of plucking the ears was performed for this consideration, I am unable to say what it would cost; but this much is certain, it is needless for the most part, as no ears of any amount need be raised, if the corn is sufficiently thick. From the best estimate that I can make of the expense of stripping leaves and cutting the tassel, I think that a smart hand would perform the work on an acre in six days, or for \$4 50; making the whole expense up to the cutting of the stalk \$24 02.

It is somewhat difficult to come at the expense I was at in manufacturing the acre of stalks into sugar, so much was done by way of experiment. But as one hundred pounds were made one day, I shall take that as my guide, and call it a day's work for two hands to make one hundred weight.

The amount above brought down.	\$24 02
To twelve days work making sugar, at 6s. per diem.	9 00
To use of horse and waggon 6 days at 3s. per diem.	2 25
To $\frac{1}{3}$ cord of wood at 12s. per cord,	1 12

The whole expense of cultivating the crop, } and manufacturing the 600 pounds sugar, }	\$36 40
Or a fraction more than six cents per pound.	

Some credit may be given for fodder, as a large amount of leaves or blades might be saved with a little extra labor, while stripping them. The stalks, after being ground, are worth something, horses and cattle eat them very greedily when they are fresh from the mill.