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TO MAKE SYRUP FROM CHINESE SUGAR CANE.

W. Tooney, Esq., of Esaula, communicates the following interesting and instructive article to the *Southern Cultivator*:

**The Manufacture of Sorgho or Confederate Syrup.**—My directions are for farmers and planters who have not, cannot, and would not, get the elaborate apparatus of a sugar house; but there are essential fixtures, &c., which must be had, to wit: a mill, boilers, a bailing dipper of wood of five gallon capacity, with a long handle, a common dipper, and perforated ladles or skimmers.

**The Mill.**—Get one mill for fifty acres, and two for a hundred acres or more; the size, 18 inches in diameter, and 24 long, for the cylinders. They should be cast iron; the foundries make them to order.

**The Boilers.**—They should be proportioned in size and number to the size of the crop; say one for twenty acres, two or three for fifty acres, and five or six for one hundred acres, more or less. As many as five or six can be put in one battery, and operated by one furnace, gunning under all.

The capacity of the boilers can be greatly increased by fastening a wooden rim eight or ten inches high around their tops. The brick work of the furnace should not reach higher on the inside than midway of the boilers, otherwise the syrup will be burnt by the fire.

The cane should not be cut until ripe, which may be known by the seed becoming of a purplish black, and the stalk streaked with red on a yellowish ground. It is well to know and recollect that the canes, if left standing on the land where they grow, with all their leaves or fodder on them, will keep good until the crop is manufactured, if you will barely cut off all the ripe seed. If you pull the fodder the canes will dry up, it being the mouth and lungs of the plants.

**The Gathering of the Canes.**—Pull the fodder as you do corn fodder, each day as you grind your cane. Cut the stalks close to the ground with sharp hoes, and haul them to the mill with the seed on, with a small crop, but cut seed off in the field if a large one, dry the panicles in the sun one day and house. The seed will equal or exceed corn on the same land, and containing by chemical analysis 66 per cent. of starch, is about two-thirds the value of corn or rye for feeding stock, or, "horres-terial," for making whisky, and will command one dollar per bushel in the market.

The juice as pressed out by the mill should run through cloths fastened over the receiving tubs to clear it of all trash.

**To Clarify the Juice.**—Put the juice in the largest boiler, nearly filling it, and start a gentle fire under it, and put the juice to simmering—not boiling—and keep it so about thirty minutes, until clarified. This is to be effected by administering some alkali in solution.

The best alkali for this purpose is the super carbonate of soda. Put one heaping teaspoonful in a pint of water, dissolve it, and pour it into the boiler of simmering juice, stir it up, and a violent effervescence takes place, rising four inches high, and finally settling in a thick greenish scum all over the surface of the juice. Skim this off, and repeat the process every few minutes, for about thirty minutes, more or less; but stop it as soon as, but not before, all effervescence ceases.

The process will neutralize the sulphuric and phosphoric acids which abound in the Chinese sugar cane juice; and the super carbonate of soda is the purest and best alkali for this purpose, as sodium, the base of the peroxyd, is lighter than water. The pressure of the mill forces out with the juice a great deal of green feculous

matter, which the alkali takes hold of by the attraction of its acids, and brings to the surface as scum. These constant skimmings will soon give you a clear juice, capable of making a clear, thick acidless syrup. This use of soda I discovered in 1857 by experimenting, and experience has fully confirmed its superiority over all other alkalies.

The Louisiana and West Indian sugar planters use lime to purify the juice. It will neutralize the acids, but I doubt its purifying agency. The lime will readily unite with and neutralize the phosphoric and sulphuric acids, but are not compounds, the sulphate of lime, or plaster of Paris, being one, too heavy to elevate the green, woody matter to the surface? I think so, and for this reason, unless you wish to eat plaster of Paris, in mechanical solution in your syrup, do not use lime in your cane juice.

I am fortified in these views, against the use of lime to clarify and purify syrup, by Dr. Robert Battey, one of the ablest practical agricultural chemists in Georgia. He says deliberately—"Lime answers no useful purpose so far as syrup is concerned, save to neutralize the free acid which exists naturally in the cane. Lime darkens the color, and to my taste, detracts from the grateful flavor of the syrup." I regret that Dr. Battey did not go farther and give the reason why lime does not clarify. I have already suggested the specific gravity, as a base; as being too heavy, as the reason.

If soda cannot be had, have ready strong ley from green hickory ashes. This alkaline solution is the next best to that of soda, and apply it in the same way.

After the juice is both neutralized of its free acids and purified of its fecula, which may be seen and known by the cessation of effervescence and the transparency of the juice, then boil down to the syrup point.

In the absence of instruments, which cannot now be had, be sure you boil enough. It is safer to err by boiling too much than not enough. As a general guide, you have to go by eye sight, and as but a few in the South ever paid any attention to it heretofore, I will give certain general rules which should be observed.

1. Boil down until the syrup is about one fifth of the original quantity of juice, for it is true that five gallons of juice will average one gallon of syrup.

2. Boil down until the syrup, being reduced to about one-fifth of its original quantity, will hang in flakes on the rim of the dipper as you pour it out and suspend it in the air.

3. Boil down until all water is expelled. This may be seen and known when the syrup, being reduced to about one-fifth its original juice, throws up jets some six inches high; this latter is the water escaping as steam; continue to boil until these jets cease, then strike off your syrup into tubs, and when cool barrel it.

**The Barrels.**—Put up your syrup in cypress barrels; white oak barrels will not hold syrup. Several large planters put up their syrup in poplar troughs. These will hold the syrup, but the oxygen of the atmosphere will certainly, as it has done, acidify it, as it thus has so much surface to act on.

In conclusion: the Chinese sugar millet is an industrial plant of great utility to the South in these our times of trial, blockade and war. Its fodder is equal to that of corn, its seed is equal to two-thirds of corn, and its syrup nearly equal to that of sugar house molasses, yielding as many gallons of syrup per acre as the lands can pecks of corn.

## RAISE SHEEP.

The difficulty of procuring goods from abroad and the high prices for wool, we are pleased to learn is producing the desired effect in inducing the people to raise sheep.

We had an interview with an intelligent farmer from Middle Georgia, who has recently turned his attention to this matter. Before the war his neighbor's dogs killed his grown sheep, and his lambs always

came in bad weather and died, and he had given up his efforts to raise them. Since the war commenced, he has gone to raising sheep, and with perfect success. Now, he says he has his sheep looked after and cared for; and in cold, rainy weather has them sheltered in his gin house lot. At night, they are all brought up and penned. In the summer season they grow fat on briars, broom sedge, &c. Last fall he had his peas and pea vines carefully gathered and with these has kept his sheep fat all the winter. Since giving his sheep this little attention, they have rapidly increased. The dogs of his neighbors do not bother them. His lambs and old sheep don't die, but thrive and yield him handsome income.

We have no doubt but thousands of farmers with similar efforts would be crowned with abundant success. Sheep are very prolific, easily raised, and could soon furnish the whole country with wool that is now much needed, if the farmers would only do their duty. Come, gentlemen, give this matter your proper attention, so that our soldiers and our children can have plenty of warm woollen clothing. And then a nice piece of fat mutton will mix admirably with one dollar bacon.

One word more; a worthless dog that is of no use will eat more than it would cost to raise a half dozen sheep.

*Southern Confederacy.*

## BEECHER ON "STONEWALL" JACKSON.

The following from a late number of the *N. York Independent* is supposed to be from the pen of Henry Ward Beecher.

"A brave and honest foe has fallen! Thomas Jefferson Jackson has died of wounds received in the confusion of the battle of Chancellorsville at the hands of his own men! There is not left another man in the South to take his place, and Richmond papers scarcely exaggerate when they say that the Confederacy could better have lost fifty thousand men. Good in counsel, his peculiar excellence was in the field. We know of no man on either side that surpassed him, if any equalled, in handling an army.

"We are in some respects better judges of his military talents than Southern men, since we felt the blows which they only saw dealt. It is certain that no other man has impressed the imagination of our soldiers and the whole community so much as he. An unknown name at the beginning of the war, save to his brother officers, and to his classes in the military school at Lexington, Virginia, his footsteps were earliest in the field from which now death has withdrawn them. But in two years he has made his name familiar in every civilized land on the globe as a general of rare skill, resource and energy.

"No other general of the South could develop so much power out of the slender and precarious means, by the fervid inspiration of his own mind, as Jackson. He had absolute control of his men, seeming almost to fascinate them. He drove them through marches long and difficult, without resources, feeding them as best he could; he delivered battles as a thunder cloud discharges bolts, and, if the fortunes of war were against him, then, with even more remarkable skill than in advancing, he held his men together in retreat, and with extraordinary address and courage, eluded pursuit, sometimes fighting, sometimes fleeing, till he brought off his forces safely. Then, almost before the dust was laid upon the warpath, his face was again towards his enemies, and he was ready for renewed conflict. His whole soul was in his work. He had no doubts nor parleyings within himself. He put the whole force of his being in his blows for the worst cause man ever fought for, as few of our generals have ever learned to do for the best cause for which trumpet ever sounded. Henceforth we know him no more after the flesh. He is no longer a foe. We think of him now as a noble minded gentleman, a rare and eminent Christian! For years he has been an active member of the Presbyterian Church, of which he was a ruling elder. He never, in all the occupations of the camp, or temptations of campaigns, lost the

fervor of his piety, or remitted his Christian duties.

"We know that before every important move he spent much time in prayer. He had so put his soul in the keeping of his Master that he was relieved from all thought of self, and had the whole power of his life ready for his work. Officers of Fremont's army who pursued him in his famous retreat from the Shenandoah Valley, found him to be greatly beloved by the common people, among whom, in former times, he had labored, in prayer meetings, in temperance meetings, and in every christian word and work. No wonder he fought well along a region whose topography he had mapped down with prayers, exhortations and Christian labor.

"He was unselfish. He fought neither for reputation now, nor for future personal advancement. He therefore did not fall into the ruinous habits of our generals, who are always neglecting to do the things that can be done because they are small, but squander time and men and patience in getting ready for great battles, which elude them or defeat them. He incessantly struck on the right and on the left, and kept alive the fire in the hearts of the ill-clad, poorly fed and overworked men by the excitement of enterprise and the constant relish of victories, small in detail, but whose sum was all important.

"Let no man suppose that the North will triumph over a fallen son with insulting congratulations! Nowhere else will the name of Jackson be more honored. Not for the adherence to the cause of slavery, but for his untarnished personal character, for his devout piety, and for his military genius."

From the Daily Progress.

HABEAS CORPUS.

(IN THE MATTER OF MARONEY.)

The facts of this case bring it within the decision in "the matter of Irvin." That decision is put on the ground that the Conscription Act of September, 1862, does not embrace substitutes. And so the questions growing out of the regulations prescribed by the War Department, "where a substitute becomes subject to military service, the exemption of the principal shall expire," was not presented.

It seems to me that any one accustomed to judicial investigation cannot read the act and fail to come to the conclusion that it does not embrace volunteers and substitutes who were already bound to serve for the war; a different construction is excluded by the words used, and is inconsistent and repugnant to its provisions.

The President is authorized "to call out and place in military service all white men, &c." The words "call out" and "place in military service" are not applicable to men who are already in the military service for the war; no legislation was necessary to make soldiers of them. If only a part is called for provision is made for taking "those who are between the age of 35 and any other age less than 45," can this be applicable to volunteers and substitutes? It is further provided that "those called out under this act, and the act to which it is an amendment, shall be first and immediately ordered to fill to their maximum number the companies, battalions, &c., from the respective States, &c., the surplus, &c. This supposes that the volunteers and substitutes composing the companies are to remain in the field, and the companies and battalions are to be filled up by those who are ordered into service under the Conscription Act.

Again, how can the regulation that all conscripts are to be sent to camps of instruction be applicable to volunteers and substitutes? Are they to be taken from the army and sent to camps of instruction? Certainly not, because they are not called out and placed in the military service under the Conscription Acts, but are bound for the war by force of the original contracts of enlistments.

I am informed that, soon after the Conscription Act of April, a regulation was made for the discharge of all volunteers for the war who were over the age of 35; and