

ters, and the scum taken from this will make good vinegar. In fact, if all the washings are saved, ten or fifteen barrels of good vinegar can be made in manufacturing thirty or forty barrels of syrup; or if, something stronger is desired, an excellent brandy can be made from all fermented saccharine juices, that is worth from two to four dollars per gallon. Forty gallons of this juice will make four of good spirits.

Drainage of Mush Syrup into Sugar.

This is the most difficult part of all our labors, for it does not naturally drip dry. The quickest and most successful way we have found to obtain sugar, is to put the mush into a coarse, strong bag, and put it into a strong hoop, similar to our common portable cider-mill hoop; then put on the pressure of the screw, and if the room is warm, the molasses will soon leave dry sugar. Another mode of drainage is to have a large table, say twelve feet square, with sides four inches high, and the centre as high as the sides, and gradually sloping to the corners, where a spout should be placed to carry off the molasses; if the room is kept warm, it will soon drain to sugar. By either mode clean, dry sugar will be obtained, free from any cane taste, as that leaves with the molasses.

Uses for the Bagasse or Crushed Cane.

A mill of any capacity will produce bagasse enough to evaporate, when employed as fuel, all the juice to syrup or sugar. On the arch, over which the long pan is placed, have a side arch with a flue to enter it, so constructed that there may be a large door to open for putting in the crushed cane by forks full. The freshly-crushed cane will make more heat than the dry; therefore it is not necessary to wait till it is dry before using it. Having two arches, either wood or bagasse can be used. If the chimney is high enough, there will be no difficulty in respect to draught. We have known the flames to pass through the twenty-five feet arch and out three above the top of a chimney twenty feet high. We have a paper mill that already uses largely of the bagasse in paper making; and, as we have already said, it is an excellent article for fertilizing the soil.

Sugar Making and Refining.

There is now no longer any room for question or cavil as to the possibility of producing sugar from the canes; nor, indeed, is there any particular difficulty in its manufacture, with suitable conveniences. Ten

days' time has been found sufficient to convert the juice into dry sugar, fit for table use. The question may then be asked, What is required for fitting up a suitable manufacturing establishment?

From our own little establishment, we have made over four tons of well-grained sugar from the Imphee syrup, during the past season, and have found but little more difficulty in making sugar than we have in making good syrup. Our process was simply the one above mentioned, of pressure in the hoop and draining from the table, and for convenience we find the following to answer a very good purpose: A building erected upon elevated ground, in dimensions about fifty feet one way, by seventy-five to one hundred feet the other way, well covered with a tight roof, and one room in it made tight, close, and warm, the temperature of which should be kept always up as high as ninety-five degrees Fahrenheit. The building should be made high enough to have a fall of fifteen or twenty feet from the mill, to conduct the juice from the mill directly to any part of the building; otherwise it would require a large receiving tank, and make it necessary to pump the juice up into this from the mill. In this case a very large pump would be required, so as not to vibrate or disturb the juice too much, for it easily foams and then ferments readily. The clarifying pan should be placed highest, to receive the raw juice first and defecate it, next the filters, and then the concentrating pan. By this arrangement much labor in handling the juice will be saved. Have a horse and sled placed under the mill to remove the crushed cane out of the way. About an acre of ground is required to afford room for the building and the sheds to hold the cane and keep it from the sun, wet, and frost, and for a place to store the bagasse. With these conveniences, one can commence operations, and as the juice of the cane passes through the tin pipe from the mill to the defecating or heating pan, bring it to a boil, and concentrate it to 12 or 15 degrees, removing all green scum; then to every gallon of juice run from the heating pan while hot into a flat box or tub, put in ten or twelve pounds of pure pulverized clay; stir it up gently, and let it stand ten minutes to settle, then draw off from faucet, leaving the clay and sediment at the bottom, and continue in this way as the juice may be needed to fill or feed the last concentrating pan. By this process will be obtained a fine syrup, or sugar, as