

the tree, but on the contrary it affords more syrup, and of a better quality the oftener it is tapped. A single tree, he says, has not only survived, but flourished after tapping for forty years. This fact is confirmed by Mr. Campbell, who informs me that in a forest of maple trees, where the trees are even full grown, when tapped for the first time, the sap is large in quantity, not so sweet, and does not yield on the average scarcely 2lbs. per tree; but the oftener tapping is performed, the stronger and richer the sap becomes, the tree seems to improve, and the amount of sugar yielded is very much larger. I have seen trees, full grown, quite healthy and flourishing, that have been tapped for upwards of sixty years, and apparently uninjured.

The sap scarcely varies in color during the time it is running from the tree; it is clear and limpid, inclining somewhat to amber or straw color. It is, however, very often perfectly colorless like water, and this will depend upon the presence of more or less sugar in solution, the darker the color, the higher the specific gravity, the sweeter the sap, and consequent richness in sugar. The richness and the quantity of the sap are influenced also by a variety of causes. A very important one is moisture of the earth: if the tree is on a hard, dry and elevated soil, the sap will not be so abundant, but it will be richer and of a yellow color; if it is in a low marshy situation, there will be a greater flow of sap, but very poor in its amount of sugar. Richer sap is also yielded in cold frosty weather, than in damp rainy weather. Hence the season chosen for tapping the trees, are the months of February and March, before the changes in the seasons occur. When the nights freeze hard and the sun comes out hot during the day, the farmers anticipate a good flow of rich sap; but if the night is warm with a warm wind in the day time, the sap they say is spoiled. A sudden thaw, such as occurred this last spring, ruins the sugar making. This was much felt in the Eastern Townships.

Each tree yields on an average about 5 or 6 buckets of sap, and a bucket-full of sap is estimated to yield over half a pound of sugar.* Mr. Campbell states that the sap from an old tree that has been tapped 18 or 20 years, will yield a pound a bucket. Many persons are satisfied with an average of 3lbs. of sugar from each tree, although there are instances, as Dr. Rush states, of as much as 20lbs. being furnished from a single tree. It would appear that sugar orchards improve if not tapped every year; my friend, Mr. H. J. Thompson, tells me that a rest does the trees good, and consequently they yield a larger quantity than if tapped every year.

Almost every farmer has his own method

of preparing the sugar, but those who prepare it on a large scale, do so in a very scientific manner, with great care and produce a better sugar. The sugar may be obtained in two forms from the sap, one in the form of a solid cake or lump sugar, the other in that of a soft, granulated or muscovado grain.

The sap (being previously strained through a cloth,) is poured into iron pots or kettles,* varying in dimensions, according to the size of the sugar bush, but, more generally containing from twelve to fifteen or twenty gallons. The boiling is rapidly performed until the sap is of the consistence of syrup, with the addition of a little butter, to prevent it from boiling over, when it is moderated, and gradually discontinued until resembling thin treacle or molasses, being carefully skimmed as the scum forms on the surface. A slow fire is now used to bring it into a state fit for making the cakes of sugar, and this is known by pouring a few drops in a little snow or ice, and, if possessing the least gritty taste, it is immediately run into moulds, forming the cake sugar as generally seen in commerce.

If it is desired to obtain it in the form of soft or granulated sugar, the boiling is continued a very short time longer, until it is a trilling degree more gritty to the taste than the last, when it is removed from the fire, and is then constantly stirred with a wooden ladle or flat stick until it becomes quite cold, when it is obtained in the form of soft or crushed sugar. The more it is stirred, the whiter, drier, and clearer in color it becomes; this is produced by the evaporation of the remaining water, which goes on rapidly, and which prevents the cohesion of the particles which is so strong in the cake sugar. After it is thus prepared, it is placed in barrels or tubs, laid upon parallel sticks, with one or more holes bored at the bottom to permit the flowing out of the refuse syrup, very like honey in color and consistence, and which still further produces a dry sugar, being similar in this respect to Muscovado. Some manufacturers use various substances to clarify and render the sugar whiter, such as slaked lime, a few eggs, and some milk.* In this way, the sugar is obtained almost perfectly colorless, and in the form of minute crystals or grains, perfectly clear and transparent, and free from any impurities whatever. From this form of granulated maple sugar, a superior kind of loaf sugar has been manufactured in the States, not in any way inferior to the loaf sugar of Europe.

To test the superiority of Maple over Cane

* Copper vessels are sometimes used, and also vessels lined with earthenware, which are superior to those of pure metal.

* The Indians are said to clarify their sugar, in some instances, with the manure of dogs, which contains much phosphate of lime.

* An ordinary bucket contains $2\frac{1}{2}$ to 3 gallons.