circle. This gives the pattern of felly from which circle is to be constructed. Rip out with wide-set rip-saw enough fellies to form the circle.

Lay two fellies down exactly on the outside of circle described on floor, one lapping a little on the other, run a saw through both, which makes the joint. Take the third felly, laying it to the center of the two, and nail with wire nails; continue until the circle is complete, then clinch the nails; if not convenient to put in position whole, remove in half sections, place one circle on foundation, and fasten in position the other circle within three or four feet of top of silo, secured to a scaffold, and plumb with the bottom circle, and secured firmly. Pile ten or twelve staves one upon another on trestles, with the ends projecting to center of lower circle; then paint the edges with coal tar. Let one man ascend to the scaffold with a rope attached to a stave, then when the rope is drawn the man on ground handles the other end of stave, setting it in place; plumb this stave and toe-nail to both circles; the next stave toe-nail to both circles, and at top toe-nail one stave to the other; continue thus until staves are all in position. Nail a few blocks about 18 inches from top for band to rest on Above these measure with tape line the length of band, less the length of bolt; cut band, and with center-punch 5-16 drill and ½-in. countersink-drill make corresponding holes in band to those in lugs, rivet firmly, with heads out. Place in position, begin tightening bands, which will draw staves from the circle. See that no staves get out of place and that the staves leave circle evenly. When the band has been drawn as tightly as possible, again measure and make another band, placing it immediately above the one in position, and tighten again. Nail blocks in center of silo, loosen the first band, remove the blocks, and let this hoop, which may be termed a "tightener," drop to center, and proceed as before. Next drop within 12 to 15 inches of bottom. The remaining bands may be put on as most convenient, but use the tightener every time. This tightener is then cut and put on permanently as the last hoop. In tightening the staves a man should be inside to watch carefully that every stave is in position. This completes silo with exception of doors, which, if made, would have to be closed again. The better way is to fill silo and open doors as the ensilage is removed, which can easily be done with small bit and keyhole saw. To close the openings use two upright strips, bolted and projecting ¾ in. inside of doorway. Use two thicknesses of matched lumber and tar paper.

The silo is built in corner of lean-to on barn. A slide leads to double doors at top of silo. Heavy purline and rafters are necessary to stand strain of elevating corn. Adjust ropes and pulleys as for hay fork, or a track and car could be used in filling silo.

Filling the Silo.—The corn for filling uncut into silo, should be in the glazed or dented stage, cut with binder, sled or by hand into gavels to remove to the silo. Place bottom of hay rack on low trucks; across this place three scantlings; outside of bolster stake splace two 14-ft. planks, 12 inches wide; in each plank bore four 2-inch holes at equal distances; in these put stakes four feet long with a piece across the top, forming a cross; put two 2x4-in. scantling lengthwise, eight inches inside the bolster stakes; use six slings of inch-rope long enough to loop around bundle of corn; hang the slings on the stakes, spreading slings outside of planks and inside of 2x4-in. scantling The corn was loaded from the ground in these loops, tassels out; the slings adjusted ready for elevating, drive the load up facing the slide, then attach the horses to elevator ropes; with the first bundle the wagon was drawn up to slide; then remove the stakes as the bundles are elevated. The all-important part is storing; the corn must be arranged so that it will settle against the sides of the silo to exclude the air. To do this in square silo, commence by leaning corn against one side of silo, tassels up; with the foot or spade break or press the center against the sides; continue a layer in this leaning position nearly across the silo; then finish as the tier is commenced, never letting butts come in contact with wall of silo. If first layer is started on the north, the next should be started at the east, then south and then west, thus continuing till silo is filled. When within a few feet of the top use spade freely and tramp well on outside of silo. Where silo is round, the layers should go round and round, auger fashion, leaning corn tassels out, using spade and feet similar to filling square silo; finish by putting about one foot of chaff or cut straw on top, wetting and tramping it. To remove ensilage, cut across silo with straw knife every three feet. No difficulty is then experienced. J. F.

Brant Co., Ont.

[NOTE.—J. F. has sent us a sample of his ensilage, evidently made from well-eared and well-matured corn, which is certainly about as good as any we ever saw; somewhat acid, but probably not more so than cut ensilage would be. It is well preserved and of the usual brownish-green color. He writes us that he has no difficulty feeding this ensilage: it does not cling to the fork-tines, and stalks are quite soft and juicy. He claims to be able to remove enough from the silo in 15 minutes for 22 head of cattle. There is undoubtedly a good deal of prejudice regarding "whole" ensilage because of the labor, both in putting it in and taking it out of the silo; and also because it is not so convenient for mixing with other cut food and grain in feeding. The above experience will, therefore, be read with much interest. We might add that since receiving "J. F.'s" letter one of our staff visited his farm and found the silo as represented. The ensilage was good, being more like what is called "sweet ensilage" than the sample sent us. Exposure to the air a couple of days had apparently made it more acid.—EDITOR.]

Modern Maple Sugar and Syrup Making.

BY W. H. BARBER.

The Indians and early settlers made maple syrup and sugar, using the stone gouge in tapping the trees; the boiling being done in kettles or pots. These primitive methods have now altogether disappeared, except, perhaps, in some remote settlements, where the potash kettle, hung on a rail, may still be found. Perhaps some of your readers are enlarging or improving their sugar camps, and may profit by this article. I shall not describe any particular camp, but the description given is drawn from an observation of the methods used in many of the best maple camps in both Quebec and Ontario.

The modern sugar house, located on a sidehill, if possible, so that the sap may be emptied by its own gravity, should have battened or matched sides, so that it will be tight unless the doors and windows are open. It should be divided into two separate compartments—one open on one side for wood, and the other the main boiling-room. A partition with a roller door separates the two, so that the dust arising from the splitting of wood, etc., need not enter the boiling-room. The dimensions of a house may be adjusted to the needs of each camp. A well-proportioned house which we know of is 16x32 feet—the woodshed being 12x16 feet, and the boiling-room 16x20 feet. A large ventilator is built through the roof over the center of the boiling-room, where the evaporator stands, with slats so arranged that they will not permit rain or snow to enter, but allow the steam to escape freely.

Evaporators have now largely superseded the kettles and sheet-iron pans which a few years ago were in such general use. They are a great saving both of labor and fuel. Evaporators are made of heavy tin. One popular style which I have noticed in use consists of four, five or more pans, placed upon an iron or brick arch. The sap is conducted from pan to pan by siphon connections, which clarify the sap as it passes through (there is no dipping to be done), and is drawn off from the last pan as syrup. Just over the firebox, where the sap enters, is a large pan with a corrugated bottom, which nearly doubles the boiling capacity. In this pan the sap is run about two inches deep. The rear pans all have plain bottoms, and are so arranged that there is never run over an inch and a quarter of sap in them. The shallower the sap the more rapid is the evaporation, and the more rapid the evaporation the lighter will be the color of the product. The rear pans of the style referred to are interchangeable, and by shifting them daily the trouble with the lime or nitre deposit burning on the pan is avoided. This evaporator has a regulator through which the sap enters, and after adjusting the regulator to the depth of flow desired, there is no more feeding to be done, except to see that there is plenty of sap in the storage. For sugaring off, a plain pan twelve inches deep is used. This may be used on the evaporator arch in place of one of the rear pans, but it is better to have a small arch or stove for this purpose.

The majority of evaporators are set on iron arches. A few farmers who have plenty of stone or brick at hand lay a deep foundation, and build brick arches. But owing to heavy frosts and the undermining done by the woodchuck, brick arches give considerable trouble, and iron arches have come into more general use. These arches are manufactured and sold with the evaporators if desired. Evaporators vary in price according to the make and size used.

It is important that the sap should come in contact with nothing but metal from the time it leaves the tree until it is drawn from the evaporator as syrup, or poured off into moulds to cool into sugar. Metal spouts have, therefore, come into general use. They are either of tin or cast iron. The tin are more easily cleaned, and they do not require as large a hole as the iron spout, so that the tree is not injured and heals over readily where it has been tapped. Sap pails, made of tin, are hung on the spouts by means of a wire hook or loop for the purpose, or by a hole punched through the pail just under the wire rim. These pails are provided with covers to keep out the leaves and dirt, as well as water from rain and snow. Wooden covers, securely fastened to the pail, so that they cannot be blown off by a strong wind, can be procured. By painting the opposite sides of the cover different colors, and reversing the covers as the sap is gathered, these covers become self-registering, and a mere glance will show the gatherer which buckets have been emptied; but a square wood or round tin cover answers this purpose well, and many use them altogether.

For gathering the sap, a tank made of galvanized iron or tin, which holds three or four barrels, is now used by some, instead of the old-time "puncheon." It is securely fastened on the sled or broad stoneboat. Some empty their sap pails right into the tank as they drive about; others carry the sap from the trees to the tank in gathering-pails, made to hold four or five gallons. When this tank is filled it is drawn to the sugar house, and the sap let into the storage tank—another galvanized iron or tin tank, which holds 10, 15, or 20 barrels, according to the size of a man's camp.

Some sugarmakers still use the heater, which is a pan with long flues extending downward from the bottom of the pan into the arch. These heaters are placed at the rear of the arch, the object being to utilize the heat as it passes through the flues on its way to the chimney, but as this necessitates deep boiling, and the heating of the sap for some time before rapid evaporation begins, it produces a dark and inferior quality of syrup and sugar, which must take a second place upon the market in competition with the clear, light-colored article. Besides, these heaters are difficult to keep clean and free from lime and other impurities, and unless they are properly cleaned, the product will become darker and darker each year. This same objection applies to all pans with deep flues.

Canada produces a surplus of maple syrup and sugar, and the sugar is shipped in large quantities to the United States. As improved methods have been adopted there, it is important to all Canadian producers that they use good apparatus, and pursue the best methods, so that their output will bring good prices. At this time, when most farm produce is selling at low figures, it is interesting to note that maple syrup and sugar have brought high prices. Much of the sugar made in the spring of 1895 sold for 8, 10, and even 12½ cents a pound in quantities for shipment to the States, and the outlook is for high prices again this spring, as the people are learning to appreciate this incomparable sweet. Fine, light-colored maple syrup sells to the consumer for $1.00 per gallon, and in some sections even higher prices are realized. The "first run" commands sometimes as high as $1.40 per gallon from customers who want a "gilt-edged" article, and want it first.

Securing a Clover "Catch."

At a meeting of a Westminster Township (Middlesex Co., Ont.) farmers' club, of a nature such as we suggested in a recent issue, the subject, "The best method of obtaining a catch of clover," was discussed. This subject—to many of the "club" members, as to hundreds of others—has been one of especial interest for a couple of seasons, owing to the seeming impossibility of obtaining a decent stand. Of course, the great cause of failure has been lack of moisture, which fact the "club" recognized and dealt with in their discussion.

There are several ways, other than by light rainfall during the summer months, of securing moisture. We invariably have sufficient rain and snow between November and April to fill the ground fairly well, and in order to retain this for growing crops, man must adopt means not usually resorted to. We have learned from experience that loosened, loamy soil acts somewhat like a sponge in holding water; and the deeper we have the soil in that loamy, free condition, the more water will be retained, and the more easily will the plant roots spread out and fill the soil in quest of nourishment. This condition can be best obtained by means of subsoiling. This operation permits the under soil to receive and retain much more water than if the subsoil were hard and unmoved. The moisture, instead of being removed by surface drainage or evaporation, is allowed to sink into the soil, where it is held.

Another method of conserving moisture is to keep the soil well supplied with vegetable matter. This is one of the very important conditions favorable to successful germination of the clover-seed and after life of the plant. This can be done by always seeding the root and corn ground of the previous year, where manure and frequent tillage have been given. Where stubble land is to be seeded, it is well to grow rape, buckwheat or other green crop after harvest, to be plowed under before winter sets in. Such land will not only retain moisture the following summer, but it will be well supplied with humus to feed the plants and hasten them to good development.

In the course of discussion it was brought out that the farmers who followed a certain method of sowing almost invariably met with success in obtaining a good "catch" during the past year. In most cases the successful ones seeded upon root or corn ground which had been well manured and tilled the previous year. The successful plan of seeding with a spring crop was to first sow the grain and harrow the ground, then sow the clover-seed and harrow once or twice with very light harrow, and then roll firmly. In some cases the land was rolled before the clover seeding and again afterwards.

Seeding on fall-wheat ground is usually a success where the soil contains plenty of humus, and has been deeply worked. The best time to sow is in March, on land that will not easily wash. Just after a light snowfall, towards the first of April, has proved to bring good results. It is well to put on a good heavy seeding of a mixture of the Red and Alsike varieties.