

ANOTHER DROP IN SUGARS.

Owing to the collapse of the Wholesale Grocers' Guild the other day, it is more than probable that the result will be an appreciable drop to the consumer in the price of Granulated Sugars.

Two Car-loads of Sugars

of different grades will arrive for us this week, and will be sold at the lowest notch. Our customers invariably get a share of the discounts given us on large purchases.

100 HALF-CHESTS OF TEA

Were placed in stock early this week. A large portion of this shipment is made up of our now famous line of 25c Tea. The quality is unexcelled for the money.

FOR THE LENTEN SEASON

We offer Salt White Fish, Salmon, Trout, Labrador Herrings, Fresh Water Herrings, Fresh Haddock, Fresh Salmon Trout, etc., etc.

LAND SALT AND PLASTER

We have now in our warehouse a carload of Beamish's Celebrated Grey Land Plaster in barrels and bags, and Land Salt in Sacks. Convenient to load and prices reasonable.

A. CAMPBELL.

FAMILY GROCER

J. WETHERUP,

DEALER IN

Organs



Pianos

THE LOWEST PRICES,

The Finest and Best Instruments ever brought to Lindsay.

ANY MAKE DESIRED.

One Price only. See them before purchasing.

Rooms Over Neill's Shoe Store. At Home

Wednesday and Saturday.

WATCHMAN

Printing Office,

WILLIAM STREET, LINDSAY
All kinds of Plain and Fancy Job Printing promptly attended to.

LETTER HEADS.
BILL HEADS,
NOTE HEADS,
MAGISTRATES BLANKS, &c.

ALL KINDS OF PRINTING AT CITY PRICES

WATCHMAN, 50 CENTS PER. ANNUM

JOS. COOPER,

Proprietor.

KNOWLSON BROS.

REAL ESTATE INSURANCE & FINANCIAL AGENTS.

FIRE INSURANCE.

The Aetna Fire Insurance Co., of Hartford, Conn., incorporated 1819, losses paid in 71 years about \$65,000,000, assets over \$10,000,000, absolutely the strongest American Co. in existence.

The North British and Mercantile incorporated 1829, paid up capital abt. \$3,500,000, total assets \$50,370,000. The N B & M is the largest and strongest Co. in existence.

We also represent other Fire Companies of high standing, and can give safest security for the lowest rates.

KNOWLSON BROS.

LIFE INSURANCE.

The Confederation Life Association, of Toronto, issues Policies incontestable after three years. FREE FROM ALL RESTRICTIONS AS TO RESIDENCE, TRAVEL, OR OCCUPATION.

The New Annuity Endowment Policy affords absolute protection against contingency of early death, provides an income in old age, and is a good investment.

Rate 15 to 20 per cent lower than ordinary rates.

KNOWLSON BROS.

REAL ESTATE.

We have a large list of valuable Building Lots, Brick and Frame dwelling houses, Farm properties, and choice lots on Sturgeon Lake, which can be had cheap for cash, or mortgage at a low rate of interest.

MONEY TO LOAN at a low rate of interest.

Persons desiring to place their property in the market can have it advertised free of charge and will be sold or exchanged by us at a small commission.

KNOWLSON BROS.

Represent the Beaver Line of Steamships plying between Montreal and Liverpool. Boats large and well equipped and cheap rates of passage.

Represent the Norwich & London Accident Insurance Co. Capital \$1,000,000. Rates extraordinarily low and security unimpaired.

OFFICE WILLIAM-ST. NORTH OF KENT STREET.
Lindsay, Nov. 19th, 1890.-45-ly.

BE A MAN



All men can't be Apollos of strength and form, but all may have robust health and strong nerves and clear minds. Our treatment makes such men. The methods

are our own exclusively, and where anything is left to build upon, the VIGOR OF MEN is easily, quickly, permanently restored. Weakness, Nervousness, Debility, and all the train of evils from early errors or later excesses, the result of over-work, sickness, worry, etc., forever cured. Full strength development, and tone given to every organ and portion of the body. Simple, natural methods. Immediate improvement seen. Failure impossible. 2,000 references. Book, explanations and proofs mailed (sealed) free. Address, ERIE MEDICAL CO., BUFFALO, N.Y.



The Indians were the first sugar-makers in America, and with their rude appliances were able to manufacture a kind of sweet stuff, though it could hardly be called sugar, as the boiling was done, before the advent of the white man, by putting the sap in vessels of birch bark and plunging red-hot stones into it. This must have been a slow, tedious and dirty process, however. The white man introduced better appliances, and the product was greatly improved. But the methods employed now are as far in advance of the old kettles and tapping gouge, with the long wooden spiles and sap troughs, as these appliances were in advance of the rude methods of the aborigines.

Instead of making a great unsightly gash in the tree with the axe and gouge as formerly, we now use a patent spile, to which is attached a hook to hold a bucket, as shown in Fig. 1. This requires a hole only nine sixteenths of an inch in size. The rough bark is taken off before boring the hole, leaving about one-quarter of an inch of the inner bark for the shoulder of the spile to bed into. Then bore the hole with a little slant and about an inch into the tree, then drive in the spile, tapping it lightly with a hammer, and see that the shoulder is well bedded into the bark so there will be no leakage. Fig. 2 shows the spile in position, with the bucket attached. Every drop of sap is saved, there is no leakage as with the old system, and we get more sap by this process than by the old system with axe and gouge, and with far less injury to the trees, as those little holes very soon grow over. These spiles cost \$1.50 per hundred, or in large quantities or when purchased along with the buckets, \$1.25. The buckets hold about ten quarts and cost \$12 per hundred. They fit inside each other when packed, and are easily moved about and handled. At the end of each season they are collected and thoroughly cleaned with boiling hot water, and allowed to stand in the sun an hour or two so that they will be thoroughly dry before being packed away.

For boiling the sap we use an evaporator, which, for a shorter name, we call the pan. It is made of galvanized iron, is twenty-two inches wide, four inches deep and fourteen feet long. This will handle the sap from 500 or 600 trees. For a larger number it would require to be larger, no wider, but a little longer. A neighbor of mine has one twenty-two feet long. It boils the sap from 900 trees. There is a frame of wood attached to the pan, which is made of 2x4 stuff dressed. The edges of the pan should lap on to the wood about one and a half inches, and be nailed on with clout nails. This should be put in pretty close together all around the edge, and care taken to make the iron fit tightly on the wood, as when boiling the sap will foam up as high as the iron, and if any openings are left between the iron and wood leakage would occur. The pan has a number of partitions reaching nearly across, alternately leaving a couple of inches for the passage of sap from one apartment into the other; this gives it a zigzag course, in passing over which it is evaporated and converted into syrup. The partitions in the pan are made with a flange which is soldered to the bottom, and also secured by rivets which are put through the bottom and soldered over. Fig. 3 gives a surface view, showing the partitions and the course of sap.

The furnace may be made of common field stone, with a few bricks to straighten the top where the pan sits and about the door. It should be built to extend past the end of the pan, as shown in the cut. The top edges should be twenty-one inches apart; this will give the pan a half-inch lap on each side, which is quite sufficient, the object being to expose as much as possible of the bottom to the heat. The pan should sit perfectly level on the furnace, and for rapid work the sap should be not more than an inch deep while boiling, though it will require close watching. A new beginner would do well to keep a little on the safe side and run it a

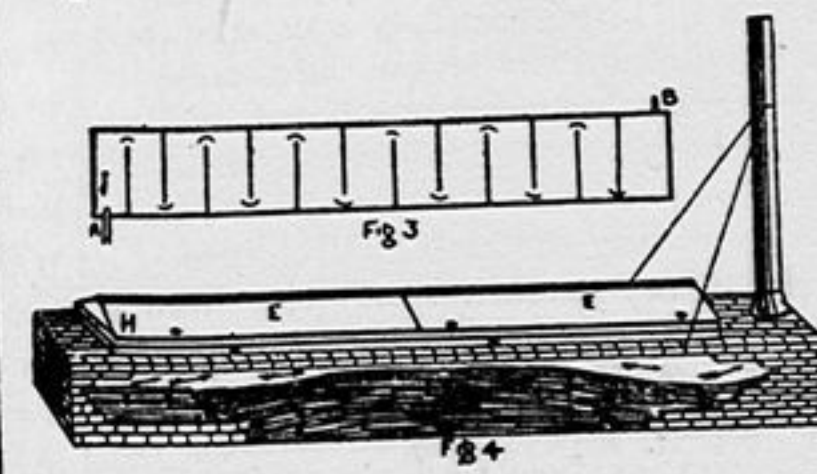


Fig. 3.—A, Spout where sap enters; B, Spout for letting off syrup. Fig. 4.—C, C. Iron side and end of pan; D, D, D, Wooden frame attached to pan; E, E, Wooden cover made in two sections; F, Furnace door; G, G, Grates; H, Place where sap enters; I, Smokestack.

little deeper till he got used to it. The pan when set on the furnace should be plastered all round the edges with mortar to make the furnace perfectly tight, and preventing the fire from reaching the wooden frame. The furnace should be so constructed that from a little back of the grates the bottom gradually rises till about half way back it comes to within seven inches of the bottom of pan. Near the back end it is again depressed gradually, till at the end where it reaches the smoke stack it is fully twelve inches deep. This is to secure a good draft, without which it is impossible to do rapid work. The smoke stack should be not less than

twelve inches in diameter, and not less than ten feet high. A longer pan would require a smoke stack a little larger and higher. In Fig. 4 the side of furnace is removed to show the grates and shape of the fire. It will be seen that the greatest heat strikes the bottom where the cold sap enters, and then passes along towards the back end, for as the stuff gets thicker towards the back end it requires less heat to keep it boiling. The wooden cover E E, shown in Fig. 4, is made in two sections for convenience, as the back end often requires looking into, while the front section seldom requires to be raised. The object of this cover is to keep off the cold air and facilitate the boiling. A narrow opening is left along the top to let out the steam. The sloping sides of the cover should project slightly over the sides of the pan as considerable condensation takes place on the surface, and this being water it is thus carried over the sides instead of dropping back into the pan, which if it did it would only have to be evaporated over again. The flow of sap is registered by a faucet in the storage trough. A strainer is placed across the trough near the end, so that nothing but the clear sap reaches the faucet. There is then nothing to obstruct the free flow of sap, and no danger of the faucet getting clogged and thus burning the pan. The syrup in the back end must not be allowed to get too thick before drawing it off, as being so shallow on the bottom and the heat intense there is danger of it running to sugar and burning on the bottom unless very closely watched. The syrup is drawn off when rich enough to string a little, or what we call "to rag on the dipper" when held up to the cold air. It is then strained and allowed to settle for an hour or two. It is then poured into a clean, well-scoured kettle, which is swung on a crane over a small fire. A small quantity of sweet milk is put into it and well stirred. This causes a scum to rise which must be all carefully removed before boiling. A few minutes suffice to finish it into first-class syrup. You then have an article that is not equalled in the whole line of saccharine products. In making sugar it is boiled till the liquid will harden and crack when spread on snow. There are several other tests, but this one will be found reliable. To make the best sugar care must be taken to remove it from the fire just at the right time. I will now conclude with a few pointers.

First as to the cost. The buckets and spiles can be bought together for \$13.25 per hundred. The evaporating pan such as I have described, fourteen feet long by twenty-two inches wide, with a capacity of twenty-five or thirty pails an hour, will cost, complete with cover, about \$14. Any handy man can build the furnace, and a piece of old smoke stack can be got cheaply at any foundry. The trees should not be bored in tapping more than an inch and a quarter in depth. The deeper the tap the darker the color of the product, and vice versa. The sap should not be allowed to stand long in the buckets or store trough. The quicker it is transformed into syrup the better. It must be gathered and boiled as fast as it runs.

Any farmer who has a few acres of maple should have one of these outfits. With care the utensils will last twenty years, and the work is done at a time when other work is not pressing, and the product obtained is a wholesome luxury well worth the time and trouble of making.—G. C. Caston, in Farmer's Advocate.

SCIENCE AND PROGRESS.

INTERESTING PARAGRAPHS COLLECTED FROM VARIOUS FIELDS.

Electric Lights in Railway Cars—Electricity from Wind—Home-Made Electricity—Hardening Plaster Casts—Moisture Proof Walls—Notes of Progress.

After two years of extensive experiment with the various methods of generating electricity for train lighting the Chicago Milwaukee and St. Paul Railroad Company built two separate tenders with the necessary machinery for lighting and heating its vestibule trains. A recent issue of the Western Electrician illustrates one of the trains running from Chicago to Minneapolis the tender connected with this train supplying about 154 lights. Each tender is thirty-four feet wide, and is divided into two compartments, in one of which is a tubular steel boiler for heating purposes, while the rear section contains the dynamo.

One of the most artistic portions of the equipment is that in the drawing-room. Over each chair in this car there is an incandescent lamp most conveniently hung under a fringed red lamp shade of tasteful design. The effect of the light shed by these lamps from beneath the two rows of colored shades on the sides of the car is most pleasing to the passenger entering from the darkness without. The lamps in the sleepers are arranged in a manner that delights the weary traveler. The man whose eyes have suffered from attempts to read his evening paper by the far-off and dim oil lamps hung near the car ceiling finds a lamp not only at his elbow, but one that gives him the light from behind and over the shoulder. Each berth lamp is placed within a drum, having two rotating shutters, which can be raised or lowered when it is desired to use or shut out the light. As the shutters open on both sides one lamp does for two berths, the closing of the second shutter cutting off the current. Should occasion arise during the night to use the light, the simple opening of either shutter places the lamp in circuit.

Lost the Load. GUNDRIDGE, Ont., Dec. 23.—Mr. Charles Tripp of this place was to-day crossing Round Lake with a load of log sleds when the ice broke letting the load and horses through. The team was drowned and the load lost, Mr. Tripp narrowly escaping.

Seed Grain Tests at Guelph.

Last September we gave a review of the work on trial plots at the Ontario Agricultural College Farm, Guelph, a summary of which may serve to freshen the minds of our readers. Of the fifty plots of spring wheat at Guelph, although promising and very free from rust, few appeared to us to be growing close enough or sufficiently heavy to yield anything extraordinary. Of necessity, all reports of plots are slightly misleading, as the ground is measured only to the outside of the growing grain, while the crop has the benefit of a large field, hence the heavy yields here in proportion to the appearance when growing.

Colorado and Herrison's Bearded made much the best showing, growing closely. The heads of each were well filled.

Red Fife, the standard of the Northwest, was a moderate crop.

Ladoga did not promise well; was thin on the ground; straw weak, and head open.

Wild Goose was, if anything, still worse.

Red Fern promised more favorably, although it has never been considered a reliable sort. For general cultivation, it does well in some sections.

White Fife was very like the red variety in appearance.

White Russian was later, although yielding well some seasons.

It is not to be relied upon in many localities, though in some it does well.

As they appeared to us, the first two mentioned are most likely to prove useful in Ontario and Quebec.

Campbell's White Chaff was not grown.

Of the one hundred varieties of oats, only a few appeared to be worthy of cultivation on the best lands. CAMPBELL'S VELVET

Without some of the earlier sorts should be tried in localities where oats ripen late. Of these, Early Calder and Early Racehorse are reliable.

Of the moderately early sorts, Banner, Magnet and Cluster are very much alike. The two former have yielded well.

The White Cave is a particularly heavy cropper; very heavy yields are reported last season. It has a strong, stiff straw, standing fully 4 1/2 feet; berry heavy and light skinned; a good milling variety.

Early Gotland is a very handsome new sort from Sweden, and, like the White Cave, ripens earlier than the black varieties.

It has a close, heavy head, stands well and is reported to have done exceedingly well wherever grown. It is certainly one of the most promising of the new oats. All the foregoing are white.

The Black Tartarian, than which there is no more reliable sort, should never be discarded on land which suits it, but growers must remember it requires care in the selection of seed.—Farmer's Advocate

Electricity from Wind.

Owing to the comparative scarcity of water power in many parts of England for the generation of power for electrical purposes, attention has been given to wind power, of which the country is well supplied. A small experimental plant has been in operation at a flour mill near London, the windmill supplying sufficient power to run a small dynamo. The current is used to charge a storage battery, from which a number of arc and incandescent lamps were lighted nightly. Although the current obtained was small the experiment was successful in demonstrating the value of this form of power for generating electricity.

The accumulators give out a steady current to the lamps, of course, independently of any conditions of wind and weather, and practically the obstacles which have hitherto stood in the way of running dynamos by wind-mills have been overcome. There is no reason why country houses standing on elevated ground should not be supplied with light from this source as well as with water. The cost of an installation should be in no way excessive, and that of operating trifling.

Home-Made Electricity.

A French chemist who has been giving considerable attention to the problem of heating and lighting from a single source has devised a novel stove, which in appearance resembles an ordinary heating stove. It is so arranged internally that the waste heat is utilized for the generation of electricity. This is secured by a number of rectangular boxes of sheet iron, containing the necessary metallic elements for furnishing the current. These elements are insulated by asbestos, and the cooling is effected partly by the shape in which the metallic alloys are cast and partly by a circulation of air.

The current obtained is not great in amount, but the results of this attempt seem to be favorable. Accumulators are used for storing up the electricity, and as the heating is required for a much longer period than for lighting, the electrical energy, which would be lost during the hours of daylight, is saved. A point of considerable moment is that the heat utilized in this way is waste heat, so that any portion that can be removed in the form of electricity is so much gain.

His Lavish Supply.

"I have a pair of suspenders for every pair of trousers I've got," he said.

"Gracious! How many pairs of suspenders have you got?"

"One pair."