BACK TO THE SUGAR BUSH

How Some Farmers are Making a Success of the Maple Industry

Just now everything points to a revival of the maple syrup industry in Canada, not the haphazard practice of driving a few spiles into the maple trees in the lane, or along the edge of the wood-lot and setting out every culinary vessel in the house except the steamer and the collander to catch the sap, but an extensive, systematic business, with big sugar-bushes and up-to-date equipment. Trees of other varieties than the hard maple are gradually being culled from the graves set apart for this purpose, especially in Eastern Ontario and Quebec, where the average maple grove contains from fifty to a hundred tapped trees per acre, writes Mr. Alex. MacPherson in the Farmer's Magazine.

There is some controversy with regard to the number of trees that will give the maximum yield of sap per acre. Possibly the ideal grove would contain a little over a hundred trees per acre, but as the sugar making quality of the sap depends on a large leaf area the farmer will often find it necessary to thin out some of the poorer trees to allow a greater crown development in the others. For sugar production a tree should have an ample root system to furnish an abundant supply of crude sap, a broad spreading top with big leaf surface to insure a good sugar quality, and a big long trunk for a storage tank. If the trees are to do their best, then, the soil must be kept cool and moist, and farm stock should not be allowed to run in the sugar bush year after year, tramping the surface roots and browsing the branches, although it is generally considered a good plan to let cattle browse the grove about one year in every five or six to keep down the underbrush, which causes so much loss and difficulty in gathering the sap. If you have an old grove it is likely to contain a number of over-mature trees that have passed the time of yielding good flows, and unless these are replaced the grove is losing ground. About the simplest way to renew an old grove is to remove the old timber and exclude the farm stock, allowing the young seedlings to spring up everywhere. While these are still young, roadways for sap gathering should be made, and later the best saplings may be encouraged by lopping the tops off the poorer ones. If cattle are let into the grove when the preserved saplings are about ten feet high, the difficulty of getting rid of the younger brush will be solved.

How They Did It Fifty Years Ago.

Some of us remember, and most of us are familiar with the story in our old school readers of the way they made maple syrup fifty years ago. A picturesque affair it was with the big iron kettle hung over the open fire and the hot sap emptied from one uncovered vessel to another as it reached a certain stage in the "boiling down" process. The leaves, sticks and ashes that happened to drop in meanwhile, were considered just a natural part of the proceedings, and the tares and wheat were left together until the time of clarifying. Nor was it a matter of any concern that the process was a slow one. Fuel was cheap and the old-time sugar-maker did not recognize the fact that sap, like milk, is a very perishable product, an excellent medium for the development of fermentive organisms, and that not only is cleanliness important, but the more direct and speedy the transformation of the new sap to the finished product, the better. The modern sugar-maker keeps this in view in every detail in equipping his plant.

The ideal sugar house has walls of house-siding or cement, cement roof and shingled ceiling, with a lean-to for storing wood. Metal roofs are often used but are likely to drip while the boiling is going on. If the floor is not wholly of cement, there should at least be a pavement of cement or brick in front of the furnace as a protection from fire. The house should be built on sloping ground so that the sap can be emptied through a pipe into the storage tank and from this into the evaporator. Where this is impossible it will save work to build an elevated bridge just back of the storage tank, where the load of sap may be hauled and emptied through a pipe from the gathering tank to the storage tank.

Perhaps the most important piece of equipment in the sugar house is the evaporator. A successful sugar-maker says: "We used to boil our sap in an iron kettle, used at other times of the year in making potash and soft soap. It must have been clean, but the syrup was always dark and strong-flavored. Then we got a sheet-iron pan, which was better, although it still required a lot of fuel and didn't turn out anything like the light, clean, delicate syrup we have since getting an evaporator." These pans with their corrugated bottoms partitioned off to give a zigzag course to the sap, and set on an arch which usually has a regular stove with large doors for firing, give rapid evaporation and are most economical of fuel. Being heavily tinned they are easily cleaned, and the syrup is always light and clear. In buying an evaporator it is not wise to get a small one while there is a possibility of ever wanting to increase the plant. An area of ten square feet of boiling surface for every one hundred trees tapped, is a pretty fair rule to follow in determining what size of evaporator to buy.

When the Sap Begins to Run.

We always try to have the wood cut and piled in the sugar house before the snow comes in the fall, and make sure that we have enough spouts, buckets, etc., on hand before the run begins. We use only tin buckets for catching the flow, as the galvanized iron, while it will not rust, is likely to discolor the sap, and wooden buckets, if it were possible to get them nowadays are hard to keep clean, and the sap often sours in them. We find it pays to paint the tin pails outside to prevent rusting. The spiles are of galvanized steel, round and tapering, so as to hold a bucketful of sap when driven firmly into the tree. Being round they keep the air from the hole and guard against driving up, retaining sap to sour during a warm spell, or to freeze when the weather is cold. This year we are going to use covered pails almost entirely, as we lost so much sap during the storms last spring. I reckon on getting a pound of sugar from a pail of sap, and out of one hundred and ninety pailfuls gathered after a rain the yield of sugar was only eighty pounds instead of one hundred and ninety, as it should have been had the rain water been kept out by covers.

As sap deteriorates so rapidly after it comes from the tree, I find it advisable to commence gathering as soon as there is a quart or two in the buckets. Pails with broad bottoms are most convenient for this, and the gathering tank should be of heavy tin or galvanized iron, with an outlet near the bottom fitted with cotton hose for emptying into the storage tank, and circular in form, as the sap dashing about when the sleigh is hauled over rough ground, would soon rack a rectangular tank. The hose can be hooked to the top of the tank while gathering. We fasten a double cloth and a wire strainer over the top of the tank, and that is all the straining the sap gets. We strain the syrup once through three or four thicknesses of flannel.

Sugar-makers agree that the more rapid the evaporation, the clearer, lighter and more delicately flavored will be the syrup. In the days of the old potash kettle the liquid was so deep in the vessel that the boiling was a tedious process. Someone was generally expected to sit guard all night with a piece of pork fastened to a stick to prevent too much loss by "boiling over." The corrugated bottom of the modern evaporator exposing the sap to such an area of hot surface, and the sap never being allowed to cover the bottom to a depth of over half an inch above these corrugations, makes the evaporation very rapid. Boiling, as everyone knows, helps to cleanse the product by bringing up dirt and impurities in a scum, which should be carefully removed. I used to carry this clarifying process further by adding egg white or milk to the boiling syrup, but have found that if care is taken to keep the sap clean it is unnecessary to use a "settler," and it is possible that syrup may not keep quite as well where eggs or milk have been added. However, this is not a very important consideration.

Perhaps the most delicate point in the whole process of syrup-making is to determine just the right "syruping off" point. An experienced hand may have tests of his own that prove satisfactory for him, but the beginner is safer to use a thermometer or saccharometer. J. B. Spencer, B.S.A., gives the following rules for testing with a thermometer. "The boiling point of liquids varies with their density and with the altitude above sea level. At sea level water boils at 212, syrup at 219, soft sugar at 238 to 240, and hard sugar at 242 and 245 deg. Fahr. The boiling point for each of these is lowered one degree for about 550 ft. ascent. Since sugar groves are usually at some height above sea level it is necessary, for accuracy, to test the thermometer in boiling water. At whatever degree the water boils there should be added for syrup 7 degrees, for soft sugar 26 to 28 degrees, and for hard sugar 30 to 33 degrees. If, therefore, water boils at 210 degrees, the syruping temperature would be 217, the soft sugar temperature 236 to 238, and the hard sugar temperature would be 240 to 243 degrees each in a state of boiling. Consequently when the boiling syrup reaches these respective figures on the thermometer it is sufficiently dense to be drawn off for the purpose desired."

The saccharometer or hydrometer is used for testing the density of the syrup either hot or cold. For testing boiling syrup the liquid is poured into a vessel two inches in diameter and nine inches deep and the saccharometer placed in it. When the syrup is of standard weight the instrument will register 30½ degrees. If it registers less, the syrup is too light, if more too heavy. In cold syrup (say at 70 degrees) of the proper density, the hydrometer will settle to 35½ degrees. Before testing, the instrument should be brought to approximately the same temperature as the liquid.

If you want to make sugar, it is a simple matter to boil this syrup down until it will form a hard lump when dropped into cold water, or until it will crack under pressure when poured on packed snow or ice. When the liquid threatens to boil over a few drops of sweet cream or a piece of butter are just as effective as the fat pork commonly used, and there will be no danger of tainting the sugar. If you have always run your sugar off into hard blocks, try granulating some this year. When the syrup is boiled to the temperature of 240 or 240 degrees, stir sufficiently to make the desired grain, pour into a mould and stir until it granulates. When dried out it may be pulverized if you like, and will be almost as fine and white as flour. This is delicious in cakes, cake icings, and for garnishing desserts, etc. Care must be taken not to scorch the sugar while drying.

DESERTS FROM GULF STREAM.

Second Gulf Stream in Atmosphere —Chilled Passing Over Sweden.

The Gulf Stream, as every one knows, is a broad river of warm water which starts in the Gulf of Mexico, wanders across the cold Atlantic Ocean and bumps into the British Isles giving them a warm climate and no end of fog and rain. But few people know that in the atmosphere above there is a second Gulf Stream of warm, moist air.

This slow, damp breeze strikes the British Isles and does not carrom off like the Gulf Stream, but continues over Europe. As it passes over Sweden, Finland and northern Russia, these cold lands chill the wind and cause it to drop its moisture in the form of rain. The lakes and rivers of these northern countries are all supplied by the moisture taken up from the Gulf Stream.

The rotation of the earth makes this wind veer gradually to the southward about the time it has given up the last of its moisture and warmth. As a mighty draft of dry, cold air, the Gulf Stream wind moves on across the plains of Russia. As it approaches the Equator the wind warms again but becomes ever drier.

At last as it sweeps over Turkestan, Arabia and Sahara, it evaporates like a great sheet of blotting paper all water it meets, forming the deserts of Turkestan, Sahara and Arabia. Fortunately this devastating wind now leaves the continent, becomes the trade winds and returns to its starting point at the Gulf of Mexico.

Several somewhat visionary schemes have been suggested for altering the course of the Gulf Stream. One of the immediate results of any such changes would be the shifting of the present deserts to other parts of the world.

In Nova Scotia.

Along the shore of the Bay of Fundy, Nova Scotia, are large tracts of inexhaustibly fertile dyked lands that have been reclaimed from the sea. This land lines the headwaters of the Bay of Fundy and extends inland up its rivers. The strong tides of that bay, which are the highest in the world, gather up great quantities of sediment from its bed and shores. The depositing of this rich sediment along the banks of its headquarters has formed a great accumulation of deep strong soil that has a wonderful productive power. Indeed, when reclaimed from the sea by means of dykes, this soil is unsurpassed for growth of grass and grain. Hay is the principal crop grown. The land needs no fertilizer of any sort and practically no cultivation. An occasional plowing for a crop of oats, perhaps once in ten years, will suffice, after which the land is generally brought at once into grass again.

Generous to a Fault.

Murphy—"Did ye hear that poor Tim Casey's dead?" O'Flaherty—"Ye don't say so?" Murphy—"Yes, an' 'e's left all 'e 'ad to the Derry Poorhouse." O'Flaherty—"'Ow much did 'e lave?" Murphy—"A wife an' ten children."

Financing The Canadian Northern

Interesting Statement From a High Official of the Company

The persistent rumors of what is called "another raid on the treasury" by the Canadian Northern Railway has caused considerable discussion throughout Canada. That readers of this paper may better judge for themselves we quote the following from an official statement recently issued by the company:—

That the Canadian Northern Railway System has been subsidized in excess of its legitimate requirements, and that moneys voted by Parliament have been diverted by Messrs, Mackenzie, Mann & Co. for their own private purposes, are charges that have been made in the public press. These statements have been previously expressed privately, and the newspapers are now only putting into print ideas which have been repeated in Canada for some years. I propose to attempt an explanation of these matters, giving the official figures of the case frankly.

There are few false statements made without some basis of truth, and few misrepresentations which have not had a more or less supposedly legitimate origin. The figures that have been quoted in the public press as to the bonds guaranteed and subsidies granted to the Canadian Northern are, as a rule, taken from the official Blue Books of the Dominion of Canada. One would naturally expect to find in these figures an exact account of the situation; but, curiously enough, a moment's reflection will show that they may fail to portray correctly the relations between the Canadian Northern, or any other railway, and public assistance. There have been placed on the statute books of Canada millions of dollars of cash subsidies which have never been earned, many of the subsidized companies having passed out of existence, and millions of dollars of bond guarantees which have never progressed farther than the original authorizing legislation. The Canadian Northern is not an exception to this general statement. Guarantees have been granted by Provincial Governments for lines which have never been commenced, and which probably will not be built for years. These guarantees, with unearned cash subsidies to certain branch lines within the system, are charged up by statisticians, casually referring to the Blue Book as against the constructed mileage of the Canadian Northern Railway System. It is the misuse, not the use, of the Blue Books which has created the false impression.

So much for the origin of misrepresentations that have taken place. Now as to the facts: The Canadian Northern Railway Company has under construction, and expects to have completed by the end of 1914, 9,843 miles of railway. There are completed 8,694 miles, and under operation 7,152 miles. The completed mileage has cost for construction and equipment to December 31, 1913, $303,319,232. From the Dominion and the Provincial Governments, and from municipalities, up to the same date, there have been received, by the companies forming the Canadian Northern Railway System, whilst under the control of Mackenzie, Mann & Company, $20,992,566, in cash subventions, or about seven per cent. of the total cost of the railway mileage constructed. These figures are correct. They include all the cash subsidies received from public sources, as a set-off against the three hundred millions of costs before mentioned. When compared with the cash subventions given to either of the other transcontinental railways, or when compared with the total cost of the work and the great economic good which has been and is being accomplished by the Canadian Northern Railway System, these figures must disabuse the public mind of the idea that the Canadian Northern has been oversubsidized, its bonds over-guaranteed, or, to put it mildly, there has been even an opportunity to reinvest the subsidies in outside ventures.

The critic, at this point, naturally asks what about the land grants. Let me explain in a few words this almost hopelessly misrepresented feature of the case. Briefly, the grants were made between 1882 and 1890 to three companies: The Lake Manitoba Railway and Canal Company, the Winnipeg and Hudson Bay Railway Company, and the Manitoba and South-eastern Railway Company, for the construction of certain defined lines in Manitoba and the then Northwest Territories. The lands at that time had little value, as by reason of inadequate transportation facilities there was no eagerness to take up farming in Western Canada, and under the homestead regulations the few settlers coming into the country obtained all the land they required for the discharge of homestead duties. The promoters, who had more confidence than finance, were anxious for Western development, and hawked the charters from one end of Canada to the other, seeking, in vain, support from the financial interests. The promoters of the Winnipeg and Hudson Bay Railway visited New York, London and Paris in a fruitless endeavor to arouse an interest in the undertaking. Years after the land grants had been authorized by Parliament, Messrs. Mackenzie & Mann bought the charters carrying the land grants, and built the railways. They did what the financiers of Canada, of the United States, of England, and of the continent had, after careful scrutiny, repeatedly refused to do.

However, this was not the course of action. The lands were turned over to the Canadian Northern and used for issuing land grant bonds. Lands were sold from time to time at market value, and their proceeds applied in reduction of these bonds. Up to the 31st day of December, 1913, there were issued $24,000,000 of land grant bonds. The land grants made to the company, the charters and rights of which were secured by Mackenzie, Mann & Company, total 4,000,000 acres. The railway company got the benefit of these lands.

It will not be denied that the Canadian Northern Railway has shared in the work of development of Western Canada in the days when it was needed, when Western Canada had been for years practically stagnant. The railways in existence at the advent of the Canadian Northern were located in the southern portion of Manitoba and the then Territories. The Canadian Northern Railway plunged into the comparatively unknown and unsettled country of the North. It has succeeded in building up a territory which was ultimately to be known as "The Bread-basket of the Empire." There have been expended by the Canadian Northern and its industrial agency, for colonization work, $2,910,000, or an equivalent of 14 per cent. of the total cash subventions received by the companies under control of Mackenzie, Mann & Company.

In assistance of eastern lines, the Ontario Government has granted 2,000,000 acres of land, and the Quebec Government 749,540 acres of land. These lands are wooded, and subjected to certain restrictions, therefore they must be considered in a different light to the infinitely more valuable prairie lands of Western Canada. So far neither the Ontario nor the Quebec lands have been of assistance to the companies in securing finance, and remain unselected and unsold.

The bonds of companies constituting the Canadian Northern Railway System have been guaranteed by the Dominion and several Provincial Governments, and up to December 31, 1913, the companies have received the proceeds of bonds so guaranteed to the extent of $131,322,660. There is no disposition on the part of the company to minimize the benefits of these guarantees, but it must be acknowledged by the company's bitterest opponents that the guarantees have in no sense been subsidies to the company's undertaking, and that the companies have faithfully discharged all of their interest obligations in connection with these guarantees. The only benefit intended by Parliament, or received by the companies from the guarantees, was that of enabling the sale of bonds secured by first mortgages on better terms than would have been possible otherwise.

Up to the 31st day of December, 1913, there also have been expended, for the purposes of the several companies within the system $134,123,171, raised absolutely without Government assistance. When this amount is compared with the figures previously quoted as to cash subventions, moneys raised from land grants, and moneys raised by the guaranteed securities, it will be seen how little truth there is in the statement that the Canadian Northern has been built by public funds.

With the statistics that have been given, it would appear almost unnecessary to deal with the statement that money voted to the Canadian Northern Railway System has been diverted and invested by either Sir William Mackenzie or Sir Donald Mann in South America or elsewhere for their personal advantage. But, since the statement has been hinted at by reputable journalists it is deserving of an answer. Sir Donald Mann, personally, has never had an interest in South American securities. Such funds as Sir William Mackenzie has invested in South America were invested from his personal resources. Neither Sir William Mackenzie nor Sir Donald Mann has ever utilized the funds of the companies in the Canadian Northern Railway System for their personal benefit. They have not even drawn upon the companies for salaries or travelling expenses. They have been prepared to confine any benefits they may receive entirely to their interest in the common stock of the company, and have devoted the best of their years to the building up of what they believe will be a transcontinental railway system creditable to Canada.

JOHN CAREW OF LINDSAY.

Great Captain of Industry—Has Many Interests Outside of Factories He Controls.

John is his name, but his intimate friends call him just plain Jack, and few apply the Mr.

He is a big-hearted, good-natured person, and one of those individuals who simply grow up with the "boys" and make good. Somehow despite the lack of knowledge that is gained by close and diligent application to the rudiments of studying the three "R's" Jack always appears to get along well, and displays in no uncertain way that the hard knocks gained by studying in the school of practical experience are, after all, the knocks that boost, until to-day, Mr. John Carew, the dynamo behind the John Carew Lumber Co., of Lindsay, is the owner of one of the best and most up-to-date lumber mills in the Dominion of Canada, having very extensive limits throughout the northern part of the Highlands of Haliburton. He is also the owner of a thriving box factory and planing mill, employing, all told, hundreds of men. In a nutshell, Mr. Carew is one of these busy, busy business men, but yet one who finds time to mingle with his fellowmen, irrespective of creed or station, and extend the helping hand to any worthy cause. He is identified with several big institutions in the town of Lindsay, his home town, where he is a good citizen in every respect. As president of the South Victoria Agricultural Society, commonly known as the Lindsay Central Fair, he is the idol of the countryside, the Lindsay Fair to-day being one of the four best and largest in the province; as one of the governors of the Ross Memoral Hospital he is recognized as a

Mr. John Carew.

thorough business man; as vice-chairman of the Lindsay Industrial Commission he was largely instrumental in securing four splendid new industrial concerns for the town in one year; as chairman of the building committee of the Board of Education he has given the town practical knowledge in the construction of two magnificent Public schools; as owner of two large tow-boats he has been largely instrumental in having the Lindsay end of the Trent Valley Canal properly dredged and improved for all manner of navigation; as patron of the Lindsay Curling Club he has been a prime factor in placing the name of Lindsay on the top rung in curlingdom the world over; as one of the first movers in the building of an up-to-date garage in Lindsay he has abetted the automobile industry in Lindsay and vicinity; as the owner of several hundred feet of river front and a large number of boat-houses on the Scugog he has bettered the conditions of the yachtsmen, giving them excellent housing facilities; as a director of the Horn Bros. Woollen Mill Co., Limited, an institution employing over 150 hands, he has aided in giving employment to a large number of the young girls of the town.

Such a man is Mr. John Carew, of Lindsay, Ont., one of the foremost captains of industry in the Dominion of Canada.—F. W. M., in Toronto Star Weekly.

Phophecy Fulfilled.

The newly married couple had just crossed the threshold of their home for the first time.

"This is our world, dear," he said softly. "In it we will accomplish great things."

His prophecy was correct.

Inside of two months they were fighting for the championship of the world.