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PUBLISHED  
SEMI-MONTHLY.

The only Newspaper devoted to the Lumber and Timber Industries published in Canada.

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VOL. 1.

PETERBOROUGH, ONT., NOVEMBER 15, 1881.

NO. 26.

The new mills for the Georgian Bay Lumbering Co. are under contract and the work is being pushed on with the greatest speed. The machine shops are built and taken possession of, and the stone foundation of the mill is nearly completed.

A. J. GEIGER, Philadelphia, is reported as having the largest lumber warehouse under one roof in the United States. It is 164 feet wide and 200 feet long. It required 13,000 square feet of tin for the roof, which is so arranged that it can be opened when the weather is fair, and closed when it is stormy.

#### THE ONTARIO BANK.

We regret to learn, directly and indirectly, that some of the depositors and note holders of the Ontario Bank have become alarmed at recent developments, and are withdrawing their deposits and refusing to take its notes as usual, notwithstanding that there is not the slightest ground for alarm on their part.

Did we for a moment think that there is the slightest possibility of any of its creditors suffering inconvenience, much less loss, by the Ontario Bank, we should be the last to discourage them taking every possible means of securing themselves, but as matters stand we deem it our duty to discourage everything tending to discredit this Bank's entire solvency so far as the public is concerned.

It is unfortunately too true that through past management, a considerable portion of the Stockholders' money has been lost, but taking even the most gloomy view of the state of its affairs, and accepting Mr. Holland's report as certain to be fully realized, the bank still possesses undoubted assets, which amount to within a fraction of one hundred and thirty-five cents for every dollar which it owes to the public. But perhaps the best evidence that the Bank is thoroughly solvent so far as its creditors are concerned, is the fact that notwithstanding Mr. Holland's proposal to reduce each \$100 of its present stock down to \$50, yet the speculators in both the Montreal and Toronto markets are paying about \$60 for every \$100 of its present stock or for every \$50 of the new stock, which is equal to a premium of twenty per cent. on the stock as reduced. This is the strongest possible proof that those most likely to be best informed still place a very substantial value upon its stock, and believe that things are likely to turn out much better than Mr. Holland's estimate. Be that as it may, however, it is quite clear that this stock cannot be worth a single cent, unless there be a surplus after paying every creditor. The Stockholders are the only ones which can suffer by the bank's losses, and that being the case we have no hesitation in strongly deprecating any action on the part of any of its creditors calculated to increase the already serious loss of its proprietors.

#### CANADA'S RESOURCES.

IMMENSE TRACTS OF PINE LANDS DISCOVERED NORTH OF THE GEORGIAN BAY.

Col. William Mercer, a railway engineer of large experience, passed through Chicago a day or two ago to commence the survey for the Quincy, Vandalia and Eastern road. The Colonel brought the first tangible information from the mysterious exploring expedition which recently left a port on the Lake Huron shore and proceeded to the mouth of Spanish River, on the Georgian Bay, where they dismissed the steamer which had taken them thus far, and took to small boats, in which they proceeded up the river one hundred and fifty miles, penetrating a region little known to the white man, and which the Canadian Government has never yet

SURVEYED OR EXPLORED.

The expedition was gotten up so quietly that only a few persons interested in the result of the exploration knew of its destination. Its abandonment of the steamer on the shores of the Georgian Bay was a matter of wonderment even to the officers of the boat, who could not, though they tried hard, guess the object of all the preparations which they found awaiting the voyagers at the mouth of Spanish River, and the extended trip of the adventurous little party at least awakened in the minds of friends at home fears that some serious disaster had overtaken them in this wild and unknown region. Launched upon Spanish River, the voyagers proceeded leisurely, noting the depths and currents of the stream, the magnitude of which surprised them more and more as they ascended. Reaching a point 100 miles inland from the Georgian Bay and the limit of Government surveys, the party landed and prepared to penetrate the great unexplored region before them. Here began the work that from its results may in the not far distant future open up a new and almost inexhaustible source of lumber supply. This, in fact, was the primary object of the expedition—to investigate the resources of this region as regarded the growth and quality of pine timber, and discover if such forests, could they be found, could be utilized when the pine supply of Michigan should be exhausted.

Establishing a base line six miles in length, the surveyors moved forward, sending outside parties, and in this way covered an area of 75 square miles. They found the pine timber of a superior quality, exceeding that of the Michigan forests, and in such quantities as to convince them that they had discovered a source which would furnish building material for Canada and the West.

FOR THE NEXT HUNDRED YEARS

at least. It was estimated that the area surveyed by them would furnish 24,000,000,000 feet of lumber, and they had not begun, according to the Indian guides, to penetrate this immense

forest tract. The explorers also encountered small streams connecting with the Spanish River, which, in the event of the future tapping of this great lumber supply, would serve admirably in floating the logs to the greater stream, which is free from rapids and well adapted to the logging trade. The value of this great pine forest will perhaps be better understood when it is stated that the entire stock of uncut timber in the state of Michigan is estimated by practical engineers at only 35,000,000,000 feet.

In addition to this immense lumber supply, the party found evidences of

VARIED AND EXTENSIVE MINERAL DEPOSITS, which of themselves will in time serve to open up this great wild region to the fuller and freer knowledge of the enterprising white man.

Spanish River, according to Col. Mercer, is from its mouth to its rise, or as far as the expedition navigated it, a splendid stream, devoid of rapids or other impediments its entire length. It runs through a grandly picturesque country, with lofty cliffs and jutting precipices interspersed here and there with lengthy reaches of high plateaus. Its waters are of a good and uniform depth throughout. This river, together with the Ottawa River—the one running south west and the other south-east—serve as the

GREAT DRAINING AND IRRIGATING ARTERIES to this widely extended land of the pine. The Ottawa River, however, is obstructed by frequently recurring rapids, and as a logging stream has many disadvantages which could not be overcome without the application of immense labor and expense. Flooding along through this almost interminable wilderness of pine, the explorers were surprised and gladdened by the voice of man coming from a source least expected in fact, they ran upon a party of engineers engaged in the work of surveying for

THE CANADIAN PACIFIC RAILWAY.

Mutual greetings and congratulations were exchanged. The railway surveyors had long since cut loose from civilization, and yearned for some means of communication with their fellow men. In accordance with these hopes and longings their daily accumulations of mail matter had been kept in the best state of preservation and at the foremost front, ready for any chance benighted party like themselves who would volunteer to carry them to their destination. This package of letters, which had assumed a godly bulk, was taken in charge by our pioneers and religiously packed with their choicest instruments, in order that their charge might be properly regarded and respected.

Col. Mercer, who has been bred to eminent practical work, soon found occasion to question his newly acquired friends with regard to the prospects and ultimate intentions of the Canadian Government touching this great railway project. He had, through his own knowledge

of the country, discovered that this road must pass through

NEARLY 1,000 MILES ENTIRELY UNINHABITED, in the largest portion of which the print of the Indian moccasins has never been seen; and yet the Colonel, who is, as has been before stated, an eminently practical man, could not see how a road through such a country could be made to pay. To the casual observer it would appear that this vast tract of timber, with the accompanying mineral resources, as discovered by this exploring party, gives promise of a successful future to the railway enterprise that at its inception has such a wide and otherwise apparently unprofitable gap between its remotely separated termini.

#### Gilmour's New Mill.

The *Advocate* says that the work on Gilmour's new mill at Trenton is being pushed with great energy. Mr. Proper has arrived and is executing the plans made by Mr. Hall, who is the draughtsman and architect. The frame of the mill proper is made in sections, each story being a section. The frame is up and also the two extension wings. The men are putting on the roof as fast as possible, so as to have it enclosed before the bad weather sets in. It is a colossal frame in no size of its timbers and the area it covers. Mr. Proper tells us one gang similar to those to be put in cut 123 logs in one hour. Mr. Lester, sr., is pushing the new smoke stack rapidly to completion. On Saturday it was within 30 feet of its height. Messrs. Crow & Sanson are driving on the boiler house with all the forces they can well set to work. The front of the new boilers, which will be tubular, will be reversed to face the west, thereby securing a better draught. The Miller Bros. have completed the stone foundation except the central stone work that is to bind the immensely large gangs to the rock. There is to be three feet of rock excavated, and then large bands of iron will be laid down and stone work twelve feet thick built over these irons, so that the gang under great weight, when screwed down to the irons, may be free from shake or jar. Mr. Gilmour, the engineer, has had four boilers put in position in the new boiler house in connection with the planing mill, and two of the boilers now supply steam to the mill. The new engine will shortly be in position, and then the present small engine will be kept for electric light or force pump purposes. The "Gehona" is about 100 feet out west of the large mill, and looks like a great circle of rough hewn stone. It will be surmounted with an iron furnace 30 feet in diameter, into which refuse stuff from the mill will be thrown, and will be kept burning day and night while the mill is in operation.

BLACKSTONE, the name of England's greatest lawyer, and the name of a well known lawyer's pen of Esterbrook's make. The stationers have them.

## OUR QUEBEC LETTER.

From Our Own Correspondent.

A LARGE SALE—PRICES OF OTHER TRANSACTIONS—STOCKS WINTERING—FURTHER PREPARATIONS FOR THE WOODS—A FREIGHT DIFFICULTY—WRECKED CARGOES—MINING NOTES.

QUEBEC, Nov. 9th.—There is never very much to report at this season concerning the lumber trade, and the present fall is no exception. There will be very little more timber shipped here this season, the last cargoes being now stowed away. There are not half a dozen timber ships now in port, and these are principally taking in deals for London and Glasgow. In another ten days the last of them will have sailed out of port, and in ten days more the harbor may be covered with a sheet of ice.

Since my last letter the whole of the fine lot of square white pine, shipped to this port this fall from above Ottawa by the Q. M. O. & O. R. R., and consisting of about 7,100 car loads, has been sold to one purchaser,—Messrs. A. F. A. Knight & Co. The price at which it changed hands has not transpired, but it is reported to be pretty well up to last published quotations. This sale involves somewhere about \$200,000.

Mention may also be made of a good raft of white pine, consisting of square and waney, which has been sold during the past week, the square averaging 48 feet, at 29 cents, and the waney about 17 inches, at 32 cents.

The Naglo raft has been sold here to Messrs. R. R. Dobell & Co. For it also 29 cents has been paid for white pine, but of 52 feet average, and 32 cents for waney of 18 inches.

Red pine has been sold at 23½ cents for 40 feet average, and 13 cents for 26 feet average.

No other lots have of late changed hands, nor are any sales of oak or other hard woods reported. Brokers state that prices have not changed for other kinds of timber, but there being no sales to report, it is not, of course, possible to give figures that all will consider correct. As may readily be imagined from the sales above reported, and the small stocks hitherto held here, there is not much to winter in first hands. Mr. J. Bell Forsyth is just now collecting details of the Quebec stocks for his annual report and statement. Until the various returns are in it will be impossible to give figures.

Lumbermen's agents are just now busy in getting good lumbermen for the woods. Mr. D. B. Charleson, of Sarnia, is here and has sent up several gangs to get out oak on the scene of his last season's operations. From all that can be so far learned, it appears that about the same amount of timber will be got out of the woods in Canada this winter as last.

The packing box industry, which gives employment to a large number of hands at Montmorency and New Liverpool, threatens to suffer somewhat by a curious freight difficulty. The Grand Trunk Railway, it appears, refuse to furnish more cars to transport the boxes to the States, on the ground that American railways, when they can get Canadian cars upon their lines, run half their life out upon their own roads before returning them, just, as it was recently alleged, was done with American mail bags by the Canadian postal authorities.

The latter portion of the Quebec Fall timber fleet has been very unfortunate this season in the Lower St. Lawrence, something like six vessels loaded with timber, deals, &c., having been wrecked on their way home from this port. The value of the cargoes amount to over \$80,000, but of course in some instances all, or at least a good portion, of the freight will be saved.

## MINING NOTES.

A good deal of competition is anticipated here at the approaching sale by auction of Government mining lands. In Beauce matters are now proceeding very quietly, and rumour says that remunerative yields of gold have been found this season. Mr. Juncker, French engineer from Paris, sent out purposely to report upon the Beauce Mines, has completed his investigation. His report will not, however, be given to the public until after it has been submitted to the French capitalists.

There is some talk of opening up a new silver mine in Charlevoix, but nothing has been definitely done so far in the matter.

SUBSCRIBE TO THE CANADA LUMBERMAN.

## BRACEBRIDGE.

From Our Own Correspondent.

LIVELY TIMES—WAGES DROPPING—A LARGE CUT PROMISED—TIMBER SALES—EXTENSIVE IMPROVEMENTS BY THE MUSKOKA BOOM CO.—TIMBER HUNTING FEVER.

NOVEMBER 4th.—Since I last wrote you things have been lively here. There have been a great many going into the woods. The prospects are that there will be a larger stock got out the present season than last. Everyone agrees that the work is much farther advanced now than at this time last year, and although men were scarce and wages much higher, there is a much better class of men in the woods now, and wages are going down, \$18 to \$20 being about the ruling wages now. The cut of board pine will also be larger than last year, but it is too early yet to give any figures. The weather has been very wet for the last month or more, and the streams are all up nearly to spring level. S. S. Cook is taking advantage of this on the Little East River, and has started to drive out his timber that was stuck there last spring; although it is late, if the weather keeps mild they are likely to get it out.

The drive on the Muskoh has reached the month, but it is not sorted yet, and is not likely to be this fall. Its progress has been very slow, owing to the lowness of the water in the spring, and so much west wind during the latter part of the season. It is to be hoped that the Boom Company will have better luck next year. I see that they are doing some very necessary improvements, viz., on North Branch, dam at Mary's Lake, which is completed; also a slide at Wilson's and another at Bracebridge; on the South Branch, a dam at Bayville, and a slide at Hannah's Falls, both of which are completed; besides a slide at Gray's Falls, on the Muskoh, and I believe they contemplate a dam and slide at Moon River. This will about complete the improvements necessary on the rivers.

Owing to the Government having advertised a sale of limits, the upper portion of our district is swarmed with timber hunters, and from present appearances, if they are all as anxious to buy as they are to get information, they will go high, for the fever appears to be at its height just now. Nearly all the timber to be sold will come down the Magnetawan and French rivers, and a good portion of it through Lake Nipissing. Some few of the mills at Gravenhurst have shut down, but the majority of the mills that get their stock from this district are running yet, and will run until it freezes up, but the cut will not be as large as was anticipated in the spring, the low water having kept back the logs.

Several timber limits have changed hands here lately. The Muskoka Mill and Lumber Company bought from Cook & Bros. the south half of Perry, and the north-east corner of Franklin, it is said, for \$23,000; and Caldwell & Son sold the south portion of Franklin for \$14,000, and H. H. Cook sold six miles in Morrison for \$11,000. There have also been numerous smaller purchases.

The article in your last issue, copied from the *Christiania Guardian*, is a little hard on the shantymen, I think. The correspondent is one of those that likes better to write than to go and see for themselves. It is quite evident that he does not know what he is writing about.

A number of our lumbermen are now in Toronto as witnesses in the suit between Petrio and the Guelph Lumber Co., no doubt very much against their will at this season of the year.

## MILL REFUSE FURNACES.

During the last week there has been shipped from Mr. W. Hamilton's foundry the prepared material for two mill refuse furnaces, one for Byng Inlet, and the other for Port Severn. Another will shortly be shipped to Waubesa, and an extra large one will be made during the winter for shipment to Trenton. These burners, or furnaces, are immense circular structures of plate iron, lined with fire brick. They are from twenty to thirty feet in diameter at the base, and from one hundred to one hundred and twenty feet high. With a well appointed system of sawdust and slab carriers, the premises about a saw mill may be kept as neat as around a woollen factory. All the leading mills are getting them.

## THE ONTARIO TIMBER SALE.

As our readers will have noticed, by an advertisement which appears in another column, the Ontario Government will offer for sale by auction, at Toronto, on the 6th of December next, Timber Limits covering a very large area of territory in the Muskoka and Parry Sound districts.

Although we imagine that intending buyers at this sale will take steps to ascertain for themselves the character of the timber on those limits, and the facilities afforded by nature for getting it to market, yet it may not be out of place for us to give a brief epitome of the reports of the surveyors who laid out these townships, with regard to the timber growing upon them.

MONAT.—This township was surveyed in 1879 by Mr. T. Byrne, who reports that all that portion of it lying south of concession line 10 and 11, and north between side line 30 and 31, and the west boundary to French River, as burnt country, and that the only pine of any consequence in the township is to be found on both sides of the Pickerel River, extending about a mile inland.

BLAIR.—This township was surveyed in 1878 by Mr. T. Byrne, who reports that about 11,000 acres in the south-west corner had been burnt over about fifteen years before, and had grown up with small poplar, white birch, balsam, spruce and scrub pine. About 21,000 acres lying south of con. line 10 and 11 to Kawiganog Lake, and west to lot 23, and all that part from the 8th con. north to Pickerel River, and west of side line 20 and 21, is heavily timbered with black birch, pine, maple, hemlock, spruce, elm, white oak, ash and tamarack, while all the rest of this township had been burnt over about three years before, leaving not a vestige of timber.

MCCONKEY.—Was surveyed in 1858 by Mr. D. Beatty, who reports that from the south boundary northward to a narrow belt along Wolf River it is timbered with maple, birch, basswood, and in some places hemlock, with scattering pine, broken with small swamps of cedar and tamarack, while immediately along Wolf River, on either side, the country is broken with ridges of rock and timbered with hardwood and pine of good quality. Along the river from about lots 20 and 21 to its outlet the pine has been cut off. Eastward from lots 20 and 21 and northward from the river, the timber is hardwood and pine,—in many places of superior quality.

LAURIER.—Was surveyed in 1878 by Mr. Henry Lillie, who describes the township as hilly, many of the hills reaching the height of from two to three hundred feet, while the timber is principally mixed with hardwood, balsam, spruce and pine, but not a sufficient quantity of the latter for lumbering purposes. There is a burnt district of about 5,000 acres in the S. E. corner.

JOLY.—Was surveyed in 1878 by Mr. T. O. Bolger. The principal streams in this township are the Magnetawan and South River. The only pine of any consequence is found along the flats of the Magnetawan, throughout the township. There is also good pine in the vicinity of the South River. Away from these streams the country is hilly and chiefly covered with hardwood.

PATTERSON.—Surveyed by Mr. J. W. Fitzgerald in 1876, who says that the swamp timber is chiefly spruce, while the uplands are covered with maple, birch, and pine, and that a rather extensive area of the north part of the township has been burnt over, and the timber rendered comparatively useless.

SINCLAIR.—Surveyed in 1876 by Mr. John McAree, who says that in different parts of the East River Valley there is a considerable amount of very good pine, of moderate size. Isolated pine trees also occur among the other timber, which consists of maple, black birch, hemlock, beech, balsam, basswood, cedar, &c.

GRIND.—Was surveyed by Mr. J. W. Fitzgerald, who writes that there are only occasional pines with an enormous quantity of magnificent black birch, with trunks three and four feet thick, with a height of thirty and forty feet, and which is of fine quality and color.

MACHAR.—Surveyed in 1876 by Mr. E. Stewart, who says the whole township is well

timbered,—the swamps with spruce, cedar and tamarack; the swampy land with hemlock and birch, with pine ridges, and on the higher land with maple, birch and balsam.

STRONG.—Surveyed by Mr. W. Beatty in 1876. About one-ninth of the area of this township is occupied by a lake lying near the centre. A belt of harwood land along the west side of the lake gradually rises to about the height of one hundred feet, when it becomes mixed with scattered pine and hemlock, with occasional patches of birch and balsam. East and north of the lake the land is rolling and covered with hardwood and scattered pines, and small patches of balsam and spruce swamp.

PRINGLE.—Surveyed in 1876 by Mr. Fitzgerald, who states that the south-west portion may be described as rugged and broken, scattered over with a sprinkling of white pine of fair quality, but not in sufficient quantities to be called a pine country. The south east part of the township is described as of better quality, covered with scattered pine of good size, large birch, and a fair growth of maple, hemlock, beech, &c.

LOUNT.—Surveyed by Mr. Hermon in 1876. The timber consists of maple, beech, birch, balsam, spruce, pine, &c. The pine about the Lake of Many Islands is said to be of value, and may be got out via Deep Water River and the Magnetawan.

HIMSWORTH.—Surveyed in 1876 by Mr. Chapman, who reports the northern portion of the township as having been formerly run over with fire, and much valuable timber destroyed, a small quantity of green pine in some places being all that is left. The remainder is timbered with maple, birch, oak, basswood, &c., on the high ground with cedar, pine, balsam, and spruce along the valleys and streams running into South River.

BETHUNE.—Surveyed in 1877 by Mr. A. B. Scott, who says there is not much pine in this township, and that it is doubtful if there is sufficient to cause it to be set apart for lumbering.

PROUDFOOT.—Surveyed by Mr. C. F. Chapman in 1877. The timber is reported to consist principally of hardwood, maple, beech and birch, on the high lands, while on the lower levels these are mixed with cedar, hemlock, balsam and pine. Pine does not occur in large groves, but generally scattered through the other timber, the best localities being along Loon Lake, and the stream running from it at the head of Island Lake, and along the main (South Branch) river eastward. A grove of small pine occur at the north end of Sand Lake, but of no great extent.

MILLS.—Surveyed in 1877 by Mr. T. Byrne, who says the southern portion of this township contains some of the finest pine he had yet seen in the Huron and Ottawa territory. He considers this part of the township principally adapted for lumbering purposes. The northerly part has also some very good pine, though not sufficient for lumbering purposes.

HARDY.—Surveyed by Mr. Bray in 1877, who says on the whole the township cannot be called a good pine township, although much valuable pine exists in it. There is a great deal of cedar scattered all over the township, which, though large, is generally faulty and hollow-hearted.

NIPISSINO.—Mr. H. Lillie, who surveyed this township, says that on the whole it is well timbered. In the central and westerly portions there are large tracts of fine hardwood, consisting of maple, birch, beech, and ironwood, with a mixture of basswood and hemlock. The maple is said to be of good size, and among it are many beautiful specimens of birds-eye, while the birch is frequently three and four feet in diameter.

ALMOST YOUNG AGAIN.—My mother was afflicted a long time with neuralgia and a dull, heavy inactive condition of the whole system; headache, nervous prostration, and was almost helpless. No physicians or medicines did her any good. Three months ago she began to use Hop Bitters, with such good effect that she seems and feels young again, although over 70 years old. We think there is no other medicine fit to use in the family. A lady in Providence, R. I.—*Journal*.

**MILL MACHINERY FOR SALE.**

A TURBINE WATER WHEEL, 50 inches, Steam Cylinder, 12 inches, with Steam Chest, Shafting and other Saw Mill gearing. Address P. O. Box 352, Barrie, Ont. 4124

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The subscriber being anxious to concentrate and consolidate his business, on account of his age, will sell at very low prices—

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2nd. The Portage and Canal connecting Black River with Lake St. John, and Lake St. John with Lake Couchiching, in the Township of Rama.

3rd. Eight million feet of saw-logs now in Black River.

4th. About 4,000 acres of land in different townships.

If not sold at private sale, the above will be offered to the highest bidder at some future time to be named, as I intend to close all out and concentrate in Michigan, where I now have mills.

All and any information can be had from Thompson Smith & Son, Toronto, or James Durham at Bradford Mills. 4125

THOMPSON SMITH.



Department of Crown Lands, TORONTO, 6TH OCTOBER, 1881.

NOTICE IS HEREBY GIVEN THAT, UNDER AN ORDER IN COUNCIL,

**TIMBER BERTHS**

In the undermentioned Townships in the MUSKOKA and PARRY SOUND DISTRICTS,

Will be offered for Sale by Public Auction at the Department of Crown Lands at twelve o'clock noon,

On TUESDAY, the 6th day of December next,

viz.: Townships of Mowat, Blair, McConkey, Hardy, Patterson, Mills, Sinclair, Bethune, Proudfoot, Gurd, Machar, Strong, Joly, Laurier, Pringle, Lount, Nipissing and Hinsworth

The area to be disposed of in the above Townships as Timber Berths is upwards of 1,400 square miles, and to suit all classes of purchasers each Township will, as nearly as practicable, be divided into four berths.

Sheets containing conditions and terms of Sale, with information as to Area and Lots and Concessions comprised in each Berth, will be furnished on application personally or by letter, to the woods and forests branch of the Department, or to the Crown Timber Offices at Ottawa, Belleville and Coboc, and the Office of T. E. Johnston, Esq., Parry Sound.

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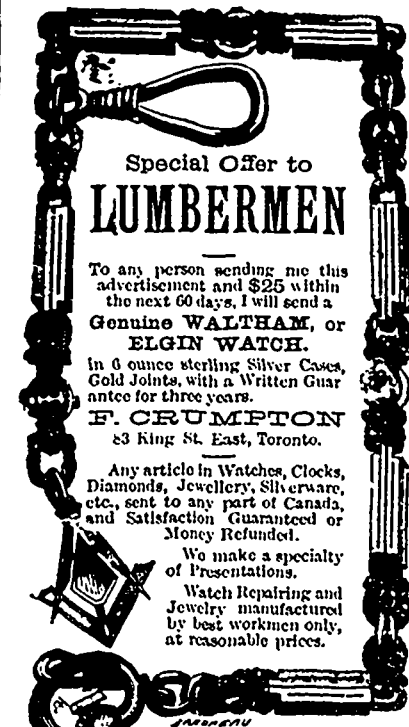
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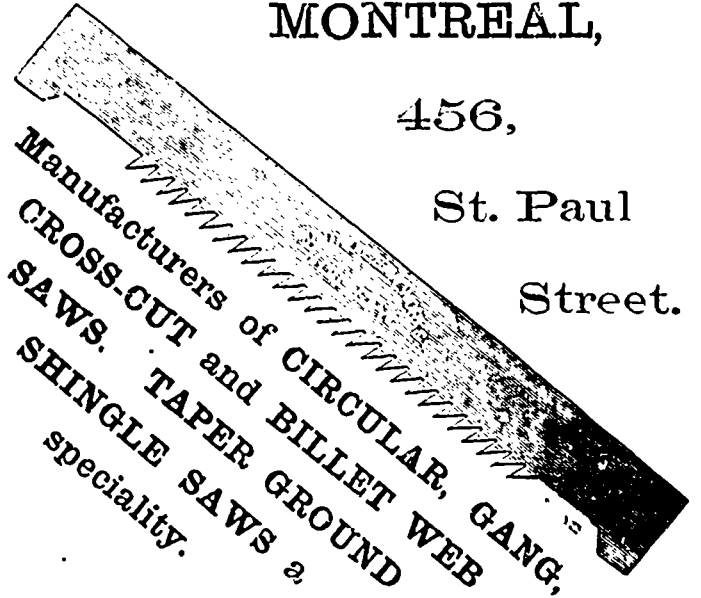
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## FOREST TREE CULTURE.

BY HON. H. G. JOY.

The following valuable article appears in the last report of the Montreal Horticultural Society and Fruit Growers' Association of the Province of Quebec:—

The European traveller who visits only the settled parts of this Province, is invariably disappointed at the scarcity and meanness of our trees. Of course, if he leaves the beaten tracks of travellers, and goes far enough into the wilderness, up the Ottawa and the St. Maurice, he will see fine timber, but, in our settlements, we can only show him, here and there, at long intervals, one solitary elm, model of grace and beauty, and the traveller will feel, as we do, grateful to the man who spared that tree.

On a warm summer's day, the Desert of Sahara, with its lovely oasis, would be suggestive of coolness, compared with our country. No trees to shade the dusty roads, to shelter the panting cattle, to set off the neat white-washed houses; only far away, hidden nearly out of sight, the patch of small neglected timber which the farmer is compelled by our storm winters, to spare from the general slaughter, as he will do, without fuel.

If every acre of ground were covered with valuable crops, one would try and get reconciled to the absence of trees, and bow to the iron rule of our age which converts everything into cash. But what a small proportion of all that ground is used profitably! We can find plenty of spare room for growing forest trees: they are not only the most beautiful ornaments to a country, and the most useful product of nature, giving fuel, timber, shade, shelter, retaining moisture and a protection against droughts, &c., &c., but, considering the question from a strictly money-making point of view, the culture of forest trees is perhaps the best and safest investment that can be made.

It is rather difficult, I admit, to induce people to plant forest trees in this Province, where, for generations, they have been brought up to look upon the forest tree as their natural enemy, to be got rid of at any cost, hacked down, burnt out of the way (for want of a better mode of disposing of it), and still troubling the settler for years with its everlasting stump, an obstacle to thorough cultivation. The children and grandchildren of the settlers remember too well; they cannot be expected to love the forest tree, but self-interest ought to conquer instinct and prejudice. With us, land is not too valuable for forest tree culture. In Europe, where land is scarcer and more valuable than it is here, they plant, every year, thousands and thousands of acres in forest trees.

To those who say that our country is too new, to think of that, I will answer that New Zealand, the Australian Colonies, India (so far as the settlement of the land by Europeans is concerned), are newer countries than ours, and they are all taking active steps toward the planting of forest trees on a large scale. In the United States, the Federal as well as the States' Governments encourage the culture of forest trees by grants of land, and money, and exemption from taxation, and powerful societies are co-operating with energy and liberality. The Government of Canada has begun by offering free grants to those who undertake the planting of a certain number of trees on the Western prairies, but I will here observe that it will require more active measures to set the people in motion, and especially the establishment of nurseries, where the people can buy young trees and seed, and the beginning of some large plantations, as an example, to show to the people, by practical results, that the culture of forest trees is within the reach of every one.

We see in the papers that the Western railways have started the culture of trees on their own account; the St. Paul, Minneapolis and Manitoba railway is reported as having appointed a superintendent of tree culture, who has just contracted for three hundred thousand trees, and most of the roads west of the Mississippi and Missouri rivers have also begun to raise trees, in order to insure a supply of trees, and for other purposes.

How many give as their reason for not planting forest trees, that they will not live long enough to get any profit out of them. You do not hear that in Europe. Are people more sel-

fish in America than they are in Europe? Or is the feeling of self-reliance so much more developed in America that the people here expect the next generation to take care of itself as they take care of themselves? Then leave them some timber, if you wish them to have the same chance that you had. It was but a heathen who wrote, more than eight hundred years ago, "Arboris erit diligens agricola quorum fructus numquam videbit." "The good husbandman plants trees whose fruits he shall never see." But I must not drift away from my subject into philosophical considerations; it will be more to the point to show that the profits of forest tree culture are not only enormous, but that their realization is far from being delayed to an indefinite future.

I do not pretend that the whole of our farms should be planted in forest trees; that would be too absurd. Our farms are generally too large for two small number of hands to employ; there are always some odd corners, idle strips, stoney or damp patches which it does not pay to cultivate; begin and plant forest trees there, suiting the tree to the nature of the soil—you will find some for every kind of soil. Once planted and fairly started, they will take care of themselves, give no trouble and increase yearly in value, in a wonderful ratio, so well expressed by the Honorable F. B. Hough, chief of the Forestry Division of the United States Agricultural Department, in the address lately delivered by him at Columbus, Ohio.

For years past, I have sought the best and cheapest mode of re-wooding our denuded lands, and have made some experiments; they have not yet been carried over a great many years, and are, so far, most encouraging notwithstanding my numerous mistakes and enforced absence at the best seasons, and they satisfy me as to the correctness of the statements made by the leading advocates of forest tree culture. I trust not to be charged with egotism if I now give the results of some of those personal experiments, rather than copy or condense what has been written by others, and it will be a great satisfaction if I can induce a few to try for themselves.

In selecting forest trees for planting, the first consideration ought to be the nature of the soil where they are to be planted; if the soil is not favorable to one kind of tree, do not waste your time in planting it there; you will find another tree that will suit the soil. After paying all due deference to soil and climate, you must be guided in your selection of a particular kind of tree:—1st. By the value of the timber. 2nd. The greater or lesser ease and certainty with which the tree can be grown. 3rd. The rate of growth.

I have tried principally black walnut, oak, elm, maple, ash, tamarack, Russian pine, and poplar, and will now give some of the results:—

**BLACK WALNUT.**—The value of that wood is so considerable (a dollar a cubic foot at the present time), and it is getting so scarce that it struck me as the most worthy of being introduced and cultivated here. True it did not grow spontaneously anywhere in the Province of Quebec, but this appeared to me no conclusive reason why it should not grow and flourish here. The lilac comes all the way from Persia, and it spreads out its leaves earlier and keeps them unchanged later than our typical tree, the maple. I did not fear our great colds, for in the West, the natural home of the black walnut, the thermometer often ranges as low as here, though for a shorter period at a time. It was well worth trying.

I procured a bag of black walnut nuts from the West in the fall of 1874, and sowed them at once; it was late in November; we had to remove the snow and break the frozen ground, but I thought the earth the safest place for to winter them. They began to come up about the tenth of June following; not five per cent. failed, and they have never been artificially sheltered in any way. It would not be worth while introducing them here if they could not take care of themselves.

Of those left undisturbed where they were sown, I have not lost one; they have now had six summers' growth. I have just had some of them measured, so as to be certain of their size; the height of the four largest is as follows:—

Fifteen feet and a half, fourteen feet and a half, fourteen feet, and twelve feet, and thick in proportion. These have not been transplanted; now notice the difference between them and those that have been moved.

In the fall of 1875, when they were only one year old, one lot were transplanted, but the soil was not favorable and they have not done well, so far; however, they are beginning to recover. In the spring of 1876 I transplanted another lot; the best are about eight feet high; and another lot last spring, the tallest of which are about ten or eleven feet. All these trees are the same age as the fifteen and fourteen feet trees; the difference in size results from the transplanting, therefore it is much better to sow them at once where they are to remain. Plant them thick, as the wood of the young tree is very soft, like that of our native butternut.

It is contrary to all preconceived ideas, even among those who handle timber every day, but nevertheless true, that the black walnut (*Juglans nigra*) and the Canadian oak (*Quercus alba*) as a rule increase much more rapidly in girth than our pine and white spruce. I conclude, from counting the rings on the trees after they are cut down, and from watching the growth of the living trees, that black walnut and Canadian oak generally gain one inch in diameter in about three years and a half, while our spruce and pine take about double that time to accomplish the same result; this can easily be ascertained by counting and measuring the rings. Of course there will be exceptions, and it would not be fair to judge by those only; I speak of the average.

It is now time to say something of the profits, and I must be careful to avoid exaggeration. Judging by the growth of the living trees and the rings of the timber, when cut, I do not hesitate to say that a black walnut, under ordinary circumstances, at the age of seventy-five years, will have attained twenty-one inches in diameter and will contain at least fifty cubic feet of timber, the actual value of which is about one dollar per cubic foot. (See for prices the *Lumberman's Gazette*, published at Bay City, Michigan, the numbers of the 26th January, 2nd February, and 2nd March, of this year).

For how many such trees, judiciously planted, will there be comfortable room on one superficial acre? It is difficult to find a regular plantation of any trees of that diameter here, to help us to a solution of the question, and the way in which trees are scattered in the forest and their irregular size leave but a vague impression on the mind, varying according to the personal experience of each. I am not ready to answer the question at present for want of full information, and will not venture a guess, but I do not feel the same hesitation where trees standing in one single row, with plenty of room on two sides, are concerned; in that case, trees twenty-one inches in diameter would not be too close standing at eighteen feet from one another. Take a farm three acres wide, with a road across the width and a row of black walnuts of an average diameter of twenty-one inches on each side of the road, the trees eighteen feet distant from one another, you get sixty trees containing fifty cubic feet each, three thousand cubic feet, worth, at the present price, three thousand dollars.

But it will be safer to sow the black walnuts in clumps, pretty close. They will protect one another when young, and, as they grow, they can be thinned gradually. Their culture will entail little trouble, apart from the preparation of the soil, and the sowing of the nut; the work of thinning will soon repay itself with the timber removed. The better the soil, the quicker the growth. Such a valuable tree as the black walnut deserves to be well treated. If possible, find some shelter against the strongest prevailing winds for the young plantation, a belt of older trees, or a hill. They are rather soft, like our butternut; it is the only drawback I have found out so far, but not fatal. Even the youngest trees will get several branches torn off and very ugly wounds without dying; they are wonderfully hardy.

The value of these plantations will increase steadily from the day they have taken root; they represent an over-increasing marketable value long before the expiration of that period of seventy-five years which I have indicated—

not as the limit of their growth; they will grow for centuries, but—as the period necessary to attain a profitable size, when they can be cut down without waste.

The BUTTERNUT grows spontaneously here; its beautiful timber can be worked with as much ease as the softest pine; it ranks immediately after the black walnut, and is inferior to it only in the colour of the wood, which is lighter. Rubbed with linseed oil, it takes the soft, rich hue of sandal wood, and if judiciously sawn, shows wonderful marks. I recommend strongly its culture, and will be glad to send nuts to those who will plant them, next fall, as we gather a large crop of them.

**WHITE OAK.**—The acorn ought to be sown as soon as possible after it drops, in the fall, as it loses its vitality rapidly, and to avoid the great check resulting from transplanting, it ought to be sown at once, if possible, where the tree is destined to remain. Its wood is tougher, and not so liable to break when young. I think it ought to grow with at least as much ease and rapidity as the black walnut; ours are rather behind, as they have been transplanted twice. The oak is so useful and valuable, and its culture so easy, that every plantation of trees ought to contain a good proportion of oak, provided the soil be not too poor for it.

**WHITE ELM.**—This splendid tree recommends itself sufficiently by its beauty and usefulness to dispense me from dwelling at any length upon it; it grows rapidly in a deep, damp soil. I have not grown it from seed, but by taking up young trees from a low island, where they grow in abundance. It appears to bear transplanting better than the oak, walnut or maple, and can be moved safely of a much larger size than any of those trees.

**MAPLE.**—If you wish to raise a maple sugary with the smallest amount of expense and trouble, go to an old maple grove in the fall; the ground is covered with a thick carpet of seedlings. After rain you can pull them up by hand with the greatest ease, without breaking any of their small roots, if you are moderately careful. Plant them at once in a corner of your garden, about two feet apart each way; weed during the first two summers with a light hoe. We found, after four years, the trees fit for transplanting, about five feet high, and the thickness of a man's thumb. As the ground was mellow and free, we took them up with little damage. Of course, there is still the objection of transplanting, but in a less degree than when you seek your maples in the woods, where their roots are mixed up with those of other trees, stumps and stones, and must be more or less torn up with violence. There is an immense difference in the comparative cost of the two processes, which will tell upon the hundreds of trees required to make a sugary worth working. Those small trees never fail (at all events those we transplanted never did), while much larger trees, more injured in the removing from the forest, die in great numbers, and the survivors are seriously checked. I have been told that the seedlings would overtake them, but have not yet had time to verify that statement. Maples will begin to yield a reasonable quantity of sap for sugar when about twenty to twenty-five years old.

**THE ASH.**—It is well known, and its different varieties are found very useful, especially the white ash, which recommends itself for its elasticity; its wood is beautifully marked, and is largely employed in the making of furniture, panels, &c. It will thrive where the walnut, oak and maple refuse to grow, or only linger miserably. I remember part of a maple avenue, where, year after year, the maples had been replaced over and over, and failed; at last, we had recourse to white and black ash; none failed, and they are progressing most satisfactorily.

**TAMARACK** will grow in wet, damp ground; we have succeeded with them where even willows had failed; the value of its timber and knees is too well known to require any comment from me.

**RUSSIAN PINE** (*Pinus Sylvestris*).—In making new plantations, especially from seed, it is no more trouble to try foreign than Canadian seed, and, however strange it may appear, I find it easier to procure the seed of the Russian and the Himalaya than of the Canadian Pine. One

may find among foreign trees valuable additions to our plantations; such as, I think, the Russian pine, native of the north of Russia. Our climate suits it admirably, and it appears a more vigorous grower than our Canadian White Pine. I cannot give any opinion as to the quality of the timber, as they have only been sown in the spring of 1873. They started rather slowly, and their height and thickness are less than those of the black walnuts sown two summers later, in November, 1874; but they are now beginning to make more rapid strides. I measured the season's growth of one of them last year, on the 3rd day of July. It showed twenty-six inches in length, gained in about thirty days, as the buds of the conifers do not open much before the beginning of June; the year's growth was already over, and from that moment it only thickened and hardened into wood.

Since the growing season of our trees is so short, we ought to lose no time if we wish to help them along, by thinning, removing useless branches, mowing the ground, or otherwise; all that ought to be done before June, so as to afford them every chance during the growing month. I think the *Abies Nobilis*, or White Fir, of Washington Territory, is the fastest grower among the Coniferae.

POPULAR.—I must beg the indulgent reader to listen to my plea in favor of this tree, and not condemn it unheard. I speak of the kind known as Cotton Wood or Populus Canadensis (not to be confounded with the Balsam Poplar and the Aspen). Its growth is wonderfully rapid; twenty-three years ago, in November, 1858, I stuck in the ground three cuttings, it was my first trial at tree culture. They are now over sixty feet high, one is twenty-five inches in diameter, the second twenty-four inches, and the third twenty-two inches, an average of one inch a year in diameter. In every new plantation, in a country completely denuded of forest-trees, and especially in re-wooding our Western prairies, I would recommend, at the start, a plentiful use of this Poplar, without neglecting, of course, more valuable trees. It strikes at once from cuttings, which can be procured and transported anywhere with the greatest ease. Thanks to its rapid growth, it will soon enliven the scenery (as it is a handsome tree), afford shade, shelter the other trees in the plantation and supply timber, not of the first quality, but better than none, until the slower growing trees are ready with their more valuable contributions, and it can easily be cut down when the room it occupies is wanted for better trees. This poplar has been introduced from Canada into Franco, where it is designated as the "Peuplier du Canada," and considered as a useful and profitable tree.

I must now close this long article. The results of my experiments are nothing to boast of; practical men would have done much better. If I had chosen the soil for the different kinds of trees more judiciously, had not left them much too long without thinning them, and been able to attend to them in the proper seasons, I am convinced that, as a whole, they would be much finer. At all events, it shows that any one who will take the trouble, can begin the culture of forest trees without previous training. I do not speak of orchards here. Having no School of Forestry in Canada, we must educate ourselves; we have got books written on the subject by eminent and practical men, and we have got, always opened before our eyes, the great book of Nature.

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GRINDLEY vs. RYAN.

At the last sitting of the Court of Assize, held at Ottawa, an action for damages was brought by Mr. Grindley against Mr. Ryan, for trespassing on the limits of the plaintiff on the Montreal river. The trial extended over several days, the chief, indeed the only, question at issue being the value of the timber taken, inasmuch as it was admitted by the plaintiff that the trespass was unintentional.

After a careful review of the evidence Justice Wilson submitted the following questions for the consideration of the jury in coming to a conclusion as to what damages the plaintiff in the case was entitled to, if any:—

1. What was the quantity of timber taken estimated at as standard logs; plaintiff says 5,250, defendant 4,450?

2. How should that number of standards be classed? That is, should they be classed as logs or as square timber, or partly as logs and partly as square timber?

3. If partly as logs and partly as square timber, what proportion do you consider to have been fit for square timber? The defendant said 55 per cent., that is 11 trees out of every 20.

4. If you find any part of it fitted for square timber, what was the Quebec price of it in 1880? The witnesses have varied from 21c. a foot to 31c. a foot.

5. What do you allow for the cost of the manufacture of square timber on the Montreal River, and getting it to Quebec from there (not noticing for the present the bad shoots and rapids, and the bad place known as the notch)? Mr. Grant said it cost from 13c. a foot to take it from the Kippawa to Quebec. Mr. Bryson said 15c. and Mr. Nagle said 17c. to take it from Lake Tomisquamungue to Quebec.

6. Was there any extra expense manufacturing on the Montreal River by reason of the difficulty of getting men and provisions to the limits? Do you think the convenience of haul would make up for that?

7. Would there be any extra expense in getting square timber down the Montreal River by reason of the shoots and rapids and of the notch? If so, how much? What I mean is, by the breakage and by damage done to the corners of the sticks, and causing loss of measurement, as it is said always happens, and by any extra delay of the men? What percentage?

8. What do you value the saw logs at by the standard?

9. What would be the cost of manufacture and driving the logs?

10. What do you allow the plaintiff (if any thing) for waste of trees cut and left lying on the limits by the defendant?

11. The plaintiff's survey cost him \$800. Do you allow it or any part of it to him?

His Lordship also impressed on the jury that the trespass was not a wanton one, but inadvertent, and that no extravagant damages should be given.

The jury returned the following answers to the questions which had been submitted for their consideration by the Bench:—

1. We take the defendant's statement to be correct.

2. Partly as logs and partly as square timber.

3. We consider 55 per cent. to have been fit for square timber.

4. Twenty seven cents a foot

5. We say it is worth seventeen cents per foot to manufacture the timber and take it to Quebec.

6. We think the short haul would make up for the difficulty of getting in men and provisions.

7. About 10 per cent.

8. One dollar and fifty cents.

9. Eight cents per standard.

10. Two hundred dollars.

11. Allow him two hundred dollars.

THE VERDICT.

The result of these answers having been considered by the Bench, the total amounts involved in them were computed, and a verdict for the plaintiff was given for \$5,746.

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Apparatus furnished on application. All work War-  
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Cures Cholera, Cholera Morbus, Dy-  
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Cholera Infantum, and all Com-  
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DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

PUBLISHED SEMI-MONTHLY BY  
**TOKER & Co. PETERBOROUGH.**

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All communications, orders and remittances should be addressed and made payable to TOKER & Co., Peterborough, Ont.

Communications intended for insertion in the CANADA LUMBERMAN, must be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. Communications to insure insertion (if accepted) in the following number, should be in the hands of the publishers a week before the date of the next issue.

PETERBOROUGH, Ont. NOV. 15, 1881.

ABOUT ten o'clock on the night of the 4th inst. the sash and door factory of Messrs. Christie & Co., St. John, were destroyed by fire. Loss, about \$15,000.

THE *Lumberman's Gazette* believes that there will be a full supply of logs for next season, even if the winter should prove unfavorable for operations, inasmuch as there is a large number of logs to be carried over.

A HOLLOW tree in South California has been converted into a dwelling. Doors and windows have been put in, and floors built for four stories, the entrance being made by means of a ladder. Outside the topmost room is a small balcony, shaded by the foliage of the tree. The occupant expects to get rich by having no plumber bills to pay.

THE following is a comparative statement of the exports of lumber, &c., from Port Hope, to the 1st of November, for this year, and also for the corresponding period of 1880:—

	1880.	1881.
Lumber, feet.....	60,471,033	69,007,340
Lath and shingles.....	32,540,850	33,907,900

**BRITISH TRADE NOTES.**

THE disposition on the part of owners just now: rather to hold than press goods on the market, in the full belief that the market will be much firmer before the end of April or May. It is the general impression now that the supply coming forward will hardly be sufficient to keep the market from touching much higher prices. Even extravagant figures are possible between now and the spring.

WE noticed at a sale some fresh-sawn oak planks from Montreal, submitted in 3, 4, and 5 in. thicknesses, at a uniform price of 3s. per foot cube. These goods are somewhat uncommon in the market. We have often wondered, with the extensive sawing facilities at the shipping places, that hardwoods have not come to this market from the various ports ready manufactured. That a trade of the kind will eventually be developed we have not the least doubt.

The parcel alluded to did not sell, the demand just now for hardwood being very quiet.

AT Hull, though the importation has been brisk, there is a considerable shortage on the whole as compared with last year, and prices are reported firm with a rising tendency.

THE importation during the past week into Liverpool has been much more lively than hitherto, owing to the sudden change of wind, which has brought into port a large number of vessels for some time past have been detained off the coast by the long continuance of easterly winds. Most of these vessels have now got to work discharging their cargoes, and the quays are now wearing a busier aspect than they have done for some time past; at the same time there are visible many large spaces either unoccupied entirely or but sparsely filled. The recent import has not affected the market in any way, for a large proportion of the cargoes recently arrived have come upon contracts entered into some considerable time since; hence there are not many cargoes in the market unsold, and those are being realized at about late rates. In cases where prices asked cannot readily be obtained the cargoes are being stored to await a better market.—*Timber Trades Journal*, Oct. 22.

**THE AUTUMNAL TRADE.**

When three-fourths of the year are fairly gone by, and about two-thirds of the import season, the trade ought to be in a position to judge pretty nearly what its status will be when the stocks expected are all come forward, or shut in by the ice, and further shipments for this year at an end.

But the season has been so exceptional that there is still great diversity of opinion as to the ruling of prices. If the last season was abnormal, so is this, but in a different sense. Then, with plenty of wood ready for shipment abroad, prices were run up by persuading importers there was going to be a scarcity. This year prices, which had been proportionately low all last year, on account of the abundant supply, rose on this side, because no shipments could be made of any importance from the Baltic ports until the spring had nearly gone by. Then came an apprehension of great pressure on our markets from the north of Europe, and prices began to droop again. Finally freights ran up 30 and 40 per cent., and while charterers were hesitating importation received a check, because buyers would not close contracts unless sellers would guarantee a ship not to exceed a certain limit of freight; and few transactions were completed without a good deal of correspondence and telegraphing, while others went off altogether because this difficulty could not be got over.

The reports of the state of the timber trade at the outports are mostly of a favorable character, and the last public sales of St. John spruce at Liverpool were the best we have noticed for some time past, and about 10s. a standard higher than they were last month, and, although business was reported quiet, prices are said to be firm, with no likelihood of abatement. Prices at Glasgow are scarcely so good for spruce and pine deals as they were twelve months ago, and 1s. 4d. per foot for first-class hewn pitch pine of 75 ft. average per piece is not an indication that the demand in the Clyde is likely to exceed the supply. There is a great quantity of timber used up in Glasgow for its iron shipbuilding fittings. It has been estimated that an iron ship of 1,000 tons register will use up about 400 loads of wood in masts, spars, bulwarks, decks, and interior fittings before she proceeds to sea; but as the market is generally well supplied in proportion to its prices, these keep a pretty fair level.

Upon the whole the prospects of the trade may be considered more hopeful than they have been for several seasons past; but it would be wrong to conclude the import season to be very near its end. That will depend on the weather of the next two months. No doubt the late gales have checked the importation and sent back many ships disabled, which will perhaps not come forward with cargoes this side of Christmas, and many more will take warning and go by; but these things nevertheless, a

goodly number of ships are likely to bring forward their cargoes, as may be gathered from the information herein referred to, and those who stand out too stiffly for price while the market is good may find it difficult to do as well when the time comes for them to want the return of their money.—*Timber Trades Journal*.

**THE WHITE PINE.**

ORIGIN OF PINE FORESTS—REPRODUCTION—INSECTIVOROUS ENEMIES—THE BLACK KNOT—WIND SHAKES—PITCH.

William Hosea Ballou, of Evanston, read a paper before the American Association for the Advancement of Science, at Cincinnati, August 19, as follows:—

**DENUDATION.**

Forty-six years ago the pine industry of Michigan had its origin on the Saginaw river. From that date to the present the denudation of timber has increased in that state, and other pine areas, to such an extent that within the next decade the use of such material as a commercial pursuit must pass out of existence. Already the producer is beginning to look to science with genuine alarm for such aid as may be extended to avert a calamity which certainly is threatening an industry the capital invested in which would twice pay the expenses of the late war. It therefore devolves upon us to discuss, not only the enemies of the pine tree which nature herself has inaugurated, but also the statistics of the destruction by the more formidable consumer, man. In a paper relative to so extensive a subject, it seems necessary to draw a line of discussion, and to confine these remarks to the white pine as it was, and to-day stands in the state of Michigan.

**ORIGIN OF THE WHITE PINE.**

The first thought suggested is relative to the origin of the white pine forests. From whence came the species which so strictly confines itself to its own peculiar territory? The oak, and most other trees, are naturally reproductive, and young trees are equally prolific in their growth on the same soil where the first forest was levelled to the ground. They may be transplanted on almost any territory, and without any special care, speedily growing to a state of usefulness to man. Not so with the white pine. It is now an almost undisputed fact that it will not reproduce on the parent soil, and that when replanted elsewhere, its development is marked with early decay in so many instances as to disparage the work. Furthermore, it is beset at once with the same host of natural enemies common to it on its indigenous ground.

For some years past my attention has been directed to some facts which may have bearing on the question under consideration. The pine of the level country east of the Rocky mountains seems to have its best growth in proximity to the lake region. I have noticed that frequently, where a lake recedes, leaving a sandy beach, evergreens, the juniper, pines, etc., are very apt to spring up. Within the memory of man, a wide sand beach near Waukegan has been made, and on this area a miniature white pine forest has appeared, and thrives. On some lone islands in Lake Erie, of evident recent formation, called the East Sister, the Old Hen, etc., I observed several years since that a similar phenomenon had occurred. These and other facts point to a recent origin of the pine forests under consideration, which might not have been in existence at the time of the landing of Columbus. This fact is more apparent when it is stated in this connection that the average age of the pine is 300 years in this country; and the other fact is reiterated that it does not reproduce on the same soil. The present pine forests, then, doubtless took the place of some other species, which had exhausted the soil necessary to their existence, a phenomenon well known to naturalists. It matters not whether the seeds were blown there by the winds, or lay dormant in the soil until their turn, or, indeed, what the speculation concerning them is, so long as the facts are inaccessible; certain it is the origin of the pine forests in Michigan is a matter of several centuries ago.

**REPRODUCTION.**

The next question of importance is reproduction. Answers to queries submitted to over one hundred practical lumbermen, as well as careful observation, makes positive the fact that

the reproduction of the white pine on parent soil is impossible as a commercial success. There are reasons for this. The most important has relation to the exhaustion of that vitality of the soil necessary to this species. Other causes have been advanced to the neglect of this, which plainly do not bear on the case. Were reproduction successful—and here is the great practical proof—any one hundred informants say that long ago forests would have been started to replace those now a fact of the past.

**THE ENEMIES**

of the white pine are numerous. The average of the data I have gathered tends to show that pine forests began to decay before one-half of the trees were matured. The causes of such decay are the growth of punk or rot, "wind shakes," and loose knots. Insects do not originate, but hasten decay.

The punk is a rot which appears in a lump on the side of the tree, eating into its vitals. It is due to more than one cause. Opinions of writers vary on this subject, all of whom argue in behalf of a special cause. I have carefully examined all of these claims, but observations in the lumber regions, and talks with lumbermen, have convinced me that anything which affects the vitality of the tree will produce punk or rot. It matters not whether the tree becomes wind shaken, or the soil exhausts, or a knot penetrates to the heart, or what befalls it when alive, punk is sure to become the secondary condition, followed by destruction.

Enemy number two is the black knot. This is a loose knot, black in color, which, when the tree is sawed, drops out of the board, making it defective. It is caused by its imperfect growth. If there is not sufficient nourishment at the roots to support the limb, it grows imperfectly, and its inner termination works toward the heart, as if to suck sap from the vitals. This brings on loose layers and subsequent decay.

A wind shake is one of the exasperating defects of lumber. It is noticeable in a board, the layers of which separate, usually in triangular form, when the sawing takes place. It occurs generally at the butt of the tree, and is caused by the force of the wind when the tree is standing, and by frost when the log rests in the yard. Opinions on the latter point vary.

**OTHER AGENTS OF DESTRUCTION.**

There are other enemies of the lumber, all of which deserve consideration just at this time, when commerce must begin to economize and obviate, so far as possible, all difficulties in the way of making the product supply the demand. The first of these is fire. All parties agree that from one-half to one-third of the lumber product is destroyed by this agent. Fires, where they occur, follow clearings, but often penetrate the dense forests, sometimes covering an area of a hundred square miles. It is impossible to secure any data on this subject, because more or less timber is saved out of the wreck. A pine tree that has been scorched is utilized the succeeding year, or the worms destroy it.

Insects are very destructive, the pine weevil, *Tomicus cylographus*, being a foremost agent. These attack a sound tree, but not a live one. If anyone will take the trouble to enter a great log yard at dusk, these creatures may be heard at work, the united sound of which is like the roar of wind or water. The grub goes through a log in a crooked line, which greatly depreciates the value of the timber. There is a "pin worm," the scientific name of which has escaped me, that bores its way straight to the heart, leaving a round black passage the size of a pin head. These are the only insects which lumbermen take into account in Michigan.

**GET OUT OF DOORS.**—The close confinement of all factory work, gives the operatives pallid faces, poor appetite, languid, miserable feelings, poor blood, inactive liver, kidney and urinary troubles, and all the physicians and medicine in the world cannot help them unless they get out of doors or use Hop Bitters, the purest and best remedy, especially for such cases, having abundance of health, sunshine and rosy cheeks in them. They cost but a trifle.—*Christian Recorder*.

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504 St. Paul Street, MONTREAL.



### A BIG FLOUR MILL.

A recent number of the Boston *Journal of Commerce* contains an account of the mammoth flouring mill now nearly completed, in the city of Minneapolis, Minn., from which we call the following particulars. The owners are C. A. Pillsbury & Co., who also own the five principal mills of the city:—

Some two and a half years since Mr. Pillsbury visited Europe with a view of examining the various mill buildings and processes relating to the manufacture of flour in the various milling centres. After his return a site was selected on the east side of the river, about 500 feet below the falls of St. Anthony, the plans of the building agreed upon, and the drawings made. In the spring of 1880 ground was broken and the structure commenced. It is built from Trenton limestone, rock faced, and laid in courses. The building is 1,800 feet long, 115 feet wide, and 137 feet high, having seven stories and a cupola. The side walls at the foundation are 8½ feet thick and at each end the walls are 7½ feet thick. The walls of the building proper are 6½ feet thick below the grinding floor, and taper to a thickness of 2½ feet in the three highest stories. The basement is 20 feet in height, laid in Louisville cement, and the coping, window sills, and two bolting courses are of hammered granite. The outside of the building shows for itself elegance of design which is quite appropriate for the purposes to which it is applied. The masonry of this building alone requires 125 men nearly six months to finish. The driving mechanism is found on the first or basement floor. There is also a wheat bin capable of holding 35,000 bushels of wheat, extending up through the grinding floor. The Hurst frames for the millstones are on this floor, but the millstones are on the floor above. The second story is the reducing floor, and when the machinery for the mill is completed, 400 sets of roller mills will be here, arranged in twelve lines. Only half of the machinery has been placed. One hundred and one Gray's mills have been furnished. All these machines are double roller, 18 x 9 inches in size. Sixty-four corrugated machines, 27 smooth roller machines, and 10 porcelain machines. There are 115 Stevens' roller mills, and there will be twenty pairs of millstones in the whole mill which will be used on middlings. The millstones are arranged in one line against the north wall of this story, and are elegantly fitted in black walnut and ash, and are all provided with Belrus patent high pressure millstone ventilation. There is also a weighing hopper and scales upon this floor, the hopper holding 800 bushels. There is also a line shaft, 120 feet in length, from which the power to drive the flour packers on the floor above is taken. The third room is the packing room, where, on each side of the mill, will be placed, when the second half of the mill is finished, 12 Euroka flour packers, making 24 in all. One end of this floor is partitioned off for a cleaning room, and this is driven by a separate belt. A large part of the floor is taken up with storage bins, but plenty of room is left for handling the flour after it is packed. On the fourth floor the bolting chests begin and run up to the attic. In the eastern half of the mill, the half now running, there are eight double and four single chests, which on the three floors above contain 40 reels each, and on the fourth floor above 22 reels, making 142 reels in all, each 14 feet long. Twenty three No. 2 Smith purifiers are also upon this floor. There are also bins over the flour packers on the floor below, made out of boiler iron six feet in diameter, extending through two stories. In the end of this story, set apart for wheat cleaning like the floor below, there are four Richmond brush machines, and two large sized Kurth-Coclele separators; also four Niagara bran dusters. The fifth floor is a continuation of the bolting chests, also four brush machines, four separators and two centrifugal flour bolters, bran dusters, smutter, brush machines, and dust catchers.

The mill has ample facilities for receiving grain and shipping flour, which facilities are absolutely necessary when the fact is stated that 25,000 bushels of wheat will be ground every day this mill runs when all the machinery is put in. The mill is supplied with an elevator for passengers and freight, and is lighted with

the Brush electric light of 32,000 candle power. The steam for heating the building is supplied by two steel boilers, placed in a fire proof building, separate from the mill; electric call bells are on every floor, and the mill has telephonic connection with Minneapolis, St. Paul, and Stillwater. A central stairway, built of iron, which is spiral in form, is one of the noticeable features. The interior of the mill is painted white, with red trimmings, while the roll mills, stairways and scales are painted red.

The power for this mill is one of the noticeable features, as well as one of the absolute requirements. The forebay is in the basement, is 125 feet long, 15 feet wide, built of stone, and laid in hydraulic cement. The wheel pits are dug out of a solid ledge, and are 57 feet deep, being walled in by solid masonry. Iron flumes, 12 feet in diameter, made of ¾ inch boiler iron, are used inside the pits. The motive power is two Victor wheels, 35 inches in diameter. The two wheels yield 2,400 horse-power, according to careful measurements, and it is said to be the largest power developed by any two wheels in the world. The water is brought to the mill by means of a canal 556 feet long, 16 feet wide, and 16 feet in depth, in solid rock. After the rock was blasted out the sides were built up with solid masonry laid in hydraulic cement and arched over with stone. The bulkhead is 30 feet wide, 30 feet high, and in it are two gates, one on each side of a central pier. A stone arch beneath the basement admits the water into the mill. The discharge from the wheels is through two tunnels, each 150 feet in length, running from the river to the mill directly under the wheels. The tunnels empty into a tail race several hundred feet long, which empties into the river. Upon the top of each water-wheel shaft is a bevel gear which transmits the power to a horizontal shaft eight inches in diameter, 145 feet long, tapering to six inches at the end, which rests on a solid archwork of masonry inside the forebay. On this line of shaft are the driving pulleys, weighing each six and one-half tons, and upon which run two 48-inch belts, each 26 feet long and double. From the line of shaft the power is taken off by thirty inch belts, to drive the various machines of the mill. The arrangement is such that if one wheel should break the other can run the mill, and the power of both wheels can be used together on each or both sides.

One half of this mill is now built, and is considered capable of turning out 2,500 barrels of flour per day; but it has made, by actual record, 3,547 barrels in one day. The mill, when completed, will have a capacity of 5,000 barrels per day, making, it is claimed, the largest flour mill in the world. The amount of power yielded by the two mills in question is something which can hardly be measured, by the mind, at least; and that a water wheel, 55 inches in diameter, should be enabled to transmit 1,200 horse-power, is applying a large amount of power, which, in this case, seems to be thoroughly utilized. We have never before heard of a water wheel transmitting 1,200 horse power, let alone two working in the same pit actually yielding, or ready to yield, 2,400 horse power.

Some conception of the capacity of this mill may be had when it is stated that 125 cars are required daily to take the total production of the mill away, and sometimes 200 cars arriving and departing to do the business of this mill.

#### Dangers of the Electric Light.

It is reported that the disastrous fire at the Landenberger Mill, Philadelphia, on Wednesday night, had its origin, as the local journals express it, in the "unaccountable flickerings and sparks from the electric lights used in the establishment." If these statements be correct, it becomes a matter of no inconsiderable importance to ascertain from the scientists how far these eccentricities are likely to be permanent conditions of the use of these lights in other establishments. It is a serious business thus to have life and property at the mercy of their scintillations.—*Philadelphia Bulletin*.

There is more or less danger of the falling of sparks from all electric lights. Any imperfection in the carbon or irregularity in the driving onglow will produce snapping and sparking. A simple safeguard is to place a glass cup around or under the carbon to catch the sparks.—*Scientific American*.

### OFF FOR THE WOODS.

Probably at a thousand towns there are men now waiting for transportation to the camps, or hanging around looking for jobs. They are not burdened with Saratoga trunks, and few of them have even white shirts. Their days are merry ones, when they are sojourning in places of civilization, and after they shall have all departed the saloon keeper will detect a material decrease in his receipts. It would be strange if at some places special policemen have not been appointed to hold in check the strangers who are stopping among them. It would be somewhat out of the natural order of events if some of these strangers have not slept in the calabasse over night, and perhaps occasionally one of them has asked a citizen for a little money to enable him to pay his board bill for a day or two longer or until he can find work. These favors, however, are never asked as a gift, but are accompanied by a promise that the money will be returned immediately after the first pay day, and it might be possible to find better dressed, and more polished men who would not remember their debts as well.

We do not infer by this description that these loggers are really bad men. Many a good man has worn a woollen shirt, and been able to carry his entire wardrobe in a big handkerchief. Noble-hearted fellows, many of them are, who would share their last dollar with a companion disabled by a falling tree, or prostrated by sickness in camp, and the hat that is passed among them for a suffering comrade would often make the contribution plate, that circles around many an elegant church for the cause of charity, look mighty sick. The men in the woods will swear at one another, fight often, and are always ready to beat his fellow workman out of his last cent at poker, but when it comes to helping the unfortunate, their hearts are in the right place.

The majority of the men who go into the pineries do not leave behind them pleasant homes. In fact, many of them are homeless, and, virtually, wanderers—in the mills in summer, on the drives in the spring, and in the woods in the winter. They float from Maine to Canada, and from Canada to the Northwest, ready at any season to travel in any direction where inclination or a promise of increased pay may lead them. They can wield an axe, "yank" a saw, flourish an ox-goad, or hold a pair of reins, and feel that these qualifications will earn them a living anywhere in the lumber regions. Their stock in trade is easily carried, and they tramp, tramp, but always with an object in view.

The dangers of a camp are many. The giants of the forest will crush many a man the coming winter under their heavy bodies and spreading wings, as they go down before the axe that year after year is cutting them away. The treacherous binder will sweep scores of drivers from their loads into eternity, and often, when loading and unloading, a log will roll over the man or men in its way, breaking limbs or destroying life. The axe will go amiss, and, instead of being imbedded in the wood, will strike some poor fellow standing in its course. The men are subjected to these dangers, and others as well. The wages they obtain would be little inducement for others than habitual woodmen to chance the risk, but they go into the woods in a mood that tells little of a thought that before the season shall end some of them, maimed, will, with blankets thrown over them, be carried to the nearest hospital, and the bodies of others drawn on ox sleds to the nearest settlement, and thence forwarded to their friends, or buried in graves that will never be wept over, or even sought. They probably think little of this phase of the life they are entering upon afresh, and it is just as well that they do not.

These men possess an enviable virtue—the virtue of good health. No weak-chested consumptive, no one debilitated by any disease can be included in the great army. Every member of it must be performed. If he does not, nothing is surer than the law regulating the survival of the fittest will force him to abandon his position to be filled by someone else. They must be men who can eat pork and beans and molasses, who can get along without butter and other delicacies of the table, and who can work in the snow, sleet and cold from daylight until dark for six days in the week, month after month. The business in which a logger is en-

gaged calls for more endurance than that of a soldier, for in addition to exposure, the logger is called upon to do severe manual labour. During the civil war many of the most enduring men in the army, and as brave as ever faced a gun, came from the pineries of the three great lumber states.

It need not be supposed that because of the hard work in the woods, and a lack of so many of those privileges which are commonly supposed to make up civilized life, the loggers go dreadfully to their tasks. They gravitate to the forest as naturally as a small footed bellows seeks the ball room. It is their life. They are used to work and do not expect to live without it. They fool at home under the trees, and in the camps, where of an evening they tell their stories through clouds of smoke. The fashions and ambitions that agitate the outside world, if none to them, cause them no unrest. In a certain sense they are happy, inasmuch as they eat heartily and sleep soundly. They are doing a more important work than they are aware of. They are filling a great niche in the world that is necessary to be filled, and which, if it were not filled, would be disastrous to trade and progress. The blow of an axe, and the click of the saw are the forerunners of many of the blessings that we enjoy, and which the ones who do so much to produce them are forbidden to enjoy, even if they have a desire to.

### INTERESTING FACTS CONCERNING WOOD-PULP.

Until recent years only a few varieties of wood were used in making wood-pulp. The poplar was early liked for this purpose on account of its clear white fibre and the ease with which it could be converted into pulp. Spruce has been considerably used of late, and hemlock makes a good quality of pulp. A large number of factories have been established for the making of wood-pulp alone and there are good reasons why its manufacture should be often carried on separate from the other processes of paper making. Less capital is needed for making pulp only. The cost of a modern wood-pulp mill, with a capacity of five tons a day, is about \$30,000, while a paper mill of the same capacity would cost not less than \$100,000. Moreover, since pulp, as a commercial commodity, is easily transported, pulp making, unlike the paper making process, which can often be best carried on in or near some city, can be advantageously conducted in an out-of-the-way place, where abundance of timber is at hand, and where water power, the cheapest of motive powers, and often found in connection with the clear, pure water necessary for pulp making, is abundant. Formerly the wood designed for pulp making, after having been reduced to pulp by powerful machinery, was boiled with strong chemicals in a generator, under great pressure, until the mass was digested into pulp; but recently many mills have introduced the grinding process. The wood, after being steamed soft, is ground by powerful machinery, which almost entirely dispenses with the caustic acid before so largely used, and thereby saves much expense. Of late experiments have been made in Canada with a view to utilizing the vast accumulations of sawdust at the lumber mills for the purpose of paper making, and some of the pulp made from sawdust has been sent to England to be tested. The idea of making paper from sawdust is not new. In 1852, Wilkinson, in England, patented a process of making paper from sawdust, and a man named Johnson also secured a similar patent in England in 1855. Although it is very evident that sawdust could be much more easily made into pulp than solid logs of wood, there are several serious obstacles that prevent the production of a proper quality of this pulp. One is this.—In making paper from wood it is necessary to remove all the bark and also the knotty portions before attempting to reduce the wood to pulp, but in the process of sawing lumber, portions of the bark and also of the knots are cut away and mixed with the sawdust. Then, too, all kinds of wood are being constantly cut in the saw mills, and the sawdust made of them all mingles and includes much pine pitch, which renders the whole mass of sawdust very objectionable for paper making purposes. To remove these obstacles and some others is the problem, and

it has not been satisfactorily solved. Wood-pulp is so largely in demand that factories for making it can be established with the certainty of doing a good business. So scarce was wood-pulp in the United States during the past season that some of the mills, unable to obtain enough, were obliged to shut down on certain grades of paper.

Two kinds of wood-pulp are used in the manufacture of printing paper, respectively designated as "mechanical pulp" and "chemical pulp." Any ordinary wood which is fibrous, free from knots and decay, and is easily disintegrated, is suitable for making chemical pulp, though the whiter the wood and the less acid it contains the better. The wood is cut into small pieces, diagonally with the grain, by revolving knives, just as logwood is cut for dyeing purposes. It is then treated with a superheated bath of caustic alkali, and afterward subjected to the same processes as are clear rags. In making mechanical pulp no chemicals are used—not even lime. An ordinary white wood is suitable for the purpose, but poplar is preferred, although the dark heart is not used. The process of manufacturing is the most stupid that could have been devised, yet it is cheap. Water power is used, and it is estimated that one cord of wood, with two stones or emery wheels and 30 horse power will produce the equivalent of from 1,200 pounds of dry pulp per day, with the labor of three men—one to attend to barking and sawing the wood, one to attend to the stones, and one to look after the pulp. The wood is used soon after it is cut, or, if seasoned, it must be steamed. The sticks are pressed endwise against the stones or wheels, and with a plentiful supply of water they are literally ground to pulp, thus destroying the fibre. Unlike the chemically prepared article, this pulp is not allowed to dry before being used. The damp sheets are folded, packed in bundles and sold, with an allowance of 40 per cent. for the moisture. To manufacture paper from it, the addition of some kind of fibre is essential—say from 20 to 80 per cent., according to the kind of paper required. Good printing paper is made from the chemical pulp without the addition of any other fibre, and the use of it is desirable in making even the best book paper. Some excellent book paper is made of 40 per cent. of this pulp, and the printing paper now being used by the government is made wholly of white-spruce pulp. Machinery of the capacity for making, say 7,000 pounds of rag paper per day, will turn out from 12,000 to 15,000 pounds per day.—*Philadelphia Record.*

**THE COMING WINTER'S SUPPLY.**

Considerable speculation has been indulged in as to the extent of operations in the woods during the coming winter. By many it is maintained that the enhanced cost of all kinds of camp supplies, increasing the expense of putting in stock, will lead to less endeavor being made to put in a large quantity. Such reasoning is not in accord with the well known practice of lumbermen, which is to run a lumber camp for all there is in it, and cease only when the weather compels a cessation of labor. It is reasonable, then, to conclude, that no man who has ever had a camp, will refrain from establishing one this winter, provided, of course, he has any timber of his own, or can get a job of lumbering from others. Of course it is impossible to predict, or even give a shrewd guess, at the quantity of logs which will be put into the streams, or placed convenient for the operation of the mills; there are too many contingencies of weather to be taken into account, but it is perfectly safe to say that, good winter or bad winter, high prices or low prices for provisions or labor, all the logs will be cut that the streams can take care of, and if the spring freshets are ample to bring the timber from the forest to the mill beams, it will be a perfectly safe proposition that the mills will have all they can do to saw it. And contrary to the experience of former years, not so long back, there is no good reason why this should not be the case. With the present prosperity of the country, largely the result of legitimate, rather than speculative causes, the present mill capacity is none too great in the Northwest, to produce the lumber which a rapidly developing country demands for actual consumption, except under the most

extraordinary conditions of the season, such as great floods or drouths, that may bring ruin to the consumer and destroy his purchasing ability, the day of overstocks in lumber has, practically, passed. There was a time when through causes induced by speculation and apparent, rather than the real wants of the country, causes the result of war rather than of peace, the mill capacity was in excess of the demand for consumption, and yearly increasing stocks of lumber at the great distributing points led to a loss in values, through the necessity of keeping the money in active motion, in order to gain even the smallest interest from its possession. Emigration was at its lowest ebb, and the era of development of the prairie, and more especially of the mining districts of the west, had scarcely given notice of its coming.

The market for lumber was then restricted to less than half the territory from which there is now an active demand. Ten years has seen an increase of one-third in the population of the United States, and the prosperity attendant upon good crops, a revival of business confidence, the development of new industries, the extension of old ones, the unprecedented increase in railway mileage, and the opening up and development of immense states, which were formerly known only as sparse settlements upon an extreme frontier—all these, aided by such an immigration as the country has never before realized, have created a use for products of the forest that almost forbids the belief that it can again be said that there is an overstock of logs in the streams, or lumber in the yards. An increased half a dollar, or dollar, in the cost producing logs never frightens a lumberman, especially when he is realizing higher prices for his manufactured stock than he ever did before; and when we see such prices quoted as \$9 for culls, \$18 and \$20 for common, and \$33 and \$40 for uppers, even for such timber as the famous Cass river pine of the Saginaw valley; or when we hear of logs selling at \$19 per thousand, even allowing them to be the best timber which ever stood out of doors, and remember that these prices are several dollars higher than the same timber ever commanded before, it is fully to think that its owners will be deterred from putting it in because of an extra dollar above the cost of other years in the expense. When, again, such prices as we have quoted can be obtained for the very best of lumber or logs, it is pre-supposable that more ordinary timber will be held at a proportionate advance upon former rates.

Recurring to the original question as to the extent of operations in the forests this winter, we reply that the stocks of next spring will be as large as the ingenuity of man—and these men ingenious and determined lumbermen—can make them by the aid of snow, if the winter be favorable, of rain, if it be wet, of logging railroads, if it be dry; the logs will be put into the full capacity of the saw mills, which capacity does not now seem to be in excess of the demands of that great territory, North, South, East and West, which may be said to stand ready to consume the lumber at an equitable valuation.—*Northwestern Lumberman.*

**Timber Limits.**

We learn that Messrs. R. and G. Strickland have purchased the Dominion Bank timber limits in the townships of Oakley and Hindon, County of Victoria. We have not learned the price paid, but understand that the limits are among the most valuable in the back country.

According to the *Times*, 149 new buildings have been erected in St. Thomas this season at an outlay of \$178,350. Last year the number of new structures was 108 and the expenditure \$133,650. There are three huge contracts on the boards for next season—the Government buildings, the Grand Central hotel, and the new Presbyterian church.

SEE TO IT?—Zopos, (from Brazil) will cure the worst case of Dyspepsia. A single dose will relieve in a degree that shows its wonderful curative powers, and its peculiar action upon the Stomach and Digestive Organs. It is a positive and absolute cure for Constiveness and Constipation, acting in a remarkable way upon the system, carrying off impurities. As a Liver regulator its actions are most remarkable. It tones and stimulates the Liver to action, it corrects the acids and regulates the bowels. A few doses will surprise you. Sample bottle 10 cts.

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160 Mils. White Pine, 1 x 10 Stock.  
175 " do 1 x 12 " "  
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149 " do 1 inch Siding.  
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10 " Cedar, 3 x 6 " "  
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**The Walkerville Foundry**  
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Walkerville, Ont., June 1881.

Market Reports.

TORONTO.

From Our Own Correspondent.

NOVEMBER 8th.—The open weather of the past two weeks has kept shipments of lumber nearly up to the same figure as in the two weeks preceding. The average number of cars of lumber per day arriving here for local use and for shipment during the last two weeks has been about fifty, so that averaging each car at 10 M., would foot up about half a million, as our daily receipts by one road alone; so that if we include our receipts by other roads it would doubtless foot up something like 700,000 ft. per day. The quality of the lumber also has been much better on latter shipments. The writer noticed two trains, of fifteen car loads each, the aggregate value of which would be in the vicinity of \$10 000 on the rail here.

The docks are entirely cleared, and nearly all the lumber now being shipped goes straight off the cars on to the vessels, and should the present fine weather continue for two or three weeks longer, considerable lumber will yet reach the American market, and I venture to affirm, without fear of contradiction, that less lumber will be wintered over here than during any winter for the last ten years. Most of the mill yards will be thoroughly cleaned out of all they have been able to manufacture, but the quantity made has doubtless come far behind the anticipations indulged in by mill men in the early part of the season. The long drought experienced during the summer months interfered seriously with the season's operations. Lath has become scarce, as indicated in my last letter, and it is difficult to procure sufficient to keep the local market supplied, and the consequence is an advance of 20 cents per M. over former prices, and the probabilities are that retailers will demand from \$1.90 to \$2.00 per M. before the season closes.

The stocks at the various yards throughout the city are still quite limited, more especially in bill stuff, which still continues exceedingly scarce; in fact all the yards combined could not fill a bill of any magnitude where timber and joisting predominated, indeed, the only plentiful kind of lumber on the market at the present time is cull boards, of which there is a full supply.

Good cherry, butternut and walnut continue scarce, and the latter has advanced in price steadily, \$200 per thousand being the retail price now demanded for a choice article. Cedar posts are also hard to obtain of sufficiently good quality for block pavements, and large quantities will no doubt be got out this coming winter to meet the demand next spring and summer, and, in order to obtain suitable timber, higher prices will have to be paid by contractor in order to insure a proper supply.

QUOTATIONS, CAR LOADS.

Table with 2 columns: Item description and Price. Includes Mill cull boards and scantling, Shipping cull boards, Scantling and joist, up to 16 ft., Scantling and joist, up to 24 ft., Cutting up planks to dry boards, Sawn dressing stocks, Trucks Am. inspection, Three uppers, Am. inspection, R. M., 14-inch flooring, dressed, 14 " " rough, 14 " " dressed, 14 " " undressed, 1 " " dressed, 1 " " undressed, 2 headed shingles, dressed, 2x4 sawn shingles, dressed, 2x4 sawn shingles, 2x4 sawn shingles, Sawn lath.

The CROUPS or COLDS are getting overheated in hot rooms or crowded assemblies, sitting in a draught, or cooling too rapidly after exercise, snuffing up warm and changing to light wrappings, cold and damp feet. No matter what is the cause Hagar's Pectoral Balsam is the cure for all throat and lung diseases that induce consumption.

MONTREAL.

From Our Own Correspondent

Nov. 9th.—The demand for building lumber has been pretty brisk since the date of our last report. Stocks of all kinds of lumber here are now pretty full, but not much more is expected to arrive this fall, as sawn lumber is now difficult to get at Ottawa. Our prices continue as last quoted, and are likely to remain so for some time to come. Four large rafts passed down the river on the 4th inst. for Quebec, apparently anxious to reach their destination before the frost sets in. The shipments from this port since the 22nd ult. were to Buenos Ayres, 1,034,401 ft., and to Monte Video, 385,104 ft. These are probably the last shipments for this season, there may be one other cargo, but this is uncertain. The total shipments to the River Platte since the opening of navigation to date were 10,601,842 ft., against 8,133,944 ft. for the same period of last year, showing an increase of 2,467,898 ft. For building lumber, ex yard, we continue to quote:—

Table with 2 columns: Item description and Price. Includes Pine, 1st quality, Pine, 2nd, Pine, shipping culls, Pine, cull deals, Pine, mill culls, Spruce, Hemlock, Ash, run of long culls out, Bass, Oak, Birch, Hard Maple, Lath, Shingles, 1st, Shingles, 2nd.

CORDWOOD.—The demand for cordwood has slackened off since the date of last report, but in a short time, when the weather turns colder, it will most likely revive; prices have receded a little. Fair quantities are arriving by boat since the river has risen somewhat, and when winter roads are good for sleighing, there will be large lots of dry wood coming in from the bush. We now quote prices on the wharf, ex cartage, as under:—

Table with 2 columns: Item description and Price. Includes Long Maple, Short, Long Birch, Short, Long Beech, Short, Long Tamarack, Short.

OTTAWA.

From Our Own Correspondent.

Nov. 10th.—The saw mills in this section are all running in full blast, day and night, but will have to shut down in the course of about two weeks. There has been no lack of rain of late, and the rise in the river has facilitated the getting down of logs, which were stuck in the rapids at several points on the Ottawa and the Gatineau. The total cut of lumber for the season will fall considerably short of the quantity produced last year, owing to the lack of log supply during the low water season. It is questionable whether the cut of some of the firms in this locality will reach the quantity sold last spring. Some of the yards are quite bare, as compared to former years at this time, and it is quite evident that the quantity that will be held over will not be nearly so large as for many previous winters.

No large sales of lumber have been reported for some weeks past, as most of the manufacturers are doubtful whether they will be able to fill the contracts made last spring or not. There are no changes in the quotations to note since the last were given, although the market is firm with an upward tendency.

QUOTATIONS:—

Table with 2 columns: Item description and Price. Includes Shipping Culls, per M, Stocks, Shingles, Mill Culls, Lath.

The freight business was fairly active during the past couple of weeks, but is now becoming dull, as tow steamers and barges are lying up for the winter season. The last of the American boats leave to-morrow, and Canadian boats are going into winter quarters as fast as they arrive. There was no further rise in freight rates as expected, owing to the limited supply of lumber to be shipped. It is expected that about the usual quantity of lumber will be shipped by rail during the coming winter.

The government engineers have completed their survey for a dam at the foot of Lake Temiscamungue, to hold back a reserve supply of water, so that it could be brought into requi-

sition at the low water season, and aid in the getting down of logs and square timber.

The log drives on the Ottawa and Gatineau rivers will be completed in about a week from the present time of writing. More difficulty has been experienced this year in getting down logs than ever before, and the lowness of water is attributed in a measure to the clearing up of the country.

The last lumber train from the Mattawan to Quebec has passed down. There were 920 car loads in all transported for the Scotch Canadian Lumbering Co. This company carries on operations on the Georgian Bay as well as on the Upper Ottawa, doing a large trade. They are sending a good many men up the river this winter, and will take out double the quantity of timber and a large lot of logs. It is contemplated by the firm to place on the market next season a million feet of square timber, and to take out 125,000 logs.

All the mill men in this section are sending large numbers of men up the river, and more square timber and logs will be taken out this winter than for a good many years back, in fact more than at any other period. The outlook is considered promising.

Mr. Edward Prince, manager of the factory at Horseshoe Bay, on the Lower Ottawa, has shipped during the past summer fourteen large loads, or some 700 cords, of match blocks to Wilmington and Westville, U. S. Splints for the manufacture of matches were formerly manufactured at the factory, but the U. S. authorities levied duty upon them, so that the blocks were only made ready to be transformed into splints. Several gangs of men are being sent to the woods to cut logs for this factory, which is connected with the Beecher, Swift & Courtney firm.

The disease known as "Pink eye" has broken out amongst the horses in the shanties of Mr. J. R. Booth, on the Upper Ottawa.

ST. JOHN, N. B.

From Our Own Correspondent.

DEALS.

The stock of deals continues very low, and there cannot be much change in this respect for the remainder of the season. The country mills are nearly all shut down, for want of logs; the few deals that come into market from that direction are selling at about \$9, while those of city manufacture are worth \$10.50.

LOGGING OPERATIONS.

The want of activity in the operations for logging, noticed in our last report, continues. There is no doubt whatever but the cut of logs the coming winter will fall far short of the average, and as the streams have been pretty well cleared of the old logs during the past season, the supply for next year's sawing must be very limited indeed.

FREIGHTS.

The freight market can scarcely be said to have undergone any change. The last charter reported was the Andrew Johnson, 2,005 tons, for Liverpool, at 56s. 3d.; this being a very large ship, this figure may be considered rather below the market rate, which we would quote about the same as in our last, say 57s. 6d.

SHIPMENTS.

The shipments of deals and other sawn lumber are as follows:— For Europe, 6,337,000 Sup. feet. " United States, 3,109,000 " " Africa, 725,000 " " Australia, 1,528,000 "

SHIPPING.

Our shipping list shows quite an increase, and as a number of vessels have yet to arrive, the prospect is that we shall have no deals left for winter. A somewhat interesting occurrence took place here on Saturday, in the sailing of two large ships for Australia, viz., the Mallville, 524 tons, and the Walter D. Waller, 1,413 tons, both with deal cargoes, amounting to 725,000 feet, and 1,103,000 feet respectively. The incident is noteworthy as indicating the development of a comparatively new department of our wood trade, a very few shipments having been previously made direct for that destination. Both ships are cleared for Adelaide for orders, and it will be interesting to note the time of each on their arrival at the Antipodes. We wish them bon voyage.

The following is a list of the vessels in port, with their tonnage and destinations.—

Table with 2 columns: Vessel name and Destination. Includes Wm. Stephenson, Pumas, Vandyck, Topaz, St. Joseph, Lohning, Sybilla, Angel, ramatta, d Palmerston, L. ons, Bertie Bligh, Wickham, Andrew Johnson, Thos. N. Hart, L. H. D'Vehed, Oliver Emery, E. M. Gregory, Sea Bird, Kodiac.

CHICAGO.

The Northwestern Lumberman says:—The cargo market, during the past week, has not only been a smaller one than usual, but as well, remarkably quiet. The weather has not been favorable for dealers to "hang around" looking for bargains, and the attendance has been scarcely up to the average. The offerings have not been large, and although each day has shown some cargoes awaiting purchasers, and each day has seen the fleet nearly or quite cleaned out, the fluctuations in prices have been very slight. Ordinary piece stuff, which is the barometer of the market, has sold at \$10.25 and \$10.37 1/2 to \$10.75, while long lengths have ranged according to the proportion in the cargo, from \$10.50 to \$13. The better grades of lumber have ruled firm throughout the week.

Shingles have been in slightly better favour, sales being made at \$2.37 1/2 for brands which had not been previously held above \$2.35. Quotations at this writing stand at about \$2.20 to \$2.30 for standards, with A bringing from \$2.37 1/2 to favorite brands at \$2.65, at which latter rate a cargo was sold October 1.

Freights have been rather dull and inactive, and many vessels are going into winter quarters from inability to meet expenses. The advancing wages and the high cost of provisions, the clemency of weather which may reasonably be expected during the month of November, is ordinarily compensated somewhat by increased rates of freight; but the outlook for a profitable month to the vessel interest is anything but promising.

CARGO QUOTATIONS.

Table with 2 columns: Item description and Price. Includes Joist and scantling, Joist and scantling, Mill run, choice green, Mill run, medium, green, Mill run, common, Shingles, standard, Shingles, extra A, Lath.

LAKE FREIGHTS.

Table with 2 columns: Item description and Price. Includes Manistee, Muskegon, Ludington, Grand Haven, Menominee, Sturgeon Bay, White Lake, Ford River.

The condition of trade at the yards in this city has not materially changed from that of last week. The weather, much of the time, all over the country tributary to Chicago, has been unpropitious to trade, but, notwithstanding this fact, a fairly active demand has prevailed, orders coming in quite freely. The call for lumber in the interior is, with most dealers, fully equal to their ability to supply it, on account of the difficulty in procuring care promptly. Some trouble is experienced by individual concerns in always finding the requisite amount of stock dry enough to ship to fill orders, though it is asserted that there is enough in the district, if it was only equally distributed among the dealers. The fact is, no doubt, that dry stocks are much broken, and in many instances run down. This is an indication that the volume of trade during the season has been heavy. The lowness of dry stocks on the Mississippi, and the dubious condition of the manufacturing interests along that river, will likely make a loud demand for all the available lumber here, and this fact should tend to stiffen prices.

The late soaking rains have put stocks in bad condition for shipment, on account of the extra weight lumber has taken on by absorption of dampness.

Receipts and shipments of lumber and shingles for the week ending November 2:—

Table with columns: RECEIPTS, SHIPMENTS, Lumber, Shingles. Rows for 1881 and 1880.

Receipts and shipments of lumber and shingles from January 1 to, and including, November 2:—

Table with columns: RECEIPTS, SHIPMENTS, Lumber, Shingles. Rows for 1881 and 1880.

STOCK ON HAND NOVEMBER 1.

Table with columns: Lumber, Shingles. Rows for 1881, 1880, and In.

BOSTON.

The Journal of Commerce says:—Reports coming in show the market to be as active as for any previous week. The call for pine stock is immense, and many large orders have been filled.

CANADA PINE.

Table with columns: Selects, Dressed, Selling, Dressed, 1sts, 2nds, Dressed Shippers, Dressed Box, Seathing, 1st quality, 2nd.

ALBANY.

Nov. 8th.—The Argus says we have a steady trade to report in pine lumber, with ample receipts and a well-assorted stock.

Hardwoods are in good supply and demand, and are unchanged in prices.

Ceasar lumber is arriving freely, and is in large demand at quotations; the demand does not permit any accumulation of stock.

The receipts of lumber by lake at Buffalo for the week ending November 7 were 11,600,000 feet, and by rail 61 cars.

The receipts by canal at Albany from the opening of navigation to the 8th inst. were:—

Table with columns: Lumber, Shingles, Timber, Staves.

Freights from Bay City to Buffalo and Tonawanda, \$3.00 per M.; from Saginaw, \$3.25.

River freights are steady:

Table with columns: New York, Bridgeport, New Haven, Providence, Fall River and Newport, Pawtucket, Newark, Hartford, Norwich, Middletown, New London, Philadelphia.

TONAWANDA.

Table with columns: Lumber, Shingles.

THE MOBILE, ALA., LUMBER TRADE.

Through the kindness of Messrs. Guy Boyan & Co., of St. John, N.B., and Mobile, Ala., we are enabled to give the following particulars with regard to the lumber trade of Mobile for the year ending the 31st of August, last:—

LUMBER.

This branch of trade, which is one of the most important of the pitch pine trade, and one of the leading industries of Mobile and South Alabama, has greatly improved during the past year, and extended its trade to new markets.

FOREIGN.

Table with columns: Cuba, Jamaica, Great Britain, Hayti, Trinidad, Rio de Janeiro, Mexico, France, Germany, Various.

COASTWISE.

Table with columns: New York, Texas, Boston, Philadelphia, Baltimore, New Haven, Various.

HEWN AND SAWN TIMBER.

We are now at the close of one of the most successful seasons in the pitch pine trade ever enjoyed by this port. The supply of timber throughout the whole season was regular and sufficiently abundant to enable shippers to give their vessels a fair despatch and avoid the annoyance and expense of demurrage.

building on both the East and West coasts of Great Britain is assuming most also be considered an aid to the revival of the timber trade. It is true that the vessels are almost entirely constructed of iron and steel, but it must be borne in mind that the internal fittings (in the construction of which pitch pine is an important item) are still the same, but on a much larger scale.

HEWN TIMBER.

Table with columns: 1880-81, 1879-80, 1878-79, 1877-78, 1876-77, 1875-76, 1874-75.

SAWN TIMBER.

Table with columns: 1880-81, 1879-80, 1878-79, 1877-78, 1876-77.

STAVES.

The high price paid for timber last year caused more time to be devoted to timber and less to staves, which caused our receipts to be very light and smaller than they have been for years.

Table with columns: 1880-81, 1879-80, 1878-79.

SHINGLES.

During the past season shippers were fortunate, as the market was plentifully supplied and they did not have to contend with a "scarcity" like they had the first part of the previous season.

The Time to Cut Timber.

Experience teaches that the best time to cut timber is in the summer when in the most rapid season of its growth, and while that season is drawing to its close.

of the roots, with no outlet for its escape, as there is in summer through myriads of leaves. While the tree is thus replete with water it is in the worst condition to cut, but when a portion of this water has passed through the leaves and the rest has been much thickened by conversion into material for wood, then is the time for cutting it.

HAGYARD'S YELLOW OIL will be found invaluable for all purposes of a family liniment. Immediate relief will follow its use in all cases of pain in the stomach, bowels or sides; rheumatism, colic, colds, sprains and bruises.



CANADIAN PACIFIC RAILWAY.

Emory's Bar to Port Moody.

NOTICE TO CONTRACTORS.

Tender for Work in British Columbia.

SEALED TENDERS will be received by the undersigned up to NOON on WEDNESDAY, the 1st day of FEBRUARY next, in a lump sum, for the construction of that portion of the road between Port Moody and the V. end of Contract 60, near Liunoy's Bar, a distance of about 85 miles.

Specifications, conditions of contract and forms of tender may be obtained on application at the Canadian Pacific Railway Office, in New Westminster, and at the Chief Engineer's Office at Ottawa, after 1st January next, at which time plans and profiles will be open for inspection at the latter office.

This timely notice is given with a view to giving Contractors an opportunity of visiting and examining the grounds during the fine season and before the winter sets in.

Mr. Marcus Smith, who is in charge of the office at New Westminster, is instructed to give Contractors all the information in his power.

No tender will be entertained unless on one of the printed forms, addressed to F. Braun, Esq., Sec. Dept. of Railways and Canals, and marked "Tender for C. P. R."

F. BRAUN, Secretary.

Dept. of Railways and Canals, Ottawa, Oct. 24th, 1881. 12d10 7c25

LEATHER BELTING.

Chipman, Renaud & Co.

MANUFACTURERS OF LEATHER BELTING,

FIRE ENGINE HOSE LACE LEATHER, &c.

124 & 126 Queen St. 125-1y MONTREAL

Advertisement for HOP BITTERS featuring a bottle illustration and text describing its benefits for various ailments like indigestion, nervousness, and general weakness.

# A. NORMAN ELECTRICIAN,

4 QUEEN STREET EAST, TORONTO, ONTARIO.

## Trusses for HERNIA, Rupture,

The most Durable and Beneficial kind known to Medical Science always in Stock, and fitted to the Body at Reasonable Prices.

## BATTERIES FOR BATHS,

Of Special Sizes, made to order, both for Public and Private Use; and FRDIO B ATTERIES always on hand. PRICES LOW. 1y-117

# ROBIN & SADLER

594, 596, 598, St. Joseph St.

MONTREAL

Manufacturers

of

**LEATHER BELTING**

Fire-Engine

HOSE,

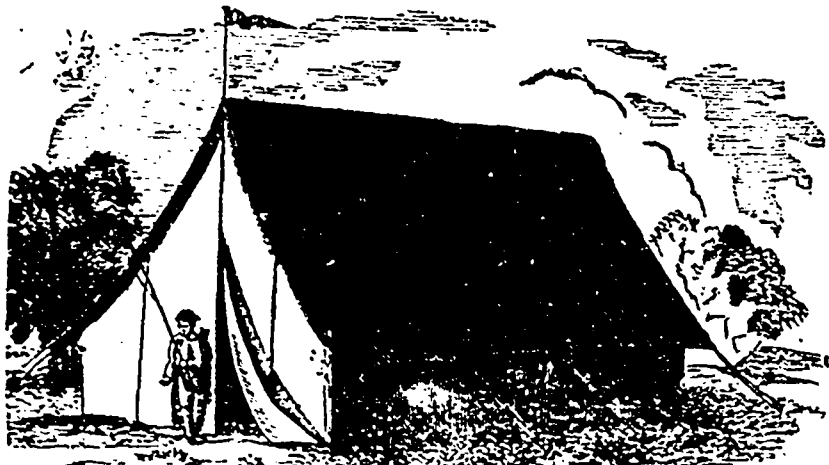
Lace Leather,

Mill Supplies, &c.

1y-118

# National Manufacturing Company

202 SPARKS STREET, OTTAWA.



manufacturers of Tents for Lumbermen, Sportsmen, Camp Meetings, Photographers, Lawn and Military Encampments, with or without extra roofs, all sizes and styles, white or fancy striped, milldew proof or plain. Prices from \$5 upwards. Flags of all descriptions, (regulation sizes) made of the best of silk-finish bunting. CAMP

OPEN FOR USE



BEDS (Bradley's Patent) the best bed ever invented; size when folded 2 x 6 in.; 3 feet long, weighing only 11 pounds, but strong enough to bear the weight of any man. Waterproof wagon and horse-covers, tarpaulins sheets, coats and leggings of every description made to order on the premises. Special rates to Lumbermen. Send for catalogue and price list to

NATIONAL MANUFACTURING CO.,

202 Sparks Street, Ottawa

127

# DAVID JONES' CELEBRATED Cast Steel Table Cutlery!

Best Cast Steel, Warranted.

Edge Tool & Cutlery Works, Woodstock, N.B.

Awarded Diploma and Medal by the New Brunswick Government in 1873.

# The Best Axes in the World!

Single, Double and Triple Steel, 28 Patterns.



Warranted Good or Exchanged.

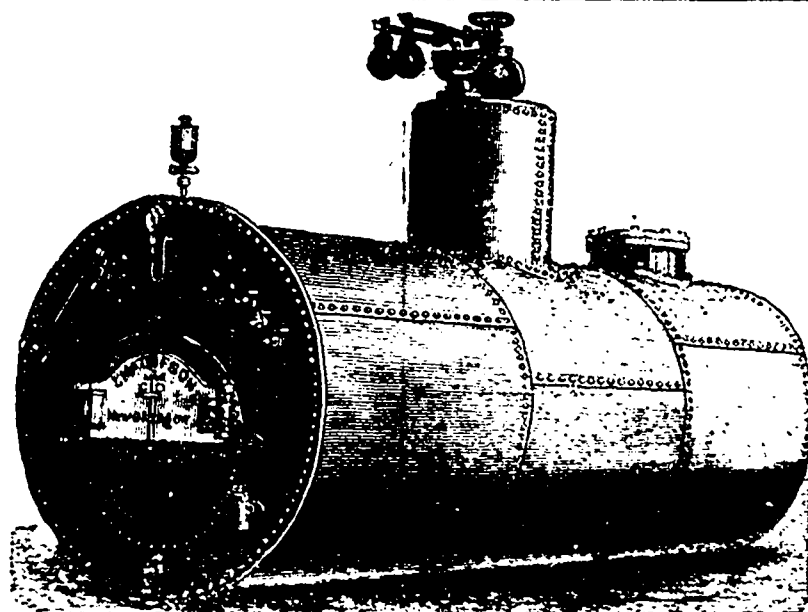


And Burrell's, Warnock's, and Dundas Axes, made specially for the Lumber Trade repacked any weights without extra charge. Lindsay Pattern of Broad and Block Axes. LANCE TOOTH SAWS, warranted good. P. Jewell & Sons (Hartford, Conn) LEATHER BELTING. 2d OUT FILES. LATH YARN. Mill and Shanty Hardware No. 1 LARD OIL. Heavy HAMES, BUCKLES and HARNESS TRIMMINGS. Ballard and other RIFLES, from \$10 each. Large assortment of CARTRIDGE

# GEORGE STETHEM, Peterborough, Ont

Importer, Jobber and Retail Dealer in Hardware.

1217



# AGATHA FOUNDRY L. MATHESON & CO. ENGINEERS & BOILER MAKERS. NEW GLASGOW, N.S.

122-17

# HART EMERY WHEEL COMPANY, Limited

HAMILTON, CANADA.

GILBERT HART, Detroit,  
President.

JAMES T. BARNARD, Hamilton,  
Secretary-Treasurer.

SAMUEL BRIGGS, Hamilton,  
Superintendent.

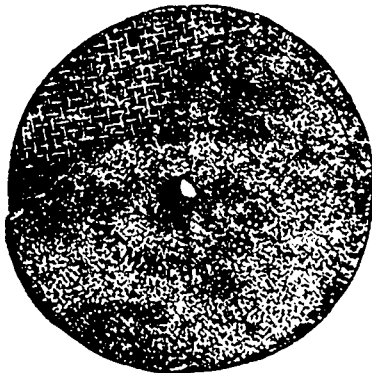
MANUFACTURERS OF THE CELEBRATED

**DETROIT**

# EMERY and CORUNDUM WHEELS

These Wheels are

Wire Strengthened



And Specially Adapted

For Saw Gumming

Neither Animal nor Vegetable Glue or Gum being used in their composition, they are NOT LIABLE TO HEAT, and give out no Odors, while

*They Surpass All Other Wheels for Free Cutting and Durability.*

We refer to the following well known Saw Manufacturers for Opinions as to the Quality of our Wheels :

Messrs. SHURLEY & DIETRICH,  
GALT.

Messrs. R. H. SMITH & CO.,  
ST. CATHARINES.

JAMES ROBERTSON, ESQ.,  
MONTREAL.

Messrs. JAMES ROBERTSON & CO.,  
TORONTO.

WE ALSO REFER TO

WILLIAM HAMILTON, ESQ.,  
PETERBOROUGH,

Manufacturer of the Covell Saw Sharpeners.

Messrs. H. B. RATHBUN & SON,  
DESERONTO,

Lumber Merchants.

# Northey's Steam Pump Works

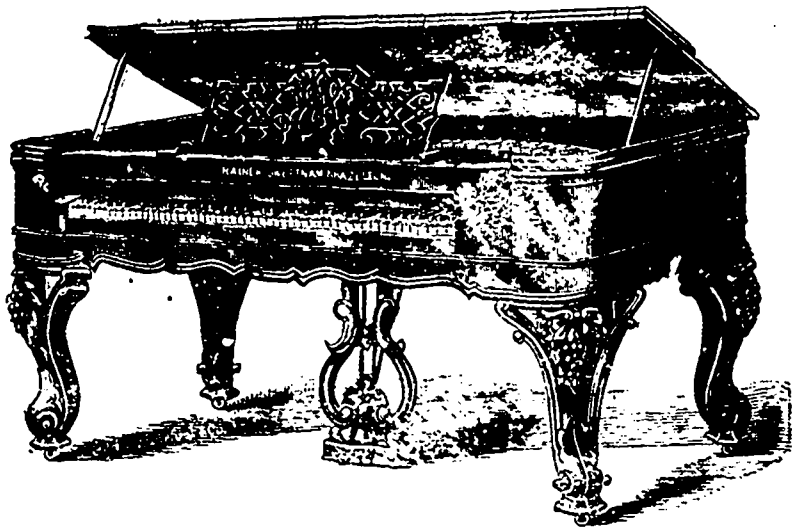
BOILER FEED PUMPS, MINING PUMPS,  
 AIR AND CIRCULATING PUMPS, PUMPS SPECIALLY ADAPTED for  
 STEAM FIRE PUMPS, and OIL PIPE LINES,  
 WRECKING PUMPS. And CITY WATER WORKS.

No. 47 King William Street.

## HAMILTON, ONTARIO.

SEND FOR CIRCULAR.

L17-17



## The Rainer Piano Always Triumphant!

CARRIES OFF THE HONORS OF 1880 AS FOLLOWS:

At Toronto Industrial Exhibition, 1st Prize, Diploma & Medal for Best Square Piano  
 At Hamilton Provincial Exhibition - - - - - 1st Prize and Diploma  
 At Brantford Southern Fair - - - - - 1st Prize and Diploma  
 At Guelph Central Exhibition - - - - - 1st Prize and Diploma

SEND FOR CATALOGUE.

### RAINER, SWEETNAM & HAZELTON,

MANUFACTURERS,

GUELPH, ONTARIO.

L14

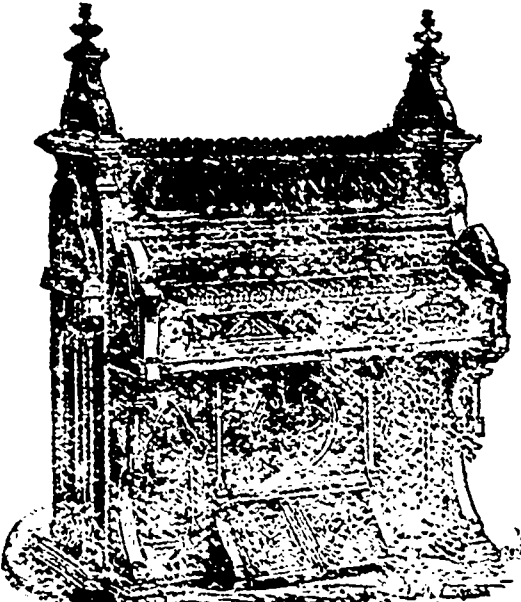
## The Crowning Triumph of the Bell Organ

The Bell organs have just received the HIGHEST AWARD and SPECIAL PRIZE (Gold Medal) at the International Exhibition, Sydney, Australia, this year for their Organs over all the English and American makers. This, along with the unlimited awards, prove that

### THE BELL ORGANS LEAD THE WORLD.

WE RECEIVED

Medal and Diploma ..... Provincial Exhibition 1871  
 Medal and Diploma ..... Centennial Exhibition, 1876  
 International Medal and Diploma, Sydney, Australia, 1877



Only Medal for Parlor Organ, Provincial Exhibition, 1878  
 Only Medal for Parlor Organ, Industrial Exhibition, 1876  
 And Gold Medal..... at Sydney, Australia, 1880

WE RECEIVED

The Bell Organ Manufactory is the Largest and Oldest in the British Empire and the fact that we have sold nearly 14,000 proves that they are the best in the market. We are THE ONLY MANUFACTURERS OF BELL ORGANS for five years. Correspondence invited. Illustrated Catalogue mailed free.

### W. BELL & CO.

41 to 47 East Market Square, GUELPH, Ont.

L17

# Wrought Iron Shanty Cook Stoves

## The Best Article ever offered to the Trade.

I have much pleasure in drawing attention to my WROUGHT IRON COOKING STOVE, for Shanty, Hotel and Boarding House use. These Stoves are made of Heavy Sheet Iron, the top and lining of the fire-box being of Heavy Cast Metal and all the connecting parts of substantial Wrought Iron Work. The dimensions of these Stoves are as follows:-

### SINGLE OVEN STOVE

Top surface contains six 10-inch holes, with ample room between, and one oven 18 x 21 x 26.

### DOUBLE OVEN STOVE

The Double Oven has a top surface containing twelve 10-inch pot holes, with two ovens, each 18 x 21 x 26. One fire-box of suitable size for men to be heated. Below will be found Testimonials from some of the leading Lumbermen, who have used my Wrought Iron Cook Stoves since I commenced manufacturing them. They are the names of gentlemen who are well known and reliable, and will carry more weight than any recommendation of my own could do.

#### The Best Stove I have ever Used.

PETERBOROUGH, May 31, 1880.  
 ADAM HALL, Esq., Peterborough. Dear Sir,—I have used your Wrought Iron Cooking Stove in our lumbering operations since its introduction here, and have no hesitation in saying that I prefer it to any other. For durability, economy and efficiency, where a large number of men are employed, it is the best stove I have ever used. You can, with confidence, offer it to hotels, boarding houses and lumbermen.

Yours truly, THOS. GEO. HAZLITT.

#### The Stove for Lumbermen.

PETERBOROUGH, June 1st, 1880.  
 ADAM HALL, Esq., Peterborough. My Dear Sir,—We have used your Wrought Iron Cooking Stove and find it is very satisfactory for lumber operations, especially so on drives. We can recommend it highly.

Yours truly, IRWIN & BOYD,

#### Gives the Greatest Satisfaction.

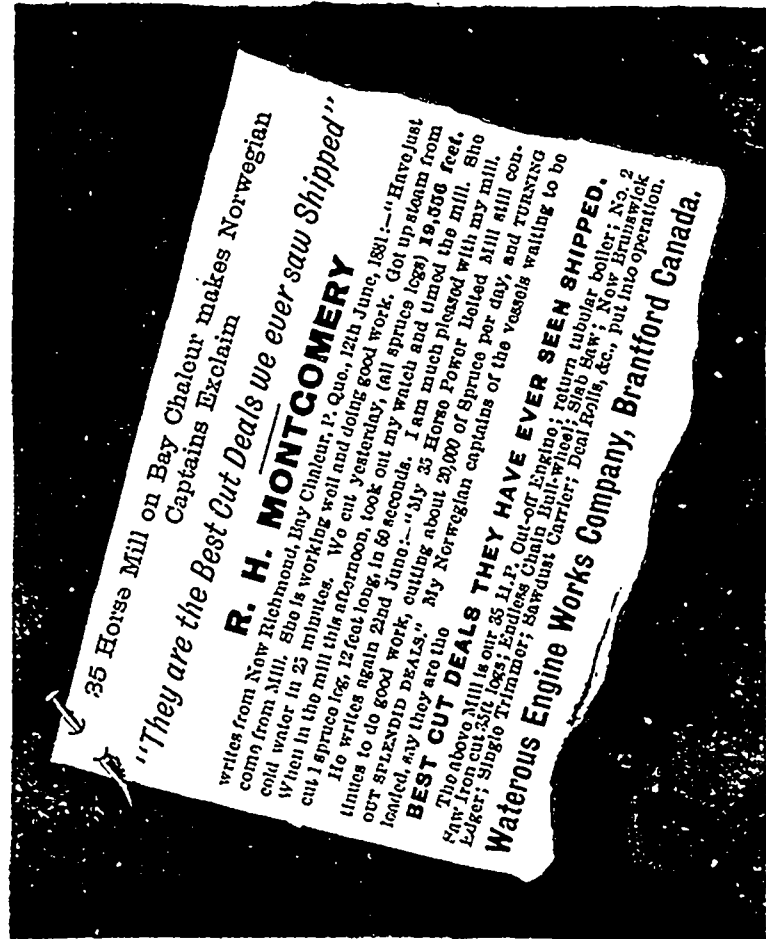
PETERBOROUGH, June 3rd, 1880.  
 A. HALL, Peterborough. Dear Sir,—I have had the Wrought Iron Cook Stove, purchased from you, in constant use ever since last fall, and it gives the greatest satisfaction in every respect. I can recommend them highly to any one who is in the lumber business.

Very truly yours, GEO. HILLIARD, M.P.

### EVERY STOVE GUARANTEED

All the necessary TINWARE and CUTLERY for Shanties supplied at the Lowest Prices.

## ADAM HALL, Peterborough.



35 Horse Mill on Bay Chaleur makes Norwegian Captains Exclaim  
 "They are the Best Cut Deals we ever saw Shipped"  
 R. H. MONTGOMERY  
 writes from New Richmond, Bay Chaleur, P. Que., 12th June, 1881.—"Have just come from Mill. She is working well and doing good work. Got up steam from cold water in 25 minutes. We cut yesterday, (all spruce logs) 19,500 feet. When in the mill this afternoon, took out my watch and timed the mill. She cut 1 spruce log, 12 foot long, in 60 seconds. I am much pleased with my mill. He writes again 2nd June.—"My 35 Horse Power loaded with my mill. loaded, my they are the BEST CUT DEALS."  
 My Norwegian captains of the vessels waiting to be shipped are waiting to be shipped.  
 The above mill is our 35 H.P. Out-of-Engine; return tubular boiler; No. 2 saw iron cut 35 ft logs; endless chain mill-wheels; Sino Saw; New Brunswick Luger; Single Trimmer; Sawdust Carrier; Deal Roller, &c., put into operation.  
 Waterous Engine Works Company, Brantford Canada.

# LUMBERMEN

Will always find a Large Stock of

## Shanty Blankets

AND

## HORSE BLANKETS

At LOWEST Mill Price, at

# JNO. MACDONALD & CO'S

## TORONTO.

Send Sample Order for our *LINED SHAPED HORSE RUG*, a pecialty highly recommended for *Wear and Warmth*



## A. LEARMONTH & Co.

ENGINEERS AND FOUNDERS,

MANUFACTURER OF

Steam Engines, Rotary Pumps, of all sizes, for Paper and Pulp Mills, Steam Pumps, and a Variety of other Pumps, Propeller Engines for Yachts & Tow Boats.

124-1y

Iron Railings, Hoisting Machines for Stores, Jack Screws, Park Mills, all kinds of Machinery for Mines, Saw Mills, Flour Mills.

St. Paul St.,

QUEBEC.

## ABRAMS & KERR

MANUFACTURERS OF

Steam Engines, Mill Gearing, Rotary Mills, ha fting, Planers, Hangers, Pulleys, Variety Moulders.

SPECIAL MACHINERY MADE TO ORDER

Latest Improved Spool and Bobbin Machinery.

Every Variety of Heavy and Light Casting.

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Foundry and Machine Shop on City Road,

ST. JOHN, NEW BRUNSWICK.

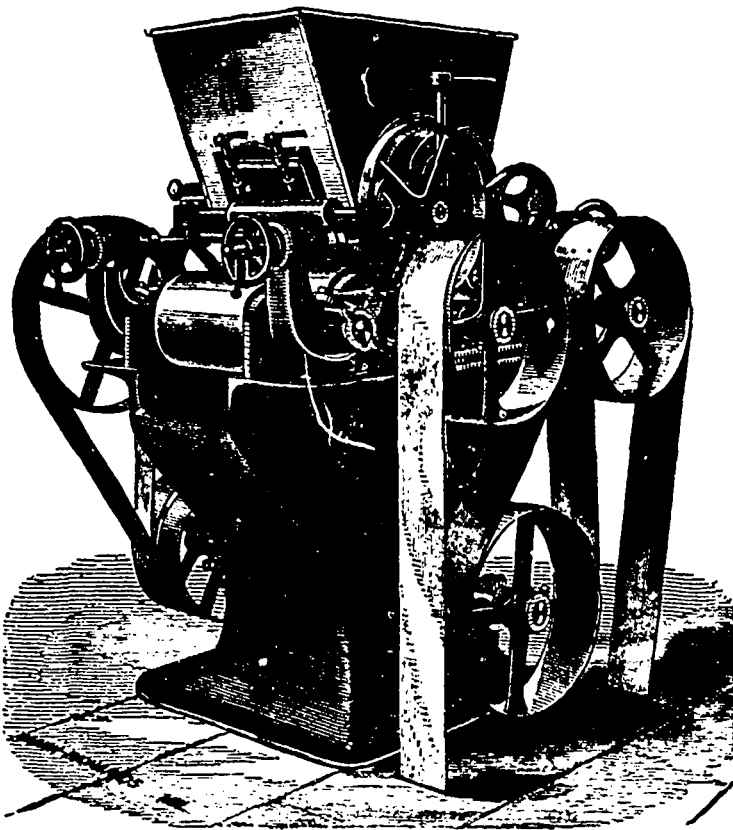
## Flour Making by the New Process

GRAY'S PATENT

# NOISELESS ROLLER MILL

*A Model of Perfection!*

*Every Mill a Success!*



CORRUGATIONS of all Descriptions. Smooth Iron or Porcelain ROLLS.

These Roller Mills are used by all the Representative Millers of the United States.

The Machine is Perfect in all its adjustments, and RUNS WITHOUT NOISE.

It is doing Better Work than any other Machine in use.

Automatic Lubrication of Principal Bearings.

Driven entirely by BELTS.

Differential Speed always insured.

WEYMAN'S NEW IMPROVED PATENT

## Porcelain Rolls

The BEST ROLL FOR MIDLINGS in the world. Over 6000 in use in this country and Europe. Send for particulars.

MILLER BROS. & MITCHELL,

Nos. 110, 112, 114 and 116 KING STREET

MONTREAL.

SOLE LICENSEES FOR DOMINION.

Manufacturers of Improved Hoisting Machinery, MINING and CONTRACTORS' PLANT. Importers of BEST STEEL WIRE ROPE. Mention this Paper.

124 1y



# EMERY WHEELS FOR SAW GUMMING!



Solid Emery Wheels are now adopted in universal use for the purpose of gulletting and gumming saws. Statistics show from 25,000 to 30,000 saw-mills in the United States. Many of these run only a single saw each. A one-saw mill would use one or two wheels a year, costing \$3 to \$4 each, and when such small mills order single Emery Wheels from the factory, the express charges often equal the cost of the wheel. There was a time when the quality of Emery Wheels was so uncertain, and the demand so fickle, that storekeepers could not afford to carry them in stock. Now, however, Saw Gumming Wheels have become a staple in articles Files, and every dealer in saws, Hardware and Mill Supplies can afford to carry a few dozen standard sizes in stock. Large dealers order stocks of \$500 to \$750 worth at a time. Saw Gumming Wheels are used with the edge (or face) square, round or beveled. Probably seven-eighths of all in use are beveled.

The principal sizes are:

8x $\frac{1}{2}$	} 7 in. hole.	10x $\frac{1}{2}$	} 7 in. hole.	12x $\frac{1}{2}$	} Holes, 7, 8 and 1 inch.
8x $\frac{3}{4}$		10x $\frac{3}{4}$		12x $\frac{3}{4}$	
8x $\frac{7}{8}$		10x $\frac{7}{8}$		12x $\frac{7}{8}$	
			12x $\frac{1}{4}$		
			12x $\frac{1}{2}$		
			12x $\frac{3}{4}$		

Probably more wheels 12x $\frac{1}{2}$ , 12x $\frac{3}{4}$  and 12x $\frac{7}{8}$  are used than all the other sizes together. Saw Gumming Wheels are used, however, of all sizes up to 21x1. The most frequent complaint is that Emery Wheels harden the saw so that a file won't touch it. The answer is that you don't want a file to touch it. An expert workman will shape and sharpen the teeth with an Emery Wheel, leaving the teeth case hardened, in which condition the saw will cut about 33 per cent. more lumber than a soft saw will. Those who want to use the file, however, have only to touch the saw lightly a second time (after going all over it once), and this second touch will cut through the case-hardened scale.

## A QUESTION OF QUALITY.

Thirteen years of experience as makers of, dealers in, and actual users of Emery Wheels, have led us to a decided opinion as to what quality is the best. We prefer for almost every use an "Extra Soft" wheel like the "Pocono." We believe that money lost through the rapid wear of the wheel is more than made up by the money saved on wages. As we cannot get every one to adopt our views, we make several qualities, so as to meet their views. We say to those who think they can only be satisfied with some other make of wheels (not Tanite), that we can furnish qualities to match any and every other make. If you have got used to some special quality of wheel, let us know what it is, and we can send you a Tanite Wheel of similar quality. Our regular classification of Saw Gumming Wheels is as follows:

**CLASS 2. MEDIUM-HARD.**—This Wheel is THE STANDARD Saw Gumming Wheel all over the world. Probably seven-eighths of all the Saw Gumming Wheels used are "Class 2. It cuts fast and keeps its shape well. Some think it too hard, some too soft. We prefer the "Pocono."

**CLASS 3. MEDIUM-SOFT.**—The same as to coarseness and fineness as "Class 2," but a softer, and therefore freer cutting wheel.

**CLASS "POCONO." EXTRA SOFT.**—This Wheel we prefer to all others. It is both finer in grain and softer than either of the above. As a Saw Gumming Wheel, Class "Pocono" is specially suited to those practical and experienced Sawyers who know how to grind with a light touch, and who want a free cutting wheel that will not create much heat.

Illustrated Circulars and Catalogue, showing Cuts of Saw Gumming Machines, and Shapes, Sizes and Prices of Wheels, sent free on application.

# The Tanite Co. Stroudsburg, Monroe Co. Pennsylvania

CANADIAN TRADE SPECIALLY SOLICITED.

# M. Covel's Latest Improved Automatic Saw Sharpener!

Is the Most Perfect Machine that has ever been Introduced into Mills for that purpose.

**CIRCULAR SAW  
STEAM FEED!**

I would also call special attention to my  
**Heavy Circular Saw Mills**

and for STEAM MILLS, would recommend the Steam Feed, having put in several which are giving the best of satisfaction, as will be seen by the following testimonials:—

GRAVENHURST, August 20th, 1880.  
WM. HAMILTON, ESQ., Peterborough.

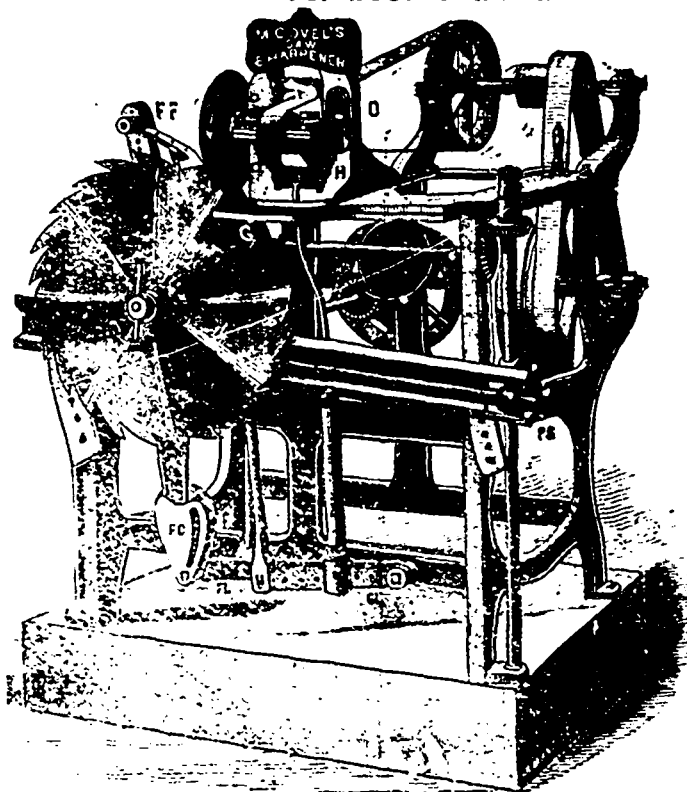
DEAR SIR—I have used your Steam Feed for near four months, and it has given me perfect satisfaction in every way; it is admitted by every person who has seen it work to be the best feed ever invented. Since I put it into my mill, I have not lost ten minutes time fixing anything belonging to it. I can cut 15 boards 13 ft. long in one minute. It can do much smoother and better work than the j' feed. It is easily governed and reverses the carriage instantly. I am thoroughly satisfied with it and can recommend it to any person who has a Circular Saw Mill for cutting long or short logs. I consider I have cut more lumber than will pay for the Steam Feed since I got it than I would have cut had I not put it in.

Yours respectfully,  
WILLIAM TAIT,  
Lumberman, Gravenhurst.

TORONTO, August 11th, 1880.

WM. HAMILTON, Peterborough, Ont.

DEAR SIR—The Steam Feed you put in is working splendidly.  
Yours, &c.,  
THOMPSON, SMITH & SON.



## MILL MACHINERY!

I am also manufacturing Saw Mill Machinery, for all sizes of Gang or Circular Mills, Span or Double Circulars for Slabbing Small Logs. My Patent Jack Chain for drawing logs into Saw Mills, acknowledged by all to be the Cheapest and best ever got up; also, my Patent Lumber Markers, different sizes of Edgers, Gang Lath Mills, Trimmers, Power Gummers, and all Machinery used in a first class Gang or Circular Saw Mill; also, small Hand Gummers for use in the woods, for Cross-cut Saws. Rotary Pumps of different sizes, for Fire Protection in Mills, &c.

## Horizontal Engines and Boilers



Where economy of fuel is the great consideration, along with uniformity of speed, such as is required in Grist and Flouring Mills, Woollen and Cotton Factories, or large Factories of any kind, I supply the Corliss Engine. I feel justified in saying that our Style, Workmanship and Finish on this Engine will be no discredit to its renown, and certainly is not equalled in this country for economy of fuel. I have them working at 2 1/2 pounds of coal per horse-power per hour.

# WILLIAM HAMILTON,

PETERBOROUGH, ONT.