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VOL. I.

PETERBOROUGH, ONT., MAY 16, 1881.

NO. 14.

FORESTRY AND ABOICULTURE.

BEING THE FOURTH CHAPTER OF THE REPORT OF THE ONTARIO AGRICULTURAL COMMISSION.

Replanting and Ornamenting Farms.

The method to be pursued by the intending tree-planter, as well as his outlay, will depend much both on the particular object he has in view and the money he has to spend.

"I would recommend," says Mr. Beadle, "for forest planting, the hard maple, particularly as a tree which will be very valuable yet in our country. I am not particularly partial to the silver-leaved maple, though it is a most popular tree with most planters because it grows so rapidly. The hard maple is a more symmetrical tree, and the foliage is very clean and free from insect deprecations."

In Kent, the Commissioners noticed that the maple had been very extensively planted on the field sides and concession lines, a circumstance that was the more remarkable from the fact that the original wood of the district had largely consisted of the elm.

Mr. Cochrane, of Kilsyth, County of Grey, says in his evidence:—

"I think in the matter of tree-planting we are in advance of the rest of the county. The planting by the road-side and along lanes is becoming quite general. The neighbors who lives adjoining my place has planted out, I dare say, 1,000 shade trees. The trees planted by him were chiefly silver maple and rock maple. The first he planted was ten years ago, and they were planted fourteen feet apart. They now meet."

Mr. Beadle says on this point:—

"For forest planting I would recommend maple, taking of course into account the variety of soil. The hard maple does not succeed in all soils, but where it does succeed I prefer it. It flourishes in a dry soil. In wet soil I would use the soft maple. Some little blocks of forest have been planted with maple trees, with a view to their sugar-producing qualities, and some of these have attained a diameter of six or eight inches and a height of thirty or forty feet. They have been planted some years. I do not think they received any cultivation after planting."

The cultivation of the black walnut in universally recommended. Mr. Leslie says:—

"In the nut trees, the black walnut grows very rapidly in its younger stages—almost as rapidly as the English ash, and, at fifteen years, the wood could be used for many purposes, particularly for cabinet-making. I think the black walnut would have to be confined chiefly to the front of the Province. I never saw it east of Cornwall, but the south-west portion of the peninsula is its home."

That the walnut is not a tree requiring an exceptionally mild climate is proved by the ex-

perience of Mr. Beall, at Lindsay. Mr. Roy too, at Owen Sound, says:—

"There is an idea that black walnut will not grow as far north as Owen Sound. Ten years ago I planted black walnut seeds, and at the present time two or three of the trees bear nuts. They are not only ornamental, but coming to be very useful trees. The diameter of two or three of them now will be as much as six inches. They were planted in a strong soil."

If the soil is at all good, Mr. Arnold recommends the planting of the black walnut on lands that may, for any other reason, be unavailable for agricultural purposes.

The butternut, as already noticed, is recommended by Mr. Leslie for planting. Senator Allan says of it:—"The butternut, if transplanted young, succeeds well."

It is somewhat more hardy than the walnut, and, as previously mentioned, is often used as a substitute for that wood.

The hickory is rather a slow grower, but can be used profitably at so early a stage in its existence that it is a profitable tree to plant pretty freely with the view to the sale of thinnings as the trees mature and crowd one another. Mr. Beadle says:—

"I have not the slightest doubt that plantations of hickory will pay in the near future."

The ash can be easily transplanted, and, as a fast growing tree, for the wood of which the demand is certain to increase with time, is one that should be cultivated. Mr. Beadle says of it:—

"The ash will always be valuable, particularly the white ash."

Mr. Leslie recommends the English ash as preferable to some Canadian varieties. He says:—

"For tree planting on waste lands, or hill-sides, with an economical view, I would recommend the English ash as a most useful tree. I think it would come into the market earlier than any other tree that could be planted. It is largely used for handle-making, and about ten years' growth on ordinary soil would produce a tree that could be split into four pieces each of sufficient size to make a handle. The English ash is not the same as our common black ash; there is as much difference as between the European larch and our tamarack. It is a more rapid grower than the black ash, and the wood is better in every way."

Of the coniferous trees none is more beautiful, and none can be planted of a more certain economical value, than the native white pine. Mr. Beadle says of this tree:—

"I believe that plantations of white pine will eventually pay when our timber regions to the north become used up or burnt up. The white pine grows rapidly."

Mr. Dempsey says of it:—

"Pine makes rapid second growth in sections of the country where it flourishes."

Mr. Beall says of this tree:—

"We should not forget our native pine, for there is no more beautiful tree we can have, if taken from the woods when very young."

Where, however, it is desired to plant in an cultivable ground, few, if any, trees will be found of greater value than the European larch. Mr. Leslie, speaking of this tree, says:—

"I do not approve of our Canadian tamarack at all. The timber is poor, and if people desire to go to the expense of planting for timber, I would recommend them to plant the European larch, which is a splendid tree, a rapid grower, and will grow in any part of this country. It is not an evergreen, but it throws out a great number of small branches which are a great protection. It is a very rapid growing tree, even more rapid than the Norway spruce, growing more than four feet on an average every year, unless the ground is very poor, in which case of course the growth will be less. In five or six years the tree will be twenty-five or thirty feet high."

After mentioning it as an ornamental tree for lawn planting, Mr. Leslie says further:—

"The European larch would also be suitable for this purpose (handle making.) The latter makes the best railway ties of any wood in the world, as it is almost indestructible. It is a very rapid grower, and in ten or twelve years' time the wood is of merchantable proportions and useful for many purposes. Of course it would not be fit for railway ties by that time, but suitable for manufacturing purposes."

"It would be decidedly profitable to railway companies, as well as beneficial to the country, if the waste lands connected with their lines were planted with European larch. From this source they could in time obtain an almost inexhaustible supply of railway ties, much superior to the kind now in general use."

"Another use to which the European larch can be put is the production of 'ships' knees, as it can be trained when young to the desired bend."

It was the European larch with which successive Dukes of Athol carried out their extensive tree planting operations in Scotland, extending at last to an area of 10,000 acres, and involving the planting of no less than 14,000,000 trees.

Mr. Roy, of Owen Sound, says of this tree:—

"I have tried the European larch, which is much more pendulous [than the pines]. I have had no difficulty in establishing it here. It is a most beautiful and ornamental tree. I obtained it from Scotland."

The larch is not an evergreen, but, when planted in groves or belts, several trees deep, offers, from its conformation, a very considerable resistance to the winds.

For a perfect shelter-belt for orchard or fields, however, nothing is more strongly recommended than the Norway spruce. Mr. Leslie says of it:—

"We consider the Norway spruce the most valuable tree there is for planting in shelter-belts. It is extremely hardy, very rapid in growth, and easily transplanted." He adds, "I prefer the Norway spruce wholly to deciduous trees and evergreens mixed, as in the latter case, the one checks the growth of the other."

But there are many native varieties of spruce, which, if not in every respect so desirable, are near at hand, and can be made to do duty very efficiently. Mr. Beall says:—

"By spruce I mean the kind that is called the Canadian or black spruce. It varies much in colour. I bought a thousand plants of Canadian spruce a few years ago. I consider it superior to the Norway spruce, because it is equally as pretty in shape and it has a better color. With the Canadian spruce we get almost every variety of shade, but the Norway is all one shade. I suppose the different shades are all of the one variety, but they differ during their life. They can be cultivated successfully in rows, with the branches interlocking in the way described by Mr. Beadle. I have a fine close-cut spruce hedge about five feet high, pyramidal in shape, and five feet across at the base. It can be pruned beautifully, and we have now every shade and color, from the palest yellow to the deepest green. It does not grow so fast in the open ground as the Norway spruce, though I have trees, planted twelve years ago, off of which I cut the tops five years ago, and they are now eighteen or twenty feet high. I do not know how the Canadian spruce compares with the Norway spruce in merchantable value. It will grow almost anywhere. I would plant it along with cedar or pine on hill-sides or rocky places."

Of the Canadian white and black spruce, Mr. Leslie says:—

"We have found the white spruce, a native of this country, a most excellent tree for shelter belts, but it is not so rapid a grower as the Norway, and for that reason the latter is superior. We have a black spruce, but it is not a good variety, as it is apt to become poor at the bottom, that is, in the early stages of the growth of the tree the lower limbs decay and are lost, while the white spruce and the Norway hold their foliage to the ground. When I speak of shelter, I mean shelter for farm buildings, orchards, etc."

A Mistake

It is a great and often fatal mistake to take repeated drastic purgatives for constipation of the bowels, they induce piles and cause debility of the bowels. Burdock blood purifier is a safe and perfect regulator of the bowels, arousing the torpid liver and all the secretions to a healthy action, acting on the kidneys, and renovating and toning the system in a most perfect manner.

LUMBERMEN'S BOARD OF TRADE.

We find in the Stillwater, Minn., *Lumberman* the following report, which we republish as showing the style in which the lumbermen work on the other side of the boundary and the extent to which they co-operate for their joint benefit:—

At the adjourned annual meeting yesterday, the treasurer's report was read, as follows:—Balance on hand, \$356.19; received on assessments, \$1,477.21; received of Walker, Judd & Veazio on account of scaling by river police, \$76.64; received from agent of the board, \$18,673.12. Disbursements: Paid orders of agent, \$18,222.53; river improvements, \$937.84; river police, \$574.35; treasurer's salary, \$225; miscellaneous expenses, \$293.85. Balance in treasury, \$325.49.

The Boom Company was requested to advertise for bids on all prize logs passing the boom this season.

John O'Brien was made a committee to report on the boom above lower boom.

Officers were elected as follows:—W. G. Bronson, president; Samuel Matthews, vice-president; John S. Proctor, secretary and agent; E. L. Hospes, treasurer. Directors—E. S. Brown, Samuel Judd, Smith Ellison, Albert Tozer, James Mulvey and David Bronson.

The directors elected Charles Murray to have charge of the river police, and authorized the employment of such assistance as may prove necessary.

TREES IN CITIES.

An interesting paper has been recently read by Dr. Pheno at Edinburgh on the benefits to be derived from planting trees in cities. Among the beneficial results to be obtained are, he stated, the relief to the optic nerve through the eye resting on objects of a green color. Just that which is effected by the use of green or blue glasses in strengthening and sustaining the power of sight, is attained, or at any rate, much aided, by the presence of green in nature; and in streets the only method to procure this result is by planting trees. It was pointed out by the author that whenever opportunity exists nature provides green and blue (the latter being the same color minus the presence of the yellow), and that as the absence of color produces snow blindness, and in tropical climes, where the ocean presents only a white reflected light from a uniform glassy surface, reduced optical power soon follows a long continuance of the absence of blue color, which becomes immediately apparent on motion of the waves. So in the streets, to the occupants of houses having a northern aspect, the glare of the reflected light is injurious; but the effect would be much modified by the coolness to the eye produced by the green trees. In ancient surgery, persons having weak or declining sight were advised to look at the emerald. In the old style of building, the streets being narrow, were both cooler from the sun not being able to penetrate them with direct rays, and less subject to noxious exhalations from the scouring and purifying effect of the searching air to which the narrow streets were subject, so that while there was no space for trees, there was also less necessity. Wide streets, on the contrary, are hotter, and require the shade of trees to cool them; and, as the case in London, which has so far done without trees in its streets, it was pointed out that not a modern street compulsory wide, but that the enormous increase in metropolitan buildings render every sanitary question one of importance; and the chemical properties of trees as shown by experiment give an important standing, irrespective of ornament or the pleasure they produce. Some of Dr. Pheno's experiments on this subject have existed over a period of 30 years, and he it was first tried the planting of trees in the streets of London. Since the reading of a former paper by him at Manchester, where the importance of the subject was pointed out, a number of streets in wealthy localities have been planted, and even Trafalgar Square, in the heart of the metropolis.

Do not let prejudice stand in the way of relief if you suffer from any lingering disease. Burdock Blood Purifiers cure others, why should it not benefit you? It is a specific for all forms of Blood, Liver, and kidney complaints. Nervous Headaches, General Debility, Scrofula and all diseases of the Secretory system. 10 Bottles 10 Cents.

PAPER PULP FROM WOOD.

The following is a description of the process of making wood pulp: The wood, four feet in length, and of any thickness, is brought in at the basement of the manufactory, placed in the barking jack (one stick at a time), where two men with draw knives rapidly peel off the bark. It is then conveyed by an elevator to the first floor, sawed in two foot lengths with crosscut saws, and passed on to the rip-saw, where it is slabbled (that is, a small portion of wood on opposite sides taken off), to permit it resting firmly in the grinding engine. It is then passed to the boring machine (an upright 1½ inch auger, with foot attachment, driven by power), where the knots are bored out. The wood is then placed in racks of the same size as the receptacle in the grinding engine, and carried out to be ground. The grinding engines are upright, and receive at a filling one-twentieth of a cord of wood. The wood is placed in a receptacle, and by a simple variable, automatic feed process, is pressed flatwise between two outward revolving rolls, composed of solid emery, which are flooded with a spray of water, carrying off the fibrillized pulp in a stream through revolving screens to the tank or stuff-chest in the basement. It is then pumped into a vat which forms part of the wet machine. In this vat is constantly revolving a large cylinder faced with fine brass wire-cloth, which picks up the particles of pulp out of the water and places them on the felt (an endless piece of woolen goods which makes between rolls, for different purposes, a continual circuit of the wet machine). On the cylinder is turned a heavy roll, called the "couch;" between the two, where they meet, the cylinder leaves the pulp, with most of the water pressed from it. The pulp now makes its appearance on the felt above the concha roll in a beautiful sheet, 38 inches in width, and is carried along in a steady flow a distance of about 8 feet, where it passes between (the water here being pressed from it) but not beyond two heavy rollers, the upper one iron, the lower one wood; it adheres to the upper roll, which is constantly turning, wrapping it up, and when a sufficient thickness is attained, is cut off by a knife being pressed to the roll, which is attached to the machine for that purpose. It now leaves the roll in a thick white sheet, 36x33 inches, where it is received by a boy in attendance on a table conveniently attached to the machine, and folded into a sheet 16x26 inches. It is then placed on scales until the weight is 100 pounds, when it is placed in a press and firmly tied into square, compact bundles. It is now ready for shipment to the paper mill.

Preservation of Lumber.

A correspondent writes as follows to the *Mill*:—"The question of the preservation of lumber from decay attracts considerable attention just now. It would be well, I think, for the Committee on Works to adopt the plan which has been well tried and is the least costly. The combination of lime with the other ingredients it is mixed with appears to be a ready method, and should take precedence of any other. The appearance of the streets at the present time suggests some other and more durable plan, especially the sidewalks and crossings, and it would be well to consider the most economical plan. The application of coal tar does not answer, as it necessitates the use of well-seasoned lumber, and is far more costly, inasmuch as inward decay sets in by the tar filling up the interstices of the wood, and forms a crust outside, preventing free ventilation. The lime admixture leaves the fibre clear, takes out the sap or fungi, and secures the material from all rot, either from sandy or clay soil.

A Wonderful Improvement.

THE CANADA LUMBERMAN.—This paper, formerly published in Toronto, has been purchased by Messrs. Toker & Co., of the Peterborough Review, and will in future be published in the latter town. The first number under the new management is before us and shows a wonderful improvement in the paper. THE CANADA LUMBERMAN will be purely a non-political trade organ and will contain such valuable information as should render it indispensable to all interested in lumbering operations.—*Coloury Sentinel-Star*.

CORRESPONDENTS.

All correspondence is of value to a paper, but it is often of more value to the man who writes it, or the town whence it is sent. When we are informed by a subscriber, as we often are, that he would not do without the *Lumberman* even if he had to pay \$50 a year for it, we feel that the benefit of this great mass of imparted information is not so great to us as to others. There is plenty of matter relating to the lumber business with which to fill a larger paper than this one, but we want facts from practical men. Such matter is what makes any paper valuable. The effusions of a theorist are not worth the snap of a finger to anybody. A man who recently engaged in manufacturing said to us, "I read 'Grimsshaw on Saws' from beginning to end, but a hard-handed, rough-looking old sawyer over in Michigan told me more about saws in twenty-five minutes than I could ever learn from the book."

We are frequently told by men that they do not feel competent to write for publication, but if they know the true inwardness of every experienced newspaper man they would not make such an excuse. A newspaper wants news, and it welcomes it from any source. It is easier to find ten smooth writers than one good news-gatherer. Every man living in a lumber region knows something of the country, the amount of business done, prices, and the outlook. Information regarding any of these points, although expressed in words wrongly spelled and sentences wrongly constructed, is of worth. It is nothing to put matter in shape for publication.—*Northwestern Lumberman*.

Lubrication of Bearings.

When a shaft bearing is at rest in its box, the oil is pressed out from under it; either out of the box altogether, or upward to the space above the shaft, between shaft and box. No doubt the metal of the shaft then settles down to actual contact with the metal of box. In starting a lot of machinery into motion, the metal of the shaft must actually drag, for a short distance, in contact with the metal of the box, making the machinery hard to start. But as the bearings make part of a turn in their boxes, the oil adhering to the surface of shaft bearings is dragged in between the box and shaft underneath, thus floating the bearing upon a sea of oil. This sea is, however, not very broad or deep; but there can be no doubt of flotation. As flotation takes place, the bearings rotate much more easily than when the metal drags in contact. This explains why starting friction is greater than friction of motion in machinery. When heavy pressures are brought to bear at the boxes, the oil is hindered from entering freely between the surfaces; and if, at the same time, the two surfaces are not nearly parallel, there may possibly, or even probably, be metal contact at the prominences. The high resistance thus caused will produce heat at the rubbing parts; which, by continuous motion, is sure to become excessive, resulting in destruction of lubricant, abrasion of metal surfaces, waste of power, etc.

Useful Hints.

The firm of Messrs. Oliver & Co., give some excellent practical advice to farmers. They say:—

"The kinds of hardwood lumber most in demand, either in the Dominion or for export, are walnut, cherry, butternut, chestnut, white ash, white oak, whitewood and basswood, all of which are now in good demand, as manufacturers are increasing their works and new ones are springing up in every part of the country. In the course of a few years these woods will become very scarce, and some of them will become entirely absorbed. This will cause the more common kinds, such as maple, birch, soft elm and black ash, to take their places.

"Our farmers, who own timber lands, cannot be too careful of them, and should use them with a sparing hand, for in the course of a few years their value will be largely increased.

"Our export trade is confined to the States and Great Britain, the former taking our sawn lumber and the latter being supplied in the shape of square timber."—*Ontario Agricultural Commission Report*.

THE OTTAWA VALLEY.

The *Citizen* of May 5th says:—According to present appearances there is every indication that the water in the Ottawa River will be unusually low this spring, much below the average height of ordinary years. In addition to the fact that the depth of the snow in the lumbering regions was much below the average during the past winter, the early thaws have melted away nearly all that was on the ground, and the water thereby formed has nearly all run off. In thick swamps, however, there still remains some snow and ice, although much less than usual. Consequently, unless we have heavy rains during the next two months, indications support the conclusion that the water in the Ottawa and its tributaries will be much below its ordinary height on the 15th of May, when the highest water generally appears. Low water will be a serious obstacle to getting out the large quantity of fine logs made during the past winter, which would be a great disadvantage to the trade, now that sawn lumber sells at such good prices. However, if lumbermen can manage to get their timber out of the small creeks into the main channel before the water begins to fall, they may succeed in bringing it to its destination.

New Rust Preventive.

A new method of protecting the surface of iron from rust has been brought forward by Mr. Ward, of London. The new "inoxidizing" process, as it is termed, consists in combining a silicate with the metal by the aid of heat. Cast or wrought iron objects are first coated, by painting or dipping, with a silicate glaze, which quickly dries, and the articles are then passed through a furnace, or rather oven. In this way the silicate composition is said to be fused and absorbed into the metal, which upon cooling is found to have assumed a dull black appearance. The coating is said to be so far homogeneous with the metal as to protect it from any change from long exposure to the atmosphere; and at the same time the silicate is not liable to disintegrate or separate from the iron. The articles treated in this manner may be ornamented by combining the silicate wash with any vitrifiable colors. Thus smooth polished colored surfaces may be produced upon iron, which, while possessing features distinct from ordinary enameling, yet present superior and more durable results than those obtainable by ordinary painting and varnishing.

Changes in the Diameter of Trunks of Trees.

According to the *Gardener's Chronicle*, M.M. Kraus and Kaiser have been making some researches, from which it appears that the trunks of trees undergo daily changes in diameter. From early morning to early afternoon there is a regular diminution till the minimum is reached, when the process is reversed and the maximum diameter attained at the time of twilight; then again comes a diminution, to be succeeded by an increase about dawn—an increase more marked than that in the evening. The variations in diameter coincide, therefore, with those of the tension, but they are shown to be inverse to the temperature, the maximum of the one corresponding roughly to the minimum of the other, and so on.

Mountain Mahogany.

This wood is indigenous to Nevada. The trees do not grow large; one with a trunk a foot in diameter is much above the average. When dry the wood is about as hard as boxwood, and of a very fine grain. It is of a rich red color and very heavy. When well seasoned it would be a fine material for the wood carver. In the early days it was used in making boxes for shafting, and in a few instances for shoes and dies in a quartz battery. Used as a fuel it creates intense heat, it burns with a blaze as long as ordinary wood would last, and is then found (almost unchanged in form) converted to a charcoal that lasts about twice as long as that of ordinary wood.

If you suffer from any chronic disease arising from Impure Blood, Sluggish Liver, disordered Kidneys or Inactivity of the Bowels; if your Nervous System is debilitated from whatever cause arising, do not despair, but procure a trial bottle of Burdock Blood Purifiers; it will only cost 10 cents. Large Bottles \$1.00. For sale by all medicine dealers.

ARBOR DAY.

Nebraska has established a custom which every one of the Western States, and many which are not included in that category, would do well to follow. For a number of years it has annually set apart a special day, called Arbor day, which the inhabitants devote to planting trees. The custom has been from its first inauguration very generally observed, and the result is that the bleak, naked surface of this Prairie State has become diversified with myriad groves, which relieve the monotony of the landscape and refresh the eye with the beauties of woodland growth, while they form a barrier against the winds and are developing into valuable preservers of timber. At the same time, in the cities and towns, and about residences in the country, ornamental trees of fine stature are affording the comforts of shade and the aesthetic pleasures of graceful form and hand some foliage. In fact Nebraska is being rapidly transformed from a treeless to a wooded country through the maintenance of its annual Arbor day.

Two Thousand Dollars.

The easiest, cheapest and best way to secure the above amount is to apply for membership in the Mutual Benefit Association of Rochester, N.Y. Pay Dr. S. B. Pollard, 56 Bay Street, one dollar for four medical examinations, he will send your application to the head office, if you are accepted as a member they will issue a certificate of membership, which, on payment of eight dollars, entitles you to full benefits as a member, should you die to-morrow, next day, next week, next month, or any time within three months, this Association will pay to your heirs, or assigns, the sum of two thousand dollars. At the expiration of the three months all you have to do is to pay your pro rata amount, which is from 20 to 75 cents on the death of some other member, who has done nothing worse than to die during the three months just past. By paying your assessments on deaths, you keep your certificate alive, and at the commencement of the second year you are assessed two dollars per thousand to keep up office expenses, etc., for the next year. No easier, surer or better schemes to carry two thousand dollars has ever been devised than the Mutual Benefit Associates, of Rochester, N.Y.

5-1-13

Should be in the Hands of all Interested.

THE CANADA LUMBERMAN.—This is the title of a 16 page semi-monthly newspaper, devoted to the Lumber and Timber Industries of Canada, the tenth number of which has just reached us. **THE CANADA LUMBERMAN** was first published in Toronto, by Mr. Alex. Begg, but has now come into the possession of Messrs. Tokor & Co., publishers of the Peterborough REVIEW, and like everything else sent out from that office, presents a very neat and tasty appearance. It is intended to be a purely trade organ, and entirely non-political. Special attention will be given to market reports, and the most trustworthy information possible will be obtained from each locality of the production of lumber and timber, and of the stock on hand. The number before us contains a large amount of useful information, and should be in the hands of every one interested in the lumber trade. Published by Messrs. Tokor & Co., Peterboro', at \$2.00 per annum.—*Trenton Trent Valley Advocate.*

A CORRESPONDENT writing from Beef Slough, the great sorting ground of the Chippewa river of Wisconsin, on the 26th of April, says the logs handled to date had been 3,500,000 feet, consisting of "pick-ups" or logs that had been hauled in off the bottoms. Last year the amount hauled was 200,000,000 feet, and it is not expected that more than that amount will be handled this season, though more logs have been put in on the stream. At the date of writing logs were coming into the boom at the rate of 2,000,000 feet a day, with a slow current. There is a lack of storage room at the works, but it is believed this will be obviated in a great measure by the large addition to the fleet of tow boats, so that logs can go out about as fast as they are rafted. There are about 400 men employed on the boom.

THE MISSISSIPPI.

Regarding the situation on the Mississippi river the Minneapolis *Lumberman* says:—The floods in the river during the last week have amounted to an embargo on commerce of every description in the west, especially in lumber. It is hard to tell just where so much lumber has gone to as the reported shipments of last week indicate sold. From the upper Missouri through to Chicago and down to Cairo the railroads have been damaged and suspended, while all reporting points show an advance upon last years' business. But for the week handling lumber on the Mississippi is almost impossible and only such lumber as is regarded unsafe is being moved and none sold. Great damage has been done already to lumber yards along the river as well as mills, booms, etc., by the floods. These things are adding to the cost of lumber this year and also reducing slightly the amount to be cut, both of which strengthen the market. From reports it is thought that nearly all the lumber held on the Missouri river will be lost and several million on the Mississippi, beside the large quantity of logs which have and being carried away.

Adventure in the Cave of Cacahuamilpa.

A serious but fortunately not fatal termination came to a recent excursion from the City of Mexico to the Cave of Cacahuamilpa, in honour of some American visitors. About fifty persons left Mexico, but the party received so many accessions by the way that when the cave was reached there were as many as 500 persons in the company, including the military guard.

It appears that Senior Carlos Quaglia, Governor of Morelos, had ordered a banquet to be prepared in that portion of the grotto which bears the name of "The Organ Salon," on account of the stalactites which have there assumed the form of an organ. The place was illuminated by electric lights, yet there were also many torches of resinous wood burning. The *dile*, who numbered perhaps ninety persons (there were also a great many servants), occupied the Organ Salon. In close proximity were placed several shelter tents for the ladies and children to sleep in. These were filled with sleepers, and along one side of the banquetting hall many gentlemen were lying on mattresses, mats, or blankets. A few of the more animated guests lingered over the table until two o'clock in the morning, and were chatting, when Governor Quaglia fainted. All efforts to restore him to consciousness seemed futile. While he remained in this condition some ladies complained of illness, others were asphyxiated, and a gentleman suggested that all this might be due to mephitic exhalations. Mothers at once hastened to their children, and, finding some in a stupor, comprehended the danger. A panic ensued. General Diaz ordered an instant retreat from the grotto. General Ord and others instructed the soldiers to carry out the ladies and children. Ex-Governor Romero Vargas aided Senior Marical, Minister of Foreign Relations, to scramble over the rocks. In fact, all who had strength assisted those who were asphyxiated, and every person was removed to a purer atmosphere. Some persevered until they reached the entrance of the cave (three miles distant) and threw themselves down on the bare ground, almost exhausted with fatigue, but safe.

Wild Cherry Wood.

Wild cherry is a wood for which a large demand has sprung up in the United States. In supplying the place of walnut, cherry is very valuable, and care should be taken of the growing trees. It is used extensively in making ebonyized furniture. It has a very close grain, takes the best stain, and is capable of high polish. Cherry is also used in the internal fittings of cars and buildings. It is common in Michigan and other States, and is probably as enduring as walnut.—*Lumber World.*

CHEBOGAN Democrat: The Pine river bridge at St. Martin's bay was carried away by the flood and 600,000 feet of logs came down into the lake. The logs were the property of the Mackinac Lumber Company, and their tug, the *Saugatuck*, is now engaged in picking them up, and all will probably be saved.

SALE OF TIMBER LIMITS.

An extensive sale of timber limits took place at the Russell House on Thursday afternoon, May 5th. They were what is known as the Cook & Waddell limits on the Kippewa. Mr. I. B. Tackaberry was the auctioneer. There was a good attendance of lumbermen, and bidding was quite active. The following were the sales effected:—

- No. 1 limit—68 square miles, to Mr. S. S. Cook, for \$88,400, being \$1,300 per square mile.
- No. 2 limit—50 square miles, \$10,000, knocked down to Mr. J. T. Lambert for Gilmour & Co., being at the rate of \$800 per mile.
- No. 3 limit—50 square miles, \$650 per mile, \$32,500; Mr. Lambert for Gilmour & Co.
- No. 4 limit—38 square miles, bought by E. B. Eldy at \$170 a mile, \$6,460.

The total receipts of the sale, therefore, amounted to \$167,360 for the 206 square miles of limits. This is one of the largest sales in amount ever effected in Ottawa, at public auction.—*Ottawa Free Press.*

Brother Gardner on Labor and Capital.

The Lino-Kihn Club is a facetious creation of the Detroit *Free Press*, and the reports of the imaginary meetings of the club, under the imaginary presidency of Brother Gardner, furnish the readers of the *Press* with perennial supplies of wit. The following is a specimen:—

The Secretary read the following:—
"CHICAGO, March 30, '31.—Bro. Gardner—Please inform your friends whether you sympathize with capital or labor, and oblige a
"WORKINGMAN."

"In the first place, dar' am no call for me to sympathize with either," replied the old man in answer. "One an' jist as necessary to the colder as two wheels to a wagon. Capital clars away a spot an' builds a factory an' gins fifty or a hundred men a chance to aim a far support fur demselves an' families. Dat factory wouldn't be dar' cept fur capital, an' its wheels can't move without labor. If dis' workin' man wanted to draw me out on the question of strikes I has on a word to say. I believe dat the average employer pays his help a far price an' all he kin afford to. I b'lieve he knowa his business, an' am mo' competent to run it dan do men who labor fur him. If I can't work fur a man fur do price he offers I stan' aside. If I hire a man I pay him do goin' price, an' I doan' let him tell me dat I mus' do thus an' so. Men strike becase dey can't dictate, but the same men wouldn't be willin' that der employers should dictate to dem how much rent to pay, what close to buy, and how to spen' deir wages. As I soid befo' dar am no call fur sympathy in do case. De mo' strikes we have do less money will be put into manufactures. When a capitalist kin loan his money at good interest he am foolish to put it into a factory whar' demage gues kin haris an' ruin him. Jist you remember what I'm talkin'." De mo' unions de less factories. De mo' strikes de less work. Do you fink I'm foolish 'nuff to take my \$800 out'n de bank, whar' principal an' interest am safe as a rock, an' put it into a coopershop, whar' three workmen could sink do hull of it in one strike becase I couldn't pay mo' fur making do barl's dan the same would sell fur? Shoo! Fings am comin' to a putty pass when do man wid a shovel on his shoulder kin boss do man whoso factory turned out that identical toole!"

A Compendium of News.

THE CANADA LUMBERMAN.—We have received No. 10, of **THE CANADA LUMBERMAN**, formerly published by a firm in Toronto, but now edited and published by Tokor & Co., of the Peterborough REVIEW. Whatever this publication may have been previous to its transfer, the number before us is certainly a credit to its present publishers, in typographical appearance, in the description, quantity and quality of its reading matter, and get up generally, and furnishes a compendium of lumbering and commercial news of the utmost importance to lumbermen and commercial men generally. We congratulate the publishers upon their enterprise, and sincerely hope that the **LUMBERMAN** may prove prosperous and profitable in their hands.—*Norwood Register.*

Wanted.

A SECOND HAND DOUBLE EDGER also a LATH MACHINE, both in good repair. Reply stating lowest cash terms or particulars to Box 1002, Peterborough, Ont.

For Sale.

A 10 INCH LEFFEL, WHEEL, and COMPLETE CIRCUIT LATH MILL, all in good order, suitable for a fifteen foot head. Apply to Box 1002, Peterborough, Ont. L10

Reid & Co.,

WHOLESALE LUMBER DEALERS. Lumber, lath, shingles, &c. Car lots to suit customers. Best Culls in the market at from \$0 to \$7 per M. OFFICE ON DOCK—Esplanade, foot of Shelburne Street, Toronto. L15

Hardwood Timber Land

FOR SALE. 1200 ACRES HARDWOOD TIMBER LAND near Nipissing Railway, Cobocook. Easy terms OSHAWA CABINET CO., Oshawa. L13

Situation Wanted.

A Book-keeper of first-class experience desires a situation with a lumber firm. An opportunity of acquiring knowledge of the lumber trade more of an object than the amount of salary. Unexceptionable references both as to character and ability. L16 Apply to the Editor of THE CANADA LUMBERMAN.

The Stewart House,

Headquarters of Lumbermen in Peterborough, corner of Hunter and Water Street—Good accommodation. Terms, \$1 per day. Free bus at trains. L15 T. CAVANAGH, Proprietor.

Allandale Junction Hotel

Travellers by Northern Railway have 16 to 20 minutes by all trains, for refreshments. Solid meals. Tea and coffee at counter. Fine brands of Liquors and choice Cigars. L17 E. S. MEERING, Proprietor.

Orillia House,

ORILLIA. New and Commodious Brick Building; best north of Toronto, splendid sample rooms, centrally located, free bus. L20 JOHN KELLY, Proprietor.

The Queen's Hotel,

TORONTO, CANADA. McGAW & WINNETT, Proprietors. Patronized by Royalty and the best families. Prices graduated according to room. L20

St. Lawrence Hall,

PORT HOPE. Is noted for its superior home-like comforts a well kept table, equalling the best hotels in Toronto, and large, well furnished rooms. Good sample rooms on ground floor. Walton Street, Port Hope. L20 WM. MACKIE, Proprietor.

St. Louis Hotel.

THE RUSSELL HOTEL CO., Proprietors. WILLIS RUSSELL, Pres., Quebec. This hotel, which is unrivalled for size, style and locality in Quebec, is open throughout the year for pleasure and business travel. L18

Queen's Hotel,

BRACEBRIDGE. JOHN HIGGINS, Proprietor. The proprietor (late of Georgetown), having lately purchased the above hotel, will endeavor to make it one of the best houses in the District of Muskoka. Tourists and hunting parties will receive every possible attention. Free bus to and from steamboat wharf. Terms, \$1 per day. L20

The American Hotel,

BARRIE, ONT. Collier Street, Adjoining the Market. RATES REASONABLE, CENTRAL LOCATION, FREE BUS TO AND FROM ALL TRAINS. L14 Every accommodation for Commercial and LUMBERMEN. W. D. McDONALD, Proprietor.

Fraser's Hotel,

GRAVENHURST, ONT. HENRY FRASER, proprietor. (successor to Douglas Brown.) Mr Fraser having purchased and thoroughly renovated and refitted that old established hotel, so long and popularly kept and owned by Douglas Brown, in the Village of Gravenhurst, is now in a position to attend to the wants of the travelling and general public. Parties en route to the Muskoka District, will find "Fraser's" a comfortable stopping place. The bar and Larder are well furnished. Convenient Sample Rooms for Commercial Men. Good stabling and attentive hostler. Free bus to and from trains and steamboats. L25

PILING LUMBER AT THE MILLS.

It is now some four or five years since the *Lumberman* first called the attention of the mill men cutting lumber for this market to the advantage of piling and drying their lumber at the point of production, over the plan then almost exclusively in vogue of shipping it to this city green and seasoning it in the yards. In that time, the methods of making and handling lumber have undergone marked changes: the facilities for sawing have improved, and the average annual output of the mills in what is known as the Chicago district has very largely increased. The process of lumber making is in hardly any respect exactly what it was in 1877, and, similarly, we find that in handling the mill product, improvements have been introduced that have materially lessened the expense and added to the profits of manufacturers. A good many mill men have followed the advice of this paper, and have made a practical test of the plan of piling at the mills, and shipping lumber to Chicago dry. The fact that none of them have found the scheme impracticable or have abandoned it after a fair trial, is pretty reliable evidence that it had in it, in the first place, nothing that was wild or visionary. Some figures printed in connection with our Annual Review of the production in this district last year give a pretty good notion of the increase in mill piling in the last four years. Comparisons of the amount carried over at the close of 1880 and 1877, with the amount sawed by the mills in those years, prove that while the increase in the cut for last year over the earlier one was less than 60 per cent., the gain in the quantity wintered over was fully 115 per cent., or nearly double. These figures demonstrate conclusively that the operators who have tried the plan of piling at the mills have found it profitable, and have continued to follow it.

The *Lumberman's* attention has been directed to this matter by the fact that several of the largest manufacturers who own yards in Chicago have lately been maturing plans to pile a considerable part of their cut at the mills, instead of occupying so much yard room here. The advance in dock rents is so great that it is becoming an important matter for the lumbermen to take up as little space in this city as they can, and, as a means of escaping a portion of this tax on their stock, a number of them are preparing to pile and dry at the mills. We are informed that several of the Menominee river operators are already making preparations to pile a large part of this season's product on the mill docks, with the intention of holding a good deal of it over for shipment early in the spring, when dry lumber is wanted and is generally scarce. They expect in this way to escape the necessity of enlarging their facilities here, which, with dock rents at \$9.50 per foot, is an important consideration. The example of these operators is likely to be followed by others who have the accommodations at their mills for piling, and probably the close of the present season will find on the mill docks the largest stock that has ever been carried over.

It would seem that the advantages of cross-piling at the place of sawing hardly needs consideration at this time. They are pretty generally understood and admitted by saw mill men. For manufacturers who do not own yards at this point, the plan seems especially desirable. By adopting it they will escape many of the annoyances and losses that arise from the shipment of the lumber just as it comes from the saw, and its sale on commission here, by reason of which allowances have often to be made to the buyer which might have been avoided if the manufacturer could have sold his lumber in pile where the purchaser could see exactly what he was buying. A man can always sell his own lumber, moreover, to better advantage than some one else can sell it for him, which is another good reason why producers should, as far as possible, endeavor to hold their lumber at the mills and dispose of it themselves.

It is true, unquestionably, that the new plan, if it may so be called now, requires a larger and longer investment of money than the old one of turning the lumber into cash as soon after it leaves the saw as possible. In order to pile his cut, a mill man must be content to expend something in the way of interest, insurance,

and, possibly, taxes; but the returns are sufficient to make this a paying investment. There is a nominal difference of fully \$1 in the value of green and dry stock, and, actually, the difference is much more, for the fact that lumber is dry implies that it can be handled and freighted at a much less cost than if it were full of sap and water. There is something saved at nearly every point in its progress from the mill to the buyer's yard, and all this economy contributes to the profit of the man who dries it. Besides, if there were any doubt remaining as to the profit to be derived from seasoning lumber, it could not stand against the fact that lumber is bought and seasoned in Chicago where rents are high, taxes excessive, and labor much more costly in proportion than it is at producing points, and the process made to pay those who undertake it fairly, if not handsomely.

There is one other fact that should not be lost sight of in this connection; namely, that the manufacturer who piles his lumber occupies a comparatively independent position toward those who buy. He does not stand in mortal fear of a break in prices, or run the chance of sending a heavy consignment to the cargo market at the wrong time, and having to stand the consequent loss, because of the impossibility of doing anything with his lumber but selling it after he gets it there. If the market happens to weaken temporarily he need not suffer by it, unless he chooses to do so. He has his stock where it will keep, and he is prepared with the facilities for holding it; so that if prices are down to-day and there is reason to think they will improve shortly he can withhold his stock from sale long enough to cover the interval of weakness.

We shall be much disappointed if, as we said once before, there is not a considerable increase in the amount of piling at the mills this season, over what has been done in this way heretofore. Our reasons for so thinking are, first, that the plan is a thoroughly practicable and profitable one in itself, and one that is looked upon with favor by the shrewdest of our mill men, and, secondly, that the mill owners and operators are generally in better shape to take advantage of it than they ever were before. There is no doubt about the fact that they made money last year, and that they enter upon the present season with greater financial resources than they have ever had. They are therefore prepared, with few exceptions, to conduct their business just as they want to, and with a view to getting out of it all that it holds for them, and it is not to be assumed that they will overlook so important a source of profit as this. We do not hope to see all manufacturers cross-pile their lumber; we know very well that many of them cannot do it, because of inadequate dock facilities, or because of other obstacles in the way; but we are equally well aware of the fact that there are many others who do not labor under such disadvantages, and of such we look for a considerable proportion to try the plan of piling and drying their lumber at the mill.—*Northwestern Lumberman.*

Spruce Deals.

There is no doubt but spruce deals are on the decline in the London market. The cargo of the *St. Julien*, from St. John, N.P. (which usually stands next in favor to Quebec), was sold a few weeks since at a decided fall in value. A cargo from the same port sold last year—about the latter part of March—fetched at the Baltic rooms on an average about £7 10s., now the highest price for the best lengths and sizes unsortea was £6 15s., and the average was in fact not more than £6 7s. 6d. all through. A couple of lots, about 3,000 pieces, 3x21 in., were knocked down at £6 5s., good lengths, varying from 18 to 25 feet. The freight charges would not be much short of £4 per standard, and if we deduct this and other expenses attached to these goods, we shall find very little left to go towards the first cost at St. John. Last fall spruce was in great request at the shipping ports, and for the best sorts at one time as much as £8 was paid. Shippers this season will think twice before consigning there again.

Yellow Oil is par excellence the remedy for Pain, Lameness, Rheumatism, Croup, Coughs, Burns, Frost bites, Stiff Joints, and all flesh wounds. Any medicine dealer can furnish it.

TREE CULTURE.

Important as is tree culture with us, the subject is an insignificant one in the older Provinces compared with the position it assumes in the daily life in the North-West. Our prairies are not so bare of trees as are those farther south, and therefore the question has not the life-and-death importance it has in parts of Minnesota and Dakota. Yet if our pioneers are wise they will, after their first needs are satisfied, plant the seeds of trees in shelter belts over a space equal to several acres. The railroad company may properly be called upon to introduce to our territory the liberal policy in vogue in the North-Western States. A good rebate should be given on the price of all land that is put under trees, and young trees should be carried free of charge. To give an idea of the indispensableness of trees, we quote a few sentences from a letter by Mr. S. M. Emory, who, the *St. Paul Tribune* says, knows as much of the subject of North Western tree culture as any man living. Mr. Emory says:—

"One-third of the money expended by the railroads in this State during the past ninety days in shovelling snow, saying nothing of loss of life, destruction of property, and the general loss in the shrinkage of revenue in freights, would plant sufficient wind-breaks on every rod of prairie storm-infested railroad in the State. Suppose the six lines of railroad crossing the State from east to west were protected by vigorous, strong-growing shelter-belts of cottonwood, white willow, or larch, and that these were supplemented by planting shelter-belts along all highways, and that the hundreds of timber-claims were covered with a vigorous growth of young timber, as required by law, could we fail in controlling the effects of these terrible blizzards? The intensity of the winds would certainly be modified, and a corresponding degree of comfort and safety be the result. This is not a matter of idle speculation, but it is susceptible of tangible, ample proof. In many places the shelter-belts along the line of the Manitoba Railroad are packed full to the top most twigs, rendering great assistance in protecting the road-bed from the immense drifts, in spite of the fact that these belts have not had anything like reasonable care for several years."

Mr. Emory suggests that railroads which are subject to snow blockades should put a rod of land on each side of their line in trees.—*Globe.*

Which Way to Run the Splice of a Belt.

A new England journal is allowing the discussion of whether there is a wrong way to run a belt with regard to "splices." The general answer to this question is: Put the belt on so that the pulley in slipping on the face of the belt shall run with and not against the splices. But if the belt slips on both pulleys, of a belted pair, then there can be no difference which way the splices of the belt lie, for the motion of one pulley will be against and the motion of the other will be with the splices, which is the true state of the case, but which does not often happen; there will mostly be conditions favoring slippage on the one or other of the pulleys, when it is known which one it is, then put the belt on to suit this condition. In the cases where there is no slipping, if the driving pulley acts favorably on the splices, then the driven pulley is sure to be against them, and so it may be said there is really nothing in the advice directing the way a belt should be run, except for the cases of known slippage. So says Mr. John H. Cooper, who is certainly competent authority, in a recent communication.

Appreciated.

COTE ST. ANTOINE,

Montreal, May 4th, 1881.

MESSRS. TOKER & Co., Publishers of THE CANADA LUMBERMAN, Peterborough, Ont.

GENTLEMEN,—You, or some friend, has been forwarding me your periodical I think from its first issue, and you will please receive enclosed \$2 to pay for it for the year, since I first received it, the date of which you will no doubt be able to ascertain. I like the paper very much. It is in my opinion the best published on the subject in America, and is far away ahead of the *Timber Trades Journal* of London, England.

Yours,

JAMES LITTLE.

PILING OR SHARPENING THE TEETH OF SAWS.

The greatest wear of a saw is on the under sides of the teeth. File nearly to an edge (but not quite), leaving a short bevel of, say 1/32 of an inch wide on the under side of the point. But in no instance file to a fine point and thin wire edge.

First.—Be sure that the saw hangs properly on the mandrel.

Second.—The saw must be in proper line with the carriage, and the carriage run true.

Third.—The mandrel must be level and run tight in the boxes.

Fourth.—Round off the saw so that all teeth will cut the same amount, and be sure that the very points of the teeth are widest.

Fifth.—Do nearly all the filing on the upper sides of the teeth and see that they are well spread at the points; file square and have them project alike on both sides of the saw.

Sixth.—If the saw heats in the centre when the mandrel runs cool in the boxes, cool it off and line it into the log a little.

Seventh.—If the saw heats on the rim and not in the centre, cool it off and line it out of the log a little.

Eighth.—Do not try the experiment of bending each alternate tooth for the set, when using inserted-toothed saws.

Ninth.—File the teeth hooking, so that the swags will spread them at the points.

Tenth.—Use a light hammer in sawing, say three-quarters to one pound weight.

In filing solid toothed circular saws, let the throats or roots of the teeth round, or as the saws are when new. Angles, or square corners, filed at the roots of the teeth, will almost invariably cause a saw to crack; the filing of such angles or square corners will cancel the warrant on any saw. The back or top of the tooth leads or guides the saw, and should be filed square across. The under side of the teeth may be filed a little beveled on the teeth of saws that are bent alternately for the set so as to leave the outer corners of the cutting edge longest. These directions, if carefully followed, will not only put the saw in excellent condition for cutting, but will, to a great extent, serve to keep it true in circumference, and even in balance. They have been prepared by J. E. Emerson, of Emerson, Smith & Co., who is, as our readers know, a practical saw maker.

LABOUR ON THE OTTAWA.

The *Ottawa Daily Citizen* in a review of the prospects of lumbering in that valley says:—The labor question in all of the lumberman's operations, is one of the greatest importance, and there seems no chance of a clash between labor and capital this season. Among the employers there seems a general idea that a slight advance in wages will take place, but no one of them seem to apprehend the slightest difficulty in obtaining all the hands they may require for any kind of work, and among the men so far, even those who are over sanguine as to what the season may produce, there seems no inclination to force the price of their toil above its fair market value. The Upper Ottawa Improvement Company, which owing to the fact that work is steady on it the whole season through, can get men cheaper than most private firms for the drive; are paying \$3,000 per month more than they did last season. In the mills, however, it is not probable that much over a dollar a day will be paid for day hands, and the usual rates will be observed in regard to night hands. Men on the drives, especially the short drives, are now commanding high wages, in some cases \$30 per month and found being paid, and in a very few exceptional cases first-class men on difficult work have secured a higher figure.

Fire Proof Buildings.

There if practically no such thing as a fire proof building. Brick comes nearer to being a fire proof material than any other substance. Iron is treacherous and almost worthless in many places where it is commonly used. A good oak pillar is far better as a support in case of fire than iron. None of the building stone generally in use of any value in case of severe fire, and granite is the worst, or least reliable of all.

THE RELATION OF FORESTS TO CLIMATE AND SOIL.

Mr. F. C. Zimmerman, who is connected with the United States Consulate at Berlin, in a late report to the state department at Washington, gives some valuable information upon this subject, which is becoming a very important one to the people of this country. He says that the influence of forests upon the climate and the fertility of the soil is most carefully studied at the forest academies and stations in Prussia, and the conclusions that are reached there can hardly fail to be of value to those in this country who are interested in tree growing. As warnings to wood destroyers, large tracts of land are pointed out in various countries which formerly were covered with forests within whose borders were springs and brooks, where now, man having thoughtlessly stripped the land of its trees, the eye looks in vain for a grass plot. The sunbeams unhindered strike the naked earth and raise the temperature of it and the neighboring air to a high degree; in the night, however, this heat is quickly and freely given out into space and the temperature suddenly sinks. Sufficient rain does not fall, nor does it fall regularly, but pours down in torrents and no good comes of it. The arid ground cannot retain the moisture, but from the dry surface, the fallen water evaporates like ether, and vegetation receives but little assistance in its effort to grow.

These students are now satisfied that the forest moderates the extremes of temperature and ameliorates the climate. It is especially worthy of note that the daily temperature of forests does not reach so high a point in summer as that of open fields, nor in winter does it sink so low. Changes of temperature do not occur so suddenly in the forest, for ground shaded by trees becomes warm more slowly than uncovered land, and does not cool off so quickly.

If one examines the statistics furnished by the Prussian meteorological stations, relative to the temperature of the surface of the earth and the neighboring atmosphere in their districts, it will be found that the rise and fall of the same are quite gradual, and that the extremes of temperature are reached somewhat later in the forests than in the open fields. This gradual rise and fall of temperature is one of the chief requisites for the proper growth of forest trees as well as for plants generally. Young trees are often injured by sudden changes of temperature, and some species cannot thrive unless some protection from such changes is furnished them. The leaves of the trees retain a great deal of water, which is evaporated and thus given back to the air, the humidity of which is thereby increased, and the supply of moisture to the soil is rendered more equal and regular. That the soil receives is absorbed and evaporated very slowly. Much of the rain that falls upon open fields is wasted, the supply being often greater than the requirement for the time being. Forests, moreover, directly induce rain. The air within the forest becoming warm by the absorption of heat, both from the ground and the air next above it, leaves over the forest a current considerably colder than the neighboring air, and rain-clouds passing over are, in most cases, condensed by coming into contact with this colder atmosphere. To exercise such an influence, however, on atmospheric temperature, the forest must be of very considerable extent. Authorities on the subject of forest culture in Prussia are unanimous in the opinion that rainfall is more abundant and regular in districts well wooded than in bare lands. In this connection it is worthy of remark that the forests are generally rich in springs and brooks. This alone goes a great way toward showing the intimate relations between woods and water.

And further, while the forest tends to moderate climate, while it regulates the supply of moisture, the forest land is continually receiving a supply of the richest soil through the yearly fall of leaves. This soil increases the capacity of the ground for warmth, its moisture-retaining properties, and furnishes all the requirements necessary for the growth of plants. The important influence of forests on climate and the fertility of the soil having long been recognized, it has, therefore, often been attempted to forest lands sterile because of unfavorable conditions of climate. These attempts have often been

crowned with success. The foresting of the Luneberg heath, a sandy plain near Hanover, was successful, though accomplished at great expense and in the face of various difficulties. In like manner the foresting of sandy stretches of land in Brandenburg and other Prussian provinces has resulted very favorably; the aim in all these cases being, of course, to counteract the influence that these sterile tracts exercised over the neighboring fertile soil and to convert them into useful and productive possessions.

Again, referring to the fact that considerable moisture is necessary for the growth of trees, it is proper to remark that when it is deemed desirable to change the course of a stream or rivulet, in order to irrigate fields designed for cultivation, it should be carefully ascertained by noting the rainfall, remaining springs, brooks, etc., whether such a change can be made without detriment to such woodland in the neighborhood as may be in part dependent on such waters for moisture.

Draining too much of the water from forest lands destroys the forests, as deforesting often dries up streams. In Prussia this is so well understood and appreciated that before any such course is pursued, very careful consideration is given to the subject, and the forest officials are called upon for, and they submit, reasons *pro* and *con*. A few years ago, for instance, it was desired to reclaim certain bog land near Chorn, in Brandenburg, but in order to do so, it was found that it would be necessary to reduce the Paarsteiner lake a square mile or more. To this the forest authorities strenuously objected, because they feared that such a reduction of the water surface would so materially lessen the moisture of the air and soil, that the very existence of the neighboring forests would be hazarded. The project was therefore not carried out. This one instance shows how thoroughly the science of forest culture is appreciated in that kingdom.

The proper hygrometric and electric equilibrium for successful farming can only be maintained, it is estimated, when at least 20 per cent. of the total area is forest land. Mirabeau estimated, in 1750, that 32 per cent. of the land in France should be woodland. Rentzsch estimated that in the interior of Germany the proportion of woodland to the entire surface should be 23 per cent., while near the coast, where the air is supplied with humidity by evaporation from the sea, 20 per cent. would be sufficient and proper. In this connection one writer very pertinently inquires: "If the German states require 23 per cent. midway between the North sea, the Baltic, and the Mediterranean, what is demanded for the great area between the Mississippi and the Rocky Mountains, almost without water from the Gulf of California to the Polar sea?"—*Nor'western Lumberman*.

To Harden and Temper a Saw.

Fix it by its hole to a bar or rod, as though it was an arbor. Heat evenly over a charcoal fire to a good cherry red. Dip it evenly in a horizontal—level—position into a bath of whale or lard oil, moving it horizontally until it is cool. Remove it, and with the oil on it heat it over the fire until the oil flashes or flits over the surface. Do not allow the oil to burn. In all cases the saw must be hardened horizontally not vertically. Experiment has proved this method to be a perfect success.

Steel Bands for Transmitting Power.

A patent recently granted in Vienna and Berlin uses bands of steel, tempered and hardened, to transmit motion from one pulley to the other, the faces of the pulleys being turned perfectly flat and then faced with a varnish of resin, shellac and asphalt. The fastenings of these belts are of a peculiar structure and can not properly be described without engravings.

Invaluable to the Trade.

THE CANADA LUMBERMAN.—This paper, which was formerly published in Toronto, will in future be published in Peterborough, Messrs. Toker & Co., of the REVIEW, having become the proprietors. The LUMBERMAN, being a purely trade organ, and devoted exclusively to the lumbering interests, will contain information such as will render it invaluable to those engaged in that business.—*Hastings Star*.

TARIFF OF RATES.

To be levied during the ensuing season (1881) by the Upper Ottawa Improvement Company, in connection with the undermentioned works:

	Tolls	Working Expenses
	Per piece	Per piece
I.—THROUGH DRS JOACHIM BOOM.		
Saw logs, 17 feet and under.....	1 cent	2 cents
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	4-0 ct.	24 cts.
do do 25 to 35 feet long.....	5-0 ct.	33 cts.
do do 35 feet and upwards in length.....	8-0 ct.	54 cts.
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	1 1/2 ct.	8 cts.
Oak, Elm and other hardwood, square or flatted.....	2 cts.	12 cts.
II.—THROUGH FORT WILLIAM BOOM.		
Saw logs, 17 feet and under.....	1 ct.	
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	4-0 ct.	1 1/2 ct.
do do 25 to 35 feet long.....	5-0 ct.	1 3/4 ct.
do do 35 feet and upwards in length.....	8-0 ct.	2 1/2 cts.
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	1 1/2 ct.	4 cts.
Oak, Elm and other hardwood, square or flatted.....	2 cts.	6 cts.
III.—THROUGH ALLUMETTE BOOM.		
Same as No. II.		
IV.—THROUGH MELONS (CHENAL BOOM)		
Saw logs, 17 feet and under.....	1 10 ct.	1 ct.
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	2-15 ct.	1 1/2 ct.
do do 25 to 35 feet long.....	1-0 ct.	1 1/2 ct.
do do 35 feet and upwards in length.....	4-15 ct.	2 1/2 cts.
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	2-5 ct.	4 cts.
Oak, Elm and other hardwood, square or flatted.....	3-5 ct.	6 cts.
V.—PASSING LAPASSE BOOM.		
Tolls same as for No. IV. No charge for Working Expenses.		
VI.—THROUGH IMPROVEMENTS IN MISSISSIPPI (CHENAL, CHATS RAPIDS AND QUIC BOOM OR ANY ONE OF THEM.)		
Saw logs, 17 feet and under.....	1 ct.	1 1/2 ct.
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	4-0 ct.	2 cts.
do do 25 to 35 feet long.....	5-0 ct.	2 1/2 cts.
do do 35 feet and upwards in length.....	8-0 ct.	4 cts.
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	1 1/2 ct.	6 cts.
Oak, Elm and other hardwood, square or flatted.....	2 cts.	6 cts.
VII.—THROUGH IMPROVEMENTS FROM DISCHARGES TO HEAD OF HULL SLIDE, NORTH SIDE.		
Saw logs, 17 feet and under.....	1 ct.	
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	1 1/2 ct.	
do do 25 to 35 feet long.....	1 3/4 ct.	
do do 35 feet and upwards in length.....	2 1/2 cts.	
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	4 cts.	
Oak, Elm and other hardwood, square or flatted.....	6 cts.	
VIII.—THROUGH IMPROVEMENTS IN THOMPSON'S DRY.		
Saw logs, 17 feet and under.....	1 ct.	
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, 17 feet and under 25 feet long.....	1 ct.	1 1/2 ct.
do do 25 to 35 feet long.....	1 1/2 ct.	1 3/4 ct.
do do 35 feet and upwards in length.....	2 cts.	2 1/2 cts.
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	3 cts.	4 cts.
Oak, Elm and other hardwood, square or flatted.....	4 1/2 cts.	6 cts.
IX.—THROUGH IMPROVEMENTS IN LINCOLN'S EDDY.		
Saw logs, 17 feet and under.....	1 ct.	
Red and White Pine, Tamarac, Spruce and Hemlock, round or flatted, over 17 feet and under 25 feet long.....	1 1/2 ct.	
do do 25 to 35 feet long.....	1-12 ct.	
do do 35 feet and upwards in length.....	2 cts.	
Red and White Pine, Tamarac, Spruce and Hemlock, square.....	1 ct.	
Oak, Elm and other hardwood, square or flatted.....	1 1/2 ct.	
X.—THROUGH BOOM BELOW THE OUTLET OF HULL SLIDE		
Same as No. IX.		

Mothers who are startled at the hour of midnight by that ominous hoarse cough of your little ones, what would you not give for a prompt and certain means of relief from that dread destroyer of your children, CROUP? Such a means you may have for the trifling cost of 25 cents. It is Haggard's Yellow Oil, the great household remedy for all inflammatory and painful disorders. Do not rest over night again without it.

FOREST FIRES.

Forest fires are numerous during this month, and too stringent measures cannot be taken to prevent carelessness on the part of settlers, and incendiarism by tramps. In New York such offences are criminal. Under the revised statutes of that State, every person negligently setting fire to his own woods, or negligently suffering a fire kindled upon his own wood or fallow land to extend beyond his own land, is to be deemed guilty of a misdemeanor, and, on conviction, is liable to a fine not exceeding a thousand dollars or imprisonment for a term not exceeding one year. A peculiar rule also applies to civil suits for damages occasioned by forest fires in Suffolk county. Wherever a person who has kindled a fire on his own land permits it to extend beyond, to the land of another, he is deemed to have done so negligently, and the law imposes upon him the burden of proving "beyond every doubt"—these are the words of the statute—"that there was no negligence on his part, and that the fire extended from his own land from causes entirely beyond his own control." These laws are found to have a wholesome effect.—*Mail*.

A Wood-Splitting Machine.

A novelty in mechanics is a wood-splitting machine, which E. W. Peck has used near Cambridgeburgh, Vt. It acts exactly upon the guillotine principle. An enormous axe, weighing with its fixtures, 200 pounds, runs up and down between two uprights, and is controlled by a pair of levers. As the section of a log drops from the buzz saw, it rolls down an incline to the splitter. Here a workman places it under the axe, which, descending, splits it with incredible ease and despatch. The toughest and knottiest "old settlers," which it would take a man half a week to split with an ordinary axe, are disposed of in a second. The rapidity with which it works may be imagined from the fact that it can split wood as fast as it can be sawed in a mill. It does as much work in a given time as twenty men could accomplish.

Timber Seasoning and Preserving.

A foreign exchange describes a method which it says has been utilized to a large extent in France. By this new process, the antiseptic properties of carbolic and other tar acids are carried through the heart and the innermost pores of the largest log, all the free water and fermentable sap being extracted by superheated steam. It is said that all kinds of wood may be preserved. A noteworthy thing reported is, that the timber if first so softened by the process, under appropriate treatment, it may be pressed into various shapes, after which it hardens and resists the attacks of fungi or of insects. As licenses have been taken out in England, we hope for fuller information as to the process itself and its practical results.

Growth of Trees.

As the result of observation and from the testimony of reliable men, the following is about the average growth in twelve years of the leading desirable varieties of trees when planted in belts or grove, and cultivated.—White maple, one foot in diameter and 30 feet high; ash-leaved maple or box elder, one foot in diameter and 20 feet high; white willow, one and a half feet in diameter and 40 feet high; yellow willow, one and a half feet in diameter and 35 feet high; Lombardy poplar, 10 inches in diameter and 40 feet high; blue and white ash, 10 inches in diameter and 25 feet high; black walnut and butternut, 10 inches in diameter and 20 ft. high.

Sharpening Old Files.

The edge produced on files by acid does not hold; a recut file differs from a new one in temper, as drawing and replacing the temper injures the steel, the original temper seldom being attained. The only method of sharpening a file and making it as good as new, is by the application of the sand blast. I have been using this in my shop about six months, and can sharpen an old file equal to new (without disturbing the temper) in from one to three minutes. I prefer old files thus treated to any new files, as it makes them keener and smoother cutting, and preventing breakage of teeth.—*W. A. Foster in Blacksmith and Wheelwright*.

Travelling Agent.

MR. A. L. W. BEGG has been appointed agent for the CANADA LUMBERMAN, and is authorized to collect subscriptions and grant receipts therefor and to make contracts for advertisements appearing in its columns.

The Canada Lumberman

DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

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Advertisements intended for insertion in any particular issue should reach the office of publication at least three clear days before the day of publication, to insure insertion.

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. MAY 16, 1881.

The saw log drive belonging to Fowls Bros., Hastings, Ont., arrived at Lakefield on Wednesday morning, and that of J. Z. Rogers, of Ashburnham, at Youngs' Point.

MESSRS. R. & G. STRICKLAND are very busy cutting up about a million feet of basswood, ash, etc., at their Lakefield water mill, which has lately been thoroughly overhauled and is now doing better work than it ever did before. Too little attention has hitherto been paid to the getting out of hardwoods in this section of Ontario.

The Tanito Company, of Stroudsburg, Monroe Co., Pa., compelled by the increased demand for their celebrated emery wheels and grinding machinery, are about enlarging their already extensive works. Plans and specifications were perfected for a building 24x64 feet, four storeys high. In consequence of the lateness of the season, however, it is impossible to get out the lumber in time. The original plans are therefore modified temporarily, and a building of two storeys, 24x32 feet, will be erected, which, at a later period, will be enlarged to the original design.

As most of our readers know it is one thing to get out logs during the winter and another to get them to the mills in good time during the summer. In the last two or three issues of THE CANADA LUMBERMAN we have given various estimates of the expected supply of lumber for the season, but none of these estimates, so far as we are aware, made any allowance for the logs which, although banked, were either not likely to reach the mills this summer, or to reach them so late as to prevent the lumber manufactured from them being put upon the market until next spring. That more than the usual quantity of logs will be hung up this season is now more than probable. Not only is the opening of the streams unusually late, but little or no rain has fallen, to make up for the water which has been quietly slipping away without taking a log with it. Unless, therefore, unusual provision were made last fall for holding back a supply of water on the small streams, the probabilities are that the estimated supply for the current season will be considerably reduced from this cause, although we think it

would be rather injudicious to make bets, as the *Lumberman's Gazette* says is being done in the west, that the supply of lumber will be from ten to fifteen per cent. less this season than it was last, on account of the dearth of water.

TIMBER ON ROAD ALLOWANCES.

In compliance with the request of a correspondent we publish the 3rd, 4th, 5th and 6th (as amended last session) sections of chap. 26 of the Revised Statutes of Ontario, which relate to the rights of license holders and municipalities to the timber growing upon road allowances included within the bounds of any license:

3. Every Government road allowance included in any Crown timber license, heretofore granted, or which may hereafter be granted under section one of this Act, shall be deemed and taken to be and to have been ungranted lands of the Crown, within the meaning of said section, and liable as such to be included in such license. 34 V. c. 19, s. 1.

4. The licensee or nominee named in any such license shall be deemed and taken to have, and to have had, all the rights in respect of every such road allowance, and the trees, timber and lumber thereon, or cut thereon, as were or, by the second section of this Act, may be conferred upon him in respect of any other Crown lands embraced in such license, and the trees, timber and lumber thereon, or cut thereon, except that he shall not be entitled to take or keep exclusive possession of any such road allowance. 34 V. c. 19, s. 2.

5. No by-law passed, or to be passed by any Municipal Council for preserving, selling, or otherwise appropriating or disposing of the timber or trees, or any part thereof, on any Government road allowance or allowances included in any such license, shall be deemed or taken to have had or have any force or effect against any such license. 34 V. c. 19, s. 3.

6. In case the council of any township organized as a separate municipality, or the council of any united townships, have passed or hereafter pass any by-law for preserving or selling the timber or trees on the Government road allowances within such townships or united townships, and included in any such license, the corporation of such township or united townships shall be entitled to be paid, out of the consolidated revenue fund of the Province, a sum equal to two per centum of the dues received by Her Majesty for or in respect of the timber or saw-logs which, during the existence of such by-law, were cut within the said township or united townships, under the authority of such license; but no corporation shall be entitled to such per centage of the dues received for timber or saw-logs cut during the times or seasons when any timber or trees on any such road allowances were cut or removed, for which cutting or removal such corporation had, before the fifteenth day of February, one thousand eight hundred and seventy-one, obtained a verdict against any such licensee or nominee.

With regard to the timber growing on road allowances not within the limit of any license, sub-section 4 of section 509 of the Municipal Act provides that "the Council of every county township, city, town, and incorporated village may pass by-laws for preserving or selling timber, trees, stone, sand or gravel on any allowance or appropriation for a public road" subject to the provisions which we have just quoted.

FOREST CULTURE.

The *Toronto World* is another paper that is sharing in the growing interest felt in forest preservation. In an editorial it says:—"The forests of Canada are, next to her farms, the chief source of her wealth. But these are being rapidly depleted, and scarcely a grove has been made in any quarter to re-plant or conserve them. At the present rate of consumption our supply will become exhausted in fifteen years, while the supply of the United States east of the Rocky Mountains will not last ten years. Much may be done by judicious care and oversight to provide for future wants, as may be learnt from a study of forest culture in Great Britain and the countries of the continent, more especially Germany and France. This work ought to begin now; to wait ten years or five years would be to lose invaluable opportunities.

OUR FORESTS.

Our readers will be pleased to learn that the Council of the Agricultural and Arts Association of Ontario at its last meeting decided to offer two prizes of \$30 and \$20 for the best essays on "the best methods of preserving our forests and the varieties of trees best suited for planting," and that these essays are to be read and discussed at a public meeting of all who chose to attend, to be held on the evening of the first Wednesday during the Provincial Exhibition in London, next September. It is to be hoped that these prizes will not only be the means of calling forth some valuable information and suggestions with regard to this very important subject, but that the opportunity, which the public meeting is designed to afford, will be taken advantage of by many of the readers of THE CANADA LUMBERMAN, to place their views—particularly with regard to the preservation of our present timber supply—before the public. In connection with this subject may we not ask: Why should not the lumbermen of this Province form an association, and receive a grant from the Provincial Treasury to aid them in promoting so laudable an object as the preservation of our forests? The Provincial Government now give grants to several associations which have been formed for similar public purposes, and why not to the lumbermen, who represent an interest, second to that of the farmer, but of far greater importance than any other.

FOREST STATISTICS.

In the United States we learn that important branches of the census work have been committed to the charge of special agents, who are experts in their several departments. Among these Professor Charles S. Sargent has charge of the subjects of "Tree-covering, Forest Wealth, and the Lumbering Industry." This gentleman will no doubt collate the scattered statistics on these subjects, and publish them in such a shape as to give very valuable information. We might well follow the example of our neighbors in this respect, for the small expenditure incurred would be amply repaid, by our better knowledge of our forest areas and forest wealth. This is only one instance out of many of the line are taking in their forests, in which respect we lay somewhat behind them.

HALIBURTON.

TIMBER.—A very large drive of square timber belonging to Messrs. Irwin & Boyd is running through this village. It will be rafted in Head Lake, where, with other timber which has already been brought up the lake, there will be some 2,000 pieces. This drive consists of 1,100, among which are some fine timber, the largest being 11 feet in length, and squaring 30x31 inches. A timber slide for loading it has been built near the new wharf, and the first train load left on the 6th via the Victoria and Midland railroads for Port Hope.

SCARCITY OF WATER.—The lumbermen are complaining very much of the want of water. A vast number of logs will have to be left in the small creeks, adjoining the large creeks and lakes, there not being sufficient water to run them out. There has not been any rain in this part since the first part of February. Water is lower than last fall.

Haliburton, May 9th, 1881.

Deserves Success.

THE CANADA LUMBERMAN.—Messrs. Toker & Co., the enterprising publishers of the Peterborough DAILY REVIEW, have purchased THE CANADA LUMBERMAN, and will henceforth publish it twice a month. It is the only paper published in Canada in the interest of lumbermen, and will, we are sure, guide and guard their interests faithfully and well. The LUMBERMAN is purely a trade organ, and will not be allied with any political party. We wish Messrs. Toker & Co. the success they deserve, and if they get that they will have no reason to grumble, as every person interested in lumber or timber should subscribe for THE CANADA LUMBERMAN at once.—*Stratford Herald.*

JANES BOGART'S saw mills, Ufford, have again been overhauled and are in first-class order.

ST. JOHN, N.B.

THE FRESHET.—The water in the river continues very low for the season of the year, owing to the protracted dry and cold weather; the same may be said of the smaller streams, operating adversely to stream driving operations.

SAW MILLS.—Sawing has commenced at the greater number of our milling establishments, both in the city and in the country districts, but it is doubtful how long they can all be kept in operation unless we have more favorable weather for the streams soon.

FREIGHTS.—The rates of freight rule about the same as at the date of our last. A large amount in chartering has been done however in the past fortnight, some 15,000 tons of shipping having been placed, chiefly for Liverpool and Bristol Channel, at 57/6.

SUPPLIES.—The following shipments of deal, and other sawn timber have been made during the two weeks past, say:

To Europe.....6,029,000 Sup. ft.
" United States.....2,227,000 "

St. John, N.B., May 5th, 1881.

OTTAWA.

SHIPPING.—Shipping of lumber is going on briskly by the river and by the St. Lawrence & Ottawa Railway, and by the Canada Central Railway.

RAFTING.—A. & P. White, of Deux Rivières, have a large gang of men rafting their timber at that place and expect to be ready to start for Quebec at an early date. The water in the Ottawa and many of the other streams is very low, and great fears are entertained that there will be many logs left in the creeks this season.

DRIVING.—Bronson & Weston's drive is near out of the Schyon; the water is as high as it was any time at this season of the year. Fraser & McCauley's drive on the same stream is also doing well. They expect to be in the Ottawa River about the 12th of May. The tug *Walter B.*, owned by Mr. Thibaudeau, is to begin towing logs from Des Joachim to Fort William on the 28th.

CLOSED.—Mr. J. A. Gouin has closed the Russell House until the 15th of June next. The old stone building is to be taken down and a handsome new front built. Mr. Gouin has conducted the Russell House for the past eighteen years, and as he has been a popular landlord, he will doubtless have the continued patronage of the travelling public when the superior accommodation which will be afforded by the contemplated improvements is completed.

BIG TREES.

Referring to big trees, the *American Register* tells us that a grove in California, consisting of 1,680, contains not one which measures less than six feet in diameter. A rare and magnificent white oak is to be seen in the Quaker burying-ground in Salem, New York. It is more than two hundred years old, and is remarkable for its enormous branches, which have a spread of 112 feet. A remarkable chestnut tree is growing on a farm in Berks, Pennsylvania. It is nearly forty feet in circumference at the base, and the top of the tree can be reached by steps fastened between the limbs. Most remarkable of trees with a history is a russet apple tree in Skowhegan, Maine, which was planted in 1762. In its branches a play-room for children has been built for half a century. The tree is seven feet from the ground to the branches, five in number, all of which are very large, and average 30 feet in length, covering a space of ground 63 feet in diameter. It is more than 4 1/2 feet in diameter, and has yielded an average of thirty bushels each year.

On the Subject of Wagon Tires.

The question has been asked why people persist in the use of narrow wagon tires where the roads are of clay and mud, or where loads have to be drawn over ploughed or mellow ground. A broad tire will not sink so far as a narrow one, consequently the narrower the tire the deeper the wheel will sink into the field or road, and greater power will be required to draw the load. While narrow wheels are desirable for vehicles for fast driving, it is very desirable that the breadth of tire used on our lumber and farm wagons should be materially increased.

Trade Notes.

The schooner *J. Norris* got \$80 per 1,000 for timber from Amhurstburg to Kingston.

Traffic on the Erie Canal is not expected to be fully open until about the 17th inst.

Mr. ROBT. CAMP's new steam saw mill at Dwight commenced cutting logs on the 14th ult. The machinery worked well.

The Moira river is falling rapidly, making owners of logs on that stream apprehensive about getting them to the mills this year.

An individual named Hitchman was fined \$10 and costs, at Huntsville, for having stolen timber from the farm of the poet Churchill.

Arrival of the rate on lumber from Toronto to Oswego is still quoted at \$1.25, a charter, however, has been made at \$1.15.

The steamer *Conqueror*, of Quebec, has been chartered for towing timber on Lake Ontario. She has been guaranteed eleven rafts.

THOMSON & McARTHUR, Fenelon Falls, are preparing to erect a large steam saw mill on the north side of the village, on the shore of Cameron Lake.

We understand that the drives on Gull and Burnt Rivers are making good progress, and will soon be out of danger, but on the smaller streams drivers have their hands full.

THERE is a good opening for a planing mill and sash factory at Lakeside, Ont., as there is none within nine miles of that place, and it is surrounded by a good country.

THE Muskoka Slide Dam and Boom Company have about 220 men employed, to whom they are paying an average of \$26 per month. Last year the average was \$24.

From the *St. Ignace Republican* we learn that the Mackinac Lumber Co., put in during the past winter 14,000,000 feet of logs, held over from last year 3,000,000 feet and have 1,500,000 feet of lumber on their docks and expect to manufacture 16,000,000 feet this season.

From two groves of maples in North Harpersfield, Delaware County, New York, the yield this year has been seven tons of maple sugar. The groves contain 4,200 trees. In 1875 the town of Harpersfield produced 200,000 pounds of sugar, an amount which this year's crop is thought to exceed.

Messrs. G. W. TAYLOR & Co., are putting in two gangs consisting of 64 saws in their saw mill, on Muskoka Bay, which will make its cutting capacity much greater than any mill in the Muskoka district. They are also building two additions to their mill, one for lumber and the other for lath.

On the 30th ult., while superintending the breaking of a vast dump of logs on the Tequin river, Mr. Joseph Calverly got entangled among the falling logs, and as a result, a few broken ribs, an ugly contused wound on the right temple, and a general bruising all over, from which, however, nothing serious is apprehended.

During the past 12 years there has been 1,686,650,816 feet of logs cut from the Menominee and tributaries. The cut of the past winter will aggregate about 306,500,000 feet, which, added to 20,000,000 feet of old logs on hand, gives a total stock of 326,500,000 feet. The log cut of the past winter exceeds that of the last previous one nearly 66,000,000.

An Ottawa dispatch says that the tug *Allan Gilmour*, with eight barges of lumber, got into the Long Sault on the night of May 8th, and it was found necessary to cut five barges loose, which were badly wrecked in going through the rapids. J. A. Kirby, of this city, is owner of the barges; the loss is estimated at \$1,000, on which there is an insurance of \$1,000.

Lake freights on lumber are quoted at \$1.50 from Muskegon to Chicago; \$1.50 from Grand Haven; \$1.25 from Manistee. No rates have been named yet for ports that are not open. The vessel market is pretty firm, and under the impression that there will be plenty of stuff to carry this season, owners expect to command paying figures.

The St. Croix River (Wis.) Improvement Company has had about sixty men engaged for some time in building dams and otherwise improving the stream, to facilitate the driving of logs. The dams have been thoroughly repaired and two ones built, making five in all. There are

about ten million feet of logs to come out of that stream, about four millions of which will be run to Stevens' Point.

The *Toronto Globe* says that it is proper to have it understood by vessel-men that there will be nothing done in this port for a week in lumber charters. The canal at Oswego will not be open till the 17th, and the docks at Oswego are overcrowded. It is said by shippers that there will be a month's good sailing when the season commences. It is hoped that rates will be maintained as they are at present.

It is learned from the *News and Reporter* that the Ducey Lumber Company with a capital of \$50,000 has been organized at Muskegon for the transaction of a general lumber business. P. A. Ducey is president; John Lynch, vice-president, and E. C. Misner, secretary-treasurer. The company has purchased the new mill of the Torrent & Arms Lumber Company, for \$10,000. The new firm is a strong one and will do a successful and profitable business.

Mr. JOHN OLIVER, of John Oliver & Co., Toronto, Ont., has been in Chicago for the past two weeks buying and selling hardwoods. Mr. Oliver has so much faith in the prospective value of certain kinds of wood, that even at present prices he would rather buy than sell. He has men in Indiana and adjoining states, buying extensively. The firm does an immense business, and is the only one in the Dominion in the hardwood trade exclusively.

The small value of birch wood for fuel, and its lack of toughness and strength, except in the smaller twigs, have led to its general neglect in the arts. Our more enterprising builders of railway cars, however, have discovered that its light weight, close grain, and rich finish make it admirably suited for certain applications where fine finish and bright effects are desired. The contrasts presented when white birch and light colored ash are relieved by the red of the cherry birch, are said to be queer looking, but very pleasing to the eye.

The Caughnawaga Indians consider their remuneration not high enough. They are engaged in piloting rafts of timber down the Lachine rapids during the open season, for which they are paid \$2 per day. They now demand \$2.50, and add the presumptuous condition that no white man be employed in this peculiar but dangerous calling. The redskins went the length of assaulting a lumberman's agent who had some French-Canadians engaged on the work. Of course they will have to pay for their obstreperousness.

LOUISVILLE, Ky., enjoys a very respectable lumber trade of some fifteen to twenty million feet, half of which is sawed there. In the report of the Board of Trade for 1880, the number of establishments in this branch of manufacturing is mentioned as three; capital employed \$300,000; number of hands, 132; wages, \$1.35 to \$2.50 per day; number of saws, 126; number of circular saws and lath mills, six; value of logs, \$124,000; value of material, \$126,375; lumber produced, 10,500,000 feet; number of lath and pickets, 3,512,500; value of products, \$212,500. The Ohio Falls Car Manufacturing Company, on the Indiana shore, at Jeffersonville, uses 50,000 feet per day, or as much as is sawed in Louisville, principally Michigan pine. The car receipts in the city amount to about 3,000 cars per year, while considerable more comes by river.

We have received from Messrs. Toker & Co., publishers of the *Review*, Peterborough, the tenth number of THE CANADA LUMBERMAN, a paper devoted to the interests of the timber and lumber industries of the Dominion. The first nine numbers of this publication were issued in Toronto by Mr. Alexander Begg, but the copy before us shows that it has changed hands and come under the able management of Messrs. Toker & Co. The *Lumberman* will be purely a trade organ, non-political in its character—a paper for the dissemination of facts and figures concerning the trade; and in the interests of our woods and forests, it will sustain an able part. The contents of the *Lumberman* are of so much value that we believe every one interested in that upon which it professes to treat, should become a subscriber. It will be sent to any address for \$2.00 per year.—*Campbellford Herald*.

Lack of Air.
Some workmen think themselves "tired" when they are only poisoned. They labor in factories, breathe air without oxygen, and live in an atmosphere of death. They are, too often, allowed to smoke, and thus add fuel to the flame which is consuming them. They knock off work "tired" and listless, when they are merely weakened by foul air and made dull and heavy by an atmosphere charged with disease. They keep the windows shut and close the door on health, while they lift the gratings of the tomb by breathing and re-breathing the poison from their own lungs, and the floating particles of matter about them. Open the windows—let in the sunshine and the breeze, stop smoking, and you will soon find that it is the poison of confinement, and not labor, that wearies and tires.—*Montreal Herald and Star*.

The celebrated cypress tree that had stood near the city of Sparta, Greece, for over 2,800 years, and was described by Pausanias 400 years before the coming of Christ, has been destroyed by a band of strolling gypsies, who camped beneath it and left their fire burning. It was 75 feet high and 10 feet in diameter near the ground.

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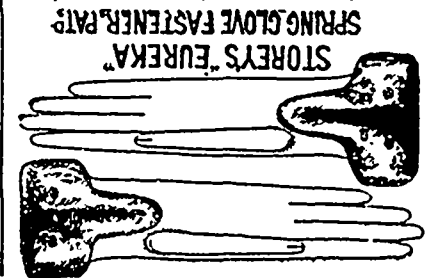
Will make her regular trips on this route commencing on Wednesday, the 20th of April, 1881, leaving Cobourg every morning at 7.30 and Port Hope at 9 o'clock, on arrival of Grand Trunk Railway trains from the East and West, connecting at Rochester with the New York Central, Northern Central, and Erie Railways, and the Lake Ontario Division of the Home, Watertown and Ogdensburg Railway for all points east, west and south.

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TENDERS, addressed to the Postmaster General, will be received at Ottawa until Noon, on Friday, 6th May, for the conveyance of Her Majesty's Mails, on proposed Contracts for four years, once, and three times per week each way respectively, between

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from the 1st July next. Conveyance to be made in a public or other vehicle. Printed notices containing further information as to conditions of proposed Contract may be seen, and blank forms of Tender may be obtained at the Post Offices of Peterborough and Apsley.

GILBERT GRIFFIN, Post Office Inspector's Office, Kingston, 25th March, 1881. 3113



Burdock Mealing Ointment should be used in connection with Burdock Blood Bitters for curing Ulcers, Abscesses, Fevers, Sores, &c. Price 25 cents per box. T. MILBURN & CO., SOLE AGENTS, TORONTO.

SCHOOLS OF FORESTRY.

Mr. David D. Thompson, of Cincinnati, who has taken much interest in all forestal subjects, gives some valuable information concerning the schools of forestry established in Europe. In order to secure the best results from the culture and care of forests, says this writer, which require a carefully planned system of regulations, with competent agents to look after their application, the European governments, with two or three exceptions, have established schools of forestry, most of which are now in a flourishing condition. The students in these schools have entered that they may thoroughly qualify themselves for the work they will have to perform, and the importance of which they appreciate. For them the salary is not the all-important question—as is usually the case with scientists.

These schools of forestry are of two kinds:—First, those designed for the study of forest sciences and collateral branches, which are called in German, *Forstakademie*; and, second, the *Allgemeine Hochschule*—colleges or polytechnic institutions in which forestry is only a department. Before entering the *Forstakademie*, students are required to have taken a course in some preparatory or other school; and in some schools to have had, in addition, a practical experience in forest planting and management under the direction of skillful forester. Practical experience in the care of forests is, in all schools, an important feature in the regular course. The rules governing admission are very strict. Either a certificate of graduation from a responsible institution or other evidence of efficiency is always required; and in the service of the state certain conditions as to age, nativity, etc., must be complied with. The object is to give such instruction as is needed in the planting and care of forests. The course of study embraces whatever will be of use for such a purpose. It includes the natural sciences, and the numerous details of administration required. Its usual result is to impress the student with the responsibilities of his work and develop a habit of close observation.

One of the oldest and best schools of forestry in Europe is at Nancy, France, and to it the department of Muerthe, of which Nancy is the capital, owes much of its rare rural beauty. The school is liberally supported, and is fully supplied with cabinets, museums, apparatus, and appliances of every sort. To those who prepare for state forest service instruction is free. The importance of this service may be inferred from the fact that the state forests cover an area of nearly 3,000,000 acres, with a gross revenue of nearly \$7,000,000, and a net revenue over all expenses of over \$5,000,000. The total expense for board, lodging, uniform, instruments and pocket money is between \$400 and \$500 a year. Foreign students are admitted, with a moderate special charge. The English government usually has several students at Nancy training for forest service in India.

The course of study occupies three years. Every student is required to devote 1,500 hours to study each half year. Lectures are delivered on the exploitation of forests; relation of forests to climate; natural history of different kinds of trees; management of forests; conversion of one form of forests into another; desirable qualities and defects of woods, etc. A large number of lectures of an hour and a half each, and the same amount of time allotted for preparation of the topic of the lecture, are devoted to botany and mathematics. There are also lectures and lessons in road and bridge building, in forest law, and in the German language, together with some military instructions and drill, and practice in horsemanship. During the summer session, about a month is spent in botanical and professional excursions in the Vosges, the Jura and other mountains, in which are visited forests in all stages of treatment and exploitation, and where the students are required to practice in the mensuration of wood and timber. Of all these observations and experiments each student must prepare a report.

In addition to the branches enumerated in the third year, attention is given to zoology, especially to entomology, the ravages committed by insects upon forests, the means of averting or destroying them, and of recovering a forest ravaged by them; the fixation of sand dunes, the reclamation of barren wastes, and the re-

foresting of denuded mountains; the geology and mineralogy of the mountains of France, mountain torrents, their causes and the means of preventing them; the chemistry of vegetation and all that relates to the production and assimilation of atmospheric and terrestrial elements.

In Germany are found the oldest, the best endowed, and, in some respects, the best managed schools of forestry in the world. In the latter part of the eighteenth century, occasional lectures on forest science was given in the Berlin University. As early as 1821 an academy for forest instruction was established in Berlin, but, on account of the absence of suitable forests in the neighborhood of that city, it was, in 1830, removed to Neustadt Eberswalde, where was abundance of forests, and the name changed to the High Institution for Forest Science. The course of study embraces chemistry, physics, meteorology, mineralogy, geognosy, botany, anatomy of plants, vegetable physiology and pathology, microscopy, zoology, entomology, geodesy, wood measuring, surveying, plan drawing, public economy and finance, cultivation of forests, forest improvements, forest botany, protection of forests, calculation of the value of forests and forest statistics, administration of forests, redemption of rights of usage, forest history, civil law, criminal law, jurisprudence, construction of roads, hunting and shooting.

There is connected with this school a driving house for seed, beds, and nurseries, specimens of a great variety of trees for botanical study, and a museum containing specimens of birds, insects, and animals found in forests, all neatly arranged in cases. Specimens of the branch, leaf, bark, wood, or cone of trees damaged by animals or insects, are exhibited side by side with the same parts in a healthy state, in order to teach the student to know at a glance the nature of any injury to a tree, and the animal, bird, or insect causing it. Stuffed squirrels, beavers, rats, and mice are so placed as to represent the same in nature, gnawing at the bark, grubbing at the roots, etc.; and insects are shown in the several stages of larvæ, chrysalis, caterpillar or moth, with all their ramifications in the stems or branches of trees. Besides these are specimen blocks of almost all descriptions of timber. A number of other schools of forestry have been established in Austria, Italy, Spain, Portugal, Denmark, Sweden, Finland, and Russia.

The American people ought certainly to be wise enough to profit by the sad experience of other countries, and not only regulate the necessary and put a stop to the unnecessary, destruction of their forests, but imitate their example in endeavoring to restore them. This may be accomplished in almost innumerable ways, if only the people can be made to realize the necessity for it, and a desire awakened to have it done.—*Northwestern Lumberman*.

THE CATALPA.

A western paper believes that the railway tie of the future will be of this wood. The Fort Scott, Texas and Gulf railroad has planted 300 acres of young trees, and the Iron Mountain railroad 100 acres, near Charleston, Mo. On the roadbed of the latter company, ties of this wood have lain in the muddy silt of the Mississippi for 12 years, and are still in a good state of preservation. They have outlasted two sets of white oak ties, and bid fair to survive the third. Fence posts in Indiana and Illinois are now sound after having been in service 40, 50, and even 75 years. In the muddy regions about Cairo, where it is grown extensively, it is used as corner stones for the most substantial building. It is of an elastic nature, but not so soft and light as cottonwood. Dr. John A. Warder, President of the American Forestry Association, claims for the catalpa a durability and power of resistance to the influences of the elements possessed by no other wood. It is found in the Mississippi valley, and on the shores of the tributaries of the great river. It bears a large, white, highly-perfumed flower, and grows rapidly.

Ask your druggist for a trial bottle of BROADBENT'S BLOOD PURIFIER. It will only cost you 10 cents, and a few doses will prove its efficiency as a health restoring Tonic-regulator of the Bowels, Liver and Kidneys. It is a specific for all diseases arising from impure blood and disordered secretions.

THE GROWTH OF TREES.

Trees, says Elizar Wright in an eastern paper, record their own history. The stump not only tells the age, but in what years the departed grew vigorously and in what it did little more than hold its own. I not long ago, in Ohio, measured the stump of a sugar maple, recently cut, and found it thirty inches in diameter. The tree had lived 125 years. In the first sixty-three years, while it had stood in the dense forest, it had acquired but nine inches in diameter. After the forest was cut away, and it was left with only a few scattering companions, it soon assumed a superior rate of growth, which it maintained till nearly the last, so as to add twenty-one inches of diameter in sixty-two years. The rings averaged about seventeen-hundredths of an inch in thickness, whereas, in the first sixty-three years they had averaged but seven-hundredths.

In Sweden it is ascertained that a forest of mixed wood on medium soil grows about a cord of wood a year on an acre of land. If much more than a cord is removed from an acre in a year, the production is reduced. But to keep the production from diminishing, it makes all the difference in the world what trees you take away, whether you take those which are beginning to decay, or those which are in the rapid stage of growth. It is only by the best judgment in thinning out that the capital of growth can be kept whole after a forest has become well established.

If we take two trees of the same species—say an oak sapling that is four inches in diameter, and sixteen years old, and twenty feet high, and a tree that is twenty-four inches in diameter, ninety-six years old and sixty feet high—a little calculation will show us, supposing the thickness of the rings now equal, that the sapling is making 2.18 of a cubic foot of wood in a year, while the tree is making 3.924 cubic feet in a year. It will take between thirty-two and thirty-three such large trees on an acre to make a cord of wood in a year; and it will take about 590 of the saplings, of nearly four to the square rod; and it would take more than seventy to be cut to make a cord, so that in so young a forest a cord cannot be taken away without trenching on the capital. It is not, in fact, till a forest is made 100 years old that it can yield so much as a cord an acre without trenching on the capital of growth. But when it gets of that age, if the right care is taken, the average cord it yields is much more valuable than mere firewood. The larger and more perfect the sound tree the more valuable per cubic foot.

The forest I have supposed, consisting of thirty-two two-foot trees to the acre, would make only two between forty and fifty cords of wood to the acre, if all cut at once. But that would be a destruction of capital which it would take nearly 100 years to restore; a capital which, if kept up by replacing every tree cut, would continue forever to yield a net profit of \$10,000 per acre yearly.

A forest, not to be ruined must be managed very much as death manages the human race. Trees must not be taken out faster than they spring up, nor all of one age or sex; only those that are ripe, sickly, and in the way. By adapting the species to the soil, even the poorest soils will yield immense returns. The rocky hills of Massachusetts, which will not grow very large oaks or walnuts, will cover themselves with enormous pines and hemlocks, if they have an opportunity. As evergreens do not, like other trees, perpetuate themselves by sprouts from the stumps, when a forest of them is slaughtered by the axe, their tender seedlings are prevented from replacing them by the sun, frost and cattle; while the harder seedling of the deciduous woods—such as birch, maple and ash, and the sprouts of such oaks and hickories as may have been mixed with the evergreens—have a better chance, and thus take the place of the rosinous woods on a soil not so well adapted to them. With a little judicious care and forethought, a wood of scrubby oak or hop-pole hickory may be converted into a glorious pinery, yielding masts for navies. But, as the individual man has, on the average, a life shorter than that of a tree, it requires the state, which does not die, to do this.

The Middlesex Falls is a tract of nearly 4,000 acres within six or seven miles of Boston, of

which more than 3,000 consist of rocky and blue-gravel hills, once covered with lofty pines and hemlocks, nearly all of which have given place to oaks and hickories, living lives of semi-starvation and devastation by frequent forest fires. There are about 140 proprietors, assessed at an aggregate sum between \$300,000 and \$300,000, and deriving an income from the fuel of a good deal less than one per cent. over the taxes. And this is taking annually more than is replaced; so that the tract, in spite of its woody green foliage in summer and rainbow tints in autumn, is growing every year more desolate.

It has been proposed that the citizens of the towns within whose territory this mostly unoccupied tract lies, and others interested in forest culture, should purchase this tract and give it to the state for the purpose of inaugurating a scientific and common-sense system of care for the trees. Should this be done, plainly, in 100 years from now the state might be enjoying from this tract alone a revenue of \$20,000 a year, while it would be a source of health and recreation quite beyond the power of money to measure.—*Northwestern Lumberman*.

WEIR MEASUREMENTS.

Within the past few years much has been said and written for and against the reliability of measurements of water flowing over weirs; this has arisen through the great diversity of results obtained by different persons, who have used the same formula for computation of late. Turbines of almost every make, tested by their builders, have seemingly given highly useful effects; while in actual use some of them have not proved economical in the use of water. This has had a tendency to discredit weir measurements, but unjustly so, as may readily be explained, for the matter is one of great simplicity, notwithstanding the complications thrown around it by those who have supposed a long array of decimals denote profundity and accuracy. Any weir under exactly the same conditions will repeat results invariably; but a formula based upon certain conditions, will not give correct results if those conditions are changed. All brooks and rivers vary much in width and depth, yet the same water flows through the narrow as well as the wide places, the velocity, of course, varying with the cross section of the stream. The velocity, however, does not cease immediately upon entering a wider or deeper part, but continues until the momentum is lost, and the general level attained; this of itself would prove the necessity of placing a weir at a considerable distance from the discharge of a higher head. The Francis formula is based upon the natural flow of the water, which for a depth of one foot over a weir is about three feet four inches per second, and it must be evident that such formula is entirely inapplicable where the velocity is four or five feet per second, as it may be if the weir is placed close to the discharge of a poor turbine, where the water leaves the wheel with half the velocity due the head; or where a cross section of pit or stream approaches the weir is but little greater than the capacity of the weir itself. It is plain that under such conditions the velocity will vary according to the useful effect of the wheel, and equally plain that no reliable correction for velocity can be applied. Had this been considered, much trouble and expense might have been saved the past twenty five years; for it is not likely any builder would have knowingly continued the manufacture of forty per cent. turbines. The cross section of a pit or stream, up stream from a weir, should be at least five times the cross section of the stream flowing over it; and for a discharge of two thousand cubic feet per minute, the weir should be fifty feet from the discharge of the turbine or opening into pit. Racks should never be used, as they obstruct and raise the water so that it passes through with renewed velocity. If there is a horizontal discharge towards the weir, check the current by zig-zag breakwaters. For measuring the flow of a river the weir or dam cannot be too large; but it may be for measuring the discharge from a mill where a governor is used, as the varying discharge, caused by adding or throwing off machinery, may prevent accuracy if too much time is required for the water to find its proper level.—*James Emerson*.

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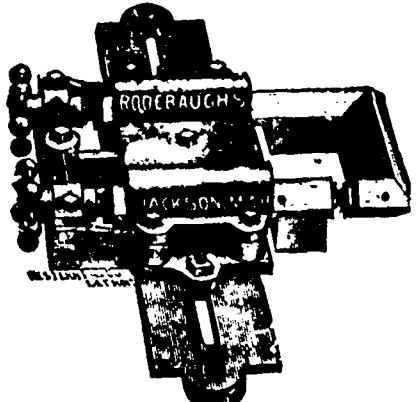
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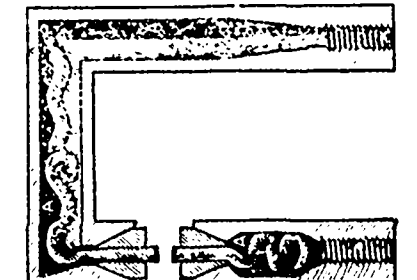
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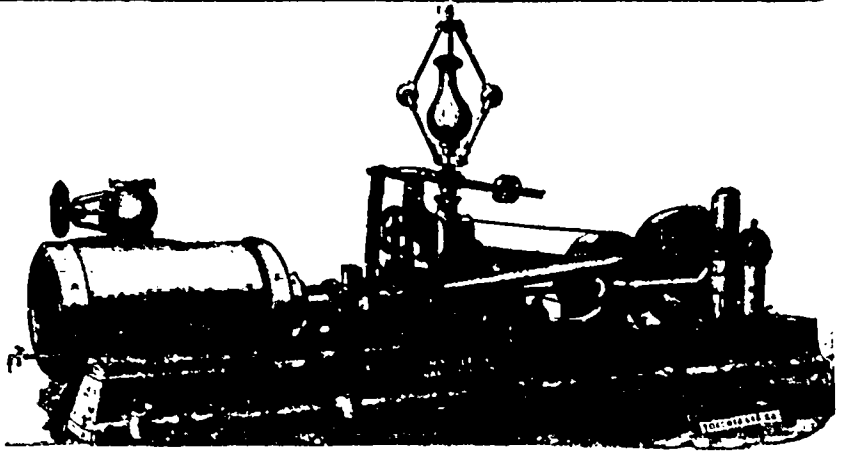
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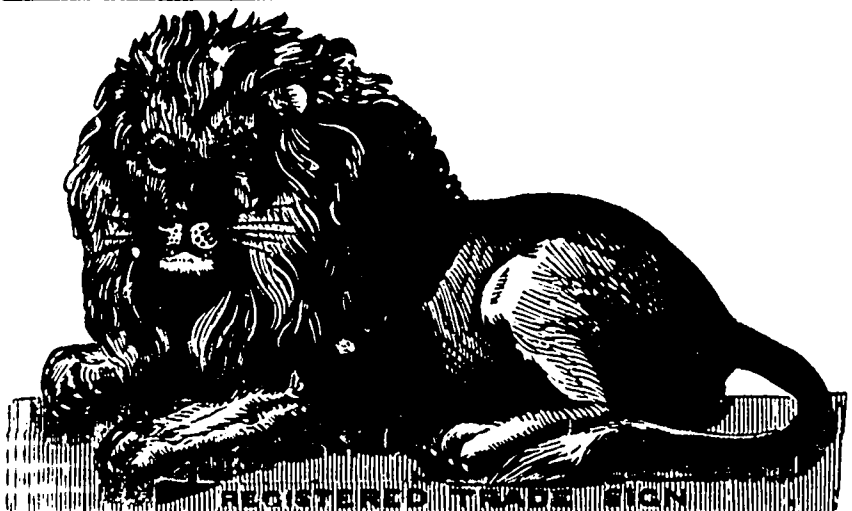
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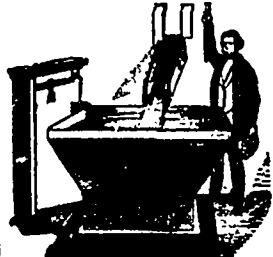
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Market Reports.

Montreal.

Table listing lumber prices in Montreal, including items like Ash, Basswood, Black walnut, Cedar, and Pine with their respective prices.

Chicago.

CHICAGO, May 4th, 1881.—The cargo market opened firmly, as the Lumberman predicted it would. Within the last week a considerable number of cargoes have reached the Franklin street docks, and all of them have been placed at prices that may, without exaggeration, be called good.

CARGO QUOTATIONS:

Table listing cargo quotations for items like Joist and scantling, Mill run, Shingles, and Lath.

Receipts and shipments of lumber and shingles from January 1st to and including May 3rd:—

Table showing receipts and shipments of lumber and shingles for the period from January 1st to May 3rd.

Some of the yards are having all the business they can do, but the general report is that trade is not as active as it might be.

In certain directions there is a very stubborn feeling against the high prices of the cargo market. It is asserted by a portion of the dealers that if the opening prices are sustained it will be an exception in the history of the trade, and they do not propose to swap much of their money for lumber at present prices.

Regarding shingles there seems to be but one opinion outside of the men who are interested in their manufacture, and that is that they ought to sell for less money. Some of the dealers whose yards have not a shingle in them are getting along by borrowing and buying from their neighbors, and swear by an uplifted hand that they will continue so to do for a while before they will lay in anything of a stock at present cargo rates.

Most of the stock sold has been that wintered over at the mills, which is called dry in some cases and partly dry in others, depending on its condition. Dry lumber generally ranges about \$1 above green, though a smaller difference is made on some consignments whose condition is not much better, so far as seasoning goes, than that of stock fresh from the saw.

The Lumberman is obliged to admit that the feeling among the frequenters of the wholesale market is difficult to describe. The sellers talk firmly enough, and profess to believe the situation and outlook of trade warrants the expectations that prices will be maintained; but on the other hand some of the buyers, at least, are holding off, hoping that they will be able to secure what they want at lower figures.

tion that prices will be maintained; but on the other hand some of the buyers, at least, are holding off, hoping that they will be able to secure what they want at lower figures. They characterize the present prices as exorbitant, and declare themselves unable to figure out any way in which the lumber can be handled through the yards without netting them a loss.

Table showing stock on hand for March 1st, 1881, categorized by Lumber, Shingles, Lath, Pickets, Cedar posts, and Hardwood.

YARD QUOTATIONS—CAR LOTS—DRY.

Table listing yard quotations for various lumber types and sizes, including 1st, 2nd, and 3rd clear lumber.

COMMON BOARDS—ROUGH.

Table listing common board prices for different lengths and widths.

TIMBER AND DIMENSION—DRY.

Table listing timber and dimension prices for items like small timber, joist, and various board sizes.

SHINGLES—16-INCH—DRY—CAR LOTS.

Table listing shingle prices for different grades and quantities.

PICKETS—LATH.

Table listing picket and lath prices for various types and sizes.

CEDAR POSTS AND POLES.

Table listing cedar post and pole prices for different dimensions and lengths.

Oswego, N.Y.

Table listing lumber prices in Oswego, N.Y., including items like Three pieces, Pickings, Fine, common, and various shingle types.

THEY ALL DO IT.—Everybody uses "TRABERY" for the teeth and breath, the newest, brightest, coolest little toilet gem extant. Try a 5 cent sample.

Albany.

The Albany Argus says a fair business is reported for the past week. The stock wintered, notwithstanding the steady demand, shows a good assortment on hand, and this being at present the acknowledged low priced market, the wonder is that it has not been more thoroughly reduced.

The complaint is becoming daily more general among the lumber merchants here that they cannot bring lumber from points of supply and realize any profit out of the transaction at today's quotations, the price asked by the manufacturer and the price paid by the buyer being too close, leaving no margin for the distributor.

The determined attitude of the Michigan and Canadian manufacturer to get his price for his lumber, together with the unquestioned certainty of very high lake freights should demonstrate beyond a doubt that much higher prices must prevail; and it is noticeable that those who thirty days ago proclaimed their opinion as otherwise, now seriously acknowledge the importance of an immediate advance; and the sooner the fact is recognized that the manufacturer's cry is "no surrender"—and he means it—the sooner will the business of the Albany Lumber Market assume its proper commercial tone.

Stocks of spruce and hemlock are very light; receipts are taken as fast as they arrive by rail. Mills on the North River are all shut down on account of high water. The lakes on the Upper Hudson are still full of ice. The recent loss by fire of the Bloomingdale Merco mill will reduce the supply from that source considerably.

River freights are:—

Table listing river freight rates to various locations like New York, Bridgeport, and Philadelphia.

Quotations at the yards are as follows:—

Table listing lumber quotations at the yards for various types of lumber and shingles.

New York.

The Real Estate Record says that on the wholesale market everything appears to be in very good shape and the expressions generally are cheerful and confident, the few grumblers previously referred to merely serving as a shading picture. Consumption on local account is daily increasing and there is quite a little few of out-of-town orders from parties who have a trade on special lines of stock, but cannot use a general assortment to advantage.

Spruce of desirable and attractive quality has a pretty steady position and the feeling among sellers is comparatively cheerful. Dealers still have their piers pretty well filled with re-

cent receipts, and in the majority of cases it would be difficult to attract demand, yet quite a number of buyers failed to "get in" on the late break and are now a little anxious to negotiate. Receivers think it would be a very poor cargo not to command \$14.00 per M, and on special \$16@17.00 are asked with extra difficult at \$15 per M.

White pine shows very little change of a decided character. Prices generally very firm and supplies indifferently offered. We quote \$17@19 per M for West India shipping boards; \$21@26 for South American do.; \$16@16.50 for a board; \$17@17.50 for do. wide and round do.

Yellow pine remains in the same firm and well supported position before noted, and the selling interest generally is confident. We quote random cargoes at about \$23.50@25 per M; ordered cargoes, \$26@27.75 do.; green flooring boards, \$24@25 do.; and dry do. do., \$25@27. Cargoes at the South, \$15@19 per M for rough, and \$20@24 for dressed.

Shingles reported about as before, the demand proving fair on most regular outlets at a steady line of values and no serious accumulation of stock offering. We quote pine shipping stocks, \$4 for 18-inch, and Eastern saw grades at \$2.50@1.50 for 16-inch, as to quality and to quantity. Machine dressed cedar shingles quoted as follows: For 30-inch, \$16@22.25 for A and \$28.75@33.35 for No. 1; for 24-inch, \$16.50@16 for A and \$16.75@23 for No. 1; for 20-inch, \$7@10.50 for A and \$11.25@11.75 for No. 1.

Boston.

The demand continues to grow daily, and sellers are confident and are preparing for a large business. Dealers are putting their attractive grades in shape for the rush which is anticipated, and the small local yards are beginning to bestir themselves in a replenishing way. The mills are very busy getting stock in shape for the market. In fact, they are in some cases over driven, as they are working on orders extending into the fall months. All classes of stock are being more firmly held, especially the nicer grades. Hard woods are much sought for, and find a ready market. To use the expression of a prominent dealer, they are able to sell themselves as soon as they show up. Buyers, although taking hold pretty well, still evince a desire in some cases to talk down prices, but dealers are firm and will probably continue so as long at least as the demand remains sufficient to keep accumulations within reasonable bounds. The movement in western pine has been good during the week, and eastern has exhibited considerable activity. Prices remain as before.—Journal of Commerce.

CANADA PINE.

Table listing Canada pine prices for various grades and types like Select, Dressed, and Sheling.

Bay City.

The Lumberman's Gazette of May 9th says:—The market has been more active the past week, and large amount of lumber has changed hands, one party reporting sales amounting to six million feet. Numerous other sales are reported and the entire sales would aggregate a handsome figure. Nearly all has been sold at market rates, although sales of ordinary stock have been made at \$6.50, \$13 and \$20, which is somewhat under the market—\$7.50, \$15 and \$25 being the figures for good stock. At these figures the most of the stock sold the past week has changed hands. There is a disposition among some holders of coarse stock to accept \$4.50, \$13 and \$20 as the ruling rates.

Navigation is fairly open and a good deal of lumber has been shipped—perhaps 10,000,000 feet. All the largest on the river are loading and will, no doubt, be actively employed for the season. Freight rates at present are \$2@2.25 to Buffalo and Tonawanda, and \$2.50@2.75 to Chicago and Ohio ports, the outside figures being from the up-river ports.

Shingles are in active request at \$1.90@2.10 for clear butts, and \$2.90@3.25 for XXX. The mills are starting up and the supply will be more liberal in the near future. The saw mills are about all in operation and

well supplied with logs. An offer of \$9 per M for 6,000,000 feet of pine logs was refused on Friday, which shows the prevailing confidence in the future of the market.

Table with 2 columns: Item (Shipping culls, Common, Three uppers) and Price (\$ 75 8 00, 13 60 18 00, 32 00 33 00)

St. Louis.

The chief interest is centered about the accessible supply of dry lumber which is, all told, but limited, and the comparatively little in market is not nearly all available.

Buffalo.

We quote cargo lots:

Table with 2 columns: Item (Uppers, Common, Culls, Dressing stocks, Dressing sidings) and Price (\$35 00 10 00, 10 00 19 00, 11 00 12 00, 18 00 20 00, 17 00 19 00)

Tonawanda.

CARGO LOTS—MICHIGAN INSPECTION.

Table with 2 columns: Item (Three uppers, Common, Culls) and Price (\$35 00 10 00, 17 50 19 50, 15 00 17 00)

London.

The Timber Trades Journal of April 16th says:—Buyers in London, who look to the sales only, are not supposed to trouble their heads about what goes on abroad.

It is true, nevertheless, that some classes of goods hold their own pretty well. The stocks of flooring at the close of the shipping season were heavily in excess of any previous year.

Liverpool.

The Timber Trades Journal of April 16th says:—It is gratifying to be able to report that more business is being done than has been the case for such a long time past that we hope this improvement will be permanent.

At the same time there is plenty of room for a better demand, for the present rate of consumption makes but little impression upon our heavy stocks.

DIARRHOEA.—Strengthen your digestion—tone the stomach for utilizing and assimilating every atom of food you take; the body needs it for strength and vigor.

Glasgow.

The Timber Trades Journal of April 16th says: The imports to note during last week are one cargo of pitch pine timber and parcels of staves and walnut, &c.

One public sale has been held, result of which is detailed below.

Apart from inferences which may fairly be drawn from the auction sales, it is at the same time to be borne in mind that important consumers, a good many being ship-builder, buy as a rule privately.

AUCTION SALE.

On the 12th of April, at Port Glasgow, Messrs. Hunter, Sheriff & Co., brokers:—Quebec waney boardwood, 65 c. ft. av. per log, 2s. 6d. c. ft.

Leith.

Messrs. Brownlee & Co. held a sale on Tuesday in Springfield street, of American timber, deals, battens, etc. There was a fair attendance, but buyers seemed to confine themselves to small purchases.

Irish Markets.

DUBLIN.—The Irish Times says that there has been a considerable increase in the demand during the week, and there seems every probability that as the season advances there will be a great revival in the timber trade.

ZEPERIA.—A healthy man never thinks of his stomach. The dyspeptic thinks of nothing else. Indigestion is a constant reminder.

For all purposes of a Family Medicine, HAZARD'S YELLOW OIL is at the head of the list. It is used with unprecedented success, both internally and externally.

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.

SINGLE OVEN STOVE

Top surface contains six 10-inch holes, with ample room between, and one oven 16 x 21 x 20.

DOUBLE OVEN STOVE

The Double Oven has a top surface containing twelve 10-inch pot holes, with two ovens, each 16 x 21 x 20.

The Best Stove I have ever Used.

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.

The Stove for Lumbermen.

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.

Gives the Greatest Satisfaction.

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.

EVERY STOVE GUARANTEED

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

ADAM HALL, Peterborough.

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Manufacturers of Marine and Horizontal and Portable Engines, Boilers, Grain Elevators and Steam Hoists, Saw and Flour Mill Machinery,

The Abol Edward's Centennial Turbine Water Wheel.

Rodebaugh's Saw Frame, Mill Dogs and Saw Guides.

Water-works, the latest and most improved, made to Order.

Light and Heavy Brass and Iron Castings

Plans and Specifications on application.

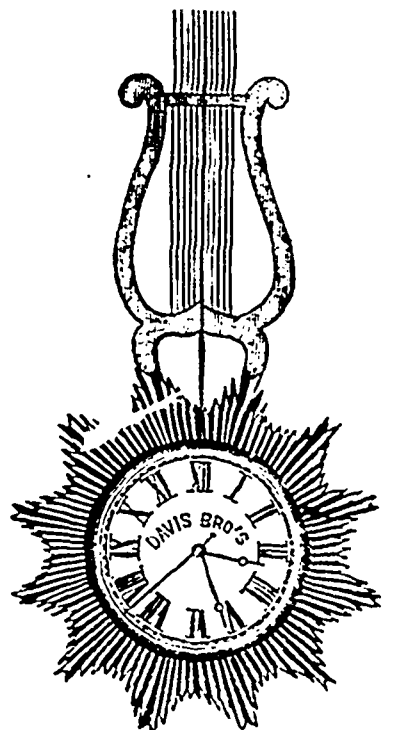
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Walkerville, Ont., Dec. 1, 1880

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CLOTHES PATENT SPIRAL TRUSS all attachments improved. No more buckles, all on solid brass casting.



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DAVIS BROS.

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N.B.—Repairing Promptly Attended to.

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 given 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 18 boards 13 ft. long in one minute. It can do much smoother and better work than the plan feed. It is easily governed and reverses the carriages 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.

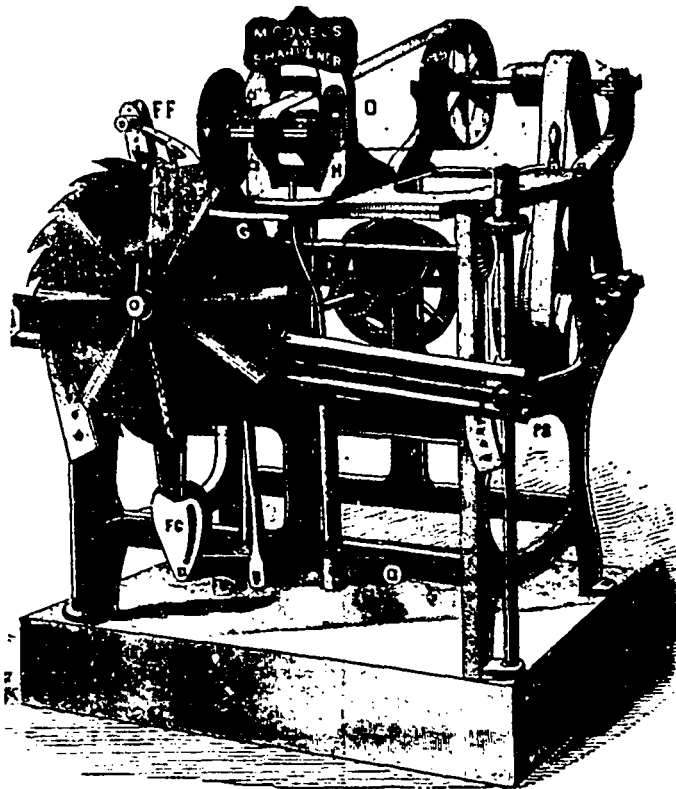
Toronto, August 14th, 1880.

Wm. HAMILTON, Peterborough, Ont.

DEAR SIR—The Steam Feed you put in is working splendidly.

Yours, &c.,

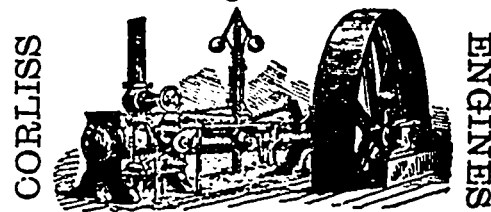
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MILL MACHINERY!

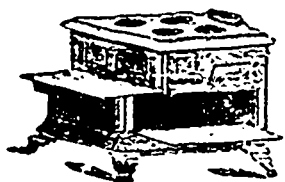
I am also manufacturing Saw Mill Machinery, for all sizes of Gang or Circular Mills, Span or Double Circulars for Slabbing Small Logs. My Patent Jack Chain for drawing logs into Saw Mills, acknowledged by all to be the Cheapest and best ever got up; also, my Patent Lumber Markers, different sizes of 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.



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SHANTY STOVES,

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In Large or Small Quantities, at Wholesale Rates. Gr. 10

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We are the most Extensive Clothiers in Canada.

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We BUY and SELL for Cash, therefore it enables us to do business on very SMALL PROFITS.

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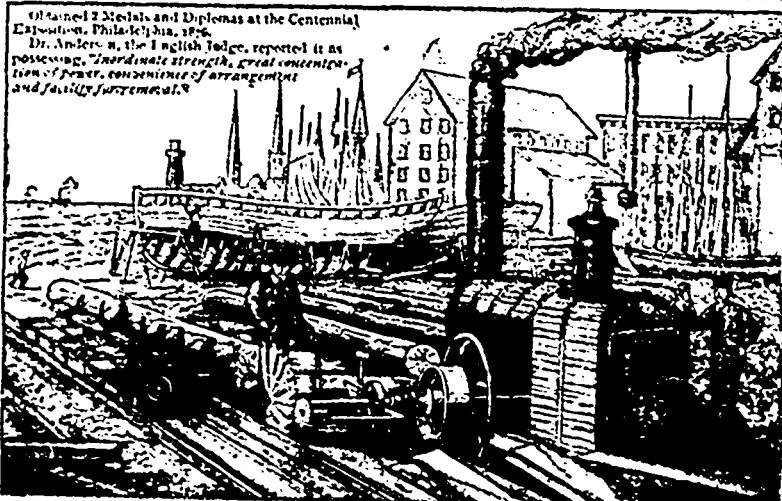
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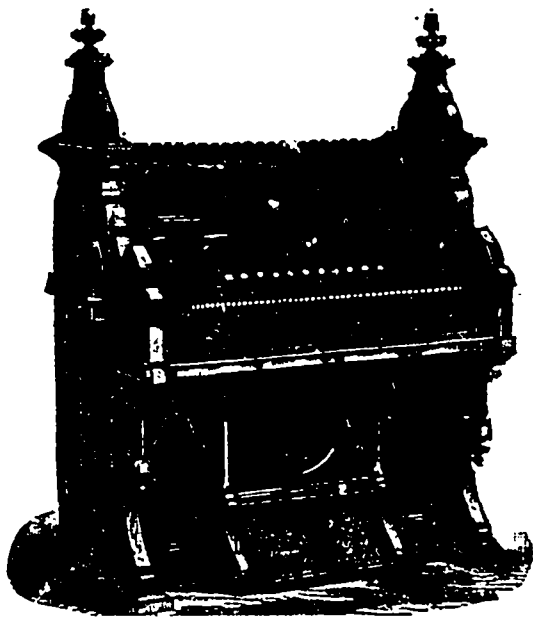
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And Gold Medal..... at Sydney Australia, 1880

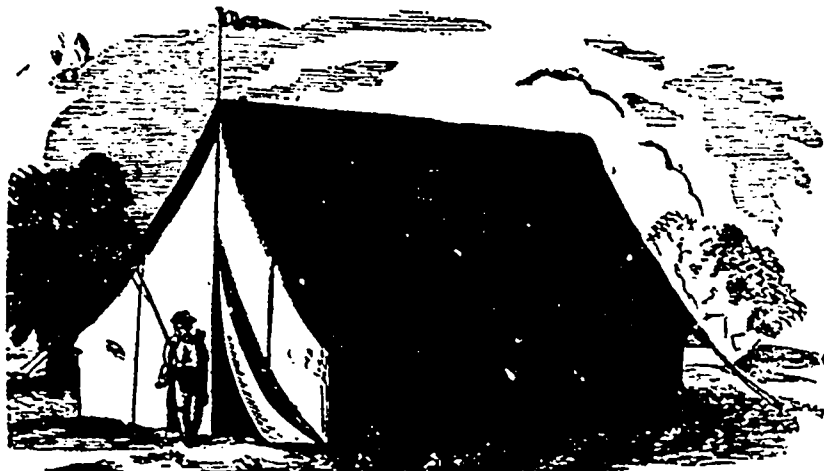
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manufacturers of Tents for Lumbermen, Sportsmen, Camp Meetings, Photographers, Lawn and military Encampments, with or without extra roofs, all sizes and styles, white or fancy striped, Milwau proof or plain. Prices from \$5, upwards. Flags of all descriptions,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

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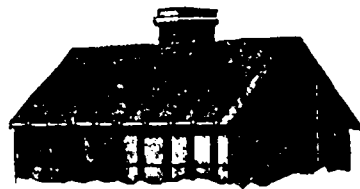
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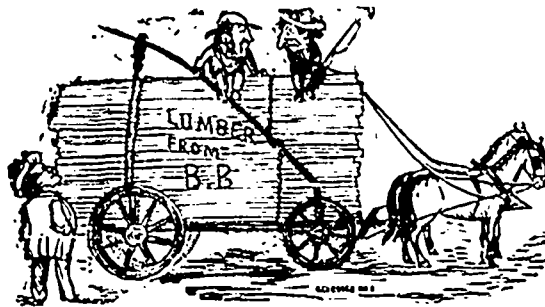


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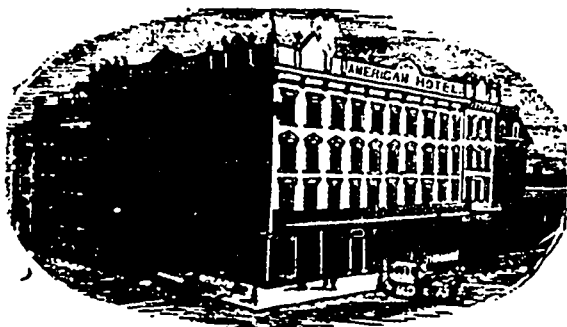


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BLAKE—"It looks like good, clear stuff. It strikes me it is about the only clear thing in the whole business."

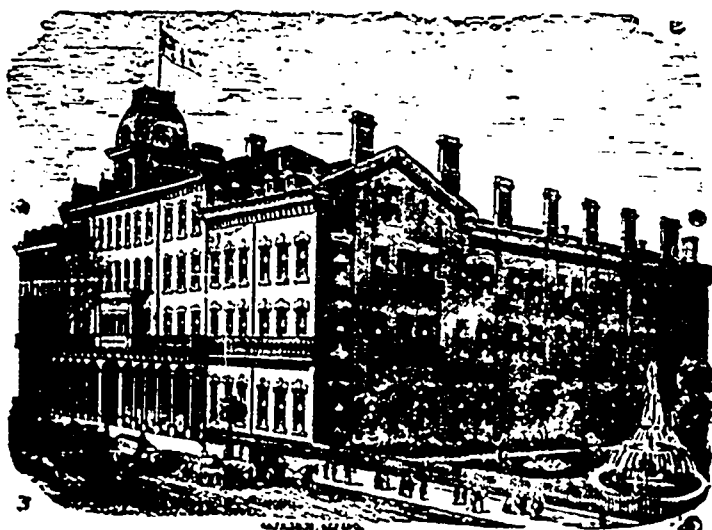
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The greatest tribute to its extraordinary merits is, that it was awarded First Prize and Diploma at

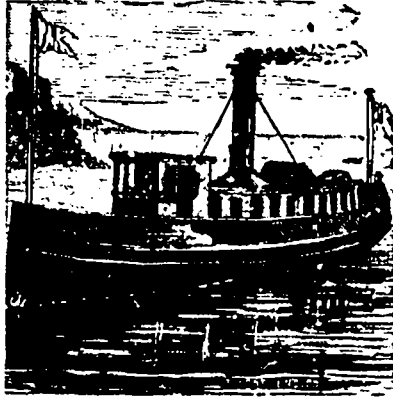
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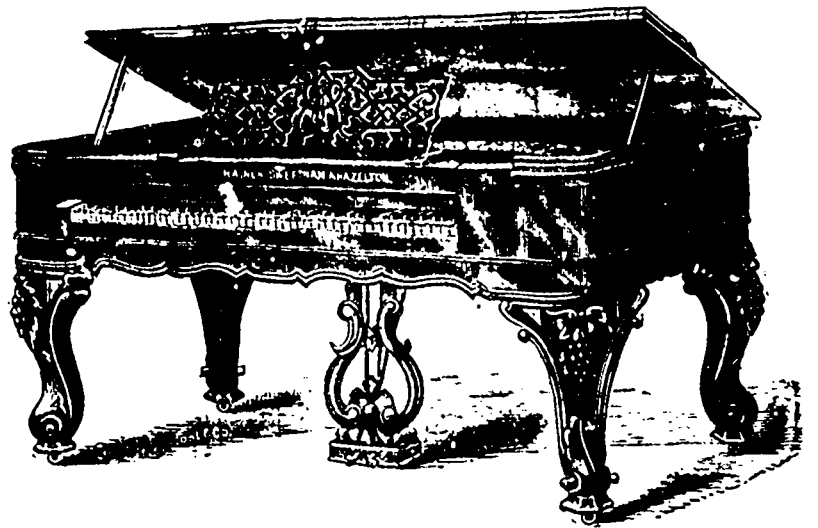
None genuine that are not like the above cut, with registered trade mark with the word "The Lance," and Maple Leaf with our name. Price \$1 per foot.

CAUTION.—Beware of Counterfeits. There are inferior counterfeits on the market, which are intended to be sold at a high price upon the reputation of this saw. We will send to any address a saw exactly like any counterfeit, warranted equal in quality or no sale, at 60c. per foot. Therefore do not be humbugged into paying a first-class price for a second-class saw. A fact to bear in mind is that if the material and temper are not of the very best quality the shape of the teeth amounts nothing. A saw, like a knife, will not cut fast without it will hold a keen cutting edge. We have cut off a 14-inch round basswood log in eight seconds with this saw. Manufactured only by

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Toronto, Feb. 21st, 1881.

Mr. F. CRUMPTON,

Dear Sir,—The watch I purchased from you some time ago, has given perfect satisfaction, and I am much pleased with it, and can cordially recommend any person in need of a watch or any thing in the jewelry line, to deal at your store. Yours very truly,

PATRICK BOYLE,
Proprietor Irish Canadian.

Send for our new price list of Watches, Diamonds, Silverware, Jewellery, &c., sent post prepaid on application. Goods sent C. O. D. to any part of Canada. We have dozens of testimonials similar to the above, plainly showing that 89 King St. East is the place to buy your goods.

F. CRUMPTON,
89 King Street East,
TORONTO. b50



The UNIVERSAL SUSPENDER.

SOME REASONS why they are the best:—

- 1st.—No Elastic required.
- 2nd.—Is slack when stopping.
- 3rd.—It never slips off the shoulders.
- 4th.—Sold at prices of common suspenders.

Manufactured by G. E. RAMAGE & CO.

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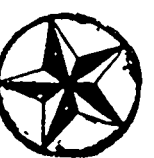
F. E. DIXON & CO.

MANUFACTURERS OF PURE BARK TANNED

LEATHER BELTING



- First Prize, Provincial Exhibition Ottawa, 1875
- First Prize, Provincial Exhibition Hamilton, 1870
- First Prize, Provincial Exhibition London, 1877
- First Prize, Industrial Exhibition Toronto, 1879
- First Prize, Industrial Exhibition Toronto, 1880
- International Medal, Centennial Ex. Philadelphia, 1876



Non-genuine unless with a STAR on the head of rivets. Send for Price Lists and Discounts.

b16

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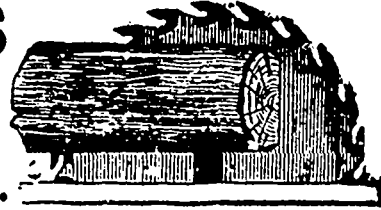
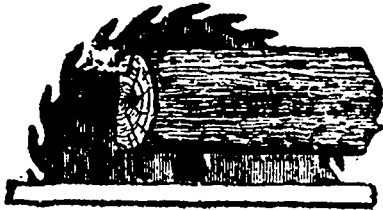
MANUFACTURERS OF EVERY VARIETY OF

Circular, Mill and Gang Saws

INSERTED TOOTH SAWS

A SPECIALTY.

Emerson Pattern and Lumberman's Clipper.



SAWS REPAIRED.

EVERY SAW WARRANTED.

SEND FOR PRICES.

6113

EMERY WHEELS FOR SAW GUMMING!

Solid Emery Wheels are now almost 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 as staple an article as 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, 3, $\frac{3}{8}$ and 1 inch.
8x $\frac{3}{4}$		10x $\frac{3}{4}$		12x $\frac{3}{4}$	
8x $\frac{1}{2}$		10x $\frac{1}{2}$		12x $\frac{1}{2}$	
	10x $\frac{3}{8}$	12x $\frac{3}{8}$			
	10x $\frac{1}{4}$	12x $\frac{1}{4}$			
	10x $\frac{1}{8}$	12x $\frac{1}{8}$			

Probably more wheels 12x $\frac{1}{2}$, 12x $\frac{3}{4}$ and 12x $\frac{1}{2}$ are used than all the other sizes together. Saw Gumming Wheels are used, however, of all sizes up to 24x1 $\frac{1}{2}$. 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.