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VOL. 3.

PETERBOROUGH, ONT., APRIL 16, 1883.

NO. 8.

THE RING-RECORD OF TREES.

Dr. A. L. Child's statement that "trees known to be only twelve years old were found when cut to have thirty-five or forty of the rings which are popularly believed to be annual marks," naturally suggests the idea that rings thus found are no indication of the age of a tree; are mere haphazard, signifying nothing of importance. It has long been a custom in this country among land surveyors, when running lines through forests, to mark their lines by blazing all trees which come in the line of sight; as well as those very close to the line. And in place of planting monuments at corners, as the custom is now getting to be, trees were marked as witnesses to corners, as they are known to all surveyors. In surveys made under the direction of the Government, these trees were particularly designated—kind of wood, diameter, course and distance from the corner. Hundreds of times in the past twenty years I have had occasion to chop in these trees to satisfy myself in regard to their identity. In every instance the number of rings corresponds to the number of years since the survey was made. I believe that our forest trees made but one ring each year. The surveyor has an excellent opportunity thus to study the growth of forest trees. It is in this way that we are enabled to trace back the history of a survey; and we can tell to a certainty when new witness trees were made to perpetuate old corners and by whom made.

The truthfulness of this "ring-record" is of great importance to the surveyor. I have no doubt that Dr. Child found these rings, or what to him appears like annual rings; but were they not shaded rings rather than distinct marks, as we may find in some of our fruit trees, especially those brought from a different climate? This shading of rings, I believe, may, in many instances, be due to a premature ripening of the wood, caused by drought or other influences, and afterward from copious rains and high temperature are forced to make a second growth, and in some instance to blossom and set fruit late in autumn. An examination made upon trees of my own planting, both deciduous and evergreen, proves the annual rings to be true to date every time.

FACTS ABOUT BUTTER TUBS.

Vermont is the great butter tub state of the union, and Montgomery is the town yearly producing the largest number of tubs in this country, or any other for that matter. The factories in this town have capacity for producing half a million tubs or packages as the trade call them. They are not all used for butter. A great number are bought by lard packers and the oleomargarine manufacturers have within two or three years increased the demand greatly. Up to 1847 the tubs were made slowly and laboriously by hand. In that year Luther

Hendrix, an experienced pail maker of Massachusetts, commenced the manufacture of machine made or turned tubs in Montgomery in a factory built for the purpose. It was then considered a good day's work for one man to turn from 40 to 50 50-pound tubs per day, while now the improvements in machinery and skill acquired by the workmen make it an easy day's work for four men to turn 300 50-pound packages per day. The other work, the hooping, the heading and making the covers, is performed with one-half the labor that was required at that time. It is probably within the bounds of truth to say that 10 men in any of the factories in this town would now manufacture more packages in a given time than 50 men would manufacture in the same time by hand.

The business grew slowly until 1852, when a new impetus seemed to be given the dairy interests. The completion of railroads to the west opened a new and larger outlet, and the small weekly shipments from Montgomery and other Vermont towns in this industry has increased to daily shipments of carloads.

The consumption of lumber by these factories is very large and mostly of spruce, which gives better satisfaction than any other kind of wood. The supply is large, but by no means inexhaustible, and very soon if spruce alone is used it will have to be obtained further back on the hills than now even. It is suggested by a manufacturer of long experience that hemlock, if of the right sort, grown in dry locations may be used without objection. It is quite possible that wood pulp will be successfully used for making butter tubs, and this supply, together with that of hermetically sealed tin packages, now used for ocean shipment to some extent, will be likely to lessen the demand on the forests. —*Boston Bulletin.*

WOOD PULP.

Wood pulp, which is made into paper and molded into barrels, casks, pails, and other wooden ware, boxes, cornices, picture frames, and a variety of small articles, can now be made from many other woods than poplar, which has long held the preference in such manufacture. Buckeye has a white fibre, and can be used, while spruce, pine, chestnut, basswood, fir, hemlock, cedar, cottonwood and other kinds of wood have been found suitable for making into various kinds of paper. Only the non-resinous woods are adaptable for white paper, while the resinous woods serve well for colored paper. Machines have been built which turn out pulp with equal facility from all kinds of wood, however. The longest fibre is made from willow, basswood and poplar ranking next, respectively, in that regard. Cedar, fir and hemlock are said to grind about alike, the latter working a little more freely. Maple has a fibre shorter than either spruce or pine, and is quite hard to grind; birch is comparatively

hard, and grinds very short; poplar and buckeye pulp remain white for a considerable time, other woods changing color; birch becomes pink, maple turns purple and basswood takes on a reddish hue. It is estimated that over 200 tons of wood pulp are daily turned out in the United States.—*Lumber World.*

BRITISH COLUMBIA.

Logging methods are rather devoid of improvement in the British Columbia lumber districts. Logs are generally snaked, from two or three to seven or eight yoke of oxen being employed as a team. A good ox-teamster commands the highest wages paid, and is the biggest man on the job. A few mules are used, and one camp has a brace of old-style Scotch traction engines at work on the main road. A New Brunswick man bought them at a cheap price after they had been found to be unsuited for use on a waggon road, on account of the numerous hills. They are credited with doing surprising service on a level and well kept road, and have the advantage of requiring no sustenance while kept idle. What one of them will ordinarily haul can be understood by the fact that it dragged a log 24 feet long and 48 inches in diameter at the small end, with another dogged to it at the top that was 60 feet long and 24 inches in diameter at the small end. Another camp has a wooden tramway.

Logs have not yet been cut more than a mile or two from deep water, and no driving in the small streams has been done, or apparently thought of. There are numerous suitable streams in the timber regions, but they would require much costly improvement to suit them to floating the heavy timber. No system of collecting crown dues on stumpage is there in operation, as in other parts of the Dominion, and nothing is done by the local government to assist the lumbermen in the matter of making improvements. Anybody can enter government land, having perfect freedom to cut timber anywhere. Government land and the timber on it can only be secured by purchase. The camps are well arranged, and the tables excellently supplied. Every man furnishes his own bedding.

In felling the giant Douglas fir, chopping boards are employed, six or seven feet long, and six or eight inches wide, shod with iron at one end, the same as are used in the red wood regions, which are driven into notches cut at the proper height. On these the choppers stand. They are sometimes placed 10 feet from the ground, to avoid shakes, as the logs are not butted after felling, and for the reason that the fir trees are much harder near the ground than a little higher up.

The wages of choppers and teamsters run from \$50 to \$75 per month, and those of sawyers and road cutters from \$25 to \$40. The amount realized by the men is more or less reduced by the time lost during unfavorable weather,

when their board is charged against them.

The mills are somewhat different from those in the eastern part of Canada. The logs are canted and rolled by machinery, dogs not being feasible. All the appliances have greater weight and strength than is required for pine. The square timber is sawed, and none hewed. The edger tables travel backward and forward, and the trimming saws are swinging ones. Every mill has a planer in connection, which dresses the green lumber, as it comes direct from the saw.

The export trade is heavy in spars, for which the timber is particularly suitable, on account of length, strength, straightness and elasticity, and the exporting has been chiefly confined to the two mills of Burrard Inlet, owned by the Moodie Saw-Mill Company, and the Hastings Saw-Mill Company. Carcoes are sent to China, Australia, India, Sandwich Islands, South America and Great Britain. The American duty on manufactured lumber has prevented the British Columbian interests from competing very extensively with their Puget Sound rivals. The timber at a little distance back from the coast is the best, but the advent of logging roads will increase the expense.

The common men employed in the mills get from \$30 to \$40 per month and board, and the more expert from \$35 to \$50. Sawyers and engineers get from \$50 to \$75. The two Burrard Inlet mills, the largest in the province, cut 15,000,000 feet each in 1882.

Indications as to the quality of trees are radically different in the fir from those of pine, and an expert in the latter finds himself off his reckoning with the former. Lumps that would show the presence of knots in a pine tree may mean no inferiority in a fir, which, however, may also be full of knots without exterior evidence of it. Large quantities of the Douglas fir cover the mountain sides, while good red cedar for shingles and fencing is found along the river bottoms back from the shore line. Farther north the pine disappears, to be replaced by white spruce and white cedar, and above the parallel of 52 degrees latitude the pine almost completely disappears, and the spruce is abundant. The latter grows very large, and generally straight and without knots, making a light lumber for building purposes, which works well under the plane. The white cedar abounds above the parallel of 54 degrees, also a splendid wood, tough, close in grain, and readily worked. It is asserted that it is proof against the boring teredo, which renders it useful timber for wharf piles. It is much favored for shipbuilding, and is said to endure equal to the best oak. Hemlock abounds everywhere, but is chiefly esteemed for its bark. The arbutus grows on the south end of Vancouver's Island, and on the islands in the Gulf of Georgia. There has been severe weather in the province this winter.—*Northwestern Lumberman.*

SCHEDULE SHOWING THE NUMBER OF SAW-MILLS IN THE PROVINCE OF MANITOBA AND DISTRICT OF KEKWATIN, OPERATING UNDER GOVERNMENT LICENSE DURING THE YEAR ENDING 31ST OCTOBER, 1882.

MANITOBA.

Table with columns: Name of Owner, Where Situated, Kind of Power, H. P., Capacity per 12 Hours, Commenced operations in, Kind of Timber, Loge Cut at, Quantity of Lumber manufactured during year ending 31st October, 1882. (Pt., D., M.), Quantity of Lumber sold on hand 31st October, 1882, Quantity of Shingles manufactured during year ending 31st October, 1882, Quantity of Shingles sold on hand 31st October, 1882, Quantity of Lath manufactured during year ending 31st October, 1882, Quantity of Lath sold on hand 31st October, 1882.

KEKWATIN.

Table with columns: Name of Owner, Where Situated, Kind of Power, H. P., Capacity per 12 Hours, Commenced operations in, Kind of Timber, Loge Cut at, Quantity of Lumber manufactured during year ending 31st October, 1882. (Pt., D., M.), Quantity of Lumber sold on hand 31st October, 1882, Quantity of Shingles manufactured during year ending 31st October, 1882, Quantity of Shingles sold on hand 31st October, 1882, Quantity of Lath manufactured during year ending 31st October, 1882, Quantity of Lath sold on hand 31st October, 1882.

A GOOD FOREST LAW.

"I never remember a session in which we worked so hard and did so little," said Mr. Joly. It would be well to give credit and do justice to two really valuable measures which were carried. We allude to two bills of Mr. Lynch's, one to guard against forest fires, and the other, far the more important, to divide the forest domain into settlements and timber lands. The idea, it is true, originated in the useful forestry congress held last year in Montreal, but none the less does the credit of having worked it out and put it into practical shape belong to the Commissioner of Crown Lands. Those who know anything of our Crown Lands can bear testimony to the fact, that the most dangerous man the lumberman has to deal with is the make-believe settler, who establishes himself in the midst of good timber lands, for the purpose of stripping his lot and the surrounding lots of any valuable timber that may be on them, and then, having ruined the property, abandons it. The fact has been stated over and over again, and never questioned, that we know of, that the great majority of the disastrous fires which have desolated miles on miles of choicest timber lands, are due to these people. Mr. Lynch's law promises to put a stop to this kind of settlement, in the future. Nor is there any danger to be fairly apprehended to the colonization interests of the country, from the measure, because it is well known that good pine and spruce land is the worst settlement land that can be found. When the bill was first introduced Mr. Lynch happened to be unavoidably absent, and Mr. Blanchet took charge of the measure. Mr. Flynn attacked it vehemently, in the interests, he said, of colonization. As a rule, Mr. Flynn can give a plausible reason for any side he may choose to take, however wrong he may be. In this case, as ex-Commissioner of Crown Lands, he laid down the law with some authority, resting himself on a number of facts more or less controvertible, and brought to his aid Mr. Picard and a few more country members, who never seem happy except when expatiating on the hardships and defending the interests of the "poor settler." The bill had to be allowed to stand over. Immediately on Mr. Lynch's return, he took the bill up and carried it triumphantly, almost without a dissenting voice. It is needless to say that the Commissioner, in his really eloquent defence of his measure, was vigorously backed up by Mr. Joly, who takes the greatest interest in all that per-

tains to our woods and forests. The act will prove a substantial benefit to the lumbermen, who will no longer be harassed by the petty pilfering of mock-settlers, and who, moreover, will be freed from the much greater risk of loss through their negligence in making fires under pretence of doing settlement duty and clearing land which every one knows they never intend bona fide to settle permanently upon. It will prove a no smaller, or more inconsiderable, boon to the real settler, since it will direct him to land upon which he can hope, by hard work and hard living, ultimately to establish a comfortable home and earn a respectable maintenance. While, if left to himself, he might do as others have done before, establish himself on some of our pine lands, in order to secure employment in winter in the adjoining shanties, and after years of work and hardship and suffering, succeed in clearing his land, only to find that, between the stones and the sand, it virtually is valueless, so much labor thrown away and hard toil lost. It is a pleasure to draw attention to these facts, because we think credit should be given to a really conscientious, hard working, clear-sighted public officer, and such, we know, is the character with both Conservatives and Liberals, Government supporters and Opposition free-lancers, are willing to concede to the Hon. Mr. Lynch.—Montreal Witness.

FATE OF A RIVER IN SPAIN.

A correspondent of the Lumber Trade Journal says:—A gentleman who appreciated the efforts of Congressman Cox, of New York, to mitigate the inordinate slaughter of our forests, wrote him a letter from which these extracts were taken:— As I frequently have gone to Spain for some years past, I have had opportunity to observe there the result of devastation of the forests which has continued during the last few hundred years. Let me tell you the condition of a once noble and important river, the Almeria. About six miles northeast from the city of Almeria is Pochina, once an important town where shipping was carried on. There may yet be seen the wharves and stone buildings that served the purposes of commerce a few hundred years ago. Now the former river is dry land for six miles, even to the edge of the Mediterranean. What was once a noble, navigable river is now a level sand waste. In the course of time, as the forest have been

cut off and the natural means of retaining the moisture in the mould and alluvial covering of the mountains and hills has been destroyed by the washing down into the river-bed, the mountains have become bare and desolate. The infrequency of rains there has become a matter well known. When they do come, the river bed is a roaring flood, and "straight is dry again." By this the shoal at the mouth of the (onco) river is constantly extending into the sea, so that immediately after one of these floods it has been known to have extended half a mile. Whether this is a part of a divine plan, and so ordered to be, or whether it is a retribution of the Divine Providence upon a country and a people for not husbanding the resources so abundantly provided, may engage the attention of some for the sake of an argument; but to me it is a lesson that we should profit by. What will our vast country become if the forests, furnishing the supply of our rivers, and so graciously withholding and distributing it through the seasons, are to be devastated; And what country in the world was ever so prodigal of its wood as this? Ties for the supply of 100,000 and odd miles of railway alone is a tax upon the forests of even this great country formidable to think of.

Thus devastated, and the alluvial covering of the hills and mountains of river sources washed down as they are in Spain, we may picture the Hudson, Delaware, Susquehanna, James, Ohio, Missouri, and even the Mississippi mere sand beds; and in future time history may record the navigation of those (onco) streams, and be illustrated with pictures of steamers that plied upon their waters in busy commerce "of old." W. D. M.

DRIVING BELTS.

BY ROBT. GRIMSHAW.

The weight of a horizontal or of a slightly inclined belt connecting horizontal shafts should be sufficient to cause it to sag or belly well down, increasing the arc of contact; but it should not be sufficient to cause excessive pressure on the bearings. When the horizontal shafts are one above the other, or nearly so, and the belt vertical, or nearly so, the lighter the belt the less it is dropped down from the pulley, and the less the loss of driving power by imperfect contact on the lower pulley. The smaller the lower pulley, and the greater the distance between shaft cen-

ters, and the thicker and stiffer the belt is, the more these remarks apply.

Where a belt connects vertical shafts, lightness is very desirable, as a heavy belt in such a position tends to come off both pulleys, unless they are either very crowning or are flanged on their lower edges; in which latter case the lower edges are apt to become frayed or stretched, according to the material.

Horizontal bolts between vertical shafts drive better than inclined over do, and still better than vertical. The reason of this is evident; the weight of a horizontal bolt tends to increase not only the arc of contact in both pulleys, but the tension; and the further from the horizontal, the less the driving power.

In this connection it must be borne in mind that where a horizontal belt connects horizontal shafts, the lower fold should be the driver, so as to make the "sag" or "belly" as little of a disadvantage as possible.

New unprepared canvas bolts had better be rubbed with hard bar soap before putting them on the pulley. This gives them a smooth, finished surface, improving the grip and pliability. —Woodworker.

Barking Hemlock.

The Courier and Journal of Potsdam, N. Y., calls attention to the fact that the bark-peelers are making havoc with the hemlock of that part of the State the value of which, for timber and lumber purposes, is becoming more apparent since the spruce is being so heavily drawn upon for supplies. The paper referred to says: "Few people realize how rapidly the hemlock is disappearing from our forests. It is destroyed not only for timber or fuel but almost solely for the sake of its bark. Lumbermen have proposed to attack the hemlock when the spruce shell have been used up, but against the unscrupulous rapacity of the bark peelers and tanneries, hemlock has no show for existence. All through the Adirondacks these trees are fast falling, and their stripped trunks show that the insatiable appetite of the bark mill has been felt even there.

The correspondent of the Northwestern Lumberman at East Saginaw, Michigan, says:—McArthur Bros., a Canadian firm who are operating in this latitude, inform me they have put in 300,000 feet of board pine, 100,000 feet of oak timber, 50,000 pipe staves, and 3,000,000 feet of long and short pine logs.

AMERICAN SAWS: We represent Four of the Best American Saw Factories

SAVE YOUR TIMBER
By using **THIN** Saws.

MoLAUGHLIN Bros., Amprior, run two 66-in. Brooke Bit Saws, 800 revolutions per minute, on 6 to 10-inch feed.

They use Steam Feed

No. 1 TOOTH.

VIZ.

AMERICAN SAW Co.

Emerson, Smith & Co.

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Inserted Tooth,

BIT TOOTH,

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SPECIALLY

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SOLID SAWS



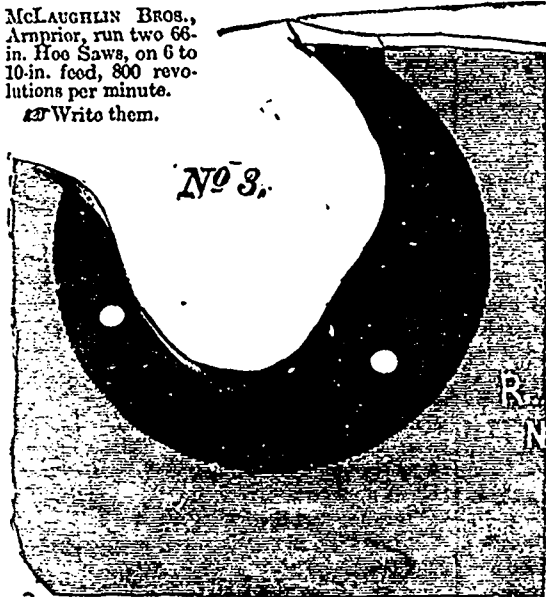
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With this Saw you have either a Bit Tooth Saw or ordinary Inserted Tooth Saw, with teeth two-and-a-half inches long, both fit same socket and are interchangeable in a few minutes. These Bits require no gumming, and very little filing; are so firmly held that they will stand all necessary sawing, and can be worn down to dotted line shown in cut; they rest on lips, saving the strain on the rim of the saw. For these reasons they will cut more and better timber at less cost than any other tooth. **EXTRA BITS (per 100) No. 1, \$9; No. 2, \$8.— (per 1000), No. 1, \$80, No. 2, \$70.**

Two sets No. 1 Bits have cut 500 m. feet pine, in 66-inch saw, running 800 revolutions per minute, on 6-inch feed. E. E. PARSONS, Amprior.

We run 60-inch to 72-inch Solid Saws, as thin at center as 10 gauge at run—saving, over a 7 gauge saw—1000 feet of lumber in every 25,000 cut.

McLAUGHLIN Bros., Amprior, run two 66-in. Hoe Saws, on 6 to 10-in. feed, 800 revolutions per minute. Write them.



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SAVE TIMBER



GROW RICH

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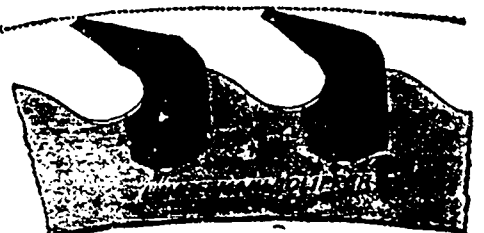
Having special facilities for the manufacture of extra thin saws for board mills, we are prepared to receive orders for Circular Saws as follows.—64 inches in diameter, as thin as 12 gauge at rim and 11 at center, 54 to 58. 11 gauge at rim, 10 at center, 66 to 72; 10 at rim, 9 at center. Our unparalleled success with thin saws during past few years has induced us to recommend them to our customers. Our superior facilities are—1st, Evenness of Temper; 2nd, Perfect Accuracy in Thickness, Saw balances perfectly; 3rd, Properly Hammered, to have equal strain in all its parts and at same time run true. This department is under the special supervision of J. E. Emerson, who has had 30 years experience and is without doubt the most successful circular saw maker in the world.

NO EXTRA PRICE FOR THIN SAWS.

EMERSON'S LUMBERMAN'S CLIPPER SAW

Can insert one tooth for every inch in diameter of Saw.

Extra Teeth 25c. each.



Extra Teeth 25c. each.

Designed specially for Thin Saws not thicker than 6 gauge at rim, or thinner than 15 gauge at rim.

The CLIPPER FLANGE SAW

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Two and a half inch long



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Mention this Paper.

DIFFERENCE BETWEEN DRY ROT AND WORM-EATEN WOOD.

Dry rot is a term applied to damp wood under process of destruction by fungi, or low forms of vegetation. The albumen and the essential oils in the wood become the food of this secondary or parasitic vegetation; the woody tissue is broken up, and the walls of the cells destroyed, an earthy, powdery matter being left as the residua. This residua bears on its face a close resemblance to burnt or charred wood. Indeed, it is akin to burnt wood, for the albuminoids and the essential oils which escape under the influence and form the food of fire, have been consumed or absorbed by parasitic vegetation. The residua, an earthy, inflammable substance, is practically identical with that resulting from fire. Dry rot, or the destruction of wood by secondary forms of vegetation, is dependent upon two conditions—heat and moisture. To prevent dry rot, the wood is dried or seasoned, by which one of the elements is withdrawn. To guard against the return of this one element, the wood is painted or varnished, and hence the general application of paint or varnish. Where wood can not be painted, preservatives are used, the object of which is to change the character of the wood, so far as its secretory matter is concerned. In this direction, creosoting is the most common or customary, the object of which is to poison the albuminoids and the essential oils, and so render them unfit for food to low or secondary forms of vegetable life. Salts, sodas and metallic injections have the same effect, but they are in a large degree soluble in water, and in course of time become weak or disappear, and consequently they are not so largely or generally used as creosote oil. The amount of moisture necessary for the support of the secondary vegetation is very large. This is supplied by humid or stagnant air, or by damp walls or subsoils, and hence it follows that wood subject to passing air, or brought under the influence of vegetation, is free from from this disease or dissolution.

Worm-eaten wood is wood injured by mechanical action—i. e., by animal life. The same conditions are imperative to the support of this form of life as to the above, but the amount of moisture necessary in this case is very small compared with that required for the support of vegetation. Wood to be worm-eaten must be subject to damp, humid, or stagnant air, and it must be a sweet wood, or the sap of a bitter or pungent wood. Ash, elm, walnut, birch, beech, and lime tree are sweet woods, and very subject to worm. Oak and resinous woods are bitter, pungent or unpalatable, and, except in the sap wood, are fairly free or proof against the attack of worms. Under certain conditions, as in the roofs of churches covered down with lead, where condensation of the atmosphere ensues, and the wood absorbs moisture, the heartwood of even oak will fall a prey to the action of worms. In some cases the necessary moisture is supplied by the ends of the beams being inserted in walls, the materials of which are porous stone. Here the damp ends of the beams will be riddled with worms, and, sponge-like they will crumble away, and, if not supported, will fall clear of the walls. The heartwood in this case seems to have lost its pungent qualities and to have become soft with long saturation; but, not having been soiled upon by fungi, to still retain its albuminoids, and to be sufficiently endowed with them to form the food of worms.—*Furniture Gazette.*

LOCATION OF A MILL.

The following contribution by T. G. Langdon, appears in the *Indianapolis Woodworker*:—The very first thing that should command the attention of a person or company going into the lumber working business is the location of the mill. For a local retail trade a point in the centre of business is the great thing to be gained, and for a wholesale shipping trade to be near a place where putting lumber on board of cars or vessels or both, is the great end in view. But there is one thing common to both these trades which should be the first and great objective point. Ease of getting stuff to and from the mill, with the least trouble and expense of moving the stock. Every man that knows about lumber knows that it costs a great deal to handle it, and and if it has to be handled over three or four

times where it needed to be moved but once, there is added a very great percentage to the cost of production, and if he has to compete with mills in the same business he will find himself doing loss business with a larger amount of help, who are worked harder, and not producing as much as the company who has taken greater pains to have a mill where lumber can be handled at the least possible expense. The first point I would make is to have a mill located on perfectly level ground, so that teams with heavy loads as lumber teams usually draw can come and get away easily, and so that no help in or about the mill shall be used to load or unload teams. I do not take into account the item of insurance as a recent writer has done, for "constant vigilance" is the price of safety in planing mills. Sometimes mills are set on fire by catching from other buildings, but very much oftener they are caused by carelessness, not only of employees, but from owners themselves, who neglect to keep all places around the furnaces properly cricked up and partition walls made sound and secure from any possibilities of accident in that direction. One great thing in locating a mill is getting on good, firm ground, so that after the mill is up and the machinery in it will not be constantly settling down, which would be a constant source of annoyance from the shafting being always out of line and consequently always going hard and often breaking. Of course there is a remedy by piling, but piling if properly done is costly, and the land that must be piled to set a building on almost without exception cuts off having a basement, which I consider a great advantage, because it is so desirable in all wood working machinery to belt from below. In places, however, which are affected by tides and overflowing of rivers I would by all means keep everything above water. The belting can be managed easy enough, only keep it out of the water. The great objective points is to have plenty of room in and about the mill—outside for keeping lumber and conveniences of getting around, and inside for handling and working it. It is very good to have plenty of room to expand in, for everybody expects to increase their business and consequently they want room to do it in. Have a good reserve on hand so if you go into market and find somebody hard up and anxious to sell a million or two feet of lumber at a good discount, you have just enough room to put it in and not crowd you.

Now to a company just going into the lumber working business I would say, first sit down and count the cost, and provide yourself with ample means before starting, and having secured that, make a good plan of everything you want in your business, yard room (if you run a yard) with ample space for piling your lumber, and good avenues between the piles for teams to load and unload, and good generous sheds for storing nice dry dressed or rough lumber, with projecting roofs so teams can load and unload in storms without danger of getting stock wet; also a place for a good, generous dry-kiln, where a team can drive in and unload instead of leaving it outside and then have to carry it in by hand, thereby adding a large percentage of cost to production which somebody must pay for. And here will be a great item to be provided for. Plan if possible so that when a load of lumber is drawn in it can be left just where you want it, and not have to be carried over the shortest distance. Just here I want to contrast two dry-kiln rooms which I know of to show the difference in the cost of filling each.

In the one the teams drive alongside a shed, and breaking it across the wheel the teamster passes it up to the man on the shed, who carries it about 50 feet to a door where another man takes it and carries it 50 feet more and leaves it across a horse at the door of a dry room, where two men stick it up. The other case is a dry house on good level ground. The teamsters backs in and throws off his own load without help from anybody, and does it in half the time the other teamster can pass his load to somebody on the shed. In the first case the company want to utilize the heat from the boilers, and in the other the man wants to avoid the danger of fire by having the dry house away from the mill, and also to take as little help as possible to fill the dry house. To you who run lumber mills I will leave to decide which of the

two are using economy in the matter of drying lumber. I bring this item of drying room in merely to show how much can be saved by having ample room for every needed convenience around a planing mill. To those not using a dry room it does not apply, but there are so many establishments that do use one that it is well to have them so that we can use them economically. Perhaps a great many will say, they have been long established and it would be at great expense to overhaul everything to suit their ideas of convenience. They are getting along comfortably well and making fair profits as they are, and are perhaps acting the parts of philanthropists in giving more employment to those who are needy and want the employment to support their families. This is all very well, but those who have to use lumber have to pay for the extra cost of production in some form or other. I know of several mills which if years ago some stray spark from a locomotive or some spite of an incendiary had caused them to be entirely burned up, that would, if built up with every convenience, have been far richer men to-day, and in some cases I think been kept from bankruptcy. In conclusion let me repeat: If you are intending to go into the lumber-working business in any form whatever, give yourself plenty of room for all your wants and a good reserve for increase of business. It is cheaper to own land and pay taxes on it than it is to hire a little nook and corner here and there, and pay a large rent to those who know they can make you, because you must have it, even if it is inconvenient. I know of parties to-day who would pay a much higher price for adjoining land for yard room than the land would cost in the market, and who could have had the same land a few years ago for a nominal price, and now they are paying twice the amount that the land would have cost them every year for rent. Other parties saw the future value of the land and wisely secured it, and it cannot be bought now. I have spoken in this article of the desirable outside convenience of the lumber-worker. In another I shall speak of the inside accommodations.

BOOMING PROFITS.

The *Northwestern Lumberman* says:—Since it has been proposed to restrict the charges of the boom companies in Michigan, there has been considerable discussion on both sides of the question. The proposed amendment is that the net dividends of the companies, after paying for all repairs, running expenses and losses, shall not exceed 20 per cent. on their capital stock in any one year, or 10 per cent. if the whole amount of capital stock has been paid to the stockholders. The following argument and figures are from the *Saginaw Herald*, the figures showing conclusively that stock in a Michigan boom company is a good thing to have:—

"The very nature of a boom company's business renders the occupancy of the river exclusive. Only one company can do business at one point. All the shores suitable for booming purposes are bought up or rented by one corporation. Logs cannot be stopped above its booming ground to raft and sort them; and below are the lakes, where the logs are lost if they have not been stopped and rafted. Under such circumstances competition is impossible. The monopoly is perfect, and whoever floats logs upon the stream must pass the boom and submit to the company's terms or run the risk of losing his property.

"Now, no man, however honest—and certainly no corporation—should be trusted with unlimited power to levy on other men for contributions. Such a power is sure to be abused. Yet the boom law of 1864 leaves this very power with every boom company, for it fixes no limit to the amounts which they may wrest from the log-owners to divide among their stockholders.

"The records of some of the largest companies in the state have been examined to show how they used their powers.

"The Manistee River Improvement Company, starting with a paid-up capital of \$22,000, raised it to \$100,000 by stock dividends, and in two years—1873-4—divided among its stockholders a greater sum than the whole amount of capital stock paid in by them.

"The Muskegon Booming Company began

with a capital of \$40,000, and ran it up in the same way until it reached \$200,000. In 10 years it paid \$216,265 in cash to its stockholders, and met, besides, all its expenses and losses, and paid for its improvements. In a single year it divided 200 per cent. on the whole cash capital originally paid in, and its cash and stock dividends for the ten years swelled to 1,100 per cent. on that sum. It still holds its \$200,000 of nominal capital as the basis of future exactions to be continued while mills stand at Muskegon and logs are floated to them.

"The exactions of the Tittabawassee Boom Company have been more moderate. It is by far the most important corporation of the kind within the state. It has some thirty stockholders, of whom no one owns a controlling interest. It has watered its stock 100 per cent. only; and it has volunteered to reduce its dividends to a lower point than the other boom companies would consent to. But even this company, within the first two years of its existence, paid back to its stockholders in net dividends an amount of \$15,000 greater than the entire capital ever paid in by them, and having thus reimbursed them, it started out in 1867 with a capital stock which cost them \$15,000 less than nothing, and has gone on collecting dividends varying from thirty to eighty per cent. and amounting in the aggregate, at the close of the present season, to \$375,000 over and above all expenses, repairs, improvements and losses. Its average cash dividend for the first ten years was 47 per cent., and its total cash and stock dividends from 1865 to 1882 aggregated \$425,000—an advance of 850 per cent. on its actual capital.

"Such facts as these abound also in the past and present management of other companies. Some of them, in defiance of public opinion, and against the protests of large minorities in their own board of directors, persist in demanding dividends twice as large as in the instances referred to. This is notably the case with the Risco River Boom Company. But enough has been stated to show the need of legislation. What it shall be for the legislature, to which this appeal is made, to determine.

"Uniform treatment of all companies, and a uniform measure of protection to all citizens, is indispensable to a just law. The price of rafting logs cannot be fixed in advance, and cannot be uniform. It must vary with varying conditions. But the profits of companies can be made uniform, for the profits of any corporation consist only of the dividends earned on its capital stock. In this respect the proposed legislation is most liberal. A company that could guarantee an annual dividends of 10 per cent. while it continued in existence, and the repayment of all its capital to its stockholders when it should be wound up, would command a high premium for its shares. But is better yet for the stockholders if they can have their capital paid back to them almost at the outset, and still have the right to a heavy dividend so long as the corporation continues.

"Another reason for this legislation is that it removes an apparently unjust discrimination in favor of capital as against labor. Capital and labor furnish the whole service of rafting and booming. The capital is worth from 4 to 7 per cent. per annum in the open market; and labor from \$1.50 to \$3 per day, if there is free competition. Now, if the laborers should combine to take possession of the outlet of a river, and should arrogate to themselves the sole right to do the labor at that point, fixing their own price and excluding all other men from competition, it would be an illegal act, to suppress which the military power of the state might be invoked. But no less vicious is it, even if done under the forms of law, that a few men should monopolize the booming grounds at the mouth of a great river; organize a boom company under a state law that fails to protect any one but the corporation formed under it; fix their own arbitrary valuation on the property used or capital employed; exclude all competition, and then enforce the payment of any rates they choose for services rendered.

"Another reason for this legislation is, that without it there will never be uniformity of charges. While some companies are strongly influenced by public opinion, and, without legislation, reduce their charges, others, owned lar-

gely by men living out of the state, care no more for public opinion than the owners of railroad shares or lottery tickets. One company is satisfied with a dividend of 15 per cent.; another wants 20; and another will take nothing less than 30, and figure that upon its capital, watered stock and all.

"A general law alone can balance the scales of justice between the different companies, and between them and the citizens who are compelled to employ them."

FORESTRY IN THE NORTHWEST.

The Winnipeg Commercial says:—No question gathers around it much greater interest to the people of Manitoba and the Northwest than that of forestry. The preservation from unnecessary destruction of what timber we have, and the reproduction of sufficient to take the place of what is cut every winter is a subject for serious consideration by all. At a recent meeting of the American Forestry Congress, Prof. Sargent, of Harvard, read a paper in which he touched upon the matter. Referring to it, he pointed out that the question of tree planting must arise in the Northwest, and the sooner it is grappled with the better for the welfare of the future millions who are expecting to people the vast prairies west of Winnipeg. In the matter of fuel alone, its importance may be estimated from the fact that there are extensive tracts of western territory where the farmers journey from ten to twenty miles by wagon or sleigh in order to obtain fuel, or where they have to rely solely on the wood train which at intervals supply them; and such farmers are often exposed to positive suffering when extensive snow blockades take place. The prairie farmer indeed soon knows the value of a belt of trees upon his farm, not merely as a source of fuel and fencing, but even more as a windbrake, warding off the fierce blizzards and in summer sheltering his growing crops, fruit trees and stock from the strong prairie winds which, developing into storms, cause almost every season vast injury.

It is not at all improbable that the planting of forests on the prairies in Manitoba, Dakota and Iowa, will be the solution of that most embarrassing problem—the grasshoppers—by affording obstruction to the high winds which bring these insects from their habitats farther west, and by furnishing suitable homes for myriads of birds which would keep the increase of the grasshoppers in check.

The planting of forests will also probably solve the question of the successful growth of fruits in Manitoba and the North-West. Fruit trees need protection alike from storms and from parching winds, and especially in our western prairie country is this necessary. It has been laid down as almost an axiom in the Western States, that the forest trees must precede the fruit trees in order to afford such protection.

In Minnesota an earnest effort has been made to encourage the planting of trees. A State Forestry Association has been organized, and annually offers premiums for the largest number of trees planted on a day in May denominated Arbor Day. It is estimated that in the spring of 1877 there were 5,290,000 trees planted in Minnesota, and of these over half a million were put out on Arbor Day. During the entire planting season of that year it is believed that about ten millions of trees were planted, and of these, that about 70 per cent. have lived.

The question of tree planting is one which should be actively taken up at once in our North-West. The Government of Manitoba could not grapple with a more pressing subject for legislation, unless it be drainage. The greatest drawbacks against which the North-West has to contend, from an agricultural point of view, are wet lands, scarcity of timber and liability to high winds, and, in some localities, to summer frosts. Dakota and Minnesota have equally these drawbacks? The Manitoba Legislature has taken up the question of drainage, and active efforts are now being made in some parts of the country to reclaim the wet lands. To cope with storms and frosts seems hopeless, and yet experience has found the great value of belts of trees around each farm as affording effective shields against these. What the Gov-

ernment there should do is to promote Forestry Associations, and to in every way encourage tree planting by exemption from taxation or by direct premiums or bonuses. Any such encouragement successfully followed up will be returned one hundred fold in the larger and more certain crops, the store of wood for lumber and fuel created by the growing timber, the relief from the monotony of the prairie landscape through the belts of trees dotting the scene on every side, and not least, in a more contented and prosperous community of farmers.

ST. JOHN, N. B.

The St. John, N. B., News, of March 26th, says:—It is impossible at present to speak with any certainty of lumber prospects for the coming season. Builders are beginning to make inquiries for spring stock, and appear to expect to pay smaller prices than they did last year. Dealers are, however, holding off for better figures, as the cost of operating in the woods was much heavier this year than formerly. Reports from abroad so far favor the purchaser, and if the European markets do not brighten—which is hardly to be expected—there must be a general decline in our home markets. The changes in the American tariff have certainly not been in our favor, and no marked increase to our trade in that direction can be expected. Prices remain unchanged.

The Northwestern Lumberman says that one reason why hemlock is not more used in the Northwest is that carpenters so generally object to it. It is more disagreeable to handle than pine, and the man who works it has a regard for his hands. It is harder on tools than pine, which is another reason that the objections are filed. The carpenters in the eastern states, being used to hemlock, do a building with it without grumbling, and the western states the knights of the plane will be compelled to handle more lumber than they are now doing, when, it is to be hoped, they will say less against it.

Advice to Mothers.

Are you disturbed at night and broken of your rest by a sick child suffering and crying with pain of cutting teeth? If so, send at once and get a bottle of Mrs. Winslow's Soothing Syrup For Children Teething. Its value is incalculable. It will relieve the poor little sufferer immediately. Depend upon it, mothers, there is no mistake about it. I cure dysentery and diarrhoea, regulate the stomach and bowels, cure wind colic, softens the gums, reduces inflammation, and gives tone and energy to the whole system. Mrs. Winslow's Soothing Syrup for Children Teething is pleasant to the taste, and is the prescription of one of the oldest and best female physicians and nurses in the United States, and is for sale by all druggists throughout the world. Price 25 cents a bottle.

The worst Scrofulous Sore, the most indolent Tumor, and the most foul Ulcer known, may be cured by the combined use of Burdock Bit- ters and Burdock Healing Ointment. Ask your Druggist for these infallible remedies.

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A SECRET.—The secret of beauty lies in pure blood and good health. Burdock Blood Bitters is the grand key that unlocks all the secretions. It cures all Scrofulous diseases, acts on the Blood, Liver, Kidneys, Skin and Bowels, and brings the bloom of health to the palid cheek.

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PETERBOROUGH, Ont. APRIL 16, 1883.

HOP poles have taken a tumble in the American market, due to an overstocked market.

A CHURCH is being built in Bavaria entirely of papier mache. It will be large enough to seat 1,000 people.

VENEERING is said to have originated with the art of cabinetmaking, and was used by the Egyptians 2,300 years ago.

ACCORDING to the Grand Rapids' Times, the Muskegon lumbermen will fall short 150,000,000 feet of their anticipated cut of logs.

SOME two hundred thousand feet of timber was purchased in Quebec on March 30th for the Grand Trunk Railway from R. R. Dubell & Co.

THE Selkirk correspondent of the Winnipeg Commercial says:—The lumber left here last fall by the boats for transshipment to Winnipeg; is being moved by the C. P. R. at the rate of 20 cars per day.

OAK barrel hoops are got out on Puget Sound extensively and shipped to San Francisco, Cal., where there is a good market for them, at \$22. Hazel hoops bring \$5, \$6 and \$7, according to size and quality.

NEW ORLEANS is destined to become one of the most important lumber markets of the United States. The vast forests of Arkansas, Louisiana, and Mississippi will furnish the supply, to be in time distributed throughout the world.

THE Lumberman's Gazette says:—Under the new tree-planting law in Canada, it is expected that hundreds of thousands of trees will be planted in the Dominion this spring. It is an excellent law, which it is thought will work admirably.

Pork has become one of the products of logging camps. When one of J. C. Brown's camps, Ogemaw county, Mich., broke up, lately, six or eight fat hogs were shipped to Saginaw. When the pigs throw like that on what is thrown away by the camp cook, the men must have lived pretty high.

THE Southern Lumberman says:—Surrounded, as we are in many places, by a virgin growth of timber, it is almost impossible to convince our people that tree planting is a necessity. Looking at our immense forests of to-day, standing in all their primeval beauty, it is difficult to realize that in a few years the best timber trees will have been felled; but it is a certainty, so sure as night follows day.

THE Grand Haven Lumber Company, of Grand Haven, Mich., can boast of the largest log that has been cut this year in the State of Michigan. The log was pine, and was cut about the middle of last month on the company's job at the head of Flat River. It measured 53 inches at the top and scaled 2,916 feet. The log is 16 feet long, perfectly sound, and measuring over six feet across the butt.

WE bespeak the especial attention of our readers for the large advertisement in this issue of the Waterloo Engine Works Co., of Brantford. As will be seen they have a great variety of the most approved saws for mills, and supply all kinds of saw mill furnishings of the most improved kinds. The reputation of this firm is too high for it to be necessary for us to dwell upon it, and their customers need have no fear of disappointment.

THE Belleville Intelligencer says that in Gilmore & Co.'s limits, near Beaver Creek, the snow is seven feet deep on the level. The shantymen are "winding up" their work on that stream. The cut on that limit will be about 80,000 pieces. Exclusive of teamsters and jobbers 110 men and 80 teams have been employed all winter in the four shanties located in that section. The cut is expected to reach Trenton by the 15th of June.

THE Duluth, Minn., Tribune says that the men who are coming in from the woods this spring are pursuing a course rather different from that of former years. Instead of spending the greater part of their earnings in the saloons and in gambling, they are nearly all leaving town for the big farms of Dakota, or to take up claims, or to engage in other work further west. The sale of Northern Pacific tickets at the Duluth station has averaged \$500 per day for several days past.

THE Lumberman's Gazette says:—Maine has been noted for its lumbering ever since the state was known. An eastern man working in the pineries, is alluded to even at the present day, as "a State of Mainer," no matter what state he hails from. Maine is evidently not denuded of its timber, or is securing the benefit of a reforestation. The Maine Journal says that something like 110,000,000 feet of logs had been cut and will be floated down the Kenebec River the ensuing summer.

THE Muskegon correspondent of the Northwestern Lumberman says:—On the headwaters of this stream there is plenty of snow and good hauling, while nearer the mouth of the river there is still plenty of snow in the woods, but as there are more clearings, consequently the roads more exposed, the hauling is poor. Quite a number of camps have broken up, having completed their jobs. I hardly think our jobbers or operators have got in within 50,000,000 or 75,000,000 feet of last fall estimates, but, with the old logs left over, there will be all the booming company and mills can handle.

THE Northwestern Lumberman says:—The project is to construct a railroad from Duluth to Winnipeg, and to have it pass through the Red Lake, Minnesota, pine timber region, and the Remy Lake mineral district. The Duluth & Winnipeg Railway Company is an organization already chartered for this purpose, and it is said that work on the line has already been begun. The Grand Forks boomers want a road to Duluth also and propose to connect with the Winnipeg line at Red Lake. A better railroad scheme could not be conceived. If Duluth could secure these two roads, besides the Vermillion Lake line, her "zenith" aspirations might yet be realized in part.

THE hurricane of 1863 blew over numberless coconut trees in the Bahama Islands. Instead of dying, each prostrate tree sent up an upright shoot from the tip. Now these branches are from twenty to forty feet in height and yield abundantly.

THE London Timber Trades Journal says:—Perhaps spruce sellers have found affairs as bad as most. A month ago they exhibited some little amount of firmness, and if deliveries had continued active an advance might have been established. But the demand fell away, and the heavy stocks of spruce deals, which at the commencement of the year we indicated were held at the inland wharves and railway depots, have evidently told with no inconsiderable effect. It is perhaps difficult to fix the exact market value of St. John spruce deals to-day. If a really good buyer were to place himself in form for a good line, he would doubtless find sellers extremely accommodating.

SUCCESSION OF FOREST GROWTHS.

THE Lumberman's Gazette says that Robert Douglas, the great western nurseryman, gives, in a brief letter to the Gardener's Monthly, some interesting facts concerning the succession of forest growths—the result of years of observation. Where the forests are cut down and the fires are kept out, they in the main reproduce the same species. But if a settlement is formed and cattle allowed to run in the cut down woods, the seedlings are destroyed as they appear. In a burned forest everything is changed, all vegetation is swept away. Even the soil is changed, and its surface, if thin, is destroyed.

After a forest fire, the first tree that makes its appearance is the aspen (*Populus tremuloides*), a tree which naturally grows on moist lands, where its roots have the best chance to escape from the general destruction. According to Mr. Douglas, this tree predominates in burned forests in Colorado, Wyoming, Dakota, the Black Hills, Minnesota, Manitoba, Wisconsin and northern Michigan. In Wisconsin and the Black Hills it is mixed with the white birch, and occasionally, as in northeastern Wisconsin, the white birch is the chief tree. Both the trees and seeds of conifers are usually destroyed by fire, except sometimes *Pinus banksiana* in northern Wisconsin, and *Pinus contorta* at high altitudes in the Rocky Mountains. The cones of these two pines are very hard, and that fact may account for their preservation. Next to the aspen and white birch, these trees and shrubs spring up over burned districts which bear seeds that are either blown to great distances, remain long in a dormant state in the ground, or are carried by birds. Where the burned forests consisted of oaks and pines adjoining, or partly intermingled, the oaks will be found after a fire crowding upon the pine lands. This is due in part to the fact that oaks renew themselves from the stumps, which pines do not, and that acorns are often buried by squirrels in spots favorable to their speedy growth.

Mr. Douglas raises a warning voice against the wanton destruction caused by forest fires, and think the time has come when some method should be adopted to prevent their frequency and extent. "Individuals like myself," he adds, "can only implore, but are powerless to prevent, such wanton recklessness; but the public press should arouse the people, the state governments or the national legislature to see that some plan is adopted to check this terrible waste."

EXHAUSTING THE TURPENTINE FORESTS

Wilmington, N.C., March 30.—Those who ought to know say that it will not be very long before the turpentine orchards will consist only of dead pine trees. This is exactly in the line of the predictions of Ingalls in the Senate and S. S. Cox in the House when the Tariff bill was under discussion. Mr. Ingalls predicted that, at the present rate of consumption, it will require only seven years to exhaust the pine supply. In Wilmington the owners of turpentine stills say that within five years, as production is now averaging, the stills will indeed become very still. Already there is a marked falling off in the production. The fearful craft that ply the Cape Fear River still bring down to port hundreds of barrels of rosin daily, but not

so many as they did two years ago. Young trees that no turpentine gatherer would have thought of boxing for turpentine a few years ago are now drained for their valuable juice. It will not be long before a very serious scarcity will occur, unless something is done to protect the young growth.

A new danger to the pines arises from a very recent discovery of the possibilities of rosin. No longer will it be made the butt of jokes respecting its use for fiddles and lager beer barrels, for it has been proved that it can be made to yield a very rich lubricating oil. It is cheaper than linseed, and combined with that oil, it is said, it makes the best lubricator in the market. Experiments are being constantly made, and now it is refined into three grades, the third yielding a drab-colored oil that is beginning to win high favor in the market. The lowest grade is sold to a Philadelphia firm that, by a secret process, converts it into the best axle grease. This development of the value of rosin is comparatively recent and is meeting with such success that it stimulates the production of turpentine and rosin to the great danger of a speedy exhaustion of the supply. There is a chance for a fortune in connection with this production of rosin oil. The man who can discover a process of deodorizing it may, if he can keep his process secret or patent the machinery, retire from business in a short time with all he wants to live on. The attempt has been made. A New York chemist set up his pots and kettles about a year ago in one of the yards adjoining a large still in this city, and fussed for a week with chemicals, making vile smells and viler smoke, but he failed and retired disgusted. If the oil can be deodorized it can be brought into common household use.

The immense tracts of land where once stood turpentine orchards, now exhausted, are not allowed to go to waste hereabouts. It has been found that this land produces a better rice than that of the South Carolina lowlands, and at the present rate of production it will not be long before North Carolina becomes the great rice-producing State of the Union. Something, however, will have to be done by the Legislature of the State, as was done in Maine, to save the forests, or before long its surface will be denuded of pines.

WHITE PINE AS A FOREST TREE.

BY JACOB W. MANNING, READING, MASS.

Our native white pine (*pinus strobus*), which was introduced into England by Lord Weymouth in 1702, and is there called the Weymouth Pine, extends to the 50th degree north latitude, west to Lake Winnipeg, south from Minnesota to the New England coast and along the Alleghanies to Northern Georgia.

It is one of the most profitable of all the pine family as fuel or as a timber tree. A piece as long as a stove for a pail, that can be cut from between the knots measuring a year's growth, is valuable, as well as the longest clear board plank or framing timber. It is always reliable, does not warp or crack as spruce or hemlock, and is light and durable as a building material.

Many open lands and forests abound in trees that will transplant safely, if six to twenty-four-inch trees, and even larger, are taken up with a ball of earth, which should be retained when the trees are planted, thus allowing the roots to be undisturbed; and I find after ample experience, if the holes are opened in the fall and allowed to remain open over winter, especially in hard land that is not to be cultivated, the frost will mellow the earth and put it in much better condition for the growth of trees when planted the next spring.

On rough land, where stumps and rocks abound, the distance apart would be regulated by the lay of the land; they should be planted from three to seven feet apart. It is best to keep all cattle from a young forest.

This work could be done as the ordinary farm work with the usual force of men.

Thus many broken lots of land now treeless and so rocky and worn out that they would not afford a paying crop of rye or even buckwheat, and when used as a pasture would not pay the interest of \$500 per acre for any number of years, could be made to increase in value year after year, with a small outlay at first and little

care after, so that it would be an investment from which a young man would realize a great gain, and no better legacy could be left by an old man to his sons; or if he wished to realize on it he could sell it at a much advanced price over the original value of the land and the labor put on it in planting the trees.

The growth of a pine in good soil in ten years after transplanting is ten to twenty feet in height, with a spread of branches six to fifteen feet, and a diameter of three to eight inches where they stand alone.

Allowing trees to grow in an open situation, with a wide spread of branches from the base up, gives the tree great vital force but makes knotty lumber; but in growing timber it is most desirable if free from knots, and this must be attained by close planting.

I have seen white pine come up from seed in an old worn-out pasture, full of rocks and running briars, that grow in forty to forty-two years to more than two feet in diameter, affording two ample board-logs and a heavy horse load of fuel, and all about it was a little forest of seedlings that required thinning out or transplanting, and all this from one seed that must have been carried many rods by the wind forty years before. Now these suggestions will apply to many almost useless pieces of land on which our New England farmers are paying taxes, but receiving no corresponding income. But on many pieces of barren plain land too poor to grow crops, but on which trees can be grown and cultivated, tree growing can be made more profitable if carried on systematically. The land should be thoroughly ploughed, the trees planted four feet apart each way, the cultivator run about four times a year until the trees shade the ground sufficiently to keep the weeds down. Wherever plantings are made the trees should be thinned often enough to allow their full development.

In all parts of New England, by taking away or planting the trees indigenous to the several sections, great changes are made in the landscape. This change is in the hands of land-owners, and all should have an eye to effect some improvement in their day.

Little is said about aid from Government to renew the forest growth, although it is a giant task, but there is talk and even delay in tree-planting, in hope of aid and bounties or reduction of taxes to encourage it, also hesitation about what trees to plant. We say what grows well and sells well is safe to plant more of.

The most successful and praiseworthy of street, shelter belt or forest plantings that have been made, and, I might say, ever will be made, were by individual effort and purpose, and single-handed labor of one man here and there often in a very obscure way.

This work is greatly to be praised, and if any outside encouragement can assist to plant a few thousand acres with millions of trees each year, it will help to make more extended plantings appear easier to accomplish.—*Canadian Horticulturist.*

TIMBER CULTURE.

Minnesota legislators have "caught on" to the importance of timber culture, and have passed two bills looking toward its encouragement. One provides that every person who shall plant prairie land with any kind of forest trees, except black locust, and keep them in a thrifty, growing condition for a period of six years, shall receive three dollars per year for each acre of grove so planted. Persons planting forest trees along the public highway will be paid two dollars annually for each half mile so planted. Not less than 2,700 trees to the acre must be planted, of which at least 1,800 must be maintained in healthy, growing condition during the first two years after planting, and at least 900 must survive the whole period of six years. Trees along the highway must be planted not more than eight feet apart, and maintained in a healthy, growing condition for four years. Planting cuttings or sowing tree seeds is construed to be included in this act, but no person will receive compensation for the year in which such planting or sowing is done. This act does not apply to railroad companies planting trees within two hundred feet of their track, nor to persons acquiring land under the provisions of the act of Congress to encourage

timber cultivation on the western prairies. The second act appropriates \$5,000 to be paid to the Minnesota State Forestry Association to be by them expended in the promotion and encouragement of tree planting in Minnesota, by means of printing and distributing a manual of directions for planting and cultivating forests, procuring lectures and addresses on the subjects by persons skilled in that science, and disseminating the same through the public press; collecting information on the best methods of forest culture from persons in this state who have been successful in the same; by experimental cultivation of varieties of forest trees which are supposed to be adapted to this climate, or by procuring and distributing seeds and cuttings for the same, and generally to aid and encourage tree planting by any other means which they may think advisable. A portion of the money may be expended in measures for the protection of the forests already growing in the state, by publishing information as to the best manner of preventing forest fires, and otherwise protecting them, with directions for their proper thinning, replanting, etc., so as to produce systematic care of the woodlands of the state and their profitable use.—*Lumber World.*

LAKEFIELD, ONT.

Messrs. R. & G. Strickland have purchased from Messrs. Thompson Smith & Son their limits in the Townships of Ridout and Sherbourne. The timber and logs from these limits will come to Lakefield, their waters being tributary to the Otonabee River. These limits added to those previously in the possession of the firm will afford a supply to the Lakefield mills for many years to come. Messrs. Strickland have also purchased from Messrs. T. Smith & Son their large steam saw mill at Bradford, at which they purpose cutting the logs from the limits in Oakley and Hindon, which they purchased from the Dominion Bank the year before last, and on which they estimate that they have over 100,000,000 feet of lumber. This estimate does not include the Northwest quarter of Oakley, which Messrs. Strickland lately sold to Messrs. Thomson & Baker, of Hamilton, for \$30,000, on which it is estimated that there is about 30,000,000 feet of lumber, but which the firm sold on account of its not being tributary to the waters in connection with their mills.

The capacity of the Bradford mill is 100,000 feet in twelve hours, and being situated on the Northern Railway, about forty miles from Toronto, it will find a ready market there, not only for the lumber, but also for the slabs and other mill refuse for fuel. It is possible that the Midland Railway may see the advantage of making an extension from Atherly to Black River, so as to put themselves in a position to carry the lumber of the extensive limits in the district. If this were done, Messrs. Strickland would remove the mill from Bradford to the Black River.

EXPERIMENTS made with cypress and walnut, and cypress and cedar, all prove that they will rot each other while joined together, but, on separation, the rot will cease, and the timbers remain perfectly sound for a long period.

THE Saginaw Bay and Northwestern logging road, recently purchased by the Michigan Central, says the *Au Sable News*, is hauling logs vigorously, and there is already banked on Saginaw Bay some 15,000,000 feet. This banking ground is said to be the largest one in the world. This road was acquired for business, and spur tracks will be put in from time to time, as may be necessary to reach timber tracts. This road, it is estimated, taps 1,000,000,000 feet of pine timber.

A KINGSTON correspondent says It is the intention of Mr. Fraser, of Almonte, to erect the largest mill in this section of the country at Cameron's Bay, Calabogie Lake. Mr. Mackie, of Ottawa, will also build a mill at Round Lake, which is about three miles from Gildersleeve's Rest on the Kingston and Pembroke. These mills will be ready to run by next spring. The amount of timber that will find its way to Kingston will then be doubled. P. McLaren will bring about 100 cars of timber more to Kingston this year than he did last.

TIMBER and other Consignments, and Agencies WANTED. Highest references. Address "Halsey" care of Messrs. Deacon & Co., 160 Leadenhall Street, London, England. 317

Wanted.

A GOOD MAN to take charge of a Steam Circular Saw Mill at Deux Rivieres, as FOREMAN. Must have a thorough knowledge of timber and machinery. Apply to
A. & P. WHITE,
Pembroke, Ont.
217

FOR SALE

A Railroad Tie Saw & Carriage
(COMPLETE).

A HORIZONTAL ENGINE, 11x14 in. Fly Wheel 7 ft. Diameter, Band Wheel 4 ft. Diameter, 12 in. Face, Heavy Bed and equal to new. Also,

A HORIZONTAL TUBULAR BOILER, 48 in. Diameter, 9 ft. long, with 98 2-in. Tubes, Fire Front, Back Door and Frame. Grate Bars and 40 ft. of Smoke Stack 22 in. Diameter.

CENTRAL IRON WORKS,
417 PETERBOROUGH, ONT.

SAW MILLS

AND

TIMBER LIMITS

WITH

Logs, Lumber, Store Goods, &c

FOR SALE

In the District of Algoma, Ont.

Eighty-Five Square Miles (64,400 Acres) of Limits. Good Pine, First-Class Water Power, Large New Water Mill, Steam Mill, Store and Dwellings.

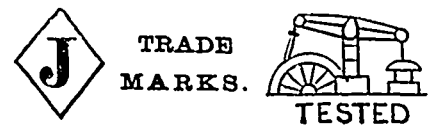
Canada Pacific Railway now running through part of the property.

For full particulars address—

WILLIAMS & MURRAY,

4711 GODERICH, ONT.

PUBLIC NOTICE



Granted according to Act of Parliament and Registered in England, Germany, Canada and the United States.

And Beam Engine Marks.

It having come to the knowledge of Messrs. Thomas Jowitt & Sons, of Scotia Works, Sheffield, in the County of York, Merchants and Manufacturers, that several manufacturers and merchants in Sheffield and in various parts of the Dominion of Canada, are pirating the above mentioned marks of **J** and "Beam Engine," which are the exclusive property of the said Thomas Jowitt & Sons, and which trade marks have been duly registered in the Trade Marks Registry of London, and the latter of which has been duly granted to Albert Alsop Jowitt, of the said firm of Thomas Jowitt & Sons, by the Cutlers Company of Sheffield, aforesaid, NOW NOTICE IS HEREBY GIVEN, that legal proceedings will be immediately instituted against anyone trading in Goods of Steel or of Steel and Iron combined, whether with or without a cutting edge, which Goods bear either of the above marks, unless such Goods are of the manufacture of THOMAS JOWITT & SONS.
Dated this 21st day of October, 1882.

YOUNG WILSON & Co.,
EAST PARADE,

Solicitors to the said SHEFFIELD, ENGLAND. 613

THOMAS JOWITT & SONS

Wanted to Purchase.

LARGE QUANTITIES OF

CLEAN SPRUCE & PINE

One foot Long and upwards; three inches thick; three to seven inches wide.

S. J. MORELAND,

LUMBER IMPORTER.

And Manufacturer of all kinds of Safety Paraffin and Vestivian Matches.

GLOUCESTER, ENG.

February 20th, 1883. 310

VALUABLE

Timber Limits

And MILLS

FOR SALE,

CONSISTING OF:

About 300 miles of limits in the Counties of Joliette and Montcalm, in the Province of Quebec, well wooded with spruce, pine, cedar, and traversed by the La Quarreau, Dufresne, and other rivers.

About 25 acres of land (freehold) with a splendid water power and saw mill (freehold) with a splendid outbuildings, on the La Quarreau River, at Montcalm, about 40 miles from Montreal.

About 100 acres of land (freehold) with a splendid Steam Saw Mill, capable of cutting 100,000 logs per annum, a large house for manager, 14 dwellings for employees, large machine shop, planing mill, bakery, store, fire engines and house, wharves, a steam tug, 3 barges, &c., &c., at Charlemagne at the mouth of the La Assomption River, about 17 miles from Montreal.

Also, booms and dams on La Quarreau, Dufresne, L'Assomption, and other rivers.

Three vessels drawing 6 to 8 feet of water can load at the wharves at once, and ships, drawing 25 feet, can anchor with 2 of a mile from the wharves, and load from barges.

The whole is complete and in running order for carrying on a large and profitable lumber business, and will be sold at a low price and on favorable terms.

For particulars apply to THE EXCHANGE BANK, Montreal, or to

JOHN M. M. DUFF,

Public Accountant,

112 St. James Street, Montreal. 315

VALUABLE

TIMBER LIMITS

FOR SALE,

Situated in the Nipissing District.

The following very desirable limits will be offered for sale at Public Auction (if not previously disposed of) at the

Grand Union Hotel, Ottawa, Ont.

—ON—

TUESDAY, 24th Day of April, 1883,

AT 2.30 O'CLOCK IN THE AFTERNOON.

Berth No. 23, Nipissing.....36 square miles
do 43, Georgian Bay.....36 do
do 51, do.....36 do

BERTH 51 is heavily timbered and is very favourably situated for lumbering. The Canadian Pacific Railway crosses the south-west corner of the limit, and parties desirous of manufacturing lumber for shipment to Manitoba and the North West would find this an excellent opportunity for establishing such a business. There is said to be a good mill site on the berth, with great facilities for piling and for shipping either west or east.

BERTHS 43 and 51 are adjacent limits, conveniently located for getting logs into Georgian Bay.

The terms and conditions of sale will be made known at the time of sale.

Further particulars may be had on application to Mr. W. H. Rowley, Manager of the Merchants' Bank of Canada, at Ottawa, Mr. Wm. C. Co, Manager at Toronto, or to

R. O. W. MacCuaig,

Auctioneer, Ottawa.

February, 25th, 1883. 310

MONTREAL TRADE.

As the season advances, the prospects of our lumber interests are brightening, there being now good reason for believing that the demand from the United States will be large during the approaching season, heavy building contracts having been given in New York and Boston, where large quantities of Canadian lumber are used.

WINNIPEG.

The Winnipeg Commercial says:—That lumber will be considerably reduced in price this year there cannot be any doubt. The enormous production, both in Canada and the States, will necessarily cause a reduction in prices.

Wood will be also plentiful, and there need not be any fear of a scarcity in that direction. One firm alone has 20,000 cords to bring into the city, and this is supplemented by large lots from other sources.

A CHICAGO LUMBER ASSOCIATION.

Considerable comment, some favorable, some decidedly the reverse, has been caused by the formation of the Northwestern Lumber Manufacturers' Association, whose object is to strengthen the wholesale lumber market. A meeting of the manufacturers was called at Chicago, March 8, and was attended by representatives from nearly every prominent manufacturing point between Lake Huron and the Upper Mississippi, except the Saginaw valley.

Your committee, considering the fact that there is a prospect of an overproduction of lumber for 1883, and that to prevent such an overproduction a system of curtailment is necessary, recommend as follows: 1. The committee recommends a reduction upon the actual total production of lumber for 1882 of 15 per cent.

secure the carrying out of the above recommendations. This report was adopted, and the convention further proceeded to the adoption of a constitution and by laws. It was, however, stipulated that these should not become binding until signed by firms representing the manufacture of 4,000,000,000 feet of lumber last year.

NORTH WEST TIMBER.

We extract the following from the annual official report of the Minister of the Interior: DEPARTMENT OF THE INTERIOR, TIMBER, MINERAL, AND GRAZING LANDS OFFICE, OTTAWA, 31st December, 1882.

SIR,—I have the honor to submit the third Annual Report of the Timber, Mineral and Grazing Lands Office of the Department of the Interior.

A statement showing the revenue derived from Crown Timber, Mineral, and Grazing Lands for the departmental year ending 31st October last, is appended hereto, together with the report of the Crown Timber Agent at Winnipeg.

Returns from saw mills show the following quantities of building material as having been manufactured during the year:—

Table with 2 columns: Item, Feet B. M. Sawn lumber 26,673,267 Shingles 6,450,311 Lath 2,251,100

New mills, being operated by the undermentioned firms commenced sawing during the season:—

- Messrs. Drake & Rutherford, Fisher River, Manitoba. Messrs. Shields, Haggart & McLaren, Shell River, Manitoba. The Morton Dairy Farming Company, Turtle Mountain, Manitoba. Mr. W. Stubbs, Ebb and Flow Lake, Manitoba. Messrs. Lethbridge & Co., Beaver Creek, Porcupine Hills, Alberta. Mills are being operated by the following firms west of the Third Initial Meridian:— Messrs. McKay (Stobart, Eden, & Co.), Prince Albert, Saskatchewan. Messrs. Moore & Macdowell, Prince Albert, Saskatchewan. The Hudson's Bay Company, Edmonton, Athabasca. Messrs. Hardisty & Fraser, Edmonton, Athabasca. Messrs. Lethbridge & Co., Beaver Creek, Alberta. The Cochrane Rancho Company, Fort Calgary, Alberta. Mr. P. McLaren, Pincher Creek, Alberta. The St. Albert Mission, St. Albert, Athabasca.

The following is a statement of correspondence, applications received, and returns examined:—

Table with 2 columns: Item, Number. Number of letters received 3,579 letters sent 3,109 timber limits applied for 684 mineral locations applied for 746 mill sites applied for 11 applications for grazing lands 154 returns from mills received and checked 113 licenses for timber limits drawn 25 returns of permits received and examined 43 instructions issued for survey of timber limits 34 returns of surveys of timber limits received and examined 8 leases for coal locations drawn 7 " " grazing lands 89

I have the honor to be, Sir, Your obedient servant, G. U. RYLEY, Ottawa. The Deputy of the Minister of the Interior, Statement of Receipts on account of timber,

for the twelve months ending 31st October, 1882:

Table with 2 columns: Month, Timber. 1881: November 5,673 79, December 5,109 31. 1882: January 3,400 87, February 7,795 20, March 2,993 91, April 537 68, May 12,660 61, June 604 42, July 8,903 47, August 5,994 78, September 10,312 13, October 14,035 89. Canadian Pacific Railway account (settled at Head Office) 30,000 00. Total 111,781 26

CROWN TIMBER OFFICE, WINNIPEG, 31st October, 1882.

SIR,—I have the honor to submit the following report of the work of the Crown Timber Office, Winnipeg, for the year just closed.

Statements showing the revenue derived from Crown timber, the number of saw mills operating under Government license in the Province of Manitoba, Keewatin, and the North-West Territories, as far west as the Third Initial Meridian, with the quantities of building material manufactured and sold by each lessee, respectively, during the year, and other information regarding the business of this office, will be found hereto appended.

It will be observed that many of the saw mills shown in the report of last year are not included in the schedule I attach, owing to the fact that some manufacture exclusively logs imported from the United States, while others are small portable mills brought in to cut timber from lands no longer in possession of the Crown; also, that the saw mills shown as situated in the North-West Territories west of the Third Initial Meridian are now outside my Agency, being included in the Saskatchewan District, under the charge of Mr. Thomas Anderson, at Edmonton.

An examination of the returns from saw mills shows the following quantities of building material as having been manufactured during the year:—

Table with 2 columns: Item, Feet B. M. Sawn lumber 25,405,871 Shingles 6,445,182 Laths 2,251,100

showing a large increase over the returns of last year.

The following statement shows the amount of correspondence, number of permits issued, number of seizures made, and number of mill returns received and checked:—

Table with 2 columns: Item, Number. Number of letters written 1,763 " received 1,892 " permits issued 580 seizures made 85 " mill returns received 121

The following changes in the ownership of timber limits have been made during the year: Mr. Joseph Whitehead assigned to Mr. David Ross.

Mr. Robert McIntosh assigned to Mr. J. W. Douglas.

Messrs. Roberts & Whimster assigned to Messrs. Whimster & Kayll.

Mr. Donald Gunn assigned to Mr. E. P. Leacock.

Messrs. Cumming & Co. assigned to Mr. James Kent.

Mr. W. J. Macaulay assigned to Messrs. Dick & Banning.

Mr. S. H. Fowler assigned to The Rainy Lake Lumber Company.

Leases of limits to the following parties were cancelled, viz.: Mr. John McBeth and Mr. R. Z. Rogers.

The total cash receipts forwarded by Deposit Receipt in favor of the Hon. the Receiver General amount to \$61,369.16.

The total revenue derived from timber, including \$36,000 from the Canadian Pacific Railway Company for construction timber, the account for which was adjusted at the head office, amounted to about \$97,639.16. Compared with the previous year, the increase in revenue is \$53,134.99.

The expenses incurred in working this office amounted to \$1,871.43, which, compared with those of the previous year, show a decrease of \$709.43.

Since my appointment as agent I have conducted the business of this office with the assistance of one temporary clerk.

Statement of Receipts on account of Crown

Timber, for the twelve months ending the 31st October, 1882.

Large table with 6 columns: Month, Returns under License, Bonus and Ground, Permits, Fees and Fines & Treasures, School Lands, Total. Includes monthly breakdown for 1881 and 1882, and Grand Totals for both years.

E. F. STEPHENSON, Crown Timber Agent. CROWN TIMBER OFFICE, WINNIPEG, 31st October, 1882.

GIRDLED TREES.

Usually a girdled tree soon dies; but it would appear from the following statements of Mr. W. H. Ragan, of Clayton, Ind., that such is not always the case:—"Hon. F. Beeler, General Superintendent of the Indiana State Board of Agriculture, living four miles southwest of Indianapolis, has a Scotch pine tree from which the bark has been removed for a space of almost a foot, when about three inches in diameter. At this point the wood is as dry and lifeless as a table leg, but above, the top is healthy, making regular and thrifty annual growths, bearing and perfecting seed, and to all visible appearance as healthy as though nothing unusual was the matter with the tree. This condition has existed for years, and the growth above the girdled point has increased to more than three below. This tree was girdled by the sawpuckers. The other is a tree of the same variety on the farm of Allen Miles, two miles east of Belleville, in Hendricks County, Ind., which was completely strangled by an iron ring, two and a half inches in diameter, being dropped over it some years ago. Below the ring for several inches the wood is dead and dry as though it had been in a dry kiln for years; above it is greatly enlarged, perhaps quadrupled in size, and still alive, though declining."—Lumber World.

THE Northwestern Lumberman says:—Some of the prominent yellow pine manufacturers have been considering for some time the propriety of making a move in the direction of a reduction of cut. They recognize the same fact that is acknowledged in the Northwest, that there is an overproduction of lumber, and believe that a healthier trade would result if there was less lumber to go on the markets. But how to decrease the speed of the mills is a problem which not one of the favorers of the scheme has satisfactorily settled, even in his mind. To bring into a combination all the men owning and operating mills in the South, would be impossible, so long as many of them have no money ahead, and doubtless it would be impossible if they were all financially independent.

Chips.

Six million feet of lumber are said to be consumed annually in the toy manufacture of the United States.

On the Pigeon river, in Haywood County, there is a comfortable country church built of the lumber from a single poplar tree.

The Phoenix Furniture Company, of Grand Rapids, Mich., recently received 50,000 feet of mahogany from the Sandwich Islands.

ARRANGEMENTS are being made for the shipment of a large amount of Canadian lumber through Duluth to Winnipeg the coming season.

The council at South Grimsby has taken advantage of the new act for the encouragement of tree planting, and in a few years the high-ways and byways of that township will be as shady as the forest, and summer travellers will bless the wise men of the council.

The Roscommon Lumber Company, of Roscommon, Mich., now has eight miles of logging railroad, besides branches and sidings, and runs ten log trains daily, of 2,000 feet each, which makes an average of 200,000 feet daily that the company is putting in Houghton Lake.

The *Northwestern Lumberman* says that a Georgian Bay lumberman is negotiating with the St. Paul & Duluth road for the shipment of 25,000,000 feet of lumber via Duluth to Winnipeg, Manitoba. He intimates that this is only a drop in the bucket compared with what is to come.

The Morris correspondent of the *Winnipeg Commercial* says that Messrs. Aitchison & Reilly, of Winnipeg, formerly of Ontario, are talking about starting a planing mill at Morris. This is something very much needed, and we hope the gentlemen named will complete arrangements.

The Kewatin correspondent of the *Winnipeg Commercial* says:—Lumber is being shipped from here to Winnipeg and westward at the rate of seven cars daily. Messrs. Dick, Banning & Co.'s yard is almost empty, but the Kewatin Lumber Company appear still to have a good stock on hand.

The London *Timber Trades Journal* says:—We understand that upwards of 12,000 standards of the BS1stSC Bjorneborg make, for delivery during the season, have already been placed by the agents of the stock, Messrs. Scheydt & Gallatly, in England, Scotland and France, at very favourable prices.

The Grand Haven Lumber Company's new shingle mill, which has a capacity of one million feet per day, employs two hundred men and boys, and is claimed to be the largest shingle mill in the world, is completed, and steamed up March 15 for trial. It will commence running as soon as spring opens.

The Boston Lamina Wood Company, Boston, Mass., are making tea and grocers' scoops upon a new and interesting plan. They are made of three-ply wood, the middle stratum or layer being placed with the grain of the wood running at right angles to that of the two outer layers. They are finished with two heavy coats of orange shellac. These scoops will not curl up, like tin, when striking a nail, and they are free from rust.

There are several reasons why walnut lumber will probably decline in the future, but the greatest reason is that while the production has been facilitated by almost every conceivable means, including extensive additions for cutting and transporting, the erection of new mills and tramways, piercing hitherto inaccessible regions in quest of it, the demand is likely to perceptibly decrease, owing to the fact that fashion has decreed that walnut is for a period at least superseded.

The *Trenton Courier* says:—Gilmour's mills are waiting for a move in the ice, to commence operations night and day, with a double gang of men. A new engine and six new boilers have been built to drive the shingle mill. It is reported that Mr. Gilmour has let the building of a dam across the river at an advance of 25 per cent. to Mr. Dinwoody of Campbellford. The intention is to erect a cash, door, blind and moulding factory on the dam. The subject of a bonus for the building of the dam will likely be discussed at the next regular sitting of the Town Council.

A LUMBER KING.

The Kingston *Whig* says:—Last evening a *Whig* reporter met the burly form of Mr. Peter McLaren, probably the greatest lumberman in Canada. He has been most prominently before the public for some time through his celebrated dispute with Boyd Caldwell concerning the use of the Mississippi River. The case having gone through the Canadian courts will now be laid for final decision before the Privy Council. We had thought Mr. McLaren was a Scotchman, but that idea he dissipated. In answer to a question he said he was a native of Ontario, born in Lanark and residing in that section of the country all his life. His father was one of first lumbermen in the district, there he lost all his wealth. He died when his son was 12 years of age.

About 20 years ago the subject of this sketch began lumbering on the Mississippi. He has thrived wonderfully, and can now probably count his wealth by hundreds of thousands. He is a genial man and has many friends in this city, which he visits frequently. Of course, lumbering is his great theme in conversation, and the reporter learned that the past winter had been a remarkably good one for operations in the woods. The snow has been so well distributed that there is very little trouble in moving about the timber limits. The ice has also been firm, and now on all the tributaries of the Mississippi there is piled the product of the winter's work.

The chief streams in Mr. McLaren's limits are South, Molloy, Bear and Louse Creeks. The shantymen are working in the townships of Clarendon, Palmerston, Barrie, Olden and Abinger and as many as 230 teams have been employed. The remuneration per day is \$1.50 and findings for man and beast. About 350 men have been at work, and they have drawn salaries ranging from \$18 to \$45 per month inclusive of board. The supplies in quantity are simply enormous and are despatched almost daily from Kingston in cars, or by teams from Perth and Carleton Place. The pork, beans and bread consumed by the men whose appetites have been sharpened by the keen air and muscular exercise is astonishing. The food devoured in one day in the shanties would afford a meal for nearly the whole population of Kingston.

The cut this year will be about 80,000,000 feet of lumber and 8,000 pieces of square timber. The lumber will be sawn at Mississippi Station on the Kingston & Pembroke Railroad, and at Carleton Place, where Mr. McLaren has two fine mills. The square timber will be brought to Kingston by train, rafted and sent by tows down the river. The expense is cheaper by this route than that by which timber was sent to Quebec some years ago. Palmerston, on the Kingston & Pembroke Railroad, is the chief distributing depot of Mr. McLaren.

THE *Call* notes the sale of property on Lake Superior. The sale was by a Canadian firm, who had built the mill, running two circulars with lath and edging works, shingle mill and all auxiliary modern devices, who had built also a store and fine boarding house, and who owned a tug and lighters and all requisite facilities for carrying on the business: of 50,000 acres of pine land, all the land on Whiskey bay, so-called, a little distance above Sault St. Marie, giving boomage facilities for 200,000,000 feet of logs; timber estimated at 250,000,000 feet, of which 11,000,000 will be got in this season and sawed before the close of 1883. The parties purchasing are Louis A. Hall and A. A. Buel, of New York, consideration not stated. The timber is of good quality, the river which comes in at the bay is navigable for 30 miles from its mouth; every facility is at hand for carrying on the business of lumbering in its most comfortable and advantageous methods.

On Thirty Days Trial.

The Voltaic Belt Co., Marshall, Mich., will send Dr. Dye's Celebrated Electro-Voltaic Belts and Electric Appliances on trial for thirty days to men (young or old) who are afflicted with nervous debility, lost vitality and kindred troubles, guaranteeing speedy and complete restoration of health and manly vigor. Address as above.—N.B.—No risk is incurred, as thirty days' trial is allowed.

SAW MILLS!

Having POLE ROADS to their Timber keep up the Mill Stock and run the year round.

Pole Roads are Cheap, Durable and Speedily built. The Cars can be built by any handy man in a couple of days, and will carry 2,000 feet of Hardwood Logs at a Load, drawn by one Span of Horses.

The Wheels are adjustable on the Axles to accommodate themselves to any bend in the poles.

The Iron Work complete, including Bolts and Washers, with a diagram of Car, are supplied by the undersigned. Prices on Application.

As to cost and utility of Pole Roads we will refer without permission to E. WATT, Gesto, P.O.; W. EDGAR, Kilroy, P.O.; DUNSTAN & IRWIN, Essex Centre, and JAMES NAILOR, Oil City, who are now running respectively 10, 8, 5 and 3 miles, and are stocked with our Cars.

C. NORSWORTHY & CO.,

ST. THOMAS, ONTARIO.

Patentees and Manufacturers of Moore's Improved Taper Cone Food Saw Mills



Established 1874.

Established 1874.

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RELIEVE AND CURE

Spinal Complaints, General and Nervous Debility, Nervousness, Rheumatism, Gout, Liver, Kidney, Lung, Throat and Chest Complaints, Neuralgia, Bronchitis, Incipient Paralysis, Asthma, Sciatica, Sprains, Consumption, Sleeplessness, Colds and Indigestion.

Ask for NORMAN'S ELECTRIC BELTS and you will be safe against imposition, they will do their work well and are cheap at any price.

A. NORMAN, ESQ.—Dear Sir,—Please send me a waist belt. Enclosed find price. Head band I got for my wife has almost cured her of neuralgia. Yours truly, C. L. TILLEY, WATERVILLE, N.B.

Numerous of such testimonials can be seen at my office, proving that they are doing a good work and worthy the attention of all sufferers. Circulars free. No charge for consultation.

A. NORMAN, 4 Queen Street East, Toronto.

NORMAN'S ELECTRO CURATIVE TRUSS is the best in the world. Guaranteed to hold and be comfortable. Circular free. N.B.—Trusses for Rupture, best in America, and Electric Batteries always on hand at reasonable prices. 1117



(This Engraving represents the Lungs in a healthy state.)

THE WAY IT WILL AFFECT YOU.

It excites expectoration and causes the lungs to throw off the phlegm or mucous; changes the secretions and purifies the blood; heals the irritated parts; gives strength to the digestive organs; brings the liver to its proper action, and imparts strength to the whole system. SUCH IS THE IMMEDIATE AND SATISFACTORY EFFECT that it is warranted to break up the most distressing cough in a few hours time, if not of too long standing. It is warranted to GIVE ENTIRE SATISFACTION, EVEN IN THE most confirmed cases of Consumption. It is warranted not to produce costiveness (which is the case with most remedies), or affect the head, as it contains no opium in any form. It is warranted to be perfectly harmless to the most delicate child, although it is an active and powerful remedy for restoring the system. There is no real necessity for so many deaths by Consumption, when ALLEN'S LUNG BALM will prevent it if only taken in time. Physicians having consumptive patients, and who, having failed to cure them with their own medicine, we would recommend to give ALLEN'S LUNG BALM a trial. Sold by all Druggists.

This celebrated Medicine is recommended by Physicians, Ministers, Missionaries, Managers of Factories, Workshops, Plantations, Nurses in Hospitals,—in short, everybody, everywhere who has ever given it a trial.

PERRY DAVIS' VEGETABLE PAIN KILLER.

TAKEN INTERNALLY, it cures Dysentery, Cholera, Diarrhoea, Cramp and Pain in the Stomach, Bowel Complaint, Painter's Colic, Liver Complaint, Dyspepsia or Indigestion, Sudden Colds, Sore Throat, Coughs, &c. Used externally, it cures Boils, Felons, Bruises, Cuts, Burns, Scalds, Old Sores and Sprains, Swellings of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Chapped Hands, Frost-bitten Feet, &c.

The PAIN-KILLER is sold by medicine dealers throughout the world, Price 20c., 25c., and 50c. per bottle.

Market Reports.

TORONTO.

From Our Own Correspondent.

APRIL 9.—There are complaints just now on the part of the retail dealers for the want of sufficient trade to keep their staff of men and horses employed, but on investigation I find that this dulness is not common to all the yards, some dealers avowing that they have all they can do to supply orders as fast as wanted. I think an explanation of this difference may be found in the fact that now streets through properties not hitherto placed on the market, are being opened from time to time in various parts of the city, and a building spurt takes place first in one locality and then in another, and often some miles apart from each other, and it is quite natural that those dealers having the yards nearest to the locality being built upon should enjoy a monopoly of the trade for the time being, although this is not always the case as some dealers whose yards are far remote from the scene of operations, will cut on prices, and deliver a bill for a less sum than others close at hand. In some instances I have known quotations for bills ranging in value to say \$500, on which quotations by different dealers varied one tenth of the entire sum, and this, I presume, will continue to be the case until such times as dealers have the good sense to unite and decide on a scale of prices from time to time as the state of the lumber market may warrant them. There is really no valid reason why dealers should vary five dollars on a bill of moderate dimensions, the class of timber to be supplied being equal.

The stocks at all the yards are fully up to the mark as to the quantity usual at this season of the year, and, with the exceptions noted above, prices remain at same quotations as formerly furnished you. The main questions now agitating the mind of shippers and mill men, are, when will navigation commence, and how will trade open up with our cousins over the way? With regard to the former question we may safely assume that nothing will move from our wharves here of any consequence before the 1st of May, and in regard to the latter, opinions are extremely conflicting, but the writer's ideas have not altered, and the views expressed in former letters, will, I think, be found to hold good, and at the close of the season it will be found that we will not have any surplus stocks left on hand above that usually held, and that fair prices will rule on the market during the entire season.

Table listing lumber prices in Toronto, including items like Mill cull boards, Shipping cull boards, and various types of shingles and lath.

CHICAGO.

The Northwestern Lumberman of April 7th, says:—The salient features of the lumber trade at the moment are these: Considerable activity at Saginaw, at apparently firm prices, fully as high as they were last year at this date; a heavy movement from all the markets west of Lake Michigan, at prices prevalent all winter; nothing noteworthy on the east shore of Lake Michigan, but an active demand at railroad points in the interior of the state, and rapid shipment therefrom; an increasing trade in New England; the opening of the Hudson, and a forward movement of lumber-laden barges at

Albany for New York and vicinity; a revival of demand at Oswego for rail shipment, and a general postponement of navigation on the lakes on account of the ice-bound condition of coast-line and harbors.

In reference to the coming season's supply of logs, it may be generally said that there are plenty of them, and in Michigan they are selling at good figures, as high as \$18 having been realized in one transaction at least.

Receipts, and stock on hand of lumber, shingles, etc., for the week ending April 5, as reported by the Lumberman's Exchange:

Table showing receipts and stock on hand for Albany, Oswego, and Buffalo, including items like Lumber, Shingles, Lath, and Pickets.

OSWEGO, N. Y.

From Our Own Correspondent.

Table showing quotations for Oswego, N.Y., including items like Three uppers, Pickings, Fine, common, Culls, Mill run lots, etc.

ALBANY.

Table showing quotations at the yards in Albany, including items like Pine, clear, Pine, fourths, Pine, selects, etc.

BUFFALO.

Table showing quotations for Buffalo, including items like Uppers, Common, Culls.

BOSTON.

Cotton, Wool and Iron of April 7, says:—The tone of the market continues firm, with a good demand for the season on general lines. Operations in some suburban places are rather backward on account of weather and snow, but the prospect for future operations is quite encouraging.

CANADA PINE.

Table showing prices for Canada Pine, including items like Selects, Dressed, Shavings, Dressed, Laths, etc.

TONAWANDA.

CARGO LOTS—SAGINAW INSPECTION.

Table showing cargo lots for TONAWANDA, including items like Three uppers, Common, Culls.

GLASGOW.

The Timber Trades Journal of March 24, says:—The imports of wood to Clyde during the past week include a small cargo of pitch pine arrived at Greenock, and one of mahogany at Glasgow, also parcels of walnut and staves, &c.

There has been two auction sales held, particulars of are noted below. The Greenock sale attracted a large company, rates steady, and a good business done.

AUCTION SALES.

Table showing auction sales for Glasgow, including items like On 15th inst., at Glasgow, Messrs. Singleton, Dunn, & Co., brokers, Quebec 1st yellow pine deals, etc.

On the 20th inst., at Greenock, Messrs. Singleton, Dunn, & Co., brokers:—

Table showing auction sales for Greenock, including items like Quebec waxy boardwood, Do. yellow pine timber, Do. red pine, Do. oak, Do. elm, Do. hickory, etc.

LIVERPOOL.

The Timber Trades Journal of March 24, says:—There is not much change in the condition of our trade from that noted last week, as the dull and depressed state of the demand from the manufacturing districts continues without alteration. Of course, there are exceptional articles in the market which hold a strong position, such as teak and mahogany, arising from various peculiar circumstances, but for most of the leading articles in the trade there is nothing noteworthy to remark about them, if we except pitch pine timber, especially sawn wood, which has made a decided upward movement during the past week or two, and from the continued scarcity of vessels there is every prospect of such an advance not only being maintained, but of being still further raised within a very short time. Buyers who declined to purchase at rates current a fortnight or three weeks ago now begin to find out their error, and are anxious in their endeavors to get hold of handy cargoes at

prices at which they would have scoffed a short time ago; consequently there has been much more business done in this line recently than has been the case hitherto.

On the other hand spruce does not seem to improve in price, although the stocks are light and no ships are loading at present; but as the time is now near when deck loads are permitted to be carried, there may be some vessels taken up to load from St. John, N. B. At the same time shippers complain that the prices obtainable in the United Kingdom are at present so low there is no inducement to ship; and, therefore, the exportation will be curtailed until paying prices are obtainable on this side.

LONDON.

The Timber Trades Journal of March 24 says:—The long-looked-for revival of trade has not as yet made its appearance, and business generally continues in the same dull state that we have become so accustomed to lately. We have once or twice experienced dull spring seasons, but they generally followed after an especially active fall trade, but there was nothing denoting any briskness in the business done last autumn, and hardly any free-on-board sales entered into for first open water. The present lethargy has continued from the close of last year, with hardly any brightening up of consequence to enliven its monotony. Outside the public saleroom, buyers have been few and far between, and we believe more will be done in the way of consignments this season than is usually the case, owing to a considerable portion of the first open water goods being as yet unplaced.

TYNE.

The Timber Trades Journal of March 24, says:—A little more business is reported generally, but the quantity doing is not great, and leaves great room for improvement. The ship-building trade still causes a demand for American goods, and these, with the exception of pitch pine, are firm in price. Of the latter wood heavy stocks are held, and prices are very low. American yellow pine deals are becoming scarce, and prices are a good deal firmer.

NEW BRUNSWICK.

The St. John, N. B. Sun says:—The lumbermen on the Bay Shore have had a very fine winter for their operations. It is feared, however, there will be a short supply of water, as there is very little snow in the woods. The amount cut by different operators from St. Martins to Salmon River, Alma, is estimated as follows:—

Table listing lumber quantities for New Brunswick, including items like J. & W. Bourke, Wm. Davidson, etc.

SAGINAW RIVER.

EAST SAGINAW, Michigan, March 27.—Some camps are breaking up and others are hauling. Unless a lumberman is forced to, it is poison for him to break camp, so long as the roads will permit a log to be moved; and many who have accomplished all they calculated on when they went in, are still at work. The roads are good, and there is an abundance of snow, with cold nights. A lumberman said to me to-day, "We are, taking old logs into account, 100,000,000 feet short of the amount in at this time last year." This may be so, but it by no means presages a log famine. I apprehend the mills will have all the stock they can comfortably attend to. The rivers are full of ice, and signs of a break-up are not apparent. Wright & Ketchum have put in about 20,000,000 feet over their log railroad, and expect to haul logs until July 1. Bad river will turn out 7,000,000 feet of hardwood and pine logs. Cass river is good for 10,000,000 feet, the greater portion of which is hemlock and hardwoods. Murphy & Dorr were broken up one camp on the Rifle, the crew coming out yesterday, and one on the Chippewa. In all they have operated six camps, and have

two or three jobbers putting in logs for them. Their total product will be about 20,000,000.—*Northwestern Lumberman.*

VENEERING.

Of recent years inlaid veneer or marquetry has attained a remarkable position, and may be said now to have established itself as a permanency in the cabinet work of the age. A quick way of doing this inlaid work that has been employed in the United States for some time is to arrange the pieces of veneer alternately—walnut and maple, for instance—and with a very fine marquetry saw cut the pattern through all the pieces as they lie piled upon each other, thus arranged according to the kind of wood. When this is done the cabinet-maker has a quantity of veneers before him of various woods with the pattern cut out of each, and on the other hand a quantity of fragile cuttings in larger pieces. All that is now necessary to be done is to set the maple pattern in the walnut veneer, or vice versa, and the marquetry is complete. This has the double advantage of cheapness and durability, and the process is one that has the merit of allowing rapid work, and usually of a satisfactory character.—*The Woodworker.*

THE ATHABASCA.

From a description of the Athabasca River in the *Edmonton Bulletin* we take the following extracts:—"The pass from the Athabasca to the Columbia is known as the Whirlpool pass, and is very high at its summit. The valley of the river between the two ranges of mountains is barren and rugged, with little timber, but the sides of the mountains for a considerable height are well timbered with spruce, poplar, silver pine and hemlock. . . ."

The mountains on each side of the Myette have a heavy growth of hemlock, some of the trees being four feet though. . . .

From Jasper house to the mouth of Lesser Slave river, a distance of about 225 miles, the course of the Athabasca is to the north east, and the country through which it passes is covered with heavy timber, both spruce and poplar. There is not in the whole of this distance one hundred acres of prairie along its banks. The current after leaving the mountains is very swift, becoming slower as the distance from the mountains increases. It is probable that from Fort Assiniboine to the mountains, a distance of 175 miles, it will be navigable for steamboats, not because there are any particularly dangerous rapids or because there is not water enough, but simply because the current is so swift. The Hudson Bay Company, however, used to track their York boats up it from Fort Assiniboine—now abandoned—to Jasper's, without making any portages, and boats and batteaux came down safely, but in some places the drop is as great as that of the roof of a house. After leaving the mountains it receives on the north side the Old Man, Baptiste and Lesser Slave rivers. The two former are very large streams rising in the mountains and flowing through a heavily timbered country. On the south side it receives the McLeod and the Pembina, both large. The McLeod flows through a country of almost solid timber and prairie, the former predominating greatly, however, along its banks. . . .

THERE is no agricultural land immediately along the Athabasca and very little in its neighborhood, but the fact that the main river and its tributaries drain an immense district of timbered country and that by the building of a short line of railway this timber can be made available for use on the plains, where it is in the last degree necessary for the development of that region, makes the Athabasca one of the most valuable streams in the whole of Canada.

A correspondent of the *Northwestern Lumberman* at Marquette, Michigan, writing on March 23, says.—Work in the woods is going well now. We are having the only first-class hauling that we have had all winter. The weather is clear, with hard frost. I think as many logs will be put in in March and April as all the rest of the season. Men are plenty, and wages \$1 per month lower than last fall. The snow is still about four feet deep, on an average.

Rafting in Kingston.

The *Kingston News* says:—Mr. McKay, one of the Ottawa lumber kings, is at the City Hotel. It is his intention to have his logs in future floated down the Clyde, brought to Kingston on the K. & P. and rafted in this vicinity. Heretofore his logs were taken to Ottawa. His operations will give employment to a large number of men, and Kingston will be greatly benefitted by the change.

Parry Sound.

PARRY SOUND, April 7.—Extensive preparations are being made for a good season's lumber business. The Parry Sound Lumber Company's water mill will be ready to start on Monday. Their steam mill is being entirely rebuilt, and when finished will be one of the finest mills on the Georgian Bay. The Midland & North Shore Lumber Company, of Parry Harbor, are putting their mill in first-class order by the addition of new machinery and a large iron burner.

Freight Rates.

The *Toronto Globe* of April 4th says:—There is nothing said about lumber freights, but the opinion is that they will open at the same rates as those of last year, \$1.25. There will not be much enquiry for lumber freights if grain should offer at 2c. and 2½c.

It was said in conversation, among some vessel-men yesterday that one of the big schooners was engaged for the round trip, from here to Duluth and back to Kingston. She will take a cargo of coal from this lake to Waubesa, lumber from Midland to Duluth, and a load of stones back from Duluth to Kingston. The coal freight is at the rate of \$1.50 per ton.

Ship Yard Machinery.

Ship timbers require the services of large machines to handle them properly. A Bath, Maine, ship-yard contains a planer supposed to be the largest in the world. It will work a piece of timber 66 feet long, five feet wide and two and one-half feet thick. The keel comes from this machine perfectly true, ready for laying. The same yard contains a big beveling saw, which turns out timber sawed to any desired angle from horizontal. Curved timber and ship-knees can be worked true to a line by it. The same engine that runs these machines also drives a bolt cutter which bites off round iron up to two inches diameter, a large and small circular saw, a machine for making tree nails, a band saw, planer, moulding machine, and a plug and wedge machine. The exhaust steam is used for steaming timber preparatory to bending it.—*The Woodworker.*

Utilizing Steam Liners.

The *Glasgow* correspondent of the *Timber Trades Journal* says:—From the business transacted during the past week at Clyde ports, no new feature has appeared indicative of any decided change in the market as regards prices. There is still a large supply of pitch pine on hand, and this affects values of Quebec red pine, which, especially small squares, may be said to have receded in price, and also 3rd quality deals. But as prospects of trade are good, and house-lotting this spring much better than has been experienced for some years past, there is reason to believe that firm prices for wood goods will be maintained in this market as the season advances. At the same time, as regards deals, it is well known that the carrying power of our Clyde steam liners can be utilized, so that large supplies from Canada might be laid down here in the early summer.

Decay of Timber.

The ordinary life of unprotected timber structures is not more than twelve or fifteen years. Timber exposed to moisture in the presence of air, especially if in a warm place, or to alternate wetting and drying, will decay rapidly. Sap and moisture retained in timber, by painting or closing in the sticks before they are seasoned through, will cause decay of a very insidious kind, as it works in the interior, leaving an apparently sound exterior or skin, which is the layer that had an opportunity to season. Paint on unseasoned timber is, therefore, more hurtful than serviceable. Large sticks of timber

JONES & SON,
Wholesale Lumber & Timber Dealers
39 Broadway, NEW YORK.

Oak, Ash, Cherry, Black Walnut, Poplar, Butternut
And all other kinds of **HARDWOOD LUMBER.**

White and Yellow Pine Lumber and Timber.
Oak Ship Plank and Timber. Pine Deck Plank and Ship Stock Generally.

dry so slowly that, before they are seasoned throughout, decay may begin, and hence pieces of small scantling are preferable to large ones. Dampness and a lack of ventilation combined will hasten decay. The best seasoned timber will not withstand the effects of exposure to the weather for much over twenty-five years.—*Lumber World.*

SOME lumber is now going from Oconto, Wisconsin, to Milwaukee over the Wisconsin & Michigan road, by way of the Stiles junction with the Eastern Grand Trunk.

LAKE of the Woods was a few years ago almost an unknown sea; now steam tugs to the number of 21 are ready to cleave its waters during the coming summer, mostly in the lumber interest.

It is stated the Thunder Bay section of the Canadian Pacific Railway will be opened for traffic on the 1st of May. The company expect to do a very large freight business over this section during the present summer.

WITHIN a radius of 16 miles from Dayton, in the eastern part of Washington Territory, 20 saw and shingle mills will be in operation this season, the lumber output from which is placed at an average daily aggregate of 135,000 feet, all of which goes to Dayton.

THE timber land skirting the streams and lakes of northern Dakota is estimated at 600,000 acres, exclusive of the Turtle mountain region, where there are 550,000 acres. The timber is principally cottonwood, although ash, oak and elm are found in considerable quantities.

THE Marinette Barge Line Company is having a new barge built in Milwaukee, that will have a carrying capacity of 600,000 feet of lumber. It is nearly completed and has the heaviest deck-beams ever put into a vessel in Milwaukee, giving her an extraordinarily stiff backbone. Her length is 164 feet; breadth 33 feet, and depth of hold 11 feet.

NEW YORK capitalists are projecting a railroad from Oswego, N. Y., through Richland, or some town further south, into the Adirondack forest region by way of Redfield, Port Leyden and Raquette lake, to the line of the Delaware & Hudson Canal Company's road and the shore of Lake Champlain. The object is to open up this forest section for lumbering operations.

The *Northwestern Lumberman* says:—A letter from a prominent point on the Wisconsin river says that orders are coming in faster than they can be filled. The writer—a lumberman of many years' experience—says he has never seen trade more lively, especially in northern Iowa and all through Dakota, and that Wisconsin trade is also good. Stocks are light and the log crop will not be large.

It is instanced that 16,000 feet of lumber have been cut from a single sugar pine tree in California; yet, on account of contracts made to cut no logs below the lowest limbs, the tops left of trees which yielded as much lumber as stated, were more than four feet through at the base when the last log was cut. It is scientifically asserted that these trees were of giant size 800 years before the Magna Charta was signed by King John, nearly seven centuries ago.

A KINGSTON correspondent says:—Mr. Kidd has a curiosity in the shape of an old Indian pipe which was found imbedded in a huge pine log in Pittsburg, which was felled about 150 years ago. The pipe is made of soapstone, is about three inches in length, and will weigh nearly half a pound. The cavity is very small compared with the size of the head, which is shaped like a "T," one extremity being bored for the stem and the other for decoration.

THE supply of hard and decorative timber for mechanical and artistic purposes will in the near future, it is thought, be largely obtained from Brazil, where the sources of these choice and valuable materials are known to be well nigh inexhaustible. It is stated that within an area of half a square mile Agassiz counted 117 different kinds of wood, many of them admirably fitted by their hardness, tints, and beautiful grains, for the finest cabinet work. One of these, familiarly known as tortoise shell wood, and believed to be the most precious wood in the world, is found in large quantities along the tributaries of the upper Amazon, where the water can be easily used as a motive power.

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CROWN FORESTS.

The following letter appears in the Toronto Mail:

Sir,—I venture to submit the following suggestions for legislation regarding our Crown forests and their preservation:—

1. All timbered lands to be properly explored by competent parties, and the quantity of each kind of timber, and the soil as to its fitness for agricultural purposes, reported upon, giving an estimate quantity of each description of timber, and where the soil is not fit for agricultural purposes at least thirty per cent. of the standing value of the timber should be charged as an upset price as a bonus. Before selling give public notice long enough before the day of sale for parties wishing to purchase to examine the limits offered for sale, so as to have competition at the time of sale; then charge another thirty, five or forty per cent. of the standing value of the timber as dues to be collected when the timber is put in market by the lumbermen. This would leave the remaining thirty-five or forty per cent. of the standing value of the timber to cover interest on the bonus paid, the annual ground rent to be charged, and timber that might be taken out of the license by actual settlers.

2. No timbered lands to be given to actual settlers unless the locality were fit for settlement, and that the lot sold or located, say 160 acres, should have a sufficient quantity of cultivatable land on it for a farmer to support himself and family by farming. Whenever sales or locations are made, no renewal of license to be given to the license-holder, providing the purchaser or locatee is in actual possession of the lot, and making improvements thereon, and gives the local agent such information as may be required at least thirty days before the day fixed for the renewal of said license, the timber to still remain the property of the Government, and be liable to future timber regulations, the same as it would be if it were only under license, and be liable to Crown dues the same as the timber that is under license. The remaining sixty or sixty-five per cent. of the timber's standing value would be an inducement to the settlers to save the timber from destruction, and the bonus paid by the lumbermen would give him an interest in the standing timber.

In case of fire breaking out and damaging the standing timber on settlers' land, the owner must not cut, nor permit any other party to cut, any timber not damaged by fire before all the timber damaged by fire has been cut, and the land on which the timber damaged by fire stood is in proper course of being cleaned up for chopping, under penalty of losing all claim to the timber on his land; and the limit-holder should be compelled to cut all the timber damaged on his limit before he cuts any timber that has not been damaged by fire, under penalty of losing his license on the limit; and in case the land is fit for farming purposes where the timber has been killed or seriously damaged by fire, compel the limit holder to clear the land and put it under crop, and give him all the authority to the land so cleared and put under crop that an actual settler would have.

Have all kinds of lumber held in bond the same as liquor is held by the distiller, collecting the dues on sawed lumber at the mill, and on other lumber as circumstances might direct while in the hands of the owner or limit-holder, any invasion on the part of the owner or limit-holder to act as a forfeiture.

All timber licenses should expire before the first day of June, and be renewed on or before the first day of August in each year.

By such a system the limit-holder and the settler will each have an interest in the standing timber, and therefore be likely to guard against fires, the revenue will not be materially interfered with by the settlers, and the Government will be saved the enormous expense that the Ontario Government is put to in keeping forest rangers in the lumber shanties to prevent fraud, by not giving correct returns of lumber cut, or by cutting timber on Crown lands and passing it as having been cut on patented lands.

It would also do away with the evil caused by the lumbermen having authority to cut timber for years after the settler is making improve-

ments and living on the land, by the lumbermen coming year after year and felling timber at the settler's door, and frequently leaving the tops of trees on his cleared land for the settler to clear up. Such things have come under my notice, and I am fully satisfied that in retaliation fire has been kindled in a dry time that burnt the lumberman's shanty, and destroyed thousands of acres of valuable timber.

Yours, &c.,
P. W. FREEMAN.

Loughboro', March 26th, 1883.

INSTRUCTIONS FOR CULLERS.

The Hon. John Costigan, Minister of Inland Revenue, submits some new regulations for the government of the Supervisor of Cullers, in respect of the culling, measuring and counting off of lumber and timber. Under them, the Supervisor is required to keep in the office, a book to be called the "Culler's Notice Book," to which book every culler shall at all official hours have access.

Each square timber culler shall, when instructions to measure any raft or transact any other duties in his capacity as culler, give notice of any expense for travelling or assistance he anticipates incurring in the transaction of such official business.

It shall be the duty of the Cashier to see that such notice book is placed before the Supervisor once on each working day, and the Supervisor shall initial each such entry and place opposite to it such remarks as he may see fit to make—indicating that such anticipated expenditure is either "approved," "considered unnecessary and disallowed," or, if in his opinion too high, "partially disallowed."

The actual disbursement thereafter made with the consent of the Supervisor thus obtained may be defrayed from time to time out of the contingencies of the Cullers' Office.

Provided that such payments shall in no case exceed one hundred and fifty dollars to any one culler during any fiscal year.

DEAL CULLERS.

After the 1st of January, 1883, the fees for "counting off" shall be collected by the Supervisor and deposited to the credit of the Hon. the Receiver-General, separately from fees for "culling or measuring."

The Supervisor shall cause the words "Counting fees" to be written across the face of each deposit receipt transmitted to the Department on account of such revenue aforesaid.

The practice of paying to each culler the sum accruing from such counting off ostensibly done by him—as heretofore followed—shall be discontinued, and instead thereof the Department of Inland Revenue is authorized to distribute from time to time the fees so received for counting off in equal shares to each of the deal cullers in the employ of the Supervisor.

STAVE CULLERS.

The fees established by tariff for culling staves, &c., shall hereafter be distributed in the following proportions:—

To the Culler . . . 80 per cent.

To the Office . . . 20 per cent.

GENERAL PROVISION.

Any regulations heretofore in force establishing or enforcing the principle of rotation of cullers are hereby cancelled in respect of any transaction in which the Supervisor shall be notified by both parties thereto that any given culler has been mutually agreed upon between them.

SPARK ARRESTERS.

A lumber manufacturer who has had 6,000,000 feet of lumber consumed at one fell swoop by means of sparks from a refuse-burner, is anxious for information regarding spark arresters, and writes this paper to that effect. The Lumberman has before canvassed the subject, but takes occasion to again refer to the devices used for the purpose. Now-fangled notions and schemes for subduing sparks, while many have been offered, have generally been discarded in favor of first principles. The more common device is simply a wire screen or bonnet, arranged in some cases with an enlarged arm above the stack, or with a hinged joint on a flat opening at the top, the latter being inclined to clog. To obviate this a wire rope is affixed for open-



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25 in ball and 5 in heel are the numbers usually required.

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PRICES for the six different sizes and for Calk Sets and Punches for adjusting Calks, on application to

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Dealers in Lumber and Mill Supplies,
ST. JOHN'S, N. B.

ing and closing the trap. A patent arrangement was tried, consisting of an inclined shelf placed inside the stack in order to so regulate the upward draft that the cinders, getting out of its control, fell of their own gravity upon the shelf, from whence they were passed by a pipe to the ground. It has not come into general favor. The great secret in conquering sparks lays in the height and diameter of the aperture in the chimney. A tall stack with an aperture not too large to interfere with the draft, yet sufficiently so to stay the velocity of the heat, produces the best results. On the other hand, a small stack built upon the principle of securing an active draft is decidedly the most dangerous, since the velocity of the heated air is sufficiently great to overcome the gravity of the cinders. The stack should have a height and diameter exceeding the actual requirements of the grate surface. The sparks then rise to a height where they are less readily buoyed up, and fall into the ash pit. The heated air when confined to small compass will invariably carry sparks or heavy cinders over the top of the stacks. One way of arranging a screen at the top is in the form of a hollow cylinder without cover, four to six feet high, and with a fine enough mesh to retain the cinders or sparks within the hollow. Where this is attached to a stack of proper height and diameter it is said to work excellently. The free admission of upper air cools the sparks and detracts from the force of the heat draft, so that the sparks are extinguished.—*Northwestern Lumberman.*

HOW A MILL WAS KEPT RUNNING.

We have obtained the following interesting description of how Mr. Willett's mills at Chambly were kept running through the winter. The water was so low in the Richelieu River, when the winter set in last fall and, owing to the great severity of the winter, it froze completely over and to such thickness that there was only from 10 to 12 inches of water between the ice and the bottom of the river, and consequently backed what water there was on to Mr. Willett's water-wheels burying them in water four or five feet deep, and forcing him to shut down. It stopped the mill completely, and he finally concluded to open a channel, and sent down to the Hamilton Powder Company and obtained some three or four boxes of dualine with flat

fuses, four feet long, and went to work with an electric battery. In three days he had blown open a channel about 1,000 feet long by from 10 to 12 feet, thereby lowering the back water at the wheels by some two and a half to three feet. The mills were started and have since been running with good speed. This dualine is done up in half pound packages, and two or three of them are attached to the flat fuse and then the fuse to the battery and it blows the ice all to pieces, and if there is water enough to carry it off it will make the channel and lower the water. The ice disposed of in this case was from two and a half to four and a half feet thick. Mr. Willett writing to a friend in this city says he believes it would be effective in preventing a flood in Montreal in case of any sudden thaw. If the material were furnished he believes he could blow all the ice out of the St. Lawrence and save the city from a flood.—*Montreal Witness.*

OTTAWA NOTES.

The *Monetary Review* says:—The staple industry at Ottawa, the lumber trade, is in the meantime quiet. Purchasers are endeavouring to buy at a reduced price, but the owners of timber and sawn lumber are holding on and will only sell at the old figure. What business has been done lately is therefore only in jobbing lots. The outlook for the coming season is regarded as bright. Those who are now daily arriving from the shanties in the woods report that they have experienced one of the best seasons for lumbering operations that has been vouchsafed for a long time. The weather, although a trifle cold, was favorable for the work, and the sleighing throughout was excellent. This, combined with the almost unprecedented length of the winter, enabled the parties engaged to prepare a larger number of logs for the coming drive than they have been able to do in one season for many years past.

A HEARTY RECOMMENDATION.—Jacob A. Empey, of Cannamore, states that he has taken Burdock Blood Bitters with great benefit in a lingering complaint, and adds that he would gladly recommend it to all.

No person can enjoy health while suffering Constipation of the Bowels. Harsh purgatives always do harm. Burdock Blood Bitters is Nature's own Cathartic; it unlocks the secretions, regulates, purifies and strengthens the system.

HART EMERY WHEEL COMPANY, Limited

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

They Surpass All Other Wheels for Free Cutting and Durability.

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

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TORONTO.

WE ALSO REFER TO

WILLIAM HAMILTON, ESQ.,
PETERBOROUGH,
Manufacturer of the Covell Saw Sharpeners.

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

ON THE KENNEBEC, MAINE.

The Kennebec Journal says:—The past winter for lumbering operations has been one of the best ever known in the annals of the business in Maine. Continuous cold weather has prevailed with very little rain and no thaws to speak of. There has also been an abundance of snow, which falling the beginning of the season has remained on the ground and even now there is sufficient for operating and the lumbering crews are still in the woods. Lumbering on the Kennebec and its tributaries has been very successful during the season now drawing to a close. Something like 110,000,000 feet of logs has been cut and will be floated down the river the ensuing summer. The Hon. John Manchester Haynes, of this city, has operated very extensively. His cut will amount to 12,000,000 feet. He has 12 different camps which will average from 25 to 30 men each. Three are located at Brassua Lake; one at Parlin pond; two at Coldstream; three on south branch of Dead River. Bodwell & Co. will cut three million feet on Dead River; M. G. Shaw, 3,000,000, Dead River; Snow & Co., 4,000,000, Enchanted stream; Townsend & Abbott, 1,000,000, Cold stream; Clark & Weston, 1,000,000, Eaton pond; Bradstreet's, 1,000,000, Moose River, 3,000,000, Moxie stream; George Snow, 2,000,000, East Branch; Eveleth, 2,000,000, Black Brook; Lawrence Bros., 4,000,000, Brassau; McPheters, 1,000,000, Black brook; E. & J. Lawrence, 6,000,000, Moose river; Elias Milliken, 3,000,000, Moosehead lake and Dead river. There is also a large number of smaller operators whose several cuts will make up the total. The lumbermen will be coming out of the woods very soon now, as the present favorable weather cannot continue much longer. The building of the magnificent dam at Indian Rock by the Kennebec Log Driving Co. will be completed very shortly, as 200 men will be put on the first of April. The structure will cost not less than \$12,000. Its object is to facilitate the driving of the logs received from the lake through to the Forks. Messrs. Milliken & Sturgis, as we have before stated, have taken the contract to drive the logs and will employ a crew of about 200 men. The driving season lasts from about the 20th of May to the last of August. Ice does not generally break up in Moosehead Lake until about the 20th of May. The prospect is that there will be a good market for lumber in the future, and the amount cut the past season will find a ready sale. There is not a large stock held on the river at the present time.

DAKOTA BUSINESS.

The growth of the lumber business in Dakota during the next five years must be enormous. The territory comprises an area about as large as Kansas and Nebraska combined, and probably a larger proportion of Dakota is capable of profitable farming than that of Kansas and Nebraska. Certainly all that part of the territory east of the Missouri will be thickly settled by an agricultural population. Though within the last five years settlement has been going on in the middle and the northern portions of the territory, but little farm improvement in the way of buildings has been done. In the Red river valley and along the Northern Pacific road west of Fargo the lumber trade began as late as 1877, and the farmers did not begin to put up substantial buildings till 1880. And yet so rapid has been the increase in the lumber trade of that section, that the amount handled at Fargo during 1881 reached 25,000,000 feet. All the new country along the Northern Pacific, the Minneapolis & Manitoba, the newly opening Devil's lake and Turtle mountain region, which is to be immediately penetrated by railroad; the Fargo & Southwestern road, now under construction; the Northwestern to the Black Hills—all these vast regions, now rapidly filling up with new settlers, have yet to be supplied with lumber to build the first permanent houses in town and country. The amount of lumber that will be required for this purposes is simply incalculable. And we must reflect that the supply is not to be furnished twenty years from now—it is not a work of the far off future; it must be done within the next two, three or five years. The proposition is simply startling. And after the first building improvement has taken place, after sufficient primitive house

rooms has provided for the wants of the earlier settlement, then there will follow the building of large barns and dwellings on farms, and more substantial structures in the towns and cities; the same process having been witnessed in Illinois, Iowa, Wisconsin, and that is beginning in Kansas and Nebraska. The Dakota trade must be counted on as a powerful factor in the future of the Northwestern lumber business.—Northwestern Lumberman.

POSTS SET "TOP END DOWN."

It is firmly believed by many persons that posts set in the ground in a position the "reversed" of which they stood while growing in the tree, will last much longer than when set "top end up." In the spring of 1879 I selected seasoned sticks, three feet long. These were split in two, and then cut in two crosswise, making four pieces of each. One set was placed in a well-drained sand, the other in clay soil. In every case two pieces were set side by side, with earth between, one as it stood in the tree, the other reversed. I tried thirteen kinds of timber. Some of these were young wood with the bark on. All contained some heartwood. Those set in the sand were examined in the autumn of 1881. In case of the beach, sugar maple, ironwood, black ash and black cherry, the piece reversed or placed "top end down," was somewhat decayed. In case of red maple, American elm, butternut and red elm, the piece set "bottom end down" was a trifle the most decayed. In case of basswood, white ash, white oak, and blue ash, there was no perceptible difference. In autumn of 1882, the posts set in clay soil were examined. In case of the red maple, sugar maple, American elm, basswood, butternut, red elm, the pieces set "top end down" were most decayed. In case of ironwood, white oak, blue ash, there was no perceptible difference.

I infer that where one piece decayed more than the other it was caused by some trifling difference in the sticks. The freshly sawed ends in each case were placed uppermost, and came an inch or two above the ground.

In some cases one-half of a stick (one piece certainly the reverse of the other) lasted considerably better than its other half. As will be seen, it was sometimes the "top end down" which lasted better, sometimes the "bottom end down," and in some cases there was no difference in durability.—Cincinnati Trade List.

THE WILLOW.

Among the various species of trees whose value is overlooked in this country, especially when the soil and climate everywhere are favorable to their cultivation is the willow, which in England is greatly esteemed for many purposes. It is claimed that we import annually \$5,000,000 worth, when we can as well raise it successfully in any part of the country. This is demonstrated by the rapidity with which it springs up after being planted by farmers for fence purposes, attaining in two or three years large proportions. In the Eastern States the willow may be seen almost about the grounds of every farm house, but its chief service is to protect the buildings from severe storms, and in summer time to afford a refuge of shade from the intense heat of the sun. The Hon. Jesse Fell, of Illinois, says:—"Were I called upon to designate one tree, which, more than all others, I would recommend for general planting, I would say unhesitatingly it should be the willow." It has been used extensively to strengthen dams, growing very rapidly with far-reaching roots that give strength to the soil to keep it in place.—Lumber Trade Journal.

A RIVAL TO THE NORTH WEST.

If we are to believe Le Nord, a paper which derives its title from its location, there is in the neighborhood of Lake Temiscamingue, a country of open prairies, excellent soil, abundant timber in pieces, and silver and lead mines of "incredible richness." This region is well watered, and the climate is mild enough to ripen some kinds of grapes. Even where the land is not open prairie, there are miles of land over which fire has swept, cutting down cedars of unusual size. The roots of the cedar are burnt out; but much of the fallen cedar is well pre-

served. On some of these spots, a child, we are told, could clear an acre in a week. This country is not distant, but it is admitted to be not easily accessible.

This region is near the great lumbering field of the north, where the farmer gets \$50 per ton for his hay, \$1 per bushel for oats, \$1.50 for peas, and \$2.50 for wheat. These prices will not of course last for ever; for when the lumbering is done prices must come down to the average level.

The Temiscamingue region is a mere speck compared with the great North-West; and if all that is said of it by Le Nord be true, its colonization will not have any appreciable effect on the future fortunes of the North-West. It is possible that many French Canadians may prefer it to the country beyond the Lake of the Woods; but is not probable that emigration from Ontario will be diverted from the course it now inclines to take by the temptation of the Temiscamingue country.

Already Le Nord calls for a railway to Temiscamingue, and the Local Government of Quebec will doubtless be importuned to build or aid in building it. At present, however, that Government is in no position to enter upon new undertakings of this kind and it would difficult to say when it will be.—Monetary Times.

THE Winnipeg Commercial says:—R. J. Bell, of Morris, has ordered a complete outfit for a saw-mill which he proposes establishing at Calgary.

THE Brandon correspondent of the Winnipeg Commercial says:—Building operations are going on briskly, and large quantities of lumber are daily arriving.

THE Western Union Telegraph Company has estimated the durability of telegraph poles as follows: Cedar, 16 years; chestnut, 13; juniper, 13; spruce, 7 years. Cedar, chestnut and spruce are used in the Northern states; juniper and cypress in the Southern states, and redwood in California. Poles cut in the summer will not last as long as those cut in the winter by five years.

SEVEN inches from the outside of a log in a Pennsylvania mill, the saw passed through a walnut which was imbedded in the solid wood. The shell and kernel of the nut were sound. The growth of the tree shows that the nut is at least fifty years old.

THE longshoremen of Oswego have met and adopted the following schedule of rates for the opening of the season:—Canada lumber, 20c.; Canada lumber in vessels and barges of 300 M. capacity, 25c.; cedar ties, 1 1/2c.; hemlock and all other ties, 2c.; shingles, 4c.; lath, 5c.; posts per cord, 30c.; stave bolts per cord, 25c.; timber per M. board measure, 30c.; headings 15c.; telegraph poles a piece, 5c.; hour work in vessels, 60c.; hour work in yards, 25c.; hop poles per M., \$3; ash and all hard wood, 35c.

THE Lumber Trade Journal says:—A large portion of the lumber supply comes from Michigan, and Muskegon cuts more lumber than any other city in the world, and so is called the saw-dust city. It is between Detroit and Chicago, being 196 miles from the former, and 192 miles from the latter city, and is on Lake Muskegon, which is about six miles long and two miles wide, and into which empties the longest river in the state, penetrating for hundreds of miles into the best pines in the state. The lake never freezes up, on account of the rapid current into Lake Michigan. There are railroads which connect Muskegon with all the main lines east to the seaboard, and west by water across the lake to Chicago, so it is admirably situated for a shipping point.

Letter from Member of Congress. HOUSE OF REPRESENTATIVES, Washington, D.C., Feb. 19, '82.

GENTLEMEN,—Inclosed find \$1, and will you send me some of N. H. Down's Vegetable Balsamic Elixir by express. I have a bad cold, as has almost every one else here, but cannot find the Elixir, which I used frequently at home and consider a most valuable medicine; in fact, the very best remedy for a cold that I ever used. Very truly yours, WILLIAM W. GROUT.

THE Minnedosa correspondent of the Winnipeg Free Press says:—Mr. Alexander Cameron, sr., is talking of moving his saw mill from Kolling River to Minnedosa. Mr. Cameron has seen what a great demand there will be for lumber this spring.

THE Wood-Worker says that saw-mill men should cut lumber full thickness and saw both ends off smooth. It adds much to the appearance by butting off both ends, and the additional cost will be saved in freight. Buyers will give better inspection, if not better prices.



MAIL CONTRACT.

Scaled Tenders, addressed to the Postmaster General, will be received at Ottawa until noon, on FRIDAY, 11TH MAY, for the conveyance of Her Majesty's Mails, on proposed Contracts for four years, forty two times per week each way, between

Peterborough and Midland Railway Station,

and three times per week between

WARSAW AND PETERBOROUGH,

from the 1st July next. The conveyance to be made in a Vehicle. Printed notices containing further information as to conditions of proposed Contracts may be seen, and blank forms of Tender may be obtained at the Post Offices of Peterborough and Warsaw, and also at this office.

Post Office Inspector's office, } Kingston, 30th March, 1883. } GILBERT GRIFFIN, } Post Office Inspector.

WISE people are always on the lookout for chances to increase their earnings, and in time become wealthy; those who do not improve their opportunities remain in poverty. We offer a great chance to make money. We want many men, women, boys and girls to work for us right in their own localities. Any one can do the work properly from the first start. The business will pay more than ten times ordinary wages. Expensive outfit furnished free. No one who engages fails to make money rapidly. You can devote your whole time to the work, or only your spare moments. Full information and all that is needed sent free. Address STRICKER & Co., Portland, Maine.

LA MAN

WHO IS UNACQUAINTED WITH THE GEOGRAPHY OF THE COUNTRY WILL SEE BY EXAMINING THIS MAP THAT THE



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By the central position of its line, connects the East and the West by the shortest route, and carries passengers, without change of cars, between Chicago and Kansas City, Council Bluffs, Leavenworth, Atchison, Minneapolis and St. Paul. It connects in Union Depots with all the principal lines of road between the Atlantic and the Pacific Oceans. Its equipment is unrivaled and magnificent, being composed of most comfortable and beautiful Day Coaches, Magnificent Horton Reclining Chair Cars, Pullman's First-Class Palace Sleeping Cars, and the Best Line of Dining Cars in the World. Three Trains between Chicago and Missouri River Points. Two Trains between Chicago and Minneapolis and St. Paul, via the Famous

"ALBERT LEA ROUTE."

A New and Direct Line, via Seneca and Kankakee, has recently been opened between Richmond, Norfolk, Newport News, Chattanooga, Atlanta, Augusta, Nashville, Louisville, Lexington, Cincinnati, Indianapolis and Lafayette and Omaha, Minneapolis and St. Paul and intermediate points. Through Passengers Travel on Fast Express

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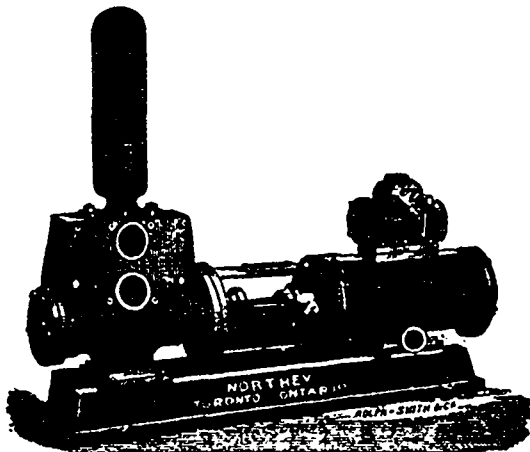
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