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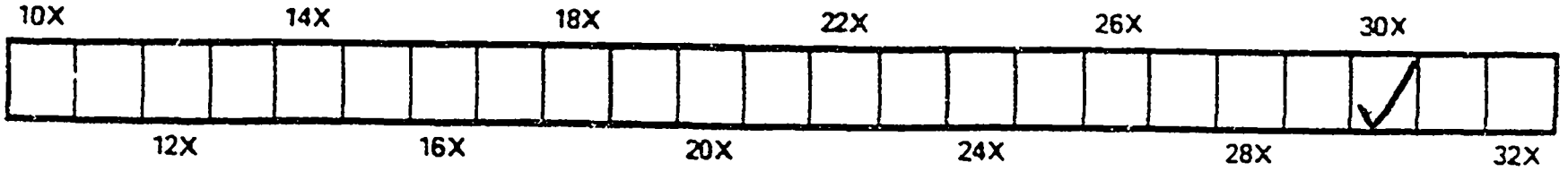

CANADA LUMBERMAN

WOOD WORKERS' MANUFACTURERS' AND MILLERS' GAZETTE.

VOLUME XVIII. NUMBER 4. | TORONTO, ONT., APRIL, 1897 | TERMS, $1.00 PER YEAR. Single Copies, 10 Cents.

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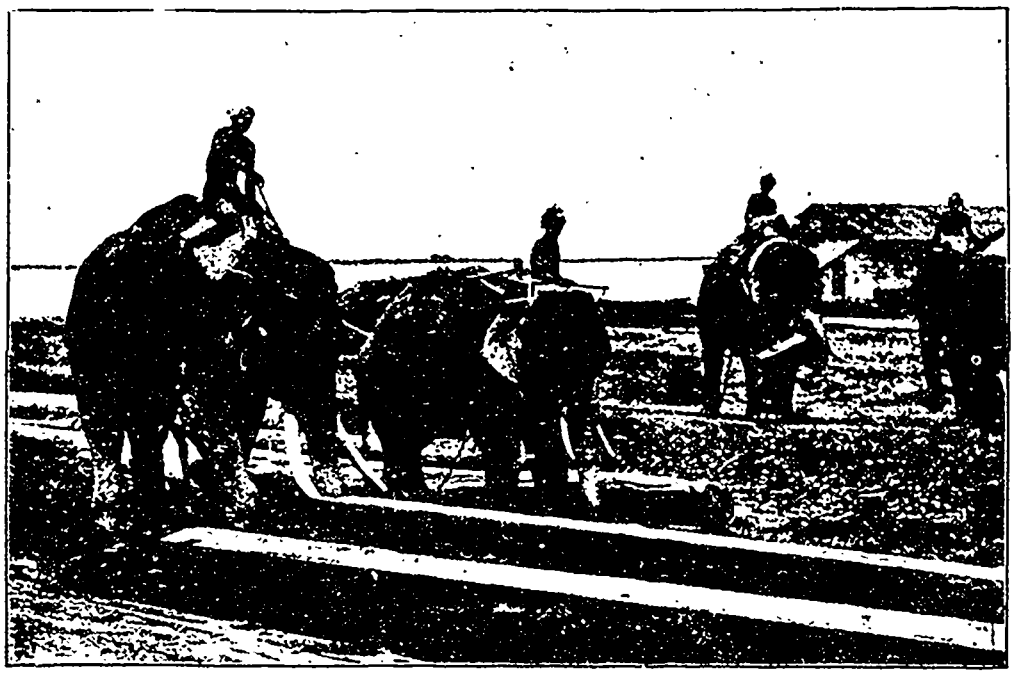
MANUFACTURING EAST INDIA TEAK.

THE following particulars of the East India teak trade, taken from a special number of Timber, of London, Eng., will prove interesting to Canadian lumbermen, the methods of manufacturing being so entirely different from those practiced in this country.

Teak wood is the product of Burmah and Siam and is exported almost entirely to Great Britain. It is used for ship-building, cabinet making, electrical and telephonic instruments, building purposes, etc. As a rule it does not require seasoning the same as other woods.

The teak tree before it is felled in the forest is "girdled" at about 2 feet and even in some instances up to 6 feet from the ground. This girdling consists in making a deep circular cut through the bark and sap into the hardwood so as to completely sever the communication between the bark and sapwood above and below the cut. The girdled tree dies after a few days, if the operation has been effectually performed, but if the smallest band of sapwood is left connecting the outer layers of wood above and below the girdle, the tree is not killed and often recovers completely, one side of the tree being clothed again in fresh bark. The girdled tree is allowed to stand one or two years, and often longer if a large tree, and being exposed to the wind and to the action of the sun, "seasons" more rapidly and more completely than a tree that has been felled green. Timber seasoned in this manner is generally drier and lighter than timber felled green.



ELEPHANTS PUSHING AND DRAGGING TEAK SQUARES.

When teak is felled green it will not float at once, and the logs have nevertheless to be placed in a sloping position to allow the sap to run out before they will float. This, however, has its disadvantages, as the logs get attacked by a large insect which bores large holes into the wood. Some would-be experts in the matter of girdling assert that the process tends to a certain extent to make the timber brittle, but this has never been proven. As, after felling, the logs have to await the rains in the forests for floating and the bulk are neaped in the first year in the creeks, it takes really three to four years from the time of girdling till the logs are actually brought into the saw mills for conversion. Therefore the teak logs can be said to be fairly seasoned before they are converted. It is true that teak in bulk seasons but slowly, but it must be remembered that the great heat in February to April seasons the logs very considerably, as can be seen by the sunsplits on the surface of the logs.

For the rapid conversion of teak, circular saws are preferred in the saw-mills, but these entail a good deal of waste owing to the thickness of blades which have to be used for such a hard wood.

Elephants are used in the forest, and without them large logs could not be worked out. A drag-hole is made at both ends of the log, which holes are also used afterwards for rafting the logs in the streams. In the case of large logs, they are tapered on the dragging side to some extent to make them slide more easily over the ground, which often causes a serious loss afterwards in the conversion and butting of squares to make them better fit for export. Where logs have to be dragged over heavy and uneven ground, the tapering of logs is much larger, and, in case of long distances, the logs wear very flat on the dragging side, and when the logs get converted the squares often show the heart on that side.

One elephant in a forest can drag from 100 to 200 logs per annum, according to distances to streams in the forests that the logs have to be dragged. A good deal also depends upon the supervision, as the elephant drivers in the forests are very lazy and unreliable, and require a good deal of urging and looking after.

In some saw mills the elephant is in use in almost every department. One will, when harnessed to a round log, drag it out of the water to the rack bench, and there with its tusks place it on the table, while at the other end his mate is waiting, and when the log has been squared he takes it in tow and marches off to the piling ground with it, where he in turn hands it over to the piling elephants, who slowly and sedately place it in its resting place.

The most difficult, or perhaps we should say intellectual, work is the piling. Say a square has been brought to the piling ground by the dragging elephant, one of the pilers would then begin by putting the squares in position alongside the pile, the end of the squares being about 6 feet past the butt of the pile. He then lifts the end of it on to the top of the pile, and with his tusks holds it in a position while his mate slowly raises the butt and with his tusks pushes it into the pile. When the pile is low, that is up to 6 feet, the front of the tusks are used in pushing the square into position, but in the case of the pile being higher the forehead is used. If, however, the square should be above the level of his forehead, the elephant throws his head well back and with the points of the tusks high in the air will push the square safely home, his mate all the time keeping a watchful eye on it to see that it goes straight and gently guiding it with his tusks when necessary.

When the squares are wanted for shipment again the elephant comes to the fore and gently one by one takes them from the pile and lays them out ready for butting, after which he pushes them down to the riverside and into the water, and if necessary will follow them into the water and hold them jammed together while the raftsmen are busy binding them.

When the day's work is over the animals revel in a bath in a river, and often nothing but the tips of their trunks are visible above the water, while their mahouts are doing balancing feats on their backs as the huge bodies loll about under the water. When the bath is over each is loaded with his evening's allowance of grass, and slowly wends his way homewards, doubtless well pleased that his labor is over for the day, and thinking of the grass on his back and what he will do with it.

An elephant is always accompanied by a mahout, either walking by his side or mounted on his back. When working the driver is always on his back. Curious as it may appear, elephants are very liable to sunstroke, and those employed at outside work, such as piling, where they are a long time exposed to the heat of the sun, only work up to ten o'clock in the morning and after three in the afternoon. The others, who are more or less under cover and work all

day, wear sun protectors while the sun is at its height.

An elephant starts work at twenty-five or thirty years of age, and is supposed to be in his prime forty years later, but upon the age that elephants live there is considerable difference of opinion. As regards strength, a good tusker can easily lift half a ton on his tusks and drag a square of three tons weight, but to see an elephant really putting forth his strength one has to see him at work in the jungle and creeks, where both log and elephant are sunk in the soft mud. It is here one realizes his enormous strength, when with a deafening roar he squares his shoulders and gives a tremendous tug, which will move the log a foot or two, and he will again flounder forward and repeat the operation till he eventually lands his charge on to the hard ground or into the water, as the case may be. In the matter of hard work, a mill elephant lives an easy life compared to his brother of the jungle. One might be compared with a man whose calling is of an intellectual nature and the other the manual laborer.

THE SUTHERLAND, INNES COMPANY.

It may not be generally known that the Sutherland, Innes Company, Ltd., of Chatham, Ont., are the largest manufacturers of cooperage stock in the world. With agents in a large number of foreign countries, and splendid connections at the mills, they are enabled to ship advantageously to every point which they desire to reach. That the chief office of such an extensive concern should be located in Canada is very gratifying, and justifies the brief description of the company which we give below :

The concern was organized twenty-five years ago, and was then known as Hay, Sutherland & Innes. Mr. Hay and the president of the company were the organizers of the firm, but shortly afterwards Mr. Hay retired and the name was changed to Sutherland & Innes. In the year 1888 Mr. James Innes, jr., was admitted as a partner, and the company became known as Sutherland, Innes & Co.

In 1893 the firm was incorporated as a limited liability company under the present title of The Sutherland, Innes Co., Limited, S. J. Sutherland being president ; James Innes, sr., 1st vice-president ; Wm. Ball, 2nd vice-president; and James Innes, jr., secretary. These persons have continued in office ever since.

The president, Mr. Sutherland, whose portrait we present, is 43 years of age, and makes his headquarters at Chatham. Besides exercising a general oversight, he also looks after the tight barrel and box shook business. Mr. Innes, jr., is the office man, and handles the finances of the company, as well as giving attention to the slack barrel end of the business. Mr. Innes, sr., has charge of the office at Liverpool, Eng.

The following particulars of the proceedings of the annual meeting held last month will serve to show the extent of the company's business :

After the board of directors were re-elected, the auditor's report was read, which showed that after wiping off $23,347.56 for depreciation of mill properties and bad and doubtful debts, there remained a net profit, after all working expenses of management, of $66,170.33, or equal to 22 per cent. net earning on the paid-up capital stock of the company. The rest account profits for 1896 and contingent account amounted to more than $100,000, out of which the dividend of 1896 has yet to be paid.

The president, in his address to the shareholders, referred to the working of the different mills, and to the various branch establishments at Savannah, Ga., New Orleans, La., Greenwood, Miss., Evart, Mich., Munising, Mich., Romney, Ont., Bismark, Ont., Edey's Mills, Ont., Erie & Huron Mill, Ont., Duluth, Minn., Minneapolis, Minn., Suspension Bridge, N. Y., New York, N. Y., and Liverpool, Eng. The company erected during the year a large mill at Munising, Mich., with an annual producing capacity of over 18,000,000 feet of lumber and 29,000,000 pieces of hoops and staves, and purchased 24,600 acres in Alger county, North Michigan, and 18,800 acres of standing timber in Alger and Delta counties, and now owns 53,-

Mr. J. S. Sutherland,
President of the Sutherland, Innes Company Limited

480 acres of timber land and stumpage. The mills have been in operation since May, 1896, giving employment to over 300 men. In the vicinity of their mill at Munising it is estimated that the company control 300,000,000 feet of stumpage, an amount sufficient for twenty years' supply. The president stated that they had purchased three mills in Canada, namely, Alvinston, Southwold and Homesdale mills, on the Courtright branch of the Michigan Central Railway. These have been stocked up with timber for the season's cutting. With the previous mills owned and operated by the company, they now have a capacity of over 125,000,000 pieces of cooperage stock per year, in addition to their lumber business. The improved condition of the the trade in the United States and in foreign countries was a source of congratulation. Reference was made to the trade with France, Spain, Italy, Germany, Holland, Sweden, Denmark and Australia, and it was shown that the contracts already made by the company for 1897 business amounts to over $1,200,000, which is an increase of about 35 per cent. over the business done on contracts at this time for 1896, and that the company was offered very large contracts that were declined, and that the prices of stock have steadily advanced from the fall of 1896.

The new business done by the company for delivery over this year has been done at lar advanced prices, and unless unforeseen co gencies arise the net profits of the compan 1897 should not be less than $100,000. fairly good winter in Canada has enable company to put in a good stock of logs at the mills, so that a steady and continuous throughout the year is assured.

Mr. Sutherland, who had recently visite south, pointed out the large increase in the oak stave department of the company's bus and also in the southern exports of lumber. thought that the stagnant condition of which followed the panic of 1893 was pretty spent, and that a revival in business in a leading branches was an assured fact.

The following appointments of foreign a were made by the company :

Stahl & Zoon, Rotterdam, Holland
Leon George, Bordeaux, France.
New York, W. P. Young and G. W. Gal
New Orleans, La., W. A. Powell and A. Adams.
Savannah, Ga., Messrs. McAlpine & S
Suspension Bridge, N. Y., C. H. Moore.
Munising, Mich., S. M. Smith, W. F. St C. E. Phillips, J. D. Staples.
Evart, Mich., C. E. Fenton and M. Petit
Romney, Ont., Geo. Patterson.
Bismark, Ont., W. S. Beach.
Holmesdale, Ont., I. B. Webster.
Alvinston, Ont., W. H. Pray.
Southwold, Ont., W. Pray, jr.
Edy's Mills, Ont., Gus. Wagner.
Minneapolis, Minn., W. B. Judd.
Duluth, Minn., H. Hurdon.
Liverpool, Eng., Jas. Innes, sr.
Travellers, W. C. West, C. H. Moore E. Fenton.
Auditors, A. F. Falls, and W. M. Flem
Office manager, W. L. Tackaberry.

Notwithstanding the very large numb agents and superintendents employed, change was found necessary during 1896, which is very encouraging to the managem

PERSONAL.

The death is announced of Mrs. Eastman, wife of M Eastman, manager of an extensive saw mill at Polle N. B.

Mr. E. H. Lemay, of Montreal, was present at annual meeting of the National Wholesale Lumber Association held in New York city.

Hon. G. A. Nantel, Commissioner of Crown L Quebec, has gone to Ashville, North Carolina, where spend several weeks, Mr. Nantel's health being in a factory condition.

From Timber, of London, Eng., we learn that Mr. Calder, son of Mr. W. R. Calder, of Allison, Cousla timber brokers, Glasgow, has entered the service o McArthur & Grafton, Quebec.

Hon. E. H. Bronson, M. P. P., of Ottawa, has b passing through a severe illness, but is now on the r covery. The primary cause of his illness is prolon exertion, and Mr. Bronson will take a rest from busi time.

Early in March Mr. E. C. Grant, of the Ottaw Co., returned from attending the meeting of the Wholesale Lumber Dealers' Association at New Y he had the honor of being elected one of the truste term of three years. This is the first time that a Ca been elected on the board of management, which is of fifteen members. Last year Mr. Grant was pla Committee of Admissions and Membership, and thi given this additional distinction.

CORRESPONDENCE

Letters are invited from our readers on matters of practical and timely interest to the lumber trades. To secure insertion all communications must be accompanied with name and address of writer, not necessarily for publication. The publisher will not hold himself responsible for opinions of correspondents.

THE TEMISCAMINGUE DISTRICT.

To the Editor of the CANADA LUMBERMAN

SIR, In view of the present and prospective improvements in the facilities of transport from the Temiscamingue district, it would not be amiss to review the lumbering possibilities and prospects of that region. Though hundreds of thousands of saw logs are annually brought from there down the Ottawa river to the mills at Hull, still there seems to be no apparent signs of the output lessening. A quarter of a century ago it was generally considered that in less than twenty years the pine of this region would practically become exhausted, and yet to-day one could not buy the very limits which were even then considered nearly denuded for the same figure at which they were freely offered then, nor in many cases for even double the amount. The principal operations have so far been confined to the province of Quebec. On the Ontario side licenses have only been issued for just those limits that fringe the shores of the Ottawa river to the extent of about ten to fifteen miles back. Beyond that, south, west and north, and tending south and west nearly to the C. P. R., and north to James' Bay, there still remains a virgin forest. The finest pineries now standing in Canada are contained within these limits, and though beyond the height of land the pine becomes scarce, all up the valley of the Montreal river, and west of it, there is no scarcity; and judging by what has taken place in Quebec, this generation--nor the next—need have no anxiety lest the supply should fail in their time.

Since the opening up of the north-western shores of Lake Temiscamingue for settlement, considerable attention has been called to other classes of wood growing here. Of hardwood, such as beech, maple, black birch and white ash, there is comparatively none. A little oak, of excellent quality, grows on the deltas of the streams that traverse the clay flats, but there is not sufficient to supply the local demand even. In the lower townships, such as Lorain, Burke, Dymond and Harris, and, in fact, in all the country back of and adjacent to Haileybury, there is an extraordinary growth of cedar, reaching in some cases up to thirty-six inches across the stump, and wonderfully sound. Poplar also grows to an extraordinary size, and in immense quantities.

If only some good market could be found for this wood and the means of transport still further improved, the manufacture of it should grow into an important industry. Spruce is very plentiful, but will hardly bear the expenses of shipment. Pulp wood is the feature of these immense clay flats now being thrown open for settlement, and it would not be considered unwise to predict an early development of this industry. Owing to the short distances that the wood in its raw state would have to be carried, it should be possible to manufacture pulp on Temiscamingue ollegat a figure that could compete with any other mills, and more than counterbalance the slightly increased freight upon the manufactured article.

Yours truly,

"A READER."

DIFFERENT RESULTS IN SCALING LOGS.

To the Editor of the CANADA LUMBERMAN:

SIR,—Kindly allow me space in your valuable paper to refer to the culling and measurement of saw logs, which is of vital importance to all parties interested in lumbering. The Department of Crown Lands organized a system of examination of cullers, and all parties who passed such examination, before procuring a license entitling them to measure logs for a return to the Department, were required to subscribe to an affidavit to measure honestly and fairly and to the best of their judgment, all logs they were called upon to measure. Again, the culler, before completing his returns to the Department, is obliged to swear to the correctness of his returns in every particular, therefore he is doubly sworn to do justice to the Department, as well as to his employer. No defined rule, however, was laid down in such examination as to what allowance was to be made for rots, shakes and other defects, but is left entirely to the judgment and knowledge of the scaler; therefore lumbermen in selecting their cullers endeavor to secure the services of experienced men, who have had a practical knowledge of not only the woods, but of the saw mill where the logs are sawn into lumber, for the saw reveals all defects and gives to the culler a knowledge of how defects of all kinds affect logs.

We believe as a rule we have honorable, upright men on the staff of cullers, who respect their oath and will do justice according to the best of their judgment. We must admit, however, that some licenses have been issued to men who have not had that practical knowledge they should have to qualify them as scalers, therefore every applicant for a license should be able to satisfy the examiners that he has worked at least two years in the woods and one season in a saw mill before he should be allowed to compete for examination, so as to raise the standard of cullers to as high a state of proficiency as possible, which would have a tendency to dispel the feeling of distrust that has been aroused in the districts of Muskoka and Parry Sound during the last two years, which would appear as if all lumbermen were dishonest robbers. As lumbering is one of the chief industries and sources of revenue of this province, it necessarily follows that a great many persons are engaged in the business, and we believe that those so engaged are honorable and upright men, and should be treated as such until it is proven to the contrary.

The following test of a quantity of logs, which can be verified, will show the difference of opinion in the judgment of three different licensed scalers, and will also show the necessity of the Crown Lands Department adopting some uniform system, which will not only protect the Department, but will also give protection to the lumbermen against loss as well. We purchased last season 18,878 logs from another firm, not with a view of manufacturing, but for the purpose of reselling them at a profit. The logs were first measured on the skidds by a licensed culler and resold on the same measurement at a profit of $2,000, less cost of culling and management. After the logs were hauled to the lake, the wood-ranger in charge of these districts came to inspect and make a sample measurement of the logs, to see that justice was done the Department, as the result of which it was reported that the logs were undermeasured at least 50%. Consequently we were notified that a re-scale would be required. On the opening of navigation two scalers were sent by order of the Department to make the measurement, which occupied twenty-one days, this delay preventing the delivery of the logs in time, and consequently the sale was cancelled. We then determined to have the logs sawn without mixing with other logs, as a test as to which scale was correct. They were taken to a band saw mill and again measured over the jack ladder of the mill by an independent licensed culler, and the following is a statement of the four different measurements, together with the actual output of the logs into lumber:

	Total.	Av. per Log.
Logs measured on the skidds by licensed scaler	1,200,810 ft.	63' 60"
Logs measured in the water by Government scalers	1,529,215 ft.	81'
Logs measured over jack ladder of mill by licensed scaler	960,099 ft.	50' 85"
Sample measurement made by Government wood rangers, with logs on ice, 50% over bush scale, or say	1,801,215 ft.	96'
Lumber measured over the trimmers at the mill by an independent inspector. Com. and Better	1,161,210 ft.	
Mill Culls	398,800	
Total	1,560,010 ft.	

At first sight it would appear that the re-scale made in the water was a very close scale to the actual output of the logs, mill culls included; but when it is considered that when Doyle's rule—which is the rule adopted by the Department—was compiled, four inches was allowed for slabs and one quarter was allowed for saw kerf, and as small logs of the size of the above do not require more than two inches for slab, and with the improved and up-to-date band saws there is a saving in saw-kerf alone of one board in ten, and with the lighter slab, there should be at least 20% of an overrun if the logs were measured honestly according to the Doyle rule. Had the logs been made up according to Scribner's rule, they would have contained 1,812,385 ft., or an actual loss to the purchaser of 252,375 ft., mill culls included, as Scribner's rule is made up according to diagrams and is supposed to give the actual contents and allow 15 ft. per M more than Doyle's rule, on logs averaging 100 ft. per log.

We would be pleased to have the opinion of other lumbermen who have made a practical test as to which of these measurements would be considered a fair, honest scale of logs cut on a band saw.

We well know that the Crown Lands Department neither asks for or expects anything but what is fair and just, and that is all that can be expected by any honest lumberman. We also acknowledge that many of the wood-rangers employed by the Department are thoroughly competent men, who would not only do justice to the Department but to the lumbermen as well, and care should be taken by the Department that only well-tried and competent men be selected to fill the position of wood-rangers who would decide fairly between the Department and the lumbermen, giving justice to both, as a re-scale of a quantity of logs invariably entails not only loss to the lumberman, who is obliged to supply men to handle the logs, but also a loss to the Department, which has no doubt been verified during the past year.

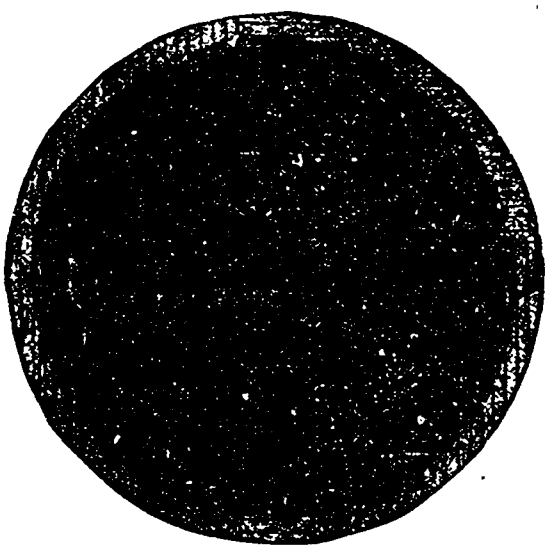
As to the sample measurement made by the wood-ranger in this case, which was 50% over bush scale, we must infer that either the ranger does not understand his business or that he wilfully overmeasured the logs with a view of building up a reputation for himself as a zealous officer—at our expense. We also think it would be in the interest of both the Department and the lumbermen as well to cancel all assistants' papers, and only employ licensed scalers to assist, who would, in our opinion, give better results. Pardon me for taking up so much space of your valuable paper. One of the unfortunate

LUMBERMEN.

METHOD OF SAWING HARDWOOD.

A WRITER in the Chicago Timberman gives the following description and illustration of what he considers the most approved method for the sawing of hardwood, as practiced in Michigan:

From observation, and from consultation on the subject with some of the most capable men in the trade, I find the consensus of opinion to be that the best side of the log should be turned to the saw and worked down until the heart defects begin to manifest themselves. The log



METHOD OF SAWING HARDWOOD.

should then be turned, sawn surface down, and the operation repeated. The log then being given a quarter turn, and sawed to leave a cant of 6¼ inches full, is then reduced to strips that will season full six inches. This leaves the heart to be thrown away if worthless, without the expenditure of any labor upon it, or it is in shape to go into strips. This method of sawing gives good average widths of stock, and produces a larger proportion of firsts and seconds than any other. The accompanying diagram will more explicitly illustrate the method outlined.

Between 20,000,000 and 30,000,000 feet of lumber were imported by China during 1896, of which 14,000,000 feet were shipped from the United States.

CANADA LUMBERMAN
WOOD WORKERS' MANUFACTURERS AND MILLERS' GAZETTE

MONTHLY AND WEEKLY EDITIONS

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THE CANADA LUMBERMAN is published in the interests of the lumber trade and of allied industries throughout the Dominion, being the only representative in Canada of this foremost branch of the commerce of this country. It aims at giving full and timely information on all subjects touching these interests, discussing these topics editorially and inviting free discussion by others.

Especial pains are taken to secure the latest and most trustworthy market quotations from various points throughout the world, so as to afford to the trade in Canada information on which it can rely in its operations.

Special correspondents in localities of importance present an accurate report not only of prices and the condition of the market, but also of other matters specially interesting to our readers. But correspondence is not only welcome, but is invited from all who have any information to communicate or subjects to discuss relating to the trade or in any way affecting it. Even when we may not be able to agree with the writers we will give them a fair opportunity for free discussion as the best means of eliciting the truth. Any items of interest are particularly requested, for even if not of great importance individually they contribute to a fund of information from which general results are obtained.

Advertisers will receive careful attention and liberal treatment. We need not point out that for many the CANADA LUMBERMAN, with its special class of readers, is not only an exceptionally good medium for securing publicity, but is indispensable for those who would bring themselves before the notice of that class. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which will be inserted in a conspicuous position at the uniform price of 15 cents per line for each insertion. Announcements of this character will be subject to a discount of 25 per cent. if ordered for four successive issues or longer.

Subscribers will find the small amount they pay for the CANADA LUMBERMAN quite insignificant as compared with its value to them. There is not an individual in the trade, or specially interested in it, who should not be on our list, thus obtaining the present benefit and aiding and encouraging us to render it even more complete.

TO VISITING LUMBERMEN.

Lumbermen visiting Toronto are invited to use the office of the CANADA LUMBERMAN as their own. We shall take pleasure in supplying them with every convenience for receiving and answering their correspondence, and hold ourselves at their service in any other way they may desire.

ONTARIO CROWN LANDS.

THE total receipts from the Crown lands of Ontario during 1896, as shown by the annual report of the Department, was $925,262.93. Of this amount the sum of $812,421.78 was derived from woods and forests, made up as follows: Timber dues, $712,443.87; ground rent, $54,457.91; bonuses, $45,520. The output of saw logs in the winter of 1895-96 is shown to be the largest in the history of the province, the quantity of pine logs alone reaching 904,379,710 feet B. M., against 800,565,355 feet the previous season. The operations in square white pine were also conducted on a more extensive scale, the figures being 1,128,666 cubic feet last year and 873,304 cubic feet in 1894-95. Pulp wood shows a gain of 4,000 cords, nearly all of which was taken out in the Western timber district. The cost of fire ranging was $31,396.90. Three serious fires occurred during the year, one in the vicinity of Lake Wahnapitae, where three or four million feet of timber were damaged, and two in the neighborhood of Biscotasing. The damage at these two latter fires was first estimated at 61,000,000 feet, but the quantity was afterwards found to be much less. Reference is made to the improved condition of the European markets, and the opinion is expressed that Canada will shortly become independent of the United States so far as the disposal of her forest products is concerned.

GRADING LUMBER.

MORE forcibly each day is the fact impressed upon us that the lumber trade of Canada, and especially of Ontario, is suffering from the lack of uniform inspection rules. In the absence of such rules, each manufacturer and dealer is allowed to make his own inspection, with the result that he frequently suffers loss in the classification of his stock, and buyers scarcely know what to expect when ordering a certain grade. The rules as adopted by the lumber section of the Toronto Board of Trade may be good so far as they go, but they are not explicit enough, while the lumber section of this board may now be said to be a thing of the past.

There appears to be no definite understanding among the trade as to what constitutes the different grades, and quite frequently we are asked for information on the subject. In the case of a legal dispute with a customer in New York, where licensed inspectors are employed, the Canadian dealer is placed at a decided disadvantage. In reply to the question of the court, the latter is obliged to admit that the lumber was graded by an inspector engaged by him for the purpose, who is unable to show any proof of his qualifications, while the person who made the inspection in the New York market produces certificates showing him to be a properly qualified inspector. The effect of this upon the decision is evident.

By the proper grading of stock the manufacturer also would realize greater returns. With a little care and a better understanding as to what constitutes the various grades fewer disputes would arise, and the relations between buyer and seller would become more friendly.

The attention given to the question of grading by United States lumbermen is worthy of notice. One of the most active associations in this direction is the Mississippi Valley Lumbermen's Association, which has established a Bureau of Uniform Grades. Licensed inspectors are employed by the Association to inspect all lumber, and a charge of one cent per thousand feet is made, which is sufficient to defray all expenses in connection with the work. Printed inspection rules are furnished to all members of the association.

PROTECTION FOR LUMBERMEN.

THE communication printed elsewhere in this number referring to the system of licensing cullers in vogue throughout Ontario, as adopted by the Department of Crown Lands, is worthy of the careful perusal of every lumberman. The statements contained therein clearly show that lumbermen are sometimes subject to much inconvenience as well as financial loss as the result of inaccurate measurements by cullers, while the government must at times stand to lose a considerable sum in timber dues. In the case reported by our correspondent, the time occupied in making a re-scale to ascertain the correct measurement prevented the delivery of the logs to the purchaser at the specified time, and consequently the sale was cancelled.

From the different estimates arrived at by the licensed cullers, we must conclude that the system presents opportunities for a diversity of opinion which should, as far as possible, be eliminated. As each culler is sworn to make proper returns, it would seem that the difference in results arrived at are largely accounted for by the allowance made for defects, and if this should prove to be the case we feel satisfied that the Department of Crown Lands will make every possible effort to remedy the matter as far as possible when convinced of the necessity of so doing.

In this connection we desire to emphasize the necessity of united effort on the part of lumbermen in order to obtain any needed reform. Where in the United States there are associations representing every branch of the trade, the lumbermen of Canada have scarcely an association worthy of the name, if we except the Western Retail Lumbermen's Association of Manitoba. The timber lands in Canada being largely under the control of the provincial governments, it would not be inexpedient to organize a Dominion association. Probably an association in each province would be the most feasible.

Organizations in every branch of industry have in the past met with strong opposition by those who believed their existence to be solely for the purpose of advancing prices to an exorbitant figure. This, to our mind, is not the object of the most successful associations. While the question of maintaining prices on a proper basis may justly receive some consideration, there are many other questions of general interest, such as the one referred to above, which would come more directly within the scope of an association, and which would require united effort to attain results. We trust that ere long the lumbermen of Canada will realize the necessity of banding themselves together to consider matters of general interest to the trade. Circumstances point to the desirability of taking initiatory steps in this direction at once.

EDITORIAL NOTES.

A BILL has been passed in the United States Senate, and now awaits the signature of the president, making it a misdemeanor to wilfully or maliciously set fire to any timber, underbrush or grass, or to negligently leave any fire built near timber on public lands. The punishment for infraction of the law is two years' imprisonment or $5,000 fine, or both, and all United States courts are given jurisdiction.

THE courts of British Columbia will shortly decide the question of the ownership of timber on mineral claims. Several parties have been cutting merchantable timber from mineral claims wherever it could be obtained, and the fear expressed that the claims will be denuded of wood before the timber is required for mining purposes. Hon. Col. Baker, Minister of Mines, having been appealed to, has given his ruling that the matter will have to be decided by the courts.

THE development of the mines of Canada has created quite a local demand for lumber in the vicinity of their operations. In British Columbia, particularly in the vicinity of Rossland, the local mills are unable to supply the lumber in sufficient quantities to meet the requirements for building purposes. In the construction of

nills considerable timber of good quality is utilized. The LUMBERMAN recently received from an eastern firm a specification for timber for stamp mill frames, with the accompanying request that we place the same in the hands of manufacturers in British Columbia, Michigan or the Southern States, asking them to quote prices on the stock required. There is evidently an opening for trade in the supply of timber for mining purposes, and Canadian manufacturers should not permit the orders to be placed in a foreign country. An announcement in the CANADA LUMBERMAN will keep your name before probable customers.

If we can judge by the sentiments expressed by the lumber journals of Great Britain, manufacturers on this side of the border have not yet reached perfection in the manufacture of their lumber. In a recent issue of Timber, of London, Eng., the following remarks are made with respect to spruce deals: "We have previously pointed out the deteriorating influences of uneven sawing, excess of wane, discoloration by sand or mud, together with a wet, unsightly appearance when landed on this side. To these serious defects must now be added a still greater defect. Many cargees that came to hand during the second half of last year contained an enormous proportion of bastard deals other than spruce, of such density and inferior quality as to be utterly useless for ordinary case-making purposes, for which the bulk of this import is required. Unless greater attention therefore be paid by makers and shippers to this last evil during the coming season these useful goods will certainly lose the distinctive character they have hitherto enjoyed, as being a reliable article, though of short average length, at a reasonable price, for the cheaper grants of the trade."

The management of the crown lands of New Brunswick was the subject of discussion in the local legislature recently. Mr. Pinder, member for York, took the position that as only 77,000,000 feet of pine and spruce was reported to be cut on crown lands, while the total export was 200,000,000 feet, it was fair to assume that stumpage dues had not been collected on a very large amount of lumber cut. He claimed that the crown lands were not properly looked after. This statement was resented by the Surveyor-General and the member for Gloucester, Mr. Sivewright. The latter remarked that the inference might be drawn that the scalers were negligent or corrupt in the performance of their duty. So far as his knowledge went, he believed the scalers to be capable, reliable men, and the charge that they would perjure themselves was without any foundation whatever. If the scalers had performed their duties faithfully, then it might be concluded that the government were conniving in some way at the operations of some of the lumber kings. He claimed that, on the other hand, owing to the many recent surveys, the returns were more accurate than formerly. In his opinion the policy of the government with reference to the 25 years' leases had greatly advanced the inerests of the province. If a lumberman wished to raise money he could go to the bank and pledge his lease as collateral, thus placing the small lumberman in a position to compete with the large operator. Mr. Sivewright showed the actual export figures to be 386,000,000 feet, which was made up as follows: Crown lands, 77,000,000; St. John mills, 100,000,000 feet; New Brunswick Land Company, 55,000,000 feet; Mr. Gibson's cut, largely on private lands, 35,000,000 feet. Then there were 40,000,000 feet cut in Albert county, and 20,000,000 at Bay Verte. The balance was made up in various quantities cut upon the lands of the Nova Scotia Land Company and on the Bay Shore.

LUMBER NOTES FROM NOVA SCOTIA.

[Correspondence of the CANADA LUMBERMAN.]

The weather during the past month has been very favorable for logging operations in this section of the country, and advantage has been taken by those interested in logging to the utmost extent, which has resulted in somewhat over the average year's cut being made, and at something under the average cost. This, with the advance in the price of deals, tends to make the lumbermen generally in very good humor.

Alfred Dickie, of Stewiacke, had a number of portable mills sawing for him all winter, which, with the logs got out for his gang and circular mill at Stewiacke, will make his output in the vicinity of thirty million feet, principally deals, which will be shipped from Halifax. He has nine million feet cut, which are to be driven down the Stewiacke river to his mill, which is alongside the Intercolonial Railway, from which the deals are loaded directly on the cars. Mr. Dickie also manufactures lath and box boards from the refuse and small lumber. Mr. John Gillies, formerly of New Brunswick, is the efficient superintendent of Mr. Dickie's large lumber operations in this section of the province. Rumors of a provincial election are rife, and both the "ins" and the "outs" are so sure of the correctness of the rumor that each have their men in the field, Mr. Dickie being one of the nominees of the "ins." Should he be successful—of which some people have no doubt—the county of Colchester would be well represented and the legislature of Nova Scotia would have another good and successful business man added to its numbers.

Densmore & Co., Stewiacke, have a very nice business—saw mill and box making. They have given their mill a thorough overhauling during the past month, and have added a modern and complete dry house, equipped with the McEachren Heating & Ventilating Co.'s heater, fan and condenser combined, made at Galt, Ontario.

Logan & Sutherland, Stewiacke, merchants, etc., have two portable saw mills in operation, cutting in the vicinity of two million feet of deals.

Lantz & Co., Milford, will cut about one million feet, some deals, but they saw principally for the building trade, supplying Halifax builders with dimension timber and lumber.

R. C. Ervin, Shubenacadie, has several portable mills, and saws from seven to ten million feet yearly, principally deals. He has also installed an electric light plant in the town, in connection with which he has a roller flour mill for custom trade, and has in view the project of extending the electric system to the neighboring town of Stewiacke, about six miles, all of which go to show that a successful lumberman is not afraid to launch out in other enterprises.

R. Richardson & Son, Bedford, have a very finely equipped saw mill, box, stave, heading, re-sawing, hardwood flooring, sheathing, planing, and a lot of other things too numerous to mention. The Messrs. Richardson have been unfortunate, having their mills burned several times. When they rebuilt the last time it was with the idea of making the mill as nearly fire-proof as possible. The boiler house is a brick building separate from the mill, into which all the dust and shavings are carried by conveyors. The mill building is completely encased with iron, so that it would seem impossible for a fire to get any headway. Their manufactures go principally to the West Indies.

Young Bros. & Co., Ltd., St. Margaret's Bay, formerly of Parrsboro and River Herbert, are getting out eight million feet, principally spruce, to saw into deals. They have some hemlock coming in, which they took the bark off during last summer, to saw for American markets.

The Gold River Lumber Co., Gold River, are getting out from two and one-half to three million feet of spruce. They will saw for the South American market principally.

The E. D. Davison Co., Ltd., Bridgewater, are the most extensive lumber operators on the Atlantic coast of Nova Scotia. They will get out from 12 to 15 million feet of spruce and pine.

R. Dawson & Sons will get out a couple of million feet of spruce and pine, along the Central railroad and New Germany.

Edward Zwicker & Son, New Germany, do a large business in hardwood and spruce staves, heading, etc.

The Morgan Falls Pulp Co., New Germany, are running day and night, turning out about twenty-five to thirty tons of ground pulp.

J. & J. Coop, of Milton, will get out about one million feet of logs, which they will manufacture at their steam mill at Brooklyn.

Harlow & Kempton, of Milton, are getting out four million feet of logs. They made repairs and improvements to their mill last season, and during the winter have put a complete outfit in their factory for making sashes, doors and house finishing woodwork.

William Ford, Milton, has taken out the gang and put in a rotary in his mill.

John Millard will run his mills at Milton during the season. He has a planing mill, with sash and door factory, at Liverpool, which has been kept busy getting out stock for new buildings being erected in the vicinity. The new hotel, rebuilt on the site of the burned "Trilby," is a credit to the energy and enterprise of Mr. Millard. On visiting Liverpool the traveller, of course, will stop at the "Thorndike," and "Mine Host" Schultz will treat him white.

Allen & Henry L. Tupper, Milton, saw for the West India market, and will manufacture the ordinary quantity.

Ira P. Freeman will saw for the West Indies, John G. Morton for the American market.

Eldred Minard, Milton, will saw about a half million feet of boards for the West India market.

T. G. Nicol, Port Joli, will get out about one million feet, half of which is sawn by the Sable River Mill Company with a portable mill. The remainder will be sawn in a new water power mill just being completed, in which there will be planers, clapboard and shingle machines, etc.

F. G. Nicol, Granite Village, is getting out half a million feet of pine and spruce, to be sawn for the West India markets.

H. W. Freeman, Jordan River, will manufacture three and a half to four million feet. The spruce will be cut into deals for Great Britain, and the pine for the West Indian and South American markets.

James R. Bower, Shelburne, saws ship plank and timber for vessels and houses, shingles, staves, heading, laths, etc.

George W. Durfee, Shelburne, has a nice business in staves and heading, besides carrying on a ship's block and pump business.

Bower Bros., Shelburne, are securing about 750,000 ft. of logs, which will be sawn for the West India and South American markets. They also supply a lot of oak lumber to car builders and furniture factories.

J. A. & J. H. McKay, Clyde River, saw about a half million feet of pine and spruce, besides some oak.

Dickie & McGrath, Tusket River, purchased the mill and timber lands from the Tusket River Lumber Company last season, and have operated extensively during the winter. They have in the vicinity of five million feet of logs in the streams, and are looking forward to a good season's cut. They are making extensive alterations and improvements in the mill, which is steam power, and consists of a steam feed rotary, edger, trimmers, live rolls for handling the sawn lumber, lath, box and shingle machines, planer, etc. Their shipping facilities are unexcelled, the lumber going on the wharf, then loaded into vessels for any port desired. They also run a large general store. Mr. Alfred Dickie, of Stewiacke, is a member of the firm, and Mr. McGrath was formerly superintendent of the Stewiacke business. His record there assures success here.

Blackadars & Co., Methegan and Hectanooga, are getting out three million feet, to be sawn into South American specifications and shipped from Yarmouth.

G. D. Campbell, of Weymouth, will saw about two million feet for the American and South American markets.

The Messrs. Stehlin, New France, will saw about three million feet in their new mill. This lumber will be taken to shipping point at Weymouth, on a pole railroad they are building, about twelve miles long. Mr. Stehlin, sr., came here from France about three years ago and brought a family of stalwart sons and fair daughters to found a colony and make a home in this new country, and the name under which the colony goes, New France, indicates a warm feeling for the home he has left and the hopes he has in making the new home equal the old.

R. W. Hardwick, Annapolis, has moved his saw mill and sash and door factory to a new site, where he will have a better water front to hold logs. He is doing a lot of building under contract and reports business good.

The R. W. Kinsman Co., Ltd., successors to F. W. Borden Co. at Canning, will get about three quarters of a million feet of lumber to be sawn into deals. They then intend removing their mill to a place near the water, and on lower ground, so that the haul will be down grade. They have some good timber on Blomidon.

S. P. Benjamin, Wolfville, will saw in his two mills about seven or eight million feet of deals. He is just putting the finishing touches on a new band mill, put in by the Waterous Engine Works Co., of Brantford, from which he expects good results. The lumber from the band mill will be run down a sluice about six or seven miles, then put on scows and taken to the ship's side.

T. G. McMullen & Co., Truro, is said to be the largest handler of lumber in Nova Scotia. This year they will have about fifty million feet for shipment, about eight millions of which will be sawn in a band mill at Ellerhause, all to be shipped from Halifax.

W. J. P.

FORESTRY IN ONTARIO.*

By Thomas Southworth

PRACTICAL scientific forestry has no existence in Ontario —a land of forests. We have no trained foresters, and, so far as I know, there has been no attempt made to apply the principles of correct forestry practice in this country. As a rule when we use the term we are apt to refer only to that incidental phase of the science which relates to the influence of forests on climate and soil and water supply, as well as the loss, from an æsthetic point of view, resulting from the removal of trees from the landscape. These are but minor factors in the science of forestry proper, important in themselves, but not constituting the chief aim of its exponents.

Forestry is a business just as farming is a business. It is the art of growing and harvesting crops of the most saluable sorts of trees in the cheapest and quickest manner, but having regard at the same time to certain incidental effects of masses of woodland vegetation on soil, on climate and on water supply, and consequently on the health and prosperity of the community. The pioneer settlers of Ontario were confronted with a vast tree-covered wilderness, the extent of which was unbroken except by the labors of the industrious and ingenious beaver. Aside from these few and small "beaver meadows," each pioneer, in order to build a home, had to begin his battle with the forest, and soon the sound of the white man's axe and the smoke of his wasteful but necessary log heaps were apparent along the frontier from the Ottawa to Lake Ontario. After a time of struggle and hardship, when communication had been opened with the sea by way of the St. Lawrence, a market was found in Britain for some of our giant pine trees. From this time the lumberman reinforced the farmer in the onslaught upon the trees, and much of the reckless waste of the burning log heaps was avoided. When we consider the conditions surrounding the early settlement of this country, we need not be surprised that the pioneer came to regard a tree as his enemy. Nor is it very much to be wondered at that the man of that day, whose horizon was limited by the solid wall of trees surrounding his cabin, could not be brought to believe that there would ever come a time when he would have to use coal for fuel or send beyond our own immediate neighborhood for timber for barns or houses. Yet that time has arrived, and it has taken but a short time to bring this state of affairs about in many parts of Ontario.

The history of settlement and of lumbering in Ontario has been similar to that of other wooded countries. In every case the forest has had a battle against odds. The tree is the king of the vegetable world, as man is the undisputed monarch of the animal kingdom. They have both struggled for existence in their upward march, and when they meet in combat who can doubt the result of the issue between these two "survivals of the fittest." In the first place, the forest has had to battle with a reluctant and sterile soil created for it, in great part, by lower forms of vegetable life. The algæ, lichens, grasses that cultivate the rock and gravel, taking most of their nourishment from the air, live out their brief existence, die and decay, thus adding to the scanty soil, which is still further augmented by the action of the rocks, of the gases generated in their dissolution. These vegetable pioneers create and fit the soil for the occupation of the forest monarchs and trees "go in and possess the land."

When man appears on the scene he takes issue with the trees and the conflict is begun again. Wheat cannot grow in the forest, nor will the latter produce sustenance for large numbers of human kind. Ground must be cleared for crops of grain and for pasture, so the battle must go on and man must win. It involves much and continuous effort, though the victor must not relax his vigilance. The forest is most persistent, and upon any cessation of man's fight with axe and fire and plow will re-occupy the abandoned position and is soon in full possession, as the abandoned farms of New England testify. Man's warfare with the forest is so severe that he is apt not to be satisfied with mere conquest, but proceeds to extermination, realizing, when too late, that it would have been wiser to convert the erstwhile foe into an ally, making the conquered forest a protector from other enemies and a contributor to his welfare and comfort. When the discovery is made, when only a remnant of the vigorous foe is left, man proceeds to expend much treasure and labor to encourage the presence of a tribe no longer regarded as an enemy, but valued as a friend. This has been the history in the old world and history is repeating itself in the new. In the Republic to the south of us the evils that follow in the train of denudation of forest lands are already seriously felt in many places. Michigan, Minnesota, Pennsylvania, once great pine states, are so no longer. The mills of Michigan are now supplied from Ontario forests. Vast sums of money are being expended in various states in restoring, from individual hands to state control, large areas of land that are the sources of streams, in an attempt to preserve the water powers so essential for industrial improvement.

In Ontario, however, our smaller population and the great extent of our forest resources have tended to postpone the evils of forest destruction. The factors that have so far caused our safety in this regard make all the more difficult the task of bringing our people to realize the gravity of our present position, and the necessity of taking steps now to prevent the disastrous effects that have everywhere resulted from the reckless extermination of the forests, and that will inevitably follow the same course here. "Experience teaches," but it would seem that experience must needs be personal to have the desired effect. The history of forest destruction in France, Germany, Switzerland and other European countries, followed by expensive attempts at reforestation when the disasters caused by the destruction became painfully apparent, is well known to all students of forestry or of history. Yet this history failed to teach the people of the American republic that there was danger in the indiscriminate and reckless waste of their forest wealth. They know it now, but it took a personal experience to instill the lesson, which has been a very expensive one. It is stated that the State of New York will appropriate one million dollars this year to add to their forest area in the Adirondacks. Other states, notably Minnesota, Pennsylvania and Wisconsin, are moving in the same direction.

In Ontario there are two problems for the forester to solve, problems quite diverse in their character and requiring radically different treatment. The first and most important is a forestry problem pure and simple, and refers to the management of the forest lands of the Crown. The other is incidentally a part of the forester's work, and refers to the necessity of replanting or reforesting on lands held by individuals, lands that have been too closely stripped of their timber, with the resultant ill effects on climate and water supply. Despite the fact that this is a young country, only a fringe of which is at all well settled, we have arrived at the stage early in our history when this latter problem confronts us, a question by no means easy of solution. A great many people are disposed to regard as cranks and alarmists those who make the statement that we in the settled part of Ontario have passed the danger line and cut away our forests beyond the safe proportion of wooded to cleared land. They drive through the country and see in the distance what appear to be extensive woods, and conclude we have more trees than are necessary for fuel or timber or for climatic protection. They fail to notice how these supposedly extensive forests degenerate into non-productive and valueless copses of stunted and shrub bushes as we approach them. Their attention is then directed to other extensive forests still in the distance. I must confess to have been at one time numbered among those who thought the people who cried danger were disturbing themselves needlessly. My personal observations had been largely confined to a county which, though an old one, is still fairly well wooded, and I found it hard to believe so small a percentage of woodland existed anywhere in Ontario, as I now know to be the case in many counties.

I think it may safely be assumed that in a country such as this, depending upon rainfall for its water supply, and where there are so great demands for wood as fuel and in the arts, the proportion of woodland to the whole area should not be less than 25%. Even in the more densely settled portion, where farming is more intensive than in the newer sections, 20% is little enough for protection and for the local needs of the farming community as fuel and building timber. What makes it all the more imperative that this proportion of wooded to cleared land should be maintained is the fact that that percentage may be said to fairly represent the proportion of the non-cultivatable land, or more strictly speaking, land on which it will pay better in financial returns to grow trees than any other crops.

In the countries in Europe the proportion under forest is in Russia 40%, Norway and Sweden 34%, Austria 29.1%, Germany 26.1%, Turkey and Roumania 22.2%, Italy 22%, France 17.3%, Greece 14.3%, Spain 7%, Portugal 5.1%. In Great Britain there exists only 4.1%, but in spite of the great value of land there and the humidity of the atmosphere from other causes, the forest area is being increased. In Germany and France, where forestry has reached its greatest perfection, the Governments are increasing the forest areas under their management and exercise a restrictive control to some extent over the forest lands of private owners. Taking this province as a whole the proportion of wooded to cleared land is much greater than in European countries, greater even than Russia, yet in many of our older counties the proportion is very low, despite our comparative youth as a nation.

In trying to arrive at an estimate of the proportion of woodland in settled parts of the province, I had recourse to the returns of the township assessors to the Bureau of Industries. I found, however, that the assessors were somewhat careless in their classification, including in the term woodland a great deal of waste and barren land that was not tree-covered. A circular was issued directing their attention to this matter, and in the next assessment greater efforts were made to accuracy in this regard. From the last assessment returns to the Bureau of Industries I find many of the older counties have less than 25% of woodland, and others would also come under this limit except that, like Hastings and Addington, they extend into the northern regions not yet well settled. From these returns the following table is compiled:

County	Per Cent of Area
Elgin	21
Bruce	26
Grey	22
Leeds	19
Dundas	17
Grenville	14
Lanark	20
Kent	17
Norfolk	18
Haldimand	17
Carbeter	18
Halton	18
Welland	19
Oxford	19
Perth	17
Dufferin	15
Lincoln	15
Waterloo	15
Northumberland	15
Durham	14
Wentworth	14
Huron	13
Prince Edward	13
Wellington	13
Brant	12
Peel	12
York	12
Victoria	11
Essex	11
Lambton	11

If the front group of townships in each be taken into account, in Frontenac, Peterborough, Lennox and Addington, and Hastings, the same condition will be found to exist. This indicates a serious state of affairs, and only must we call a halt in the work of deforestation, but we need to in some measure repair the injury already done, by increasing our woodland areas. How this is to be done is a problem not easy to solve. The land in question is in the hands of individual and small owners, of men engaged in farming. If you can convince the individual farmer that it will pay him financially to grow trees instead of grain or stock, he will very soon proceed to plant trees. You cannot well do this for two forcible reasons. In the first place, except so far as waste or otherwise uncultivated land is concerned, it will not pay to grow trees instead of other crops, and in the second place, farmers in this country, where there is no large land-holding class, where we have no old families and estates, look with small favor on the growing of a crop which they are not likely to live to reap, and lose sight entirely of the value of the crop as an investment, and fail to see that the very presence of the trees, though only partly grown, would greatly increase the selling value of their farms. So far we have failed to grow crops of trees in Canada or in America to produce actual profit in the operation, and in the absence of practical demonstration of results, theories cut very little figure with the Ontario farmer. If you point out to him that the absence of trees on his farm deleteriously affects the climate, he naturally thinks his farm is large enough to have much effect, and besides, the welfare of the general public is no immediate concern of his. It is hard to make him see that the cutting away of the trees around the pond at the head of the creek on his farm will injure his neighbors by lessening the flow of water that runs away on this creek, and he is not disposed to worry much over it if he does. I am afraid this matter will be settled satisfactorily by appealing to the patriotism, the pride or the altruistic sentiments of the average land-owner. The remedy must be applied by the land-owners, but I have grave doubts of the necessary reforestation being accomplished without the aid of some form of governmental encouragement, perhaps in the way of financial assistance, but at least by government interference.

Much may be accomplished in this direction by the cultivation of a public sentiment in favor of trees, and the newspaper press of the province is already nobly in that work. Various local influences tend to the growth and preservation of trees for commercial purposes, and in some ways this can be fostered. The united counties of Leeds and Grenville, in which woods were at one time in danger of total extinction to feed the locomotives of the Grand Trunk Railway, are still comparatively well wooded because of the manufacture of maple sugar. Of the 5,665,000 pounds of sugar made yearly in Ontario, according to the census returns, over one-sixth, or 981,147 pounds, are made in those counties, hence there is still much maple land there, largely maple. I am afraid, however, we cannot cultivate a public sentiment in favor of planting fast enough to keep pace with the destruction of our woodlands or to restore soon enough the vast denuded areas. For the general benefit of the country as a whole there must be considerable replanting, for if a direct financial profit to the planter cannot be shown. The farmer is apt to say when urged to plant trees, I cannot see any profit to me in the operation, and you say, the presence of the trees would be of general community, why, the general community contribute towards the expense of planting. The factor of the general benefit of forests to the people in Europe caused governmental interference in the form of exercising a control over private forests, and

*Paper read before the Canadian Institute, Toronto.

of forest land is not allowed to remove the forest cover entirely if it is likely to be inimical to the general interest. Repugnant as this control would be to the democratic sentiments of the people of this country, it would be no more arbitary legislation than the law by which a man is prevented from polluting a stream passing through his lands which waters the lands of his neighbors.

Various suggestions have been made as to the encouragement of tree planting in our settled areas, and they are for the most part in the form of government assistance, either by remission of taxes on woodlands, by supplying seedling trees at the public expense, or by a cash bonus. Just what form this governmental interference should take is still an open question, but in my opinion such action, coupled with the education of public opinion on the matter, will be found necessary to restore that proportion of wooded to cleared land which experience has taught us to be necessary to national prosperity.

The other and vaster phase of the forestry problem in Ontario requires different treatment, and becomes easier of solution as we learn more of the condition of the country and the habit of growth of our more important commercial timber trees. As remarked before, the forest is very persistent and will perpetuate itself if given a chance. Time and protection of the land from fire would restore in all its primeval glory the magnificent forest growth that once covered this country. In a country where all the land is arable, where grain can be raised profitably, it is difficult to prevent the forest from being removed to make way for crops of grain or grass. Fortunately, I think, this is not the case in Ontario. While we have a very large extent of arable land along the great lakes and the St. Lawrence river, south of the elevated plateau we call the height of land, and north of it, on the slope towards the Hudson Bay, there is a strip of land, generally speaking from east to west across the province, not suited for general agriculture, but well adapted for forests. It is impossible even approximately to estimate the amount of valuable white pine that has been cut and burned off this height of land, and we are still cutting and burning further west on the same ridge. It was eminently right that we should cut this timber as fast as the demands of commerce warranted. The forests were old and much of the timber past its prime. Through the Algonquin Park country the lumbermen now operating there report that much of the pine timber is defective from over age.

Two principal causes have acted against the practice of scientific forestry in this country. In the first place, our wondrous wealth in forests tended to the belief that they were practically inexhaustible, and that careful or provident methods in their exploitation were not necessary. Fortunately for the revenues of the province, however, both in the past and for the future, our legislators had a due regard for the welfare of the province in a financial sense, and these forests were not given away, nor was the land in which they grew placed in the hands of speculators, but held by the Crown for the use of bona fide settlers.

In marked contrast to the policy pursued by the people of the United States, in selling to large lumbering firms or other speculators great areas of timbered land at a merely nominal price per acre, Ontario has sold her timber by auction to the highest bidder, subject to a small stumpage tax when cut, and has held the land for the use of settlers. This policy has not been without its opponents. Men from purely unselfish motives have sometimes urged a different course. As long ago as 1862 the late John Langton, M. A., in a paper read before the Historical Society of Quebec, pointed out the danger of too rapid extinction of our forests. He took the position that with a proper system of administration of the forests a comparatively small area would grow successive crops of timber sufficient for our demands for local use and for export at the then rate of cutting, but that with the wasteful methods then in vogue there was danger that our revenues from that source would soon be exhausted. As a preventative measure Mr. Langton advocated the selling of many blocks of timber land outright to lumbermen, who would be interested in their protection and in the perpetuation of the timber crops. Mr. Langton saw that dividing up the land into small holdings for settlers was likely to produce the results that now are seen in our older countries, but his remedy, in the light of subsequent history in the United States, would not have cured the evil. It has been very fortunate for us that the large areas on which grow our finest forests were not sold to lumbermen, but remained the property of the whole people, leaving us now in a position to grow another forest in place of the one removed, without having to buy back the land to do so. Our timber policy has consisted of realizing as much as possible for the public revenue from the use of the vast timber wealth with which we are endowed. So far it has not included any provision for replacing the crop destroyed, and this has been the case largely because of the other factor I have referred to, which consisted of a very general belief that this could not be done except by an expensive system of sowing or planting.

Our great timber tree of commerce is the white or Weymouth pine, a tree that has no successful rival in any country, and in any scheme of reforestation for commercial purposes this tree must be the main feature of the forest growth. Under our system of lumbering the tops and branches of the trees are left on the ground where the trees are felled. In coniferous forests this refuse is extremely inflammable, and in consequence, when the lumberman has gone through a pinery, fire invariably follows in and sweeps away what he has left not the refuse only, but the young trees not large enough to cut. If it should happen that this forest fire does not entirely destroy the growing timber, there is apt to be another one to complete the work. This succession of fires after logging operations has come to be looked upon quite as a matter of course, though I venture to express the opinion that the enormous waste of wealth occasioned thereby is not at all necessary, and could be materially checked by some slight change in the method of lumbering and by the expenditure of some money in forest protection, an expenditure that would be a good investment by reason of the increased revenue from the timber lands of the Crown.

However, we must consider the situation as we find it. Forest fires occur, and the cut over pine lands are completely stripped, not only of the young trees that would make the future forest, but the seeds on the ground are destroyed, and occasionally the soil that has been centuries in forming is burned away as well. When any soil is left the pine forest burned away is generally first succeeded by a growth of less valuable trees, such as poplar, birch, fire cherry, etc., and from this fact has been drawn the conclusion that when once pine forests are cut away we need never hope for other pine forests to take their place unless we replant them. Experienced woodmen have repeatedly given this as their settled conviction, and it has almost come to be regarded as an axiom that nature provides a sort of rotation of crops of trees, by which white pine is succeeded by some other tree and it in turn replaced by others till the circle is complete. As an evidence of this it is alleged that there are trees that will not reproduce till their seeds are subjected to the action of fire. One of these trees is our own Jack or Banksian pine. Concerning this tree a very distinguished authority, in a paper read before one of the sessions of the American Forestry Congress, states:—

"Referring to the evidence afforded by the trees themselves that forest fires are natural phenomena, I shall mention the case of the Banksian pine. The cones of this tree are hard and remain closed as long as the tree lives. The older ones become weathered and covered with lichen, often indicating great age, still adhering firmly to the branch. The tree may fall down and rot and the cones drop from the decayed branches, yet they will not open. But should the tree become scorched by a forest fire, they will immediately gape open, and the healthy seeds will become scattered far and wide by the wind."

If this position be correct, and we cannot reap successive crops of our most valuable timber trees on the same land without artificial sowing or planting, then our hope of successful reforestation of the cut and burned-over areas on the Crown lands must needs be very faint. With all due deference to the views of these experienced men, and in spite of the general concensus of opinion to the contrary, I am convinced that white pine will succeed white pine even after a forest fire if any pine trees capable of bearing seed are left in the vicinity, and even if the new growth is largely deciduous trees it will be found, on close inspection, that there are many young pines among them that will in a short time overtop and subdue the less valuable trees. Even in the case of Jack pine referred to above, some investigations undertaken by Mr. E. C. Jeffrey last summer go to prove conclusively that it will reproduce itself in just the same manner as other trees, and that it does not require the assistance of a forest fire to do so.

All over the province where lumbering operations have been carried on and the land has not been cultivated, young pines in varying numbers may be seen growing thriftily until some tourist or prospector or settler causes it to be burned over. In the original pine region, wherever fire has been kept out for a few years, pine is now growing among the other trees, and there are large areas of unproductive land on which, if properly protected, there will be a valuable forest in twenty-five years from now. Fifty years is a short time in the life of a nation, but in that time we could begin cutting timber in the Ottawa valley again and get from it a greater revenue for the province than was obtained from the original forest. The land is still ours; it will inevitably be tree-covered if protected, and it will not require a heavy expenditure to protect it. The forest problem in the Crown lands seems to me to require for its solution simply the setting aside of the now tillable areas throughout the height of land or the water shed of the province as permanent timber reserves not open for settlement. Keep out fire and allow the forest to grow till the trees are a merchantable size. When this period is reached these forest areas should be worked on correct forestry principles, and the lumbermen allowed to cut only as directed by the government foresters, and not indiscriminately as at present. The time required to grow this new forest would be less than is commonly supposed. There are now, over large tracts of country suitable for forest reserves and useful for little else, quantities of young pine growing of various ages that, if protected, and more particularly if thinned out, would be suitable for timber in from ten to forty or fifty years. The growth of pine per year has been variously estimated. In any computation it must be remembered that pine is not found growing alone, but always with other trees; hence when we compute the amount of pine on an acre we should not lose sight of the value of the other trees, many of them of commercial value, such as oak, maple, elm, birch, spruce and others, and this value is increasing yearly.

Sir Henry Joly, referring to some calculations in the last report of the Ontario Bureau of Forestry, states that he has from personal measurements through several years concluded that "It takes about ten years to add two inches to the diameter of a tree. At this rate of growth I find that a white spruce twelve inches in diameter will gain in ten years eight cubic feet, which would give four-fifths of a cubic foot every year, and if you allow 75 spruce trees to the acre it will give you 60 cubic feet for the yearly growth. Continuing, Sir Henry says: "Perhaps there are not many acres on which will be found 75 good sized spruce, but on moderately well timbered land the equivalent in bulk of the timber represented by 75 spruce trees of say, 14 inches at the stump, will be found in other trees, and it can be ascertained by comparing the yearly rings of the white spruce with those of the black walnut, butternut, pine, oak, ash, poplar, elm and some others, that the growth of the white spruce is slower than that of the above mentioned trees, so that I feel justified, like Mr. Southworth, in adopting the United States figures of 59½ cubic feet, the more so that we have the statement of eminent authorities in England who estimate the annual growth of one acre of Scotch pines at 100 to 120 cubic feet, nearly double the rate allowed by Mr. Southworth."

Our present annual cut of timber on the Crown lands of the province aggregates over 60 million feet cubic, and it will require a great many years at this rate of cutting to go over the uncut and unexplored regions of pine land in the Crown domain even with the assistance of occasional fires. Taking the figures of 60 cubic feet as the annual growth yer acre under ordinary forest conditions without culture, it would only require a million acres of land to grow the amount of timber annually cut on the Crown lands, and we have more than that area in Algonquin Park alone. It is impossible at present to more than guess at the extent of the areas that could be set aside as forest preserves without encroaching on our agricultural lands, but it will reach many millions of acres. It is but fair to add that to the amount of timber annually cut on the Crown lands may be added fully as much more cut by settlers. I have not yet the complete figures, but am safe in saying it will be found to be fully that much, and this must be taken into account as well, because the woodlands of the farmers are being depleted to make it up. Throughout these areas of cut-over land that might be utilized for forest preserves there are scattered settlers wherever there is soil fit for agriculture, and in some places where there is none. In any scheme of protection of these young forests the services of these settlers could be used, thus lessening the cost to the country and helping these settlers to make a living.

As to the profits on the investment, we have only to look at the example of Germany to see. Their Crown forests have been cut over again and again, yet their 6,050,445 acres of Crown forests return a net yearly revenue to the state of $8,000,000, and this despite the fact that their forestry system is a semi-military and expensive one and the expenditure includes yearly purchases of land and the maintenance of an expensive system of forest schools

Aside from the question of provincial revenue derived from our timber we must not lose sight of the fact that the extinction of our forests means the decay of our lumbering interests. It has been customary in many quarters to denounce the ruthless and reckless course of the lumbermen, but they have been a very important element in our industrial development and now represent the largest industry, aside from agriculture, in the province, employing a very large number of men, with a heavy capital investment. Lumbering operations provide a paying market for the produce of the pioneer farmers, many of whom are employed in the woods during the winter. It would be a national calamity if this industry were to die out, and if it does it will be our own fault. Another happy circumstance in connection with the proposed forest preserves lies in the fact that the land most suited for an extensive system of forestry because of its inutility for general agriculture is that section of country where the existence of forest cover is demanded for the protection of our main water courses flowing both north and south.

PUBLICATIONS.

The annual supplementary editions of the Winnipeg Commercial have become a fixture. The number just to hand surpasses all previous issues.

The contrast in the condition of the country between the time of Lincoln's first inauguration and that of President-elect McKinley is said to be vividly portrayed in an article by Stephen Fiske, for the March Ladies' Home Journal.

The twenty-second annual special issue of the Timber Trades Journal, of London, England, is devoted largely to a description of the lumbering industries of Canada, particularly the eastern provinces. For this purpose a director of the journal visited Canada last fall, and the *result of his labors is the publication of a volume* of information which should be of great interest to importers in foreign countries. The journal is freely illustrated and altogether a creditable number.

One of the most complete publications which has yet come under our notice is a special edition of The Paper Mill and Wood Pulp News, of New York. The many interesting illustrations of mills and prominent persons connected with the paper trade are printed on first-class paper, in such a manner as to produce the best results, and the success with which the publishers have met in their efforts to produce a journal second to none should be gratifying in the extreme. The advertisements as arranged constitute an important feature of the number.

Mr. J. B. McWilliams, crown timber agent, of Peterboro', Ont., returned early in March from an inspection of the lumber camps in Northern Ontario. From Huntsville he drove through a rough section of country, sheltered, however, from cold winds by thick forests and almost insurmountable walls of rock. Passing through the townships of McClintock and Livingstone to the village of Dorset, the former headquarters of the Gilmour Company, Mr. McWilliams proceeded to the headquarters of the superintendent of Algonquin Park at Canoe Lake. He visited during his tour the camps of the Rathbun Co., Gilmour Co., Mickle, Dyment & Son, J. D. Shier and the St. Anthony Lumber Co., and inspected operations amounting to 80,000,000 feet board measure of saw logs, and 530,000 cubic feet of board timber, representing a total revenue to the government of over $110,000. Mr. McWilliams found the largest stick of board timber on the limits of Mr. Dyment. It measured 305 cubic feet. In the St. Anthony Lumber Co.'s limits he found a log 4,069 feet, board measure. The largest average in the size of logs were those of the Gilmour Co., 230 feet being the average. Mr. McWilliams declares the Rathbun Company to have the best camp and the best accommodations for the men. They do the closest cutting and take greater care in preserving their timber.

* * *

How the position of the lumber business in many parts of Canada has changed of late! Where a few years ago the business was chiefly confined to a few large operators, we now have a very large number of small mills, and many farmers who have a few thousand feet of timber to dispose of, put in a portable saw mill and cut the lumber, either for their own use or for market. There are several reasons for this change, among which may be mentioned the perfecting of the portable saw mill, the meagre returns from farming, and the increase in the price of lumber as compared with twenty-five years ago. I was recently given access to some returns showing the number of small mills in Ontario which cut entirely from timber obtained from private lands, and was surprised to find that such mills numbered well up to fifteen hundred. Of course the average annual cut of most of these would probably not be more than a few thousand feet, but it would go a long way towards supplying the local demand from the farming community. In New Brunswick similar conditions exist, and as a result property has materially advanced in price. Lands which at one time were considered almost valueless are now held at a high figure, owing to the general adoption of the portable mill.

* * *

I had a conversation recently with the head of a large manufacturing firm which had become insolvent. His account to me of the business of the firm since its establishment was interesting and suggestive. Starting in business about fifteen years ago with a very limited capital, the combined possessions of the partners in the enterprise, success was at once met with, and year after year showed an increase in the profits of the company. In keeping with the increasing business, it became necessary almost every year to enlarge the plant, and to this end nearly all the profits were devoted, until the almost insignificant establishment of a few years ago became an extensive and modern concern. But during the general business depression of the past two or three years, orders commenced to slacken, a condition the company were ill prepared for, having their funds largely locked up in manufacturing plant. Profits decreased, and it became necessary to mortgage the plant to meet their expenses. No assistance coming in the way of renewed activity, the abandonment of their estate was the only resort. In the above lines there may be a lesson for some one. While enterprise is at all times to be commended, there is danger in branching out to such an extent as to jeopardize one's position when unusual financial or commercial depression is experienced. The shrewd business man is he who makes ample provision for the many ups and downs which are certain to be encountered in business life. Had the firm referred to been content with a smaller plant, and retained some of their capital for an emergency such as subsequently was met with, they would undoubtedly have weathered the storm more successfully. Slow but steady progress is certain to attain the best results.

QUERY FOR LUMBERMEN.

May & Son, of Weston, Ont., were cutting in their mill an elm log, third from butt of tree, say 30 feet from ground, and the saw ran on to five iron spikes, half inch thick. They were imbedded in about 8 inches, and eighty growths were outside of them. How did they get there?

The Lumberman solicits the opinions of its readers as to the most feasible solution of the problem.

BRITISH COLUMBIA LETTER.

[Regular Correspondence of the Canada Lumberman.]

The subject of forest preservation has received considerable attention in the local legislature. Mr. Kennedy moved that more efficient means for preventing forest fires be adopted, by some system of patrol by the provincial police during the months of July, August and September. Hon. Mr. Martin suggested that, owing to the large area of timber limits, a steam yacht be employed to cruise along the coast. Mr. Kennedy suggested the establishment of fire districts and the appointment of a warden for each district, such warden to have the power of a police officer and authority to call on the public for assistance in putting out fires. He thought loggers should be required to burn over their cuttings at the close of the cutting season.

Mr. E. J. Palmer, manager of the Victoria Lumber and Manufacturing Company's Chemainus mill, spoke as follows with regard to the lumber trade: "Business is rushing—so much so that we are running night and day, and even then find it hard to keep up with the orders. Oh yes, the lumber trade is looking up at last, I'm glad to say."

According to the report of Timber Inspector Skinner, the timber cut during 1896, not including that from the Dominion and the E. & N. lands, was 112,957,106 feet, of which 61,845,798 feet was from Crown lands, 30,575,180 from timber leaseholds, 13,549,228 from private property, and 6,986,900 from timber limits. The royalty payable was $30,922 in respect of Crown lands, $15,287 timber leaseholds, and $3,493 timber limits, making a total of $47,703. The rebates allowed for exportation were $18,395, leaving the net royalty on timber $31,307. The royalty collected on cordwood was $7,863. The rent accruing on timber leases during 1896 came to $45... The total revenue from timber sources was $90,40... largest payments for royalty were made by the Mo... dy Lands and Saw Mill Co., $7,893 less $3,919 reb...e; C. Mills, Timber & Trading Company, Vancouver ... New Westminster, $20,432 less $10,216; Victori... L... ber & Manufacturing Co., Chemainus, $3,874 less $1... Geo. Cassady & Co., Ltd., $1,298 less $649; ar... L... Blue, Rossland, $1,705.

COAST CHIPS.

The large mill of the Takush Harbor Lumber Co. ... closed down.

A shipment of 80,000 feet of cedar timber and ... bolts was recently made to Japan as an experi... order.

Mr. J. C. Schermerhorn, formerly of the Sayward ... Co., of Vancouver, has been appointed manager of ... Sayward's mill at Pilot Bay, and assumed his new d... a fortnight ago.

Mr. E. F. Stephenson, Dominion Land and T... Agent, of Winnipeg, was in this province early in ... month investigating the affairs of the Crown T... Agency here. A commission was held yesterday to ... quire into matters, the result of which I have not ... learned. Pending the result, Mr. T. S. Higginson ... been suspended.

New Westminster, B. C., March 20, 1897.

NEW BRUNSWICK LETTER.

[Regular Correspondence of the Canada Lumberman.]

Much interest is taken here by lumbermen in the ... posal of the United States government to impose a ... upon Canadian lumber. A number of American ... holding timber limits in Maine have mills on this ... the border, in which they manufacture the logs from ... Maine limits. Among those may be mentioned the ... lowing: Stetson, Cutler & Co., two mills; Mi... Woodman, two mills; J. R. Warner & Co., S. T. ... Sons, A. Cushing & Co., Dunn Bros., James F. Ha... Charles Miller, and E. L. Jewett, all of whose mi... located at St. John. The above firms find it mo... vantageous to manufacture their logs on the Ca... side, and are therefore opposed to a duty on lumber.

St. John is coming to the front as a winter sh... port. A statement recently prepared shows that ... the season is completed 48 vessels will have s... British ports and eight to the West Indies, carry... total of 106,162 tons. The figures for 1895-96 were ... tons. The regular liners have taken a large quan... lumber in small lots, which has enabled light impor... Great Britain to obtain goods direct.

J. A. Sinclair, brother of Mr. Edward Sinclair, the ... known lumber operator of Miramichi, is manager of ... of the largest saw mills in California. He went ... Pacific coast in the early seventies and located in ... boldt County. The town of Scotia, Humboldt Co., ... built principally by Mr. Sinclair. An idea of the s... the mill may be obtained from the fact that the cont... the largest single contract for saw mill machinery ... taken in the United States.

BITS OF LUMBER.

The annual meeting of the St. John River Log D... Company is announced to take place in this city ... 7th of April.

Charles D. Stanford and F. W. Hall, of Bangor, ... have decided to erect a large mill on their prope... Tracadie next summer.

Messrs. Timothy Lynch, Michael Welsh, David L... James Love, John Reynolds and Peter B. Miller are ... ing incorporation as the Upper Southwest Miramich... Driving Company.

Leonard & Son's mill at Annidale, Queens Co., is ... sawing. Their mill at Armstrong's Corner will b... plied this year with lumber cut on Canaan river a... north-east branch of Long creek. There will be a ... two and a half millions to supply these mills this ye...

St. John, N. B., March 23, 1897.

The McEachren Heating & Ventilating Co., of ... Ont., will shortly remove their works to the larger ... premises recently occupied by the Cant Bros. Co. ... company propose to extend their business by ... several new lines of manufacture.

THE RETAILER AND Wood-Worker

SHARPENING PLANE CUTTERS.

RT from the importance of properly con-ing the details of wood-cutting machines, eeping of the cutting edges in good ion, both as to their sharpness and quality mper, is one of the elements necessary to ce economical results. In the case of saws eedful to have appliances for keeping the of correct shape, and of the proper depth, ith the proper amount of set. Machines s class of work are constructed by various s, and mostly of one pattern, which ex-e has, no doubt, determined as being the The sharpening of the cutters for planing nes is equally important; but in the d of adapting machines to the grinding of ges various systems have been tried. In wheels most generally applied to the g of bevel edges on the cutters, and had continued in use for some years before tem was departed from, a wheel was used large diameter that the surface produced cutters was but very little concave or In practice it was found that as the was reduced in diameter the concavity was ed to such an extent as to leave insuffi-naterial at the back of the cutting edge porting it properly and carrying away the enerated. No doubt for this reason the an was brought forward for producing a face on the bevel of the cutter; the wear of the grinding wheel does not here e uniformity of the cutting edge. Both e systems are open to very grave objec-and, in fact, any mode of grinding based arrangement of the wheel and material present a difficulty in obtaining good As the grinding wheel is in contact e cutter, each particle of metal and of r emery that is separated in grinding ss for a short distance between the wheel e cutter. However small such a particle it is impossible for it to be carried away first being pressed between the two , and as the emery wheel is more porous metal the small particles get embedded wheel. From a large experience in the of grinding the writer believes that any grinding according to either of these st result either in only a small amount l being ground away or else in constant in keeping the grinding wheels in con-r acting. In a new machine recently cut by the writer's firm for grinding the grinding wheel has a transverse given to it equal to two-thirds of the f its face, so as to bring every part of over the work. By this plan its face is ight. The pressure of the wheel on the regulated by gravity. As the cutter is traversed beneath the wheel the grinding continues until the wheel comes to the limit of the adjustable stop in its lateral traverse; so that in the case of small "nicks" in the edge of the cutter, the machine can be set in operation and the grinding continued at a uniform rate until the "nick" is ground out. The result of experience with the grinding wheel acting in this way under a number of conditions proves that the particles of steel ground off the cutter get away so freely that no heat is generated in the grinding. In practice this means that the cutting edges themselves are left with their original temper, and will work for a much longer time without the necessity for re-sharpening. The traversing movement of the table is obtained by a very simple frictional reverse movement.

WHAT CAUSES BUSINESS FAILURES.

In an effort to point out some of the causes for business failures. John Shaw, in Lumber, gives some suggestions in which retail dealers may find food for reflection. He says:

In every case a man, on contemplating going into any business, should be positively sure that he thoroughly understands it himself and is able to handle it without employing someone to manage it for him. This is especially the case in the lumber trade.

In perhaps no other business in the world is it necessary to use so much tact and keen diplomacy as in the lumber business. Many men fail from just a lack of this propensity. They are just square, honest, easy-going men, thinking that because they are square and right everybody else is. In these days of close competition, however, a man who has not got his eye teeth cut is "not in it."

That a man's honesty and integrity does not always bring a premium goes without saying, but a man who has these qualities established will certainly stand a storm that would strand a trickster. But no matter how much integrity a man has, if he wants to succeed in the lumber trade he has got to get right down to business, and must run on high-grade business principles. He must buy the stock that will sell, and keep his trade moving along. He must keep his finger on the public pulse, catering to its constantly changing whims. He must keep posted on the market so as to anticipate, if possible, any change in styles, for sometimes our architects are as changeable as the weather. If he has a lot of wainscotting or mouldings on hand that are "old style," he can charge them up to profit and loss they are no good. Many other things in the builder's line need watching, but the things mentioned are especially liable to change in style.

One very prolific source of failure seems to be the idea that the lumber business will run itself and pay its own bills. Many a man has found out the mistake of this, and still there are many more who still hold on to the idea as if infatuated with it. It's no use talking, any man in any department of the lumber business must be in it early, and be there to stay the day out, and give it his whole, undivided, close attention. From the saving of small pieces there may often be enough realized to make a margin of profit. No man can expect to run the business successfully without looking after every detail of it.

When a man is sure he knows his business in every detail, and couples with this knowledge a vim and willingness to take hold anywhere and of anything that will help his business along, when he is able to catch on to little things as well as big ones, it is fairly safe to say that he will succeed in any business he may engage in. And if he lacks these qualifications he might as well stay out of business, for it is safe to say that he will eventually go to the wall.

A NEW MACHINE.

THE Timber Trades Journal, of London, Eng., calls attention to a new machine which Messrs. George Gordon & Co., timber merchants, Aberdeen, have added to their plant. It is a horizontal board-sawing machine, said to be the only machine of the kind in Scotland. The feature of the machine is that it has two horizontal parallel saws. The effect of having two saws is, of course, says the journal quoted, that the machine cuts a log into boards in half the time that a single-saw machine can. The log or tree to be divided into boards is placed by means of a crane on a massive iron table, 30 feet long and about five tons in weight. It is fixed firmly to the table by means of dogs, and the table is then run up along rails to the sawing machine by means of a revolving screw working on a rack. The end of the log is thus fed against the saws, one of which projects a little in front of the other. The saws are, as regards height one above the other, placed a distance apart equal to the thickness of the boards which are desired to be cut. The saw frames in which the saws are fixed are driven from side to side by connecting rods of a two-throw crank with opposite centers, so that the motion of the one balances that of the other and prevents vibration. The crank makes 200 revolutions a minute; each saw, therefore, making double that number of journeys across the machine in a minute. The machine can saw boards up to 48 inches in width, and its cut is found to be very clean. The makers are Messrs. Robinson & Son, Limited, of Rochdale.

THE BEST IN THE DOMINION.

MR. A. E. PREST, Mooseland, Halifax Co., Nova Scotia, writes: "Find enclosed $1.00 for my subscription to the CANADA LUMBERMAN. I think it is the best paper in the Dominion for those interested in the lumber business."

FILLS THE BILL.

MR. Richard Lockhardt, Riversdale, Ont., writes: "Enclosed find $1.00 to renew my subscription to THE LUMBERMAN. I think your paper fills the bill exactly, and is just what lumbermen need to keep them posted. I would not be without your valuable paper.

Provided no adverse change is made in the tariff the McMillan & Haynes Co., of St. Catharines, Ont., will erect a new saw factory.

WOOD PULP DEPARTMENT

PULP STATISTICS.

ACCORDING to the Trade and Navigation Returns of the Dominion of Canada for the fiscal year ending June 30, 1896, the total value of the pulp wood exported in that year was $627,865, as against $468,359 in 1895, says the Canadian correspondent of the Paper Mill. All of it, with the exception of $27,580 worth, went to the United States. That is, the value of our pulp wood exports to the United States during the last fiscal year was $600,285. More than two-thirds of this was sent from the Province of Quebec, its total exports across the line amounting to $426,949 In 1895 the value of Quebec's shipments to that market was only $275,076. It therefore increased its sales there during the past year by $169,873. Ontario's sales to the United States have fallen off somewhat, those of 1895 amounting to $203,666, while those of 1896 amounted to only $196,016. Very little was sent in either fiscal year from Nova Scotia or New Brunswick.

Unless this pulp wood was bought at very low prices, there can hardly have been the one million cords of it that the advocates of the export tax have all along assumed to be the amount of our pulp wood exports to the United States. Half a million cords would probably be nearer the mark. For $600,285 the Canadian farmers would hardly furnish a greater quantity, especially as most of the wood was got out near the border, at a point where the cost of transportation to American mills is comparatively low, namely, along the part of the Quebec frontier in the neighborhood of Lake Champlain. Consequently the price realized by the producers for most of it would almost certainly be the highest obtainable on wood intended for export. It should be much higher, for example, than if the wood had been cut in an interior district, where the producer could get only what remained of the market price after paying the freight to the frontier. This $600,000, representing, as it does, prices paid for wood obtained for the most part close to the border, probably did not bring more than half a million cords. If that is correct, the process of ravaging our spruce tracts is not being carried on so rapidly by American pulp manufacturers as some of our alarmed advocates of an export tax imagine.

We have increased our exports of wood pulp. In the fiscal year covered by the report our total sales abroad amounted to $675,777, as against $500,874 in 1895 Our exports to Great Britain fell off from $251,848 in 1895 to $113,557 last year, while our exports to the United States increased from $330,385 in 1895 to $557,085 in 1896. That is, while we lost ground on the British market to the extent of $137,201, we more than made up for it by our gain of $220,700 in the United States market. Here again our export taxers find themselves confronted by a stubborn fact. The free movement of our spruce wood to the United States is not proving fatal to the development of an export trade in pulp across the border. It is true our sales of pulp wood there have increased from $458,813 in 1895 to $600,285 in 1896, or by $141,472, but at the same time our sales of wood pulp there also increased, and by the larger sum of $220,700. France took a small quantity of our pulp. Last year, as the year before, Quebec took the lead among the provinces as an exporter of pulp, the foreign sales of the provinces being as follows: Ontario, $194,409; Quebec, $251,485; Nova Scotia, $187,106; New Brunswick, $42,777.

DUTY ON PULP WOOD ADVOCATED.

STRONG pressure is being brought to bear upon the Dominion Government to impose an export duty on pulp wood shipped from Canada to the United States, with what results will be known when the tariff of the new administration is placed before the country. Scarcely a week passes in which a deputation from some point does not make known to the government their opinions in regard to the matter, and it is only reasonable to suppose that the arguments presented will be given careful consideration at the hands of the authorities. A strong resolution passed by lumbermen and others in the vicinity of Penetanguishene is referred to elsewhere, and we note that a representation from the province of Quebec last week urged the imposition of an export duty upon all wood used for making pulp. Mr. Clergue, manager of the large pulp mills at Sault Ste. Marie, Ont., also had an interview with members of the government, and asked that an export duty on pulp wood should be imposed conditionally. It would, he thinks, lead to the dropping of the McKinley duty on lumber and to other results beneficial to Canada. Mr. Clergue says that the world's supply of pulp wood is confined to Canada, Norway and Sweden, and that were these supplies of raw material cut off the newspapers of London and New York would have to suspend publication for want of paper. The Government, it is understood, did not commit themselves to the expression of any view.

WOOD FIBRE BOX.

THE wood fibre box is the latest thing to compete with old fashioned sawed boards. It is made of pulp, something after the style of fibre woodenware. It is supported by a light frame around the outside, and has no joints except at the corners. A factory has been started on the north side in this city, which will employ a force of 70 men. Thus the utilization of the wood pulp develops into enlarging fields. If the thing keeps on as it has in the last few years, pulp manufacture will beat the ordinary lumber business. It looks as if the time would come when wood grinding will be a bigger industry than saw milling. Improved methods of reduction are likely to be such that everything in the shape of wood and bark will be converted into pulp.

There is a concern in Wisconsin now that is buying millions of feet of hemlock to be worked up into fibre. The wood pulp business, when it reaches its full development, will utilize much timber that cannot be converted into lumber, and thus hasten the extinction of our forests, unless vigorous and widespread measures shall be taken to plant and cultivate anew. More New England and New York spruce is worked into pulp than is cut into lumber. This fibre business, moreover, will greatly add to the value of standing timber and timber lands, because it will render wood salable that once went to waste.

Northwestern Lumberman.

PULP NOTES.

The project to establish a pulp mill at St. George, N. B., has not yet been abandoned.

About 20,000 cords of pulp wood will be shipped from Windsor Mills Station, Que., this season.

The town council of Chicoutimi, Que., have voted a bonus of $10,000 towards the establishment of a pulp mill.

Mr. H. R. McLellan was in Fredericton, N. B., recently investigating the chances for procuring a supply of poplar wood with which to manufacture pulp.

The Paper Makers' Association, represented by Mr. C. Wilson, Lachute; Mr. Barber, Georgetown, W. H. Rowley, of the E. B. Eddy Company, and others, lately appeared before the Tariff Commissioners at Ottawa in private. It is understood they asked, among other concessions, an export duty on pulp wood.

Dr. Drewsen, an expert chemist, of New York, was recently in Ottawa on business with the E. B. Eddy Company dealing with their wood pulp manufacture, and states that the pulp wood supply is fast failing in the United States, and manufacturers are looking to Canada for the keeping up of their supply. If an export duty on pulp wood was imposed by the Canadian government there would be no alternative but for the Americans to come and manufacture their pulp here.

Pulp mills in New York, Massachusetts, Maine and New Hampshire are receiving large quantities of the raw material from Canada in the form of spruce logs. The middlemen who buy the wood from Canadian farmers and lumbermen and deliver them to the pulp mills on the other side of the line make a handsome profit. What is the matter with Canadians working their own pulp wood in their own country? The Robb Engineering Co., of Amherst, N. S., are now making a full line of pulp machinery.

The Sault Ste. Marie Pulp & Paper Company have expended $2,000,000 in developing power, new building and plant, and have surpassed the wildest dreams of the most sanguine theorists. They have the largest pulp mill in the world in full operation day and night, and a second mill well under way, all of substantial stone, and most of the machinery in place. They also have a large moulding and smelting foundry and extensive machinery in full blast, together with carpenter shop, sash factory, etc., railway sidings, and the best docks on the river.

The Roberts Grinder Co., of Kingston, N. Y., have taken out patents in Canada for an improved apparatus for pulping, consisting of a moving pulping agent, a stationary table, through which the pulping agent extends, a pocket, means for continuously pressing pulping material through the pocket and against the table and against the pulping agent, and means for simultaneously moving the pocket across the pulping agent substantially in the plane of movement of the said pulping agent until the material in the said pocket is clear of the pulping agent and in contact with the table.

A dispatch from Washington states that the Republican members of the Ways and Means Committee have decided upon the rates for pulp and printing paper in the new tariff bill. The duties on pulp were changed from ad valorem, as in the Wilson bill, to specific duties somewhat below the McKinley rates. The new rates, compared with the McKinley rates, follow: Mechanical ground wood pulp, new rate 1½ cents per pound, McKinley rate $2.50 per ton; chemical wood pulp, unbleached, new rate ⅛ cent per pound, McKinley rate $6 per ton; chemical wood pulp, bleached, new rate ¼ cent per pound, McKinley rate $7 per ton.

A French paper contains the following in regard to wood pulp in France: All kinds of wood will answer for paper-making, but the quality and quantity of the product differ widely: 100 parts of oak or walnut will only furnish 26 to 29 parts of pulp, while 38 parts may be obtained from the same weight of willow or chestnut. The aspen (tremble) gives a very white paper, massy, but of small tenacity. A mixture of 05 per cent. fir (sapin) and 5 per cent. aspen gives a good result. The fir is exported from Norway either as short logs (a length of 1.10 metres to avoid the payment of the French duty) or as damped ready for the chemical process. The process is known as the bisulphite method. Its details are not yet made public.

THE NEWS.

—Neiberg ill & Co. are putting in a hoop mill in connection with their stave mill at McGregor, Ont.

—G. D Campbell & Co., of Weymouth, N. S., have placed an electric plant in their saw mill.

—Craig & Austin, of Kinmount, Ont., have started their shingle mill and expect to keep it at work the year round.

—M. J. Nealon, of Woodville, Ont., intends putting in a portable saw and shingle mill in the vicinity of Bloomfield.

—The quantity of lumber which passed through the Canadian Sault Ste Marie canal in 1896 is given as 26,346,000 feet.

—C Meikle, Gravenhurst, Ont., is having a $4,000 steam yacht built at Kingston, Ont., for service in the Muskoka Lakes.

—It has been rumored that the Dominion government will hand over to the local government all the remaining crown lands in the province of Manitoba.

—Berry & Watson have dissolved partnership in the stave and heading business at Kinmount, Ont. The business will be carried on under the name of Watson & Davis.

—Joseph Turenne is reported to have been dismissed from the position of forest ranger in Manitoba, and Mr. Martin Jerome, ex M.P., has been appointed in his place.

—Messrs Seaman & Newman, of Wiarton, Ont., have dissolved partnership. Mr. J. P. Newman continues the old business, and Mr. A. G. Seaman has rented a mill at Barr Bay.

—A. G. Peuchen, of Toronto, has waited upon the council of Lorelon Falls, Ont., asking assistance towards starting a manufactory for wood, alcohol, charcoal and other products.

—Suit has been entered by Don. J Leathers against John Caufield, of Manistee, Mich., for $40,000 commission alleged to be due for negotiating a sale of timber limits to the Thayer Lumber Co , of Muskegon.

—President Cleveland celebrated the 165th annniversary of the birth of the First President of the Republic by signing and promulgating thirteen proclamations, establishing thirteen additional forest reservations, containing an aggregate area of 21,379,840 acres.

—A dispatch from Bangor, Maine, states that a petition asking that logs cut on the American side, manufactured in the Canadian provinces and re-shipped to the American market, shall be exempted from the proposed duty on lumber in the new tariff bill, has received many signatures in northern and eastern Maine.

—The proposed headquarters of the Dominion Rifle Association at Bisley, England, is to be constructed entirely of Canadian woods. It has been suggested that the native wood of a province be used for a particular room or hall, and that a neatly engraved plate be placed at a conspicuous point in such room, indicating the province which supplied the wood.

—Mr. Alex. Hamilton writes the LUMBERMAN from Cache Bay as follows. "I propose commencing to saw at our new mill at Warren on the 1st of April, and have about 8,000,000 ft. laying at mill to cut. I also have some hopes of securing a stock for the Cache Bay mills later on. We propose to build about seven miles of railroad to bring logs to the Warren mill."

—In the case of Harnwell vs. Parry Sound Lumber Co., the courts have decided that where a book-keeper is engaged for the term of one year, and his employment is continued after the expiration of that time, there is no presumption that it is to continue for another year, says the Court of Appeal. The employer may dismiss him at any time upon reasonable notice, and in this case, there being no evidence of usage to the contrary, three months' notice was held to be reasonable.

The stevedore committee of the Buffalo Lumber Exchange have arranged to continue the same system for discharging cargoes of lumber in the port of Buffalo that has been in effect for the past four years. The following is the schedule of prices adopted for the season of 1897 :

	Per M.
White pine log run including strips and mid culls	$0.22
Shorts	.40
Four inch strips in lots, in hold	.32
Norway, 1 to 2 inch, and not over 18 feet	.22
Bill stuff, 2, 3 and 5-inch	.28
Lath	.07
Shingles, 18 inch	.04
" 16 inch	.03
Bass wood and elm	.25
Ash, maple and oak	.35
Cedar posts, 1 cent each.	

On lath, shingles and posts a discount of 12½ per cent. is allowed. All barges and steamers over 12 feet in the hold must pay $5 for every 6 inches depth or fraction thereof in excess of 12 feet Boats with more than one cross beam and ships, or with overhead arches, pay 3 cents per thousand extra on the entire cargo.

—A broad gauge charter is sought from the Dominion government by the Canadian Douglas Saw Manufacturing Company, Limited, composed of United States and Toronto capitalists, with a capital stock of $700,000. The head office will be in Toronto, and the company ask authority to manufacture all kinds of circular and band saws, saw-sharpeners, saw tables, logs, lumber, staves, shingles, etc.

CASUALTIES.

—Mr. Dodds, of Mayo, was killed in the lumber woods at Whitney, Ont., by a log rolling on him.

—John Moore, of Otonabee township, was loading saw logs in the woods when he fell and had his leg broken below the knee.

—Word comes from Stanhope, Que., that a man named Lessard, from St. Joseph, was killed at Norton's camp by the fall of a tree.

Onesime Fortier, of St. Sauveur, Que., while working in a saw mill at Cedar Hall, fell upon the circular saw and had his left arm nearly severed from his body.

—A serious accident occurred recently at Klock's limits, above Mattawa, by which a young man named Geo. Demeule, of L'Ille Verte, Que., was instantly killed by a log crushing his head.

—Ward Reid, a young man employed in Jas. Sim's saw mill at Blackville, N. B., was caught in the shafting. His legs and arms were bruised, and it is feared he sustained fatal injuries.

—A boiler explosion in a saw mill in Bruce county, seven miles from Tiverton, Ont., killed the fireman, Kenneth McDiarmid, aged 18 years. The boiler jumped about 50 feet endwise.

—Samuel Fleming, jr., of Hockley, Ont., was recently struck in the head by a belt which flew from the drive wheel of an engine in his saw mill, and died from the effects a few hours later. The deceased was a very industrious man of 35 years of age.

TRADE NOTES.

When our correspondent was in Brantford lately he called on the Waterous Engine Works Company, who had just started on their second year in their new premises. Although built during 1895-96, the dullest year to many, they have been kept more than busy. They are now running with 246 men and working till 10 o'clock every night. Their shipments extend from the mines of the Pacific to the lumber and pulp mills of the Atlantic. Their reputation, established during the last 50 years, is such as to keep them busy even during the dullest season.

The Magnolia Metal Co., of New York, state that they have just closed their fiscal year on the first of March, and find that sales of Magnolia metal in America have been 25° larger than they were the year before, and that the volume of business exceeded that of any previous year during the past ten years. Their European business was found to be larger than the American business. The prospects for the ensuing year are very good. On the first of May the offices of the company will be changed from 74 Courtland street to Nos. 266 and 267 West street, where they will occupy the entire buildings. This change is made to give increased facilities for storage, shipping, etc.

The Small & Fisher Company, of Woodstock, N. B., have just completed for Mr. Fred Moore, an extensive lumberman of that locality, a rotary saw mill, probably one of the best that has been built in the province. The carriage is 37 feet long, equipped with Green Mountain dogs, and driven by rope feed. The saw arbor is 3½" diameter hammered steel, with saw collar forged solid, that is, upset from the bar itself. The log is set by man riding on carriage. The same company recently shipped three shingle machines to British Columbia, making about a dozen machines sold in that province within a year or two. They have completed an addition to their machine shop, and put in a new 80 h. p. boiler of E. Leonard & Son's manufacture. This addition provides fully 50 per cent. additional space.

The Emerson Company, of Baltimore, Md., advise us that they have closed the following orders during the past two months: Warner Moore, Richmond, Va., one 52' kiln; Anderson Lumber Co., Charleston, S. C., one 100' kiln; A. J. Cottingham, Maxton, N. C., one 52' kiln; H. B. Short, Lake Waccamaw, N. C., one 100' kiln; E. L. Halsey, Charleston, S. C., one 66' kiln; Hines Bros. Lumber Co., Kinston, N. C., two 100' kilns; M. J. Clagett & Co., St. Louis, Mich., one 100' kiln; Elizabeth City Lumber Co., Elizabeth City, N. C., three 100' kilns; Watson Lands Lumber Co., Mayburgh, Penna., one 85' kiln; Dixie Mill Co., Mobile, Ala., two 100' kilns; Mann & Co., Norfolk, Va., one 68' kiln; Charleston Lumber Co., Charleston, W. Va., one 68' kiln; Cummer Lumber Co., Jacksonville, Fla., four 100' kilns.

The Dodge Wood Split Pulley Company's works at Toronto Junction are running fifteen hours per day, with a full complement of men. The company tell us that never in the history of their eleven years' business in the Dominion have they been so crowded with work. The manufacture of their celebrated wood split pulley is constantly increasing. Recent large shipments have been made to Madras, India, and to agencies in Central America, while one order alone for over 1,000 pulleys is at present being prepared for shipment for the English market. In addition to the manufacture of wood split pulleys the Dodge Company are also general machinists and millwrights, and have now in work complete power transmission for several electric stations, including shafting, floor stands, friction clutch pulleys, bearings, heavy iron centre driving pulleys, etc. The Dodge Company are also doing a lot of special work for some of our largest mining plants. In the company's machine shop at present are sixteen friction clutches in work for contracts on hand.

We notice from the Official Gazette that an application has been made to incorporate The Montreal Lumber Company, Limited. The three principal promoters of this company are men well known in their different localities: John McKergow, recently elected president of the Montreal Board of Trade, a man highly esteemed for his business qualities; W K. Grafftey, who for 19 years was with G. A. Grier, the well known lumberman, afterwards becoming a partner for three years with E. J. Maxwell & Co., the hardwood dealers; and Geo. I. Dewar, the manager of the Export Lumber Co. at Ottawa, whose general knowledge of the trade could hardly be surpassed. The headquarters of the company will be at Montreal, but Mr. Dewar being always on the ground at Ottawa, will give valuable assistance to the business there The intention is to do purely a wholesale trade, and as soon as business brightens they will no doubt receive their fair share. We wish them all success in the new venture. Until 1st May, when they commence operations, the temporary address of the company is, care of W. K. Grafftey, 27 Tupper street, Montreal.

There are 4,350 firms engaged in the timber trade of Great Britain and Ireland, 773 in London, 2,668 in England and Wales, 634 in Scotland and 275 in Ireland.

A Parrsboro, N.S., paper says: Six masts and twelve spars, forming a load for four cars, arrived here last week from the Tacoma Mill Co., Tacoma, Wash. The masts and spars, which are for the new barques, are sawed on eight sides and are remarkably handsome sticks.

IMPORTS AND EXPORTS.

THE tables of the trade and navigation of the Dominion of Canada for the year ending June 30th, 1896, contain some interesting statistics of the imports and exports of forest products, as compiled from the official returns. The total value of exports of wood goods is shown to be $19,996,803, against $17,504,302 for the previous year. The imports reached in value $1,942,708, as compared with $1,642,337 in 1895. The following table gives the value of the different classes of logs, timber and lumber exported, together with the proportion shipped to Great Britain and the United States:

Article Exported.	Total Value.	Great Britain.	United States.
Logs, cedar	$ 3,458	.....	3,458
" elm	124,988	627	124,361
" hemlock	18,607	.....	18,419
" oak	6,627	....	6,627
" pine	1,423,989	500	1,423,489
" spruce	86,075	....	86,075
" all other	71,035	12,763	58,172
Lumber, planks and boards	8,513,710	583,393	7,041,074
" spruce deals	5,579,746	4,865,305	.....
" pine deals	3,001,537	3,025,569	.....
" deal ends	520,646	506,331	5,192
" basswood	35,963	16,535	15,724
" battens	35,267	35,162	105
Laths	492,224	.....	485,839
Joists	14,747	.....	14,747
Scantling	387,707	52,649	255,678
Headings	699,155	87,176	603,538
Piling	67,355	.....	67,355
Telegraph poles	38,498	.....	38,498
Posts	60,949	.....	60,949
Sleepers and railroad ties	213,662	5,368	208,254
Stave bolts	34,672	.....	34,672
Box shooks	72,133	33,915	34,767
Other shooks	53,499	29,184	2,280
Shingles	899,547	.....	886,103
Square timber, ash	52,950	50,964	.....
" " birch	228,876	226,335	945
" " elm	209,409	206,843	.....
" " oak	614,028	613,306	.....
" " red pine	108,436	107,826	200
" " white pine	1,570,652	1,567,370	432
" " all other	67,754	61,956	5,251
Pulpwood	627,865	27,580	600,285
Wood pulp	675,777	113,557	557,085
Spoolwood	99,576	99,045	531
Doors, sashes and blinds	190,004	168,673	1,150

Besides Great Britain and the United States, we find boards and planks were exported largely to other countries, chief among which were Australia, $96,482; British Africa, $76,149; British West Indies, $85,421; Argentine Republic, $224,118; Chili, $53,390; China, $86,628; South West Indies, $96,172; Brazil, $34,500; and to the British possessions in Africa, $16,295. Doors, sashes and blinds were exported to British Africa to the value of $18,883, and wood pulp to France to the value of $5,135.

Pine deals were imported by Germany totalling in value $11,145, while France imported spruce deals valued at $110,653. Other spruce deal importing countries were: Spain, $32,468; Brazil, $15,456; Portugal, $16,859; Australia, $7,791.

The principal increases over 1895 are in the case of pine deals, planks and boards, square pine timber and shingles. A falling off is shown in the exports of pine logs, owing to the depression in the Michigan manufacturing district.

Turning to imports of forest products, we find that Canada purchased from the United States the following: Logs and round unmanufactured timber, value $286,683; cherry, chestnut gumwood, hickory and whitewood, $145,312; mahogany, $21,974; oak, $207,191; pitch pine, $131,540; red wood, $4,829; Spanish cedar, $14,604; walnut, $52,998; white ash, $2,848; African teak, black heart ebony, lignum vitae, red cedar and satin wood, $3,565; ship timber and shipping plank, $2,577; hewn or sawed timber, $9,584; squared or sided timber, $341,048; sawed boards, planks and deals, $255,712; pine clapboards, $694; lath, $4,267; shingles, $28,741; staves, $23,992; veneers of wood, $1,742.30; manufactures of wood, $65,954.98; wood pulp, $2,856.50.

FAVOR RETALIATION.

The ratepayers of Penetanguishene, Ont., are a unit in favor of protecting Canadian industries. A public meeting was held recently, at which a number of prominent lumbermen and others were present, when resolutions were passed favoring the imposition by the Dominion government of an export duty on saw logs equal to the foreign import duty imposed upon Canadian lumber. This resolution was moved by Dr. Spohn and seconded by C. G. Gendron. The former stated that nine-tenths of the timber in Ontario was owned by Americans, and if a duty was imposed on logs, this timber would certainly be manufactured in this country.

One of the speakers remarked that there were too many changes in the United States government. It took them about two years to get their machinery oiled up and in working order, and just when things begin to move smoothly another change takes place and upsets everything.

A. B. Thompson thought the duty should be imposed on saw logs whether the United States taxed our lumber or not. He did not believe in making our laws to suit the Americans.

On motion of H. H. Thompson, it was resolved to advocate a duty upon pulp wood leaving Canada. Mr. Beck favored a high duty, which would necessitate the manufacture of the timber in this country.

A resolution was then passed referring to hemlock timber. It was in substance, that whereas large quantities of hemlock timber are being cut down for the purpose of being stripped of the bark, and such timber is likely to be of greater commercial value at a later date, and in addition the forests are endangered by fire by reason of such timber lying around, therefore be it resolved that the government of Canada be requested to impose such an export duty upon tan bark as will prevent our hemlock trees from being slaughtered and wasted. At present there are 40,000 cords of tan bark used in Ontario alone, and 25,000 cords exported to the United States.

Another resolution favored the adoption of a similar alien labor law to that in force in the United States.

CAN'T DO WITHOUT IT.

MR. N. D. Seaman, of Woodford, Ont., in remitting renewal subscription, writes: "I am not ready to give up the LUMBERMAN yet. I could not do without it while I am in the business."

HARD MAPLE.

Hard maple, or rock maple, as it is called in the eastern states, is one of the most staple of all our native woods, and in gross bulk it is the most plentiful of all the hardwoods. At first thought this would seem to indicate that it should be an easy and profitable wood to handle. But the reverse is the case, as many an operator has discovered by experience, to his sorrow and the depleting of his pocket book.

In the first place, a large percentage of growing trees are so defective that they will not produce merchantable lumber sufficient to pay for hauling the logs to the mill. Another large proportion of the logs will barely pay for logging and saw bill, and a large proportion of the logs apparently good and sound, are found on sawing to be worthless.

There is probably no kind of logs in the entire list so deceptive in appearance and so hard to inspect and scale satisfactorily as hard maple.

A good buyer and scaler of maple logs is a rarity and a treasure to the saw mill man. Where there is one who can make his winter's scale of logs come within a whole row of apple trees of the actual product of merchantable green lumber as shown at the tail of the mill, there are nine who will scale so wildly that if their work was on anything except hard maple, they would be run out of the country.

But the trouble does not stop here, for let the mill scaler scale never so wisely, if the lumber is put into pile to await weather drying before shipment, the discrepancy between the shipping clerk's scale and the mill scale will be enough to take away the breath of the novice in the business, and generally, to cap the climax, when the mill man gets his returns for his dry stock shipped to the consumer, he generally receives another paralyzing shock.

Altogether, although hard maple is an honest, reliable and valuable wood and one of the most important in all the list of the native species, it is, nevertheless, about the most unsatisfactory to handle in the whole catalogue. - Hardwood.

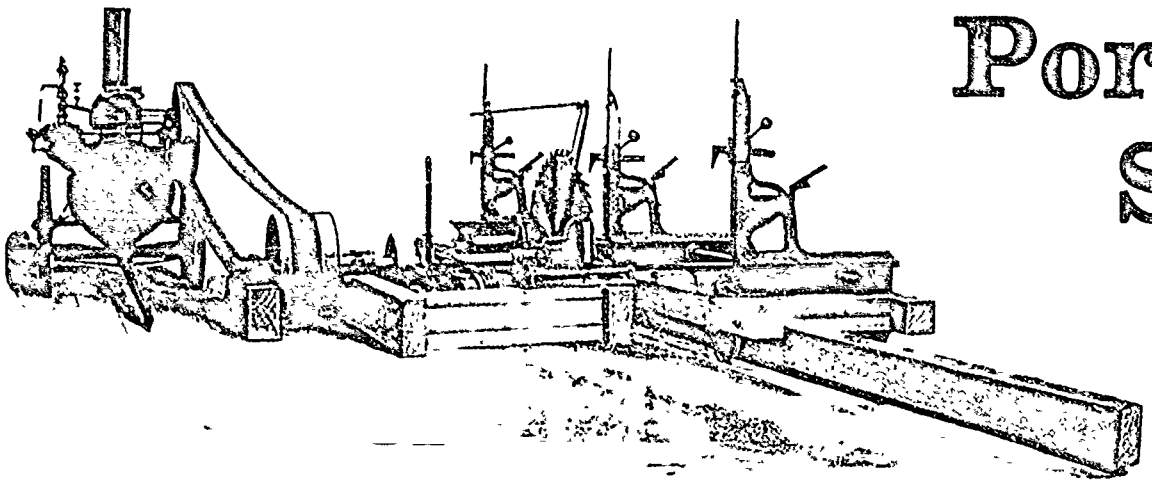
VIGARS & COMPANY'S NEW MILL.

A LARGE mill is nearing completion at Port Arthur, Ont., for Vigars & Co. It will be 35 x 100 feet, two stories, covered by an iron roof, and is most substantial in character, resting upon heavy tamarac beams, which in turn are set upon several rows of piles, driven five feet apart. In the basement or ground floor is contained the shafting, a Cunningham steam feed engine and a Kalamazoo nigger—a machine calculated to do four times the work of the old nigger it replaces. On the south side of the main building is located the boiler and engine rooms. In the latter room a solid stone foundation is being laid, on which will rest the big engine. A battery of two 45 and one 75 horse power boilers is required to furnish power to the 120 and 40 horse power engines which drive the machinery. A second smoke stack will raise its lofty head beside the one which now towers above the mill. In the second storey will be located the various saws. The mill will be equipped with the latest devices for the speedy handling of all kinds of lumber.

On the north side of the mill, and attached thereto, is the lath mill, equipped with a machine of a capacity of 30,000 laths per day. Separated from the saw mill and about 60 feet south are the large dry kilns, and south of the kilns again is the planing mill.

The improvements to the saw-mill will, it is estimated, add from 5,000 to 8,000 feet of lumber per day to the capacity of the mill, which will have a total capacity of from 40,000 to 45,000 feet per day.

The work of finishing and equipping the mill is being pushed forward as rapidly as possible. The 25th of April will see the mill in operation, as it is necessary that a start should be made then in order to fill a large order for the C.P.R. for timber required to make repairs to the company's dock.



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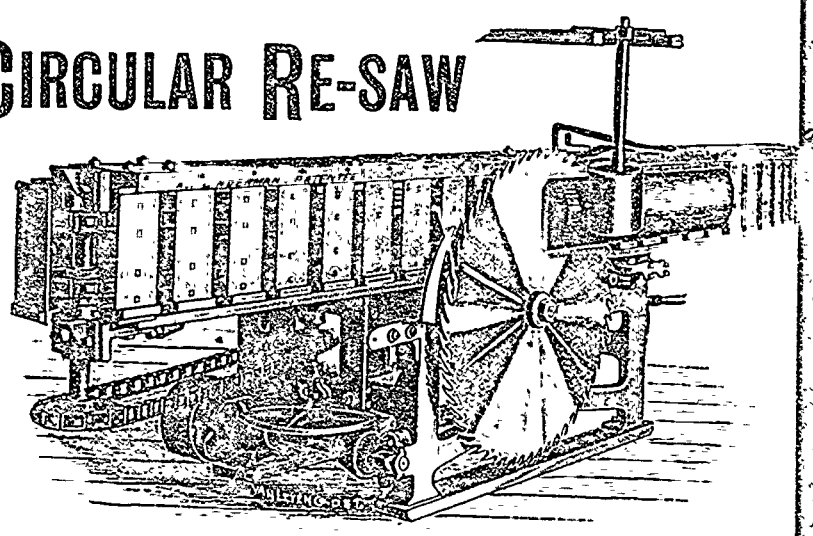
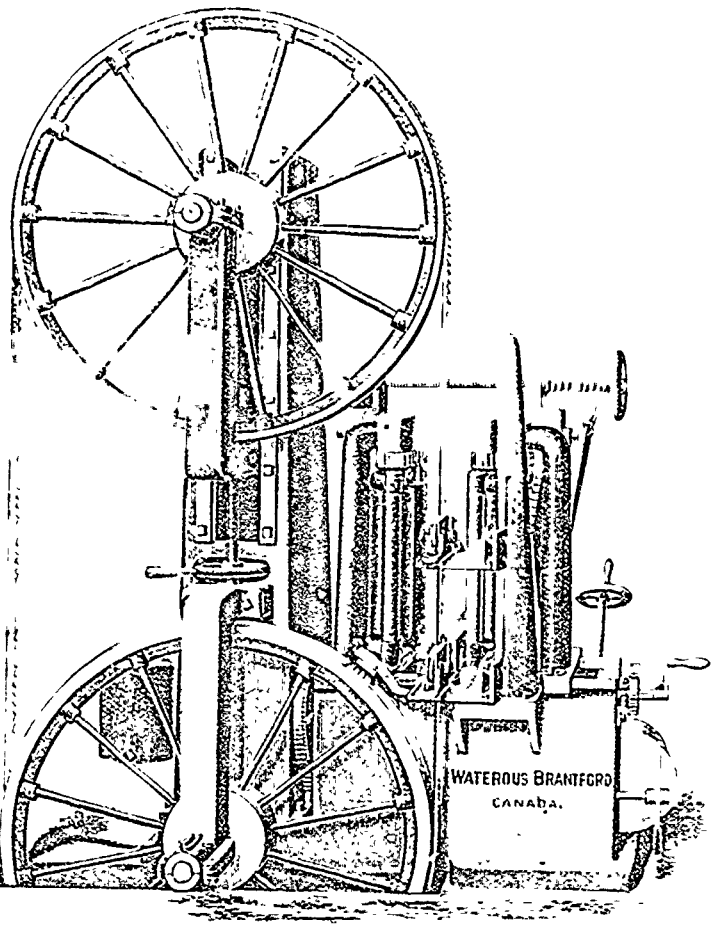
A Band Re-Saw converts a Cull Deal into say a one-inch Thin Cu
a two-inch Clear. Re-saws Thick Slabs and is largely used to incre
Capacity of Mill 25 to 35%.

CIRCULAR RE-SAW



Re-Saws Slabs Equally as Well as Lumber.

It will convert your Slabs and other Mill Refuse into Lumber at a Small Cost. The l
cut from slabs is usually of upper grades, much being clear; the amount th
be taken from a cord of ordinary slabs is from 400 to 700 feet surface mea
according to the thickness. Instantly changed to cut from 7/16 to 2" thick.
single band or circular mill the daily saving, customers report, is 7,000 to 9,000
of ⅝ box lumber.



A THOROUGHLY REBUILT.... NO. 5½ EGAN BAND RE-SAW

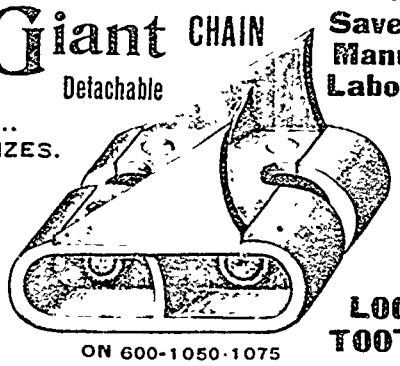
FOR SALE CHEAP—60" Wheels; takes 4½" Saw; Re-saws 30" wide and 12" thick.

Several Good Second Hand Saw Mills
Correspondence Solicited - Prices Close

If your Log Jack troubles you try Giant Chain

Giant CHAIN Detachable 4... SIZES.

Save Manual Labor..



ON 600-1050-1075

LOG TOOTH

A most satisfactory and durable chain for Log Haul-Up, Heavy Refuse Conveyors, Etc.

10 to 15 tons of Link Belting, covering All Sizes, constantly in Stock.

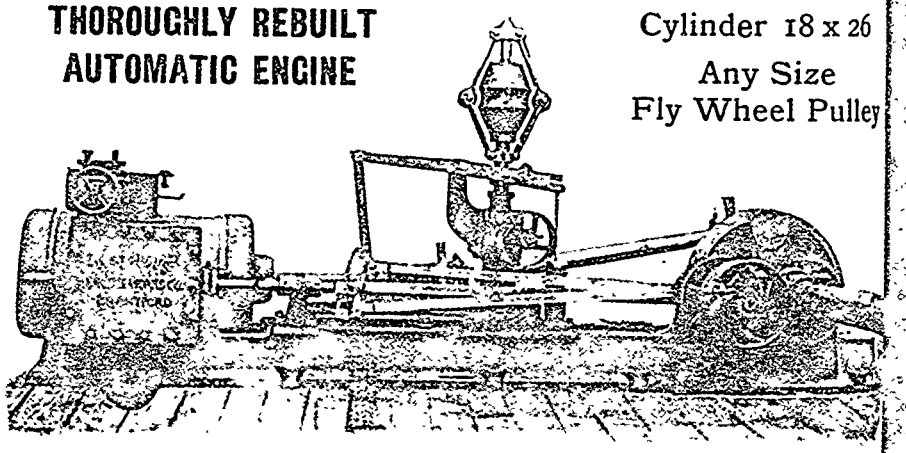
◇

EVERYTHING FOP

Saw Mills, Wood-Working Establishments and Pulp Mills.

THOROUGHLY REBUILT AUTOMATIC ENGINE

Cylinder 18 x 26
Any Size
Fly Wheel Pulley



WATEROUS, BRANTFORD, CANADA