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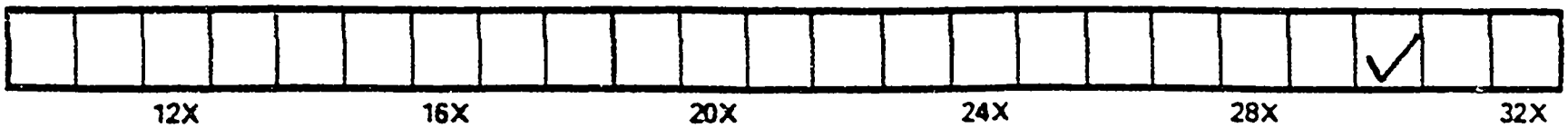

THE CANADA LUMBERMAN

Wood-Workers', Manufacturers' and Millers' Gazette

XXI. | TORONTO, CANADA, MAY, 1901 | TERMS, $1.00 PER YEAR Single Copies, 10 Cents

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SAW SASHES OF ALL WIDTHS

We manufacture a
Complete Line of

HIGH GRADE SAW-MILL MACHINERY

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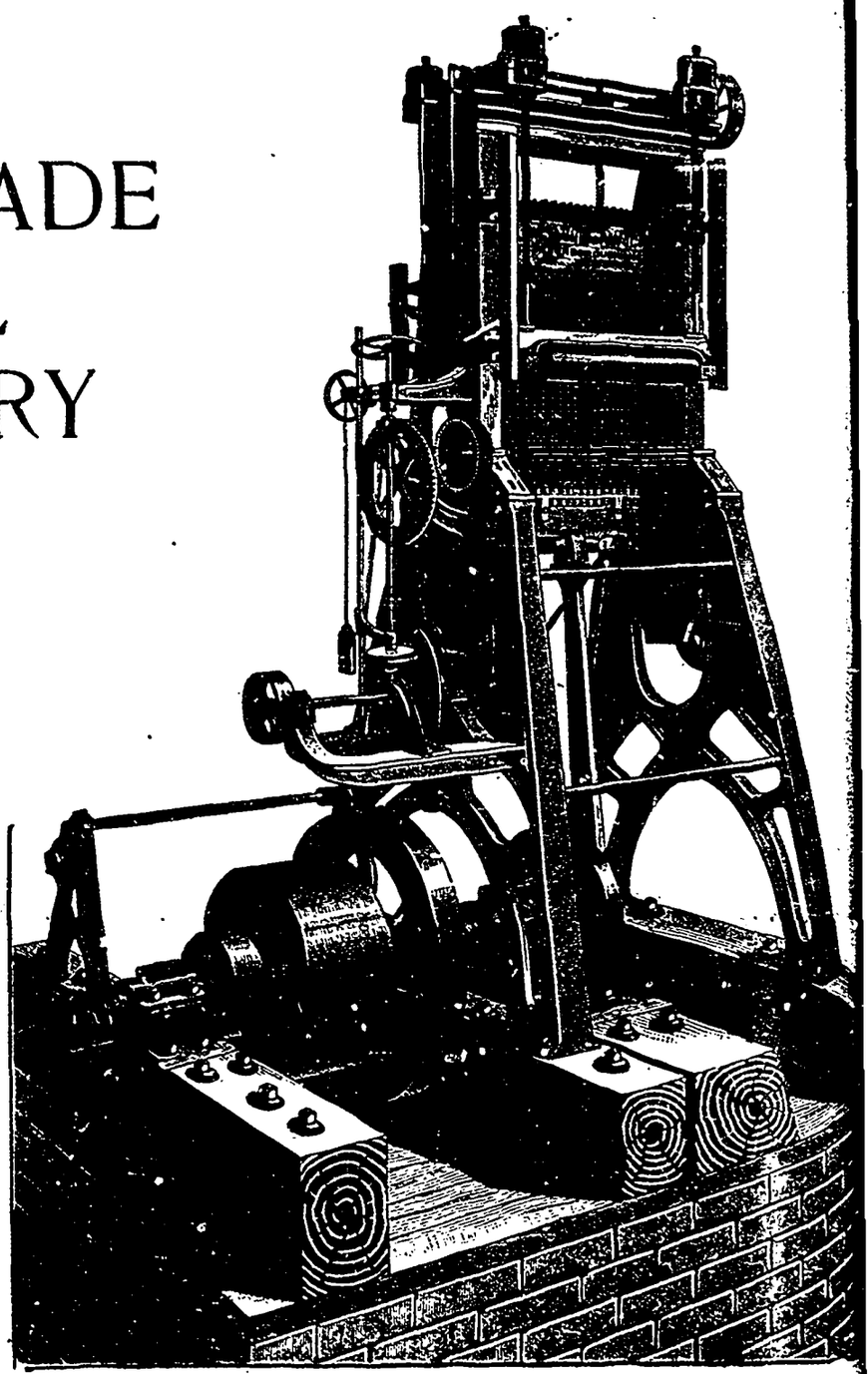


We are prepared to furnish plans, specifications, and build mills complete of any capacity, or to remodel old mills.
Write for prices, informing us what yourrequirements are.

The Wm. Hamilton Mfg. Co., Limited

Branch Office: VANCOUVER, B.C. **PETERBOROUGH, ON**

R. H. SMITH CO., LIMITED

St. Catharines, Ont.

We are the Sole Manufacturers of Saws under the

Simonds' Process

in the Dominion of Canada.

There is no process its equal for tempering circular saws. Other makers recognize this fact, as some of them, in order to sell their goods, claim to have the same process. **All such Claims are FALSE,** as the patentee in the U. S. and ourselves are the only firms in the world who use it.

MILL STREAM, QUE., on I. C. R'y, December 17th, 1894.

R. H. SMITH CO., LTD., St. Catharines, Ont.

DEAR SIRS,—Driving a 20 in. 13 gauge saw into frozen hardwood, using a 9 in. 4-ply belt, if it can be done satisfactorily, is a very severe test. Your saws have stood that test better than any I have tried. I have been experimenting with different makes—both home and imported—during the last five years, and give yours the preference. Last order is just to hand and will report on them by and bye.

Yours very truly, JAMES McKINLAY.

CAMPBELLTON, N.B., Nov. 17th, 1894.

R. H. SMITH CO., LTD., St. Catharines, Ont.

DEAR SIRS,—In regard to your Shingle Saws, you can say that I have been using Shingle Saws of your make (Simonds) for the past four years, and they have given good satisfaction. I am running nine machines and use a good many saws, but have never had a saw yet that did not work satisfactorily. Before using your saws I used saws of American make, which worked well, but after giving your saw a trial have continued to use yours, as they are cheaper, and in regard to working qualities are all that is needed.

Yours truly, KILGOUR SHIVES.

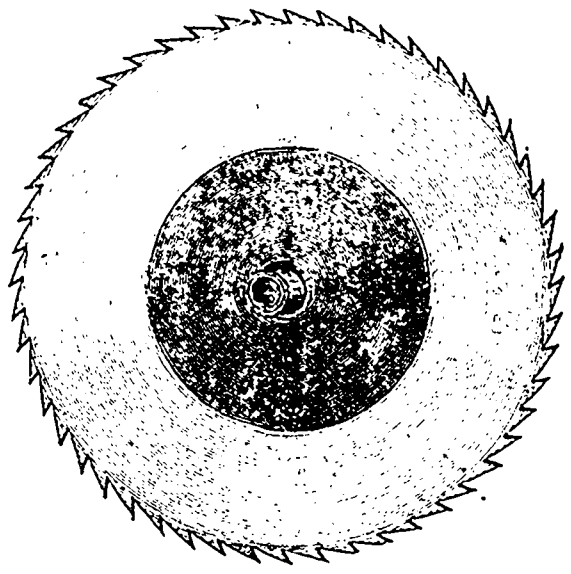
CLAVERING, ONT., May 3rd, 1897.

R. H. SMITH CO., LTD., St. Catharines, Ont.

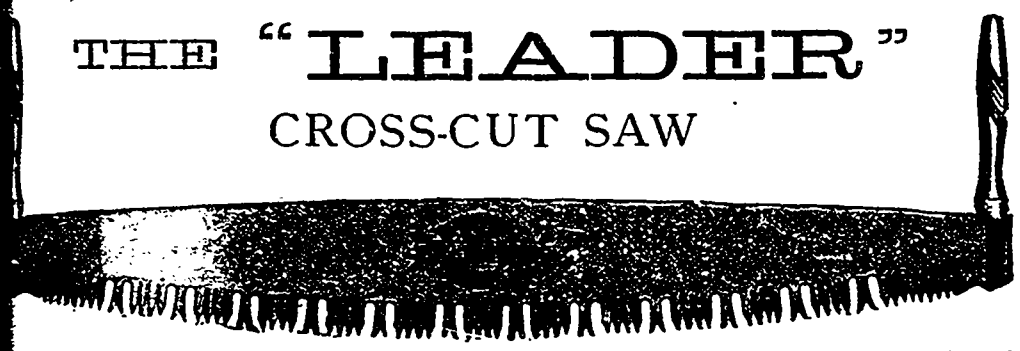
GENTS,—In reply to your letter asking me how I liked the 62" SIMONDS Saw, I must say in all my experience I never had a saw stand up to its work like the one purchased from you last month. Having used saws for the last 22 years, and tried different makes, I can fully say it is the best saw I have ever had in my mill, and would recommend the SIMONDS' Process Saws to all mill men in need of circular saws.

Yours truly, W. G. SIMMIE.

P.S.—I am sending you my old saw to be repaired; please hammer to same speed as new one. W.G.S.



THE "LEADER" CROSS-CUT SAW



These Saws are made from the best DOUBLE REFINED SILVER STEEL, warranted four gauges thinner on back than front, and the only Saws on the market that are a perfect taper from the points of the teeth to the back, and require less Set than any other Cross-Cut Saw.

They are tempered by the Simonds' Patent Process, insuring a perfectly uniform temper throughout the plate, and stand without a rival as the BEST, FASTEST, AND EASIEST-CUTTING SAW KNOWN. A gauge to regulate the clearing teeth is furnished with each saw.

Directions for Setting and Filing are plainly Etched on every Saw. None genuine without our Registered Trade Mark as shown in cut.

THE "LEADER" SAW SWAGE

Made in 3 Sizes—$2.00, $2.50, $3.00 Net.

OUR PRICES ARE RIGHT. KINDLY ALLOW US TO QUOTE YOU BEFORE PURCHASING.

R. H. SMITH CO., Limited, St. Catharines, Ont.

THE CANADA LUMBERMAN

VOLUME XXI. NUMBER 5. | TORONTO, CANADA, MAY, 1901 | TERMS, $1.00 PER YEAR Single Copies, 10 Cents

THE VICTORIA LUMBER AND MANUFACTURING COMPANY.

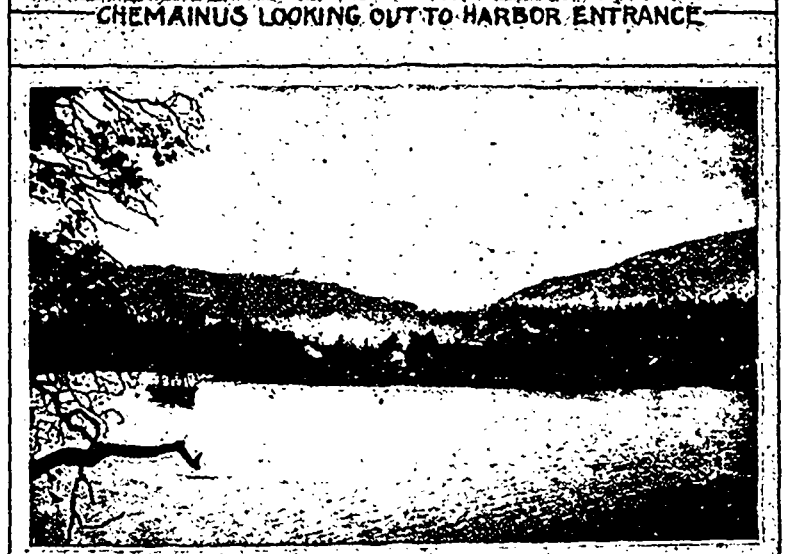
Located at Chemainus, in British Columbia, is one of the largest and most modern saw mills on the Pacific coast, the property of the Victoria Lumber and Manufacturing Company. The town is about fifty miles from Victoria, on the east side of Vancouver Island. It is situated on Horseshoe Bay, which is sheltered by Bare Point, making a perfect harbour, where ships of all sizes may load with perfect safety. Harbor views are presented on this page, and on the following page are shown some scenes in connection with the Victoria Lumber and Manufacturing Company's lumbering operations.

The present saw mill was built in 1890, but the full complement of machinery was not installed until later. The main mill is 450 feet long by 74 feet wide, and the boiler house, a stone structure, is 64 feet long by 64 feet wide. The motive power is supplied by two 24x30 slide valve engines and one 22x28 twin engine, while a 15x22 upright engine is used for driving the dynamo, the company supplying their own electric light. Steam is supplied by four tubular boilers 66 inches by 16 feet, and four two flue boilers 36 inches by 24 feet. Fuel used is sawdust and refuse, fed automatically.

In the mill proper are two band saws, a Wickes' gang, two gang edgers, two gang slashers, and one patent trimmer. One side of the mill is equipped with a Hill steam nigger, and the other with a Simonson steam log turner. From the time the log is pushed onto the saddle on the log haul-up, until the lumber lands on the extensive docks, which surround the plant, the lumber is all handled by machinery, flippers, transfer chains, etc., being strongly in evidence. The log haul-up is an endless chain, fitted with rigid saddles, which carries the log up on to the deck, from which it is thrown by steam flippers to either side of the mill, as required. The mill can cut timbers up to 130 feet in length, and is especially adapted for the handling of large and long timbers. Besides the main mill, is a well equipped machine shop, lath mill, blacksmith shop, and planing plant.

The lumber cut is mainly Douglas fir, commonly known as Oregon pine, although a certain amount of cedar and spruce, to meet the local demand, is also cut. The output, at present, is largely shipped to foreign markets, and consists of deals, flitches and timbers, with a certain percentage of decking, selects and flooring. The Esquimalt & Nanaimo Railway runs within a short distance of the plant, and, as the C. P. R. is reported as intending to install a ferry system, connecting the E. & N. Railway with their line, no doubt it will not be long until the Chemainus Company is shipping to eastern markets.

CHEMAINUS LOOKING OUT TO HARBOR ENTRANCE



CHEMAINUS FROM HARBOR ENTRANCE

Fire protection is afforded by the company's own water-works system, in conjunction with two large steam pumps and their private hose.

About two hundred men are employed in and about the mill, and from forty to sixty in loading the vessels.

The company operate their own logging camps, which are situated about six miles from salt water, immediately back of Chemainus. The logs are all hauled to the boom in front of the mill over the company's own railroad, which is a standard guage, well ballasted road. In the woods the company employ from 100 to 150 men. The logging plant consists of ten donkey engines, one Climax geared locomotive, two direct connected locomotives, and a large number of logging cars. This plant when working full is capable of putting in 250,000 feet of logs per day. The company own their own timber lands, and supply all the logs used in their mill.

The officers of the company are: J A Humbird, president; R. P. Rithet, vice-president; T. J. Humbird, treasurer; W. H. Phipps, secretary; E. J. Palmer, manager. Messrs. R. P. Rithet & Co., Victoria, B. C., are selling agents for the company.

TESTS OF TIMBER.

According to tests of timber made by Professor Henry T. Bovey, of McGill University, Montreal, spruce failed by compression at 9,000 pounds, tamarac at 11,000 pounds, and British Columbia fir at 14,000 pounds. H. J. Gamble, division engineer of the Canadian Pacific Railroad, located at Vancouver, B. C., writes: "In bridges exposed to the weather fir lasts in this wet climate about ten years, and in the dry interior of the province, a few years longer. I would also state generally that it is very strong and excellent timber for bridges, trestles of buildings, joists, etc., and when cut 'edge grained' makes as fine a flooring as can be desired."

LUMBER DAMS.

In a report to the Commissioner of Crown Lands, Mr. G. W. Bartlett, superintendent of the Algonquin National Park, calls attention to the destruction of timber around the lake shores by water. He says: "It is very much to be regretted that so many of the lakes in the park are being damaged by having the water kept up too long in the spring, thereby killing the timber around the lake shores. Dams must be built, it is true, but I think each spring the limit holders should be notified, as they were last spring, to let off the water as early in the season as possible."

The annual meeting of the St. John Log Driving Company was held at Fredericton, N.B., on April 3rd. Reports were presented, and the affairs of the company stated to be very satisfactory. The following directors were elected: W. H. Murray, A. H. F. Randolph, R.A. Estey, D. Fraser, jr., and F. H. Hale. W. H. Murray was elected president and J. Fraser Gregory secretary-treasurer. The contract for steam driving from Grand Falls to the boom limits was awarded for a term of four years to J. A. Morrison and Robt. Nobles, at 30 per cent. off the upset. The contract price per thousand is 14 cents from Grand Falls to the boom, and 11 1-5 cents from Tobique to the boom.

ONTARIO FORESTS.

The annual report of the Commissioner of Crown Lands of Ontario for the year 1900 states that the revenue from woods and forests during the year was $1,276,376.48. Of this $636,464.54 was on account of bonuses, $61,704.70 on account of ground rents, and $1,886.25 on account of transfer fees, leaving the net revenue from timber dues $576,320.99. The prosperous condition of the lumber business and the success of the manufacturing clause affecting pine saw logs is referred to.

The activity in the demands for woods suitable for the making of pulp and paper, the report states, has been undiminished. The Sault Ste. Marie Pulp and Paper Company have operated their mechanical pulp mill continuously throughout the year, and have also erected a sulphite mill of large capacity. Work at the Sturgeon Falls mill has been suspended through litigation respecting this property. Since the last report three new agreements have been entered into by the Government and ratified by the Legislature for the erection of paper and pulp mills, namely, with the Spanish River Pulp and Paper Company, the Blanche River Pulp and Paper Company, and the Nepigon Pulp and Paper Company. The Spanish River company have prepared elaborate plans for the establishment of their industry, and are proceeding with the erection of dams, mills, etc. The other two companies, namely, the Blanche River and the Nepigon, have not yet succeeded in settling matters in connection with the water powers for their proposed mills.

The explorations in the country north of the height of land have revealed the fact that this province has almost boundless resources in pulp woods, and with the higher prices and greater demand for this class of raw material, we may confidently look for a great expansion in the pulp and paper industry in the not distant future.

Regulations have been passed prohibiting the export of spruce pulp wood cut on lands of the Crown, as well as of hemlock bark to be used for tanning purposes, the object being, as in the case of pine sawlogs, to realize for the province all the benefits arising from the utilization of these natural resources in our own country.

FIRE RANGING.

The following reference is made to the fire ranging system as now in vogue:

The number of licensees who had firerangers on their limits last season was 79, and the number of rangers employed on licensed lands was 185. There were also 12 rangers employed on Crown lands in the Temagaming country (which is a favorite resort for tourists) and in the Wahnapitae country and the district of Rainy River, where prospectors have gone in. The total cost of the service to the Department was $26,985.43.

In the Ottawa country and in the districts of Muskoka, Parry Sound and Nipissing, the season was comparatively wet and there were no large fires. In the districts of Algoma, Thunder Bay and Rainy River, however, the summer was a particularly dry one, and some serious fires occurred, especially on limits in Algoma and Rainy River. In the township of Dana, on the Sturgeon River, owned by the Crown, a fire broke out in June. The Department's rangers from Temagaming hurried to the scene and succeeded in confining the fire to some lots in the first concession. A good deal of timber was damaged, and after inspection by woods rangers of the Department it was decided to dispose of the timber standing on lots 1 to 5 in the first concession, so that its value might be realized to the Province.

At the last session of the Legislature the fireranging system was put upon a statutory basis, and whereas in the past the employment of firerangers was merely optional on the part of limit owners, the Department has now authority to place men on licensed territory where there may be danger from fire, and charge half the cost of the same to the lumberman. This was undoubtedly a proper step, as it was manifestly unfair that a licensee who had protected his limits year after year by the employment of rangers should be exposed to loss from fire running over from the limit of his neighbor who employed no rangers.

It has been the practice of the Department to keep close watch on the fireranging system, in order to see that it is being properly carried out, and to strengthen it from time to time where it may be weak. In order to get definite information upon the working of the system, it has been customary every two or three years to send out a circular to all those licensees who have employed firerangers, asking them a series of questions as to the working of the system, and what suggestions they have to offer in the direction of improving it. This year circulars were sent out to those licensees who have employed firerangers during last summer, and replies have been

LUMBER SCENES—VICTORIA LUMBER AND MANUFACTURING COMPANY, CHEMAINUS, B.C

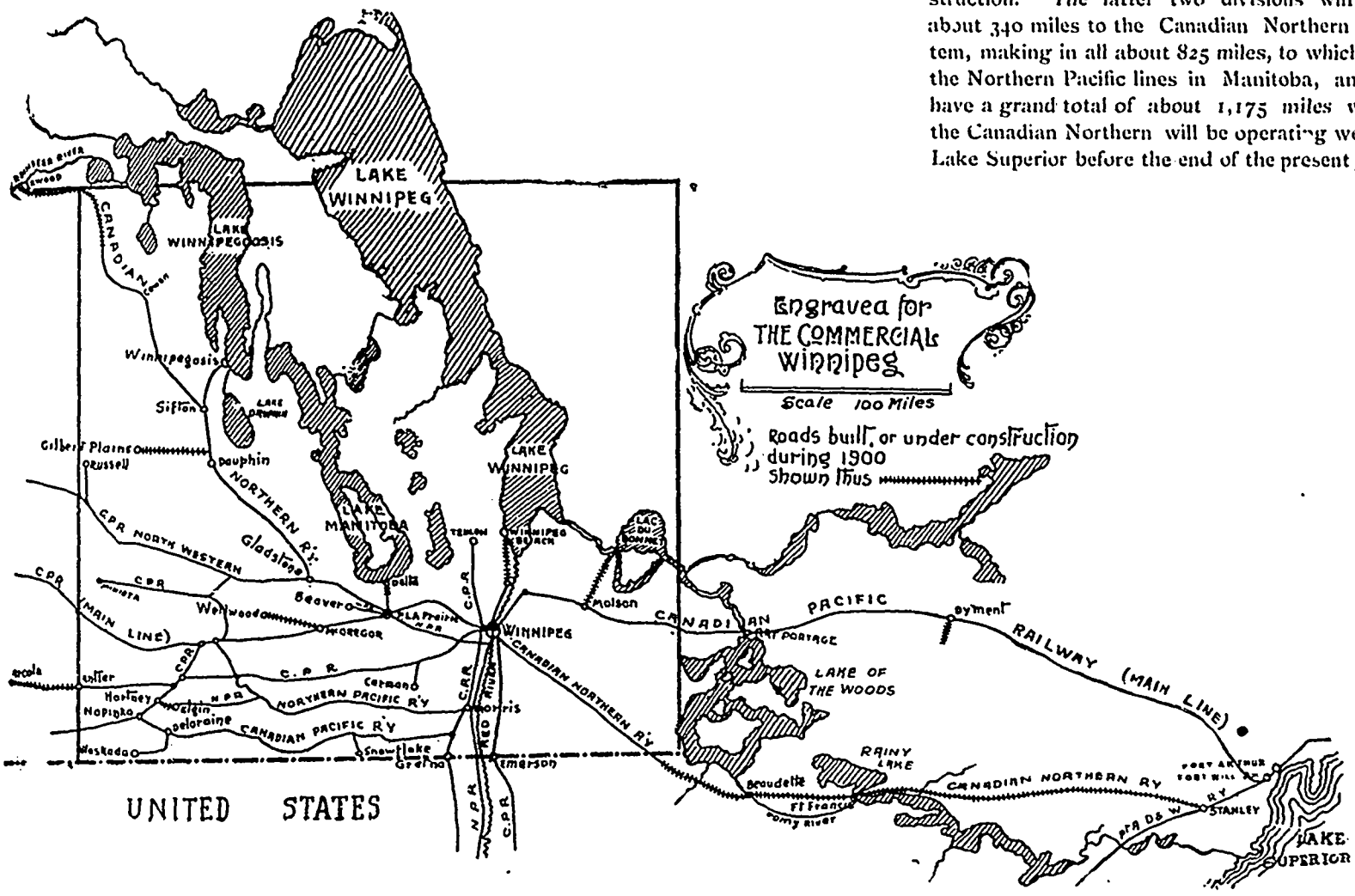
ceived, and from these it appears that there ere about ninety fires extinguished by the different fire rangers before they got much headway, which, if there had not been firerangers on duty, would no doubt have spread and destroyed large quantities of timber. The licensees all expressed themselves as satisfied with the management of the service, and in only one or two instances out of the whole number employing rangers were any suggestions made, and they were all in the direction of increasing the number of fire rangers and making more severe the penalties for setting out fire or leaving a burning in the bush during the dangerous period. It has been suggested that the forest rangers of the Crown should be kept on duty during the whole summer, and have supervision of the firerangers. Perhaps the service would be benefitted by a closer inspection, but without an increase of the vote for forest ranging it is not possible to keep the rangers on duty longer than is required to supervise the cutting operations in the winter and collect the sworn returns of the same.

Following is a statement of timber taken from Crown lands during the year ending December 31st, 1900 :

Area under licenses	16,732 acres.
Pine saw logs	643,510,766 ft. B.M.
Other saw logs	36,721,998 ft. B.M.
Pine, boom and dimension timber	34,724,488 ft. B.M.
Other dimension timber	6,866,900 ft. B.M.
Square white pine	1,919,230 cubic ft.
Birch timber	2,380 cubic ft.
Ash timber	555 cubic ft.
Pile timber	524,387 ft. B.M.
Cedar	135,008 lineal ft.
Cordwood	29,184 cords.
Tanbark	1,253 cords.
Railway ties	1,143,374 pieces.
Posts	5,309 pieces.
Telegraph poles	9,784 pieces.
Shingle bolts	1,145 cords.
Head blocks	164 pieces.
Pulp wood	65,051 cords.
Traverses	148 pieces.
Stave bolts	5,559 pieces.

THE RAILWAY SYSTEMS OF MANITOBA.

In view of the relation which the transportation problem bears to the lumber supply of Manitoba, and of the proposal of the Canadian Northern Railway to assume control of the Northern Pacific lines in that province, the accompanying map will be of interest to many of our readers. The map, for which we are indebted to the Winnipeg Commercial, shows the new Canadian Northern system up to date ; also the Northern Pacific lines in Manitoba, which may come under the control of the Canadian Northern. The cross-sectioned lines show railway built or under construction last year. The Canadian Northern system includes the Port Arthur, Duluth and Western railway, and the Ontario and southeastern section extending from Port Arthur to Winnipeg. A section of about 145 miles, extending eastward from Beaudette, where the latter line crosses the Rainy river, under construction, will make the line complete between Winnipeg and Lake Superior. This is also the northern section of the Canadian Northern systems, extending from Gladstone, in Manitoba, northerly to Erwood, in Saskatchewan territory. By building a short new line from Gladstone to Beaver, the western terminus of the Northern Pacific Portage la Prairie branch, the Canadian Northern will have a through line from Erwood, west of the extreme north-western corner of Manitoba, to Lake Superior. There are two branches connecting with the northern section of the line in Manitoba—the Winnipegosis and Gilbert Plains branches. The Northern Pacific lines in Manitoba proposed to be acquired by the Canadian Northern, are as follows : Winnipeg south to the United States boundary, Portage branch from Winnipeg to Beaver, Lake Manitoba branch from Portage la Prairie to Delta, and the line from Morris to Brandon, with a branch from the latter line to Hartney. The Northern Pacific lines in all aggregate 351 miles, as follows : Winnipeg to boundary, 65 miles ; Portage branch, 74 miles ; lake branch, 16 miles ; Morris-Brandon branch, 145 miles ; Hartney branch, 51 miles. The Canadian Northern lines are as follows : Northern section, Gladstone to Erwood, 279 miles ; Gilbert Plains branch, 29 miles ; Winnipegosis branch, 21 miles ; Southeastern section, Winnipeg to Beaudette (Rainy River), 155 miles. Total, 484 miles. This does not include the Port Arthur, Duluth and Western, nor the Ontario section east of Rainy River (Beaudette), part completed and part under construction. The latter two divisions will add about 340 miles to the Canadian Northern system, making in all about 825 miles, to which add the Northern Pacific lines in Manitoba, and we have a grand total of about 1,175 miles which the Canadian Northern will be operating west of Lake Superior before the end of the present year, not allowing for new branches which they may build this year. They will have to extend the Morris-Brandon branch eastward at once to connect with the line to Lake Superior, in order to give this branch an outlet, and the connection between the Beaver and Gladstone will no doubt also be made at once. Other new branches are projected. The Canadian Northern therefore becomes one of the great railway corporations of the continent, with the prospect that it will ultimately travense the Saskatchewan valley and beyond to the Pacific coast.



Railway Map of Manitoba and North-Western Ontario.

The government agent for Canada in Belgium writes to the Canadian Manufacturers' Association that there is an opening in that country for a large trade in both axes and ax handles. He suggests that a sample room for various lines of Canadian goods should be opened, and is confident that the results would prove very satisfactory to the manufacturers.

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THE CANADA LUMBERMAN is published in the interests of the lumber trade and 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 anyway 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.

LUMBER AND RAILWAY MATTERS IN MANITOBA.

IT is almost beyond doubt that no import duty will be placed on United States lumber at the present session of the Dominion Parliament. The consumers of Manitoba and the Territories will be permitted for another year at least to import lumber from Minnesota without being called upon to contribute to the funds of the Dominion treasury. A circumstance has arisen, however, which, although not meeting the requirements of the entire Dominion, seems likely to give a measure of relief to Canadian lumber manufacturers, who are rightly entitled to the Manitoba market. This is the probable control by the Canadian Northern Railway of the lines in Manitoba now operated by the Northern Pacific Railway.

An agreement to that effect has been arranged between the owners of the Canadian Northern Railway and the Manitoba Government, but up to the time of writing the agreement has not been ratified by the Dominion Government. There are, as might be expected, opponents to the proposed contract, and probably justly so. As a lumber journal, we are not particularly concerned with the political aspect of the contract, but only in so far as it is likely to affect the lumber interests of Canada.

The lack of railway accommodation has in the past been a great drawback to Manitoba. Some points were reached only by the Northern Pacific Railway. Consequently, the freight rates were so manipulated by this road as to almost entirely shut out Canadian lumber from these points. The freight rate on lumber from the principal saw mills in Minnesota to all points on the Canadian Pacific Railway in Manitoba has been 16 cents per 100 pounds, this being a flat rate to all points. The Northern Pacific Railway have refused to carry lumber produced on other railway lines than their own except at local rates. These rates were almost as high for a short haul as the long haul rates from Minnesota points. For example, on lumber carried from Winnipeg to Mariapolis, a point 119 miles west of Winnipeg, the rate is 14 cents, or just 2 cents less than the rate from Little Falls, Minn., to Brandon or Hartney, a distance of nearly 500 miles. The Northern Pacific rate from Winnipeg to Roundthwaite, a distance of 170 miles, for lumber produced by Canadian manufacturers, is 16 cents per hundred, while the same rate is charged for a haul of about 500 miles for lumber manufactured along their own line of railway.

The Canadian pine lumber being practically all produced east of Winnipeg, must bear a freight to Winnipeg, which, together with the local rate charged by the Northern Pacific Railway, excludes almost entirely all lumber produced in Canada from the markets on the Northern Pacific Railway system in Manitoba.

Should the Canadian Northern Railway Company take over the lines of the Northern Pacific Railway, which now seems probable, and operate them in connection with their line nearing completion from Port Arthur to Winnipeg, a rate will no doubt be given as low, if not lower, from the mills on the Lake of the Woods and along their line of railway as the rates which now obtain from the lumber centres of Minnesota to all points in Manitoba reached by the Northern Pacific Railway. This will have the effect of opening up a market in Manitoba for Canadian lumber which Canadian manufacturers heretofore could not reach, for the above stated reasons. Such an arrangement as is proposed would not be likely to shut out the American product entirely, but would doubtless decrease materially the quantity imported.

The system of the Canadian Northern Railway from Port Arthur to Winnipeg, which is expected to be completed this summer, passes directly through the principal pine territory from which the west is supplied, touching the Lake of the Woods and crossing Rainy River, the outlet to Rainy Lake, and again crossing Rainy Lake, to which water all tributaries from Northern Minnesota and the many tributaries from the pine forests of Western Ontario flow. Being the shortest and most direct system of railway to the prairie country, it should be of great benefit to the lumber consumers of Manitoba, as well as serving, by means of competition, to lower the freight rates charged to the west. Instead of being a disadvantage to the farmers and other users of lumber, as some contend, we believe the proposed railway agreement would have the ultimate effect of lowering the price of lumber to consumers.

THE PREFERENTIAL TARIFF AND TRANSPORTATION.

The preference of 33⅓ per cent. which is granted by the Canadian tariff to British manufactured goods entering Canada, appears not likely to benefit British manufacturers to any considerable extent. The reason is that United States manufacturers, in their determination to maintain their hold on the Canadian market, are cutting the prices of their goods to Canadian buyers to the extent necessary to enable them to undersell the British manufacturer, notwithstanding the advantage which the latter enjoys under our tariff. In order to do this, United States manufacturers are selling their goods in Canada at prices much below those charged to their customers in the home market. The only person, therefore, who is being benefited by the preferential tariff is the Canadian consumer.

Discrimination in railway freight rates also enables United States manufacturers to undersell Canadian manufacturers in their own market. As an illustration, we may take the case of corrugated iron. Every sheet of this material used by Canadian manufacturers must be brought into this country from the United States. Most of the material comes from Pittsburg. We find that the Pittsburg mills are selling the finished product to the customers of the Canadian manufacturers to whom they supply the sheets. On account of lower freight charges, the Pittsburg mills are able to ship the manufactured material to British Columbia, pay 25 per cent. duty, and undersell the Canadian manufacturer in that market. They can lay the finished product down at $1.00 per 100 lbs. plus the duty, while it costs *the Canadian manufacturer* $1.48. The Canadian Pacific Railway Company claim that they cannot meet the rates granted by the American roads, although their freight carrying facilities are not fully taxed. Surely it would be better for them to carry Canadian goods at a small profit and thereby help on the Canadian manufacturer, than allow his trade to go to the United States manufacturer and the goods to be entirely carried by American roads.

It will be seen that the tariff question has become one of the greatest importance in Canada. Some means of regulating rates and conditions are needed. Whether the proposal of the government to appoint a railway commission would effect the object in the most satisfactory manner is a difficult question to determine, and one which would largely depend on the powers and privileges granted to the railways by their charters. If such a commission is appointed, it should be entirely beyond political influence, and should be so constituted that the character of its administration would be continuous, giving opportunity for the members to become thoroughly familiar with the questions with which they would be called upon to deal.

The proposition has been brought before the Canadian Manufacturers' Association that the preference should only apply to British goods brought into Canada through Canadian ports. This proposition has in view the laudable object of building up Canadian seaports, but there are other phases of the question which are equally important and which must be taken into consideration. If Canadian manufacturers are to successfully compete with those of the United States for foreign trade, they must enjoy equal shipping facilities. It is evident that we can only bring to Canadian ports as many ships as we can supply with cargoes, and that the frequency of their arrival and departure must also depend upon the volume of shipments. With

...n population les... than one-twelfth that of the United States. ... with seaports much less advantageously ... ted, we cannot hope to be able to give e... shippers for export as good facilities as t... now enjoy by the use of American ports ... under the bonding privileges which now exist, ... are placed on equal footing with the shippe... of the United States, while if they were comp... to use Canadian ports, they would be subje... delays which would make it impossible fo... em to compete.

EDITORIAL NOTES.

If you have carried over any lumber, remember that it will be greatly preserved by re-piling. It will cost a little, but will be economy in the end.

Would the present season not be an opportune time to visit Great Britain, take in the Glasgow exhibition, and do a little missionary work towards forming a connection with Britsih timber importers and consumers? Last year the United Kingdom imported timber to the value of $125,000,000. A greater share of this trade may be yours for the seeking.

The lumber shippers of St John, N.B., have encountered a labor strike, although not of serious proportions. The surveyors who tally the lumber loaded on the vessels formed an association a short time ago, and after getting in working order asked for an increase in the fees paid for the duties performed by them. This increase was paid by one or two of the shippers and refused by the others, but at time of writing a settlement seems to be in sight. The lumber trade has for some time been singularly free from labor disturbances, and the outlook at the opening of the sawing season is that the friendly relations will continue to exist between employers and employees. The scale of wages is materially higher than a few years ago when strikes were more common, and it should be said in justice to the men that they apparently recognize the betterment of their position.

The recent outbreak of small-pox has called attention to the question of the sanitary condition of lumber camps, and government inspection has been suggested. Without advocating the necessity or otherwise of such inspection, it may safely be stated that the employing lumbermen would place no obstacles in the way of the enforcement of proper measures for the prevention of the spread of this disease, even if an official inspection should be necessary. Voluntarily, the sanitary condition of the lumber camps has been greatly improved in late years, notwithstanding the statements of newspapers of the filthiness which exists in some quarters. A radical change in the personal habits and general sanitary conditions has taken place, but is no doubt capable of being carried still further. In some of the lumber camps laundries have been established, by means of which the clothing of the men is washed and mended.

In lumber shipping circles considerable agitation has been shown on account of the proposition of Hon. R. R. Dobell to again introduce in the Dominion Parliament legislation providing for government inspection of deck loads of lumber. The main objections have come from the Maritime provinces, where it is claimed that such a law would be inimical to the interests of lumber shippers, that it has not been asked for by the British Underwriters, and that it would cause unnecessary expense and delay. These objections have been answered by Mr. Dobell, who points out that at a meeting of the London Chamber of Commerce the Underwriters stated that they had been led to increase their rates of insurance on vessels trading to British North America owing to the loss of deck loads. The charge for inspection, he contends, would range from $5 to $10 per vessel, which would not be a serious handicap when it is considered that the average freight on a vessel carrying 375 standards of deals would be $750. There would be no delay in the sailing of vessels, as if an inspector were not on hand when the steamer had finished loading, the captain would be justified in sailing without inspection. Any slight disadvantage which might result from the necessity of such inspection would, in Mr. Dobell's opinion, be more than offset by the improbability of accident by having the decks overloaded. An illustration which bears directly on the case was furnished at St. John early in April, when a vessel bound for London with lumber and pulp was unable to make any progress and would neither steam nor steer owing to her being almost over on her beam ends. After getting a short distance out, tugs were dispatched for the purpose of relieving the vessel of some of her deck load. The consequent delay and expense would probably have been obviated by compulsory inspection. It is understood that the Minister of Marine and Fisheries has decided not to include in his bill at this season anything relative to the inspection of deck loads, but it is improbable that the matter will be allowed to drop.

QUESTIONS AND ANSWERS.

"R. W. R.," Liverpool, writes: I shall be much obliged if you will give me the names of a few of the largest exporters to Liverpool of hard and soft wood handles for tools, and such like Canadian goods ready for use.

Ans.—There are, in Canada, a number of manufacturers and exporters of turned wooden goods, of whom the following might be mentioned: Alexandria Export Co., Alexandria, Ont.; Canada Wood Specialty Co., Orillia, Ont.; Ker & Harcourt, Parry Sound, Ont.; Dominion Paper Co., Kingsey Falls, Quebec; Colin Reid, Bothwell, Ont.; Lachute Shuttle Co., Lachute Mills, Que.; Blyth Handle & Turning Works, Blyth, Ont.; Gillies Bros., Braeside, Ont.; Cameron, Dunn & Co., Strathroy, Ont.

Dr. Young, Adolphustown, Ont., asks: "Can you give me the names and addresses of individuals and firms in Ontario who sell, wholesale, stock for apple barrels, such as staves, hoops, and heading?"

Ans.—Sutherland, Innes Co., Chatham; Steinhoff & Gordon, Wallaceburg; Rathbun Co., Deseronto; Fred Deutschmann, Teeswater; W. R. Thompson, Teeswater; J. Vance, Hepworth Station, and others.

The Georgian Bay Shook Mills, Limited, capital $40,000, has been incorporated, to take over the business of the Georgian Bay Box Company at Midland, Ont. P. Potvin, R. B. Little, and William Finlayson are the promoters.

DISCOLORATION IN CEDAR.

The discoloration in red cedar shingles has caused much protest recently from dealers to manufacturers. The complaint has been based on the ground that the discoloration was the beginning of rot, and that these shingles had been cut from trees with hollow butts or from timber that had been down for a number of years and which had been subject to decay in the action of the element. It may surprise the retailers who have been handling the beautiful, clear cedar siding that comes from the west coast, to be told that nearly all the stock is cut from hollow butted trees. Should any one of these retailers visit the forests of great coast cedars, he might wonder that any sound cedar lumber could be manufactured, for a very large proportion of the large cedar trees have butts that are hollow many feet above the ground; and yet the shell of the butt and the part of the tree above the hollow are as sound as any timber that grows. The belief that the shingles are cut from fallen trees may also be true; in fact, it is quite likely to be true; but the deduction therefrom that the shingles are any less sound is equally unwarranted. It is a peculiarity of the red cedars that the soundness of the wood is maintained hundreds of years after the life of tree is extinct. Scattered through the forests of Washington are hundreds of cedar trees that fell ages ago and which are covered with moss and decaying vegetation. When the outside shell is removed, the interior of the tree is found to be as sound as when the tree was standing. That these trees have been down for centuries is proven by the fact that other trees hundreds of years of age have grown up over them. The streaks of discoloration of which the shingle buyer complains are not an indication of decay. The belief that it is probably comes from a comparison with white pine. In fine dark streaks are more than likely to be rot; but it is a peculiarity of red cedar, as well as a number of other woods, that these dark streaks are as likely to be found in sapling growth as they are in mature hollow-butted trees. These complaints have become so common where the warrant for them is so slight that reputable firms have added to their price list a statement that objections to shingles because of discoloration will not be considered. This is done simply as a protection from the injustice of complaints that are without warrants, and retailers who find occasional shingles not entirely bright can be assured that the chances are that the stocks of discolored wood are as sound as the remainder of the shingle. As a matter of fact, few, if any, shingle men are expert enough to tell, after a shingle has been through the kiln, whether it was cut from a live tree or from one that has been lying prone for ages. The Tradesman.

PACIFIC COAST SAW MILLS.

Mr. L. W. Knight contributed a paper at the twenty-fifth annual meeting of the Pacific Insurance Association, in which he states that on the Pacific coast, including British Columbia, there are 3,298 establishments engaged in the manufacture and sale of lumber and lumber products. In British Columbia there are 97 saw and shingle mills, 11 planing mills and box factories, 17 sash and door factories, 42 log and bolt camps, and 34 retail yards.

FORESTRY IN BRITISH COLUMBIA.*

By J. R. Anderson.

At the present time British Columbia probably possesses within its limits larger unbroken areas of primeval forest than any other country in the world, and is destined in the near future to be the principal source of supply of timber and wood pulp. Hence the question arises how best to conserve our forest wealth to the best advantage and for the greatest good.

British Columbia, it must be premised, is a province of vast extent, extending as it does from the forty-ninth degree of latitude on its southern boundary, to the sixtieth degree on its northern boundary, bounded on the west by the Pacific ocean and on the east by the 120 degree of longitude and the Rocky mountains.

The climatic conditions within this great area, owing to natural causes, it can easily be imagined, are most variable and calculated to suit the requirements of many different kinds of forest trees. Amongst the most prominent of them I make mention of the following. And here I may explain that the descriptions are largely quotations from a report I made some years ago, at the request of the Admiralty, and will serve, to some extent, to give an idea of the forestry resources of British Columbia. I reproduce my remarks with all diffidence, and subject to correction, as I am quite aware of my liability to err in statements involving interests of such magnitude.

Without doubt the timber of greatest economic value in the province, and of which there is the greatest quantity, and most generally distributed, is the Douglas Fir, sometimes called Red Fir and Oregon Pine; it is now known under the botanical name of Pseudotsuga Douglasii—Carr.

The synonyms are :

Pinus taxifolia—Lamb.
Abies Douglasii—Lindl.
Abies mucronata—Raf.
Pinus Douglasii—Lamb.
Abies Douglasii—Gordon.
(var taxifolia)

Its range may be said to practically extend to the whole of the province with the exception of the Queen Charlotte Islands, where it is said it does not grow, and it accommodates itself to all altitudes from sea level to 6,000 feet; at great altitudes, however, it only grows in a very stunted form. Dawson says: "The best grown specimens are found near the coast, in proximity to the waters of the many bays and inlets which indent it. Here the tree frequently surpasses eight feet in diameter, at a considerable height above the ground, and reaches a height of from 200 to 300 feet, forming prodigious and dark forests." My own experience is that Dawson is quite right in his remarks, and therefore it will readily be seen that the shipping facilities are exceptionally good for the best qualities of this useful timber. Amongst the uses it is put to I may mention house building, ship building, bridging, wharves, piles, masts, furniture, fencing, etc. When growing singly in the open it forms a very beautiful and useful shade tree, the branches starting from near the ground and growing out very thickly all along the stem. It is, however, practically useless for commercial purposes when growing in this form, and it is only useful when growing thickly together in dense forests. In the latter state it grows without branches except at the top and so yields timber of immense size and length, without knots, particularly suited for bridging and similar works. In this country it is not particularly liable to attacks of insects and dry rot, except when immersed in the sea, where it (in common with most of the other woods of the country) is subject to the attacks of the Pennulifera teredo. When submerged or buried under ground, away from the influence of the air, it is very durable and will in these positions last for many years; it soon rots, however, if left lying on the ground exposed to damp. The usual methods of seasoning for ordinary purposes is by piling the manufactured wood in the open air and allowing a free circulation of air to pass through the piece. When used for furniture and cabinet making it is usually seasoned in a hot air chamber. As much as 505,000 feet of good lumber have been cut off one acre in the Comox district, and this, although trees under two and over seven feet in diameter, were not used. This is by no means the only instance recorded of so large a cut.

The wood next in importance is probably the Cedar, generally known as Red Cedar, it is also sometimes called Yellow Cedar, (not to be confounded with Yellow Cypress or Cedar); botanically it is known as Thuya Gigantea—Nutt.

The synonyms are :

Thuya plicata.—Don.
Thuya Menziesii.—Dougl.

This tree is very generally distributed on Vancouver Island and the coast of the mainland to the westward of the coast range. Scarce in the dry central plateau, it however again occurs in considerable quantities in the Selkirks and gold ranges of the mountains. As in the case of the Douglas Fir, the finest specimens are to be obtained in proximity to the sea coast. Here the trees attain an immense size, some idea of which may be formed from the fact that some of the native canoes which are all hewn out of the trunks, are six feet and more from the level of the gunwale to the bottom. An Indian plank hewn out of this wood is at present at the museum here, the dimensions of which are 5 ft. wide by 15 ft. long, and this is by no means anything like as wide as others on the west coast. Although second in importance as regards its economic value, it is a more valuable wood than the Douglas Fir, being used principally for interior finishing, cabinet making, doors, shingles, and posts. It is very ornamental when properly finished, splits well, and lasts a long time in the ground. In a specimen bundle of split shingles sent by this Department to the Chicago Exhibition, each shingle measured 22 inches wide, and split boards quite straight from 12 to 15 inches wide and 12 feet long. As regards attacks of insects, dry rot, seasoning and accessibility for transportation, my remarks under Douglas Fir will also answer for this wood. As an ornamental tree it has few equals, and is certainly the finest of our native trees.

Very little below Cedar as regards its economic value is the Spruce, botanically known as Picea Sitchensis.—Carr—with the synonyms of

Pinus Sitchensis.—Bong.
Abies Menziesii.—Lindl.
Pinus Menziesii.—Dougl.
Abies Sitchensis.—Lindley & Gordon.

Dawson says, "This tree seems to be confined chiefly to the immediate vicinity of the coast of British Columbia, where it attains a large size." It grows in large quantities in all low lying land in the vicinity of the coast, and is therefore easily accessible for transportation. Its height is not so great as that of the Douglas Fir, but if anything it is larger at the butt; I myself saw one which measured nearly sixteen feet in diameter. The wood of this tree is very white and light, resembling white pine, but is more elastic, and will bend with the grain without splitting. It is therefore much used for boat building, light spoon bladed oars, boxes, shelving and interior work. It lasts a long time without decaying and is an equally good insect resistant as the Douglas Fir. As the shrinkage is generally very great, it is generally kiln dried before using, or kept stored away until it is thoroughly seasoned. On account of the sharp pointed short fronds it is quite impossible to grasp them in the naked hand, and this renders this tree easily distinguished from the other Coniferae.

The Yellow Cedar or Yellow Cypress probably ranks next in its economic value. It is known botanically under the name of Thuya Excelsa—Bong—and the synonyms of

Cupressus Nutkaensis.—Hook.
Chamaacyparis Nutkaensis.—Spach.

This tree is not nearly so plentiful as any of the foregoing, its range being confined to the coast ranges of the mainland and islands, generally at a considerable elevation in the southern part of the province, where it occurs in no great quantities. On Queen Charlotte Islands, however, Mr. Dawson says, it is abundant and reaches the sea level. It there also attains a size of six feet and more in diameter. In my experience I have seldom seen it over four feet. On account of its beautiful color and close grain it takes a high polish, and is susceptible of being manufactured into beautiful articles of furniture and interior decorations, hence it commands a much higher price than the woods previously mentioned. It is highly esteemed for ship building, as it is very durable, and is generally credited on account of its strong, pungent, but rather agreeable odor to be teredo resistant; of this, however, I am not prepared to vouch. The natives of the northern part of the province use it largely for paddles, carvings, boxes, and articles of domestic use. It is said that on account of its liability to shrink lengthwise, as well as laterally, it requires to be well seasoned for use. The expense of bringing this to shipping points is somewhat great, except in the northern parts of the province, where it abounds near the sea coast. The long and slender pendulous fronds which hang from the branches give the tree a very graceful appearance, and the strong pungent odor of the wood when it emits when freshly cut, and which it never loses, renders it very easy of identification.

The Hemlock, known botanically as Tsuga Mertensiana—Carr—and its synonyms of

Pinus Mertensiana
Pinus Californiensis—Boog
Abies Mertensiana—Lindl
Abies Albertiana—Murray
Pinus Pattoniana
Abies Pattonii—McNab

is, except the bark, practically unused at the present time. Its range extends over the whole of the coast line, where it grows to an enormous size in dark, gloomy forests, generally barren of other vegetation, except scattered bushes of the whortle berry (Vaccinium parvifolium), with a thick carpet of moss covering the ground. The bark is extensively used for tanning, but the wood although good for inside work, is liable to decay when exposed to wet. It is but fair to say that partly on account of the abundance of other coniferous woods, and the prejudice existing against it, it has never been fairly tested, and it is quite possible it may possess excellent virtues. As its habitat is generally at no great distance from the sea, it is a wood which could be transported to shipping points without great expense. When young and growing singly the tree is decidedly pretty, and the pendulous like fronds which enshroud the trunk form a most welcome and soft bed for the weary prospector or trapper.

The Western White Fir or Balsam Fir, Abies Grandis—Lindl—synonyms :

Pinus grandis—Dougl
Picea grandis—London
Abies Gordoniana—Carr
Abies amabilis—Murray

is quite common in the vicinity of the coast, and grows to a large size, but the wood is held in small esteem, being perishable and brittle. It is, however, white and light, and may in course of time be put to use for boxes, etc. The bark when young is thickly covered with blisters or bladders or cells filled with a liquid resinous gum which has great healing properties.

The tree, with its thick flat fronds and rigid growth, although grand in appearance, is rather too stiff and formal and too much of the Noah's ark type to be considered pleasing.

The Western White pine, known as Pinus Monticola (Douglas), with its synonyms of

Pinus strobus var monticola (Nutt.)
Pinus porphyrocarpa (Lawson.)
Pinus strobus (Hook.)

Dawson says: "It is found in scattered groups, but no great quantities, on the slopes of the mountains in the interior, where the rainfall is plentiful, and in certain parts of the interior of Vancouver Island it is abundant, and is found in all parts of the southern portions of the Coast Range where there is an abundant rainfall." The wood is nearly identical with and nearly equal to the celebrated "King of Woods," as it is called, the White Pine (Pinus Strobus) of Eastern Canada. It has, however, thus far been but little utilized, partly on account of the difficulty of getting it in sufficient quantities altogether, and partly on account of the expense of transporting it to shipping points. It is the most useful wood for window sashes, doors, powder barrels and similar work. Being a white and very light wood, it is unsuitable for outside work, and has a tendency to absorb moisture when in contact with the ground, and is therefore liable to decay. It is a very grand looking tree, with long bluish green fronds, and cones from eight to nine inches long.

The other coniferae of the Province do not in my opinion require special descriptions, growing as they do in comparatively limited quantities, many of them in the interior of the country, and only used in default of better timber. Some of the principal varieties are:

Western Yellow Pine or Bull Pine (Pinus Ponderosa (Dougl.)
Pinus Resinosa (Hook.)

Its habitat is the dry plateau of the interior situated between the coast and gold ranges. It is a remarkably handsome tree, with smooth red bark, very long leaves and large cones bearing a large quantity of seed, the

*Paper read before the Canadian Forestry Association, Ottawa, March 7th, 1901.

the natives formerly used as an article of food. Synonyms:

Scrub Pine (Pinus Contorta, Dougl.)
Pinus Incana (Hook.)
Pinus Banksiana (Lindl. and Gordon.)

Its habitat is everywhere in the Province on Sandy points and exposed rocky points, seldom growing larger than inches: quite useless for timber and not at all ornamental. Black Pine (Pinus Murrayana, Balfour.)

Synonyms:

Pinus Contorta (Macoun.)
Pinus Contorta par Latifolia (Dawson.)
Pinus Incana (Hook.)

Its habitat is on the slopes of the mountains of the interior of the Province, where it grows in dense masses very straight and long, but of no great size. Most useful for mining purposes, being strong and durable and the only wood procurable in many of the mining districts. It is said to make excellent charcoal, the only coniferous wood to my knowledge that is used for the purpose.

Larch or Western Tamarac (Larix Occidentalis, Nutt.)

Synonyms:

Pinus Larix (Dougl.)
Pinus Nuttallii.

On the slopes of the mountains of the interior mainland. Used for rails, interior fittings, and shakes or shingles, where cedar is not available.

There are several other coniferous trees of the fir or pine and juniper order, which I do not think are necessary to mention particularly.

Broad leaved maple (Acer Macrophyllum.) This is probably the commonest and best of our deciduous woods. Its range is all over the lower lands of Vancouver Island, the Gulf Islands, and the mainland to the westward of the Coast Range. It grows to a large size, the trunks frequently attaining to a diameter of three or four feet, and when growing close together or with other trees, very straight and tall. When growing singly in the open, it forms a magnificent shade tree. One remarkable specimen near Victoria covers a space of probably eighty feet in diameter. The wood is close grained, takes a fine polish, and is well adapted for furniture, inside finishing and carriage building. That part which by reason of an abnormal growth is known as bird's-eye maple is very beautiful. Although used by furniture makers in some cases for inside work, it is comparatively little used, and is only cut by one or two mills to supply the demand.

There are two other native maples, viz., the Vine Maple, Acer circinatum, and another resembling it called Acer glabrum. The former is common on the low lands of the mainland to the westward of the Coast range, but does not occur to the eastward of the Coast range, nor on Vancouver or Gulf Islands. As its name implies, it only grows small and crooked, much in the shape of a vine. The latter occurs all over the province, principally in the dry belt to the eastward of the Coast range, where it never gets beyond a bush; and on the islands, where it frequently attains to the dignity of a small tree.

Alder, Alnus Rubra, (synonym A. Glutinos) is another common tree on Vancouver and Gulf Islands and on the mainland to the westward of the Coast range. It attains in many places a diameter of two or three feet, but much of it is under two feet. Growing as it does in close forests, it runs up to a considerable height and is very straight. The wood, which is of a light brownish color, nearly white, resembles black walnut in the grain, and is used, stained to the proper shade, to a limited degree in imitation of that wood, for furniture, inside furnishing, bannisters, &c.

The only other representative of this genus is the mountain Alder, Alnus Sinuata, a worthless variety and more of shrub than tree. Its range is general throughout the province, generally on mountain sides.

Poplar or Cottonwood (Populus Trichocarpa), sometimes called P. Balsamifera, is a common tree throughout the province on low lying lands in the vicinity of water. It attains to a large size in favorable localities, three or four feet in diameter being common, and attaining a great height in dense forests along river banks and on low islands. Its wood is very little used, being white and soft, without any great quality to recommend it. The principal use it has been put to is for the manufacture of excelsior, for which purpose it is well adapted. It has also been used for boxes, being very light but the objection to its use for this purpose, I am informed, is that it turns dark after being sawed. Possibly this difficulty could be overcome by allowing the wood to season in the log, or other methods.

Another representative of this genus is the Aspen leaved Poplar (P. tremuloides). Its range is also very wide, occurring as it does in all parts of the province. It does not attain to any great size, twelve inches being probably about the limit. The principal use it is put to is for fence rails in that portion of the province to the eastward of the coast range where other timber is scarce.

Oak (Quercus Garryana or Jacobi). The range of this tree is altogether confined to Vancouver Island and Gulf Islands, not a single specimen occurring on the mainland. Patches of it occur at the southern end of Vancouver Island and for about one hundred and fifty miles north. In some places it attains a size of from three to four feet in diameter, with good straight trunks from which logs can be obtained ten to twenty feet in length. It is likewise a highly ornamental shade tree. The wood resembles English Oak in appearance, having a beautiful grain, but it has never been much used, principally, I believe, on account of the difficulty of seasoning it properly, or rather the necessary room and capital for storing it away for several years. It is used to a limited degree by cabinet-makers, etc., for ornamental furniture and other purposes of that kind.

Canoe birch (Betula Papyrifera) is common on the mainland and very scarce on Vancouver Island. The wood is a good fine grained durable one when not exposed to the weather, but it has never been used to my knowledge for any purpose but for fire wood. It attains a size of from one foot to eighteen inches in diameter, but is often smaller.

Arbutus or Madrona (Arbutus Menziesii). This is quite a common tree on Vancouver and Gulf Islands and on some parts of the coast line of the mainland. It is a striking looking tree with its red bark and bright evergreen leaves. As a rule it does not attain to a great size, especially when growing on exposed rocks and headlands, but trees a foot in diameter are common, although, as a rule, twisted and crooked; when growing in forests, however, it grows fairly straight and sometimes attains a large size. On the Alberni Road, in the vicinity of Nanoose Bay, many fine specimens are to be seen. When travelling in company with Dr. Fletcher and Rev. Mr. Taylor two years ago, I took the measurement of one tree which was ten feet five inches in circumference. I am not aware that the wood of this tree has been put to any particular use; it is hard, fine, and close grained, and takes a good polish, but it is apt to warp and check if cut before it is well seasoned.

Dog Wood (Cornus Nuttallii). A highly ornamental tree with immense white flowers, fairly abundant throughout the islands and the coast of the mainland. It often attains a size of twelve inches in diameter and a height of thirty feet or thereabouts, and has a fine grained, hard, pinkish wood which takes a good polish. Not used to my knowledge except in isolated cases for ornamental work.

Buckthorn, sometimes called Bearberry, and from that wrongly often called Barberry (Rhamnus Purshiana) is not an uncommon tree on the islands of Vancouver and the Gulf and on the coast of the mainland. It attains a size of about a foot in diameter, but more frequently smaller. The wood is of a light yellow color, close grained and hard. Not used except for ornamental purposes.

Crab (Pirus Rivularis) grows commonly in swamps on the mainland to the westward of the coast range, on Vancouver Island and the Gulf Islands. It seldom attains a larger size than nine inches. The wood is hard and close grained, and is principally used for rollers in mills and similar purposes.

The following is from a paper supplied by the government to the *Forestry Commission* at Chicago in 1893, but I am not now prepared to vouch for the correctness of the figures:

"The average cut is easily 50,000 feet per acre. On the Mainland and Vancouver Island it has varied from 20,000 to 500,000 feet per acre."

Messrs. King and Casey cut 508,000 feet on one acre in the Comox district. This is not the only instance of so large a cut. And this although trees under 2 feet and over 7 feet were not used.

QUANTITY ON THE PRESENT LIMITS.

The acreage is at least this year (1893) 400,000. Suppose the average to be 30,000 feet to the acre, this would give 12,000,000,000 feet on the limits now occupied.

CUT PER ANNUM.

In 1892 the cut was 64,000,000 ft. Add for waste and cut unreported say 40,000,000 ft. This would give 100,000,000 ft. At this rate the present limits would last one hundred and twenty years. This, however, supposes an average of 30,000 feet per acre, no bush fires, and no increase in the annual output.

It is estimated that fire destroys fully 50 per cent. of the timber. This reduces the time from 120 to 60 years. However, the output must rapidly increase and will in the near future be treble what it is to-day. At this rate of cutting the present limits would be worked out in 20 years.

Some say one-third of the limit of the province is taken up. Suppose the entire acreage (of the average 30,000 ft. to the acre) be three times that taken up now. This would give 1,200,000 acres. The time required to cut the entire amount at three times the above output would be 60 years.

Although various causes will hasten the lessening of our forests the natural growth must add considerably to the amount above stated.

The chief element of destruction is fire, which should be guarded against both by the millowners and the Government.

EXPORS FOR THE FOUR YEARS ENDING JUNE 30TH, 1894.

(To all countries including the United Kingdom.)

Burrard Inlet.....	136,054 M feet.	Value	$1,385,980
Victoria.....	8,352 M feet	"	70,541
Nanaimo.....	6,532 M feet	"	55,128
New Westminster...	5,900 M feet	"	50,012
	156,838		$1,561,661

(To the United Kingdom alone.)

Burrard Inlet	7,161 M feet.	Value	$113,304
Victoria.....	30 M feet	"	255
Nanaimo.....	836 M feet	"	12,180
New Westminster....	nil.		
	8,027		$125,739

The quantities are approximate, but the values are accurate and include fir, cedar and spruce planks, boards, deals, spars, masts, square timber, laths, poles, and posts.

The provisions of the acts relating to the forests are succintly as follows:

The Chief Commissioner of Lands and Works is authorized to grant special licenses to cut timber on Crown lands.

No such license is granted for a larger area than one thousand acres nor for a longer period than one year. License costs $50.

License entitles holder to all rights of property whatsoever in all trees, timber or lumber, within his limits.

The Chief Commissioner of Lands and Works is also authorized to grant a general license to hand loggers upon payment of ten dollars to cut timber upon Crown lands, not being timber limits, without any reservation as to the area; such license is personal, however, and limited to one year.

A ground rent of five cents per acre is charged and a royalty of fifty cents per thousand feet, board measure, for general timber suitable for spars, piles, saw logs, railroad ties, props, shingle bolts of cedar, fir or spruce, and a royalty of twenty five cents for every cord of other wood.

A drawback is allowed on exported timber equal to one-half of the royalty. "Timber lands (that is lands which contain milling timber to the average extent of eight thousand feet per acre, west of the Cascades, and five thousand feet per acre east of the Cascades, to each one hundred and sixty acres) are not open for sale."

Under the Bush Fire Act any portion of the province may be created by order in council a fire district. It is unlawful to start a fire in a fire district between 1st of May and 1st October, except for clearing land, cooking, obtaining warmth, or for some industrial purpose. Precautions must be taken in clearing land not to allow fire to spread, and in other cases fires must be extinguished before leaving.

Locomotives are required to have spark screens on their smoke stacks.

Now, whilst the provisions of the acts relating to forest conservation are good as far as they go, the difficulties of enforcing them in a country but sparsely settled are so great that many of them are practically inoperative, and the question naturally arises how can this be remedied. The elaborate and undoubtedly efficient remedies pursued in older countries, notably Germany, are not suited to a

wild country; the cost alone of maintaining an armory of forest rangers is sufficient to appall any government undertaking the task, and after all would such a system be efficient? I doubt if it would, only to a limited degree. Those areas of forests lying beyond the limits of civilization would still be liable to the devastating influence of forest fires set out in many instances by prospectors in search of mineral wealth, in others by carelessness, and in some instances possibly by natural causes. Nevertheless no other system seems apparent, and if properly managed, it could, I believe, be made effective in those portions of the province adjacent to settlements and where the operations of the lumbermen and woodmen are carried on, and where also by special taxation the system might be made self sustaining.

In conclusion let me say to those members of the Canadian Forestry Association who have not visited the West that they have yet to see a forest in all its magnificence. No other word seems to me to convey a proper idea of a virgin forest of the west. Picture to yourselves thousands of trees, Douglas Fir predominating, of prodigious size, so close together that it is with difficulty and often impossible for an animal to go between, limbless except the tops through which the rays of the sun scarcely penetrate, the ground carpeted with mosses and ferns, and the hush of nature all around you, and you can perhaps form some idea of a forest in British Columbia.

DISCUSSION.

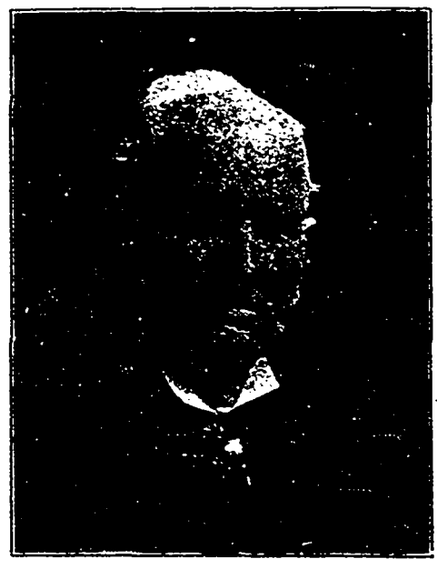
Dr. Saunders said that he could confirm the statements that were made by Mr. Anderson regarding the great forest wealth of British Columbia. In going through a forest thirty miles from Victoria he had found the trees so numerous as to make it difficult to get around. One tree which had fallen was measured and was found to be eleven feet in diameter and about 165 feet perfectly clear of branches, with about sixty feet with branches, making the total length of the tree about 225 feet. Speaking of the Experimental Farm at Agassiz, he said that on the mountain thousands of forest trees had been planted. Where they could get sufficient sunlight they had grown rapidly, which showed that it was the proper climate for tree growing. The ferns which grew very high on tops of mountains proved an obstacle in growing trees, as they shaded and partly smothered them and retarded growth. Now, however, some of these forest trees were getting above the ferns and were making better progress. These experiments, he thought, would be found very valuable as showing what varieties of trees should be grown, and especially in the case of hardwoods, which are greatly needed in British Columbia.

Prof. Macoun said that Mr. Anderson's paper was a thorough description of the forest trees west of the Cascade Mountains and on Vancouver Island, but not of the timber of the interior. At Comox 508,000 feet of timber had been taken from one acre without cutting the trees below two feet and over seven feet in diameter. In some sections there were trees ten to twelve feet in diameter, which are very difficult to cut owing to their size. As showing the great height of some of the trees of the interior, he said that thirteen ties 8 feet four inches in length had been cut out of one tree, and this tree small enough to make ties. The territory to which he referred extended from the 49th to the 60th latitude, and from 300 to 500 miles in width. In Northern British Columbia there were immense tracts of white and black spruce of the same quality as found in the Maritime provinces. These trees grew much larger in the west, many of them reaching three feet. Prof. Macoun lamented that much of this valuable timber was being destroyed by fire, but said that in the northern part of British Columbia fire could not destroy the timber, because the trees did not get dry enough to burn. The rotting of pine timber was caused solely by the fungus in the trees.

MR. R. McLEOD.

Reproduced on this page is the portrait of one of the oldest active lumbermen in Ontario, in the person of Mr. R. McLeod, manager of the London Lumber Company, of London, Ont. The likeness is a particularly good one, and was taken from a recent photograph.

Mr. McLeod was born in Scotland 74 years ago, and came to Canada when only three years of age. He learned the trade of cabinet-making and was for several years a manufacturer of furniture, pianos and organs. While in this business he acquired a thorough knowledge of the hardwoods required in the manufacture of furniture and musical instruments, and his company are largely patronized by manufacturers of these goods in Canada, the United States, and Great Britain. Some years ago Mr. McLeod entered into the hardwood business exclusively, under the name of the London Lumber Company, of which he has continued as general manager since its inception. While dealing in all kinds of hardwoods, the company makes a specialty of sawing to order special size bills, such as birch and soft elm squares, quarter cut lumber, etc. Mr. McLeod is still actively engaged in the management of the business, and is enjoying excellent health for a man of his advanced age.



MR. R. McLEOD.

PUBLICATIONS.

In the 28th annual special issue of the Timber Trades Journal, of London, England, we find a combination of quantity and quality. The number is voluminous, neatly printed, and contains, besides the annual reviews and other articles, a sheet of portraits of timber trade representatives at the war, also a very complete description of the timber trade of the Thames, with broadside map showing the position of the principal timber yards and saw mills on the river. Another interesting feature is an article under the caption of "1800-1900," being a glance at the timber trade of the last century. The publishers are William Rider & Son, 164 Aldergate Street, London, E. C.

The saw mill of Prowse Bros. at Souris, P.E.I., has recently been remodelled, and is now considered one of the best on the island. The new boiler was furnished by I. A. McLean, of Charlottetown, and the engine by the Waterous Engine Works Company, of Brantford, Ont.

PERSONAL.

Mr. C. Beck, of Penetanguishene, ... returned ... the middle of April from his Europe... trip.

Mr. A. Gunter has been appointed ... superintende... the Pembroke Lumber Company, in ... succession to ... A. McCool.

On April 19th Mr. H. B. Elderki... of the firm ... Elderkin & Company, ship builders ... and lumbermen ... Port Greville, N.S., was superintend... the loading ... cargo of piling, when the tackle b... and a piec... piling swung round and struck him ... on the head, ... injuries received resulted in his death three days later.

Many readers of the LUMBERMAN will be pleased to learn that Mr. John A. Bertram, son of Mr. John Bertram, of Toronto, has almost comple... recovered fr... his long illness. Mr. Bertram was ... taken ill early ... fall, from blood poisoning, and for a time was in a ... precarious condition. He is now able to again give ... attention to business, and has gone to Little Current ... engage in the inspection and shipment of lumber.

Owing to ill health, Mr. John Donog... retired from ... Swan-Donogh Lumber Company, of ... ffalo, N.Y., at ... beginning of February last. His in... est has been ... chased by the Clark Jackson Lumber Company, of ... luth. It is probable that a new company will be org... *ized to be known as the Clark-Swan-Jackson Lum...* Company, which will absorb the old company.

The death took place last month of Mr. Robert Park... until recently head of the timber importing firm of R... Parker & Company, Liverpool, Eng. Mr. Parker co... menced his business career with the firm of James Bo... & Co., Canada Dock, which held the premier positio... all the Liverpool timber trade. He went to Quebec ... one of the assistants to Messrs. Dobell & Beckett, ... represented there the interests of the Liverpool ... Subsequently he was engaged in St. John, N. B., in ... ing purchases and shipments for the house at ... Then he proceeded to Russia on similar busi... Later he was in business as one of Carter, Taylor & P... ker, and afterwards the firm was changed to ... Parker & Co. He retired in 1899.

TRADE NOTES.

The Dodge Manufacturing Co., of Toronto, are ... ing out a neat little booklet containing a number of ex... lent testimonials from manufacturing companies, elec... light companies etc., expressing satisfaction with ... Dodge split friction clutch.

William C. Clarke and W. Demill, foremen respectiv... for the McGregor, Gourlay Company and Cowan & Co... pany, of Galt, have formed a partnership, and will eng... in the manufacture of woodworking machinery. T... factory will be located in Galt.

A new and very complete catalogue of embossed ... turned mouldings, spindles, ornamental turnings, ... grilles, etc., has just been issued by the manufacture... Boynton & Company, 67 West Washington street, C... cago, who will be pleased to send a copy to any subscri... er of this paper on application.

Attention is directed to the advertisement on ... cover page of this issue of Messrs. Horn Bros., of Li... say, Ont. This firm make a specialty of all kinds of ... bermen's blankets, and sell direct to the consumer. T... have supplied many of the largest dealers in competi... *with home and foreign manufacturers, and have ...* several large government contracts. They manufac... union and all wool blankets, check horse covers, ... naw cloth, long stockings and socks, using all pure w... Lumbermen will find it to their advantage when requi... any of the above goods to correspond with them.

Attention is called to the advertisement of Mr. J. ... Wallace, C.E., and the Drewsen Co., of New York, ... pearing in the pulp department. Mr. Wallace, who ... formerly a member of the firm of Tower & Wa... mill architects, has recently associated himself with ... Drewsen Co. for the purpose of carrying on the busi... of mill architects, engineers and chemists. They are ... pared to furnish surveys, plans, estimates and speci... tions for foundations, buildings and entire equipment ... paper and pulp mills, and for water, steam and electr... power development and transmission. The Dre... Company will give special attention to the design ... construction of sulphite fibre mill, and to the che... work. The ground wood pulp, soda fibre and ... mills and other work will be attended to by Mr. Wa...

THE NEWS

...son has start... in the lumber business at Eli,

...ill will be established at Otter Lake, Ont., by ...ore.

...Early are enlarging their veneer factory at ...n, Ont.

...eau Lumber Company are building a saw mill ... Bay, Ont.

...Pritchard, of Killarney, Man., has opened out a ...rd at Holmfield.

...cArthur, of W...peg, has decided to build a ... mill at Lac du Bonnet, Man.

...ell & Ferguson, lumber dealers, of Melita, Man., ...ave a supper to their employees.

...orted that the Veneer Box Company, of Burk's ...t., will erect a factory at Sundridge.

...inson has contracted to drive the entire cut of ...e Seguin river to Parry Sound, Ont.

...iber agency of the Rathbun Company at Peter... Ont., has been sold to two local men.

...orted that the Savanne Lumber Company will ...mber yard at Grand Coulee, N. W. T.

...runette Saw Mill Company, of New Westminster, ...s installed in their mills three new boilers.

...an Bros. are building a saw mill at Ponoka, ..., to have a capacity of 20,000 feet per day.

... City firm is said to be negotiating for a site at ...guishene, Ont., on which to build a saw mill.

...man, Lefurgey, Clarke & Company are building a ...d-working factory at Charlottetown, P. E. I.

...stner and J. P. Newman, of Wiarton, Ont., have ...ced Dutch ovens in the boiler rooms at their saw

... Newman, of Wiarton, Ont., is building a scow for ...ber trade, estimated to carry 110,000 feet of

... McKay, of Lansdowne, Pictou County, N. S. has ... sold out his lumber business to J. N. and F. T. ...y.

... McKinley, Wood Lumber Company have installed ... saw mills at Parry Sound, Ont., a new engine and ...w boilers.

...W. Doherty is reported to have sold his saw mill ...oom privileges at Restigouche, N. B. to W. C. ..., of St. John.

...H. Witthun & Company, of Wiarton, Ont., have just ...ed in their saw mill a gang resaw, steam feed, lath ...nd new boiler.

...ew lumbering firm has commenced operations at ...'s Bay, Ont., doing business under the style of the ...shekong Lumber Co.

... Alcorn & Company, of Hartland, N. B., has put ...ing machines for making broom handles, and ex... to turn out 12,000 a day.

... reported that Mr. Haines, late of the Blind River ...er Company, intends building a saw mill at Lake ..., near Algoma Mills, Ont.

...R. Williams, of Nampa, Iowa, has purchased the ma...ry of the planing mill at North Tonawanda, N. Y., ...ly owned by J. & T. Charlton.

...ptain J. J. Campbell, of New Westminster, B.C., has ...ased over 3,000 acres of timber limits about 200 ... from Dawson, in the Yukon district.

...W. Stout, trading as the Summit Lumber & Timber ...any has opened a branch of his lumber business at ...wood, B. C., in charge of Sydney Oliver.

...son & Gordon's saw mill at Ottawa, Ont., resumed ...tions for the season early in April, about a month ...r than last season. Another edging machine has ...installed.

...gment has been handed out dismissing the petition ... J. B. Klock against the Sheriff of Nipissing to ...el the latter ... declare him elected as representa... to the Domin... Parliament. Mr. Klock claimed the ...on account of ... Sheriff's action in postponing the ...of nomination. The present member elect is Mr. C. A. McCool, lumberman, of Geneva Lake, who retains the seat.

It is reported that the Eddy mill site at Revelstoke, B. C., has been purchased and that a large saw mill will be built, under the management of D. Robinson.

A donkey engine has been installed by Herbert Gilley in his logging camp at Mud Bay, B. C. There will be a wire cable 7,500 feet in length, and the logs will be hauled a considerable distance.

The Northern Lumber Company, Limited, of Dauphin, Man., is applying for incorporation. T. A. Burrows, J. Hedderly, W. J. Osborne, H. E. Crawford, and Isaac Cockburn are the applicants.

Frank Laurie is operating a saw mill at Parry Sound, Ont., and expects to make an average cut this season of 12,000,000 feet per day. The Parry Sound Lumber Company have overhauled their shingle mill and put in a new boiler.

Larger premises are required by Shurly & Dietrich, of Galt, Ont., in which to manufacture saws, bedsteads, and other lines. They have made a proposition to the town to erect a factory with 80,000 square feet of floor space.

The Georgian Bay Shook Mills, Limited, capital $40,000, has been incorporated, to take over the business of the Georgian Bay Box Company at Midland, Ont. P. Potvin, R. B. Little and William Finlayson are the promoters.

The C. C. Barker saw mill at Saginaw is being dismantled, and the machinery shipped to Collingwood, Ont., where Mr. Barker and Thomas McLellan, of Bay City, are building a saw mill, which is expected to be in operation this year.

At the annual meeting of the Tobique Log Driving Company held at Andover, N. B., last month, Henry Hilyard was elected president. The contract for driving the logs was let to E. McCollum, at the rate of 17½ cents from the forks of the Tobique to the St. John river, and proportionate rates from points below the St John.

The Northern Pacific Railway Company has found its expiriment of hauling logs for lumber companies a financial and practical success. The parties making the contract are the Muscatine Lumber Company, of Muscatine, Iowa, and William Kaiser, also of Muskatine, Iowa. The total amount of logs which will be transported by rail from Northern Minnesota under the contract is about 20,000,000 feet, necessitating the use of 4,000 cars.

ROPE TRANSMISSION IN SAW MILLS.

It seems strange there are not more rope transmissions used in saw mills. Possibly the matter has not received the thought and attention due to it, or possibly, saw mill machinery men are not in position to furnish the necessary machinery for a "drive," and, therefore, ignore that system in submitting estimates for new work.

Rope transmission is particularly suitable for a band mill, yet out of about a dozen new

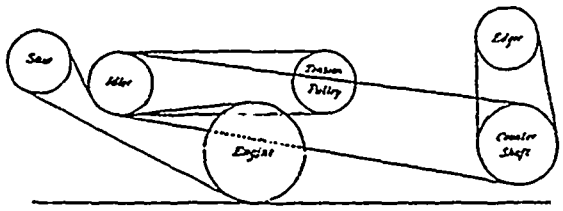


DIAGRAM OF ROPE TRANSMISSION.

band mills I have seen installed in late years, only one has a rope drive.

Hearing of it was, to me, to see it, and I cheerfully took the seven mile walk and the inconvenience of stranger, in a strange place, to get a look at it.

The mill was converted from a circular to a band, and had belts been used, it would have required that the engine be turned around to line with the drive shaft that had been changed to run parallel with the length of the mill. The engine had a band wheel, 18-inch face, very heavy, to answer as a fly wheel. This was left in place, and on the outer end of the engine shaft there was used an 8-groove pulley, carrying a 1¼-inch rope that made a quarter twist on two idlers and thence to the main shaft.

That is all there is connected to the engine—no edger counter to run, and heavy tighteners, nor any gearing nor framing of any sort near it. It is no trouble to get around it to work.

The edger is driven by a ¾-inch rope, four strands, and is run from the line shaft by two quarter-twist idlers. In the case of the engine, the tension carriage and tract are horizontal; at the edger it is perpendicular; in both cases of less than quarter the weight and strength required for tighteners for similar service.

The usual unsightly and cumbrous rig of a balanced swing saw or "jump" saw, gives place to a light frame jump saw, raised by friction and

driven direct from its own shaft, without the usual two intermediate idlers, the single tension wheel handling the slack of the rope without all the equipment usual with a belt.

The only belt in use in the mill outside of the file room is used to drive a lumber transfer.

In the case of a circular mill, the rope drive especially commends itself. The sketch herewith is the plan of a circular mill now under way. In this case, as in that of the band mill, the one grooved pulley on the engine does all the work of the mill except the log haul-up, and that runs from small friction clutch pulley from the end of the engine shaft, that also being a rope drive. On the shaft carrying the idler is a groove pulley that runs the edger countershaft by traction of the rope drive to the saw. The plan shows two distinct drives from the one engine pulley, the tension pulley at the edger not showing in the sketch. An idler turning the edger rope to the tension carriage is used to drive a counter-shaft from which the cut-off saw and trimmer are run, and the other either drives the counter that runs the live rolls and refuse or slot chain.

In this case there is not a belt in the driving machinery of the mill, and only those on the trimmer, in contemplation.

Figures given by users who are in position to know give the cost of the two systems as about 40 per cent. in favor of rope, and the lasting qualities as above from 60 to 80 per cent. the same way. I know of an irrigating plant that was using a quart-twist belt, 10 inches wide, and used three belts a season. Six strands, or more properly, six ropes, one inch diameter, are now running their third season on a quarter-twist drive, and show no appreciable wear.

There is another feature of the rope drive distinctly advantageous to a circular mill, and that is there is absolutely no slip to the rope and no danger of choking down the saw as long as the engine is turning. The eliminating of slipping as a factor is of great advantage to the results of the motive power. As an example of how much this may contribute to the success of a mill, let me tell of some things I saw in a pine mill that was built to be the "crack" mill of the state in which it was located.

The mill was built for a double circular and gang; but, as seen in so many other instances, but one circular was installed. In this case the gang also stood idle. In looking for a cause I was told, and could easily see, that the outlet for the lumber could not accommodate more than 60,000 feet a day, having only one trimmer, and, while the sawing machinery could easily turn out three times that amount, the lumber could not be handled at the end of the mill.

I scraped acquaintance with the filer, and, noting a piece of 12-inch board standing against the wall, that showed marks of about a 30-inch feed, I made enquiry as to the saw belt. The engineer had told me it was the second belt in less than two years, and was 24 inches wide and endless. I saw that it was under a tightener, the weight of which added to the frame could not have been less than a ton. This "sample" of sawing that the filer was saving showed that the saw had choked down about 18 inches from the end of the log, but the momentum of the carriage had carried the log by and split off the board just as an axe would do. The filer was saving the board to show the manager what abuse his saws had to stand. If I had been the manager that would not go as an excuse, for his saws did not have enough hook to the teeth, and backs were too high to stand any feed. The sawyer knew this, and told me he did not propose to hold down the feed to suit the filer's idea of saw-fitting.

But to return to the belt. The engine never lagged at any cut, not even when the saw choked down, still carrying its load, with power to spare. Had this been a rope drive, the mill would have been benefited in the total output and in the grade of lumber, for every time the saw lagged I could see thick and thin boards, more especially in the 2-inch stock. At the planing mill the tale was told, for the sizer has all it can do to cut down the miscuts from the mill. This is one of the best constructed and best equipped mills that I have seen, but somehow or other the designer, the manager or the millwright must have run out of ideas before the job was through —not out of money, for they had it to throw away.

But we cannot expect to find perfection centered in one plant. I call to mind a plant I helped build, the original estimate of which was $42,000, and in six years it has been practically rebuilt twice. Originally designed to cut 50,000, it has never exceeded it, despite the addition of much new machinery. The millwright was one of the best known in this section. He said he would be ready in four months from the day the first framing was put on the ground, but notwithstanding the fact that it was only necessary to ask for material to have it at once, it was nearly seven months before we cut our first board. It may sound like telling tales out of school, but the beer bucket took too many trips to the corner during that hot summer.

In starting this mill there was another good chance to make some comparisons with rope and belt. The main drive belt was an endless rubber belt, 20 inches wide, and has been replaced about once a year, each time with a leather belt ready for splicing. A rope drive in a mill not far away is still running the same rope with which it started, and is probably good for two or three years more. This mill also had on the edge a leather belt, 12 inches wide, made endless, and when the mill started, in trying the engine, the belt tightener was carefully adjusted and the belt tracked exactly on both upper and lower pulleys. Being busy in the engine room, the belt was no longer watched, and in the course of a half hour the smell of burning leather called it to mind. We found it had run to one side, rolled up and was rubbing the boxing; it was totally ruined and gave an object lesson not to be forgotten. Had this been a rope drive such a thing could not happen.

The countershaft that carried the edge driving pulley was run from the line shaft by a bevel gear, and difference in cost would have been almost the total cost of the ten feet of shafting and the two gears, with the three journal boxes, the difference in cost of the rope sheaves and pulleys not being of much consequence, the millwright work being in both cases the same. In fact, I believe I would rather put up rope drives than belting, the results being so much more certain, and much more satisfactory to erect and operate.

There is another feature about it of which don't lose sight, and that is the journal is in proportion to the load at all times, tension pulley adjusting itself to the work the sensitiveness of a governor. I recall in which I worked that was one of the swift and cut an average of 85,000 feet. From mill floor everything seemed to work so and the mill looked clear and unencumbered too much machinery. There were too many double edge trimmer, three jump saws, slab sizer and four sets of live rolls and the two chains. On the lower floor a new hand got lost in the maze of false studding, bracing and belting. There was every sort of belt had ever come into use, all trying to get there custom of the concern, but they changed so often that no one sort of belt ever could steady advantage in the way of a regular ment.

One sort that did well in one place would do in another, and the result was an ment seldom equalled or hardly ever This condition of things was hardly one lar person's fault, but one of those that happens so." The manager was a chronic peptic, and when he got a fit of his and you ran foul of his ideas, your chance standing at the cashier's window to get were particularly good, no matter what From my place in the mill at the sizer, I could a good view of nearly all the lower floor, have often figured out the rope drive for the —but I took good care to keep my reflections myself.

I recently paid a visit to one of the crack mills and spent the day observing. There one of the longest and best log haul-ups I saw, and although so long and with a chain (1½-inch iron), it was driven by an belt, being strongly geared. While there one of those peculiar accidents that happen milling.

The drive belt had got slack and the who hauled up logs had to use all his strength the lever to get the belt tight enough to the chain. The man at the boom end of the slip put out logs on the chain as fast as the went up to make room, and it was not his ness to watch the mill end of the chain. Get tired of hard work, to keep the belt from the negro took down his dinner bucket, and a cup he poured a couple of spoonfuls of oil es on the belt. At the highest touch of the the belt gripped and the logs moved right Mr. Negro had a grin on his face like a pie, for a few moments, but when he the lever the belt still held its grip. On the log up to the stop, knocking it down ing on over the bull wheel down on the mill Another log followed its course, and still The man below supposed everything was right and kept putting on logs, and the logs adding to the pile. The edger man and his left for outdoors, and it so rattled all hands they forgot the signal whistle, and before negro could run down to the engine room get the mill shut down there was a couple hours' sawing piled up in logs on the mill

In the confusion resulting from so singular accident I did not get a chance to continue inquiries, and returned at a more propitious to get information.—H. C. Haner in The Worker.

WOOD PULP DEPARTMENT

PULP WOOD FORESTS OF ONTARIO.

As the result of a recent exploration made under the direction of the Crown Lands Department of Ontario, it has been ascertained that there exists an immense area of territory in the northern part of the province on which there is almost unlimited quantities of pulp wood. It consists of a tract stretching from the Quebec boundary west across the districts of Nipissing, Algoma and Thunder Bay, and comprising an area of about 24,500 square miles, or 15,680,000 acres. The region is watered by the Moose river and its tributaries, the Abitibi, Mettgami and Missinable, and by the Albany and its tributaries, the Kenogami and Ogoke. The principal pulp wood forests are north of the ridge, extending across the districts of Nipissing, Algoma and Thunder Bay. The timber embraces all the common pulp woods, such as spruce, poplar, and jack pine, as well as tamarac and cedar. It is generally of good quality, and ranges in size up to three feet in diameter. It is estimated that there is 3,000,000,000 feet of pulp wood in the new territory.

PULP MAKING IN NOVA SCOTIA.

A history of pulp making in the province of Nova Scotia is published in a recent issue of the Halifax Herald, the author being Mr. R. R. McLeod. Among other things he says :

"The first wood pulp mill in the Maritime Provinces was erected at Penobsquis, N. B., in 1870 or 1871, under the superintendence of Daniel Hughes. In connection with it was a paper mill. This concern was a failure, due to heavy transportation charges. Paper was manufactured in Nova Scotia in 1837, perhaps a little earlier. Near Bedford was a small mill, operated by Keswick & Sons, who afterwards built a large one in that vicinity. In 1872 Daniel Hughes & Sons purchased the property and operated it successfully till its destruction by fire. The next mill was built at Ellerhouse by a German of that name, who also had a paper mill in connection with it. This was burnt, and after a considerable delay was rebuilt and is now in operation by Mr. Hart. In 1880 a Halifax company built a pulp mill at Mill Village, Queens. That has been in continuous operation, and is owned by the Nova Scotia Wood Pulp Company. Next in order was a small mill at Sheet Harbor, built by H. McC. Hart, using a Hughes & Horton grinder on slabs. After running a few years the concern went out of business there. In 1893 three new mills were built—one at Sissiboo, Digby, by an American company ; one at Morgan's Falls, Lunenburg, built by A. G. Jones & Co., in conjunction with John S. and Joseph Hughes ; one at Milton, Queens, by the Milton Pulp Company, organized by A. G. Jones & Co. Afterwards was organized the Acadia Pulp and Paper Mills Company, Limited. The list of officials is as follows: President, Hon. A. G. Jones ; vice-president, John F. Stairs ; managing director and secretary, Walter G. Jones ; directors, Geo. E. Pomeroy, R. E. Harris, M. Dyer, A. E. Jones, John Duffus, W. N. Wickwire, M.D., Wm. Chisholm.

"The property of this company consists of three pulp mills with a capacity of 150 tons of pulp per day in all, various large tracts of woodlands, several vessels and a steam tug. It is capitalized at $550,000. While no large dividends have been paid to the holders of common stock, still the prospect is excellent now that the mills are in successful operation. Thus far there has been a great absorption of the profits in purchasing lands and building the new mill that will bear a description somewhat in detail. It is situated in the village of Milton, at Cowie's Falls, and has been built from plans and estimates of John S. Hughes, and under his superintendence, assisted by his brother, Joseph S. Hughes, the manager of the Morgan's Falls mill. This new mill at Milton is built on an excellent site. The main dam is 400 feet in length, 40 feet wide at the base, and 8 feet at the top, and 20 feet in height. This structure was designed by John S. Hughes, and is in some features new to that section. Five to six thousand horse power can be developed. The mill is a substantial and appropriate structure, built by Jason McLeod, of Milton, who also set the water wheels and placed the machinery. The mill is fitted for three pairs of Smith & McCormick wheels, 36 inches in diameter. Two are now installed, also one 24-inch and one 22-inch wheels.

The Morgan's Falls mill is provided with the same make of water wheels. The upper mill at Milton is equipped with two pairs of these wheels, 33 inches in diameter, and one line of three turbines 36 inches in diameter, and other wheels generating 3,000 horse power. The product of these three mills is 150 tons of wet pulp per day. It requires 1⅛ cords of good spruce to make 1 ton of pulp. This wood costs on an average $3.60 per cord at the mills. A short line of railway connects the mills with the port of Liverpool. The company gives employment to nearly 200 men at the mills, and the wages range from $1 to $2.25 per day

"The supply of wood is mainly derived from drives that are brought down the river and from the company's lands near the western shore, whence it is brought to Liverpool by vessels and barges. From the output of the upper mill during the first two weeks in February there were shipped 2,412 tons of pulp in thirteen vessels, and landed by them in Port Medway and Halifax, and from these ports it will be shipped to England.

There is some chronic grumbling because the spruce trees are being ground into pulp instead of sawed into logs. The fact is that 1,000 feet of spruce logs made into pulp leaves twice as much money in the country as it does when shipped as lumber. A very large proportion of the pulp wood is of little or no value for any other purpose. It is too small for lumber and not accessible for fencing. As a rule the thick growths of small spruce and fir on our low grounds do not reach the dimensions of saw logs, owing to causes I need not discuss. The pulp industry is a great source of prosperity to our people, and it will increase to much larger dimensions as the natural facilities become better known. On the Medway River, at Queens, are about 40 miles square of green soft wood forests, admirably adopted to pulp purposes, and the water powers could be united by electrical transmission over some 15 miles of the river above Brookfield, and made to turn the wheels and grinders of a large mill at Brookfield. A railway is the indispensable requisite for this enter-

prise. Other portions of the province offer openings for this industry.

PULP NOTES.

Mr. Robert S. Hall has been appointed manager of the Riordan Paper Mills at Merriton, Ont.

Mr. W. H. Parr, C.E., of Vancouver, B.C., has lately returned from a trip up north, where he surveyed a site for a pulp mill near Bella Coola.

The John Bertram & Sons Company, of Dundas, Ont., have been incorporated, with a capital of $300,000, to manufacture pulp and paper machinery, tools, etc.

It is reported that a large pulp company is negotiating for the purchase of the timber owned by the Chappell Lumber Company in Hants County, near Windsor, Nova Scotia.

The Brompton Pulp & Paper Company seems likely to proceed with the building of pulp and paper mills at Brompton Falls, Que. A Mr. Wilson, of Lewiston, Me., is one of the interested parties.

Messrs. A. T. Mohr and J. B. Scovell, of Buffalo, and J. W. Munro, M.P.P., North Renfrew, waited on the Ontario Government a few days ago in respect to the establishment of a pulp mill at Petawawa.

The Spanish River Pulp & Paper Company have let the contract for building pulp and paper mills at Webbwood, Ont., to J. W. Munro, M.P.P., of Pembroke, the contract price being about $200,000. The work of construction is expected to start almost immediately.

There are in Germany, according to a correspondent, 601 wood pulp mills, the annual value of the raw material for which is estimated at about $5,000,000. It is contended that conditions for pulp manufacturing are less favorable in Germany than in other countries, and a higher import duty is advocated.

The bill to incorporate the Ottawa & Hull Power and Manufacturing Company has passed the Private Bills Committee of the Dominion Parliament. The incorporators include W. C. Edwards, M.P., Hiram Robinson and H. K. Egan, and the company is empowered to develop electric power and to operate saw and pulp mills, etc. It is proposed to build a pulp mill at Chaudiere, Ottawa.

Negotiations are said to have been completed between the Quebec government and a party of New York capitalists which will result in the erection of immense pulp and paper mills on the upper Saguenay, at a point known as the Grand Discharge of Lake St. John. The water power is said to be almost unlimited, and we are told that about $4,000,000 will be expended on the undertaking, and that the mills will be more than double in capacity those at Grand Mere.

During the year ended June 30th, 1900, Canada exported $905,752 worth of pulp wood, of which $864,077 went to the United States. Ontario exported 50 per cent. more pulp wood than in the previous year, while the export of Quebec was about equal to that of 1899. Of the exports of wood pulp during the year under consideration, amounting to $1,816,016, nearly $1,200,000 worth was shipped to the United States. The wood pulp exports increased, as in the case of pulp wood, nearly 50 per cent. during the year.

Charles E. Eaton, chief engineer of the Sissiboo Pulp & Paper Company, of Weymouth, N. S., states that after years of experience with the Dexter Sulphite Pulp & Paper Company, of Dexter, N.Y., and in the construction of the Chicoutimi mills at Grand Mere, Que., he is of the opinion that pulp can be produced as cheaply in Nova Scotia as any other place in the world. The new mill at Weymouth Falls will start with a daily output of 30 tons of dry pulp. The dam constructed at Weymouth in connection with the mill is one of the largest in the Dominion, being 74 feet broad at its base, 450 feet long and 60 feet high, the construction of which took 1,000,000 feet of timber, 20 tons of iron, and 1,900 cubic yards of stone. The steel flume from the dam to the mill is 200 feet long and 15 feet in diameter. Three miles away, at Sissiboo Falls, a second mill of 20 tons daily capacity has lately been entirely reconstructed by the Sissiboo Pulp and Paper Company, of which Charles Burrill is managing director.

E KEEWATIN POWER COMPANY.

e closing days of ... Ontario Legis- ... an agreement was ... fied granting ... concessions to the ... ewatin Power ...any. The company ... the owner of ...l Island, in the Lake of the Woods, ... it has expended up ... ds of $500,000 ...ater power on the Winnipeg River, ...ntends to construct extensive pulp ...aper mills, at a cost of $1,500,000, ... it will operate, to give an annual ...t of 40,000 tons, employing at least ...ands. Half a million must be spent, ...ding to the agreement, within a year, ...he whole million and a half within ... years. In consideration of this ex- ...iture the Government grants the right ... period of twenty-one years, to cut ...e, poplar, or whitewood and banksian or jackpine to enable the company to work its mills to their full capacity along the rivers and streams tributary to the Lake of the Woods, other than the Rainy River. The company may select sixty square miles of land from this territory, upon which is to be found the woods aforesaid, and it shall pay forty cents per cord of 128 cubic feet for spruce and 10 cents per cord for the other woods. Only the right to cut wood is thus sold to the company. The following gentlemen constitute the company: Richard Fuller, of Hamilton; John Mather, Alex. Fraser, of Ottawa; Wm. Gibson, of Beamsville; Henry Newell Bate, David McLaren, of Ottawa; Alex. McLaren, of Buckingham, Quebec; Henry K. Egan, Newell Bate, of Ottawa; Thomas Bate, of St. Catharines; Robert A. Mather, of Keewatin; Wm. H. Brouse, of Toronto; John B. Fraser, Ottawa.

The Pembroke Lumber Company have installed another boiler in their saw mill at Pembroke, Ont.

One of the features of the Ontario forestry exhibit at the Pan-American Exposition at Buffalo will be canoes made of basswood, cedar and birch bark. There will also be exhibits of pulp and paper products and chemical by-products.

The Robertson Raft Company, widely known among lumbermen on account of their expiriments in rafting on the Pacific Ocean, will shortly complete work on a raft containing 6,000,000 feet of logs which was towed from Westport, on the Columbia river, to San Francisco. According to report, the company purpose making a raft of 10,000,000 feet to be sent across the Pacific Ocean to Shanghai.

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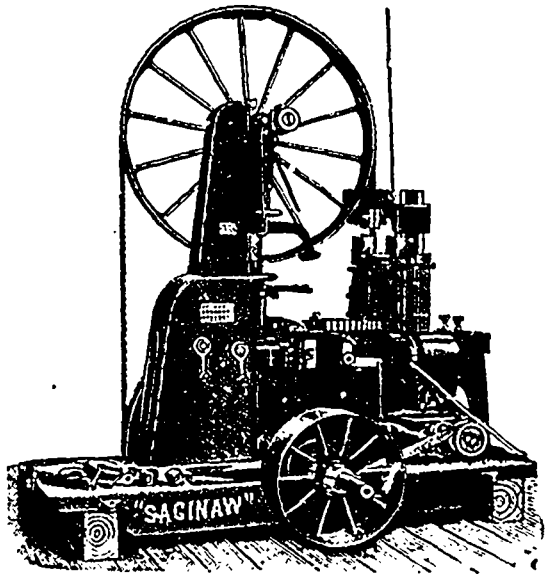

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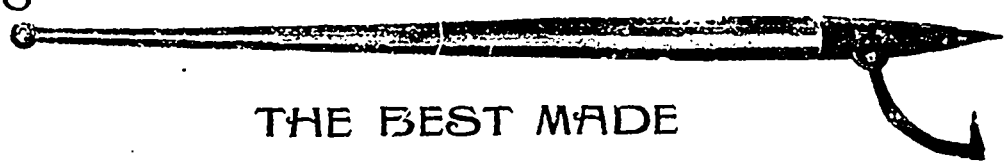

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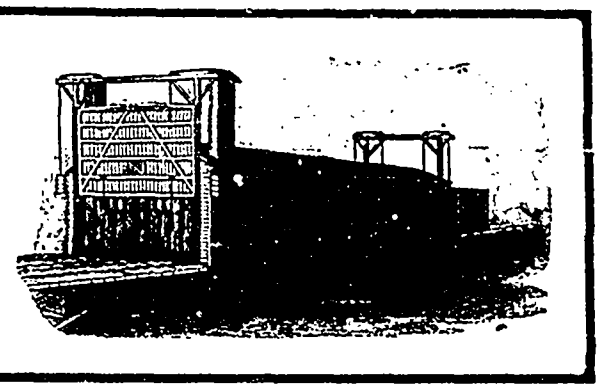

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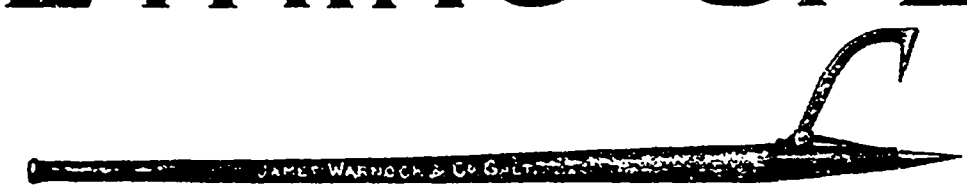

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