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THE CANADA LUMBERMAN

VOLUME XVI. }
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CHARACTER SKETCH.

HON. J. B. SNOWBALL,

SENATOR AND LUMBERMAN OF NEW BRUNSWICK.

"Let us be doing something."

To tell the story of some men's lives is to sketch the times and place in which they have lived. The life of Sir John A. Macdonald is necessarily a history of Canada for more than 25 years. The biographer who would write of Sir Oliver Mowat would, at the same time, be writing, perhaps, the most complete history of the Province of Ontario. Men of individuality leave their impress on all their surroundings.

If one is to write of the lumber trades of the Maritime Provinces he unconsciously thinks of J. B. Snowball and Alexander Gibson. To pen a sketch of these men he must write, in a large measure, a history of the lumber trades of New Brunswick and Nova Scotia.

Already in these columns a sketch has appeared of Mr. Gibson. In noting some of the incidents in the career of the Hon. J. B. Snowball, of Chatham, N. B., the sketch is sure to tell much of the extent and character of the lumber business of the provinces down by the sea.

Just as Alexander Gibson's name is intimately associated with the town of Marysville, so is the name of J. B. Snowball identified with the town of Chatham and that section of New Brunswick, familiarly termed Mirimachi, and covering a number of towns and places within the district of the Mirimachi River.

Jabez B. Snowball is a native of Nova Scotia, having been born at Lunenburg, in that province, Sept. 24th, 1837. His family is of German origin, but for several generations were residents in Yorkshire, Eng. Mr. Snowball's career has shown a happy commingling of the perseverance and endurance indigenous to the Teutonic races, and that pluck and grit that is characteristic of John Bull. The father of our sketch was the Rev. John S. Snowball.

Mr. Snowball has been actively engaged in the lumber trades in the Maritime Provinces for a long term of years, and is to-day the largest manufacturing shipper in the district in which he resides. It is estimated that the Maritime Provinces possess forest resources to the extent of about 20,000 square miles. Where pine is the leading product of the forests of Ontario, spruce holds the premier position in the Maritime Provinces. Outside of this wood there is a considerable supply of birch, which, now that this wood is coming into increased uses, will prove a valuable asset to that portion of the Dominion. The two main shipping points are St. John and Mirimachi, or Chatham more strictly speaking, the home of Mr. Snowball. The exports of lumber from St. John to Europe and America are given as 200,000,000 feet b. m. annually. An estimate of the shipments, and names of shippers, from the Mirimachi district, mainly spruce deals, etc., for the past two years, are given as follows:—

Shippers.	1893 Feet.	1894 Feet.
J. B. Snowball.....	22,081,347	24,505,000
D. and J. Ritchie & Co.....	10,650,238	11,088,000
F. E. Neale.....	13,519,604	8,730,000
E. Hutchison.....	7,109,925	9,318,000
Geo. Burchill & Sons.....	4,601,000	7,380,000
W. M. McKay.....	18,084,380	27,447,000
William Richards.....	6,607,000	5,993,000

The picturesque, aside from the rude, native beauty that is common to every lumber district, is not one of the factors that goes to give fame to the Mirimachi. This, at least, would appear to be the experience of the editor of our English contemporary Timber, who a year ago visited the Maritime Provinces and particularly the lumber districts. He had made a pleasant call on Mr. J. B.

Snowball, and at his invitation had made an inspection of his mills, together with those of Mr. E. Hutchison and others in the district. Having concluded his business, this is his account of the remaining hours spent in Chatham: "I have no desire to visit Chatham (Miramichi) again. Although the town has a pretty considerable population it is a very primitive place. There is no hotel except one or two boarding houses. The means of getting to and from the place are very inconvenient. I wished to return to St. John, but in order to do so I had to take a train at a kind of station a good mile and a half from the town at 3 o'clock in the morning. I engaged a conveyance to call for me at half-past two and the landlady of the boarding house advised me to go to



HON. J. B. SNOWBALL.

bed and let the cabman come up to my bedroom and awaken me (they do not seem to fasten the doors of their houses here) but I would not risk it, and I sat up. That cabman never came, and after anxiously waiting till the last moment, I seized my bag and ran, in the pitch darkness, over a mile up a rutty, muddy lane. I was not sure I was going in the right direction, and, after several falls in the mud, I arrived at the station, almost breathless and dirty, just as the train was starting. By repeated entreaties I got the driver to wait and entrain me and my baggage. I shall not readily forget Miramichi."

Of Mr. Snowball personally our English friend, as is the case with everyone else, can only say kind things. His interview was of the pleasantest character. "Like everything with which Mr. Snowball is connected," says he, "his mill is a reflex of his undoubted ability and great intelligence. Although the mill has only three gangs with compliment trimmers he can cut here some 30,000,000 feet or 15,000 stds." Besides this mill, which is illustrated on the following page, Mr. Snowball handles the product of three other mills in the district, in which he has a direct interest. Following the custom of lumbermen in this country Mr. Snowball carries on a general store business, the profits from which make even a better showing than that of his lumber business. The Snowball stock is shipped largely to Great Britain, Messrs. Farnworth & Jardine being his representatives there. Mr. Snowball himself is a yearly visitor to Great Britain,

The activities of this well-known Lower Province lumberman are by no means confined to his commercial undertakings, though these are extensive. For, besides his lumber business, he is largely interested in the railways of his province and has been president of the Chatham Gas Co., as well as director of other monetary institutions. He has been mayor of Chatham more than once, and it goes without saying that the town was the gainer by his wide business experience and knowledge of public affairs. He represented Northumberland, N. B., in the House of Commons from 1878 to 1872, when he retired. On May 1st, 1891, he was called to the Senate, and in the Upper Chamber of the House he has been one of the Senators who has done his share to impart a measure of present-day business life to a branch of government that has sometimes been said is fast becoming fossilized in its character. In politics he is a Liberal-Conservative.

CUTTING QUARTER-SAWED OAK.

In a recent interview a leading Grand Rapids furniture man gave some valuable ideas as to cutting quarter-sawed oak, from his standpoint. He said that the demand just now was better for quartered oak than for any other wood, and that prices for satisfactory qualities and widths would afford a reasonable profit. He remarked: "If I owned a lot of that stock that would exactly meet the ideas of the furniture men in every respect, I would not know what price to put on it, but would hold it pretty high; but if I had a lot of badly manufactured, dirty, narrow, different length quartered white oak, I would not know what to do with it, for no furniture man would buy it." To sell well it must be well manufactured, clean and bright and well handled. The greater the width the better the price. No one wants it less than six inches or an average below eight. Other things being all right, a ten-inch average makes a lot that sells readily at a top price. It requires a lot not less than twenty-six inches to make a profitable lot. It requires the best of machinery, all the appliances and the most skillful handling, and then there is a large loss of timber.

INDICATOR FOR SHAFT REVOLUTIONS.

AMONG the mechanisms of utility lately described, is a small instrument which shows the number of revolutions of a shaft by means of two hands traversing a dial similar to that of a watch, the longer hand indicating the units and tenths of revolution and the smaller the hundreds. In order to make error in reading impossible, whether the shaft be running in one direction or the other, a simple method is resorted to, which consists in placing the dial plate carrying the numbers under a perforated plate, the numbers on the dial showing through the perforations. There are two sets of numbers on the dial plate, one set reading from right to left and the other from left to right, so that, should the shaft move from right to left, the figures on the dial move automatically so as to come under the perforations, while if the shaft move in the other direction the other set of figures show through the perforations. After reading the number of revolutions, the hands could be quickly brought to zero by opening the case and turning a knob. The spindle of the revolution counter is projected by the watch ring so that the instrument can be carried in the pocket, as in the case of a watch, without injury to the clothing, this portability and the extreme simplicity of the operation of the instrument constituting its special advantages.

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TALKS WITH WOOD-WORKERS.

THE arrangement of the machinery of a mill is a matter of practical import to wood-workers. I have come across some sensible thoughts on this question which will, I believe, be appreciated by my readers.

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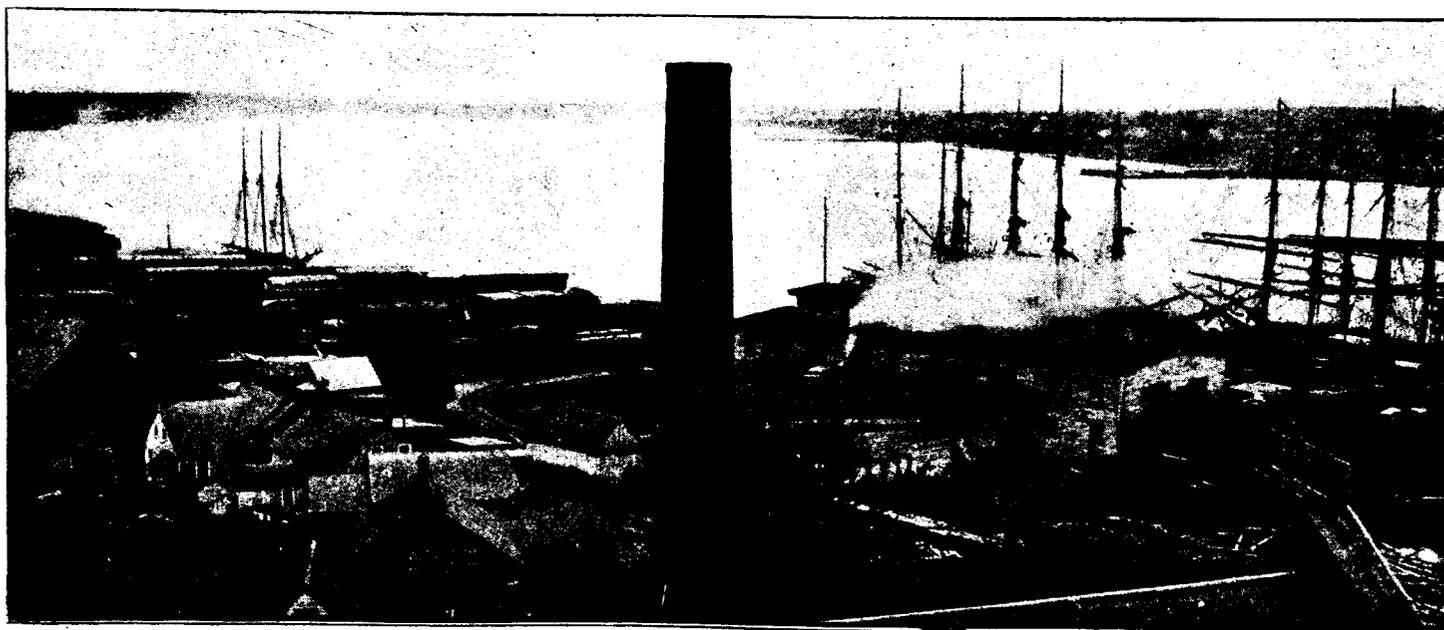
It makes no difference how small a mill is if it is not overcrowded with machines. The great trouble generally is that mill men are too greedy to get a large number of machines when they have not room to put them in, so that they are in each other's way. This is not the case with wood-working mills especially, but as we are in the wood-working business we had better not branch out into any other, for fear we shall make a mistake somewhere. There is some excuse for planing machines being crowded, for we can push their work entirely out of the building, and if there is a convenience for getting the stock up to the machines we can get along very well if they are close together. The chances are, however, that in crowded mills the planers quite as often as any, come in for their full share of inconvenience from being too close together. In years gone by mill men had to have large floor space to lay down their work for the matcher, but now when everything is sawed to stock width, we can dispense with some of this room and set machines nearer together without much inconvenience. The common tendency, however, is to crowd

to set it down on the floor and not have it touch anything. They do not stop to think that all the machines that are run should have free space and good light. No one can see to set a machine up well where there is poor and insufficient light. It should have good light, that the operator may see that the work comes out nice as it runs through, and may not be obliged to carry his work to some near or distant window to look at it. Band saws are frequently put in some out of the way place. There is but one way to put in and arrange machines, and the plan should be made at the same time the drawings for the mill are made. The man knows what kind and the amount of work he expects to do, and he can sit down and arrange every piece of machinery before the building is erected. In fact, it should be so done. Plan your building to accommodate your machines and not to crowd them into it. Of course, as is many times the case, a company may buy a building already erected. Then it must take its chances and do the best it can. As a general thing, it is far better to build your own mill and arrange the machinery so that it shall be situated in the most convenient manner that you can devise. The importance of this method cannot be over-estimated. The extra cost of each day of handling the stock makes in the aggregate a large expense account, which makes the proprietor wonder why his mill cannot be run as cheaply as his neighbor's. The latter, by con-

NEW BRUNSWICK CROWN LANDS.

M. R. EDWARD JACK writes as follows of the crown lands of New Brunswick:

Within the past few years there has been a great and noticeable improvement in the management of the crown lands of the Province, as compared with former periods. Timber lands are not now being sold. On the contrary they and their products are being jealously guarded, and disposed of in the manner most profitable, and at the same time most beneficial to the Province. The Free Grant Act is being much more wisely administered than in former years, care being now taken to preserve the timber lands intact, as far as it is possible to do so. The system of twenty-five year leases, renewable every year, which the Government has lately adopted, is working remarkably well. Under that system a very great deal more land than formerly is under lease, and the provincial revenues are thereby largely increased. I think the Province must now have as much as 5,500 square miles under lease. (This is, of course, a mere guess.) From these miles the Government is in receipt of an annual rental of \$4 per square mile, which will be a source of permanent revenue for a great many years. The holders of these long leases are showing a great deal more care in the protection and preservation of the land and lumber, than they were accustomed to exhibit under the old system of short term licenses. The



J. B. SNOWBALL'S MILLS AT CHATHAM, N. B.

machines too close together, and the cost of handling stock is very largely increased in consequence.

x x x x

Men too often think that because they have a lot of machines in their mills they can do a great amount of work, never taking into serious consideration the cost of getting the stock to and from the machines. In the matter of moulding machines, it is too often the case that the stock has to be carried to the machine piece by piece and taken away in the same manner. There might be some excuse for this if we had but little to do, but where machines are doing a large amount of stock work, they should be located that loads of stock, either from teams or floor trucks (which are far the most preferable) can be laid down or left, as in the case of using floor trucks, so the feeder can get them easily. In setting machines too close together we have to resort to the plan of carrying up one or two pieces at a time, and this, with machines that are feeding 75 or more feet per minute, is slow and costly work, and smacks not of the rush style that we must adopt to keep up with the times. "Laying down floors" for the matcher is one of the "way back" systems which have given place to something better and quicker; but that does not warrant crowding in machines so that we shall have to run over one to get to another.

x x x x

A great many mill men seem to think that they can put a moulding machine anywhere, so that there is room

veniently handling his lumber in the mill, makes a percentage of profit where the former loses and eventually go to the wall. Men manufacturing light work can crowd their machines more closely together, if the work is so arranged that it can be passed from one to the other without extra carrying.

x x x x

It needs the nicest calculation to arrange the different kinds of machines so that a shop or mill can be run at the least expense, and this reduction of expense is made positively necessary from the fact that lumber workers like men in every kind of business, have cut prices to the lowest notch. If lumber working mills were benevolent institutions, we might not advocate doing the work as cheaply as possible, but "necessity is the mother of invention," and we must devise some means whereby we shall save a margin of profit on the investment. No other plan seems so natural and easy of accomplishment as arranging the machinery in your mill so that the work can be done economically. No one person can make plans for each mill and shop. Each individual owner must take the subject into serious consideration and make a study of it, as the officers of a railroad do in making out their time-tables so that every train shall meet in the right place.

JAS.

Increasing the diameter of a bearing increases the friction, and increasing its length reduces the pressure per square inch, but does not alter the amount of friction.

reason is, of course, apparent to every one. The licensees have now some kind of a substantial interest in the land.

In addition to the improvements just mentioned, there have been more surveys of lumber leases made during the past year, than for many years previous, with the result that wherever these surveys were made upon lands which were not formerly under lease, the lumbermen have come in and applied for licenses. Any expense that the Government has incurred in this connection has been amply repaid and justified by the results. A singular instance of the benefit resulting from the making of such surveys occurred on the Restigouche, where upwards of one hundred square miles were literally discovered—that is to say, errors in previous surveys were disclosed whereby that much additional area of timber lands was made available to the Government for licensing. This new found land was, I think, all applied for and taken up, with the result that \$800 of new revenue went into the Government treasury in the shape of bonuses; and there will be, in addition, \$400 or more of a constant annual revenue therefrom.

Much more surveying should, however, be carried on at once; and more extended examinations should be made into the situation and character of our fertile public lands. Former Governments totally disregarded the best interests of the country, when they located to settlers spruce and hemlock lands which were never intended for settlement.

TESTS OF CANADIAN TIMBER.

STRENGTH OF DOUGLAS FIR, RED PINE, WHITE PINE AND SPRUCE.

An encouraging feature of the lumber trades is the consideration lumbermen are giving to forestry proposals, and the ascertaining, by scientific methods, of the enduring qualities of timber. It is not to have been expected, in a new country, such as this, that at the outset men who invested their capital in forest products, would have much thought outside of the commercial return that would come to them from the investments thus made. Immersed in the cares of business, material things have necessarily commanded a large share of attention. In Canada and the United States, however, we have reached a period when lumbermen have come to the conclusion that, rich as are these countries in timber resources, yet there can be an end to these riches. Consequently, more lumbermen to-day than at any other time, are thinking along the line of reforestation. We are free to admit that this interest grows slowly, but it is growing. So it is in the matter of testing the properties of timber grown in the woods. It is worth something to the lumber trade to know by scientific experiments just what is the degree of endurance and practical utility of the leading woods of the country. By knowledge of this kind, fresh markets can be opened up, and our own woods placed to uses that are not common to them to-day. The Forestry Department of Agriculture in the United States is giving considerable attention to this question, and during the present congress an appropriation of \$40,000 was made that investigations in this direction might be made. Perhaps our Government has been too busy paying out money for sundry royal commissions to touch anything so material as lumber. But it is pleasing to know that within the educational institutions of the land, there are those who have given careful thought, and, out of their experience, made known to the public the strength of the leading woods of the Dominion.

Before us at the present writing is an exhaustive paper prepared by Mr. Henry T. Bovey, M. Inst. C. E., L. L. D., giving statements of results obtained in various experiments made to ascertain the strength of Canadian Douglas fir, red pine, white pine and spruce. Mr. Bovey is at the head of the technical department of McGill University, Montreal, Que., and the experiments made have extended over a period of two years.

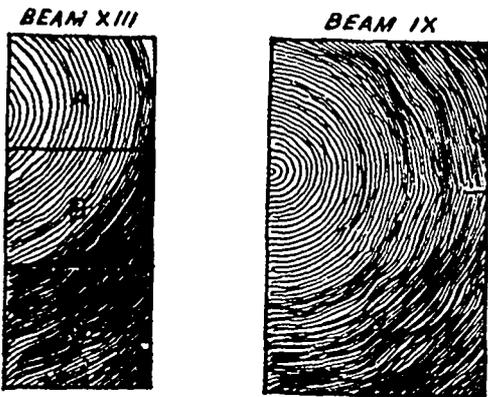
DOUGLAS FIR.

Douglas fir of British Columbia is the first timber dealt with, and some of the experiments made were from beams sent to the Montreal Testing Laboratory by Mr. John Kennedy, chief engineer of the Montreal Harbor Works. It will be remembered by readers of the CANADA LUMBERMAN that within the past two or three years some of the finest Douglas fir timbers grown on the Pacific coast were shipped to Montreal to be used in harbor improvements. During the journey of these woods from Vancouver to Montreal, their immense length and size generally, as well as magnificent appearance, produced comment at many of the stations along the line, when en route. Other timbers of the same kind were forwarded to the Laboratory by the British Columbia Mills Timber and Trading Co., through its manager, Mr. C. M. Beecher. We shall not attempt in the present comments to give with any degree of detail the results recorded by Mr. Bovey, as this would mean much more space than we have at our disposal just now. Briefly summarized, however, the writer of the paper in question states that the following data may be adopted in practice. In the case of specially selected timber, free from knots, with sound, clear and straight grain, and cut out of the log at a distance from the heart:

- Average weight in lbs. per cubic foot = 40.
- Average co-efficient of elasticity in lbs. per sq. in. = 2,000,000.
- Average maximum skin stress in lbs. per sq. in. = 9,000.
- Safe working skin stress in lbs. per sq. in. = 3,000.
- In the case of first quality timber, such as is ordinarily found in the market:
- Average weight in lbs. per cubic ft. = 34.
- Average co-efficient of elasticity in lbs. per sq. in. = 1,430,000.

Average maximum skin stress in lbs. per sq. in. = 6,000.
 Safe working skin stress in lbs. per sq. in. = 2,000.
 Certain experiments were made from old Douglas fir, and it is remarked that the results obtained in the experiments with the old stringers show that the strength of the timber had been retained to a very large extent, and that the rotting had not extended to such a depth below the skin as to sensibly affect the efficiency of the sticks, which still possess ample strength for the work they were designed to do. The tensile shearing and compressive experiments upon specimens cut out of different parts of the same log all show that the timber near the heart possesses much less strength and stiffness than timber at a distance from the heart.

The accompanying photograph is given to show the variation of thickness in the growth rings from the heart outward, and a careful study of the results obtained up



to date would seem to indicate that the best classification defining the strength of the timber would be found by dividing the section of a log into three parts by means of two circles, with the heart as the centre, and by designating the central portion as 3rd quality, the portion between the two circles as 2nd quality, and the outermost portion as 1st quality.

RED PINE.

Experiments made with red pine from timbers secured in the neighborhood of the Bonnechere River, Nipissing district, county Renfrew, are summarized as follows: The average weight in lbs. per cubic foot = 34.61; average co-efficient of elasticity in lbs. per sq. in. = 1,520,056; average maximum skin stress in lbs. per sq. in. = 5,370.

In general, the following data may be adopted in practice. Average weight in lbs. per cubic foot = 34.6; average co-efficient of elasticity in lbs. per sq. in. = 1,430,000; average maximum skin stress in lbs. per sq. in. = 5,100; average safe working skin stress in lbs. per sq. in. = 1,700, 3 being a factor of safety.

WHITE PINE.

The beams used as tests in white pine were cut out of one large piece of square pine made and taken out in the Gatineau Valley, Ottawa county. The timber was brought down via the Gatineau and Ottawa rivers to Montreal, and remained in the water until late in the fall of 1892, when it was piled on the land for winter sawing. Three old white pine stringers were also sent to the Laboratory. These had been in service since 1885, for about eight years. The summary of the results obtained for white pine is as follows: For new timber, the average weight in lbs. per cubic foot = 37.88; average co-efficient of elasticity in lbs. per sq. in. = 754,265; average maximum skin stress in lbs. per sq. in. = 3,388.

The following data are suggested for practice: The average weight in lbs. per cubic foot = 37.8; average co-efficient of elasticity in lbs. per sq. in. = 754,000; average maximum skin stress in lbs. per sq. in. = 3,300; average safe working skin stress in lbs. per sq. in., 3 being a factor of safety, = 1,100.

SPRUCE.

The stick of spruce sent to the Laboratory for experiment was cut out of a tree felled near the Skeena River B. C., about 600 miles north of Victoria. It is remarked as a possible item of interest that the freight for this beam from Claxton to Victoria was \$4; from Victoria to Vancouver, \$2; from Vancouver to Montreal, \$46, and the cartage to the University, \$4, making a total cost for freight of \$56. It is said that spruce from the

Skeena district is of specially fine quality, having a clear straight grain, and possessing a large amount of toughness. The old spruce used for tests came from the Sherbrooke district, and had been used in the construction of a bridge near Lennoxville in the winter of 1886-87, and had been in service until the summer of 1894, or for a period of about 8 years. The experiments with spruce have not been as complete as Mr. Bovey would have liked, but he says the old spruce stringers were found to possess ample strength and stiffness for the work they were designed to do. The experiment gave: 29.15 lbs. as the average weight per cubic foot; 1,189,780 lbs. as the average co-efficient of elasticity; 3,875 lbs. as the average maximum skin stress per sq. in.

COMPRESSIVE STRENGTH.

The experiments to determine the compressive strength of the various timbers have been chiefly made with columns cut out of the sticks already tested transversely. These columns were in the first place carefully examined, to see that they had suffered no injury. The following inferences may be drawn:

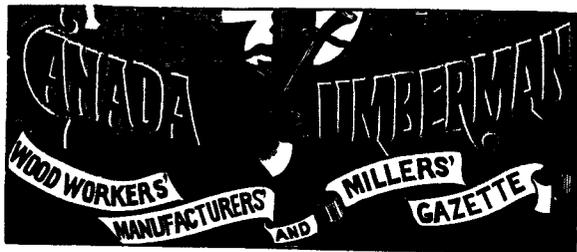
- (1.) The compressive strength of Douglas fir and of other soft timbers is much less near the heart than at a distance from the heart. The compressed strength of the timber increased with the density of the annular rings.
- (2.) When knots are present in a timber column, the column will almost invariably fail at a knot, or in consequence of the proximity of a knot.
- (3.) Any imperfection, as, for example, a small hole made by an ordinary cant-hook, tends to induce an incipient bending or crippling.
- (4.) When the failures of average specimens commence at an initial bending the compressive strength of columns of about 10 to 25 diameters in length agree very well and the results obtained by Gordon's formula, the co-efficient of direct compressive strength per sq. in. being 6,000 lbs. for Douglas fir and 5,000 lbs. for white pine.
- (5.) The greatest care should be observed in avoiding obliqueness of grain in columns, as the effective bearing area, and therefore also the strength, are considerably diminished.
- (6.) If the end bearings are not perfectly flat and parallel, the columns will in all probability fail by bending concave to the longest side.
- (7.) The average strength per sq. in., indifferent of the ratio of length to diameter is: 5,974 lbs. for new Douglas fir; 6,265 lbs. for old Douglas fir; 4,067 lbs. for new red pine; 3,843 lbs. for new white pine, 2,772 lbs. for old white pine, 3,617 lbs. for new spruce, (B. C.); 5,136 lbs. for old spruce. It should be pointed out that none of the old Douglas fir columns exceeded 4.4 diameters in length, while the great majority of the new Douglas fir columns were from 4 to 25 diameter in length. This explains the reason of the greater average compressive strength of the old Douglas fir, and similar remarks apply to the new and old spruce.

Interesting experiments were also made directed to the comparison of the tensile strength and stiffness of portions of the same stick, in different positions relatively to the heart.

PROFIT IN LITTLE THINGS.

It is a well known business fact that many large buyers reclassify and reselect car load lots of lumber and find a profit in so doing. But there are many of the smaller mills that would find a large profit in doing the same. The small country mill can discover from his stock some as fine quality of extra quarter-sawed oak as can be turned out by the best and most improved methods of cutting. There is no possible way in which an oak log can be sawed without producing some quartered pieces. If the mill man will carefully select these and pile them by themselves he will in time have on hand a supply of first-class stock of dry quartered oak that will bring him in some extra money without having impaired the grade of the general stock. It is worth trying, at least.

The Savanne Lumber Co., Penetanguishene, Ont., are applying for incorporation with a capital stock of \$48,000, for the purpose of building and operating mills for the manufacture of lumber, etc.



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

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

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

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

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

AUSTRALIAN HARDWOODS.

EXPORTERS of timber in Australia are making special efforts to secure a market for their woods in Great Britain. At the present time Mr. Gaven Scott, representing one of the largest firms in Sydney, is in England with this purpose in view. He has visited the leading cities of England and Scotland, and also journeyed to Brussels, Antwerp, Hamburg, Paris and other continental cities. A report sent home to his house states that he has met with much encouragement and he expresses the opinion that there is a good prospect of Australian hardwood sleepers taking the place of the timbers now in use. In Manchester large orders have already been given firms in Western Australia for a supply of Jarrah for wood blocking, and Mr. Scott is endeavoring to have some of the New South Wales hardwood blocks laid alongside the Jarrah blocks so that an experiment can be made as to how the different timbers wear. In Liverpool Canadian deals are used quite largely for street paving, and it is not unlikely that they will also meet the competition from Australia. It is stated that 75,000 railway sleepers are renewed annually in England, and it is from this source that Mr. Scott hopes to see a large trade in Australian woods develop. As we have taken occasion in these columns to remark before, there is a wonderful durability about certain Australian woods, rendering them proof against the ravages of various insects, and also of climatic conditions. An illustration of the durability of Australian hardwoods, and particularly of iron bark, is furnished by some of the piles which are being removed in connection with the improvements on the western side of the Circular Quay, Sydney. These piles have been in the ground about 40 years, and many of them are nearly as sound as when they were first put down. The piles consist chiefly of red and grey iron bark; both have lasted well, but the former rather better than the latter. To so slight an extent are some of these piles injured that they will be used for temporary work at other points. A few of the iron bark piles have been superficially attacked by the toredo, but this destroying pest, after burrowing for about one-

half an inch, seems to have turned back and abandoned the piles. Specimen slices from these piles are being forwarded to the forestry department to be placed in the forestry museum, and also to be sent to England and other countries to illustrate the durability of New South Wales hardwoods.

WHY DEFRAUDED SOMETIMES.

COMPLAINT keeps reaching us of the sharp practices of lumbermen who want to get ahead of some one in their purchases of lumber. One device or another is employed to do the mill owner or wholesaler out of a part of his shipment, if not the whole of it. We learned the other day of a wholesaler in Toronto who received a cheque from a concern across the border, to whom a carload of lumber had been forwarded, where some \$8 or \$10 had been coolly deducted from the amount of cheque without any satisfactory explanation being made, whilst the cheque was very cunningly worded "in full of account." The man who will play tricks of this kind needs to be watched, and we hope that the trade will quickly get on to all such.

Right here we take occasion again to say that the different members of the trade could be protected against this kind of fraud if they were only organized so that each one might know who were the dishonest ones. There is, however, another side to the story. Some one has remarked, "There is never a shark without a corresponding sucker." We don't feel sorry for some men getting let in occasionally, for they have deserved nothing better. Their keenness to make another dollar or two has led them to sell lumber at a price sufficiently in advance of the best price going to have told them that either the man who bought at such a figure did not know his business, and consequently, sooner or later, would come short in his payments, or else all he wanted was to get the lumber into his hands and let the dealer whistle for his pay. Everybody is anxious to do business in these days of slow trade, but far better for a man to keep his lumber in his yard, though he might need the money ever so badly, than ship it away and be minus lumber and money.

Care, caution and common sense ought to be exercised in filling any order for lumber when it comes from a stranger. Learn of the man's financial responsibility; further, ascertain something about his business ability, and whether he is a straight or a crooked man. In this way we will find the community minus both shark and sucker, and the trade will be the better for this.

WHITE PINE PROSPECTS.

NOT a few of the more thoughtful lumbermen, whose operations are largely in white pine, have been asking themselves the question, what really is the future of white pine? All recognize the premier position, which in many respects, this wood holds, and yet they know that various elements, foreign to the situation in the past, are showing themselves of late. The Timberman has a carefully-written article along these lines, starting out with the assumption that it looks as though ordinary white pine timber had been pushed to too high a price. The reflections of our contemporary are as follows:—

"The great advance in white pine prices came after the census of 1880 was made public, with the misleading statistics incorporated therein concerning the amount of standing pine timber in the Northwest. The effect of these erroneous figures was modified by the disclosure of their real worthlessness, but an impetus was given to the advance in the value of pine timber which could not be entirely checked; and prices have gone up from that time to this, not even the depression of the last two years having had much effect on them.

"In this boom—for such it was to a large extent—too little attention was paid to the real worth of the timber. White pine was white pine, and many purchases were made with little regard to the amount of Norway which would be found in the tract or the amount of piece stuff timber in the white pine itself. It hardly occurred to the white pine lumbermen of twelve or fourteen years ago that that wood could have any competitor for any purpose whatsoever, and they felt as confident of the supremacy of white pine piece stuff as they did of uppers. But times have changed. White pine uppers are in as good

demand as ever, as shown by the prices maintained, regardless of the value of other portions of the price list. But the proportion of uppers in the total cut is constantly decreasing, and the lower grades are meeting competition on all sides.

"In piece stuff southern pine occupies a constantly increasing field, and the white pine must come down instead of the yellow pine advancing in price, for the reason that yellow pine, though comparatively new in the northern markets, is in almost unlimited supply, and is being pushed with the advantage of low stumpage value right into the white pine field proper. There's where the rub comes in. We know of northern timber, including Norway as well as white pine, which represents to its holders, including original cost, taxes and interest, from \$6 to \$7 a thousand, and yet which runs largely to low grades. The piece stuff and other low grade stock cut from this timber has to compete with the better quality cut from the southern timber that represents at the outside \$1 a thousand stumpage.

"Freight rates, of course, have their influence, but for equal hauls, the southern mills have the advantage; and in any event, the difference in the cost of the timber will more than make amends for any differences there may be.

"It seems therefore questionable whether the average white pine timber, as it is now found, is worth what it is held at. There is no question as to uppers or as to the value of the better kind of logs, but many of the operators in the lower parts of the white pine field, who are cutting perhaps the second or third time over their land, might as well face this condition now as later."

This view of the situation is not entirely new to Canadian lumbermen, and has been referred to in these columns before. None the less, however, is it deserving of careful thought at this time. The fact that the reference is to United States white pine does not lessen its value to lumbermen in Canada whose interests are closely allied with those of their congeners to the south.

NORTHERN TIMBER DISTRICTS.

THE northern districts of Ontario are commanding more than usual attention at the present time. By these we mean that section of territory in the vicinity of North Nipissing, Eastern Algoma and Rainy River. Persons who have visited these territories lately have taken occasion, through the press, to draw attention to the rich resources of that section of the province. We find that not the least of these resources is the timber. Lumbermen know something of the timber to be found in the Nipissing district, and further north, but we fancy that few comprehend the fullness of the lumber riches of those territories. A pamphlet of nearly 100 pages, prepared under instructions from the Commissioner of Crown Lands, serves to convey a large amount of information of this country.

It is pointed out that Algoma and Nipissing districts and the Temiscamingue settlement are in that belt of the world which has ever been the most famous for the production of grasses, vegetables, fruits and cereals, and—men. A dense forest covers the whole of the land. Pine, of course, is found in large quantities, but the timber resources are in no way confined only to pine. Great quantities of pulp wood are found there, to an extent that it is hardly possible to readily calculate. In hardwoods the territory is very rich, and noting what has been remarked in another column on the uses of hardwood for flooring, fencing, and many other purposes not formerly adopted, extra interest is given to this country from the lumberman's point of view.

Black birch is found there, and of a size which astonishes persons familiar with the tree farther south. Specimens of two to three feet in diameter are common. This wood, as lumbermen are learning to know, is proving a very general substitute for cherry. White birch also grows in the same district to a large size, and it is to be remarked that this is not the same species of birch that grows as a small tree over the eastern provinces and New England, but is a large straight-growing tree, furnishing sheets of bark sometimes large enough in a single sheet to make a good-sized canoe.

White cedar is common to the district, and grows to a large size. Let it be remembered that the consumption of cedar runs into large quantities, used for fence

posts, building posts, sidewalks, railway ties, telegraph poles, paving blocks and many other purposes, and is therefore a forest product of real value to lumbermen.

Hemlock is native to these territories, but is reported to be of poor quality. The commonest tree in the north is poplar, and because of its great value for pulp wood it must rank as an important timber resource of the district. Tamarac, which is useful for railway ties and ship timber, as well as joists and rafters, is one of the native trees of these parts. Beech is also found to some extent. White and red oak grow in that part of Canada. Maple, elm, basswood and white ash, all woods that are in increasing value, complete a catalogue that makes this northern district of Ontario a territory that is worth the consideration of lumbermen, and provides another illustration of the wealth to be found quite within the precincts of this one province of Confederation.

The importance of the Rainy River and Lake of the Woods district to lumbermen has recently come into fresh notice through the explorations of certain Chicago capitalists, who are just now endeavoring to effect an arrangement to secure the entire lumber cut of that district. This at present, with the mills located at Rat Portage, Norman and Keewatin, is about 100,000,000 feet a year. These prospective operators believe that this amount can be easily quadrupled if anticipated railway connections can be made with the Western States.

EDITORIAL NOTES.

A DAILY paper attempts to create a sensation by describing the lumber camps of northern Ontario as unfit places for human beings to live in. This kind of nonsense is sometimes accepted by people who know nothing of the subject discussed. Those who have a knowledge of the matter are ready to tell of the wonderful progress made in logging life in the past few years. In primitive days shantymen had many hardships to endure, just as was the case with the pioneer agriculturist. But to-day the gulf between life in the shanty, and life at home is not very great. As a shantyman of 22 years' experience has said: "Visit some of the camps in Muskoka, examine them carefully, and you would admit that compared to some habitations in your clean city, they are models of cleanliness. And the board furnished will compare favorably with many hotels in Toronto."

THE growing demand for hardwoods is one of the noticeable features of the lumber business in these later days. Hardwoods we have had all along, but the lumber dealer has not usually considered that these have cut any large figure in trade history. Opinion is changing. White pine still exists in considerable quantity, but changes are coming over the trade. Better grades of white pine are becoming scarce—to a larger extent, perhaps, than some realize. This is a condition of the trade that is general to the white pine districts, not only of Canada, but of the United States. The annual product of white pine, a contemporary has remarked, is not lessened, except temporarily, but the proportion of the better grades is rapidly growing smaller. An outcome of these changes is already indicated in the call there is for hardwoods to be used, where before they were not known, and also is indicated in increased activity this season in the cutting of hardwoods in Michigan, Minnesota and even Ontario, the great white pine districts of the country.

A REPORT of the annual meeting of the Western Retail Lumbermen's Association of Manitoba and the Northwest, which we publish elsewhere in this issue, furnishes another object lesson of the value of lumbermen binding themselves together in a trade organization. This association has now been in existence for several years, and each year's experience makes more manifest the value of the lumbermen of these territories being organized in this manner. We have now in the Maritime Provinces and the Northwest two distinct lumbermen's organizations. It seems timely to suggest that Ontario might fall into line somewhat shortly. All over the United States during the past month lumbermen have been meeting in their annual gatherings, and a careful perusal of the reports of these meetings emphasize the same lesson that is noted here, and which we have been hammering at from time to time for a number of years.

How long, yes how long, shall we continue to wait for a further development in this direction? From the business and social side these lumbermen associations are doing an excellent work.

THERE is more in being a lumberman than simply buying and selling timber products. These are important departments of every business, and the condition of the balance sheet will rest to no small extent on the skill and care shown in both these transactions. But money is made in the lumber business in other ways as well. We have been pleased to note the interest shown in the various articles of a practical character that appear in these columns at different times. It will not be out of place to say here that the CANADA LUMBERMAN has been anxious to make its monthly edition strong in this one particular, and we have reason to believe that readers appreciate and value the journal on this account. An article along these lines, that has commanded the attention of readers is that on stacking lumber published in the February issue. We are glad to supplement this by a contribution this month from one of our readers, in which are made some sensible suggestions, the experience of one who has made good use of wide opportunities to observe just how mill men throw away good money sometimes. Because all the surroundings of a saw mill may not be as complete and in as tasty form as those to be found in the counting houses of large city concerns, this is no reason why decency and order, system and care, should not be exercised in these places. What this correspondent says of carelessness in the lumber yard can be supplemented by remarks of carelessness in the office. It is the little leaks that ruin the biggest business, and these little leaks come from slovenliness in method more perhaps than in any other way.

RED CEDAR SHINGLES.

A NOT unfrequent subject of comment with the trade is the British Columbia red cedar shingles. The matter comes before me in one shape or another constantly as I meet with lumbermen. Two months ago the views were published in these pages of an Ontario lumberman, who held with tenacity to the opinion that red cedar shingles, because kiln dried, would prove disappointing in Ontario. Mr. J. G. Scott, of the Pacific Coast Lumber Co., New Westminster, B. C., replied to these criticisms in last month's LUMBERMAN. I have had the privilege within the past week to meet Mr. Scott, who is on a visit to Ontario just now. He has unbounded faith in the red cedar shingle of the Pacific Coast and is ready to demonstrate that the nature of the wood is such that it will prove itself impervious to Ontario rains or sunshine. The wood is possessed of most endurable characteristics, illustrated in object lessons that no one can question. He was frank in saying that it is possible that by careless kiln drying these shingles may be injured, but when a proper kiln is used and the necessary care is taken, the kiln dried shingle will stand all that is claimed for it from either wind or weather. I noticed in the last number of the Puget Sound Lumberman, that the shingles of that region have been criticized because of defects in manufacture. But in no case can the shingle itself, when carefully manufactured, be fairly made chargeable with the imperfections that are sometimes placed on the slate against it. This is the claim of Mr. Scott and other manufacturers of the Coast, supported by a pretty thorough knowledge of the subject.

ELI.

THE CANADA LUMBERMAN'S NEW YEAR SUBSCRIBERS.

AS a tangible evidence of the growing appreciation of the CANADA LUMBERMAN by persons engaged in the lumbering and wood-working industries, we append the names and addresses of new subscribers received since the opening of the present year:—

Barrow Bay Lumber Co., Barrow Bay, Ont.
Louis Lahay, Kearney, Ont.
Bowen Smith, Cocaigne.
Richard Lockhardt, Riversdale, Ont.
H. Calcutt, Peterboro', Ont.
Bain Bros. Mfg. Co. Brantford, Ont.
Dominion Art Woodwork Mfg. Co., Toronto Junction.
Canadian Bank of Commerce, Collingwood, Ont.
Cook & Goetz, Dashwood, Ont.
John M. Beyers, Germania, Ont.

Blind River Lumber Co., Blind River, Ont.
N. Wenger & Bro., Ayton, Ont.
Jos. Williams, Goderich.
J. Taylor, Chatsworth, Ont.
Neill & Simpson, Lindsay.
S. Schryer, Ridgetown, Ont.
McCall & Mason, St. Williams, Ont.
John Anderson, Toronto.
James Walsh, Toronto.
W. H. Stubbs, Toronto.
Todhunter, Mitchell & Co., Toronto.
J. J. Gartshore, Toronto.
Wm. Lees, Fall Brook, Ont.
Mrs. K. L. Lowndes, Midland, Ont.
Jacob Lawrence & Sons, Watford, Ont.
Sauble Falls Lumber Co., Sauble Falls, Ont.
W. H. Johnston, Pefferlaw, Ont.
M. F. Beech & Co., Winchester, Ont.
W. J. Cummings, Spencerville, Ont.
The S. Hadley Lumber Co., Chatham, Ont.
Isaac Rutherford, Dobbington, Ont.
Bidwell Way, Hamilton, Ont.
J. D. McEachren, Galt, Ont.
D. O'Connor, Jr., Ottawa, Ont.
Robert Allan, Mississippi Station, Ont.
R. A. Stark, Owen Sound, Ont.
J. S. Pinch, Owen Sound, Ont.
V. E. Traversy & Co., Montreal, Que.
John Harrison, Owen Sound, Ont.
John Nicol, Nicolston, Ont.
Samuel Hotel, Clifford, Ont.
Daniel Fulsythe, Clarendon, Ont.
John Cooper & Son, Bloomfield, Ont.
M. Gillespie & Co., Alvington, Ont.
Davies & Dean, Richard's Landing, Ont.
Jas. McCartney, South River, Ont.
J. R. Vanfleet, Brantford, Ont.
D. P. Sicklesteel, McGregor, Ont.
J. R. Richardson, Walker's, Ont.
Knight Bros., Burk's Falls, Ont.
Weaver & Lewis, Hope Bay, Ont.
Thomas Ebbage, Acton, Ont.
I. T. Kerr, Iona Station, Ont.
Neibergall Stone & Lumber Co., Stapes, Ont.
Geo. Gordon, Sturgeon Falls, Ont.
J. D. Stewart, Matane, Que.
Estate of Ross Bros, Buckingham, Que.
Emile Dubé, Rivière Du Loup Station, Que.
W. E. Edwards & Co., Six Portages, Ont.
V. Gladiv, St. Francois du Lac, Que.
C. W. Taylor, Cookshire, Que.
C. H. Parker, Scotstown, Que.
I. D. Sowerby, Oak Bay Mills, Que.
Alex. Scott, Buckingham, Que.
Robertson & McCallum, Barachois de Mal Bay, Que.
E. H. Lemay, Montreal.
Dominion Leatherboard Co., Montreal, Que.
Cassidy, Bonner & Co., Montreal, Que.
W. H. Murray, St. John, N. B.
Jarvis Wilson, St. John, N. B.
W. H. Duffy, Hillsboro', N. B.
Thos. Power, Newcastle, N. B.
A. & D. Loggie, Church Point, N. B.
Finley & McDonald, Blackville, N. B.
Hugh McLean, Brigg's Corners, N. B.
Jos. A. Likely, St. John, N. B.
A. E. Alexander, Campbellton, N. B.
Andre Cushing & Co., St. John, N. B.
A. & W. Ogden, Sackville, N. B.
Michael Welsh, Glassville, N. B.
Clarke Bros., Bear River, N. S.
Wm. Chisholm, Halifax.
John Stanford, Chester, Ont.
N. J. Raymond, Miteghan Station, N. S.
Alfred Dickie, Lower Stewiacke, N. S.
John Kerr, Franklin, Man.
Himes, Penfield & Co., Buffalo, N. Y.
Frame & Verge, 11 Centre St., Boston, Mass.
Davis & Holmes Co., Marinette, Wis.
Millard Lumber Co., New York, N. Y.
Holcomb & Caskey, New York, N. Y.
Timothy Cronwell, Boston.
New York & Canada Lumber Co., New York, N. Y.
C. B. Nichols, Albany, N. Y.
Ollie & McKeen, North Tonawanda, N. Y.
Moses Prescott, Eastport, Me.
Smith, Craig & Co., Albany, N. Y.
Taylor & Felin, Philadelphia, Pa.
Geo. C. Power, Chicago, Ill.
Second Vice-President, Illinois Central R. R., Chicago, Ill.
Penberthy Injector Co., Detroit, Mich.
M. J. Bourke, Ashland, Wis.
Poole & Hotchkiss, Buffalo, N. Y.
David Ross, Whitemouth, Man.

If any reader of this number of the LUMBERMAN is not a subscriber, he is invited to forthwith join the procession of those who know a good thing when they see it, and, like them, show his appreciation in a tangible way. To persons having anything to sell to owners of saw and planing mills, or lumber merchants, the advertisement pages of this journal afford the most direct and economical medium through which to reach these classes in every part of the Dominion.

BRITISH COLUMBIA LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A PIECE of good news to lumbermen here is the guarantee of the United States Senate of an issue of \$70,000,000 bonds for the building of the Nicaragua Canal. As I have intimated in this correspondence at different times the building of this canal, hereby shortening our export route to Great Britain nearly one half, is a most important undertaking for the lumber trade.

The Brunette Saw Mills Co. are in receipt of a car load of machinery for their mill here.

The firm of George Cassidy & Co., Ltd., Vancouver, capital stock, \$200,000, has been incorporated with Edwin B. Morgan, George Cassidy and George J. Wilson as trustees.

A warning to those who are given to stealing logs is found in the case of A. Benoist, who has been sentenced to six months with hard labor for stealing logs from the Brunette Saw Mills Co.

The customs return of British Columbia show the export of the forest of the month of January to be as follows: Victoria \$2,502; Vancouver, \$20,855; New Westminster \$10,164, making a total of \$33,521.

At the annual meeting of the shareholders of the Brunette Saw mills Co., the following were elected officers for the current year. President, J. Wilson; sec.-treas., H. L. De Beck; directors, Messrs. J. B. Kennedy, H. Macdonald and J. A. Lewis.

General lumber business is not any too brisk, and yet there are some signs of improvement. Recent advices from Australia show greater activity in trade and a general brightening up on the business horizon. For several years past trade with the Antipodes has been of a most unsatisfactory character, and no one can hope better than ourselves that a change is now likely to take place.

The provincial boards of trade are urging the local government to grant a bonus of \$5 to \$6 a ton on all wooden ships over 400 tons built in the province. It is stated that the Puget Sound business was mostly done by coasting schooners made on the Sound, and that lumber could be carried cheaper per ton than in foreign iron built boats. It was less costly to build the wooden boats and they hold more per ton. The suggestion is favorably received in shipping circles.

NEW WESTMINSTER, B.C., Feb. 18, 95.

NEW BRUNSWICK LETTER.

[Regular correspondence CANADA LUMBERMAN.]

VERY little lumber news is to be picked up just now. As seems to have been the case almost everywhere else, the blizzard has paid us a visit here and some very severe weather has been experienced. Taken altogether the weather this season has been favorable to lumbermen, but this last installment of storm will impede matters somewhat.

A boom is being given to lumber in the section of the province through which runs the new Bangor & Aroostock railway.

James Hamilton proposes to erect a new saw mill on Strait shore. It will be one of the largest mills on the river, and will be in operation about the 1st of June.

An unfortunate accident occurred at McMullin & Winn's saw mill, Truro, N. S., Feb. 13th, when an employee, Edward Brenton, was thrown across a circular saw and received injuries from which he died in half an hour.

The local government look forward to increased receipts from stumpage on crown lands this season, because of expected increased operations in the woods. This view was expressed by Provincial Secretary Mitchell in his speech in the legislature a week ago. Last year the receipts from stumpage were \$65,401, and from renewals, \$29,400; in 1893 the amount was \$105,000 from stumpage and \$18,000 from renewals.

The failure of Scammell Bros., of New York, has some interest here. The firm had a branch office in St. John, and owned a large fleet of wooden vessels. Noting the financial troubles of this concern and also the failure recently of W. J. Davidson, a large shipper, together with other circumstances, the evidence comes home to us that the outlook for shippers in the province is anything but bright.

Mr. E. B. Knight, of Knight Bros., Popcum, reports a good outlook for trade in lumber this year. The demand of his firm already is much ahead of a year ago, and the orders on hand now will require 60 days to fill. A number of buildings are going up in Chilliwack and Agassiz and four large bridges are being constructed in Chilliwack, the lumber for which is being supplied by Knight Bros.

Word has been received that the steamer Trinidad has just arrived at New York, bringing with her the rescued crew of the Schooner Doine, which left St. John with a load of lumber Jan. 10th. She encountered heavy gales, and while at anchor

off Cape Cod on the night of Feb. 6th both anchor chains parted and they were blown off shore. The vessel was at the mercy of the winds until the Trinidad fell in with her.

ST. JOHN, N. B., Feb. 20, 95.

MICHIGAN LETTER.

[Regular correspondence CANADA LUMBERMAN.]

A SURVEY of the lumber business at any of the larger lumber points of the state do not show any great amount of activity. It is believed that business will open out fairly well in the spring, but what with unsettled monetary conditions and remarkably severe winter weather and storms, so far as the present is concerned business is pretty much at a standstill.

The Alpena Spool Works manufactured and shipped last year 21,000,000 spools and 4,000,000 pail handles.

It is thought that a larger quantity of logs will be towed from Canada this year than was the case last season.

Indications point to increased activity in railroad building. As a result at Manistee, for example, we hear of mills that have all they can handle in the way of car sill bills.

Hon. George H. Williams, one of the oldest lumbermen of the Saginaw district, died on Feb. 12th. He was the oldest son of Gardiner D. Williams, who erected the first saw mill on the Saginaw river.

The Diamond Match Co., of Bay City, will likely get out 100,000,000 feet this year. Considerable of their limits suffered through the fires of the past summer, and this fact is forcing them to make a larger cut probably than usual.

Henry Moiles who has been operating a mill at Remers, Mecosta county, is putting in 1,500,000 feet of logs. Moiles, it will be remembered, has been an operator to considerable extent in the Georgian Bay district. This season the mill that he had operated at St. John Island will be under the control of Henry Colclough, and will make a considerable cut.

William Peter, of Bay City, who will operate a saw mill in Canada the coming season, will, it is believed, cut most of his logs there and ship his lumber direct to Toledo. Mr. Peter has had a good deal of trouble in the past with dock hands and he will repay them this time by taking away business that perhaps otherwise would have been done in Bay City.

The Tittabawassee Boom Co. are gradually, and very certainly, dropping away from their old time supremacy as lumber forwarders. A year ago the company sold out its interests to a new concern, and now this concern has gone out of existence, selling its plant to Edwin Andrew, who will attend to rafting all the logs which come through that stream next season. The company has rafted more logs than any company which ever had an existence on earth, but its days of usefulness are about ended.

SAGINAW, MICH., Feb. 23, 1895.

THE FORESTS OF SIBERIA.

FROM an important work on the forests of Russia, recently translated into English, the following interesting facts are reproduced.

The composition of the Siberian Forest is interesting, as bearing on the future timber supply of the world, and as showing for certain classes of timber, like oak, ash and the best building material, Central Asia, if it is ever to become an important seat of population, will have to depend upon the islands of Saghalin and Yezo, and perhaps, too, upon British Columbia and Western Washington and Oregon.

The vast forest resources of Siberia are unequally distributed over its enormous territory. The great forests are situated in the north, while the south is nearly treeless. The whole region may be divided into three zones, each distinguished by characteristic features and situated in a direction from east to west.

The zone of what is here called "northern tall-stemmed woodlands," stretches uninterruptedly from the Ural Mountains to the eastern shores of Kamchatka; on the north it borders on the tundras, the limit of the growth of the larger vegetation, and on the south it extends to the region suitable for agriculture. It is interrupted by large masses of impassable bogs, and is composed of pines, larches and firs. The deciduous trees are few and insignificant, although willows and aspens border the swamps and birches occur in places. This northern forest occupies all that part of Siberia where agriculture is impossible from the deficient quantity of heat during the months of vegetable activity.

The fixed population is insignificant, and the raising

of grain sporadic in small spots on its southern border. There are localities, we are told, in this great forest belt, "where for tens and hundreds of versts in every direction stand clean plantations of pine, which, with their interlaced summits, hide the sky. The absolutely naked trunks, rising perfectly straight to an enormous height, and so monotonous that a man who once chances into such a part of the Siberian tiaga, or even a wild beast, cannot find his way out again.

Access to such places is difficult and the timber contained in them is so far without value, but with the growth of the population, the improvement of roads and the destruction of the forests in the inhabited parts, means will be found to make use of the now remote forest resources.

The scourge of the forests of this zone at the present time is only the forest fires, not infrequently devastating hundreds of versts. The burned timber is, however, rapidly replaced by young underwood growing up under the influence of natural selection.

The zone of birch forest covers the whole of the low-lying or so-called steppe portion of Siberia. This zone is occupied by a settled population, and practically coincides with the cultivated or agricultural part of Siberia. The principal and only valuable tree in this region is the birch, with a slight admixture of aspens and willows along the banks of rivers. Coniferous trees are entirely absent. The birch thrives on a chernozion soil, and therefore this zone is the most populated and particularly characteristic of Western Siberia, between the middle course of the Tobol and the upper waters of the Ob. This region embraces the so called steppes of Ishimsk, Barabinsk and Kurudzinsk.

Although it is usual to understand by the word steppe an absolutely treeless space, in Siberia, with the exception of the whole Kirghiz steppe region, which produces over large areas shrubs used as fuel in the mining works, all the remaining plains are covered more or less thickly with birch patches or spinnies, giving the locality a very peculiar appearance. These birch copses, mingling, when viewed at a distance, produce the effect of an unbroken forest. Traversing hundreds and thousands of versts by the Western Siberian tract, the traveller sees everywhere on the horizon as it were, uninterrupted forests. The distribution of birch patches over the steppe surface may for the most part be called ideal, constituting precisely that combination of wood, arable land and pasture which is everywhere and at all times desirable in the interests of agriculture. Thanks alone to this happy disposition of the forests in this part of Siberia, notwithstanding the not wholly favorable atmospheric conditions and the mediocre soil, crops and grass thrive well.

The forests of the south are confined to the mountain slopes of the ranges which extend in an almost uninterrupted chain, under various names, from one end of Siberia to the other. In this forest conifers prevail; they yield timber of excellent quality, though often difficult to obtain, being remote from centers of habitation and usually confined to steep inaccessible slopes. These mountain forests, guarding as they do the sources of swift flowing streams, are extremely important in the economies of the country.

During the last thirty years the Government of Russia has been paying some attention to the care of the forests of western Siberia. In 1863 in the Governments of Tomsk and Tobolsk, temporary regulations were introduced establishing a tax per stump for the use of wood. Preservation of the forest was imposed upon the rural population, who, in return were allowed to make a free use for their own needs, but not for sale.

In 1869 a law was promulgated granting to a corporation the unlimited right of making use of Siberian timber for industrial purposes. Since 1884 the forests of Western Siberia have been placed upon the same footing as that by which the crown forests of European Russia are managed, that is, by a paid forest guard.

In Eastern Siberia the inhabitants are still allowed free use of the forests for their needs, and there is as yet no forest control. In the Amur country, where the forests are believed to be extraordinarily varied and valuable, steps have recently been taken toward ascertaining the extent of the crown forests and for bringing them under State control.

THE NEWS.

—Brush & McLean have purchased property at Colchester South, Ont., and will erect a saw mill.

—The Gillies Bros. Co. have a gang of millwrights at work thoroughly refitting their mills at Braeside.

—The Nichergall Stave & Lumber Co., of Staples, Ont., has been incorporated, with a capital stock of \$45,000.

—The Richmond Industrial Co., Richmond, Que., are applying for incorporation, with a capital stock of \$100,000, to manufacture woodenware, etc.

—Jos. Jacob and J. B. Tremblay have formed a partnership in Montreal as sash and door manufacturers. The style will be J. B. Tremblay & Cie.

—The saw mill of F. A. James at Hobart, Ont., has recently been running day and night. Two self-acting shingle machines are to be added to the mill.

—Geo. H. Whitehead and F. D. Whitehead have been registered proprietors of the lumber firm of G. H. & F. D. Whitehead, Waterloo, Que.

—An extension is being built to J. R. Booth's mill at the Chaudiere Falls which will make room for a couple more large saws and materially increase the output next season.

—Currie & Craig, of Flower Station, recently cut a tree for the Rathbun Company, which made six logs, the measurement of which were 3,297 feet. In the butt log there were 840 feet.

—J. R. Booth, of Ottawa, proposes cutting his lath material longer than the four feet, and is putting in a machine to trim off both ends of the lath after it has been bunched up to exactly the right length.

—The A. R. Williams Machinery Co., of Toronto, are applying for incorporation, with a capital stock of \$300,000, to manufacture and deal in engines, boilers, motors, and all kinds of machinery and supplies.

—Gilmour & Hewson, of Hull, Que., propose enlarging their present boiler house and adding two new flue boilers. They are also putting up an additional smoke-stack to facilitate burning refuse and saw-dust.

—The stave mill of H. C. Rees, at South Woodslee, Ont., which was burned a fortnight ago, is to be rebuilt at once, and will be fitted with the latest improved machinery. The boilers were only slightly injured by the fire, but the engines will have to be rebuilt.

—Thos. Conlan, the well-known Thorold lumberman, recently returned from his timber limits on the north shore of Manitoulin Island. He states that this season's snowfall is the smallest for the past six or seven years, although there is sufficient depth for teaming through the woods.

—The Liverpool Timber News, of Jan. 26th, says: Mr. Isaac H. Mathers, of Halifax, and Mr. George McKean, of St. John, N. B., are now in England visiting timber importers. They were both shippers, previously, to Messrs. James Smith & Co., Liverpool, who acted as their agents.

—The Fredericton, N. B., Boom Co. will, it is said, ask power from the provincial legislature to boom from the foot of Omocto Island to the eastern shore or the St. Jehn river, and will transfer their operations to that point. The new works will necessitate an expenditure of about \$70,000.

—Robert Gault, superintendent of the Rathbun Company's operations in the Algoma district, and Mr. S. C. D. Baker, his secretary, have established their headquarters at the Manitou House, Manitowaning, Manitoulin Island. They have already purchased a vast quantity of railway ties for the Company.

—Argument was recently heard by Mr. Justice Street in a suit over the estate of the late Robert Charles Smith, sr., lumberman, of Port Hope, upon a question as to whether R. C. Smith, jr., Alice Underwood and Charlotte Macbeth, children of the deceased, rank on the estate to the exclusion of five children of a deceased daughter. The estate is valued at \$250,000.

—C Beck, of Penetanguishene, Ont., has made arrangements with the Waterous Co., of Brantford, for the supplying of a complete band saw mill, to be erected near Savanne, on the C. P. R., where he, in connection with the Hogan Bros. of Wyevale, and Dr. Spohn, under the name of the Savanne Lumber Co., contemplates extensive lumbering operations. He has also purchased an additional band mill for the New Keene mill and also intends putting a new gang in the Penetang mill.

—Wm. Evans, of Deseronto, has received the official appointment as inspector of hulls for the Toronto district, and has commenced his duties. Mr. Evans was born in Kingston in 1849, and first began work as assistant to the clerk of the Edward Berry Shipbuilding Company at Portsmouth, and after a short time commenced his apprenticeship under Mr. Wm. Yeomans,

shipbuilder, working at the building of all the ocean ships constructed by him. There were 32 applicants for the position to which he has been appointed.

—The Ontario and Western Lumber Company, which controls and operates a big lumbering industry on the Lake of the Woods, with mills at Rat Portage, Keewatin and Norman, has decided to branch out in a new line of manufacture. The company is putting in machinery to equip a first-class box factory on a large scale, with the object of shipping boxes and packing cases. The factory will have all modern machinery, including stamping and printing presses for taking impressions on wood. Heretofore large quantities of box material have been brought in from the East or the United States to supply Winnipeg factories. This will now be unnecessary, as a supply will hereafter be obtainable close at hand, from a home industry.

CASUALTIES.

—While working for the St. Anthony Lumber Co., of Long Lake, John Foley, of Stittsville, Ont., was killed by the falling of a tree.

—Richard Pier, an employee of Palmer's heading mill, at Alvinston, Ont., had his arm caught between cogwheels recently and badly injured.

—William Kerney, logger, was killed near Vancouver, B. C., recently. A tree fell on him inflicting terrible injuries, from which he died.

—Samuel Fripp, of Wellington, Ont., was killed recently while cutting down a tree by the falling of a dead branch. He was struck on the head and died two hours afterwards.

—An employee in the planing mill of Messrs. Moffat & Co., Carleton Place, named Peter Miller, got entangled in the machinery and had his leg broken and his ankle badly crushed.

—Moise Dubay died at Sudbury, Ont., on the 5th ultimo, from injuries received at the hands of certain lumbermen at Gaudet's Camp, near Worthington. He was struck with heavy sticks of wood.

REMOVAL OF BOILER SCALES.

THE great bulk of the solid matter deposited from the feed water, remarks the Locomotive, may be removed by frequent and judicious blowing. It cannot all be removed in this manner, however, for where the plates are hot more or less of it is sure to bake on, forming the hard, stony layer known as "scale."

The commonest components of scale are carbonate of lime (limestone) and sulphate of lime (gypsum). Carbonate of lime seldom forms a stony scale. It may collect in large masses and do serious injury to the boiler, but the deposits which it forms are usually lighter and more porous than the corresponding deposits of the sulphate of lime.

Most substances are more soluble in hot water than in cold; but carbonate of lime is a notable exception to this rule, for, although it is somewhat soluble in cold water, in boiling water it is almost absolutely insoluble. It follows from this fact that when feed water is pumped into a boiler, the carbonate of lime it contains is precipitated in the form of small particles as soon as the temperature of the water reaches the neighborhood of 212 degrees. These particles are whirled about for a considerable time in the general circulation, and if the circulation is good they do not usually settle until the draft of the steam is stopped for some reason—as for instance, in shutting down for the night, or in banking the fires for the noon hour.

The best time to remove this sediment by blowing is, therefore, just before starting up at one o'clock, or after the boiler has stood idle for an hour or so at night, or just before beginning work in the morning; for at these times the carbonate deposit has settled into a kind of mud at the bottom of the boiler.

Sulphate of lime differs from the carbonate in being more soluble in hot water than in cold; and it is, therefore, not deposited in the same way. The sulphate deposit is formed at those points where the evaporation (and consequence concentration of the solution) is most rapid, that is, in contact with the shell, the tubes and the back head. Being deposited practically in contact with the iron, it forms a hard adherent coating, which often resembles natural stone so closely that nobody but a skilled mineralogist could tell the difference between them. The best way to treat water containing sulphate of lime is to convert the sulphate into carbonate, and remove the carbonate thus formed by means of the blow-

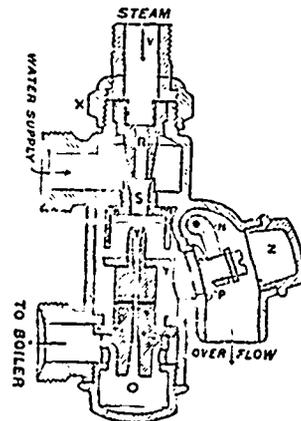
off, as already described. This can be done without injury to the boiler by the use of soda ash, which is a crude carbonate of soda. The chemical action that takes place may be briefly described thus: Carbonate of soda and sulphate of lime act upon each other so as to produce sulphate of soda and carbonate of lime. The sulphate of soda thus produced is what is known as Glauber's salts, and is very soluble in water, and passes away very readily through the blow-off.

THE PENBERTHY INJECTOR.

WE illustrate herewith an injector which has been before the steam using public of the United States and Canada for several years, but which has not previous to this time been brought especially to the attention of the lumbering trade in this section.



The "Penberthy" automatic injector is marked by simplicity of construction, it having only three jets as will be seen by referring to the sectional cut herewith. The entire wearing parts are easily accessible, the delivery jet which most frequently needs cleaning in every injector being removed by simply unscrewing the plug at the bottom of the machine, and the jet which rests in



SECTIONAL VIEW.

this plug will follow it out. This injector is claimed to have a wider range of operation than any other automatic injector manufactured, starting on low steam at from 22 to 25 lbs. pressure, and working from that point to 145 to 150 lbs. steam pressure, being automatic and restarting at any and all pressures between the points named. When taking water from a lift, it is operated by opening valve in steam pipe and then opening valve in suction pipe with which the water supply can be regulated to the proper amount required for the steam pressure earned, after which it is only necessary to close and open the steam valve to stop and start the machine, and if from any cause, such as a sudden jar of the pipe, the feed to the injector is broken, it will at once restart automatically without attention from the engineer.

This injector has been adopted by many of the large builders of engines and boilers throughout United States and Canada, and is guaranteed by the manufacturers to be superior to all other makes. They have recently issued a catalogue of these popular machines, which they will send to any mill owner or engineer who will write them and mention this paper. The injector is manufactured by the Penberthy Injector Co. of Detroit, Mich., their Canada trade being supplied from a branch factory, located at Windsor, Ont. In writing for a catalogue or information address the office at Detroit.

WESTERN RETAIL LUMBERMEN'S ASSOCIATION.

(Special correspondence CANADA LUMBERMAN.)

THE annual meeting of the Western Retail Lumbermen's Association was held in the MacIntyre Block, Winnipeg, on Wednesday, 13th inst., and in the absence of the President, Mr. J. L. Campbell, Vice-President, occupied the chair, and delivered the following address:

Gentlemen and Fellow Members of the Western Retail Lumbermen's Association:—

It is my esteemed privilege to have the pleasure of welcoming your presence in attendance at this our fourth annual meeting.

I am glad to report to you that the affairs of this Association have received close attention at the hands of your officers, and while there may not have been so many complaints acted upon this year as in the last, there were some very exceptional difficulties to dispose of.

The season's business, as you no doubt are aware, was one of restriction and caution on the part of the dealers, particularly so in the rural districts; and the wisdom of this has been apparent in the fact that owing to the low prices obtainable by the farmers for their products—especially wheat—the great staple of the country, thereby seriously crippling them in making payments. I am unaware of any failures in business during the year of any member strictly in the lumber trade. This, I think, speaks in high commendation of the action taken.

The Committee appointed at the last annual meeting, re railway freight, lost no time in calling upon the C. P. R.'s authorities, memorializing them for a reduction of the excessive lumber freight tariff, in order that lumber might be sold to the consumer at a less price. In this, we are glad to say that the manufacturers to the east of us followed up the interview had with the railway authorities, persistently urging upon them the necessity and very great importance of making a substantial reduction in their charges, and as you know, after some months' deliberation a reduction was made, and the manufacturers were able to announce to you a material reduction in the cost of lumber from the east. While this reduction may not have been as much as you were looking for, I think it is a matter that I may well congratulate you upon.

I may mention that your Board of Directors had taken into consideration the question of organizing a Mutual Fire Insurance Company in connection with this Association, but having observed the disaster that had overtaken the Merchants' Mutual Company, although considering the scheme with much favor, it was decided to leave the matter in abeyance. I notice that the North Western Lumbermen's Association have had much success with their insurance branch, having done over a million dollars of business in less than a year, and that the sister lumber associations of the States appear to be fast following in the wake of the North Western Lumbermen's Association in organizing lumber insurance companies in connection with the lumber associations.

A bill to amend the Lien Law was kindly taken in charge by our fellow dealer, Mr. Burrows, M.P.P., and after getting the first reading of it, upon canvassing the members of the Legislature, he found that it could not be carried through, and it was thought prudent for him to withdraw it until this session, when it is probable the chances of its becoming law will be much improved, should you still desire it.

It is with sorrow that I have to inform you that our Association has sustained a severe loss in the death of one of its Directors. I refer to the late Peter Atkin, of Morden. Mr. Atkin was a man of great value to the Association, not only for the unsparing interest he bestowed upon it, but for his wisdom as a counsellor in deliberating upon the matters coming before our Board. He was also highly esteemed for his personal qualities by all whose privilege it was to become acquainted with him.

As the Secretary will have some statistics to give you and some statements to make, I will no longer take up your time, only to thank you for the high honor you did me in electing me Vice-President for the second time. And I desire to thank my fellow directors for their good attention to the Association's work at all times, and to

say to them that it has been a work of pleasure and satisfaction to me to have been associated with them on the Board.

The Chairman called upon the Secretary to read the minutes of the last annual meeting, and upon the same being confirmed, the Secretary proceeded to make his annual statements in the following address:—

SECRETARY'S REPORT.

I too, along with the Vice-President, desire to state that it affords me much pleasure to have the privilege of meeting you here on this occasion.

The Financial Statement to 31st Dec., 1894, a copy of which was mailed to each member early in January, shows a surplus of \$1063.34, with outstanding dues amounting to \$320.

During the last year I have to report having dropped from the membership list, 19 active and 3 honorary members, for the following reasons: 14 having quit the lumber business, 2 removed by death, 1 having changed his place of business, and 2 for refusal to pay annual dues. The honorary members removed were for the following reasons: One by request to be stricken from the list and refusal to pay dues, one for neglecting to pay dues and one for violation of the by-laws of the Association. We have added to the list 15 new names, 9 active and 6 honorary. Our membership now stands with 130 active and 23 honorary members on the list. We have had two meetings of the Directors and three meetings of the Executive Committee.

During the year four complaints were made and acted upon, and while some further grievances were reported to me, the complainants declining to comply with clause 16 of the By-laws, no investigation was made.

Owing to a change in the tariff of the Dominion Government in the early spring, permitting the importation of American lumber free of duty, we experienced a disturbing effect upon some of our members at points where American lumber was brought in and at frontier points. In order to meet the exigencies of the cases affected thereby, we deemed it prudent to allow open price list thereat, so as to enable the dealers interfered with to hold their trade. This no doubt has been to some extent injurious to the surrounding districts therefrom, and perhaps such dealers should have further consideration in this matter. I have no doubt that upon the revival of the lumber business in the States to what it was up to the last couple of years, and the lowering of the price of Canadian lumber that has already taken place, that the American lumber will not long continue to be a competing factor in the trade, and that the present position of business at such points will not continue for any lengthened time. I ask you to bear with me should I be a little tedious in making some remarks, which may be pertinent to the welfare of the Association at this time.

I have observed, with regret, a restive disposition on the part of some members, for the reason, as has already been stated to me in some instances, that they failed to see that any good was derivable to them from being members of the Association, simply because a direct return was not received in lieu of the annual fee paid; while some others have said to me that it was no protection to them, mentioning some exceptional circumstances that had arisen, and were interfering with their business, which was plainly beyond and outside of the Association, and which any reasonable person should know that the Association could not deal with.

In regard to such statements, I make answer that I understand the purposes and objects of the Association to be for the mutual benefit of the retail dealers, in directing the wholesale business into the channel of selling exclusively to the established retail dealers in the ordinary business of the trade, and as well to limit the number of dealers in consistency with the amount of business to be done and to maintain fair and reasonable profit on business done. If I consider aright the aims and objects of the Association, I have no hesitation in affirming that it has brought about much that was sought for in its organization, if not to the full extent. Unquestionably there have been many unfaithful members in the Association, and probably there will continue to be some who will evade the by-laws and be irritating. While this is unfortunate, and delinquents may for some time

succeed in undermining and doing unfair things, and it may also be very difficult to get the necessary proof in some cases to discipline them, yet on the whole, should the members in the main implicitly observe the rules and by-laws of the Association, I think that it has been shown that many of the delinquents can be brought, in an unmistakable manner, to feel the error of their ways.

I think the Association has had a career of much success, and the retail dealers should be satisfied with its usefulness and stand nobly by it. The Association has been singularly fortunate in receiving true and sympathetic support from the honorary members, thereby adding strength and advantage to it.

Very different is the experience of our sister associations in the States. There they are confronted by many of the manufacturers, wholesalers, middlemen and scalpers, ready to sell to consumers direct on all opportunities; but in spite of such difficulties, the present is an era in lumber associations there—from Massachusetts in the east to the several southern and western states—and through energy and live interest by the members, they are well maintained. In the same way it behooves you all to enlist your good services and energetic influence on behalf of this Association, so as to keep it up to what it has been and make it capable of extending and advancing your business interests. Some dissatisfaction has been evinced in the requirements of a member changing his yard from one town to another, to pay membership fees and dues. Also I have been asked what constitutes a member, as to the quantity of stock in the yard. I ask your consideration of these matters.

AN ELOQUENT SPEECH.

After the reading of the Secretary's report, the Vice-President spoke eloquently and enthusiastically on Association matters. He said that during the past year the Directors had given very careful attention to the various subjects brought before them. Doubtless some were not always satisfied with the decisions arrived at; of course every one thought his side of the question the right one; but it should always be borne in mind that there were two sides to every question, and the board of Directors had always tried to get the fullest information from all sides and give a conscientious decision. If they have erred in any particulars it was because the proper evidence was not forthcoming. He here paid a tribute to the excellent services rendered by the Secretary-Treasurer of the Association, Mr. I. Cockburn. He always found him to be giving the most careful attention to all matters pertaining to the welfare of the Association, and believed that the success so far attained was largely due to his unremitting labors. He proceeded to show that the members of the Association had every reason to be proud of what it had accomplished. In the first place, it was unique among the lumber associations on the continent, inasmuch as no other approached it in the completeness of its character and operations. With scarcely an exception it included every dealer and manufacturer in the territory covered, and the principle recognized, of buying from and selling only to members of the Association, had proved of immense advantage to the members.

By the principle of preventing undue multiplicity of yards at a single point, each dealer was assured of his rightful amount of trade and fair profits. By this elimination of illegitimate modes of business, the standing of every man in the trade was strengthened, so that, while during the first year failures had occurred in almost every form of mercantile life, not a single failure had occurred among active members of the Association, a state of affairs, of course, gratifying to the wholesale dealers. It might be said that this success has been attained at the expense of the public, but such is not the case. In no instance has the price of lumber been advanced, but on the contrary, from the nature of their business, wholesalers have been enabled to reduce their prices. Add to this the reductions consequent upon freight rate concessions, concessions which could not have possibly been obtained without the united force of our Association, and we have a good substantial reduction in price, of which the public have had the advantage. It might further be said that the members of the Association do not intend to put in their pants' pockets, any gains in this way, but will continue to give the pub-

lic the benefit as heretofore, being themselves satisfied with a fair profit.

This is an age of combinations; indeed it might be said that combinations are the mainspring of civilization of the latter part of this century, by the aid of which the greatest studies have been made. We find every trade profession and calling controlled by associations—some of them indeed recognized and solidified by acts of Parliament—but of all the associations west of the Great Lakes, there is none more roundly abused than ours, and none more innocent in its effects upon the public. This Association fears not at any time to undergo an investigation into its merits. It is true beyond a doubt that no class of mercantile trade is conducted on so small a scale or margin of profit, and no association guards so well the interests of the public. The speaker was satisfied that, as more became known of the objects of the association, the prejudice against it would disappear. He was pleased to see so good an attendance; a number of subjects would come up for discussion, and he hoped the results obtained would conduce to the continued benefit of the association.

The election of officers and directors for the ensuing year was gone on with, resulting as follows:—President, J. L. Campbell, Melita; Vice-President, Alex. Block, Winnipeg. Directors—D. N. McMillan, Morden; J. M. Taylor, Portage la Prairie; K. H. O'Hara, Brandon; J. B. Mather, Glenboro; T. A. Cuddy, Minnetosa; J. Dick, Winnipeg.

Mr. Taylor subsequently resigned, and J. M. Nelson, of Carberry, was appointed in his stead.

The balance of the session was taken up in discussing amendments to the by-laws, and some changes authorized to be made. The session throughout was considered most satisfactory.

WINNIPEG, MAN., FEB. 23, 1895.

ELECTRICITY AND ECONOMY.

THE nature of electrical generation and dynamo working is such that only sufficient amount of current required to do the work in is used, so its economy is at once obvious. In factories where the machinery is working intermittently, and liable to great fluctuation, the economy of driving by electricity is even more marked, as the electric current can be switched on or off with the greatest ease and rapidity, after which crossed belts and fast and loose pulleys appear a heavy and clumsy, not to say unscientific, method of utilizing power.—Manufacturers' Gazette.

PUBLICATIONS.

The annual statistical number of the Mississippi Valley Lumberman is one of the most complete special issues of a lumber journal that has come to our table in some years. Especial care has been exercised in the gathering of statistics of the lumber trades of the particular territory covered by the journal. These tables embrace hardwoods, as well as pine, a new venture with our contemporary, and one that is not common to the gatherer of lumber statistics. Outside of the special trade review features of the number, there are found in its pages several valuable articles on the saw-mill, wood-working machinery, and a history of Minneapolis as a lumber manufacturing point, all appropriately illustrated. Typographically the number is deserving of much praise.

From across the ocean comes to us a special American and Canadian edition of Timber a massive volume. The editor of this journal took a trip through Canada and the United States a year ago, and the evidences of his industry and observations are seen in this splendidly gotten up number. It contains an excellent history of the trades of these two countries. We congratulate our contemporary on the very thorough and accurate manner in which he has dealt with the Canadian trade of the several provinces. The number is profusely illustrated with portraits and illustrations of prominent lumbermen, saw mills, and lumbering scenes in the several provinces of the Dominion and elsewhere.

If a belt will not run a machine unless it is as tight as the strings of a bass viol, then it is time the pulleys were changed for broader-faced ones, and a wider belt put in place of the narrow one. A belt of the proper width to perform its work with ease can be run on by hand as easily as it can do the work required of it.



MENTION was made, I noticed, in discussing trade conditions in the WEEKLY LUMBERMAN a week ago, of the difficulty experienced in securing lumber, and especially hardwoods, of the size frequently called for by United States dealers. I was speaking to Mr. George Cormick, of Whitby, a few days ago on this point and he was telling me of an order he had received, which was going to give him some bother to fill, as our mill men were not accustomed to making up lumber of these sizes. The complaint comes, not alone from Mr. Cormick, but I have asked others on the point and a few days ago in the office of J. G. Cane & Co. I had a case cited to me of a similar kind. Lumbermen who undertake to do business for a particular locality must needs meet the requirements of that trade. It occurred to me that mill men would simply have to lay themselves out to cut wood to these particular sizes, for I judge that the cases are not exceptional and that where Mr. Cormick would get orders for certain kinds of wood of a certain size other dealers would be receiving like orders, which would mean that the mill men would find it pay to make up some quantity of wood of this character.

* * * *

Whether or not southern pine is going to cut a figure in the Canadian market that is worth any large amount of consideration, is, perhaps, a debatable question. This, I have to remark, that meeting with lumbermen almost daily, and those engaged in different branches of the business, I find that a good many, at least, are talking about this matter. I do not think that a systematic effort has been made to put any great quantity of southern wood into Ontario, though some movement is being made to find a market for it here. But it would not take long if a decision were arrived at to rush business in that direction. The trade are frequently in receipt of price lists from the south, and these are not thrown into the waste paper basket. They are being studied, some figuring done and comparisons made, and the lists are carefully filed for reference. I find this to be the case. Prices, as nearly as one can compare these with white pine, run somewhat closely parallel. And yet there are certain grades of the foreign article where the price is lower than white pine men would care to sell their stock for, and I should be sorry to see them get prices down that low. In conversation with a group of lumbermen I found one old-timer, who knows the trade for many years back and who still keeps on the road, who does not think that southern pine will make much headway in Ontario. He believed that the action of the lumber section of the Board of Trade, taken shortly after the recent great fire, was going to have a potent influence both in Toronto and throughout the province in deciding lumbermen against handling this wood. Certainly if the Underwriters' Association take the question up and make a distinction in rates between buildings where this resinuous wood is used in construction and others that hold to native woods, a blow will be struck at southern pine. The case occurs to me as one that in a measure is in its embryo. In the meantime the subject will bear investigation and the CANADA LUMBERMAN will be glad to gather the opinions of the trade on the question.

* * * *

As the months pass by since the placing of lumber on the free list between the United States and Canada, the full import of the measure is commencing to work itself out. Possibly Canadian lumbermen were rather much carried off with the idea that the removal of the duty on lumber was going to work all one way. On the other hand it is quite evident that United States lumbermen were unnecessarily terrified at the disaster they were sure the measure would wreck upon the lumber trades of their country. Free trade is free trade and it can

hardly be made the policy of any country without cutting the two ways. Under a protective tariff there is some opportunity of shutting out imports from a foreign country. Under free trade just as sure as the country enjoying that has the freedom that enables its people to push their products into those countries that reciprocate along the same lines, so contrariwise, they have taken down the bars and they may expect that certain products will come into their country from the outside. I am not going to follow this interesting economic phase of the question any further. Perhaps it will set readers thinking. I simply mention it to remark that this is proving the experience more and more of free lumber. British Columbia lumbermen are sending cargoes almost every week into San Francisco. Washington Territory lumbermen are getting their red cedar shingles not only into British Columbia, but their salesmen have been through Toronto and Ontario points within the past few weeks pushing business. Ontario white pine men are sending in manufactured lumber in increased quantities into the United States, because of the removal of the duties. As I have noted elsewhere, reciprocity comes into play here by the southern pine men sending their supplies, not only of rough lumber but of manufactured stocks, into Ontario, and talking lumber matters the other day with Mr. Thomas Meaney, manager of the Toronto branch of Robert Thomson & Co., I learned that this firm will, the coming season, bring in Duluth pine to Toronto, and place it on sale at their various branches. And remember that Robert Thomson & Co. are large mill owners themselves, interested in selling the product of their own mills. Does not this look like a very general mixing up of the lumber products of the two countries?

* * * *

Some one has said that history is teaching by example. I have no doubt but that all of us would save many expensive experiences if we would but study history a little more, and thereby learn that some of the schemes into which we enter with so much certainty of success, had at times past been tried by others and proven to be complete failures. I would not like to say that this line of argument could with perfect safety be applied to some observations on the lumber trade that I heard discussed a little while ago when in a lumberman's office in Toronto. I met there several lumbermen who had been long enough in the business to know something of its history and outcomes, and with these a gentleman who has been quite largely engaged in building and real estate in Toronto. The present condition of business was the all important subject of discussion, and the tendency was to take a pessimistic view of affairs. I wanted to point out to these lumbermen that the evidence seemed to show that we had turned the corner, and dull as 1894 had certainly been, things were going to improve in 1895. Sales would certainly be better, and prices that were stiff to-day were not likely to relax, and perhaps would increase some. Everybody did not agree with this prognostication of mine. Lumber will be lower during 1895, said one of the company, than it is at the present time. I reminded this person that mill men had seldom held lumber at a firmer price. The answer was that this was all very well. It was natural to expect that mill men would talk about stiff prices, and anyone in their position would be likely to do the same thing. "But," joined in another of the party, "those who can go back to the year 1876 saw just this kind of business existing. There was plenty of lumber in the country and you could not move mill men from their prices. What was the result? I have in my memory at the present time the case of one large concern, with offices in Toronto, who held a large stock of lumber, for which they would not take a cent less than \$13 a thousand. No shading from this price could tempt them to part with it. They held on with bulldog tenacity, but the time came when that same lot of lumber was sold for \$7 a thousand." I do not think that conditions as they exist to-day find a fair parallel in those of 1876, but on the principle that history teaches by example, and taking my friends view of the case as correct, there is, of course, something in his way of stating it. Our friend, the builder, thought lumber was a good deal like real estate in the city of Toronto. There was no better asset for anyone to hold, if he could hold it long enough.

CORRESPONDENCE

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

CARELESS METHODS OF LUMBERING.

To the Editor of the CANADA LUMBERMAN:

SIR,—Some excellent advice is contained in an article published in your February issue under the heading "Stacking Lumber," and I would heartily recommend our hardwood manufacturers to peruse it carefully and then sit down and figure up how much good hard cash they have lost on their last season's stock by failing to give this particular branch of their business proper attention. I have no hesitation in saying that there are few mill men who could not count up any lost dollars, directly attributable to careless piling or stacking.

The prevailing custom of putting up 12, 14, and 16 foot boards and planks in the same pile is bad, and is undoubtedly a source of great loss, for reasons which must be obvious to everyone who knows anything about lumber. I have seen soft and rock elm, piled in this way and 25% to 50% of the 14 and 16 foot length had to be thrown out, as common, on account of warped and twisted ends, which would otherwise have passed as 1st and 2nd. By piling each length separately this trouble would be overcome, and with no small gain to the manufacturer, as it will be seen that he loses by the other method not only the difference between the price of common and 1st and 2nd on what has been thrown out but is also at the expense of repiling it, which is a considerable item on a large stock of lumber.

"A penny saved is a penny gained"—and pennies are a panacea for hard times.

BOARD RULE.

FORESTRY A PRACTICAL QUESTION.

To the Editor of the CANADA LUMBERMAN:

SIR,—It is not an easy matter to awaken in the breast of the average lumberman an interest in the study of forestry. There are some notable exceptions, I am glad to say, as in the case of Hon. J. K. Ward, Mr. William Little and a few others. But the great mass of lumbermen are interested in cutting down the products of the forest, rather than giving any concern to filling up the immense gaps, they are making in this product every year. How seriously the question touches every thoughtful man is indicated by the attention that is being given to the subject of late in the leading magazines and reviews of the country. In a late number of Blackwood there was published an exhaustive article on this question, and the Century has been running a series of articles on the subject. The time has gone by when the matter can be laughed out of court. This policy has in the past been the usual stock rejoinder of those who would tell us that the country was so rich in forest products that no one need talk nonsense about the denuding of the forests. This was the story in Michigan until within the past few years. Now the most utilitarian of lumbermen are prepared to admit that that once great pine state is practically out of the running as a lumber state to-day; and that many believe what they say, they are making heavy investments in Canada, Wisconsin and Duluth, and from these places stocking their Michigan mills, which they can no longer stock from supplies at their doors.

Where reform, perhaps, should commence is with our own government. The disposition of the crown lands of the country is under their control. The Ontario government deserves much credit for setting aside certain timber lands for a forestry park, and the system of fire rangers adopted has commended itself to all who have studied this question. This, however, is only a method of preservation. What is needed is the adoption of a system of reforestation, so that future generations will be left in possession of some of the rich timber resources that to-day are the pride of the present generation. The local legislature is now in session and I doubt if members could spend their time to better advantage than to consider a measure modelled along the lines which are here suggested.

Dr. Dawson, of Montreal, in a lecture, recently, sounded a note of warning on this matter, which may

fitly be quoted here: "Our forests are no doubt in a critical state. We still have more timber than any other country, but for that very reason we need to be careful not to give away too much to those who are not in want of it, or to waste it at home. The time has come for planting and scientific forestry, and attention to these matters might enable us to supply the world for centuries and leave abundance for ourselves. Our little export of twenty-six millions of dollars worth might, with proper management, represent only the annual increase of our forests."

CANADIAN LUMBERMAN.

SPANISH RIVER, ONT., Feb. 20, 1895.

INJURY TO BOILERS BY GREASE.

IT has often been observed that small quantities of grease in combination with deposits lead to boiler accidents. This compound gets deposited on the plates, and the most violent water circulation is sometimes insufficient to remove it. The plates, in consequence, get overheated and accidents result. The introduction of grease inside the boiler should be avoided, especially where the water from the condenser is used for feeding the boiler, by the use of a sufficiently large feed-water filter. The Berlin Boiler Inspection Society had the following case brought under its notice: Two single-flued boilers, 4 feet 8 inches diameter, 23 feet long, flues 18 to 22 inches diameter, pressure 12 atmospheres, were used to generate steam for a 150 horse-power engine with surface condenser. The installation had only been at work since July, 1893. A considerable portion of the flue of the left boiler had collapsed. This could not be attributed to shortness of water. On examination it was found that nearly all over the boiler a fatty brown slime had been deposited, which, being placed on a red-hot iron, burst into flame. The feed-water pump got its water from a large open tank over which a small filter was placed. The condensed water was led to this filter in order to have the grease removed. Unfortunately, the arrangements were so bad that a considerable portion of the grease found its way into the boiler. A similar case was recorded by Mr. Abel at the last meeting of the Markisch Society for Testing and Inspecting Steam Boilers. Four boilers, the feed water of which was heated by the exhaust steam from a Westinghouse engine, after being in use about six weeks, were so damaged that one boiler had to be completely removed, the other three had to receive extensive repairs. An examination showed that the flues were covered with a deposit of fatty slime. An analysis of this showed that about 52 per cent. of it consisted of mineral oils and paraffine, and 27 per cent. of animal fat. It is strongly advised, therefore, that feed water shall always be filtered so as to remove any oils or grease.—Scientific American.

TRADE NOTES.

Messrs. Cassidy, Bonner & Co., of Montreal, have secured the contract order for the 18" double belt for Montreal Steam Laundry and about two thousand feet of other sizes, which has to be nearly all water-proof. They make a speciality of water-proof belting.

Mr. A. G. Sinclair, the late president of the New York Emery Co., has connected himself with the Tanite Co., of Stroudsburg, Pa., and solicits for that company the trade which in former times he controlled as salesman for the Ashland Mills, and later for the New York Emery Co., and the American Emery Mills. As Mr. Sinclair is one of the oldest salesman in the emery trade, and also a practical manufacturer of emery, he knows something as to the intrinsic quality of that article and also as to the needs of the trade. Having learned what Tanite Mills emery is by several years competition with it, he now offers it with confidence, and asks equal confidence from old customers and friends.

The peculiar properties of Tanite, which fit it for a base in emery wheel manufacture, have been applied by the Tanite Co., of Stroudsburg, Pa., U. S. A., to the production of solid emery whetstones. The result has been a great practical success, though the prejudice of the trade and the novelty of the article have conspired to make the demand irregular and scattering. That this state of the trade is not due to the quality of the artificial whetstone is evidenced by the fact that in quarters where it has once been introduced the demand is regular. The Tanite whetstone is adapted to the mill pick, the carpenter's and stone cutter's chisel, the bit of the moulding mill and the axe of the woodman.

VIEWS AND INTERVIEWS.

Liquid Fuel. From investigations made and published by Dr. C. O. Weber, it appears that in the use of liquid fuel

Russia is in advance of all other countries, but there the heavy petroleum residues, astatki, are used for boilers, railway engines and similar purposes astatki, or combustion, producing 11,000 cal., as against 8,000 cal. obtained from first-class steam coal. In this respect, therefore, 62 pounds of astatki are equal to 100 pounds of coal. By working side by side two boilers of the same type, firing the one with coal and the other with astatki, it is found that one pound of coal evaporates eight pounds of water, and one pound of astatki thirteen pounds of water; and in regard to the important point, the volume of air passing into the furnace and the quantity of water evaporated, it appears that for 1,000 cubic feet of air consumed, coal evaporated 1.5 and astatki 2 pounds of water; consequently, besides a smaller weight of fuel an item of considerable importance in the case of marine boilers, allowing their volume to be materially reduced without lessening their steam producing capacity.

Opinion varies as to who was the inventor of the circular saw. Noting certain claims in this particular, Mr. C. A. Dunham writes a cotemporary as follows: "Allow me to say that the circular saw was invented in America in about the year 1770, by a comb maker by the name of Hartshorn, who used a common hand saw to saw out the horn between the teeth, thus forming one of those old-fashion horn combs. Finally, thinking it a rather slow process, he took what used to be called a "Bung-town copper," filed it down thinner, drilled a hole through its center, then squared the whole and cut the teeth in its outer edge, placed it upon a mandrel true and permanent, then put it into his lathe, and with the flat horn laying upon a wooden rest he sawed out his combs. From the copper he shortly cut up his back saw and converted it into circular saws. This man Hartshorn lived and died in Mansfield, Connecticut. I have been well acquainted with his descendants. He also invented the screw and lip auger, also the bit, such as are used in the brace. He was asked why he did not put in his claim for compensation long afterward when we had a patent office. His reply was that if he had done anything that was a benefit to his fellow men they were welcome to it."

The Woods of Maderia.

Maderia possesses some valuable woods. Of native trees the till is the largest and handsomest. It has shining deep green leaves. The wood is brown, marked with dark veins, and susceptible of high polish. It is in demand for furniture, boxes, walking sticks and soveniers generally. Newly cut till has a disagreeable odor, and it can be used only when well seasoned. The vinhatico is a fine tree. The wood is red and much used for furniture. It is often called Maderia mahogany. The aderna grows to the height of sixty feet, and it is used for cast staves. The wood is white. Azevindo and pernado are closely allied trees and are species of holly. The wood is white and is used for inlaid work. They attain a height of fifteen to twenty feet. None of the foregoing trees are found elsewhere, except in the Canaries. The pao branco is a handsome tree, attaining a height of fifty feet. It has a hard, white wood, and is in much demand for keels of boats. It grows readily from the seed. It is not found elsewhere, except in the Canaries and Azories. The folhado is a fine tree, attaining a height of sixty feet. In summer it is full of white scented flowers. Its wood is tough and of light weight. It is of great interest to botanists, belonging to a genus of which all the species except this are American.

To test leather belting, says an exchange, cut a small piece of the belt and place it in vinegar. If the leather has been perfectly tanned and is therefore of good quality, it will remain immersed in vinegar for several months without any other change than becoming a little darker in color. If it is not well impregnated with tannin the fibers will promptly swell, and after a short time be converted into a gelatinous mass.

THE CAPABLE RESAWYER.

USUALLY, the man of capacity is the man at the head of affairs, when considered from the practical side strictly, says a writer in *The Wood Worker*. This may not always be evident upon a cursory view. Merit is oftentimes modest and retiring, and, among practical men, as well as among those in other callings, ability is often unassuming.

There is a pleasure and gratification which waits upon the successful mechanic, as he cuts away the rubbish surrounding a difficulty, which is more tuneful to the ear of the worker than any self-gratification which the boaster may gather from an elaborate discourse in honor of his own accomplishments. A skilful sawyer, if backed up by energy, is in evidence on every side in any mill where resawing is regularly done. For whatever purpose the lumber may subsequently be used, its fitness is largely determined by the quality of the sawing. Other operatives are, in an appreciable degree, affected by the skill with which the resawyer handles his work. If the lumber is uniform in thickness, the product may be finished up to standard excellence; but if it is irregular, no operator, no matter how expert, can turn out perfect work.

In any line of work there is a certain fitness and accuracy of action upon the part of the mechanic which proclaims ability to the initiated. Its essence is aptness and reasonableness. Its possessor, if a resawyer, has a keen insight into the entire round of active mechanics under his charge and has obtained such mastery over the forces at his command that their action is unerringly directed in the prescribed line.

Failure to accomplish the end in view should be carefully accounted for, and not dismissed as a piece of ill-luck, which it is hoped will not occur again. The source of the difficulty located and understood, will help to insure smooth sailing under the same conditions when they arise again.

At the risk of repeating a familiar tale, some of the methods of the fraternity are worthy of being recounted. An ounce of prevention being worth several pounds of cure, it is wise to take advantage of every precaution.

When a new saw is placed on the arbor, see that it is just a fit, neither tight nor loose, and that the mandrel collars are clean. The nut on the arbor should be an easy fit, so that it will seat itself squarely against the collar when tightened up. A mark on the collars, and the brand or other mark upon the saw, will enable the sawyer to always replace them in the same relative position; though apparently a small thing, it is of importance.

The saw being hung and carefully tested and trued up, by lining the collars with thin paper where required, until it runs true within one hundredth part of an inch, it is jointed off and made perfectly round.

The dressing of the teeth is next on the list, and is a subject to which attention may be sharply directed. Between the extremes, where circular saws have been broken by the ignoramus who started them up without either setting or filing the teeth, and who forthwith returned them to the maker with his condemnation of their quality, to the man possessed of more zeal than judgment, who, strong in the opinion that you cannot have too much of a good thing, sets the teeth more than twice the thickness of the saw plate and cripples the saw before it is used, there is a golden mean which is just right for the purpose, and all sawyers should determine its limits practically. In any case, the least amount of set which can be carried successfully is the best. This is equally true whether the consideration be smoothness of cut, saving of lumber, easing the labor of the saw, or lessening the power consumed in driving the saw.

If a spring set is employed, it should be placed at the point of the tooth only, and not extended down into the plate below the base of the tooth. The latter practice is the ruination of many saws. Swaging is seldom attempted on the teeth of resaws.

The proper filing or sharpening of the teeth is an easier subject to determine when the conditions of use are set, than it is to give a description of what could be considered a model. The lumber to be sawed and its condition have much to do with the dressing of the teeth; the gauge, number of teeth and condition of the saw also have a decided bearing. Last, but by no

means least, the machine and its peculiarities must be considered.

Speaking generally, the hook in the teeth may be taken tangent to a circle whose diameter is one-half that of the saw, and the bevel limited to enough to give a clearance to the inner corner of the tooth; this bevel may be divided between the front and back of the tooth. The depth of the tooth is determined by the gauge and number of teeth in the saw. It should be short for thin gauges. The gullets of the teeth should invariably be kept round by using a rat-tail file.

When the saw is in perfect running order, the machine comes in for attention. Thorough inspection of all its working parts is required, and any deviation from exact action carefully corrected. The feed-rolls, as usually constructed, wear more rapidly in the lower than in the upper journals, and do not have a uniform bearing upon the lumber; this point should be sharply looked after, as the correct lining up of the feed-rolls and their perfect action is an essential feature. The action of the reverse and stop motion of the feed-rolls is an important item. It needs to be positive and free from lost motion, as an instant's delay in reversing at a critical moment may work great damage.

In the majority of circular resawing machines the feed is not capable of variation, when set, except by changing a pulley or shifting a belt. A variable feed, controlled by a conveniently placed lever, is a positive advantage which is appreciated by all sawyers who have a thin saw to handle. When entering a hard shear knot or a shaky place in the lumber, a variable feed is a necessity. When not on the machine a makeshift is employed by using the stop motion, and, by alternately throwing the feed-rolls into and out of gear, jigging the board along a little at a time. This loses time and only meets the requirements in an imperfect manner. In other instances where the feed could be judiciously increased, it cannot be done, involving a further curtailment in the quantity of work. A disc friction feed meets the requirements in this direction, and may be found on some of the later-built machines. The guide pins are properly set just to clear the saw near the base of the teeth.

The spreaders are the subject of some debate amongst sawyers of experience. This arises principally because they cannot be conveniently adapted to the varying conditions which are presented in the different varieties and conditions of lumber brought to the saw. On some machines the side spreaders are adjustable toward and from the saw in a slight degree. If too large or too small, they must be taken off and replaced by others. A wider range of adjustment under control while the machine is in operation could be made very effective in some cases.

When resawing dry pine surfaced on two sides, six and eight-inch boards are sometimes fed into the machine one over the other; this doubling up saves considerable time.

There is danger of breaking the saw if short stuff is resawed, which leaves the rolls before the forward end passes the rear of the saw so that the taker-away can grasp the end of the board. As the board leaves the rolls it is liable to swing, throwing it across the front of the saw. A trough formed by setting up a board on each side of the saw, to hold the lumber in line, is sometimes employed.

For handling short blocks, six to twenty inches in length, two boards with a cleat along the bottom and at the back edge of each will do the trick. The short pieces are set between and all passed through the rolls at once, thus, in some instances, saving stock which would otherwise go into the kindling pile.

Skill in resawing is secured by practice and close attention; it requires good judgment and activity, a quick eye and a steady hand. A thorough knowledge of the machine, saw and lumber is essential. It requires a trained ear. It involves a knowledge of cause and effect and their relative value under varying conditions. It is best attained and retained by a sober man. Present attainments should only prepare the way for further improvement. It is within the reach of mill owners and sawyers to secure a handsome advance in the art of resawing.

Thinner-gauge saws may be used. More lumber can be sawed per hour. Smoother sawing can be done.

To accomplish these desirable results, attention should be directed to the following, among other points: By stimulating the improvement of resawing machines and only using those which are substantially built; by setting them up on heavy, independent foundations; by speeding up the saw; by gradually increasing the feed; by improving the dressing of the saw teeth; by using a steady, constant power, and, not least in value, is a well-proportioned and properly-made saw.

There are four elements in determining the proportions of a resaw practically: First, the skill and judgment of the saw manufacturer; next, the experience and ability of the sawyer; third, the style and perfection of the machine, including its setting up; fourth, the kind and condition of lumber which is to be sawed.

It is a reasonable conclusion, in view of the fact that the element of skill is taken into account in estimating the ability of the sawyer, that if he is a man of capacity he is in the line of advancement. Hence he is one who views with a lively interest anything which enters practically into his round of duties. There is profit in improvement, both for the mill owner and the sawyer. If the latter is able to rank with the most proficient in his line, he may expect to earn the highest wages prevailing in his department of labor. If he can excel and improve the quality and economy of the work, he may hope to better his condition.

Expert filing has accomplished some wonderful results, and it is probable that resawing will be developed to so high a standard that the lumber will invade the domain of dressed lumber for some purposes.

TIMBER MEASURING.

IN the *Contract Journal* an interesting discussion has been carried on concerning methods of measuring timber, from which we print the following. One writer says: "In this age of ready reckoners and calculating tables we are too prone to take for granted the correctness of a calculation without troubling ourselves to verify its accuracy. It is true the recognized engineering tables of the present are marvels of ingenuity, and evince long and patient study to arrive at correct conclusions. I would, however, with all due deference to our engineering experts, respectfully ask how they reconcile the system of measuring round timber by the quarter-girth process with their theory of arriving at the square of the diameter of a circle? We are told that the square of the diameter of a circle $\times 7854$ will give us the area, and that the diameter $\times 3.1416 =$ the circumference. Now, suppose we take a log of timber 40 ft. long with an even diameter of 2 ft. To find the area, we multiply the square of the diameter—viz., 4 ft. $\times 7854$ —which gives us an area of 31416 ft. This multiplied by the length (40 ft.) = 125664 cube feet. Next, take the same log and find the circumference; thus 2 ft. $\times 3.1416 = 6.2832$, then divide by 4 to get the side of the square, according to the quarter-girth system; this will leave 15708. Convert into cubic feet: 40 ft. $\times 15708 = 628320$, being a difference of nearly 27 cubic feet in favour of the buyer, or over a quarter of the timber with which he is debited. The only conclusion at which I can arrive is that in checking the quarter-girth system, if it was checked, the diameter, and not the square of the diameter, was multiplied by 7854 and the product accepted as the side of a square."

A. Mr. Gray writes: "I think no one will contend that the method of measuring by squaring the quarter girth and multiplying by the length gives the exact cubical contents of a log of round timber. Supposing, for the sake of comparison, it were required to obtain the sectional area of a perfectly cylindrical stick of timber.

(1) By the most accurate method—

$$\text{Area} = \text{dia.}^2 \times 0.7854.$$

(2) By the quarter-girth process reduced to the same form as (1)—

$$\text{Area} = \text{dia.} \times 0.61685 \text{ (or } 0.7854\text{)}.$$

The last will be found to be about a mean between the actual area of the circle and that of an inscribed square, which is

$$\text{Area} = \text{dia.}^2 \times 0.5 \text{ (or } 0.707107\text{)}.$$

In fact, the method, as I take it, is to allow the buyer for the waste in slabbing and reducing to the square, and for irregularities in the shape of the logs."

MORE ABOUT LEAKS.

THERE is another thing in connection with sawing lumber for the different uses. How many men we see, says a writer in Wood Worker, that take an order, go to a pile of lumber, and take as much as they require, just as it comes, where, by laying aside a few boards, they could have taken boards that would either make one piece of the size wanted, or two, and leave practically nothing for waste? This is apt to be the case in small orders as well as in large ones where the stock is sent in.

I recall to mind a case in particular where an order was given for a certain amount of stock, to be worked five inches wide. The lumber was sent in just as it run, and after the proper number of lineal feet was cut there was over 200 feet (board measure) of strips left, all the

way from three to five inches wide, to be thrown into the waste strips, and the full amount of lumber charged up to the job. Not a great while before or after this job, a sawyer was given an order for the same amount, and went after the stock himself. He chose such lumber as would work to advantage, and after getting out the order had a few small strips from one-half-inch to one and one-half inches wide, making less than 250 feet of stock less than it took for the other order, and perhaps took ten minutes longer to get the stock, as he probably handled a little lumber that had to be put back on the pile after he had taken what he wanted.

So I would say to men who do the sawing, work your stock so as to get all there is in it and save making waste strips, for although they may be used for molding, there will be plenty of them anyway. And I would say

to foremen and superintendents, watch your men in this particular and teach them to work to advantage. Then when you have a man that works for the interest of the concern, use him well, pay him well and he will be apt to stand by you.

Right here let me say that every concern doing any great amount of work in house trim, furniture or sash, door and blind work, should have one good man who thoroughly understands the business, to pick out stock for the different jobs, so that the material can be placed right at the saw and the sawyer thus be able to keep his machine going nearly all the time; instead of, as I have seen in some shops, having two or three sawyers, and at least one of them with his helper is out in the yard hunting up stock, and as he doesn't always know just where to look for certain kinds of stock, it takes him one-half longer than it would a man who attended to that part of the work and nothing else.

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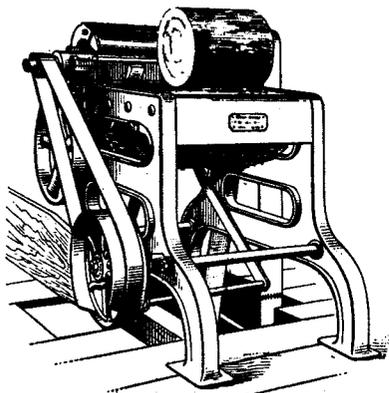
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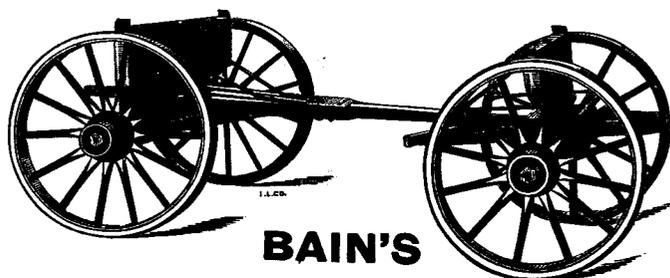
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Yours truly, McRAE & CO.

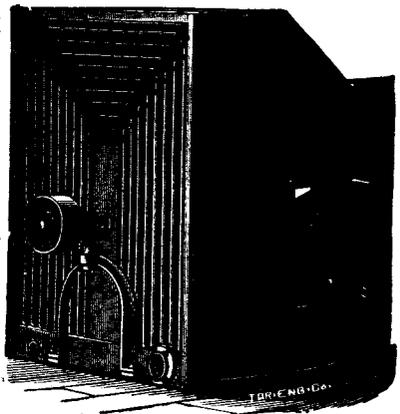
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DEAR SIR,—In reply to your favor of the 15th inst., we might state that the Hot Blast Heating System erected by you for our new factory, and driven by an independent engine, is giving us the best of satisfaction. We prefer it to any direct system, either radiators or piping, and has proved very economical. We have had no trouble in keeping the temperature at 70° at zero weather, with only 2 lbs. pressure on the heater. The heat is evenly distributed in the different flats, and is under perfect control, and can be raised to the above mentioned temperature in about 20 minutes, the amount of space heated being 135,000 cubic feet. The disc wheel makes about 400 revolutions per minute and has a great capacity for handling air. The engine makes on an average about 80 revolutions per minute and develops 1 1/2 H. P.

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AMERICAN OAK LUMBER.

TIMBER, of London, Eng., discourses as follows on American oak lumber. The criticism is rather unfavorable to Canada, but will not be without its value on this account. Says our contemporary:

A conspicuous development and important feature of the last quarter of the nineteenth century is to be observed in the increased importations of United States oak in contradistinction to, and competition with, that of purely Canadian wood. To those able to carry their minds back some twenty or thirty years, the metamorphosis will not only be apparent, but almost complete. During the sixties and seventies it was no uncommon sight, in the busy months of July, August, and September, to find fifteen or twenty Quebec sailers all discharging parcels of the primest Canadian white oak logs, the bulk of which were as promptly secured by the leading rolling-stock makers ex quay. At this period it was also a regular occurrence for the principal consumers to place orders with individual importing firms to the extent of 100 to 150,000 cubic feet. The timber quays and wharves of several of the larger British ports were often covered with the best and freshest products of the far-famed Canadian forests, which then knew not, nor feared, rivalry in any shape or form. Notwithstanding this state still obtains in a reduced form, there can be but little doubt that the old-time supremacy of the Canadian log trade has gone, and will never return. Why the exigencies of progress have compelled a departure so radical, is an ethical point upon which time and space forbid us to dwell. What actually remains of a former huge consumption in the direction named, is confined to

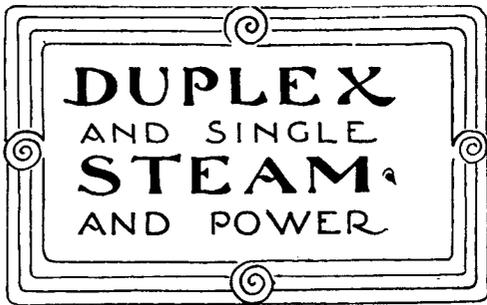
the relatively small demands of a few railway companies, who still believe it to be to their greater advantage to continue the system of themselves cutting up Canadian logs as required. This applies more strictly to those companies who not only repair, but build, the whole of their new plant, and who have learnt by long experience that length of life, rather than cheapness of material, is the real factor in the cost of permanent rolling stock. That Canadian wood still offers the better intrinsic value, with respect either to durability or expense, for railway coach and wagon purposes in particular, cannot be gainsaid. Moreover, it will be found impossible for other smaller requisites to exchange its reliability and tensile strength for that of a modern competitor, whose defects as well as merits we do not propose to overlook. What, then, have been the causes of the quiet, but nevertheless far-reaching revolution referred to? Cheapness, adaptability and economical machinery probably best characterize a reversal unique in the annals of commercial enterprise. A glance at the evolution of American forestry in general will show that the Canadian lumberman, together with his *via media*, the Quebec shipper, has virtually done nothing progressive during the larger portion of one hundred years, beyond cutting down the most suitable woods in the Dominion, hewing them into square or waney logs and rafting them for export to this country minus the cull pieces.

While it is true that most of the American pioneers in the oak plank industry, notably Messrs. A. K. Brown, J. Donaldson, and Edward Alcot, have practically become extinct operators, an army of small men have

rushed into the fray, some, it is to be feared, not wisely, but too well. So keen have the latest school of exporters become, that for months past they have given the English buyer the most hopeless hostages to fortune in their anxiety to realize their consignments on any terms. As previously pointed out in our columns, this has eventuated in serious depreciation and confusion, so much so that, unless a strong reformatory effort be quickly made by a majority of responsible shippers, irreparable injury must ensue. Is it not patent to all that as the edge of civilization becomes sharper, exactness and thoroughness are of necessity the great essentials to permanent success? If so, has not the time come when the technical details of foreign markets deserve enhanced attention? It is plain to the English trade that of the numerous varieties of United States oak, at least one half are unsuitable for conversion, and can never therefore be remunerative to shippers. Many recent parcels have consisted of poor, soft, red or brown wood, cut from low lying or swampy districts, and next to useless for substantial purposes. Of the endless other consignments, even of those sawed from the tougher and better grown white oak, there has been an utter lack of proper cutting and grading. This applies not merely to wagon scantling but to coffin planks, in which a big demand has sprung up, and where the need of careful quality and precise make is absolute.

The total import of United States oak into Great Britain is not much below 3,000,000 cubic feet, annually, and as its further increase undoubtedly lies in the path of sawed planks and boards, is it not opportune for American lumbermen generally to get close into touch with the stricter requirements of English buyers.

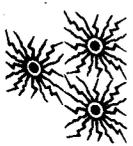
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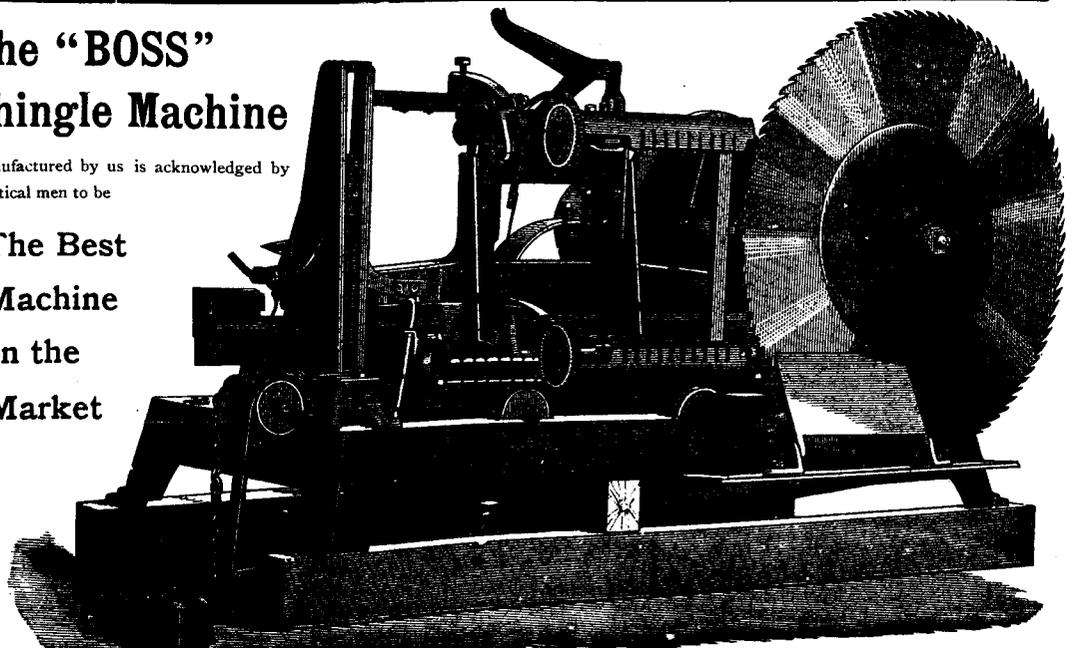
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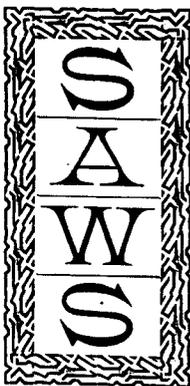
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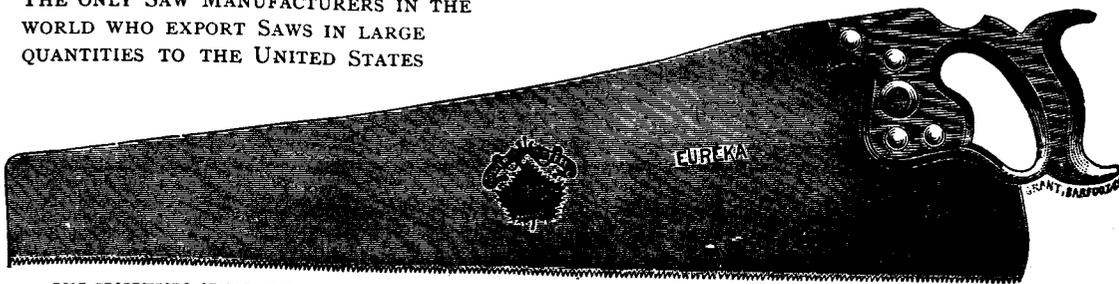
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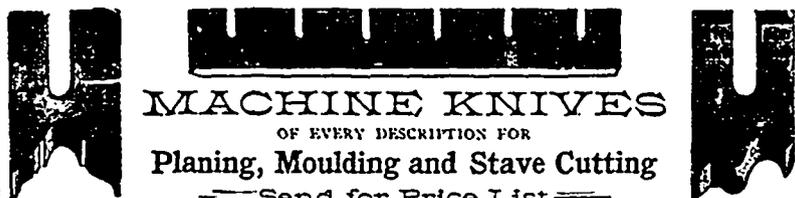
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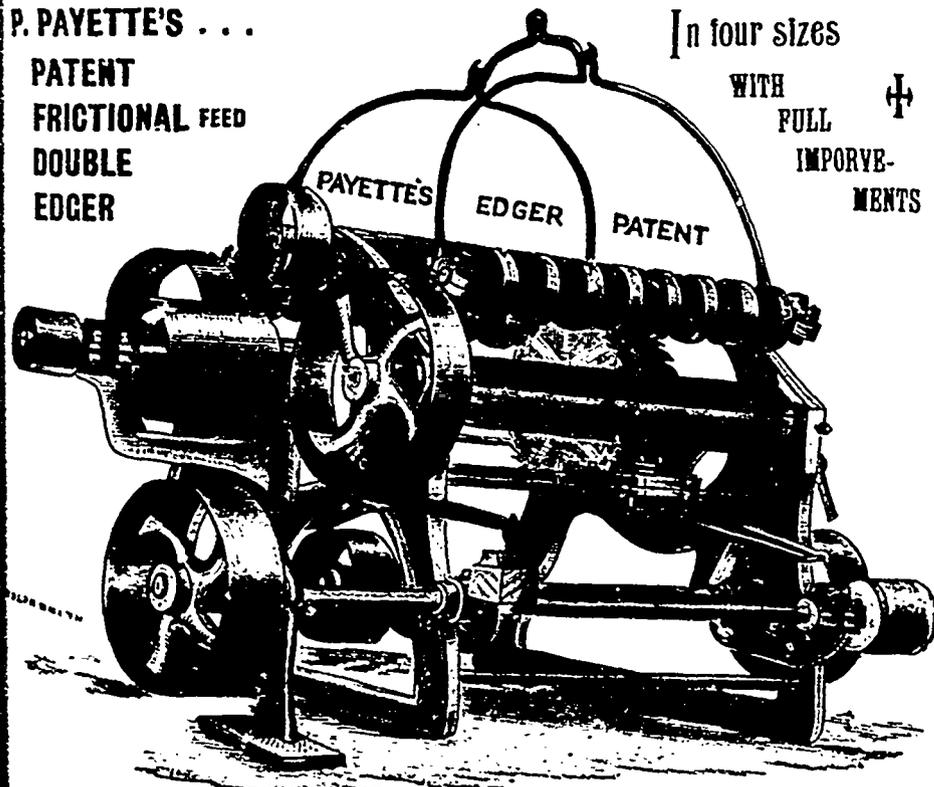
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