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The only Newspaper devoted to the Lumber and Timber Industries published in Canada

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NO. 12

HISTORY OF THE SAW MILL.

How surprised I was on seeing in a museum, a long time ago, such things as scissors, seal rings, necklaces, and pairs compasses, that were taken from Egyptian tombs 3,000 years old!

But, after all, men were men 3,000 years ago, and women were women. They had the wants, the needs, the vanities of men and women, and they had brains not unlike our own to supply them.

The most boastful Yankee (not that Yankees are more boastful than other people) in some of the rooms of the British Museum is obliged to confess that the ancients originated a great many good notions which we moderns have only improved upon.

For instance, there are few tools more ancient than the saw. All the ancient nations appear to have had it; certainly the Hindoos, the Egyptians, the Greeks and the Romans. The saw may have existed even before there were any men on earth.

There is a creature called the saw fly, with two saws in its tail, which it actually uses for sawing the stems, leaves and fruits, wherein its eggs are to be deposited. There is also a saw-fish, the long snout of which is a saw. It is said also that the original inhabitants of the island of Madeira found a ready-made saw in the backbone of a fish.

The Greeks had a pretty story attributing the invention of the saw to the accidental finding of the jaw-bone of a snake by one Talus, who used to cut through a small piece of wood. Being a slave, and finding that this jaw-bone eased his labor, he made a saw of iron, and thus gave mankind a new and most valuable tool.

The ancient saws differed from ours in two ways. The teeth were so arranged that the cut was made by pulling instead of pushing, and the teeth, instead of being set one to the right and one to the left alternately, were set so that ten or a dozen in succession were slanted one way, and the same number the other way.

The ancients had several varieties of the implement. The Greeks, for example, had cross-cut saws for two men, also saws for cutting marble into slabs. And they had a kind of tubular saw for hollowing out a marble bathtub, similar in principle to the method now employed.

Among the pictures uncovered in the buried city of Herculaneum there is a representation of two genii sawing a piece of wood on a carpenter's bench very much like ours and using a saw with a wooden frame similar to those now employed. Still more strange, the frame saw tightened with a rope and stick, such as our street wood sawyers use, was probably as familiar to the Romans as it is to us.

A mill, however, by which wind, water

or steam is made to do the hardest part of the work, was not known to any ancient nation.

Sawing by hand, next to digging a stiff clay soil, is about the hardest work that men ordinarily have to do. It is therefore not surprising that our cease loving race began to experiment a good while ago with a view to applying the forces of nature to the performance of this toil.

A learned German investor who has investigated the subject very thoroughly states that the first trace of saw mill yet discovered is in the records of the German city of Augsburg, for the year 1337.

The reference is slight, and does not fix the fact with certainty. But there are two saw mills near that city which are known to have existed as far back as 1317, and they are still used.

Before that valuable invention, all boards and planks were split with wedges, and then hewn to the requisite smoothness with the axe.

The splitting of boards is still practiced in remote settlements, as I myself have seen, and it is recorded of Peter the Great, of Russia, that he had much difficulty in inducing the timber cutters of his empire to discontinue the method. At length he issued an edict forbidding the exportation of split planks. Even in Norway, covered with forests as it was, there was not one saw mill before 1530.

Nowhere in Europe, it appears, was the introduction of the saw mill so long resisted as in England. In 1866 a Hollander erected one near London; but it brought upon the poor man such an outcry and opposition that he was obliged to abandon it.

The sawing of timber by hand furnished occupation, at that time, and long after, to large numbers of strong men.

In every town there was saw pits, as they were called, for the convenience of the sawyers, one of whom stood at the bottom of the pit and the other on the log.

We can easily imagine that when every beam, plank and board, thick or thin, had to be sawed by hand, the sawyers must have been a formidable body, both from their numbers and their strength.

After the failure of the Dutchman in 1663, there was no serious attempt to start another saw mill in England for more than a hundred years.

In 1767 an English timber dealer of large capital built a saw mill to be moved by the wind. It was thought to be a great and difficult enterprise, and it attracted much public attention. Some years before an author had explained the advantages and economy of saw mills; then the society of arts gave the scheme of building one their approval, and, finally, the mill was actually built by an engineer who had

studied the saw mills of Holland and Norway.

No sooner was the mill complete than the sawyers assembled in great force and tore it to pieces. The Government compensated the owner for his loss, as was just. Some of the roters also were convicted and imprisoned.

A new mill was then built, which was allowed to work without molestation, and proved so profitable that others were soon introduced.

In no part of the world, probably, has the saw been more minutely and curiously developed than in Great Britain, where they have saws so fine as to cut diamonds, and circular saws nine feet in diameter and a quarter of an inch thick.

They have also veneer saws so accurately adjusted as to cut 18 slices of veneer from a rosewood plank an inch thick.

In London they will put a log of mahogany upon the mill and cut it into slices so thin that the sawdust weighs more than the veneer.

Yankees have beaten this performance. They take a piece of mahogany or rosewood, soften it by steam, and cut it into veneers with a knife, without making a grain of sawdust.

Daniel Webster tells us that his father had a saw mill after his removal to New Hampshire, at the source of the Merrimac river.

Daniel, who was by no means fond of labor at any part of his life, liked nothing better in his boyhood than to attend this saw mill, because when he had put his log in position, and started the saw, he had 16 good minutes for rest or reading before the business required further attention.—*Journal of Progress.*

SPRUCE FOR MAKING PULP.

A very large quantity of logs, both spruce and poplar, are now coming into use for grinding up as pulp for newspaper work, cardboards and the like. When the first paper was made from wood pulp it was thought that poplar was the best and perhaps the only wood which could be used, but during the last few years it has been found that spruce wood made better and stronger pulp than poplar. Poplar will always be a much cheaper wood than spruce, because it grows very rapidly and has but few economical uses, outside of the grinding up for pulp and the making of excelsior. Poplar never grows very large but grows quite rapidly. A growth of poplar 16 to 18 inches through at the butt is considered very good growth, although some few specimens may be found of larger growth. After reaching that size in the average New England soils, it seems to lose vitality and finally die. Those who cut poplar for pulp wood cut down some very small trees, even down to few inches in diameter. It is commonly cut into four-foot lengths and sold by the cord, New Hampshire lots fetching from \$4 to \$5 per cord, probably averaging about \$4

per cord. Spruce logs cut up in four-foot lengths are selling at the same time at from \$6 to \$6.50 per cord, delivered on the cars in various parts of New Hampshire. It is claimed by some that spruce wood does not make so white pulp as poplar, and that the chemicals for bleaching are somewhat more expensive in the case of the spruce, but it is much sought for on account of the strength of its fibre and the better character of the wood. Lumbermen are quite ready to get out a certain percentage of spruce for the wood pulp grinders, because they will take some sawmy trees, where reasonably clear and of good growth. Such sawmy trees are not profitable for sawing into any kind of lumber. There is a great difference in the color of spruce, that which is very white being much more desirable for the wood pulp people. Trees of the same variety seem to differ in whiteness or color, probably owing to the soil upon which they grow. Hence some lots are really worth a dollar a cord more to manufacture into wood pulp than other lots, while both might be worth equal prices for manufacturing into ordinary lumber. The pulp business is destined to grow more rapidly in the future even than in the past, for the users of pulp and paper and cardboard are becoming multiplied every year. The inventive genius of the Yankee discovers many new applications for a product like this almost every day, and the time is rapidly drawing near when a large quantity of spruce and poplar will be required to meet the demands of wood pulp grinders.—*Manufacturers' Gazette.*

MAKING ESTIMATES.

Powis Hale, in "Saw-mills," gives for cross cutting soft and medium woods a speed of 10 000 feet per minute at the points of the teeth and says he has yet to be convinced that any speed in addition to this serves any useful purpose, or is in any way necessary or desirable. In sawing very hard woods the speed of both the saw and the feed of the wood should be reduced, the former about one quarter and the latter one half, or even less. He further says suppose a circular saw, say 30 in. diameter and 12 gauge, be put on a spindle and the speed gradually increased till it reaches at the periphery say 12,000 ft or 13,000 ft per minute, it usually will become wavy and pliant, and run untrue, it therefore follows that not only is the extra speed entirely unnecessary, but it is positively detrimental, as more power is consumed, and more heat engendered in the bearings, spindle, and saw plate, extra lubrication is required, and the belts deteriorate more rapidly.

The value of planed and finished lumber, sash, doors and blinds, sent from the United States into Manitoba, during the year ending June 30th, 1885, was but \$72,000 and the value of undressed lumber was but \$22,000.

WHITE PINE EXHAUSTION.

The ably edited *Northwestern Lumberman*, of Chicago, which has frequently criticised the estimates given of the pine standing in Michigan and other states, with the intention of showing that they were unreliable, itself recognizes the fact that the forests are being depleted. It says:—

The readers of the *Lumberman* well know that, as a journal, it has never taken the extreme view in reference to the rapid exhaustion of the white pine supply. Yet it has not been unmindful of the fact that the forests of Michigan, Wisconsin and Minnesota could not eternally furnish food for the saw mills. It has also recognized the truth that on most of the area now covered with white pine there can be no second growth of this wood. Indeed it is doubtful if any other state than Maine has a soil or climate adapted to a second crop of pine trees sufficiently sturdy to make saw logs. Even in Maine the sapling pines attain but a limited growth, and are used mostly for the making of coarse box boards, and are not adapted to general lumber purposes. Hence, as each pine tree falls, there is one less in the myriads that stand in the forest, and its place cannot be filled. Even if it were possible to grow another crop of pine, it would not serve to fill the lack that would ensue before the saplings were ready for the market.

Until within the past half dozen years there was very little believed about the comparatively near approach of the end of the white pine supply. Even when it was announced, three or four years ago, that there will be little or no more pine floated out of Cass river, in the Saginaw district, and that lumbering on the Flint was drawing toward an end, western operators paid but slight attention to the statement. It was thought then, and still is, to a considerable degree, that there was, and remains, an inexhaustible supply in the forests of Michigan Wisconsin and Minnesota, and that practically, so far as this and the succeeding generation or two are concerned, the exhaustion of the white pine supply of the northwest is a matter that belongs to some remote future century.

But this view is as extreme as the other that has been rife for twenty years past, which has fixed the limit of pine supply five, ten or fifteen years hence. The prodigious rate at which consumption of pine lumber has proceeded for the past fifteen years is at last visibly telling on the resources of the forests. Not that production has as yet been seriously effected by the coming exhaustion that casts a shadow on present operations; for, though manufacturers and stumpage owners are beginning to shape their affairs so as to avoid a wasteful slaughter of pine in the future, and husband their holdings as much as possible, there is still manifested a disposition to crowd production a little beyond the consumptive and trade requirement. Undoubtedly this propensity will be exhibited until the supply has been so reduced as to permanently raise the price of both stumpage and lumber to a pitch that will induce a strict economy of forest resources. There are signs of coming restricted supply, however, that must be visible to any one who will open his eyes and look around. The more prominent of these are glanced at, as follows:

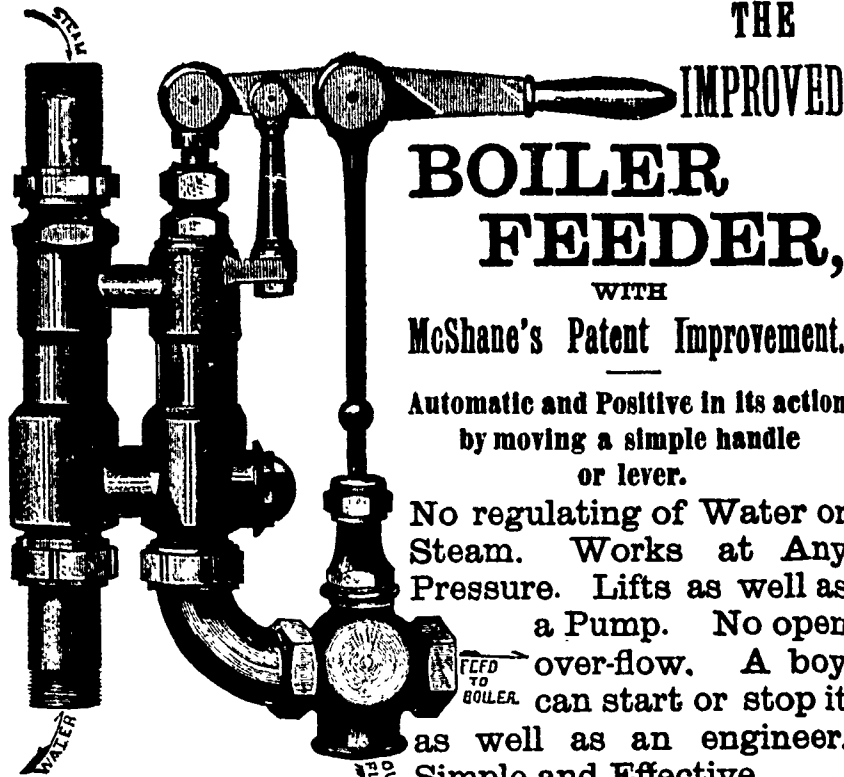
The heavier operations of lower Michigan are on the headwaters of the logging streams, quite in the middle of the state, and in the regions where the waters flowing into Lake Huron, and those that run into Lake Michigan, debate the ground for supremacy in drainage. The counties of Roscommon, Crawford, Missaukee, Wexford, Kalkaska, Osceola and Clare, are now the home of the vaster pine forests, while the counties that surround the interior group, though still possessing much pine, are losing their prominence as producers. Twenty years ago the interior counties named were a *terra incognita* to the loggers and mill owners along the lake shores. Now the pine has been so largely cut off on the headwaters of the Muskegon, the Manistee and the Pere Marquette, that log hauls and logging railroads are the rule, and not the exception, as formerly. Great companies are annually taking out 20,000,000 to 40,000,000 feet of logs on the headwaters of all the important streams of lower

Michigan, and have reached up to the hardwood belt that covers the northern counties of the state. There are no longer vast stretches of untouched pine in lower Michigan. Nearly every section has been scarred and gored by the operations of the industrious and enterprising logger. How long will it be, under such insupportable conditions, before it will begin to be said that this, that and the other owner has exhausted his pine in the counties that have been named? For several years past mill concern after mill concern has cut its last pine tree on the lower portions of the Grand, the White and the Muskegon rivers, and has closed up its business on that account. Such notable instances as the retirement of the Beidler Manufacturing Company last year, and A. A. Bigelow & Co., this year, from the Muskegon saw mill business, wholly on account of the exhaustion of their stumpage supply, have been common along the Michigan shore within the past half dozen years. Many concerns are keeping themselves alive by buying more pine on the headwaters of the streams. Thus is being concentrated and intensified the final struggle on the backbone of the state. There the battle will end, so far as the lower peninsula is concerned. Not that there will not be scattered pine forests and some logging and sawing in lower Michigan for twenty or thirty, or even forty years to come, but the larger operations will be events of the past before the nearest of these limits of time; the supply will have been so reduced that rush and competition for volume of business will be no longer possible.

The direction that the product of Michigan mills is taking for market is a noteworthy feature, as bearing on the diminution of the supply. Time was when the Saginaw district and the Huron shore furnished the eastern markets with lumber.

Latterly buyers for the eastern markets have found that the Saginaw and Huron shore supply is not adequate to their needs. Not that there is not enough lumber in those districts, measured by feet, but it is not properly classified for profitable handling; besides, it is held in close hands, who wring all the speculation out of it. The yard trade in the Saginaw valley is also increasing, and will eventually require a large portion of the stock that once went east by lake. In view of the newer phrases of the Michigan lumber trade, we must conclude that the eastern demand has begun to spread over the supply that was once altogether directed to the westward. What does this mean but that the supply in the older districts is becoming inadequate to the eastern demand? And must we not conclude, also, that the eastern requirement is year by year increasing, and that whereas probably over 200,000,000 feet of lumber is now sent to the east from mills on Lake Michigan and Lake Superior, the time is near at hand when 500,000,000 feet will take that direction? In the meantime the western demand will increase in like proportion. This enlargement of the requirement is but slightly taken into account when men talk about the diminishment of the pine supply. It is safe to conclude that the end will draw near with accelerated speed as it approaches, because that, while the supply is growing less all the time, the demand is increasing. Whole mill cuts are now going to eastern markets from north shore and Green Bay ports. An increasing amount is being shipped from points on the east shore. Huron shore mill men already have to buy a part of their log supply in Canada. Muskegon, White lake and Grand river lumbermen are seeking new locations in Wisconsin and in the Lake Superior region. Much of this new enterprise is for the supply of the eastern trade, while that of the prairie states is constantly enlarging. These considerations are corpulent with meaning in reference to the rapid exhaustion of the white pine supply.

It cannot be denied that yellow pine, poplar, cypress and the Pacific coast woods will more and more come into use in the fields where white pine has hitherto been supreme. But all of these woods have a local territory of their own that will need an increasing supply. Aside from this is the fact that nothing has, nor can, fill the place of white pine. The longer it endures the test, and the more it is brought in sharp comparison and competition with other



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kinds of lumber, the better does its reputation become. So it is plain that nothing can prevent the enormous consumption of white pine lumber and the rapid diminution of its forest supply.

THE MANAGEMENT OF STEAM BOILERS.

The following rules for the management of steam boilers are laid down by the Hartford Steam Boiler and Inspection Company:—

1. Condition of Water.—The first duty of an engineer, when he enters his boiler room in the morning is to ascertain how many gauges of water there are in his boilers. Never unbank or replenish the fires until this is done. Accidents have occurred, and many boilers have been entirely ruined from negligence of this precaution.
2. Low water—In case of low water, immediately cover the fires with ashes, or, if no ashes are at hand, use fresh coal. Don't turn on the feed under any circumstances, nor tamper with or open the safety valves. Let steam outlets remain as they are.
3. In cases of foaming—Close throttle, and keep closed long enough to show true level of water. If that level is sufficiently high, feeding and blowing will usually suffice to correct the evil. In cases of violent foaming, caused by dirty water, or change from salt to fresh, or vice versa, in addition to the action above stated, check draught, and cover fire with fresh coal.
4. Leaks—When leaks are discovered they should be repaired as soon as possible.
5. Blowing off—Blow down, under a pressure not exceeding twenty pounds, at least once in two weeks—every Saturday night would be better. In case the feed becomes muddy, blow out six or eight inches every day. When surface block-cocks are used, they should be often opened for a few moments at a time.
6. Filling up the Boiler—After blowing down, allow the boiler to become cool before filling again. Cold water pumped into hot boilers is very injurious from sudden contraction.
7. Exterior of Boiler—Care should be taken that no water comes in contact with the exterior of the boiler, either from leaky joints or other causes.
8. Removing deposit and sediment—In tubular boilers the hand-hole should be often opened, and all collections removed from over the fire. Also, when boilers are fed in front, and blown

off through the same pipe, the collection of mud or sediment in the rear should be often removed.

9. Safety Valves—Raise the safety valves cautiously and frequently, as they are liable to become fast in their seats, and useless for the purpose intended.

10. Safety Valve and Pressure Gauge—Should the gauge at any time indicate the limit of pressure allowed, see that the safety valves are blowing off

11. Gauge Cocks, Glass Gauge—Keep gauge cocks clear, and in constant use. Glass gauges should not be relied on altogether.

12. Blisters—When a blister appears there must be no delay in having it carefully examined, or patched as the case may require.

13. Clean Sheets—Particular care should be taken to keep sheets and parts of boilers exposed to the fire perfectly clean; also all tubes, flues and connections, well swept. This is particularly necessary where wood or soft coal is used for fuel.

14. General Care of Boilers and Connections—Under all circumstances keep the gauges, cocks, etc., clean and in good order, and things generally in and about the boiler room in a neat condition.

MARMORA.

DROWNED.—The Campbellford *Herald* says that a telegram was received at the Rathbun office, Campbellford, conveying the intelligence of the drowning of Philip O'Hara, a young man in the employ of the company, which took place in Crow River, at Marmora, on May 29th. The deceased was crossing a river in a boat, in company with Dan Murphy, intending to land on an island midway in the stream; but before reaching it the men were capsized and thrown into the water. Murphy started to swim ashore, but returned to the boat. O'Hara, who was able to swim, did not seem to do much to help himself, and sank a short distance from where the boat was overturned.

A Lady's Secret.

"I'd give a good deal if I had such a pure, healthy skin as you have," said a lady to a friend. "Just look at mine, all spots and blotches, and rough as a grater. Tell me the secret of your success in always looking so well." "There is no secret about it," was the reply, "Dr. Pierce's 'Golden Medical Discovery' cleansed my blood, and when that was done my skin, which was worse than yours, began to look smooth and healthy, as you see it now."

CANADIAN PACIFIC RAILWAY.

Ontario and Quebec Division.

CHANGE OF TIME.

To take effect Monday, November 2nd at 1 a.m. Trains arrive at Peterborough as follows:

From the West.

12.31 p. m.—Mail from Chicago, Detroit, St. Thomas Galt and Toronto.
9.05 p. m.—Mixed from Toronto and Intermediate Stations.
10.50 p. m.—Express from Toronto and West.

From the East.

5.31 a. m.—Express from Montreal, Ottawa and Perth.
7.25 a. m.—Mixed from Havelock and Norwood.
11.45 a. m.—Express from Winnipeg via Carlton Junction.
6.42 p. m.—Mail from Montreal, Ottawa, Smith's Falls, and Perth.

Trains depart from Peterborough as follows:

Going East.

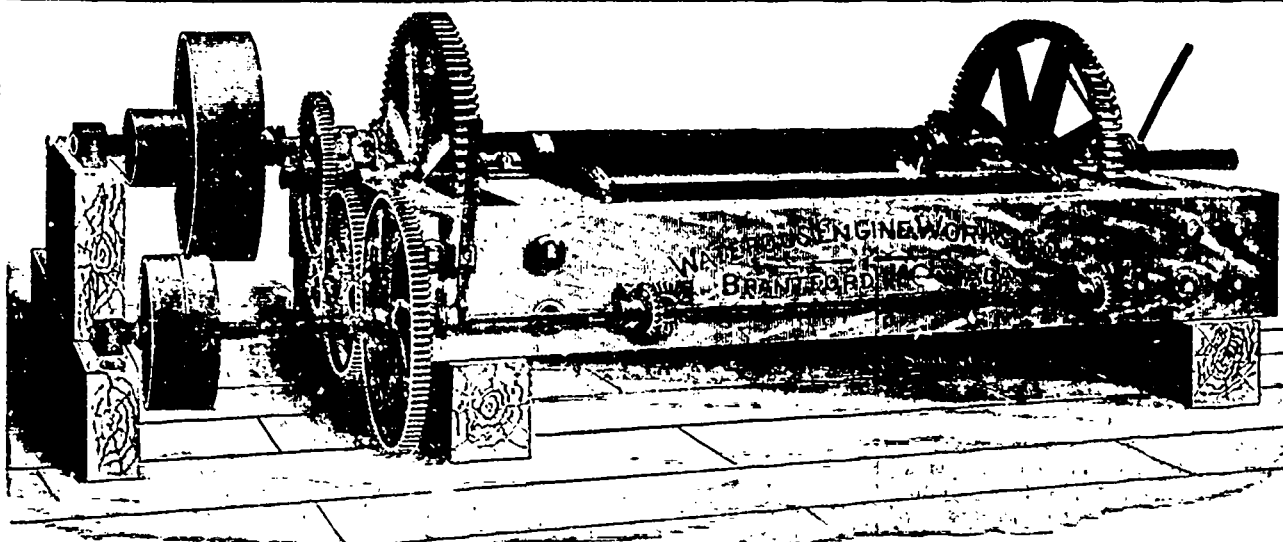
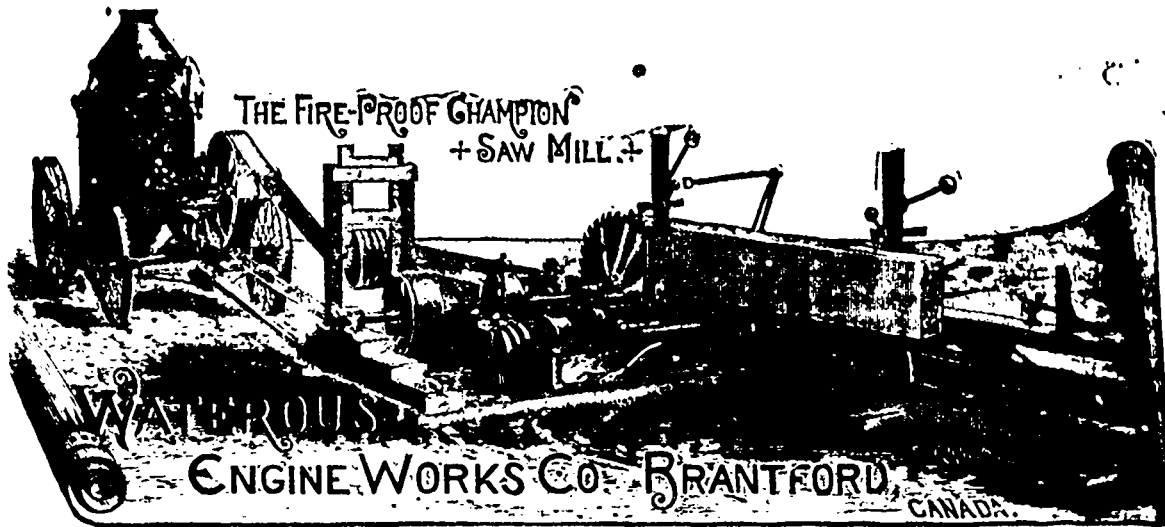
2.31 p. m.—Mail for Perth, Smith's Falls, Ottawa and Montreal.
9.10 p. m.—Mixed, for Norwood and Havelock.
10.50 p. m.—Express, for Perth, Smith's Falls, Ottawa and Montreal.

Going West.

5.31 a. m.—Mail, for Toronto, Galt, St. Thomas, Detroit and Chicago.
7.25 a. m.—Mixed for Local Stations, West to Toronto.
12.41 a. m.—Express for Toronto and points west.
6.42 p. m.—Express for Toronto and Intermediate Stations.

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Plans now open at Messrs. Mason & Birch's, A. S. Nordheimer's and L. Suckling Son's, Music Stores, Toronto.

Parties living at a distance may secure reserved seats by application in writing, enclosing the necessary funds in cash, P. O. order, or bank draft, to the Hon. Secretary, JNO. EARLE, 14 Adelaide Street East, Toronto, or from any of the above firms, from whom official programmes, with plan of the Hall, may also be obtained. Excursion Rates by all Railroads are being arranged.

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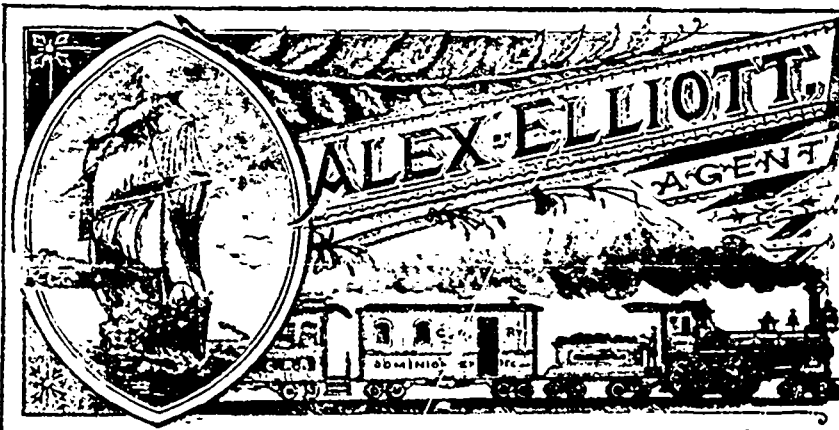
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CANADIAN WOOD EXHIBITS AT THE COLONIAL EXHIBITION.

The *Timber Trades Journal* of May 22nd says:—Prominent amongst the exhibits at South Kensington stands the timber produce of the various countries represented. Specimens of the forest growth of Canada, Australia, India, and the Cape are conspicuous in their natural state as well as sawn and polished, attracting the attention even of those who, from the want of a more intimate knowledge, are unable to appreciate the important part they play in the world's history. We have heard visitors express their admiration of the beautifully polished surface of the fine log of Jarrah timber which adorns the Australian Court, and certainly they had reason, for a more splendid specimen of that durable tree could not have well be selected, and the way it has been prepared for display does credit to those who had the work to do.

It is not our purpose to discourse of the various woods in the order that they meet the eye of the visitor as he makes the range of the exhibition, but to take them rather one in each department, in the order of their utility, writing of those first which are in most common use. In this way our task will first embrace the woods from Canada, of which the different varieties, characteristic of the country are artistically grouped in convenient places for inspection. It is the vulgar idea that the wooded portions of Canada form enormous tracts of dark, gloomy-looking forests of pine, their sombre appearance unrelieved by any variety of tint. There never was a greater mistake made. The forests of Canada, on the contrary, are picturesque and pleasing to the eye, and in the season when the leaves begin to change the tints present many different shades and colours, lending to the wood an enchanting aspect, the same as a forest here would appear in Autumn, somewhat enhanced by the majestic proportions of the trees in the Dominion.

As with us here, the pine tracts are peculiar to themselves, and whole sections of this useful tree and its near relation, the spruce, cover the hillsides in dark belts, contrasting with the other varieties, forming a background which adds to the beauty of the Canadian scenery. The enormous size and straightness of the pine trees, of which these boundless fir forests are composed, we have very little experience of here. Trees of immense girth we undoubtedly possess, and our ancient oak and elms afford us specimens that often attain considerable altitude; but the huge stem of a Canadian pine of equal circumference, 80 or 90 feet, without a leaf or branch, its lofty top crowned with the long and drooping fronds of needle-shaped leaves, is a sight seldom to be met with in the forests of the mother country.

There is not, of course, the same undergrowth in the timbered portion of the northern countries as there is in milder climes, but with this exception the difference in the appearance of the woods is not so marked. The forests of Canada are composed of pine, spruce, Scotch or Norway fir, oak, ash, elm, maple, birch, beech, larch, cherry, walnut and other woods, and hardly a tree which we have named which does not come to our shores, though they do not always figure in the public sales.

Our readers are sufficiently acquainted with the merits of the white pine, or, as it is called over here, yellow pine, to need any description from us, but the various specimens supplied by Messrs. Burstall & Co. show of what a high finish it is capable in conjunction with its other preferential claims as an indispensable building material.

The chief of the timber districts, or, as they are termed "limits," of the Dominion, extend from the mountain shores of British Columbia, washed by the Pacific, containing immense forests, yielding some of the finest timber in the world, that are yet practically untouched, to the Province of Ontario, the shores of Lake Huron and Superior, the Georgian Bay country, embracing the Nipissing and Muskoka rivers to the district drained by the Ottawa, St. Maurice, and Saguenay, to the Bersimis (both noted pine regions), and further on to St. John and the lower ports, where the mighty river empties itself into the Atlantic.

From this vast territory, thickly wooded with

every species of timber, there is little fear of our supplies running short.

The inroads which have already been made are undoubtedly sufficiently extensive to cause apprehension of a failure in the cut of pine, but the question of forest exhaustion is still too remote to be seriously discussed at present. Many of the forests in the lake districts, Ontario and other Provinces, are yet hardly touched, the land not being so suitable for agriculture, and from these regions sufficient pine will be drawn to make up for any deficiency that may be apprehended from the destruction of the older timber limits for many years to come. The importance of the forest supply of Canada to us here can hardly be estimated. Our annual consumption of pine and spruce is something marvellous, and it would be little short of a calamity if any failure took place in the forest resources of the Dominion.

We hear a good deal of the increasing scarcity of white pine, a tree which is said to be so valuable that it would be difficult to find a substitute for it were Canadian forests to become exhausted. But this can hardly ever happen, if ordinary care is exercised to prevent destructive fires, as it will grow and flourish on the poorest soils, and is a rapid grower. Mr. Small, in his account of Canadian forests, says that "intelligent lumberers consider that a white pine forest renews itself every twenty years." This must be an important consideration in estimating the forest wealth of Canada.

It seems that the wanton destruction of the forests in the Province of Quebec was complained of by the French Governors of Canada as far back as 1696, that is 190 years ago, but the record says that nothing was done by them to check it, and little has been done since. Is it not clear that nature has not again and again made good the ravages of man, and that still more pitiless enemy, the devouring element of fire, during the ages that have since intervened, and that she is still able to set the destroyers of her forests at defiance?

In addition to the thousand and one industries that cannot be carried on so well without the assistance of soft convertible timber, we have railroads and railways, which in the shape of sleepers, ties, platforms, stations, carriages, waggons, &c., add largely to the consumption of the forest produce.

The woods of British Columbia at the exhibition are particularly noticeable, a large ornamental erection of pine from that country, supplied by the Hastings Saw-Mill Company, Burrard's Inlet, being the first object that meets the gaze on entering the Canadian Court.

The woods from St. John were in a prominent position, a panel of each kind being scientifically arranged, the polished surface adorned with a neatly executed painting of the leaf.

We inspected the different specimens from New Brunswick, which include beech, ash, maple, birch, white and black hemlock, white pine, red pine, balsam fir, as well as black and white spruce. Amongst the woods not generally shipped to this country, but many of which, we think, could be used here with advantage, are the cherry, plum, bilbury, poplar, alder, hornbeam, butternut and willow, lime and basswood. Poplar is largely used in the States for a variety of purposes, and cherry is also in demand.

Ottawa, in addition to pine, is represented by neatly arranged specimens of sugar maple, red oak, figured beech, and from Burrard's Inlet, in addition to the pine specimens already mentioned, are some well-prepared blocks of red cedar and Oregon pine.

The specimens outside the court are sections of canoe, birch, tamarac, Ottawa best pine, Norway pine and red pine from Ontario, used as mining timber, the collection being sent by Mr. T. A. Koefler, of Port Arthur. There are several pieces of tamarac, black larch, aspen, poplar of very fine and smooth grain, another variety being the jack, or scrub pine. The suitability of many of these woods for use here depends on the cost. The home-grown woods, of which these would have to take the place, are plentiful, and, unless something were gained in size or price, their introduction would not be rewarded with success. A considerable

objection to the softer kinds, such as poplar, tamarac, hachmatac, &c., is that they will not take the plane like the pine or deal, and in that respect present a marked contrast to the non-resinous woods of the north of Europe, all of which smooth up equally to the red or yellow descriptions.

Hamatac ranks with our larch or juniper, and is the most durable of all the pine tribe. For shipbuilding purposes it is considered in the United States more durable even than oak, and it is well known and appreciated at Lloyd's in their classification of ships.

It is not to be expected that, within the limits of a single notice we can describe, even superficially, the various objects of interest in the wood department alone; and we have already occupied as much space as can be conveniently appropriated to the subject this week. What, therefore, has further to be said of this wonderful collection must be deferred to another number.

MICHIGAN HARDWOODS.

It is a very common thing to find in the columns of the contemporary press, says the *Michigan Tradesman*, exhaustive articles deprecating the rapid destruction of the pine timber in Northern Michigan, accompanied by startling statistics, showing that, at the present rate of denudation, the supply of pine will be practically exhausted in a few years. While in many instances these statistics and conclusions are very wide of the mark, there is pith in the main idea underlying them, and ample material for reflection. But the apostles of forestry in their eagerness to inveigh against the wholesale conversion of pine forests in lumber, too often overlook a species of waste which is infinitely more mischievous than the operations of the pine industry, viz., the waste of hardwoods by the logging operations of settlers. If this destruction were confined to legitimate lumbering processes the case would at least have mitigating features. But in many instances the waste is purely wanton; and wanton waste is under all circumstances to be deplored. The soil which grows hardwood timber is well known to be richer, and more perfectly suited for agricultural purposes, than that on which pine is commonly found. For this reason the hardwood lands suffer most severely from the hands of the settler. The fact that the ultimate value of Michigan hardwoods is but imperfectly and not generally understood, also favors the destruction. The average settler knows that the immediate revenue to be derived from his hardwood lands will be greater if he brings them under cultivation than if he leaves the forests inviolate; hence, he proceeds to get rid of the timber as quickly as possible, by gathering into log-heap and reducing it to ashes.

The exigencies of agriculture, of course, are not to be ignored. It is absolutely necessary that a certain proportion of the land should be cleared and placed under cultivation. But American farmers too often labor under the mistake that the measure of successful husbandry is in the area of land under tillage. Many of them have yet to learn that a small farm, well cultivated, may be made more profitable than a large farm carelessly cultivated; and that it would be true economy to clear a much smaller proportion of their hardwood lands than is customary, leaving the timber on the remainder to increase in value, as it will inevitably do in the near future.

Northern Michigan possesses magnificent possibilities (which can be realized if she husband her resources) for the manufacture of hardwood products. Situated in the central portion of the vast Northwest, between two great inland seas, which afford easy and cheap transportation to the markets both of the East and West, her facilities for the profitable disposal of her wares are all that can be desired. Her forests abound in an excellent variety of woods suitable for manufacture, and her numerous streams flowing through the heart of the hardwood regions, afford cheap and abundant power for manufacturing purposes. In short, the natural advantages of Northern Michigan for wood manufacture are unsurpassed, and only await the enlistment of extensive capital and enterprise to raise them to an important

position. Already the good work has begun, Handlo factories, bowl mills, spoke and hub factories, basket factories, etc., have been established at various points with favorable results. But the development of these industries is yet in an incipient stage. For the full realization of the manufacturing possibilities of Northern Michigan, we must look to the future. A large proportion of the smaller class of articles manufactured from hardwoods, now comes from Maine and other New England states. There is no good reason why the markets of the West and Northwest should not be supplied from the vast reserve of raw materials lying at their thresholds; and they certainly will be so supplied in the not distant future, if the settlers of Northern Michigan do not, in the meantime, render such a result impracticable, by the wanton destruction of the vast forest wealth which are indispensable to the establishment of an extensive manufacturing system in the line of hardwood products.

A LOG CARRIER.

There is being built and nearing completion at the shipyard of Capt. James Davidson, of West Bay City, a vessel which is a novelty in more ways than one.

In the first place she is the first vessel ever constructed specially for the purpose for which she is intended,—transporting saw logs from the place where they are harvested or put into the water to the mill which is to convert them into lumber, and in this respect she is an experiment, although the projectors and owners have the utmost confidence in the enterprise.

In the next place she is a novelty as well as a wonder from the fact that she will be the largest vessel which has ever been put afloat on the great inland seas on this continent. Her capacity is 3,500 tons and she will carry 700,000 feet of saw logs, or 2,500,000 feet of manufactured lumber, sufficient to load an ordinary tow of vessels plying between the Saginaw river and the distributing centres; or in other words, she will carry as much lumber as six ordinary lumber barges. She is 175 feet long, 51 feet beam and 12 feet depth of hold. The reason for her comparative slight depth of hold is the fact that no logs are to be put below the deck for transportation, but they will be loaded entirely on deck. She has on board machinery, and all the appliances for loading the logs expeditiously; and hence can be loaded and unloaded in an incredible short space of time. She is a veritable floating monster or will be when she is launched next week. She has five centre gunwales, from bottom to deck, all edge-bolts, the same as a centre board box and diagonally braced on each side of gunwale and fore-locked on gunwale. The name of this laviathan of the lakes is to be the *Wahnapeetae*, which is the name of the river in the Georgian Bay country from whence she is to transport logs to West Bay City and Tawas. Her cost is \$35,000, and she belongs to Emery Bros., who own pine in the Georgian Bay country and projected the enterprise.

There is also being built at the same yard, and nearly completed, and which will be launched about the same, a large lake tug, to tow the above vessel. She is a beauty, and will cost \$17,000. She is to be called the *Temple Emory*, after one of her owners.—*Lumberman's Gazette*.

Minnesota Lumber Trade.

A dispatch from Minneapolis, May 20th, says:—The receipts of lumber in Minneapolis the last week amount to 132 cars and in St. Paul 365 cars. The shipments from Minneapolis reached 233 cars and from St. Paul 229, substantially the amount received and shipped last year. The farmers in the northwest, now that their seeding is done, are preparing to make such improvements in the building line as their funds will permit. The bulk of the trade, however, continues to be from the cities. The local trade is exceedingly good in both St. Paul and Minneapolis. None of the Mississippi mills at St. Paul, Minneapolis and above have yet started, though all the drives are coming on well except the main river drive, which is coming slowly. The Minneapolis mills will probably start about the first of June, though there are but few logs yet in the boom.

Chips.

It was estimated that the strike of the yard hands in Chicago entailed a loss of \$10,000 on the laboring men of Muskegon, Michigan.

A. T. Stone recently shipped 110,000 maple trees from Manton, Mich., for resetting on his tree claim in Dakota.

GILMOUR'S big mill at Trenton commenced operations on May 3rd. The drive of logs down the Trent is expected here this month.

It is said that the Ontario Lumber Company are making preparations to rebuild Dollar's mill. The mill will be completed this fall.

The first drive of logs down the Moira has all arrived at the Bay of Quinte and booms of them are being taken to Trenton and Deseronto.

It is reported from Manistee that Milmo & Stokoe, of Jeanerette, La., are trying to introduce cypress lumber and shingles in that market.

LATE hemlock and hardwood land purchases within a few miles of the mouth of the Menominee, in Wisconsin and Michigan, are said to amount to 12,000 to 15,000 acres.

The oldest and the largest tree in the world is a chestnut near the foot of Mount Etna, Italy. The circumference of the main trunk is 212 feet.

Do not force a boiler. If you do you are liable to soar upwards some fine day, and brickbats, hot water, steam and pieces of the overburdened boiler will go with you.

The gang board or plank has an ancient history. It was the plank of the ship that passed from stem to stern across the seats of the rowers, and along which they passed, and upon which the mast was laid when it was unhipped.

A SIMPLE method, which is very closely correct, is as follows: The sum of the diameter of the roll and the eye in inches, multiplied by the number of turns made by the belt, and this product multiplied by the decimal .1309, will be the length of the belt in feet.

ON May 29th, at Sandy Cove, Ont., a boy named Greaves, son of Wm. Greaves, was drowned near Thos. Greave's saw mill. The men at the mill went to the rescue, but were too late, and while they were away the mill took fire and was burned, together with a large quantity of lumber and logs.

MESSES. McArthur & Thompson's drive containing over 14,000 logs, says the *Minden Echo*, has passed this point and now hurries onward with rapid pace towards their destination. We understand these enterprising lumbermen will be on the market next season, buying all kinds of timber and railway ties.

QUININE, an important article of medicine, much used in fevers, ague, &c., is obtained from Peruvian bark, cinchona, or Jesuit's bark. It obtained its name cinchona from the Countess del Cinchon, wife of the Conde del Cinchon, Viceroy of Peru, who first sent the bark to Europe, and Jesuit's bark because it was introduced into Spain by the Jesuits, who had it sent to them by their brethren in Peru.

THE Port Arthur Lumbering Company, of Port Arthur, Ont., cut 750,000 feet of logs at its limit on Cloud river, the past winter, employing 30 men in the woods. The same company last season cut 3,000,000 feet on Pine river, but owing to low water the logs were hung up. An effort will be made to drive out these logs this spring. Hammon & McDougall, at Fort William, near by, last winter, got out 30,000 ties, 300 piles and 1,500 cords of wood, employing 60 men at Fort William and Fire Steel river.

LUMBERMEN AT WAR.

There is trouble among the lumbermen of Isabella county, Mich., over-running logs in the Chipewa river. Recently Judge Hart, of that county, granted an injunction forbidding Leaton & Upton from obstructing navigation at Pares Brothers dam at Mount Pleasant, which prevented the running of 50,000,000 feet of logs. A second injunction to interfere with the log drivers was granted, but has since been dissolved. Last week the ill feeling between the Saginaw lumbermen and the Isabella mill owners broke out in violence. The log drivers took forcible possession of the Woodin dam, and Woodin's men attempted to interfere they threw two of them into the river. In consequence three of the gang have been arrested on the charge of attempted murder. The hard feeling is spreading all over the vast lumber region that feeds the Muskegon and Saginaw mills. This bitterness was evidenced in what happened at Mount Pleasant one morning, when a dynamite cartridge was exploded under the dam of Harris Brothers. Great timbers were torn up and thrown one upon the other and the water was rapidly lowered. This dam was used as a feeder to float down the logs. The injury to the dam is several hundred dollars, while the loss of the log drivers will be up in the thousands.—*Timber Trade Journal*.

SPEED OF CIRCULAR SAWS.

It highly entertaining to run across the estimates made years ago of the pine standing in Michigan. In 1869 the Hon. John F. Drigg, in "an elaborate and carefully prepared statement," put the figures at 15,000,000,000 feet less than there are standing to-day on the upper peninsula. Three years later C. B. Headley, considered to be well posted, went the honorable gentleman 2,000,000,000 better. Mr. Headley thought that the maximum cut in the Saginaw valley would be reached in 1873. By 1873 the production was 619,000,000 feet in round numbers, and in nearly 10 years of the prophesy the figures run up to 1,000,000,000. In 1872 Colonel Ben Wait said there were 43,000,000,000 feet of pine in the state. Since Mr. Wait set those figures as much pine has been cut in Michigan as he named, and doubtless, if asked he would reply that there is now standing nearly, if not quite, as much more. A dozen years ago Mr. Wait was the most liberal estimator whose figures got into cold type, but as seen, even he was not liberal enough by 100 per cent.—*North Western Lumberman*.

FOREST fires have begun to rage this early in the season, says the *Northwestern Lumberman*, having broken out in Michigan and Wisconsin. Notwithstanding the large amount of property destroyed annually by such fires there has been no way devised to prevent them. Hunters, land-lookers and others, tramping through the forests will not use due care; and the boy who makes a pile of brush and burns it, more for the fun than any other reason, is rarely mindful of the results. Lumbermen cannot charge these fires to the carelessness of others wholly, for following their operations they leave scattered over the ground twigs and brush that when dry make fuel that catches fire quickly, and burns fiercely. It strikes us that standing pine is now worth so much that it might possibly prove a big investment for the owners of it to use at least as much precaution to protect it from destruction as they would other property of equal value.

Exportation of Canadian Pine.

OTTAWA, June 5.—Mr. R. A. Loveland, of East Saginaw, had an interview to day with the Commissioner of Customs in reference to the exportation of a large quantity of Pine logs cut by the Emery Lumber Company during the past winter on French river, which enters into Georgian Bay. From information conveyed by that gentleman, it appears notwithstanding the increased export duty the Americans still consider it possible to carry on a profitable business in that direction.

SPECIAL despatches received at Milwaukee, Wis., state that fires are raging in the timber lands along the Escanaba River, involving a loss of thousands of dollars. Forest fires are

also burning at Junction City and in the vicinity of Sturgeon Bay, and are raging fiercely along the lines of railroad north and south of Phillips, Wis.

Perhaps the most extraordinary that success has been achieved in modern science has been attained by the Dixon treatment for Catarrh. Out of 2,000 patients treated during the past six months, fully ninety per cent. have been cured of this stubborn malady. This is none the less startling when it is remembered that not five per cent. of the patients presenting themselves to the regular practitioner are benefited, while the patent medicines and other advertised cures never record a cure at all. Starting with the claim now generally believed by the most scientific men that the disease is due to the presence of living parasites in the tissues, Mr. Dixon at once adapted his cure to their extermination; this accomplished the Catarrh is practically cured, and the permanency is unquestioned, as cures effected by him four years ago are cures still. No one else has ever attempted to cure Catarrh in this manner, and no other treatment has ever cured Catarrh. The application of the remedy is simple and can be done at home, and the present season of the year is the most favorable for a speedy and permanent cure, the majority of cases being cured at one treatment. Sufferers should correspond with Messrs. A. H. DIXON & SON, 305 King street west, Toronto, Canada, and enclose a stamp for their treatise on Catarrh.—*Montreal Star* 1y12.

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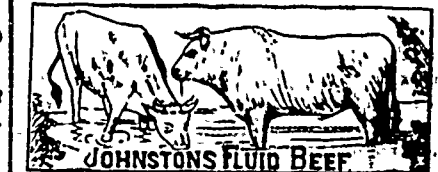
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PETERBOROUGH, Ont., JUNE 15, 1886.

A GROWL FROM MONTREAL.

THE Montreal Herald is dissatisfied with the action of the Dominion Parliament in increasing the log export duty. It claims—and quotes from the Trade and Navigation returns to sustain its claim—that there has been no reckless export of timber in the rough, and that, therefore, the increase was unnecessary, or "silly," as the Herald's choice phrase reads. But the Herald has evidently ignored recent events and must have shut its eyes to current news. United States lumbermen have purchased largely of limits in Canada, but they have made no preparations towards erecting mills. Instead, we hear of barges and steamers being built on an extensive scale, for the purpose of carrying the logs from the Canadian shores to Michigan, to be there sawn into lumber. These purchases and preparations for exporting the logs are much more extensive than they have been on any previous year and all indications go to show that they would have increased had not the Parliament stepped in to protect the Canadian forests and the interests of the Canadian lumbermen. If the United States lumbermen wish to work Canadian limits let them build mills on this side of the line, or at any rate let the Canadian manufacturers be placed in such a position that the foreigner, who does not give us the benefit of the labor of manufacturing, shall not have an advantage over them on account of the operation of the tariffs. This is what has been done, and efforts to undo what has been accomplished will have little chance of being successful.

GOING TO EXTREMES.

WHILE approving of the action of the Dominion Parliament in increasing the export duty on logs, the Montreal Star wishes it to go farther and impose an export tax on sawn lumber. It is not at all likely that the Star's advice on this point will be accepted or acted upon. One reason why the export duty on logs was increased was because the Canadian manufacturers were, under the former tariff,

placed at a disadvantage as compared with the American exporter of logs, and it was thought desirable to relieve the manufacturers from this disadvantage.

At present the Canadian lumbermen are compelled to pay the duty imposed by the United States custom laws and, weighted with this burden, compete with the lumber producers of that country. If they were compelled to pay the Canadian Government for the privilege of taking the lumber out of this country, and to pay the United States for the privilege of taking it into that country, they would be unable to compete with the lumbermen who had no customs duty to pay at all. The lumber industry of Canada is too valuable to be stamped out by ill-considered legislation.

An export duty would not only effect the trade with the United States, but with other countries. The Canadian lumber or timber dealers to push trade, have to compete with other exporters of lumber wherever they send it, and to place a duty on the export of the material would result in handicapping them, and crippling the business and the export trade of the country.

The idea of the Star is to build up on this side of the line factories for making sash, doors, etc., but it leaves out of account the trade done with other countries besides the United States, and does not stop to consider that, in giving protection to sash and door factories, it would not exclude foreign manufacturers from our own country—the powerful argument of the protectionist—but would cripple or extinguish an extensive industry already existing in the country with the hope of creating another.

It is not probable that the suggestion made by the Star will be further urged. It would not be a wise policy, and that fact is so easily seen that it will fall to the ground.

STRIKES AND THE LUMBER TRADE.

THE present unsettled condition of affairs in the building trades in Boston, says the Commercial Bulletin, has naturally powerfully affected the lumber business, the prosperity of which is dependent upon the building business. At the opening of the season the prospects for a large demand for lumber were very bright, as there promised to be a very active building business. The improved outlook for general trade appeared to have effected real estate owners and operators very favorably, and the architects were kept busy with enquires and orders. The permits for building taken out for the first few months of this year were considerably in excess of those for last year. * * * There would have been a considerable amount of tearing down and rebuilding in the business district also. The prospects for the erection of small and medium class dwelling houses in the suburbs and suburban towns were good.

The lumber dealers, wholesale and retail, thus looked for an excellent business in this market and at profitable rates. This latter expectation was based upon the fact that the cut of pine and spruce in New England, and of pine in the west, would only be of average proportions at the most. The cut and supply of hardwoods was placed at only an average amount also, and as the prices of southern pine were down to a very low level, only a change in the direction of higher figures was expected. The prospects of a strike on May 1st by the builders' workmen for eight hours and an advance in wages put a much different face on the condition of affairs.

The buildings which were under way were hurried to completion, and no new work of importance was undertaken. The only exception was in the building of small and medium class dwelling houses. The men employed on this class of houses have generally not struck. The building of these houses has therefore been continued in the suburbs and suburban towns, and indeed all over the state. The lumber used is coarse lumber, that is New England lumber, principally spruce. For this there has been a good demand, particularly for framing stock, and the northern mills have been, and are now, well supplied with orders. The demand for laths, clapboards and shingles has not been as large as if general business was good, but it has been of very fair proportions, and prices have ruled high.

TIMBER CULTURE ADVOCATED.

The March number of *The Century* contained an article on "Timber Famine and a Forest School," from S. W. Powell, who said: "Savages live lavishly as long as their stock of food lasts, although they know they will have to starve afterwards. We say they can never climb out of savagery until they learn to save and to provide for coming want. Yet with respect to the forests—which are, no doubt, the most indispensable product of the soil—we have acted very much as the Comanche does with respect to his store of food.

"The value of our forest products is not less than \$500,000,000 a year. Our store of white pine is rapidly approaching exhaustion, and other valuable species will be as ruthlessly wasted when the pine is gone. When the resulting timber famine comes, it will for several reasons be a more serious calamity than would be the failure for 10 consecutive years of any other of our crops.

"Failure, or even great scarcity, of working timber involves the derangement of total ruin to a vast number of important industries which wholly or in part depend upon the forest for their raw material. Some of these are metal lurgy, building, wood-turning, tanning and the manufacture of articles made of leather, the making of wagons, carriages, furniture Musical instruments, sewing-machines, etc. In short almost everything one uses needs wood directly or indirectly for its production.

"Destruction of the forest, especially upon steep hillsides, causes irregularity in rain fall and other climatic changes very harmful to agriculture, commerce, manufactures, and health besides the loss from floods, of which during the last few years we had such sad experience.

"But we shall never keep the hillsides wooded merely as preventive measure. We must learn to make timber culture in such localities profitable; and that can never be done without skilled labor and such professional training as the forest schools of Europe afford. * * * We are rapidly nearing a terrible reckoning for the breach of natural law involved in our wasteful treatment of the woods.

"We have a great deal of second growth woodland which although it may be of value as a means of regulating climate and the flow of water in springs and streams is producing very little of the timber which we are beginning so sorely to need. If we had a forest school, with a large tract of woodland under its care, it would be easy for farmers' sons to learn in a few weeks of observation, study and practice how to do the pruning and thinning necessary to change these unsightly and nearly profitless wood lots into rich and permanent sources of gain. If the proposed Adirondack reservation is made, as it should be, to yield a large revenue instead of being a heavy and increasing burden and peril to the public, a thoroughly equipped forest school will be one of the first requisites."

PROTECTING CANADIAN LUMBERMEN.

A Detroit despatch to the New York Times says:—Lumbermen in the Saginaw valley section of the State are much exercised over the news from Ottawa, Ontario, that the Canadian Government has advanced the export duty on pine saw logs from \$1 to \$2 per 1,000 feet. The effect of this advance in the export duty will be to materially injure the saw mill industry of Eastern Michigan. Parties in this State own about 1,700,000,000 feet of pine timber in the Georgian bay district, the great bulk of which was purchased in the expectation of cutting the logs and shipping them to Alpena, Tawas, the Saginaw river and other ports for manufacture. The Emery Lumber Company alone owns 100,000,000 feet and cut last winter 55,000 pieces, scaling about 15,000,000 feet, which it was expecting to bring to east Tawas and Saginaw this season. Ralph H. Loveland, of east Saginaw a member of the Emery Company, started for Toronto immediately upon the receipt of a despatch announcing the decision of the Minister of Customs, to look after his company's interests, and others will follow at once, Mayor Hill, of Saginaw City, among the number. It is, of course, generally conceded and the object of the Canadians is to prevent the exportation of saw logs to American points for manufacture, and

compel Americans who have purchased timber limits in Canada to erect mills in Canada.

SPEED OF CIRCULAR SAWS.

It highly entertaining to run across the estimates made years ago of the pine standing in Michigan, In 1869 the Hon. John F. Drigg, in "an elaborate and carefully prepared statement," put the figures at 15,000,000 feet less than there are standing to-day on the upper peninsula. Three years later C. B. Headley, considered to be well posted, went the honorable gentleman 2,000,000,000 better. Mr Headley thought that the maximum cut in the Saginaw valley would be reached in 1873. By 1873 the production was 610,000,000 feet in round numbers, and in nearly 10 years of the prophecy the figures run up to 1,000,000,000. In 1872 Colonel Ben Wait said there were 43,000,000,000 feet of pine in the state. Since Mr. Wait set those figures as much pine has been cut in Michigan as he named, and doubtless, if asked he would reply that there is now standing nearly, if not quite, as much more. A dozen years ago Mr Wait was the most liberal estimator whose figures got into cold type, but as seen, even he was not liberal enough by 100 per cent.—*North Western Lumberman.*

CANADA ON STRIKE.

The Yankee fishermen are highly indignant because the Canadians are determined to protect their fisheries, and the Michigan lumbermen are highly indignant because the Canadian Government has placed an export duty on saw logs, which will necessitate the establishment of saw mills in Canada. The trouble with these Americans is that they have always been accustomed to think of Canadians as slow-going innocent country people, easily imposed upon and willing to always remain hewers of wood and drawers of water for the Americans. They will soon understand that Canadians are wide-awake practical people, quite able to take care of themselves and that it takes more than an act of the United States Congress to decide any matter in which Canada is concerned. The right place for the saw mills is in the district where the lumber is cut. Northern Ontario is especially well provided with water power and there is no reason why mills should not be erected there as well as in Michigan.—*Montreal Star.*

PHOSPHATE AND LUMBER.

OTTAWA, June 4.—A deputation consisting of from fifteen to twenty phosphate and lumber merchants, headed by Mr. Alonzo Wright, M. P., waited on the Minister of Public Works this morning, in reference to the improvement of the River Lievre, or which a vote of \$10,000 had just been made by Parliament. They showed to the Minister that the increase in the phosphate trade alone was over \$1,500,000, and that the proposed lock and dam at Little Rapids, backing the water and rendering the river navigable up to the high falls, would be a great addition in the way of increasing the trade.

The Minister assured them that the intention of the Government was to benefit that trade as much as possible, and that a proof of that intention was given by the Government asking Parliament for the money voted. The plans and specifications would be immediately prepared and tenders invited.

HANDICAPPED.

Under existing regulations the lumber trade of this part of the Dominion is seriously handicapped. Besides the heavy timber dues now enforced, the export of dressed lumber to the other side is virtually paralyzed by the heavy duty imposed by the United States customs. According to the Canadian tariff, the duty on all kinds of lumber imported, rough or dressed, is \$2 per thousand feet, whereas, if a Canadian firm ship dressed lumber to the States they have to pay at the rate of \$6 per thousand, all lumber other than rough being tarified as finished material. This state of things naturally tends to cripple the lumber industry and prevents competition, besides cutting out all labor of dressing lumber. Again, the high rate of rail way freight is ruinous to shippers.—*The Miner.*

NATURAL SEEDING OF FORESTS.

It is unquestionably true that large areas in the Northern, Eastern and Middle Atlantic States, now almost destitute of trees, are better adapted to the growth of forests, and would yield a larger income to the owners if devoted to that purpose than to any other. The natural seeding of forests has an important bearing on this subject. To *let nature* in this work is an easy way for its accomplishment. Nature is prolific in the abundance of seeds that she provides for the renewal of all the trees and plants, but she cannot unaided quickly sow the seed of the better kinds of timber trees over large tracts of land that have been stripped of seed-bearing trees, though some of the less valuable trees, like grey birches, are easily distributed over such tracts. John E. Hobbs, of North Berwick, speaking of the common belief in the rotation of hard and soft-wooded trees, and that one always follows the other naturally, says there is but little foundation in fact for this belief. This rotation often occurs and is effected in two ways: In one way by moving either of the varieties from a tract of land, which is afterwards seeded by the other variety that happens to be more favorably situated for doing it. In this way it is quite easy for a farmer to change the character of his forests, if when removing them he leaves such trees standing to reseed the land as he prefers for a subsequent growth. In the other way the rotation is caused by live stock. Cattle, sheep, horses and goats eat almost all varieties of young deciduous trees, and would prevent their growing when suffered to roam at large over the forest land. If live stock be left out of the question, the following may be given as the rule for the natural seeding of forests: Land from which a forest has been removed is reseeded by trees which are most favorably situated for furnishing the seed, unless it has been done with seed matured in the forest immediately before its removal, the wind being the chief agent in sowing the seed. When some forests of white pine trees are cut down a dense growth of the seed of the same kind of trees springs up at once, and when others are cut many years elapse before enough trees grow up to cover the ground. The tenacity of life of the seeds of the white pine, says Mr. Emerson, is remarkable. They will remain for many years unchanged in the ground, protected by the coolness and deep shade of the forest above them. But when the forest is removed and the warmth of the sun admitted, they immediately vegetate. A few pines scattered through a forest of deciduous trees fill the ground with seed, in a series of years, so completely that when the forest is cut down it not infrequently happens that a pine forest springs up its place. As some white pine forests are and others are not immediately renewed, it is possible that the seeds may not possess that tenacity of life which is claimed for them. Again, this difference in the time of renewal may be accounted for by the fact that the white pine does not mature seeds every year. In some years the mature cones in a white pine forest are very abundant. In other years there are scarcely any to be found. Therefore a forest which is cut down in the year when the cones are abundant is renewed at once, but if cut in the year when there are none or few to be found, the natural reseedling is either precluded or at least doubtful. This desirable result could have been effected if a sufficient number of seed-bearing trees had been left standing to reseed the land, and after it has been done these trees can be removed with benefit to the young growth, for young trees require the same advantages of air and sunshine as Indian corn, and grow much faster under full exposure than in the shade. Another authority states that the method of reseedling forests by leaving nurses standing over the area to be reseeded, though practical with modifications to several species of deciduous trees, has been almost entirely abandoned in Europe with the pine, on account of danger to the nurses through windfall, and of the injury done to the young growth by their removal. Instead of this, narrow strips are cleared and other strips are left standing by the side of the first, from which the reseedling is expected. This subject of natural seeding of forests under proper conditions

furnishes a solution for a cheap method of covering certain sections of land with forest growth.—*Manufacturers' Gazette*.

THE QUEEN AND THE CANADIAN SECTION.

From the London, Eng., *Canadian Gazette* of May 27th we take the following notes regarding the Colonial Exhibition:—

The *s.s. Ulunda*, with 800 tons of exhibits from Canada, reached the London Docks on Tuesday last, and so excellent were the transport arrangements under the charge of Messrs. T and E. Kenny, that active work in the unpacking and arrangement in the various courts was possible as early as 4 a. m. on Thursday morning. The new exhibits comprise the Dominion Government's interesting ornithological collection to form part of the Natural History court; a variety of excellent photographs and pictures, which already add brilliancy to many portions of the Canadian section; silk and other textile fabrics of much merit; Canadian machinery of the famous Corliss type; and also considerable additions to the furniture, metal, educational, and agricultural exhibits, such as will, it is hoped, enable the Canadian section to assume a complete form in the course of the present week.

The commercial interests of Canada are already beginning to benefit by the display. During the past week very large orders are reported by various Canadian firms, including organs, spring mattresses, and various manufactured goods. Representatives of the London School Board are among recent enquirers, with a view of large purchases of school desks, seats, appliances, while deputations with a similar object have come from as far north as Halifax in Yorkshire.

The Exhibition Conference Committee has drawn up a preliminary programme of papers to be read at the Exhibition during the season. Among the contributions we notice that those touching upon Canada will include one by Professor Fream on Canadian agriculture, and another by Professor Macoun on the botany and vegetable products of the Dominion, while Dr. Selwyn and Mr. Alexander Begg are also to read papers. Mr. Begg will treat of "The Great North-West."

The record of the Exhibition opened well in the way of numbers, and last week full sustained the high figures previously reached. In the course of the week as many as 140,533 passed the turnstiles. For the corresponding period, dated from the opening, in former exhibitions the official returns were: 1885, Inventions, 87,870; 1884, Health, 91,436; 1883, Fisheries, 74,871. A comparison of the totals at each exhibition in the period to date shows:—1886, Colonial, 386,111; 1885, Inventions, 255,110; 1884, Health, 209,596; 1883, Fisheries, 275,841.

On the morning of Friday last the Queen, accompanied by the Prince of Wales, Princess Beatrice, and the Duchess of Albany, visited the Canadian section in the course of an informal inspection of the Colonial portions of the Exhibition. Entering at the agricultural court from the West Indian section, the royal party was received by the Canadian Executive Commissioner and Lady Tupper. After presentation by the Prince of Wales, Lady Tupper handed to Her Majesty a bouquet of Marechal Niel roses, lillies, ferns and other flowers. Lady Tupper also took this opportunity to express great regret that circumstances had prevented the presentation to Her Majesty of the bouquet sent by the Montreal Horticultural Society. The Marquis of Lorne, who had previously been in the building, here joined the party, and presented Dr. Selwyn to Her Majesty. Both Queen and the Prince of Wales expressed admiration at the arrangement of the agricultural trophy, and evinced much interest in the display of fruits, grains and general agricultural products. Proceeding for a short distance down the south aisle of the central gallery, Her Majesty accompanied by the Prince of Wales, whose arm she took, made a detour through some of the Australian courts. On again entering the central Canadian gallery, from the South Australian portion of the central annex, attention was specially drawn by Sir Charles Tupper to the large map of the

Dominion, and to the completed line of the Canadian Pacific—in the progress of which the Queen and her eldest son have been known to take a keen interest. Some time was then spent in an examination of the game trophy, special interest being excited by the Hubbard natural history collection, and by the fur exhibits of Messrs. Renfrow of Quebec, and of the Hudson Bay Company. Here Her Majesty was pleased to purchase an elegant lady's sable set from the exhibit of Messrs. Renfrow, and a silver fox skin from the Hudson Bay collection. Passing through the interior of the trophy, a handsomely framed photograph of Sir John Macdonald arrested attention, and Her Majesty expressed great satisfaction at the Canadian Premier's recovery from his recent illness. In the mineral court, which was next reached, the royal party much admired the agates from the head of Lake Superior comprised in Mr. Keefe's collection, the magnificent amethyst exhibited by the Executive Commissioner from Amethyst Island, and the specimen of gold from the Blue Nose lode belonging to the Nova Scotian Government. In the western gallery the machinery in motion claimed considerable notice, as well as the photographic views of the Windsor hotel and ice palace of Montreal prepared by Messrs. Notman of the same city. The educational court was next entered. In the Ontario portion Dr. May was in waiting, and reaching that allotted to the Province of Quebec, Lord Lorne presented the Hon. Mr. Quimet, Superintendent of Public Instruction for the Province of Quebec, and Mr. Joseph Manette, who is connected with the library collected by the Dominion Government. Her Majesty here noted with interest the evidences given by the exhibit of the great advance made during recent years in the education of the Dominion, and from this court entered the New Zealand section, expressing her great gratification at the parts of the Canadian display that had come within her notice.

It is estimated that there are three million feet of pine timber tributary to Thunder Bay, intersected by the Pigeon, Pine, Jarvis, Cloud, Carp, Slate, Sturgeon and Kaministiquia rivers. About three-fourths of this amount is white pine. W. H. Carpenter's limits embrace 25,000 acres of timber lands, of which there are 200 million feet of pine, and about the same amount of tamarac and spruce, cedar and poplar.

A "Pointer."

When Col. Sellers gives you a "pointer" in stocks, my friend, leave them severely alone, but when your own feelings tell you that you have palpitation of the heart, asthma, bronchitis or catarrh which unless checked are apt to run into consumption, heed the admonition before it is too late. All the diseases enumerated, and others, arise from impure blood. Put the liver in action, the largest gland in the human body, and you will speedily regain your lost health, and your bad feeling will disappear. Dr. Pierce's "Golden Medical Discovery" will accomplish the work speedily and certainly. Of your druggist.

J. D. Tully, druggist, will gladly inform anyone enquiring as to the wonderful merits of West's Pain King. The standard remedy for dizziness, summer complaint, cholera morbus, cholera, colic, etc. Price 25 cents.

If any of our readers that are afflicted with rheumatism have never tried West's World's Wonder or Family Linctment, we advise them to do so at once, and be convinced of its extraordinary merits. It is a never-failing remedy for cuts, sprains, bruises and all complaints requiring external treatment. Price 25 cents and 50 cents per bottle. Sold by J. D. Tully.

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As there are many inferior goods, corded with jute, hemp, etc., offered and sold as Coraline by some unprincipled merchants trading on the reputation of our genuine Coraline, we warn the ladies against such imposition by drawing their attention to the necessity of seeing that the name

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WOOD POWDER.

Dynamite, so long used as an explosive in the engineer corps of the Belgian army, has lately, on account of the numerous difficulties attending its use, been replaced by wood powder, made at Canbille, near Peor, in the Province of Limburg.

The powder is simply sawdust, treated with a mixture of nitric and sulphuric acids, and afterward formed under powerful pressure into cylindrical or prismatic cartridges. These cartridges are prepared for commercial use by covering them with paraffined paper, which protects them from moisture.

The instantaneous production of the gases arising from the primer and the explosive, and the simultaneous action of these gases in every direction cause the air in contact with the face surface of the cartridge to act to some extent as a light tamping, and the power of the explosion is directed to the other face.

In comparative experiments made upon a rail with wood powder and dynamite with cellulose, it was ascertained that for equal weights charges of the first substance were at least as powerful in those of the second, and that the results were more constant, more regular.

In the experiments for rupturing double-T beams, the maximum effects were produced when the cartridges were placed in the angles upon one face of the beam.

Below are the results of the different experiments in the rupture of double-T beams of wrought iron, with equal weights of wood powder, of dynamite with cellulose, of gun cotton, and of paleine of 40 per cent. :

Nature of Explosives.	Pounds per Cwt.	Trials			Insufficient
		Complete Rupture	Partial Rupture	Insufficient	
Wood powder	3.50	10	8	2	1
Dynamite, with cellulose	4.50	10	8	2	1
Gun cotton	5.00	10	8	2	1
Paleine	6.25	10	8	2	1

*One wholly failed to explode.

But it is especially with reference to transportation with an army that wood powder possesses remarkable advantages. It is well known what precautions are essential in order to protect dynamite cartridges in pack trains from projectiles which might strike them and cause explosion. With cartridges of wood powder this danger need not be feared, since when they are placed against iron plates, and struck by bullets fired a distance of fifty metres, they do not explode.—*Quarterly Journal.*

THE AVERAGE LIFE OF BUILDINGS.

"How long does it take for a city to rebuild itself?" said the building inspector. "Well, that depends upon the progressiveness of the city. I should say about seventy-five years. That is the average life of a building nowadays. There are very few houses in this city that were standing seventy-five years ago. The old houses on north Capitol street, built by George Washington, are older than that, and there are other old buildings in the city. The Capitol is an old building, but I am speaking of private houses. The buildings erected by the Government, under careful supervision and at a great expense, of course, are more durable structures than those erected for private residences. The building which is being erected by Mr. Abell on F street will cost more per foot, I suppose, than most Government buildings. No, it may not be a good investment, but it is not being put up as an investment, it is a monument. The new State, War and Navy Department building is, however, just as well built as that. That building will be standing a thousand years hence. It may, of course, need some repairs before that time, and roof, of course, may have to be rebuilt. No material or work is allowed to go into these buildings unless it is up to the standard. The army engineers who have charge are very strict. Of course a private individual would not put up such a building. It would not pay. Yes, good brick ought to be as durable as stone. It depends a great deal upon the manner in which the bricks are laid. Good mortar becomes harder with age. When dry bricks are laid during the warm months

the brick will absorb all the strength of the mortar. Brick laid at such a time ought to be wet. A wall erected in April or May or October and November of sufficient thickness, ought to last for two or three centuries."—*Washington Star.*

THE LATE E. B. RATHBUN.

The *Belleveille Intelligencer* of June 1st says:—The sad tidings of the death of Mr. H. B. Rathbun, of Deseronto, reached Belleveille this morning. Mr. Rathbun has been in ill health for some time past. Last winter he went to California for the benefit of his health. From California he took a tour through the Southern States and returned home but a short time ago. He found rest this morning about 4 o'clock. The deceased was born at Auburn, N. Y., and was 74 years of age. He came to Canada in 1854 and located at what was then called Mill Point, but is now known as Deseronto. At the time of his arrival the place had but one house. He began lumbering operations and from modest beginnings gradually extended his business until the name of Rathbun became a symbol of solidity and integrity throughout the Dominion and the adjacent states of the neighboring Republic. Through his thrift and enterprise Deseronto has developed from what it was when he found it to a thriving village of upwards of 3,000 persons. The operations of the Rathbun company have become so extended that to day they have branches in Napanee, Picton, Belleveille, Gananoque, Toronto, Oswego, Albany, New York, Liverpool and Glasgow. All these agencies are supplied from the mammoth works at Deseronto, which are the backbone of the place. Besides these large lumbering operations there has been equipped a small fleet of bay steamers, a railway into the back country, a shipyard, a large flouring mill, and numerous minor undertakings, all the outgrowth of his early enterprise and the energy and ability of his son E. W. Rathbun. Some twenty years ago the deceased retired from active business pursuits and surrendered the management of his vast business interests to his four sons, the eldest of whom is Mr. E. W. Rathbun. The result has proven that the son is worthy of his sire.

The late Mr. Schuster, the City Missionary, had a staunch supporter in the deceased, who recognized the good work that was being done, and encouraged it with his ample means. A family of four sons and three daughters survive him.

FORESTS AND FIRES.

In the Quebec Provincial Legislature on May 31st, Mr. Poupore moved for all correspondence respecting the enforcement of Vic. 46, respecting the sale and management of timber on public lands. Mr. Poupore stated that a large quantity of pine and other valuable timber was annually destroyed by people recklessly setting fire to it all seasons of the year. He trusted that the government would enforce the act and inaugurate a system to protect our forest reserves. He suggested to the Commissioner of Crown Lands that the limit holders should be charged a certain fee to aid a fund to establish a force of men to protect the forests from reckless people. He expressed the opinion of the lumbermen of the province to pay this fee. He did not wish to be considered as opposed to colonization, but his object was to protect the timber from reckless squatters, as distinguished from *bonafide* settlers. The squatters went on the ground in lumber regions, started taverns, and to clear a few acres in the spring they set fire to the timber and burned a million dollars worth of valuable property. He hoped the Government would amend the law to prevent this state of things. The timber trade was one of the most important sources of revenue to the province and as a practical lumberman he would wish to see the law enforced.

Hon. Mr. Lynch said he had no objection to bringing down the correspondence if Mr. Poupore would also ask for the orders in council respecting the enforcement of this law. He felt the great importance of doing everything possible to protect the timber reserves of the province. It was a question on which the future prosperity of our province depended, and its importance could not be over-estimated. The province of

Quebec has been especially blessed by nature with a wealth of soil, of timber and of minerals, all of which are capable of vast development. It is the desire of the Government to in every way promote immigration and colonization in suitable districts, but they did not ask a man to settle in a district which did not offer every advantage to himself and children. He was greatly pleased with the remark made by the Lieutenant-Governor on Arbor day when his Honor said that they should place the settlers on the land which offered the fullest advantage to them and preserve the forest limits, so they might be found more valuable and more useful a hundred years from to-day. He could look back with pleasure to the fact that this law which divided the lands into lands for settlement and forest reserves had been placed on the statute book by him. He regretted that his invitation to the lumbermen of the province to assist him in carrying out his law had met with a poor response. He was, however, prepared to go so far as to make the lumbermen contribute to the protection of the forests assessing a fee on them.

After similar remarks from Dr. Duhamel the motion, as amended by Hon. Mr. Lynch, was agreed to.

A UNITED STATES VIEW.

The *Bay City Lumberman's Gazette* says:—William Little, of Montreal, advocates the increase of the export duty on logs from Canada to \$4 per thousand feet, \$2 to counterbalance the United States duty on lumber and \$2 more for national protection. He says, in order to foster Canadian manufactures, it would be best to have a rate of export duty almost prohibitory, but he would not propose that. Michigan mill men who are arranging to import logs from the Dominion ought to feel grateful to Mr. Little for not advocating a prohibitory rate and proposing only a mere pittance of \$1. With that rate of export tax the Canadians would keep their logs at home by a large majority. If the Canadians want the timber more than they want American money, and the development of their country, they should follow Mr. Little's advice. The money which being invested in timber limits in Canada would have been put into Southern timber lands and saw mills in the south, the duty on lumber imported into the United States would be retained, and Canada would be left to the slow growth of the past. If her forests in their primitive condition are of such great value in themselves and she desires to retain them intact, she can do so by imposing such an export duty on logs as Mr. Little recommends. With any greater rate of duty than is now imposed Canadian logs will not be brought to Michigan for sawing nor will Canadian lumber be in much demand, while southern pine lands are obtainable at \$1.25 to \$2.50 per acre. Southern pine is calculated to take the place of Canadian lumber in the American market and all that is needed to enable it to do so is the greater development of the industry and an improvement in railroad enterprise in the south.

OUR TIMBER SUPPLY.

Hon. Mr. Carling's scheme to establish experimental stations this summer will not come into operation prematurely. Among the things which it proposes to deal with in forestry, and while the usefulness of experiments in that direction are primarily intended to benefit the prairie Provinces of the Dominion, they must before many years have passed be acted upon in the older sections of the country. It is true we have an abundance of timber just now; but the foreign demand is increasing and the value of our forest possessions are rapidly being exchanged. They must before long become of enormous value. A glance over the geography of the world shows that but one other country possesses so large an area of Forests as Canada, and that country is Russia. At the present rate of consumption the United States, with 16,000 saw mills, has but twenty seven year's supply, outside of private possessions, and the trade now springing up with that country is but the beginning of what must become a very great branch of our foreign commerce in a few more years. The planting of hardwood trees on land

not otherwise very useful cannot be begun to soon. France since 1848 has converted nine millions of her waste acres into forest, and the wisdom of that course is now abundantly demonstrated. Each acre, which before being planted with trees produced about \$175 annually, is now valued at over \$600. The people of Canada, when they have looked into this matter, will see the propriety of taking any proper steps which have for object the development of forestry. There's millions in it.—*London Free Press.*

SERIOUS BUSH FIRES.

The *Nipissing Times*, published at North Bay, says:—The bush fire which was referred to when going to press last week, originated about a half a mile above the village. A north-west wind was blowing at the time, which caused the fire to make rapid headway towards the village. The hose, not being of sufficient length, was useless. A large number of the villagers and men from the C. P. R. shops, hastened with pails and axes to stop the progress of the flames, which would in a short time have got beyond their control. Water was conveyed to the spot by locomotives. After two hours hard labor the progress of the fire was checked.

The *Renfrew Mercury* says:—After the long continued dry weather, bush fires in many parts of the country became alarmingly dangerous last week. At North Bay the village bell was kept ringing continually on account of the fires in the vicinity. At Renfrew, a fire spread from Mr. J. Murphy's farm at the Pinnacle, through Mr. E. Mayhew's limits, which were entirely devastated of a fine growth of young pine, and the fences burned down, and then on to Mr. Ward's property, where it also destroyed a considerable portion of fencing and menaced the barn. A number of friends from the village went out to assist in fighting back the flames and succeeded. Many of them were laid up next day—Sunday. Mr. Murphy's bush was also destroyed. The fire through Mr. Mayhew's property caused a great commotion among a lot of partridges. On Saturday morning the Wilberforce side of Eganville had a narrow escape from destruction also. A slight change in the wind fortunately averted the disaster. Boys had carelessly started a fire.

About two weeks ago says the *Eganville Enterprise*, set out fires in the vicinity of Pogue Lake, says a man just down from the woods, and the high winds which prevailed since that time have carried the fire down to Brennan's creek, a distance of over ten miles, the breadth of the burnt district being over three miles. Mohr's limit suffered greater, the fire totally destroying it. McLachlin Bros.' limit caught in several places, burning all the provisions the men had for the drive. On Saturday during the high wind the barns and outbuildings on the farm of Mr. Stephen Ryan, Reeve of South Algoma, took fire from the bush and were totally destroyed. A number of settlers in South Algoma and Hagarty have had their fences and crops burnt. On Saturday evening they had a good shower of rain, and only for this a good deal more damage would have been done. The Polish settlers were removing their furniture and effects from their houses and burying them, but the timely rain saved their buildings.

A Russian Pole was arrested at the instance of McLachlin Bros and brought before Justices Kinders and O'Grady, charged with setting fires to their limits, and was by them committed to goal for thirty days.

BEATTY'S wharf, house and dock and the Parry Sound Lumber Company's storehouse, at Parry Sound, containing a quantity of flour, oats, etc., were destroyed by fire on May 29th. A strong wind placed the lumber yards of the Parry Sound company in jeopardy, but strenuous exertions on the part of the employees saved the property. Loss covered by the insurance.

W. C. RANSOM, deputy commissioner of railroads in Michigan, estimates that there will be 390 miles of new road constructed in that state this year.

FORESTS FOR FOREIGNERS.

A MEASURE for the public good can rarely be adopted without causing inconvenience to somebody. It appears that the very judicious and beneficial action of the Dominion Government in increasing the export duty on saw logs is no exception to this general rule. The *Globe* constitutes itself the advocate of these sufferers, and in an editorial article zealously urges their cause. Its clients are two bodies with somewhat different, though allied interests, being the saw mill men of the United States, and Mr. Mowat and his colleagues.

We are informed by the *Globe* on behalf of the foreign interest that "mill-owners from the United States have lately purchased large timber limits on the North Shore of Lake Huron, &c.," that these men will consider the increased export duty a fraud upon them, and may, therefore, induce their Government to retaliate. The country will not agree with the *Globe* in preferring the interests of these foreigners to those of Canadians. Why should our saw mills be closed, or in newer districts remain unbuilt, in order that foreign mill-owners may secure the profit and foreign mill hands earn the wages gained by the conversion of our saw logs into lumber? As to fraud, the idea is absurd, for it is no oppressive duty, but merely a reasonable measure to redress the unfairness of the imposition of a duty on Canadian lumber taken into the States, while their lumbermen wish to obtain our logs free. Now that our neighbors have made preparations to carry on these operations on a larger scale, it has become necessary to redress this inequality so unfair to our country. The cry for retaliation is just as unfounded, for it is Canada that is simply protecting itself by meeting an unfair discrimination, and putting matters on an equality. The *Globe* occasionally pretends to have an especially friendly feeling for the Canadian "workingmen." In its course in this matter we have another proof of its impudent hypocrisy in this claim. Now, as always, it prefers the interests of foreign workingmen to those of Canada. It is bitterly aggrieved because this means has been taken to prevent the workingmen in the United States saw mills from snatching from Canadian workingmen in Canadian saw mills the profit of turning Canadian saw logs into lumber.

The case on behalf of Mr. Mowat and his colleagues, as put by the *Globe*, is no stronger. It is not to be desired that facilities should be afforded them of stripping Canadians of the profits of manufacturing lumber in favour of foreigners, merely to assist Mr. Mowat to obtain money from those foreigners to satisfy the greed of his followers, and enable him to keep up his extravagant expenditure out of capital. If the raised export duty has the effect of putting some check upon such wasteful sales this will be only an additional benefit derived from it. It is well that the property of Ontario should not be sacrificed by such improvident sales, and it is also well that the Administration should not be encouraged in extravagance by having the easy expedient of selling some more of the Provincial real estate whenever it cannot make both ends meet out of current revenue. When there is a demand for our more distant timber to convert into lumber there will be a sale for it, and it is only an improvident policy to force premature sales. This is especially the case when our property is thus sacrificed on the worst possible conditions, netting us merely the bare purchase money and dues, making an inroad on our natural resources, taking from our own people the advantage to be derived from the trade, and conferring all its benefits upon foreigners. An additional light is thrown upon the impolicy of such sacrifice sales, when we reflect that some of these purchasers from the United States have possession in their own country of timber lands which they are avowedly holding in reserve for the inevitable future rise in prices, and they are buying our timber expressly to hold back their own until our

available forests are exhausted. Why should Ontario thus play into their hands, instead of securing for itself the benefit of such rising values?

While we cannot agree with the *Globe* in its advocacy of the claims of its foreign and domestic clients, we must congratulate it on the terse truthfulness with which the tenor of its editorial is described in its heading "INVITING RETALIATION AGAIN." This is precisely the *Globe's* position in this article. It is a deliberate appeal to the United States to inflict some injury on Canada, under the pretence that it is a fraud for Canada to protest its property, its industries and its working men from unfair and one-sided conditions. The *Globe* can never forgive Canada for being Conservative and for refusing to entrust the management of its affairs to the *Globe* and its friends. Therefore it welcomes and sympathizes with any ally that is opposed to Canada and its people. It makes a hero of Riel and his fellow rebels and murderers because they fought against the authorities of Canada and killed loyal Canadians. So in commercial contests it always takes the side of foreign manufacturers and foreign workingmen against Canadian manufacturers and Canadian workingmen. It is therefore only consistent in its present invitation to the United States to inflict some injury on Canada under the false pretence of retaliation.—*Peterborough Review*.

EXPORT DUTY ON SAW LOGS.

THE raising of the export duties on logs is a wise step and will meet with general approbation. Our Finance Minister has proposed and carried a resolution to increase these duties to the following amounts:—plus logs \$3 per thousand, spruce logs \$2 per thousand, and shingle bolts \$1.50 per cord. This will do away with a crying evil. It is bad enough that our forests should be so rapidly exhausted even though our own lumbermen were deriving a profit from the operation. But it was much worse to see our land strip of our forest wealth to enrich foreign mill-owners while the owners of our own saw mills lost the profit. And there were evident preparations for this being carried on henceforth on a gigantic scale. Lumbermen from the States have made enormous purchases of limits, and there was no attempt to conceal the policy that was being adopted of looking to Canada for logs.

As to the difficulty that has been suggested of collecting these duties, a few seizures will settle that question, for saw logs cannot be easily smuggled.—*Peterborough Review*.

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Causes, directly or indirectly, fully one-half the sufferings which afflict mankind. It is usually induced by inactivity of the liver, and may be cured by the use of Ayer's Pills. C. A. Schomerus, Great Bend, Kansas, writes: "I have used Ayer's Pills for Costiveness, with the most beneficial results." J. Windholm, Newark, N. J., writes: "Ayer's Pills cured me of chronic Constipation." Martin Koch, Indianapolis, Ind., writes: "Last year I suffered much from Biliousness

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Cured by Using

Ayer's Pills." Rev. Francis B. Harlowe, Atlanta, Ga., writes: "For years I was subject to Constipation, from which I suffered increasing inconvenience. In spite of the use of medicines of various kinds. Some months ago, I began taking Ayer's Pills. They have entirely corrected the costive habit, and have vastly improved my general health." Hermann Bringhoff, jewelry engraver, Newark, N. J., writes: "Costiveness, induced by my sedentary habits of life, at one time became chronic and exceedingly troublesome. Ayer's Pills afforded me speedy relief, and their occasional use has since kept me all right." Ed. O. Easterly, Rockford, Ill., writes that he has been cured of chronic Constipation by the use of

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Prepared by Dr. J. C. Ayer & Co., Lowell, Mass., U. S. A.

Market Reports.

TORONTO.

From Our Own Correspondent.

JUNE 9.—Another large tow of lumber left our docks this morning, consisting of over 1,600,000 feet, via Ogdensburg for Boston, and the docks are nearly clear of lumber, and at all the mills north of here there are nearly clear mill yards leaving ample room for piling this season's cut. It is generally conceded that bill lumber must soon take a step upward. There are two potent reasons for this belief: 1st, the fact that last years cut is cleared out, or nearly so. 2nd, quite a number of mills that run on bill stuff last season, are this year cutting stocks for shipment to the American side, and trade with the western part of our province increases yearly. The small mills in the west for many years past furnished considerable lumber for home use, but that is now a thing of the past. Trade here also continues brisk, all the yards keep fully employed, but the two first reasons given are sufficient to warrant the belief that dimension stuff, cut to order, must advance before the season closes.

Our wholesale lumbermen have at last come to the conclusion that unless they were willing to have their last dollar filched from their pockets by the railroad companies, that they must be up and doing, consequently a deputation of the prominent dealers left here this evening for Montreal, to place their grievances before the heads of the G. T. and C. P. railroad companies. The universal opinion held by all our lumbermen is that lumber should be carried by the M feet and not by weight. All dealers would then know exactly where they stood. At the present time they frequently sell cars at less than cost, after the excess freight has been deducted. In addition to this the new orders issued from day to day by the N. & N. W. R. R. are so vexatious in their character that lumbermen are fairly sick of the whole business. It really seems as if the present management was determined to strangle the entire lumber traffic by all possible means in their power. It is true that there is a certain portion of the lumber cut that must come over their line, but there is also large cut that will take the water routes this season that would otherwise of passed over their rails. If the present manager is satisfied that his road will have all they can do well and good; if not, he is guilty in pursuing such a suicidal policy, time will tell. Lumbermen will, however, resist to the utmost any attempts at collecting excessive charges such as that now demanded. Railroad companies must be made to understand that they are amenable to the same laws that govern other common carriers. Where is the common sense or justice in saying, if you load on 20,000 pounds of lumber on our cars we will charge you for carrying 24,000 pounds, and if your load on 28,000 pounds we will charge you on that weight and 25 per cent. additional on 4,000 pounds. It is so absurd in its character that it will not bear one moment's discussion, and if any other class of men except railroad managers were to attempt to perpetrate such a gouge, four prison walls would be thought by most people the most fitting place to enclose them, and it will be to the ultimate advantage of all roads governed by such men to remember that there is a limit to the endurance of even lumbermen.

Table listing lumber prices for various grades and sizes, including items like 'Mill cut boards and scantling', 'Shipping cut boards', 'Scantling and joist', 'Cutting up planks', and 'Three uppers'.

Table listing lumber prices for various grades and sizes, including items like '1 dressed', '1 undressed', 'Boards Sheeting, dressed', 'Clapboarding, dressed', 'XXX sawn shingles', 'Sawn Lath', 'Red oak', 'White', 'Basswood, No. 1 & 2', 'Cherry, No. 1 & 2', 'White ash 1 & 2', 'Black ash 1 & 2'.

WOOD-WORKING PATENTS.

The following list of patents relating to the wood working interests, granted by the United States Patent Office, June 1st, 1886, is specially reported by Franklyn H. Hough, solicitor of American and Foreign patents, 925 F. Street, N. W., Washington, D. C., who will furnish copies of patents for 25 cents each:

- 342,939—Lumber cutting machine—H. S. Smith, Brooklyn, N. Y.
343,996—Saw, drag—W. H. Yagel, Deer Lick, Ohio.
342,918—Saw mills, transfer apparatus for—G. W. Loggie, Portland, Oregon.
342,057—Sawing machine feed table—D. J. Murray, Warsaw, Wis.
PATENTS ISSUED JUNE 8.
343,411—Chuck, lathe—J. H. Westcott, Oneida, N. Y.
343,443—Lathes, beading attachment for—N. A. Dickinson, Chester, Conn.
343,217—Mortising and boring machine—H. A. Axtell, Montague, Mass.
342,457—Saw mill feed mechanism—H. I. Hipp, Columbia, S. C.
343,254—Saw, hand—C. Richardson, Newark, N. J.
343,358—Saw tempering apparatus—W. B. Barry, Indianapolis, Ind.
343,203—Saws, device for jointing circular—K. Shives, Dunsinane, New Brunswick, Canada.

CHICAGO.

The Northwestern Lumberman of June 5th says:—Receipts this week were quite liberal. The Monday morning fleet was thought to have been the largest that had been seen on the market this season. Every day since Monday there has been a fair number of offerings. While the market has not shown great activity, the cargoes for sale have gone off with reasonable celerity. The yard men still hold a little aloof, and purchase only after considerable talk and hammering, an attitude that prevents a quick market. Yet prices have been fairly maintained at about former figures. If short, green piece stuff has been sold below \$9.25 for decent cargoes, nobody will acknowledge it. Dry dimension is worth from \$10 to \$10.50, according to composition of cargo as to quality and length. The greatest inquiry is for green dimension. Boards and strips are not so urgently required, as prices are thought now to be too high to warrant heavy purchases.

Shingles are quoted five cents a thousand lower than they were last week, though commission men deny that there has been any decline. The yard dealers, however, assert to the contrary. Since the market is described as more active than last week, it is likely that sufficient concession has been made to stimulate buying.

The market as a whole may be described as moderately alive, with prices held up by main strength on the part of the commission men. Even this would not suffice if the manufacturers should load the market with a rush of cargoes. But the policy this season will probably be like that of last year—shipments will be gauged by the urgency of demand.

The following list represents the range of prevailing prices:—
Dimension, short green \$ 9 25
dry 10 00@10 50
boards and strips, No. 2 10 20@12 00
" " " medium 13 00@15 00
" " " No. 1 16 00@19 00
Shingles, stapled 1 75@ 1 80
" extra 2 00@ 2 10
" cedar, standard 1 65@ 1 75
" extra 2 00
Lath, green 1 25
Lath, dry 1 40
Just now the yard men are discussing questions of trade with much interest, because they cannot see how they are to get in stock and keep business moving when there is so little

margin between cargo and yard prices. The chief interest now centres in cargo and mill-yard values. Nothing more than a steady summer trade is expected from now until August. All realize that the late labor disturbance gave a stunning blow to the spring and early summer trade, and have given up the idea that there can be an extraordinary trade this season. What concerns the dealers now is to know how to put in such stock as they require for the fall trade without danger of losing money. They insist that cargo prices must go down, or they will buy but sparingly. Prices have weakened within the past few days, but they screw down hard, with little indication of a break. It is likely that the experience of last year will be repeated.

Prices will be yielded just enough to work off the offerings, and no more. In this way the yards will be gradually stocked up, and in the fall it will be found that the cargo market has been held steadily all the season, while the yard men have gained no great advantages in their purchases.

These has been no marked change in yard prices within the week. Individual yards are making prices to suit the stocks and financial conditions of each. The price list is little regarded in making sales of lumber above the common grades. Dimension that is dry enough to ship is held with tolerable firmness. Wide inch lumber is also fair property, at steady prices. But strips, from C upward, and the most of high grade lumber, is selling slowly, and prices are made to the customer that will induce him to take the lumber.

The trade in good lumber has taken a peculiar turn this year. The large relative inquiry for it last season, and the apparent short supply of it, induced nearly every dealer to search for and procure an unusual supply. Yards that had been in the habit of carrying but little good lumber, laid in all that could be bought last season. The result was that the trade was loaded down with good lumber, though probably much of it was not well graded, and was less saleable on that account. Every holder imbibed the idea that he must realize larger profits on his choice stock, in order to make up for his losses on the cheaper classes. But to his chagrin he has found that the demand has not been equal to the supply. Manufacturers and housebuilders have called for cheaper lumber than ever. Sash and door makers have been forced to buy cheaper lumber to meet the competition of low prices. It has thus been found that there is a limit to the demand.

Some yards, the business of which is largely local, report a good trade. Yards that supply the builders of the smaller class of structures in the city and suburbs, are having a better trade than the yards that look for heavy contracts. The reason for this is obvious. The labor troubles checked the building of large structures, while the building and repair of small houses was not seriously affected. Within the past week there has been a marked increase in the number of building permits issued. Permits for several large buildings have been issued within the past three days, showing that confidence among investors and contractors is becoming restored.

Receipts of lumber and shingles for the week ending June 3rd, as reported by the Lumberman's Exchange:—

Table showing receipts of lumber and shingles for the week ending June 3rd, including columns for 'Lumber', 'Shingles', and 'Receipts' for years 1886 and 1885, and 'Stock on hand' for May 1st, 1886 and 1885.

Table listing prices for various locations: Albany, Troy, Buffalo and Pittsburgh, Shenectady, Wheeling, Suspension Bridge, Salamanca, Black Rock, Dunkirk, Erie, Toronto.

ALBANY.

Table listing prices for various lumber types and sizes in Albany, including items like 'Pine, clear, 2 M.', 'Pine, fourths', 'Pine, select', 'Pine, good box', 'Pine, common box', 'Pine, 10-in. plank, each', 'Pine, 10-in. plank, culls, each', 'Pine boards, 10-in.', 'Pine, 10-in. boards, culls', 'Pine, 10-in. boards, 10 ft., 2 M.', 'Pine, 12-in. boards, 13 ft.', 'Pine, 1 1/2 in. siding, select', 'Pine, 1 1/2 in. siding, common', 'Pine, 1-in. siding, select', 'Pine, 1-in. siding, common', 'Spruce, boards, each', 'Spruce, plank, 1 1/2 in., each', 'Spruce, plank, 2-in., each', 'Spruce, wall strips, each', 'Hemlock, boards, each', 'Hemlock, joist, 4x6, each', 'Hemlock, joist, 2x4, each', 'Hemlock, wall strips, 2x4, each', 'Black walnut, girth, 2 M.', 'Black walnut, 2 in.', 'Black walnut, 1 1/2 in.', 'Scaymore, 1-in.', 'Scaymore, 2-in.', 'White wood, 1-in. and thicker', 'White wood, 2-in.', 'Ash, good, 2 M.', 'Ash, second quality, 2 M.', 'Cherry, good, 2 M.', 'Cherry, common, 2 M.', 'Oak, good, 2 M.', 'Oak, second quality, 2 M.', 'Basswood, 2 M.', 'Hickory, 2 M.', 'Maple, Canada, 2 M.', 'Maple, American, per M.', 'Chestnut, 2 M.', 'Shingles, shaved, pine, 2 M.', '2nd quality', 'extra, sawed, pine', 'clear', 'cedar, mixed', 'cedar, XXX', 'hemlock', 'Lath, hemlock, 2 M.', 'Lath, spruce'.

OSWEGO, N. Y.

From Our Own Correspondent.

Table listing prices for various lumber types and sizes in Oswego, N.Y., including items like 'Three uppers', 'Picking', 'Cutting up', 'Fine Common', 'Common', 'Culls', 'Mill run lots', 'Siding, selected, 1 in.', 'Siding, 1 1/2 in.', 'Mill run, 1x10, 13 to 16 ft.', 'Selected', 'Shippers', 'Mill run, 1x10', 'Selected', 'Shippers', 'Mill run, 1 & 1 1/2 in. strips', 'Selected', 'Culls', '1x2 selected for clapboards', 'Shingles, XXX, 15 in. pine', 'XXX Cedar', 'Lath 1 1/2, No. 1', 'No 2', 'Ash, 1st & 2nd 1 to 4 in', 'Basswood, 1st & 2nd, 1 & 1 1/2 inch culls'.

BUFFALO.

Table listing prices for various lumber types and sizes in Buffalo, including items like 'We quote cargo lots:— Uppers', 'Common', 'Culls'.

TONAWANDA.

Table listing prices for various lumber types and sizes in Tonawanda, including items like 'CARGO LOTS—MICHIGAN INSPECTION. Three uppers', 'Common', 'Culls'.

LONDON.

The Timber Trades Journal of May 29th says:—We cannot chronicle any change whatever either in the London or coast markets, and business continues unusually restricted even for the present time of year, which is generally one of the quietest seasons as far as f.o.b. sales are concerned. A few contracts have certainly been made, but buyers as a whole remain quite indifferent, while many sellers, seeing no good results from forcing sales, seem inclined to abstain from pressing their makes. We think ourselves that the inland trade would brisker were not that the fear of an impending dissolution of Parliament leads buyers to confine their dealings within the narrowest possible limits. It is generally thought that we shall, before long, find ourselves in the midst of 'her election, with all its accompanying disorganizing influences on trade.

EASTERN FREIGHT RATES.

Table listing freight rates for various locations: To New York, Boston, Philadelphia, Baltimore, Washington.

A few weeks back there were some slight signs of an improvement in the Midland districts, but the indications have disappeared completely during the past ten days.

There was by no means a bad room at Messrs. Churchill & Sim's sale on Thursday, especially considering the limited nature of the reserved lots and the counter-attractions down Epsom way. This latter undoubtedly had its influence, as we noted the absence of one or two leading firms from their accustomed places in the vicinity of the auctioneer's desk. Prices ruled low throughout, though here and there a lot really wanted fetched pretty fair values.

The great falling off in the consumption is getting very serious, and till we see some amendment in this quarter we cannot hope for a recovery in prices. There are reports about that several heavy sales have been made lately, but there is nothing to corroborate them in the deliveries from the docks.

The weather this month has not favored the building trade, and a worse time for carcassing we cannot well remember. The rainfall extending over Friday, Saturday and Sunday is almost unexampled, and must do a considerable amount of damage to the crops in loose soil, all the low-lying lands being flooded. "A moist May and dry June keeps everything in tune," says the adage, but we question if the oldest inhabitant can recollect a wetter May than that which is now near its termination.

The deliveries from the docks can hardly be very good while such a state of things continues. The depression of trade was bad enough before, but we must look for the effects of the rain on the consumption in an aggravated form the forthcoming week.

That things, however, are not quite as bad as they seem if evident from the large quantity of goods placed. The wonder is that, after three months of an unusually severe winter, free-on-board prices have kept up as they have done. At any rate, there is a big business still being carried on. The weather has been just the reverse of favorable to consumers, yet even at the public sales good stocks hold comparatively steady. If the decline in prices is still noticeable, it cannot be so easily perceived on the better descriptions, which, were it not for the exceptional state of the market, would soon show an upward tendency.

LIVERPOOL.

The *Timber Trades Journal* of May 29th says:—The arrivals of timber laden vessels during the week past have been very few and unimportant; consequently the docks and quays have worn day after day, a bare and uninteresting appearance.

Bad as this may be from some points of view, it is not greatly to be regretted, for, evidently, the more the import for the coming season may be curtailed, the better for the trade generally, as the demand from the country and the wants of the local districts are apparently of the most limited character.

Perhaps some part of this apathetic state may be traced to the fact that some buyers refrain from entering into their purchases until the arrival of the first shipments of fresh goods, and this is not now far distant; but at the same time it is to be feared that the present dead state of trade is traceable to other causes.

There is little change in the freight market, and although some amount of chartering has been done from Quebec to Liverpool, the quantity is below that of the usual average. The latest rate we have heard of is 19s. per load of timber to Liverpool.

We regret to say that another house engaged in this trade, near the Canada dock, have been compelled to suspend payment. A private meeting of the principal creditors was called a few days ago, and we hear another is to be held at the end of this week to consider the position. Probably an amicable arrangement will be arrived at without the intervention of the Court. Pending the result of the proposed meeting nothing further can be said on the subject.

TYNE.

The *Timber Trades Journal* of May 29th says:—There is a long list of arrivals during the last seven days, but amongst them there are

no items of importance, with the exception of one cargo of teak from Bangkok and a cargo of timber from Pensacola. Pitch pine timber is largely held on the river at present, and is being now sold at lower rates than at any previous period. There is but little demand for it, and when an order is to be placed there appears to be little difficulty in buying on almost as favorable terms as merchants have imported. Pit-props are still a very slow sale, and prices show no signs of improvement. In trade generally the present is as dull as ever, and the outlook for the future is not at all inspiring. Ship-builders are still very slack, and the various ironworks and collieries are apparently as dull as it is possible to be. So far there are no arrivals of Baltic deals, but a few ships are almost daily expected.

GLASGOW.

The *Timber Trades Journal* of May 29th says:—Imports at Glasgow for the past week include the first arrival this season of Canadian deals, viz., the parcel per steamer Norwegian, consisting chiefly of narrow first quality pine deals. They are being yarded at Yorkhill.

No auction sale of the new deals has yet been called.

At Greenock the only arrival to note is a cargo of teak timber, consigned to Messrs. Edmiston & Mitchells.

The import of teak to Clyde ports this year to date has been eight vessels, aggregate tonnage 6,075 tons.

There have been a good many launches from the Clyde shipyards within the past week; total over 6,000 tons. At the Point house shipyard Messrs. A. & J. Inglis are about to begin the construction of two steamers (their combined tonnage 1,600 tons) for the Carron Company; and Messrs. Barclay, Curle & Co., (Limited) have, it is stated, been entrusted with an order from Mr. John Burns to build a screw steamship, intended for the Irish trade of the Messrs. Burns.

A public sale of deals took place at Yorkhill, Glasgow, on 26th inst., Messrs. Edmiston & Mitchells, brokers. The catalogue comprised Michigan 1st and 2nd pine deals and Shediac, N. B., spruce. There was a small attendance of buyers, and demand quiet; offers for the 1st quality not meeting brokers' views, these deals were withdrawn. The following were the prices realized:—

Michigan 2nd pine deals—	Per cub. ft.
16 ft. 16/24x3	2s. 4d.
14 ft. 10/27x3	2s. 2d.
Shediac, N. B., spruce deals—	
16/24 ft. 9x3	0s. 9½d.
15 ft. 8x3	0s. 8½d.

NEW YORK.

The following is the official list of the prices obtained at the New York Lumber Auction Company's sale at New York on June 8th:—

- Lot 1—Ash balusters, 4570 pieces, 1½ cents each.
- Lot 2—Whitewood, 1½ and 2 inch, firsts, 7,100 ft. seconds, 4,196 ft.; culls \$9 1. 50
- Lot 3—Whitewood ¾ inch, firsts, 2,000 ft. seconds, 3,396 ft.; culls, 145 ft., \$23 60
- Lot 4—Whitewood, ¾ inch, firsts, 4,000 ft.; seconds, 3,063 ft.; culls, 171 ft. \$
- Lot 5—Whitewood, 2 inch, firsts, 7,225 ft.; seconds, 3,908 ft. \$28.
- Lot 6—Whitewood, ¾ inch, wide, firsts, 1,995 ft.; seconds, 709 ft. \$24.
- Lot 7—Whitewood, ¾ inch, firsts, 8,474 ft.; seconds, 6,329 ft.; culls, 245 ft. \$22.
- Lot 8—Whitewood, 1½, 2 and 2½ inch, firsts, 4,815 ft.; seconds, 1,618 ft.; culls, 184 ft. \$32.50.
- Lot 9—Whitewood, 1 inch, firsts, 4,850 ft.; seconds, 1,730 ft.; culls 145. \$31.
- Lot 10—Whitewood, 1 inch, firsts, 5,165 ft.; seconds, 1,637 ft.; culls, 91 ft. \$32.
- Lot 11—Whitewood, ¾ inch, firsts, 2,130 ft.; seconds, 1,197 ft.; culls, 151 ft. \$25.
- Lot 12—Whitewood, 1 inch, culls, 12,084 ft. \$16.
- Lot 13—Ash, 1, 1½, 1¾ and 2 inch, firsts, 2,040 ft.; seconds, 1,396 ft.; culls, 845 ft. \$26.
- Lot 14—Whitewood, 1 and 2 inch, seconds, 704 ft.; culls, 1,296 ft. \$30.
- Lot 15—Ash 1½, 1¾ and 2 inch, firsts, 3,729 ft. \$26.
- Lot 16—Ash, 1 inch, firsts, 9,878 ft. \$22.
- Lot 17—Whitewood, 1 inch, firsts, 5,367 ft.; seconds, 6,396 ft.; culls, 84 ft. \$36.
- Lot 18—White pine shelving, ¾ inch, s. 2 s. (wide) 5,533 ft. \$26.
- Lot 19—Ash and walnut balusters, 125, 1½x1½x32, 2 cent each. 11,949; 1½x1½x32, ¾ cent each. 6,149,

- 2x2x32, 1½ cents each. 20, 2x3x33, 2 cents each. 100, 3x3x32, 2 cents each.
- Lot 20—Whitewood, ¾ inch, wide, firsts, 2,392 ft.; seconds, 1,658 ft. \$24.
- Lot 21—Whitewood, ¾ inch, firsts, 7,095 ft.; seconds, 0,253 ft.; culls, 94 ft. \$21.50.
- Lot 22—Whitewood, 1½ and 2 inch, firsts, 6,400 ft.; seconds, 3,832 ft.; culls, 110 ft. \$28.
- Lot 23—Whitewood, 1 inch, firsts, 7,018 ft.; seconds, 4,073 ft. \$26.
- Lot 24—Whitewood, 1 inch, firsts, 0,359 ft.; seconds, 5,289 ft.; culls, 192 ft. \$26.
- Lot 26—Whitewood, 1 inch, firsts, 8,635 ft.; seconds, 6,252 ft.; culls, 315 ft. \$30.
- Lot 27—Whitewood, 2 inch, firsts, 6,174 ft.; seconds, 4,570 ft.; culls, 403 ft. \$20.50.
- Lot 28—Whitewood, 1½ and 1¾ inch, firsts, 2,304 ft.; seconds, 1,920 ft.; culls, 116 ft. \$27.50.
- Lot 29—Whitewood, 3 inch, firsts, 755 ft.; seconds, 2,306 ft.; culls, 3,204 ft. \$22.
- Lot 30—Whitewood, 3 inch, firsts, 2,630 ft.; seconds, 0,560 ft.; culls, 2,094 ft. \$25.
- Lot 31—Whitewood, 1 inch, firsts, 5,979 ft.; seconds, 5,143 ft.; culls, 375 ft. \$25.
- Lot 32—Ash 2 inch, firsts, 4,262 ft., seconds, 5,452 ft.; culls, 657 ft. \$24.50.
- Lot 33—Elm, 1 inch, firsts, 349 ft.; seconds, 1,215 ft. \$16.
- Lot 34—Elm, 1 inch, culls, 2,359 ft. \$11.
- Lot 35—Basswood, firsts, 297 ft.; seconds, 610 ft. \$19.50.
- Lot 36—Basswood, 1 inch, culls, 2,823 ft. \$15.50.
- Lot 37—Whitewood, 1½ inch, firsts, 5,630 ft., seconds, 2,914 ft.; culls, 40 ft. \$29.50.
- Lot 38—Basswood, 1 inch, firsts, 150 ft.; seconds, 1,856 ft. \$18.50.
- Lot 39—Basswood, 1 inch, culls, 8,469 ft. \$10.50.
- Lot 40—Cherry, 1 inch, seconds, 537 ft.; culls, 1,433 ft. \$31.50.
- Lot 41—Cherry stripes, 1 inch, 4,150 ft. \$38.
- Lot 42—Whitewood, 2 inch, firsts, 2,993 ft.; seconds, 1,308 ft. \$29.
- Lot 43—Hemlock joist, 927 pcs. 2½x4x13. 1½ cents each.
- Lot 44—Birch squares, culls, 951 ft. \$15.50.
- Lot 45—Whitewood, 1 inch, firsts, 5,137 ft.; seconds, 7,690 ft. \$24.50.
- Lot 46—Whitewood, 3 inch, firsts, 7,820 ft.; seconds, 6,210 ft.; culls, 210 ft. \$29.
- Lot 47—Whitewood, 1, 1½ and 2 inch, culls, 9,195 ft. \$16.
- Lot 48—Whitewood, 1 inch, culls, 8,294 ft. \$18.
- Lot 49—Whitewood, 1 inch, culls, 9,733 ft. \$18.
- Lot 50—Whitewood, ¾ inch, wide, firsts, 2,370 ft.; seconds, 1,149 ft. \$25.
- Lot 51—Whitewood, 1, 1½ and 2 inch, firsts, 159 ft.; seconds, 2,184 ft. \$27.
- Lot 52—Birch, 1 inch, seconds, 191 ft. \$15.
- Lot 53—Birch, 1 inch, culls, 1,652 ft. \$11.
- Lot 54—Birch, 2 inch, firsts, 23 ft.; seconds, 530 ft. \$18.
- Lot 55—Birch, 1 and 2 inch, culls, 5,401 ft. \$12.
- Lot 56—Ash, 1 inch, firsts, 162 ft.; seconds, 782 ft. \$23.
- Lot 57—Ash, 1 inch, culls, 6,010 ft. \$14.
- Lot 58—Whitewood, 1 inch, firsts, 8,990 ft.; seconds, 4,135 ft. \$29.
- Lot 60—Whitewood, ¾ inch, firsts, 6,645 ft.; seconds, 4,705 ft.; culls, 1,276 ft. \$19.
- Lot 61—Whitewood, 3 inch, firsts, 555 ft.; seconds, 1,066 ft.; culls, 8,263 ft. \$20.50.
- Lot 62—Cherry, 1½ inch, firsts, 1,491 ft.; seconds, 2,181 ft.; culls, 460 ft. \$73.
- Lot 63—Ash, 1½ inch, firsts, 705 ft.; seconds, 1,055 ft.; culls, 7,374 ft. \$18.50.
- Lot 64—Ash, 1 inch, culls, 9,362 ft. \$14.
- Lot 65—Whitewood, 1 inch, firsts, 3,530 ft., seconds, 2,492 ft.; culls, 104 ft. \$27.50.
- Lot 66—Whitewood, 1 inch, firsts, 3,873 ft.; seconds, 2,942 ft.; culls, 113 ft. \$27.50.
- Lot 67—Ash, 1½ inch, firsts, 1,585 ft.; seconds, 3,252 ft.; culls, 2,772 ft. \$23.50.
- Lot 68—Ash, 1 inch, seconds, 5,403 ft. \$19.
- Lot 69—Ash, 1 inch, seconds, 7,497 ft. \$19.
- Lot 70—Cherry balusters, 722 pcs. 4 cents each.
- Lot 71—Ash balusters, 9,501 pieces at 2 2½ 3 5 and 4½ cents.
- Lot 72—Whitewood, 1½ and 2 inch, firsts, 5,982 ft.; seconds, 5,543 ft.; culls, 67 ft. \$26.
- Lot 73—Cherry, 1½ inch, firsts, 1,053 ft.; seconds, 2,407 ft.; culls, 630 ft. \$77.50.
- Lot 74—Ash, 2 inch, firsts, 1,491 ft.; seconds, 3,091 ft.; culls, 3,021 ft. \$22.50.
- Lot 75—Ash, 1 inch, firsts, 7,566 ft. \$39.
- Lot 76—Whitewood squares, 5x5 to 8x8, firsts, 2,258 ft., seconds, 542 ft.; culls, 337 ft. \$23.50.
- Lot 77—Whitewood, ¾ inch, wide, firsts, 2,437 ft.; seconds, 796 ft. \$25.
- Lot 78—Whitewood, ¾ inch, wide, firsts, 2,161 ft., seconds, 1,518 ft. \$24.
- Lot 79—Whitewood, 3 and 4 inch, culls, 12,219 ft. \$20.
- Lot 80—Ash, 1 inch, firsts, 123 ft.; seconds, 825 ft.; culls, 392 ft. \$24.
- Lot 81—Whitewood, 1 inch, firsts, 2,950 ft.; seconds, 2,915 ft.; culls, 291 ft. \$25.50.
- Lot 82—Ash, 1½ and 1¾ inch, firsts, 4,738 ft.; seconds, 3,333 ft.; culls, 136 ft. \$27.50.

- Lot 83—Cherry, 1 inch, firsts, 2,852 ft.; seconds, 4,045 ft.; culls, 520 ft. \$71.
- Lot 84—Whitewood, ¾ inch, firsts, 0,043 ft.; seconds, 0,070 ft.; culls, 1,831 ft. \$20.
- Lot 85—Whitewood, 1½ to 4 inch, firsts, 4,800 ft.; seconds, 4,730 ft.; culls, 490 ft. \$27.50.
- Lot 86—Whitewood, ¾ inch, firsts, 10,539 ft.; seconds, 7,240 ft.; culls, 107 ft. \$24.
- Lot 87—Whitewood, 2 inch, firsts, 8,248 ft., seconds, 3,701 ft.; culls, 140 ft. \$23.
- Lot 88—Whitewood, ¾ inch, firsts, 0,305 ft.; seconds, 7,783 ft.; culls, 760. \$19
- Lot 89—Ash, 1 and 1½ inch, firsts, 5,235 ft.; seconds, 4,847 ft.; culls, 351 ft. \$31.
- Lot 90—Hemlock boards, 1,002 pcs 1x10x13, 13 cents each.
- Lot 91—Whitewood, 1 and 2 inch, firsts, 1,516 ft.; seconds, 1,376 ft., culls, 42 ft. \$23.
- Lot 92—Whitewood squares, 4x4 to 5x5 inch, firsts, 3,017 ft.; seconds, 1,217 ft.; culls, 192 ft. \$27.50.
- Lot 93—Whitewood, ¾ inch, firsts, 8,634 ft.; seconds, 5,094 ft.; culls, 265 ft. \$19.50.
- Lot 94—Ash, 1½, 1¾ and 2 inch, firsts, 854 ft.; seconds, 454 ft.; culls, 171 ft. \$30.
- Lot 95—Ash, 1 inch, firsts 3,036 ft., seconds 2,973 ft., culls 1,139 ft. \$25.50.
- Lot 96—Whitewood, 1 inch, firsts 4,121 ft.; seconds 1,576 ft. \$29
- Lot 97—Ash, 1 inch, culls 857 ft. \$14.50
- Lot 98—Elm, 1 inch, firsts 205 ft.; seconds 353 ft. \$11
- Lot 99—Elm, 1 inch, culls 7,312 ft. \$9.50
- Lot 100—Whitewood, ¾ inch, firsts 5,515 ft., seconds 2,432 ft. \$22
- Lot 101—Walnut, 1 and 2 inch, seconds 2,079 ft.; culls 7,347 ft. \$15
- Lot 102—Birch, 1 and 2 inch, firsts 64 ft.; seconds 393 ft. \$19
- Lot 103—Birch and ash, 1 and 2 inch, culls 11,491 ft. \$11

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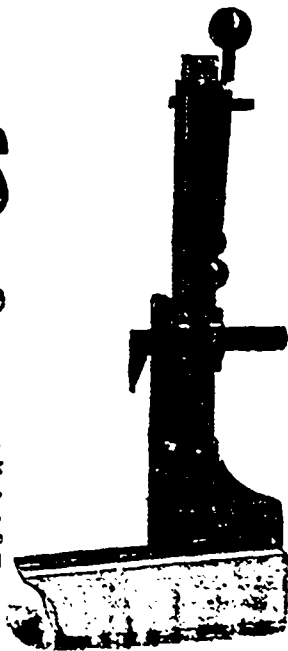
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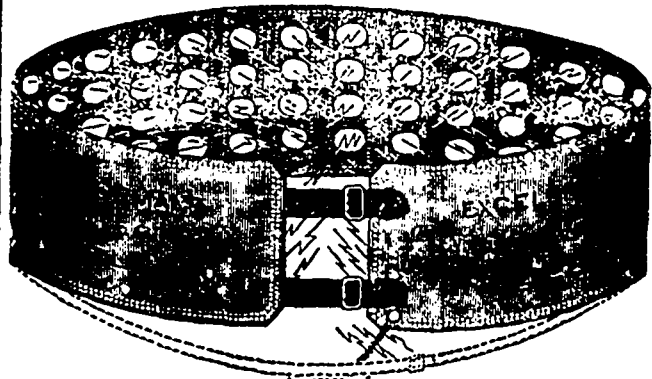
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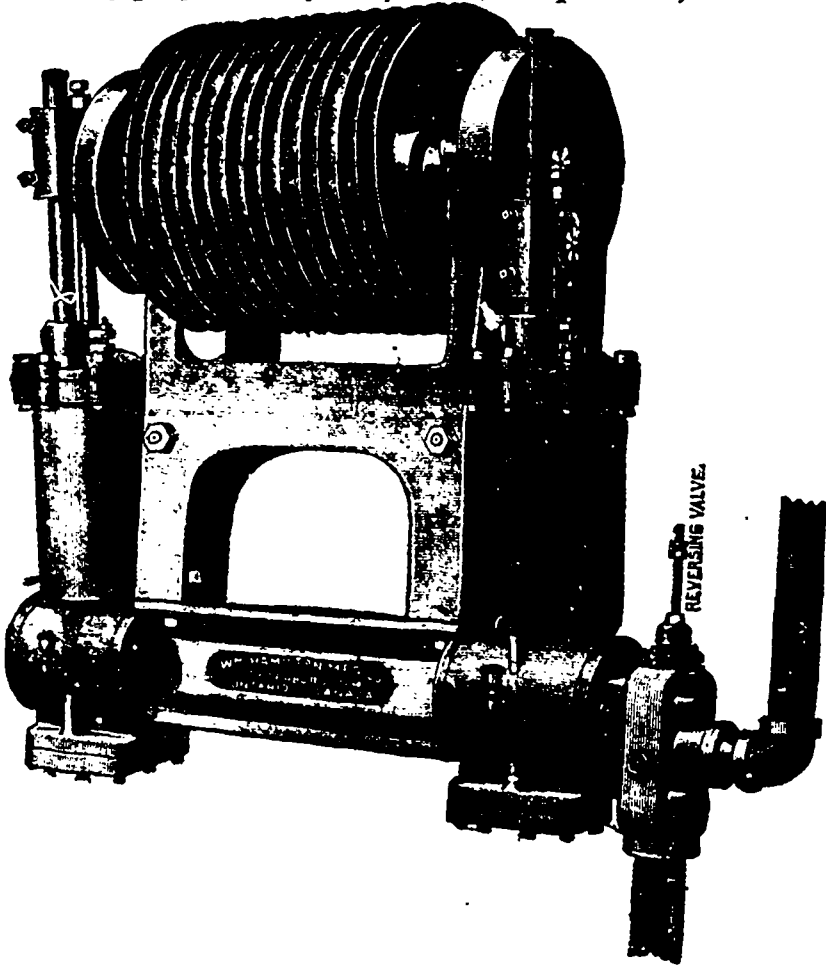
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from it to the carriage; or it can be placed in the engine room, where it is under the control of the engineer for oiling, thence by shaft and pinion to carriage rack bars. These engines are well adapted for cutting long logs, or where the logs are mixed, the advantage of this feed will be apparent to mill men. When the carriages are used in two or more sections, the coupling and uncoupling of each section is quick and simple.

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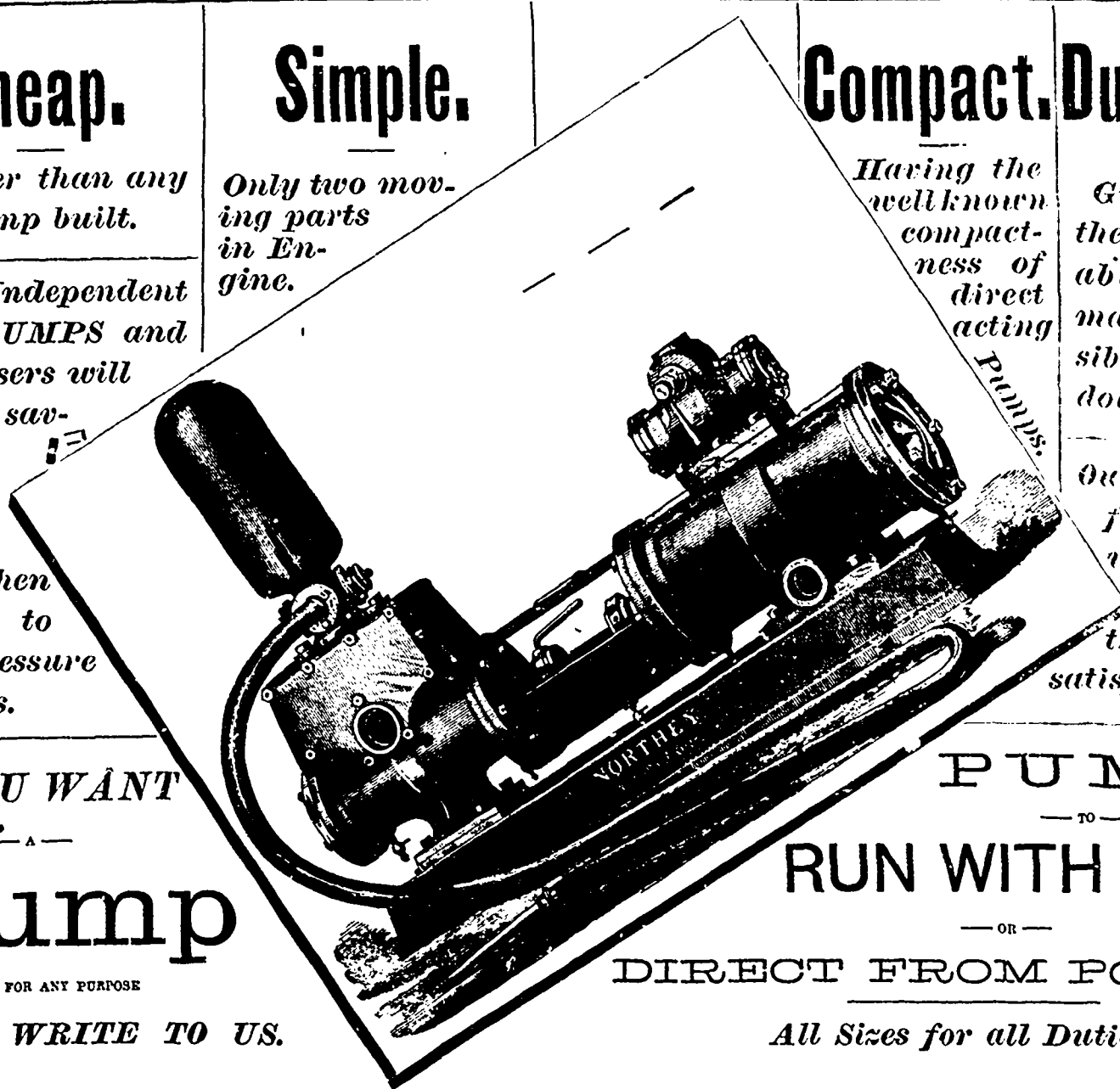
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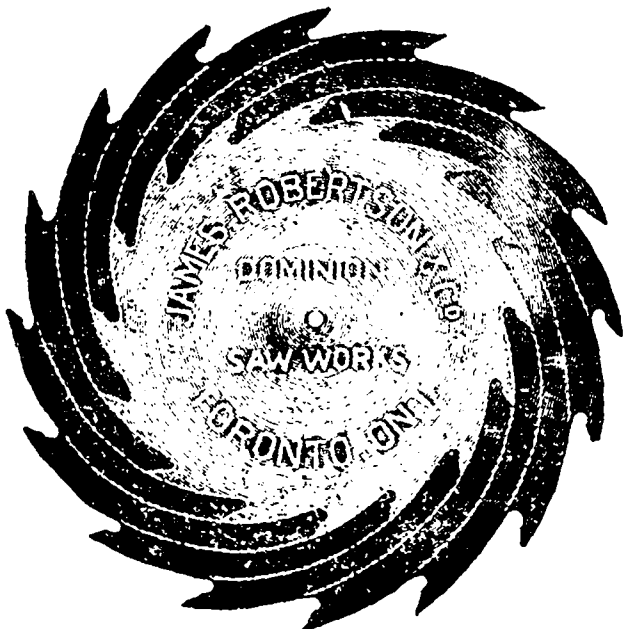
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