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THE OPENING SEASON

If any value is to be placed on indications, an early and vigorous opening of the lumber trade in lumber is one of the things that may fairly be expected of the near future. We find business starting up on every hand. Orders are beginning to flow in to the distributing markets, and these are but the precursors of the business boom to result from the flood of inquiries which wholesale lumber merchants have been getting for weeks back. Everywhere there is an anxiety to know about stocks and values—to feel the pulse of trade, and to measure, as far as it can be done, the resources of the country in the way of present supplies. The strong feeling among holders, and the manifest rising tendency of values, contribute to produce a feeling of anxiety among those who are or must be buyers, and to hasten the placing of orders. The situation has all the buoyancy and strength which comes with an advancing market, and whole-ale merchants have all the cheerfulness which comes from such conditions.

In the outlook now spread out to the view of the lumber trades there is one feature that is frequently spoken of, always with more or less apprehension—the possibility of labor disturbances. The present strike along the docks in New York is pointed at as the probable beginning of a disturbance likely to extend into various lines of industry, and by reason of that possibility, forming an element of uncertainty that is necessarily disturbing and annoying. All calculations must be made with this possibility of labor troubles in view, and it must therefore prove a factor, whether it turns out only a bugbear or not. No one will venture an undertaking without regarding it, and without as carefully restricting his enterprise as to avoid, as far as may be, the evil consequences of such disturbances if they come. To plan otherwise than this would be incautious and even dangerous in the extreme, and would be without justification in a management ordinarily careful.

It is not improper to consider, however whether the conditions actually existing may not be such as to warrant a hope, at least of a practical escape from any such upheaval of the labor element as occurred last year. Experience seems to show that strikes are less apt to occur when labor is generally employed than when there is a large contingent of idlers. If this be true, as a principle, there is some encouragement to be got from the fact that labor is pretty likely to have plenty to do during the present season and to that extent may escape the temptation to mischief which is always present when idleness abounds. Then the rate of wages is likely to be fair, and should be satisfactory. That it will be satisfactory, unfortunately does not necessarily follow. But this fact that men are averaging good pay, and stand in no peril of starvation, or of any hardship from insufficient means, will have some influence in keeping them from strikes, which many are beginning to learn are more costly to the working men than to their employers. If it were not for the labor unions, for the demagogues that control them, and for the principle they have established of ordering great strikes for merely revengeful and retaliatory ends, it might be safe to predict comparative immunity from labor uprisings during the present year. But these unlucky facts stand boldly out in the prospect, and make the one great blot on the fair picture that would otherwise present itself.

But even with this possibility of a whirl with the trades unions to interfere with the perfect hopefulness of the outlook,

the expectation of the business man, and especially the lumberman, is justifiably of a busy and profitable season. It will not do to scan too carefully all the dark elements in the problem, and ignore all the bright ones. The chances that the wrong will not come uppermost are at least even, so that in discounting the future half the probability must be given to the other side. The unexampled health of the country in a business way must be given its due weight, and it is not to be forgotten that in especial the lumber business is in a condition of prosperity that has but few parallels in its history. It is to be remembered that there is in first and second hands but a limited supply of stock, and that among retail holders the supplies are proportionately even lighter. It cannot be therefore, but that every foot of dry lumber that is now in pile in the northwest, whether at mill points or in distributing yards, will be required to meet the actual consumptive demand of the spring and early summer. Such stock possesses for this very reason an intrinsic value that should be recognized and appreciated by every holder. Generally it is, and it is this fact that makes the present market so strong, and the rising tendency of prices so pronounced. If the trade does not take advantage of the present conditions, it will make the greatest mistake possible one which the annals of the business have never recorded, and which it is to be hoped there will never be the necessity of placing therein.—*Chicago Lumberman.*

FOREST RESOURCES OF THE NATION.

THE following circular issued by the Chicago Lumberman's Exchange and approved by the Lumber Manufacturers' association of the northwest, has been sent out:

It is desired to enlist your sympathy and assistance in an endeavor to obtain an inventory of the forest resources of the nation. It is a work which can properly be accomplished only by the Forestry Division of the Bureau of Agriculture, and we learn from reliable sources that the amount allotted to that Division from the annual appropriation to the Bureau, is utterly inadequate to accomplish any useful purpose. It is desired that the Division of Forestry should place men in the various states, as rapidly as circumstances will permit, with instructions to ascertain: 1st. The amount of the various kinds of standing timber, classified. 2d. The extent of the improved farming land—with such other useful information as may suggest itself to the Chief of Division.

And why is it desirable that this information should be obtained?

As a nation we are scarcely more than 100 years old, and yet in that time the forests of Maine, Vermont, New Hampshire, New York and Pennsylvania have parted entirely with the vast supplies of white pine which once covered their forests, and their good oak is also gone. In these states only hemlock, spruce and hardwood, mainly of second growth, and of a vastly inferior grade as compared with the original timber growth, is to be found. Michigan which but 50 years ago was estimated to contain 150,000,000,000 (one hundred and fifty billion feet), is set down in the census report for 1880 at but 32,000,000,000 feet, while the annual manufacture equals 5,000,000,000 feet. Wisconsin in the same time has been reduced from an original supply fully equal to Michigan, to an estimate of 44,000,000,000 feet in 1880. Minnesota with an original growth of perhaps 30,000,000,000 feet, was in 1880 estimated at but 11,000,000,000 remaining.

These three last named states are supplying lumber at the rate of not far from 10,000,000,000 per year, and if the census estimates were reasonably correct, the year 1890 should show an almost entire extinction of the white pine supply of the northwest.

While perhaps the estimates were far too low, the poorer grade of the supply of each succeeding year is speaking as no figures can do of the fact that the pine supply of the northwest is drawing uncomfortably nigh to a period of utter exhaustion. Of oak, which for many years was a staple production of Michigan, it may truthfully be said that it has disappeared, for a while a large amount of inferior timber suited only for saw logs may yet remain, the seeker after staves and square timber for ship building is compelled to look to other and more remote regions.

The vast timber resources of states further south, as Ohio and Indiana, have been covered over until little is to be found except that which only a few years ago was rejected as of no value. With an average consumption demand equaling 500 feet per capita for the 100,000,000 people of the United States require 30,000,000,000 feet per year of the sawed products of the forests, in addition to their fire wood.

How long the now extensive forests of the south can stand the strain, which (with a smaller population) has so nearly exhausted the once supposed inexhaustible forests of the north is an interesting problem.

Our Canadian neighbors who have been hitherto thought the possessors of unlimited forests of pine have already taken the alarm, and ascertain that in eight years the timber trade of Montreal has increased from 3,500,000 feet in 1878, to over 100,000,000 feet in 1886, now propose to increase the export duty upon the manufactured product, in order to conserve and protect their forests from speedy extinction. Under these circumstances, is it not for the interest and advantage of every citizen of the United States, be he farmer, merchant, professional man or laborer, that a reliable inventory of the present and still remaining forests resources of the country should be speedily undertaken, in order that with an intelligent appreciation of the facts waste may be prevented and the commercial, agricultural and manufacturing interests of the nation, may, to the fullest extent be benefitted.

It is firmly believed that when the importance of the subject shall be appreciated by our legislators, there will be no delay in providing the bureau of forestry of the United States with ample means for inventuring the timber resources. To this end your influence and vote is requested.

Importance of Thin-Blade Saws.

The Germans use at the present day among their furniture-makers, carpenters and joiners, thirteen different varieties of saws, each one of which has its own peculiar size of the tooth, as well as a different relation of teeth to each other. How important the thin saw-blade is, not only as a means to save power, but also as a means to save wood, can be seen from the following: A log of walnut, four meters long and one meter in diameter, cut into twenty pieces the new horizontal saw frame, saves thirty millimeters of wood when compared with the cutting of the old-fashioned vertical saw. This is equal to a profit of \$9 to \$12. For Germany, where annually 100,000 cubic meters of this wood is used in various industries, this would represent a saving of \$37,500 to \$50,000.

John W. Perry, Lumberman, Coles Island, has assigned.

CANADIAN WOODS FOR CARRIAGE BUILDING.

A COUPLE of months ago THE LUMBERMAN briefly referred to a paper read at a meeting of the Institute of British Carriage Manufacturers, by Professor John Macoun, Botanist to the Canadian Government, on the "Timbers of Canada suitable for Carriage-making." Through the courtesy of Mr. Macoun, we are now enabled to produce his remarks almost in full, and coming as it does at a time when the excitement of an election contest precludes any great amount of news concerning the lumber trade, we have no doubt but that one and all of our readers will feel a personal interest in the remarks of this talented gentleman. Among those present at the meeting above referred to was Sir Philip Cunliffe-Owen, K. C. M. G., chairman, the Hon. G. Quinett, (Canada,) Messrs. A. Ransome, L. Ransome, Ira Cornwall, J. Burn, Bishop & Son, Allison, F. Joplin, C. Chapman, A. W. Wright, (General Commercial Agent for Dominion Government,) E. B. Biggar, (New Brunswick,) G. N. Hooper, and many others.

Professor Macoun, on rising, said: Gentlemen, although my remarks will chiefly refer to woods used in carriage building, I feel convinced that my audience will bear with me while I make a rapid sketch of the lumbering business and point out on the accompanying map the localities where it is chiefly carried on. New Brunswick, Quebec and Ontario are the chief seats of the timber trade, and there is not a river in these three provinces where a saw log will float but has its sawmills or its lumbering firms. In northern New Brunswick there are still extensive forests of maple, beech, ash, basswood, birch, oak, poplar and elm, of very great size, besides the great tracts covered with hemlock, black and white spruce, red and white pine, as well as swamps of larch and cedar. Owing to their positions these forests remain untouched, and when a projected line of railway is built, large supplies of timber for every branch of business will be laid upon to commerce. I particularize this region because it is nearest the seaboard than any other untouched locality. At present spruce and pine, with a little ash, are the only woods exported.

Quebec has been exporting pine timber for generations, and still has very large quantities, but it is chiefly confined to the upper waters of the various streams entering the St. Lawrence. The same hardwoods which occur in New Brunswick are still in abundance, but are getting more difficult of access owing to the advance of settlement. Cedar, larch, and spruce are abundant, and were the demand greater there would be more produced.

Northern Ontario possesses the most extensive pine forests now existing in Canada, perhaps in America. These extend from the Ottawa river on the east to Lake Superior on the west, and lie on both sides of the Canadian Pacific Railway. West of Lake Superior there are extensive tracts covered with pine, spruce, larch and cedar, part of which is being utilized, while the greater portion is being destroyed by fire. The hardwoods mentioned as growing in the other provinces are more abundant in Ontario, and the species are in much greater variety. In the Ontario forest sixty-five species of trees grow in profusion, while in England only fourteen are found native.

A belt of timber composed of poplar, spruce and larch, and one species of pine (*Pinus Banksiana*), extend from the meridian of Lake Superior westward to the Rocky Mountains, with a depth of about ten degrees of latitude. This belt contains much fine timber, especially in the river alleys, part of which will find an outlet by Hudson Bay.

The Rocky Mountains and British Columbia contain in their recesses the finest coniferous forest on the continent. This, if properly looked after, would be a source of profit for centuries but past experience tells me that a few short years will see only blackened stumps and fire-scorched trees, where the stately fir and cedar show their crowns of waving green as the breeze passes through their tops two hundred feet above the earth.

From the data just given, it can be easily shown that there can be no uncertainty about the supply. I am afraid that our people would cut down too much and have no profit on their labor. Were there a timber bureau or exchange organized in connection with the contemplated Imperial Institute, dealers might be made aware of the anticipated wants of consumers, and producers could be instructed accordingly. There need be no fear of the supply of spruce and larch, and of the coarser kinds of pine lumber, giving out, as we have immense tracts, unfitted for agriculture, covered with this class of timber. It is true that fires do great damage every year, but that applies more particularly to pine forests, as these grow on dry and generally sandy soil. Fire passing through a Canadian forest simply means the re-covering of the land with a different variety of tree, as pine lands, if the soil be fairly good, seldom become covered with pines again.

I may be permitted at this stage to make a few practical remarks on forest conservation and practical forestry in general. The Imperial Parliament has taken up the matter of a School of Forestry for England, and much discussion has taken place regarding it, and much useful information has been elicited by the Parliamentary Committee appointed two years since. In looking over the evidence I was struck with the clear-sightedness of a number of the witnesses, though I could see that their environment was rather restricted, and their

views partook of their surroundings. As I am acquainted with the conditions under which the 110 species of Canadian forest trees exist, flourish and mature, from the Atlantic to the Pacific, I may be permitted just here to make one or two broad statements. Before doing so, however, I may state that, should any gentleman desire it, I will give him, at another time, the soils, localities and atmospheric conditions under which each and every species flourishes in Canada. For over thirty years I have studied the flora and climate of Canada, and collected every species of tree in its native habitat so that answering questions as above requires no preparation.

Mixed forests are always the best in Canada when size of trunk is considered. Lumbermen prefer the pine to be in groves, as it costs less to get it to the water. No two species of tree have ashes containing the same constituents, hence the more diverse the ashes the better suited to plant together. Conifers produce little ash, but deciduous trees much; therefore I would mix by having say, a pine and an oak. The pine has a pyramidal top and grows faster than an oak, while the latter has a broad top and is slow of growth. Pine (*Pinus strobus*) and oak (*Quercus alba* and *rubra*) grow together in many districts of Canada, and both are very healthy. Larch requires undrained soil, and can thus resist a hot climate, but a constant supply of moisture at the roots or a cool moist atmosphere are its essentials.

Let me give you an actual forest picture, as seen in many districts in Canada. You stand on a hummock in the centre of a tamarac (larch) swamp, all around you are small larches, scarcely rising twenty feet above the swamp, which is composed of species of sphagnum and hypnum, and interspersed with ericaceous shrubs. Far in the distance you see trees of other kinds, and you walk towards them. As you proceed the trees become larger and are soon of a merchantable size. Soon cedar (*Thuja occidentalis*) begins to mix with the larch, the soil gets firmer, the sphagnum disappears and you are in a cedar swamp. The larches are now very large. Still passing outwards a few black ash (*Fraxinus sambucifolia*) are met, and these soon predominate, and you are in a black ash swamp. Reaching almost dry ground you meet with soft maple (*Acer rubrum*) and American or swamp elm (*Ulmus americana*). These extend to the margin of the wet ground, and you now meet with beech, birch, maple, white ash, rock elm, and the various other hardwood species of dry and a able soils. In many cases this good land is traversed by ridges of gravel or gravel and sand, and here you will find oak and pine growing together, seldom the one to the exclusion of the other, in the central parts of Ontario; but north, only pine is found, and south, only oak in such places. These are the conditions under which a few of our trees live and go through their round of existence.

It is now time to come closer to the real object of the lecture and introduce what is essentially the subject of my discourse—'Canadian Timbers suitable for Carriage-building.' I have been permitted, however, at a later stage, to make some remarks on species suited for other purposes.

List of elastic woods valuable for carriage building:—

1. Shell bark hickory (*Carya alba*).
2. Bitter-nut hickory (*Carya amara*).
3. White heart hickory (*Carya tomentosa*).
4. Pig nut hickory (*Carya porcina*).
5. White ash (*Fraxinus americana*).
6. Black ash (*Fraxinus sambucifolia*).
7. Rim or red ash (*Fraxinus pubescens*).
8. Chestnut (*Castanea vulgaris*).
9. Cherry or black birch (*Betula lenta*).

I ELASTICITY.

Ash and hickory are noted everywhere for this property, but in commerce only two species are taken into account—White ash (*Fraxinus americana*) and shell-bark hickory (*Carya alba*). It is well known, however, that all the Canadian species of ash possess this property in an eminent degree, and both black and red ash have been used from time immemorial by the American Indians in the manufacture of baskets, on account of it. Red ash, or Rim ash obtained the latter name from the early settler in Canada, because, when hammered, each year's growth separated from its fellow and enabled the Indians to get the thin ribbon like pieces which they use in their basket work. Much has been spoken and even written on the great value of 'second growth' ash and hickory, yet a clear conception of what is meant seldom enters the mind. In England I have heard of the superiority of English ash as a species, but this I deny, and assert as a fact that it is due to the conditions under which it is grown. English ash is grown on lawns and in the hedge-row; ours, which reaches England in square logs, in the close forest, where it is protected from both storm and sunshine. Second-growth ash, on the other hand, is young timber grown in the corners of fences in the old settlements; or young forest growth which has sprung into existence since the old was cut or burnt away, and has been produced under the same conditions. The same remarks are applicable to hickory, and the wood grown in the old forest bears no comparison with the second growth.

I consider elasticity a property of young wood, and the greater the exposure the more it is produced. Should this be a fact—and I have no doubt of it—there is no reason why

Canada could not produce all the ash and hickory for every variety of agricultural implement and vehicle required in England. We have millions of acres of waste lands growing up with young wood, which to-day are of no value, but which in twenty years, if merely let alone, would fully supply the English market as well as our own.

LIST OF WOODS NOTED FOR TOUGHNESS.

1. Basswood (*Tilia americana*).
2. Common or white elm (*Ulmus americana*).
3. Rock elm (*Ulmus racemosa*).
4. Slippery elm (*Ulmus fulva*).
5. Beech (*Fagus ferruginea*).
6. Hornbeam (*Carpinus americana*).
7. Ironwood (*Ostrya virginica*).
8. Walnut (*Juglans nigra*).
9. Butter-nut (*Juglans cinerea*).
10. White oak (*Quercus alba*).
11. Blue oak (*Quercus bicolor*).
12. Pin oak (*Quercus palustris*).
13. Grey oak (*Quercus macrocarpa*).
14. Sycamore (*Platanus occidentalis*).
15. Red maple (*Acer rubrum*).
16. Whitewood (*Liriodendron tulipifera*).
17. Whitewood, Cottonwood (*Populus monilifera*).

II TOUGHNESS.

Toughness and elasticity, although often combined in the same wood, as in the various species of elm, are not necessarily produced under the same conditions. Elasticity, as I mentioned above, is a youthful state, while toughness is produced from the interlacing of the fibres, and is found at all ages. Our three elms, common or swamp elm (*Ulmus americana*), rock elm (*U. racemosa*), and slippery elm (*U. fulva*), are in their young state so tough that in many cases it is impossible to split them. I have seen thousands of young elms ranging from six inches to eighteen inches cut down close to our railways and burned up on the ground because they were so tough that they were almost useless for firewood, and not worth the labour of converting into firewood. Did English purchasers and Canadian producers understand their business better these small trees would be cut up in Canada of the required size, or merely cut into plank and shipped to England when partly dried. Or, better still, English capital, managed by competent men in the interest of the manufacturer or dealers in England, could produce just what was wanted and forward direct, so that the heavy charges now paid to middlemen could be dispensed with. I see no reason why Englishmen cannot look upon Canada as an integral part of the Empire, and place their money there with the same freedom they do in this little island.

Another tough and invaluable wood to the carriage builder is basswood (*Tilia americana*). Besides its lightness and easiness to work, it possesses the valuable property of retaining any shape required by the builder, and for the bodies and panels of carriages is unsurpassed. In both Canada and the United States it is considered a valuable wood for every purpose requiring lightness and strength. Our manufacturers use it for sounding-boards for pianos, as it will not warp, for chair bottoms, sleighs, fanning mills, and other purposes of a like nature. Bowls and woodenware generally are made from it, besides many toys and various little articles. To the cabinetmaker it is also valuable, as it can be stained any color, and often passes for much more costly wood. Whitewood is also a valuable wood, but is becoming scarce in Canada as it is confined to the western part of Ontario, chiefly along Lake Erie. It has been asserted with much truth that Canadian oak is far inferior to English, but the fault lies more in the conditions of growth than in any specific distinction. English elm ash, and oak are grown in the open ground, and hence are as tough as they possibly can be, while only the full grown forest tree is shipped from Canada. No trees of these genera are cut for export in our forests, except those that will square a certain size, and therefore the timber exported is our most brittle and weak. We have now in Canada around the old settlements, in fence corners, and in the forest, cut many years ago an enormous quantity of young wood ranging from twenty to sixty years of age which is considered of no value, as there is no demand for it. This is the class of wood you want and cannot get because your own country does not produce enough of it. You reject our forest-grown wood and say it is of second-class quality, and tell us our woods are far inferior to yours. I retort by telling you that you can get the wood you desire by changing your mode of purchase. Let any competent man go out to Canada and have a lot of young oak, ash, elm, and hickory sawed up into plank of the size you want, let it be partly seasoned, and then shipped direct to the manufacturer. Then you will get good cheap raw material, and with your machinery and skilled workmen there is no reason why you cannot build carriages of better quality more cheaply than you do at present.

So that you may understand the ignorance that prevails in Canada regarding our own woods, I will relate one or two instances of this character. Last autumn I was collecting samples of wood for the Indian and Colonial Exhibition, and went for that purpose to the Niagara peninsula. At Queenstown Heights I purchased a lot of second-growth hickory for hammer handles for the use of the Geological Survey, and at

Niagara Town, Clifton and St. Catharines I found hickory almost the principal firewood, and piled up in every person's yard. At the manufactories in St. Catharines I learn they use imported hickory, and put their own in the fire, while west of them, on the line of the Canada Southern Railway, numerous sawmills were at work cutting hickory into spokes and hubs for the American market. I visited the mills myself, and saw them at work. One of the chief causes of our gross ignorance is the want of a Forestry Department and staff of competent men to enlighten the people. Each province owns its wild lands, and each settler his farm, and reckless waste and wanton destruction are the order of the day. The people are gradually becoming aware of the alarming waste caused by fire and the permanent change taking place in the climate. The probabilities are that the Dominion Government may take the matter up at an early day, and at least the worst features of the constant burnings be somewhat curtailed.

III. HARDNESS.

Nearly all the woods mentioned in the lists are hard when dry. Some of them are so hard that in daylight fire will be seen to fly from the axe when they are being cut for firewood. Ash, hickory, all the oaks, beech, hornbeam and ironwood become very hard when dry. Basswood, elm of the various kinds, willow, poplar, and some other woods, do not become so hard but they are very difficult to cut, as the axe will indent them but not start a chip, owing to their toughness.

IV. WOODS SUITED FOR CABINETMAKING AND FURNITURE.

In the foregoing remarks I have abstained from saying anything about the beauty of many of our woods and their great value for cabinetmaking and all kinds of furniture. Many woods, of great beauty for panels of doors and inside work in rooms, are to be had at a small cost in Canada. The more abundant of these woods are black ash, Douglas fir, black walnut, butternut, cherry, pine, cedar, birch, tulip-tree or white-wood, chestnut, white ash, maple, oak, sycamore, and some others. An examination of the articles of furniture, doors, &c., in the Exhibit on will illustrate this part of the subject better than I can, but these billets, which I now show you, will give you at least a faint idea of their varied appearance and contrast of colours. The Douglas fir, easily worked, and has that warmth of colour so admired in pitch pine, but is free from the resin that interferes with its working. Sycamore (*Platanus occidentalis*), black walnut, maple and ash are well known, and need only be mentioned; but one fact should not be lost sight of—that all these are easily worked, and of more value on that account. We have had logs of black birch, black walnut, black ash, basswood and slippery elm exposed to the English climate since spring, and there is not the least appearance of checking up to date in any of them. This to me is a fact that should not be lost sight of, as wood that dries without a flaw ought to be good.

V. COOPERAGE.

Oak seems to have the first place for wine and beer barrels, and Quebec staves have held their own for many years. Birch staves are found to be an excellent substitute for vinegar and many other barrels, and Mr. Mansone proved the other day that black ash is well adapted for the same purpose. Pine, cedar, and many other woods are suitable for dry barrels. In this line of business our easily worked woods are unapproachable.

VI. PULP FOR PAPERMAKING.

In conversation with a gentleman the other day, I discovered that large importations of wood pulp were being made from Norway and Sweden into England. Now, it may not be a surprise to any of my audience when I say that we have in Canada more land covered with poplar alone than the whole area of Norway, Sweden and Finland; that these poplar lands are in every province, and with the exception of the Northwest, are the poorest of the lands. As poplar (*Populus tremuloides*) grows rapidly, we can fill any orders that may be made upon us without exhausting the supply. Much of the spruce required for common purposes comes now from these same countries; and this, too, we can furnish, as a belt of spruce crosses the watersheds of all the rivers flowing into the Gulf and River St. Lawrence and Hudson's Bay.

VII. DETERIORATION AFTER CUTTING.

Many trees, under certain conditions, rot easily, while under other conditions, they are almost imperishable. Basswood was early considered a poor wood for fencing, as it rotted so easily. Observation showed that with the bark on it soon rotted, but without the bark it remained sound. The same thing is true of elm, but in a lesser degree. Beech rots very quick if exposed to the elements, but under shelter remains sound. If covered by water it will remain sound for a long time. Oak, if exposed to the weather, loses its sap wood, but the old wood remains sound for many years. I believe all young timber should either be put in water immediately after it is cut or put under shelter, as the young wood begins to rot very quickly if it is alternately wetted and dried. It follows, then, that deterioration takes place to a far greater extent than we imagine by letting young trees lie out in all weathers with their bark on, as they cannot resist wet without having been first dried.

I believe that any attempt to ship our hardwoods to this country without a proper understanding of the subject will result in failure. Basswood sent to England in the usual way would be both an unsightly and an inferior wood, but if sawed into boards at once in Canada and dried would be both beauti-

ful and of excellent quality. Its natural colour is a light yellow, but it takes a stain so easily that it can be made of any colour. Our practical men know the great beauty of our common woods, but few know how to treat them to preserve their strength and colour. My own opinion is that only two plans can be adopted—soaking in water long enough to remove or change the character of the sap, or sawing up the wood into planks or boards and drying at once. Unless this is done you cannot expect to get such stock as our local manufacturers use. Deterioration by discoloration or incipient decay, or even by fungus growth, can easily be proved to arise from decomposition or fermentation of the sap or the albuminous matter laid up in the wood cells for the next year's growth. All the maples, birches, poplars, and lindens are noted for their loss of colour owing to these changes. The action of the winter's frost in the case of the maple changes the albuminous matter into cane sugar, while in the sap of the birch it produces grape sugar.

This would seem to indicate that the sap also undergoes fermentation when the tree is cut down and the logs are exposed to the weather. In removing the starchy matter from the cells we remove the chief cause of decay and of weakness, and must have a closer-grained, lighter, tougher, and more elastic wood.

By the present method of shipping square logs, one-fourth of the best part of the tree is left on the ground and another seventh is lost before it passes into the hands of the mechanic. In this way over one-third of the wood is wasted, and the old overgrown trees, with very inferior heartwood, are the only ones that reach the English market. If the plan indicated above were adopted, half-grown trees, as well as old ones, would be taken and sawed at once to the required thickness or size. After rejecting the heartwood, bark, and other useless portions, a material would be left which all practical men can see must far excel that now sold on the English market. Beauty of grain, toughness, and elasticity are combined in the wood of young trees and hence such ought to be chosen, and their supply in Canada is practically inexhaustible.

In speaking to an English audience composed of practical men, I feel bound to show that the superiority of English woods is not due to any inherent quality, but merely to the fact that you take the best of yours and get the worst of ours. Give our woods, grown under the same conditions, and of the same age as yours, the same treatment, and I have no fear for the results. The ash and oak I saw in Mr. Lucas's factory told their own tale, the bark being just as sound as the wood, showing conclusively that it was sawed up shortly after being felled. To be of any real value carriages must be constructed of well-selected and well-seasoned timber, and to all desiring such I would say look to Canada for your raw material.

VIII. AMERICAN VIEW OF THEIR TIMBER SUPPLY.

We are threatened with a want of sufficient quantity of timber to meet the actual necessities of life.

Twenty millions of people are living in dwellings chiefly constructed of wood. Their barns and outbuildings are of wood, and the fencing of their farms, more expensive than their other improvements, is of wood, and all these are perishable with time. Moreover, our sixty thousand miles of railroad consume annually immense quantities of timber. Twenty-one thousand six hundred cords of wood are daily consumed in running railway trains three hundred and twenty thousand miles each twenty-four hours. Sixty thousand miles of road require twenty-five hundred ties to the mile, and as they must be replaced every five years an annual consumption of thirty million ties is required. We will soon construct each year ten thousand miles of new road requiring twenty-five million more ties, and when we add to all these sources of forest destruction the wood required in the fencing of these railroads, the half-million telegraph poles which each year will be required, and the vast amount of the destruction of forests by flood or fire, we must be absolutely startled with the conviction that whole provinces of wood which have required a hundred years to grow are each year being swept away, while nothing is done by either public authority or private zeal to supply the place of that which is destroyed or protect in any measure that which exists. These are 'hard facts,' and whether people mind them or not to-day, they will give them some thought hereafter.

In France the forests were cut down with the utmost recklessness, and for the last thirty years her fertile valleys have been swept by terrible floods carrying away all kinds of property and covering the rich soil with gravel and sand. In Russia the forests are beginning to disappear, and a law is now in force making it illegal to use anything but coal for fuel on the railroads.

The timber lands of Germany are under the special protection of the Government, while in Japan every one who cuts down a tree is compelled at once to plant another.

The experience of these countries foreshadows that of our thoughtless men, and reckless corporations may go on stripping the land of its forests, but at last every one will be convinced of the necessity for a change.

PRACTICAL VIEWS FROM NEW BRUNSWICK.

Mr. John D. Howe, of the firm of J. & J. D. Howe, furniture manufacturers, of St. John, New Brunswick, the designer of the magnificent wood trophy shown by the Government of

New Brunswick at the Colonial and Indian Exhibition, says: 'Authorities differ as to whether our supply of what is generally looked upon as our marketable lumber is diminishing. Be this as it may, we still have enormous supplies of these woods. Independent of these it is a well known fact that immense tracts of our lands are covered with most valuable woods generally considered of little value, but which will eventually yield a more profitable article of export than either pine or spruce, as the latter are now handled. The poplar, white birch, basswood, maple, and other deciduous varieties of our forests if cut and shipped in the ordinary manner of shipping spruce and pine, would in most cases prove a failure. In order to make their export a success their nature and peculiarities must be well understood, and a desirable amount of intelligence and skill brought to bear in their manufacture. We might as well attempt to send away our grass or grain as we take them off the fields, without curing, as to export these woods without seasoning and manufacturing into desirable sizes or articles for which they are best suited. Our poplar, which is very abundant, is valuable for many purposes; it is very white in colour, and of light weight. It becomes hard and tough when dry, and is susceptible of a very high degree of polish. On account of the hardness of this wood it is considered superior to pine or spruce, where narrow stock is required, for flooring and other interior finish. It can also be largely used for cabinetwork, tool handles, paper-pulp, and many other purposes.

Basswood, like the poplar, is even more liable to spoil after the tree is cut down. Like all other vegetable substances, there is not any remedy for it after decay sets in. The early stages of decay, or softening of the sap, as it is called, should be carefully guarded against; it alike destroys the colour of the wood and the firmness of its grain. It destroys the qualities which render it so valuable for many purposes, such as carriage bodies, furniture, interior finish, &c. It takes walnut or mahogany stain equal if not superior to any other wood, and makes a pleasing finish in its natural colour—pale yellow.

The white birch, although not so liable as the basswood, poplar, and maple to deteriorate while green, or before the sap or moisture leaves it, requires careful treatment in order to preserve its strength and colour. The many purposes to which this valuable wood may be applied are too numerous to mention. Large quantities are now being shipped to Europe in the shape of spool bobbins blocks, &c. It is becoming exceedingly popular for first class flooring, and for this purpose should be cut on the rift rather than on the slash of the grain. Maple and beech are also excellent for flooring, but their chief value is for tool stocks and handles, agricultural implements, lasts, and an almost endless variety of articles requiring a strength and hardness that will resist wear.

The preference given to English plane stock and tool handles is not due (as the prevailing opinion puts it) to the material used by those makers being superior to ours. It is rather attributable to their proper method of treatment of it. The trees are cut down in the proper season, while the sap is down; they are then blocked out to suitable sizes and dried, not allowing the sun to check or dampness to heat or mould it. On no account is the log allowed to remain uncut for any length of time, either in or out of the water. There is not any class of woodwork where the proper cutting and curing of wood is of so great importance as in its preparation for wood-engraving. Our rock maple if prepared according to the foregoing observation, becomes dense and capable of receiving almost as large a number of lines to the inch as boxwood; in other words, it is suitable for fine work. If the same wood was allowed to remain in bulk for any length of time, even in the log or plank, or (worse still) a close pile, it would become worthless for wood-engraving.

Mr. Howe continues; 'It is to be regretted that the beauty and nature of our native woods have not been better understood and properly appreciated. This is probably due to their abundance, but it is not any reason why we should not make the most of what we have so plentiful. It is hoped that when it becomes apparent that we still possess a valuable supply of timber that it will not receive the same ruthless and greedy treatment that the pine, spruce, and hemlock have received in the past.'

In again referring to the proper preservation and seasoning of timber, while Mr. Howe's remarks apply to some lumber or material not exceeding three or four inches in thickness, the same cannot be applied to cases where it is used in larger bulk, as in the case of that used for shipbuilding. For these purposes another eminent authority says: 'The decay of woods by the growth of fungus, denominated dry rot, may be traced to the putrefying of the sap (as alluded to by Mr. Howe) when this has been left within the pores of the timber in the same condition as it exists in the living tree. The various means employed to arrest this destructive fermentation are either to wash out the sap by long soaking in water, aided by the action of the sun, to dry up the sap, either naturally by exposure to the sun and wind, or artificially by heated currents of air.' Nearly all authorities agree that there is great advantage in having our woods properly seasoned in this climate. A firm of dealers in wooden ware, writing from Liverpool recently, commented most strongly upon the subject, and stated that the advantage

of having the woods seasoned in New Brunswick climate gives manufacturers an undoubted advantage.

With the foregoing facts before us, it cannot but be admitted that the consumers are much better served by having the woods cut up and seasoned in this country. They obtain better material unquestionably. The saving in raw material should insure lower prices for them, and the saving in freight is a considerable item.

At the conclusion of Professor Alcou's interesting and valuable address, which was received with great applause, a valuable discussion took place.

BALANCING PULLEYS.

If a pulley is placed on a mandrel that is too loose for the bore, and one of the set screws tightened just to hold it in place, the wheel is not going to be brought to a perfect balance by placing the shaft on narrow edged bars and weighting the lightest side till the wheel will stand in any position. Neither will it do to wedge in arbor on all sides with shingle nails filed to a point with the object of bringing the mandrel in the centre for the purpose of balancing. Leaving the wheel to stand loose on the shaft while the arbor is rolling on the bars will give a much better result, but to get a wheel anywhere near perfect in balance a true mandrel must be used that will let the wheel drive on to the centre, and made to rest between two narrow straight-edged bars that have been tested with a spirit level. This gives a revolving motion so delicate that it stands next to the knife edge in accuracy and requires, but the slightest weight to throw the wheel out of balance. The pulley will have a tendency to roll back and forth when placed on the bars, and this is sometimes taken advantage of in finding the lightest side of the wheel, as it is as important to find the place where the balancing weight is to be added, as it is to determine the amount that is to be attached to the weight of the wheel. During the rocking motion of the wheel a mark is made on the rim at the same height from the supporting bars, as the wheel comes to rest on each forward and backward movement. The central position taken from these points locates the lightest side of the wheel in about the manner that the dead centre of an engine is found by blocking under the crosshead, and throwing over the fly-wheel till it is brought up by the same stop again, and dividing the movement in halves. The wheel is then rolled around till the lighted side stands level with the mandrel. This brings the centre of gravity the farthest to one side of the central line of the wheel, and assumes some of the good qualities of a balancing scale. A weight sufficient to hold the wheel in this position will be all that is needed to keep it equally poised in any part of the circle.—*Boston Journal of Commerce.*

TIMBER AND DEAL FREIGHTS.

(To the Editor of the Journal of Commerce of 24th January.)

STR.—It is much to be regretted that notwithstanding the anticipations of an improvement in trade all round, the first charters which have been made from Quebec this season are at rates little, if anything, better than those of last year. There is no doubt that the ruinously low freights which have ruled at Quebec and the deal and pitch pine parts during recent times are and have been owing in the greater measure to the reckless competition of owners having vessels engaged in these trades, especially North of Europe, ships which appear to accept anything merchants think fit to offer. Last year prospects looked fairly good shortly after the opening of the season at Quebec, but, as usual, the market was spoiled by owners and captains rushing in and accepting whatever rates suited shippers and merchants to offer. The shipbrokers at Quebec complained of the action of the shipowners and captains in frustrating their efforts to establish an advance in freights. Shipowners have been acting under a sense of unreasoning panic, each trying to outstrip his neighbor in the race to ruin—grasping at anything and everything for the sake of employment, and apparently losing sight of the hopelessly unremunerative nature of their operations. From all quarters come complaints of the loss and of shipowners being reduced to the brink of insolvency, yet they make no effort to save themselves. It is self-evident that it is impossible for this state of affairs to continue; the end must be very near at hand with a great many owners now. If a combined effort is not made to put freights up a general bankruptcy of owners of wooden vessels must inevitably ensue. Combinations and trades unions are resorted to and adopted in other industries when those interested find things arrived at a point which does not afford a living, and there should be no insuperable difficulty of shipowners entering into a combination for mutual protection. It must come to this, or universal ruin for the present owners of the large amount of wooden tonnage afloat, amounting to several millions of tons register, and representing many millions of money. To all appearances, under existing circumstances, the ships must pass into other hands at mere nominal prices, and perhaps new owners may be deluded into the experiment of running them at rates of freight which do not pay expenses, but they must speedily awake to the fact that the game is not worth the candle. This experiment has already been tried, in a measure, by foreigners, who have been acquiring ships at ridiculously low prices, as compared to their cost

and intrinsic values, but the majority have discovered by this time that even under these conditions the result is disastrous.

There is no good reason why freights from Quebec should be less than 25¢ per load for timber, and from the deal and pitch pine ports 60s and 100s per standard respectively. These rates would be easily obtained if shipowners will resolve to accept no less and stick firmly to that resolution. The trade can well afford it, wood goods have been selling at absurdly low prices for some years past, and no one interested appears to be any the better off for it, except, perhaps, the consumers of the goods, who have, probably, been lining their pockets at the expense of the producers and shipowners. The trade was in a much more healthy condition when prices were considerably higher than they are now, and any movement in the direction of a return to better rates should be welcomed by the shippers, carriers and merchants. Anyhow, it is a question of life or death with the shipowners, and it rests with them whether they will make a stand for existence or quietly submit to extinction.

It may be said, in addition, that if owners abroad would give positive instructions to their agents in England not to fix their ships at such ridiculously low rates it would be some help towards getting freight up. British shipowners are anxious to hold off, but when they see foreigners rushing in and snapping at everything, they are obliged, in self defence, to accept what they can get.

It is utterly impossible for ships to pay expenses out of such a rate as 19s to 20s per load from Quebec, as instanced by the following particulars of a voyage made last summer by a vessel of 950 tons register under favourable circumstances as to outward freight and all possible economy as to expenses, viz. :—

Disbursement at port of departure, including provisions and outfit.....	£302
Disbursement at Quebec.....	367
Insurance on hull and freight out and home.....	269
Disbursement at port of discharge, including captain's and crew's wages.....	392
Brokerage on timber charter.....	14
Sundry commissions.....	49
	£1,393
Freight out to Quebec.....	£ 200
Net freight from Quebec to a port in U. K. at 19s 6d per load.....	1,084—£1284
Loss on the voyage.....	£ 109

SHIPOWNER.

THE TREATMENT OF FOREST SEEDS.

WM SAUNDERS, F. R. S. C., Director of the Central Experimental Farm, Ottawa has issued the first Bulletin relating to the workings of that establishment. Among many other things of interest we find the following remarks regarding the treatment of forest seeds.

The great importance of encouraging and stimulating tree planting among the farmers, especially in the Northwest Provinces, is beyond dispute. It is felt also that this can only be accomplished on the scale of magnitude required by the planting of suitable forest tree seeds, which can be gathered from the native trees growing in the Provinces or purchased at a small cost. This leads us to add a few words of advice on the general treatment of forest tree seeds.

Many of the tree seeds which mature early are better sown soon after they are gathered. This applies especially to the several varieties of elm and to the soft maple. The hard maple, box elder and ash seeds keep well over winter, provided they are stored in a cool place and not allowed to get too dry. Acorns, nuts and stone fruits are most successfully planted in the autumn, but if kept over winter should be mixed with moist sand and exposed to frost and planted as early as possible in the spring, taking care that they are not at any time left in masses under conditions so as to heat. Many failures with seed arise from not sowing it in partial shade. If seeds are exposed alternately to hot sunshine and cold, while they are swelling, they will frequently rot before they appear above the surface. The requisite shade may be obtained by the use of brush wood, or a light layer of corn stalks or straw, removing this as soon as the seedlings are up and fairly established. Many nurserymen enclose their seedbeds with wooden frames, on which are laid light frames made of one-inch strips and covered with cotton or muslin. These are convenient and can be provided at small cost. Seedlings of evergreen trees grow slowly and require to be shaded and kept moist during hot weather all through the first year of their growth and some times longer. Seeds take some time to swell their coats after being placed in the ground, hence, if planted dry, they should be sown as soon as soil can be had to cover them. Germination may be hastened, especially with seeds of hard texture, by pouring hot water on them and allowing them to soak for twenty-four hours before sowing.

Seeds sometimes fail to grow from being planted too deep. The larger nuts and acorns should be covered with soil about as deep as the seed is thick; other smaller seeds should not be covered with more than half an inch of mellow soil, pressed gently with the back of a spade so as to make the earth firm around them, and when the young seedlings appear they should

be carefully weeded. Occasionally seeds will remain in the ground until the following season without germinating. Should any fail to grow by the time spring is over, and on examination the kernels are found sound, the seedbeds should be kept weeded and shaded until the next season.

Anyone desirous of securing a copy of the Bulletin referred to can do so by addressing the Experimental Farm, Ottawa.

British Trade With Canada.

The export and import trade between the United Kingdom and Canada in the month ended the 31st ult. shows a total export from the United Kingdom to the Dominion, of £507,769 contrasted with £435,467 in January of last year, an expansion of £70,302, equal to 16 per cent. Of horses £750, in value was shipped to Canada in excess of last year. Articles of food and drink show a falling off, and in raw materials, wool exhibits an increase of £2,200. The expansion in cotton piece goods is £20,975, being £137,033 last month against £116,029 for the corresponding period. Of linen piece goods there was £3,700 more shipped than in the first month of 1886, and of silk broadstuffs £2,600. Woollen fabrics show a falling off of £7,400, but in worsted fabrics there was an increase of £18,500, and in carpets of £5,000. Hardware and cutlery were shipped £300 in excess of January last year. The exports of iron show a marked increase, the total being £42,640, as compared with £17,111, an increase of £25,529, or 149 per cent. The increased value of the exports of machinery is £500 in steam engines, and £400 in other kinds. An increase of £12,400 is shown in haberdashery, £2,300 in earthen and china ware, and £5 800 in seed oil, but in apparel and slopes there was a decrease of £500 and in stationery of £900. As to the imports from Canada to the United Kingdom the total last month amounted in value to £30,373 against £35,150 in January, 1886, showing an increase of £16,223, equal to 47 per cent. Of wheat, £7,695 came to hand, some being imported in the corresponding month. Flour shows an increase of £7,400; butter, £3,400; and cheese, £2,300; but in cured and salted fish a decrease of £2,300 is exhibited. The imports of copper ore were \$8 400 more in January last year, but the lumber trade shows a decided falling off, the quantity of hewn wood received being only £24 in value, for a decrease of £3,716, and of sawn wood £7 012, a reduction of £6,900.

The Duty on Sawn Lumber.

A well-known lumber merchant says the duty of \$2 per thousand feet, which was imposed by the Government last session on all unsawn lumber exported from Canada to the States, has had the effect of stopping the taking of Canadian lumber by Americans. The few Americans who had the misfortune to have large limits on their hands at the time the tax was imposed have either disposed of them to Canadian firms or erected mills on the Canadian side, where they sawed up the lumber and then exported it free of duty to the other side. Since this duty was imposed Canadian lumbermen have had much brighter prospects, and he thought that one long our lumbermen of the Lake Superior and Georgian Bay districts would be able to compete with their neighbors across the line.

Taper Pike Poles.

We direct the attention of our readers to the advertisement on page 15 of this issue, of W. Forsyth, Peterborough. This gentleman has lately gone into the manufacture of Taper Pike poles, which is something entirely new to the Canadian trade. A large number of the leading lumbermen in Eastern Ontario are already using this article and consider it by far the best that has yet been introduced. When an article of merit is placed on the market and once tested, it generally finds a ready sale, as doubtless will be the case in this instance. Our readers would do well to send for a sample article.

No Voice For War.

In regard to the little hostile demonstration made by a few small politicians on account of the fishery troubles with Canada, no doubt the editor of the Orange, Texas, *Tribune* voices, in a rough way, the sentiments of every Confederate veteran in the following paragraph.

"Well, we say let 'em fight. We don't care, but we don't want any of it in our'n. We used to be quite ardent and patriotic, but that was when we were too young to know any better, but we have gotten gloriously over all that as we have come to the conclusion that we would rather go down the shady side of life with a whole hide than to have our name recorded on the sacred pages of history, if we have to cross over the flood loaded with lead to get it rec'd."

To Prevent Dry Rot.

It has been ascertained that timber which has been floated in water for a considerable time is no longer liable to the attack of dry rot. The albumen and salts are slowly dissolved out, thus depriving the fungus of the nutriment needful for its development. A French experimenter has shown that fresh sawdust rots away in a few years in damp earth, whereas sawdust from which the soluble matters have been soaked by water remains unchanged under like circumstances.

CHIPS AND SAWDUST.

Mr. J. Warren, of Cobden purposes erecting a large sash and door factory in that village.

Messrs Rowe, Avery & Hare, of Hampton, Ont., intend running the saw mill at that place.

A. D. McNab and R. C. Campbell have opened a new lumber shanty near Golden Lake, Ont.

Mr. Wm. Robinson is said to have leased the sawmill at Furnace Falls from Parry & Mills.

The Rathbun Company will take out about sixty thousand railway ties around Calabogie this winter.

L. J. Hughes & Co., lumber, Sarnia, Ontario, are succeeded by the Muskoka Mill and Lumber Company.

The closing down of the box factory at Waubausheno has thrown quite a number of men and boys out of employment.

A gentleman from Port Hope is trying to get a site for a small mill which he intends erecting in the spring at Calabogie, Ont.

Messrs Shurly & Dietrich, of Galt, have received a large order for their lance tooth cross-cut saws from the Western States.

It is reported that Mr. McRossie, lumberman, of Kingston, is about to build a large mill on the Madawaska river near Calabogie, Ont.

Chew Bros' mill, at Midland, is running constantly cutting the oak recently purchased from Mr. S. Frayer. The timber is turning out well.

Boyd Caldwell's mill at Wilbur Station, Ont., started to cut shingles on Jan 1st., and will cut all winter. Donaldson's mill will also run all winter.

Ottawa lumbermen report sales to be slow, prices high and purchasers holding back and do not seem inclined to buy. Scarcity of box cars is a great hindrance to the shipment.

The Export Lumber Company of New York is credited with having recently purchased the entire cut of McLaughlin Bros., Ottawa, Ont. The purchase amounted to about \$500,000.

The A. Mfg. Co's men and teams have been in the lumber woods west of the Albert Mines, N. B., about three months, and at the present time have more than 5,000 logs yarded.

Grant's shanties on the Bonnechere intend breaking up on account of the deep snow and thickness of the crust, as it is impossible for horses to work owing to their legs being badly cut.

The suit, involving 25,000,000 feet of lumber, between the liquidator of the Rainy Lake Lumber Co., Rat Portage, Ont., and the Union Bank of Toronto, was decided in favor of the bank.

The celebrated suit involving 2,500,000 feet of lumber between the liquidator of the Rainy Lake Lumber Co. and the Union Bank, has been decided in favor of the bank by the supreme court.

W. A. Quinton, M.P.P. has about 70 men lumbering in the vicinity of Loch Lomond and 25 men in the woods in Lancaster, N. B. Mr. Quinton will get out a large quantity of logs this winter.

The Chatham Manufacturing Company have secured a valuable tract of timber land, in the vicinity of Newbury. There are walnut, chestnut, oak, white ash and other timbers of good quality on the limit.

In 1877, Montreal shipped to Great Britain 3,400,000 feet of lumber, and to South America 8,000,000 feet. In 1886 the shipments to Great Britain amounted to 38,000,000 and to South America 21,500,000 feet.

For the want of snow lumbering operations in New Brunswick have been somewhat curtailed. Patrick Long intends putting in about 1,000,000 feet on the Kennebecasis river this winter for Freeze Bros., of Penobscot.

Rat Portage Progress:—We understand that Mr. Mather is sending a gang of men under the superintendence of Desj. Marris, up to Rainy River to build a boom to facilitate the transportation of his logs the coming spring.

The Glencoe sash and door factory is to be rebuilt by Messrs. Huston, Hopkins and Stevenson, who are about to purchase a couple of lots near the railway station from A. P. McDonald for the purpose. The new building will be of brick.

The lumbermen on the Gatineau report that there is more snow this year in the bush and on the open and rivers than has been seen for a number of years in that district, and they say that if the spring comes with a rush all the rivers will be swollen greatly.

Reports from Baltimore, N. B., state that times are dull there this winter. Very little lumber is being cut. William and Edward Stevens will get in about 20,000 feet at their mill for spring sawing. George Irwin will get in 10,000 feet or upwards at his mill.

Mr. T. P. Pierce gives notice in the *Canada Gazette* that he has purchased the property of the Cobourg, Peterborough and Marmora Railway and Mining Company, and will apply to Parliament for an Act authorizing him to build the road and operate the mines.

In some of the shanties up the Ottawa river log cutting for some time past has been curtailed for a want of means of getting the logs to the ice. Teams suitable for the work are in some cases getting \$1 7/8 a day and the demand is brisk. Snow is reported to be deep in the woods at present.

Mr. Hooper, President of the British Carriage Manufacturers after a tour throughout Ontario and Quebec, is writing a book upon our hard woods. He advocates the utilization of our immense and injurious waste of sawdust by mixing with pitch or something similar and pressing into bricks to be converted in a charcoal, for which there is a great demand in England.

James Connelly, who has had charge of one of Mr. J. R. Booth's shanties on South River, returned home recently suffering acutely from injuries received while working in the woods. It appears that while loading a sleigh a log slipped from its position on the rollway and passed over his body, breaking several of his ribs and otherwise severely injuring him. It is thought he will speedily recover.

It is stated that the largest tree in California is to be found in Tulare Co. It is four hundred and thirty-eight feet in circumference. To comprehend the size of this tree, one has only to reflect that a building forty-five feet square could be set on the butt for a foundation, if the tree were cut down, and not project over the sides. "The Father of the Forest" seems to be a fitting name for such a monster.

Fine specimens of French walnut have come as high as \$2 a pound. Ebony is as costly as French walnut. It often brings as much as \$300 a ton, providing the wood is of the finest quality. Five dollars a pound is often asked and received for exceptionally fine pieces. Rosewood and mahogany are popular woods and are always in demand. The best mahogany comes from San Domingo. Rosewood is worth from three to six cents a pound.

Below we give a statement of the quantity of logs and timber that will go down the French River in the spring:— Ontario Lumber Co., 20,000,000 feet of logs, and 50,000 cubic board pine. Georgian Bay Lumber Co., 200,000 board pine. McLean & Co., 6,000,000 feet of logs. Sluch & Co., 6,000,000 feet of logs. Whiting & Co., 4,000,000 feet of logs. L. & H. McLean, 5,000,000 feet of logs. Power & Co., 7,000,000 feet of logs. Onocoda Salt and Lumber Co., 8,000,000 feet of Tonawanda timber. Emery Lumber Co., 18,000,000 feet of logs.

A Winnipeg lumber dealer states that at the present reckoning, the number of feet of lumber in Winnipeg and points between that city and Port Arthur, including the latter place, is estimated to be between twenty and twenty-five millions. It is claimed that at this season last year there were about forty-five million feet, and present prices are pretty stiff in consequence of the limited stocks held by dealers. They report no heavy transfers, but are perfectly satisfied with the outlook, as considerable activity is expected in the province and the west when the building season opens.

A correspondent writing from Winnipeg to the *Mechanical and Milling News* has the following regarding the lumber trade:—A number of lumbering companies have their headquarters at Winnipeg, but there is now only one mill which saws in the city. The logs for this mill are procured from tributaries of the Red River which flow into the river from the east side. Supplies of timber from this source are pretty well exhausted. The companies represented here have their mills at Keswatin and Rat Portage, on the Lake of the Woods, and some on Lake Winnipeg. There are also supplies of timber on Lake Manitoba and Winnipegosis, and on the streams and tributaries of the head waters of the Assiniboine, in the northern portion of the Province, but these have only been available for local purposes. The great central portion of the Northwest is devoid of timber to a great extent, though the Wood mountains and Cypress Hills supply some timber districts. In the Cypress Hills there is a saw mill which does a considerable trade in supplying the stations along the C. P. R., in the central parts of the territories with lumber. The lumber is hauled to Maple Creek, on the C. P. R., 600 miles west of Winnipeg, from which the mill is about thirty miles distant. Calgary promises to be a centre of the lumber industry of considerable importance, and will likely be the chief supply depot for the far-western country. Already several companies have their headquarters there, and a large mill is in course of erection. There is plenty of timber tributary to the Bow river west of Calgary, whilst the mountains furnish almost an unlimited supply. The lumber trade has been demoralized here ever since the boom days of 1882, and is only now being placed on a firm footing. At that time anything in the shape of lumber was bought up immediately on arrival at exorbitant prices, and the mills were unable to keep up with the demand. In the following year, however, the business was greatly overdone. Stocks became excessive and prices were demoralized by a course of cutting which was vigorously indulged in by all the firms. Surplus stocks have now been reduced and during the present year there is every indication that the trade will be a satisfactory one. The log crop in the district tributary to Winnipeg will be somewhat larger than last year, but will not be excessive, and dealers expect to do a paying business for 1887.

GENERAL INFORMATION.

A curious application has recently been made of electricity to condense dusts and fumes. If air filled with smoke is charged with electricity the smoke at once flies to the sides of the containing vessel in a way that appears almost magical. In the same way, electricity will cause fine dusts which are in suspension, and which are often very difficult to remove from the air, to condense, or coagulate so as to be easily removable.

Take care (says *Power and Transmission*) how you let any machine oil or lubricator come into contact with a cut or scratch on your hand or arm, as serious blood-poisoning may result. In the manufacture of some of these machine oils fat from diseased and decomposed animals is used. All physicians know how poisonous such matter is. The only safe-guard is not to let any spot where the skin is broken be touched by any machine oil or lubricator.

A sash, door and blind maker says there is more waste of lumber in the business than is always taken into account. Says he: "A man figures that his lumber costs him so much, his labor so much and his interest, taxes, insurance and what not so much more, and that there ought to be so much left for profit; but when he comes to figure up at the end of the year, he has to inventory his plant at all it cost him to make his books balance." This will apply to others besides the sash, door and blind makers.

On the 27th ult., the annual meeting of the Canadian Rubber Company was held in Montreal. Directors were chosen as under—President, Andrew Allan; vice-president, James Benning; Directors—William Withal, H. M. Allan, Hugh McLennan, Arthur Prevost, H. A. Allan, Francis Scholtes and J. B. Larmouth. Some days ago, this old and successful company gave a festival to their employees numbering nearly 1,000, the occasion being the opening of a new wing which has just been added to the already extensive premises.

An important enterprise nearing completion on the Pacific coast is the postal telegraph in course of construction between Westminster and San Francisco. From the latter point to the British Columbia boundary is about 1,100 miles, and from thence connection is made with the Canadian Pacific telegraph system. All parts from Victoria and other points on Vancouver Island, thence eastward to Winnipeg are brought into direct communication with the Atlantic seaboard and European cable. Altogether there are included about 60,000 miles of wire.

Canadian shipping has considerably diminished during the past year, the statistics of all the Maritime Provinces showing a decline. There were struck off the list of registered tonnage in Nova Scotia, New Brunswick and Prince Edward Island, in 1886, 290 vessels, aggregating 72,346 tons, while the newly registered for the year numbered 215 and 31,613 tons showing a net falling off of 76 vessels of 37,703 tons. While at five ports of registration in Nova Scotia there was an increase in tonnage; such did not occur at all in either New Brunswick or Prince Edward Island.

Shoe pegs require 100,000 cords of timber annually in their manufacture; matches, 300,000; lasts and boot trees, 500,000. All this is of the most superior quality, straight grained and clear of knots and gnarls. To raise the telegraph poles of the country required 800,000 trees, and 300,000 more are required for annual repair. The railway ties of the country annually consume 75,000 acres of timber at least thirty years old, and the fencing of railways represents \$45,000,000 and the annual repair \$15,000,000. These are but a moiety of what is required of the United States forest supply. The burning of brick alone requires 2,000,000 cords of wood annually.

The improved French method of preserving wood by the application of lime is found to work well. The plan is to pile the planks in a tank, and to put over all a layer of quicklime, which is gradually slaked with water. Timber for mines requires about a week to be thoroughly impregnated, and other wood more or less time according to its thickness. The material acquires remarkable consistency and hardness it is stated, on being subjected to this simple process, and the assertion is made that it will never rot. Beachwood prepared in this way for hammers and other tools for iron work is found to acquire the hardness of oak, without parting with any of its well known elasticity and toughness, and it also lasts longer.

An English Journal enumerates the following as among the inventions which are specially needed at the present time:—Macaroni machinery, good red lead pencils, type writers that will work on account books and record books, indelible stamp-cancelling ink, a practical car starter, a good railway car ventilator, better horse shoes, locomotive headlights, an instrument for measuring the velocity of wind currents, apparatus for measuring the depth of the sea without sounding by line, piano-hid hinge which shall be flush on the outside, good fluid India ink for draughtsmen, a good metallic railway tie, an effective cut off for locomotives, a method of alloying copper and iron, and a molding material for iron and brass casting, capable of giving a mold that can be used over and over again.



THE CANADA LUMBERMAN

DEVOTED TO THE LUMBER AND WOOD WORKING
INTERESTS OF THE DOMINION.

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A. G. MORTIMER, PETERBOROUGH, ONT.

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The CANADA LUMBERMAN is filed at the Offices of Messrs SAMUEL DRACON & Co., 154 Londonhall Street, London, England, who also receive advertisements and subscriptions for this paper.

Our Readers who write to Advertisers in this Journal, will oblige both the advertiser and Publisher by mentioning the "Canada Lumberman."

PETERBOROUGH, ONT., MARCH, 1887.

It is authoritatively stated that the Export Lumber Company, of New York, has contracted for 41,000,000 feet of timber in Canada, involving a consideration of nearly \$700,000.

MR. ALEXANDER McEWEEN, timber merchant, Caithness Steam Saw mills, Wick, N. B., has taken into partnership his son, John McEween and his son Alexander James McEween, both of them having been for many years associated with him in the business, and henceforth the style of the firm will be Alexander McEween & Sons, timber merchants, Wick, N. B.

THE Lieutenant-Governor of Ontario, in his speech from the Throne, on the occasion of the opening of the Ontario Legislature, February 10th, said that the question of the right to the timber and minerals in the territory awarded to Ontario by the Privy Council, has been carried to the Supreme Court where it stands for judgment. Will the people ever hear the last of this question?

THE heavy tax imposed by the Province of New Brunswick on all wood cut from Provincial or Crown Lands, seems to have had a bad effect on the trade. Every influence has been brought to bear on the representatives of the Local Legislature to make a reduction on this tax, but so far nothing has been done in the matter. It is to be hoped that something satisfactory to the lumbermen will be done in this matter at the next session of the Provincial Parliament.

THE *Journal of Commerce*, Montreal, lately presented figures showing the decline of Quebec's lumber and timber shipping interests, and a corresponding increase at Montreal. The decline at Quebec is seen in this, that in 1877, vessels to the number of 796 cleared from that port, loaded with an aggregate of 670,627 tons of lumber and timber, while in 1886 the number of vessels was only 325, with cargoes aggregating 250,635 tons. In 1877 only 10 vessels cleared from Montreal, with 3,400,000 feet of lumber and timber; but in 1886 the amount of superficial feet of lumber and timber shipments amounted to 98,277,000 feet.

"BOOK-KEEPING for Country Storekeepers" is the suggestive title of an article published in the February issue of *The Office* from the pen of Mr. E. R. C. Clarkson, of Toronto, Ont. Mr. Clarkson's effort is to show how country storekeepers may keep their accounts so as to know how they stand at all times, and steer clear of the shoals of insolvency. His paper is accompanied by some illustrations of journal forms differing in some of their features from the conventional book-keeping of the schools, but the use of which would facilitate the commendable results that he has in view. *The Office* is published at 205 Broadway, New York, and every issue is replete with articles of interest and importance to accountants and business men.

THE projected bridge across the St. Lawrence river, at Quebec, has been the cause of much discussion among the members of the city council of the ancient capital, but from latest accounts it seems that the resolutions on the subject have now received the sanction of that body. It is estimated that to erect a bridge of a character desired, that three millions of dollars will have to be raised. The harbor commissioner of Quebec proposes to submit the trade of the port to a tax sufficient to pay the interest on this sum of money, but it is not likely that his idea will be carried out, for the reason that it is not entirely a local work.

OUR American contemporaries are discussing the merits and demerits of a new company which has lately been organized by some of the Pacific coast lumbermen, to test the efficacy of a plan of controlling the market for their output—that of actually marketing the entire mill product through a special corporation. The new company will purchase the lumber from the mills, and distribute it wherever a market may be found, either local or export. It is expected that by this method competition will be avoided, expenses lightened, and profits increased. The prospects are that the new idea will prove a success, so long as the business retains manageable proportions, but no longer.

ON pages 4 and 5 of this issue of the LUMBERMAN we publish an almost complete report of the lecture delivered by Prof. John Macoun, F. L. S., F. R. S. C., before the Carriage Makers Institute, in London, Eng. It is so full of interest and vital importance to Canadian lumbermen, that we have no doubt but that all our readers will give it a careful reading. We are pretty safe in asserting that no other man in Canada is better posted in "lumber lore" than Mr. Macoun, and it is a pleasure to note that he is bringing his knowledge into practical use. It is a satisfaction to be able to inform our readers that this gentleman will hereafter be a regular contributor to the LUMBERMAN.

AMONG the many attractions at the late ice carnival in Montreal was the Lumbermen's Camp, which was appropriately placed under large trees on Phillips Square. Within the camp the scene was a typical one, true to life in every particular. In the centre blazed a large fire of logs, while over this was suspended the chandeliers, in which are concocted the *soupe aux pois* and other such delicacies. At one end are arranged the sleeping bunks, providing room for ten men. In the rear extension is the cook's shanty, and the dining table. Here a regular bill-of-fare was provided at a nominal figure, and from all accounts a large number of people availed themselves of the novelty provided. Mr. W. Parker acted as *chef de cuisine*.

SO far as can be learned from different sources throughout the Dominion, the lumber trade has had no reason to complain of the amount of business done, and the probabilities are that trade will continue to increase. During January there was an advance of 50 per cent. over the business of the corresponding year. Prices rule about the same, with a prospect of an advance in certain quarters. In the Ottawa district it is said that lumbermen are indifferent about having more logs cut this season until a better opportunity offers to have them taken out. In all probability the cut will be large during the coming season, and with the already perceptible improvement in the English market, it can fairly be conceded that the export will far exceed that of last year.

IT is expected that the Provincial Governments of Ontario and Quebec will withdraw from the existing arrangement for the collection of the timber dues in the Ottawa district. At present the Dominion slide dues, and Ontario and Quebec timber duties are collected by the Ottawa Crown timber office, the expense of maintaining the same being borne jointly by the Dominion Government and the Governments of the two Provinces, the appointment of the officials resting with the Dominion authorities. The Provincial Governments seem to think that a more economical arrangement might be made, by which the Crown timber revenues of the two Provinces may be collected jointly without reference to the Federal Government.

AN English exchange in reviewing the lumber trade of that country during the year 1886, points out that a deficiency existed of 803,787 loads of timber, compared with the year previous. London, as the leviathan of the trade, fell short by 170,000 loads; Liverpool, which is unrivalled for second place, 87,000; Barrow gave way 22,000 loads; Bristol, 36,000; Cardiff, only 16,000; Gloucester 37,000; Grimsby, 66,000; Hartlepool, 48,000; and Hull, the capital of the east coast, only 19,000; Lynn, 13,000; Newcastle, 20,000; Newport (Mon.), 59,000 (a very fluctuating market); Plymouth, 8,000; Shields (N. & S.), 22,000; Sunderland, 29,000; Swansea, 14,000; Wisbech, 16,000. Then Scottish ports: Aberdeen, 41,000; Alloa, 10,000; Dundee, 7,000; Grangemouth, 56,000; Granton, 19,000; and Greenock, 17,000 loads. Then in Ireland: Belfast is 12,000; Dublin, 19,000; Waterford, 3,000 loads short of their supply in 1885.

A HALF century's incessant onslaught by saw mills and tanneries on the once dense forests of pine and hemlock in the counties of Northwestern Pennsylvania and the adjoining counties of New York State, has at last virtually exhausted them. Out of 150 immense tanneries in operation fifteen years ago, it is said that there is not enough bark left to keep more than half a dozen in operation to-day, and not more than one of these can be run over three years longer. The same state of affairs exists in Wayne County, which, ten years ago, sent annually to market 125,000,000 feet of hemlock lumber. To-day not more than one-quarter of that amount is cut. In Canada we find ourselves in a similar position, and the fact is to be regretted for the reason that it is only of late that the true value of hemlock has been recognized by cabinet makers and others engaged in the utilization of wood.

ADVICES from Miramichi ports indicate that although the export from the principal spruce ports has been curtailed, that from Nova Scotia, as well as from the smaller ports in New Brunswick—places not having the heavy stumpage tax to contend with—the export has been increased. This has brought the total export for 1886 nearly up to that of 1885. Notwithstanding this, and also the fact that freights ruled lower than in any previous season, the business has been unprofitable, the consumer and not the producer receiving the benefit. The shipments from this port during 1886 were less than half what that they were in 1877, 1880 or 1883, but it is not expected that any further decrease will take place, in view of the fact that the sawing power has lately been doubled, and only part of this was utilized during the past season. The stocks of both manufactured and unmanufactured woods on hand are estimated at twenty-five millions superficial feet.

AN investigation was lately undertaken in the Michigan legislature looking to the abolishment of those dens of iniquity called "stockades," which abound in the lumber and mining regions of the northern peninsula of that state. An exchange in commenting on this subject uses the following strong but expressive language: "Ordinary debauchery, when under the eye of municipal police, is shocking enough, but when the lowest order of brutes, in the semblance of men, seek the seclusion of the almost illimitable forest, and there establish houses of prostitution, into which they entice the dissolute of both sexes, and where horrors and cruelties too deep for conception can be perpetrated without scrutiny of law, it becomes a damnable disgrace to any class of men who wink at it, and a double-dyed stain on the state that permits it. And when ignorant or unsuspecting girls, whether wholly innocent or not, are inveigled from their city homes, and spirited away to become slaves in such dens, as has in several instances been proved, the outrage becomes so intonso and stupendous that words are impotent to adequately characterize it."

WITH the object of more thoroughly introducing the CANADA LUMBERMAN to the trade of Canada, the United States and England, we have undertaken the work of issuing, on Friday 1st April, next, a special edition of six thousand copies. Every effort is being made to make this edition, both in size and nature of contents in advance of anything yet introduced by the trade press of Canada. Some of the best authorities on the lumber trade, in every Province of the Dominion, will contribute to make this special effort a success and one worthy of the great industry whose interests it is intended to represent. By reference to the prospectus to be found on page 18 of this issue, full particulars regarding advertising space, etc., are made known. At no other season of the year will an investment in advertising pay so well as at present, and it is to be hoped that wholesale lumber merchants, manufacturers and others, will make free use of the pages of THE LUMBERMAN next issue. It is intended that every man engaged in the lumbering and wood-working branches of trade in Canada, will receive a copy of this issue. The wants of anyone making application by letter will be promptly attended to.

THE month that has intervened since the last issue of THE LUMBERMAN, is one which will long be remembered by Canadians as a period of political turmoil second to none in the annals of this country. For three weeks previous to election day business was practically at a standstill, and men were left to indulge to their heart's content in the discussion of the vital issues before the country. Fortunately, the elections in this country are hurried through in a few weeks, instead of piecemeal and periodical elections months ahead of the time when officials and legislators enter on their duties, as is the case in the United States. The one great issue of the late campaign was that of the National Policy, and notwithstanding Mr. Blake's expressions of friendship towards a protective tariff, the issue became none the less interesting and on this the electors cast their votes. The question of secession in Nova Scotia came in for a considerable amount of discussion from both sides, and it is pleasing to note that a large majority of the people of that Province are still loyal to confederation. The Nova Scotian difficulty will doubtless be settled by concession and possibly a rearrangement of the tariff. This province has as much Home Rule as Ireland would gladly

accept, and more freedom to talk secession than would be allowed her as one of the United States. From among the successful candidates we find more than one prominent lumberman, while there are also to be found others who fought the fight, but came out less victorious. After the election of representatives to the Ontario Legislature THE LUMBERMAN had the pleasure of congratulating Mr. Brouson, of Ottawa, on his success. It is now an equal pleasure to extend to Mr. Perley, the Conservative candidate, our congratulations also, with the hope that both he and the other members of the fraternity he represents, may successfully watch the interests of the lumber trade whenever any measure effecting the same may arise in the House.

In a letter to the *Saw Mill Gazette*, on the cause of fires in wood-working establishments, Mr. A. Christofel, of Brooklyn, N. Y., calls particular attention to what he calls "draft-back," which, he says, "is nothing more nor less than a gas explosion. This has caused the destruction by fire of a great many mills, and is the result of improper stocking. Shavings have to burn from the top and never from the bottom, as a smouldering fire only makes smoke with very little heat. Wood or shavings contain many insidious vapors which, combining with the carbon of the charred shavings and the oxygen of the air, are likely to produce a violent explosion at any time. Whenever the fire is allowed to become too low and a large lot of shavings have been thrown into the furnace, do not leave the boiler before the flames and draft are fully established, and remove all light combustible materials to a safe distance, and then there will be no danger."

NEWS.

Logs are coming over the Bay of Quinte Railway in large quantities.

Saginaw's rail shipments amounted to \$132,000,000 in round figures last year.

The book-keeper in McMillan's mill at Winnipeg, was murdered a fortnight ago.

The cedar mill at Deseronto, is again running. About 100 men and boys are employed.

The Georgian Bay Lumber Company are taking out a quantity of square timber on Black River this season.

The Minneapolis and Ontario Lumber Co. has purchased fifteen hundred million feet of timber in British Columbia.

Operations in the woods around Quebec are going on briskly and a large output of logs will be the result when spring opens.

The season's cut of logs and lumber that will come down French River in the spring is 74,000,000 feet of the former and 25,000 feet of the latter.

Quarter-sawed lumber has become so popular with customers throughout the country, that a great many mills are devoting considerable attention to that class of work.

The well known firm of Messrs. Hall Bros. & Co., of Quebec, has been dissolved, Mr. Lewis F. Peters going out. The business is continued by the remaining partners.

A. Hirtle, the proprietor of a planing mill in Berlin has effected a compromise at 50 per cent. secured on liabilities of \$3,000. His assets were covered by a chattel mortgage.

In bridging the Echo river for the Sault Ste. Marie branch of the Canadian Pacific railway, in the Algoma district, 9,000 piles will be required, instead of 2,000 that were first contracted for.

Mr. Grier's new saw mill at the Chaudiere is assuming goodly proportions. The frame work is erected, and the roof which is of an oval shape is placed. The structure is a large one and of a very substantial nature.

The number of new buildings erected in Montreal last year was 699, with a value of \$2,131,334 against 429 for previous year with a value of \$1,723,945, the increase being 270 buildings and valuation of \$402,889.

The recent wood dust explosions seem to have awakened a general interest in the matter. We trust wood dust explosions will not come to be of such common, every-day occurrence as saw mill boiler explosions.

The mill-owners at the Chaudiere have gangs of men employed in making all necessary repairs and getting the mills in perfect running order. It is reported that the cut at the mills this year will be larger than last.

Peter Watt, of Ompah, Ont., while working in one of McLaren's shanties was struck by a falling tree. He met with severe injuries, the bones of his shoulder being crushed and his hand pierced through with a knot.

It is stated in a Kingston exchange that the swamps and lumber district out on the Kingston and Pembroke Railway are covered with water; also that the country is in a bad state, and that the lumber trade is materially affected.

The Upper Ottawa Improvement Company have nearly compl. the annual repairs on their booms and other works up the Ottawa. They are in readiness to stand the high floods which are expected this season owing to the great quantity of snow.

Sawdust thrown on a circular saw table will render the hauling of heavy planks quite easy. The grains act as small rollers and reduce friction.

The last season's cut of lumber in the White Lake district is being shipped now. Twenty eight teams are engaged in drawing it to Pakenham, eight of which are drawing for J. R. & J. Gillies. About 2,000 feet constitute a load, and one trip a day is made.

Mr. J. R. Boeth, has a gang of men employed in making repairs and improvements in his large saw mill at the Chaudiere. A busy season is expected by the lumbermen as there will be no delay for logs, as large reserves have been left over from last season.

A large number of lumber shipments were unable to be made lately owing to the scarcity of cars. Prices are not quite so firm as they were a month ago and buyers are not investing so freely as last year. At this date last year the quantity of lumber sold far exceeded this year.

Mr. David Edgar, a well-known resident of Hamilton, passed away during the month. Deceased was for many years a builder, but for the last ten years or more gave his attention to his lumbering business at Mitchell. Mr. Edgar was highly esteemed and respected by all who knew him.

Reports from the Dumoine and Kippawa lumber shanties state that the cut this year has been much interfered with by the immense amount of snow in the bush which has rendered the drawing of lumber to the mills very difficult and tedious, as it is almost impossible to keep the roads open.

It is understood that Messrs. Dobell, Beckett & Co., of Quebec, have purchased Mr. Little's Three Rivers deals, 4th quality, being the balance of his 1886 cut. The price paid was \$27 and all charges. Messrs. McArthur Bros & Co., of the same place are reported to have purchased H. E. Hall's 1886 spruce. Some 65,000 q.s. at \$41, \$24.50, \$22, and all charges.

Mr. J. Bell, formerly of Cavan, has located in the township of Cartwright, Ont., and has put up a saw mill, which works well. He intends building a bank barn, 70 x 40, and a house 24 x 34 during the coming summer. He will also have a boat in which to give his friends, who may wander that way, a treat.

The Rathbun Company have at present 475 employes at their works in Deseronto alone, a larger number than were ever engaged at this time of year. All told, in their different agencies, lumbering operations, &c., they have at present over 2,000 men in their employment. This vast army gives some idea of the magnitude of the Company's operations.

There will soon be an end to the far-famed redwood forest of California. There are no fewer than nineteen lumber companies now engaged in cutting down the "big trees," and all the mills are in constant work, as the demand for the wood is practically unlimited. The country will, therefore, be cleared in a very few years, for nobody makes even an attempt at replanting.

There is considerable work under way in the shipyard department at Deseronto this winter. The yacht *Norah* is being completely rebuilt. The engine and boilers have been removed from the steamer *Puritan* and she has been otherwise dismantled with a view of converting her into a lumber and wood barge. The *Rescue* will be fitted out with a new engine, so as to enable Capt. Murray to beat, if possible, his record of last year. The *Quinte* is also receiving a new boiler and other craft are receiving a complete overhauling.

A White Lake correspondent says:—The lumber that was sawed here last summer in the two mills owned by Gillies and Paris respectively, is being drawn to Pakenham, preparatory to its being shipped on the train. Gillies employs eight teams, while six are drawing from Paris' lumber yard for Marshall & Co., of Brockville. There are also fourteen teams drawing from Stewart's mill at Wabigoon to Pakenham. The average loads are over two thousand feet some being over three thousand. These are not bad loads considering the state of the roads lately.

The total number of miles of timber licenses issued at the New Brunswick Crown Land Office during 1886 was 4,116½, consisting of 1,068 applications, as against 1,625 of the year previous. In nearly every case applications for renewal were made, while about 475 miles of new berths were taken, making the total number of miles of timber licenses renewed 3,641, and the number of miles of new timber applications sold 375. The total average of licenses issued during the year is considerably in advance of previous year. Of this extent of timber lands under licenses J. B. Snowball has 406 square miles; John McLaggan, 309; Kennedy Burns, 265; Geo. McLeod, 218; Allan Ritchie, 213; John Stewart, 145½; Wm. Richards, 140; G. C. King, 110; Hugh McLean 109.

The following clipped from the *East Saginaw Courier*, refers to Wm. Merrill, of Norwich, Ont. The *Courier* several weeks ago gave a history of the case of Wm. Merrill against Joseph Wilson et al. It has been decided by Hon. J. H. Steere, Circuit Judge of Alger County. The Judge decides that the complainant is entitled to the relief prayed for in his bill. This gives Mr. Merrill title to 320 acres of pine land in Alger County under a deed given by him October 3, 1885. As

previously stated, Mr. Merrill had placed in the hands of his agent 1000 acres of pine land in Alger County for sale, and as he claims, the 320 acres of land were held by Wilson and others through fraud, and filed his bill to set aside the pretended title held by them. The case will be carried to the Supreme Court.

J. S. H. Clark, of J. S. H. Clark & Co., wholesale and retail lumber dealers, Newark, N. J., has been in the valley. This firm handles about 15,000,000 feet of lumber from the Saginaw valley annually, shipping largely by rail. Asked his opinion as to the probable effect of the In-er State Commerce law, he said it was an unknown quantity, but he did not believe that it would seriously affect the lumber traffic. He has recently returned from a visit to British Columbia, having been interested with an English syndicate in a vast tract of pine timber on the Shuwap Lakes, about 300 miles east of Port Moody, near the Canadian Pacific railroad. Mr. Clark disposed of his interest in the timber, regarding it as too much of a future. In other works there was too little market and too much competition for the cheaper grades of white pine.

A correspondent writing from Duluth furnishes some interesting figures in regard to the lumber business in the Zenith city. He says: A short time ago, a local paper of this city, the *News*, gave a very general report on the lumber industry of the city, and among the interesting matters mentioned was the fact that the cut of the Duluth district, including the mills of the St. Louis river and Tower has been 161,000,000 feet in the past year, beside 43,000,000 shingles and 22,000,000. Of this total, a very small amount, probably not more than 50,000,000 feet, is now in yards, and of this only 20,000,000 feet is in this city itself. The cut of the coming summer promises to be slightly larger, as 135,000,000 feet is being cut in the woods, and 10,000,000 more will be driven down in the spring. The depression in the Duluth lumber trade seems to be over, and the lumbermen of this district are looking for a good business during 1887.

The *National Builder* gives the following items for the use of nails.—For 1,000 shingles allow 3½ to 5 pounds fourpenny nails; or 3 to 3½ pounds threepenny nails. For 1,000 laths allow about 6 pounds threepenny fine nails. For 1,000 feet clapboards about 18 pounds sixpenny box. For 1,000 feet boarding boards, 20 pounds of eightpenny common. For 1,000 feet boarding boards, 25 pounds tenpenny common. For 1,000 feet top floors, square edge, 34 pounds tenpenny floor. For 1,000 feet top floors, square edge, 41 twelvepenny floor. For 1,000 feet top floors, matched, blind nailed, 35 pounds tenpenny floor. For 1,000 feet top floors, matched, blind nailed, 42 pounds twelvepenny floor. For 1,000 feet furring, 1x3, 45 pounds tenpenny common. For 1,000 feet furring, 1x2, 65 pounds tenpenny common. For 1,000 feet pine finished, about 30 pounds eightpenny finish.

The New Brunswick Trading Company are well to the front for the new year's business, and although little over a year in existence, have, during the past season, done a very large business. Our readers will recollect that this company recently paid to their shareholders a dividend of 8 per cent., which we consider very good as times go. Though chiefly representing the spruce interest, the New Brunswick Trading Company are also largely engaged in the pitch-pine trade. The shipments of New Brunswick spruce during the past season have shown a marked falling off. From St. John, the shipments in 1884 amounted to 165,000,000 ft., but in 1885 they dropped to 152,000,000, and last year they only amounted to 136,000,000. From Miramichi, the decrease as shown in Mr. Snowball's circular has been even greater; for while in 1883 the total shipments amounted to 149,000,000 ft., in 1886 they were only 72,000,000 ft., less than one half. This shows that the recent advance of spruce prices on the west coast was not without justification. Were the North of Europe whitewood does not enter into prejudicial competition with spruce, as in London, Hull, Leith, &c., the advance recently established is likely to be maintained.—*English Ec.*

Mr. Hiram Robinson, general manager for Messrs. Hamilton Bros., lumber merchants, has just returned from an extensive visit to the Gatineau district where he was looking after the working of the shanties of the firm. Mr. Robinson said that the output of lumber this season on the Gatineau, was not as large as it would have been had there been good weather. The fore part of the season was splendid weather for lumbering and consequently a great many logs were made before the heavy snow storms set in. These storms rendered the roads in every direction almost impassable as there was a depth of five or six feet of snow, and in many places the roads were drifted to a much greater depth. Later on, consequent upon a heavy rain storm, a thick crust was formed which was another impediment, as it was very hard for horses to work in this crust while hauling logs and timber. None of the shanties of any of the lumber firms had to shut up, but many of the small jobbers were unable to continue their work, and consequently had to send their men down the river. "What is the quality and size of the lumber being turned out this season?" "Well, the quality is fair, and the size large. I think that on the whole, the quality is nearly as good as last year's cut."—*Journal.*

BRITISH COLUMBIA IN 1886.

In the New Year's issue of the *Victoria Daily Times*, which consists of ten pages, we find a voluminous account of the progress and position of British Columbia and its principal towns. Never before in the history of British Columbia, says that journal, were the prospects so favorable for the development of the quartz mines; the coal trade is improving and the lumber export finding new markets. The Esquimalt and Nanaimo railway was finished and begun to be operated and the dry dock was practically completed.

The estimate of revenues and expenditures of that province for the current financial year of 1887, puts the revenue at \$570,000, and the proposed expenditure at \$710,524 50. Of the receipts, the Dominion pays \$100,000 for lands conveyed in trust; \$18,000 in a per capita grant; \$35,000 by way of subsidy and \$29,000 as annual interest at 5 per cent. The provincial land sales are estimated at \$100,000; free miners' certificates \$24,000; licenses \$30,000; provincial revenue tax \$75,000; real property \$24,000, and personal property tax \$20,000. Among the proposed expenditures of the province we find \$225,000 in public works; \$34,000 for education; \$50,000 for administration of justice (salaries, \$75,000, not included); civil government \$62,000; hospitals and charities \$21,000; legislation \$19,800.

The exports of British Columbia form an interesting list. From twenty to thirty million feet of lumber in various shapes were dispatched to foreign shores last year. From Victoria, the declared exports for 1886 to the United States amounted in value to two and a quarter millions, an increase of 11 per cent on the average of three preceding years, and consisted mainly of coal, coin, furs, skins, salmon, fish oil. The list is as under:

Coal.....	\$ 896,312 84
Treasure.....	693,815 20
Furs, hides and skins.....	299 721 95
Seal skins (undressed).....	218,452 61
Canned salmon and fish oil.....	53,676 60
Tobacco and liquors.....	21,055 01
Opium, rice and Chinese goods.....	18,973 03
Miscellaneous.....	46,934 14
Total.....	\$2,248,941 54

The fiscal year 1883 showed the largest export trade from all ports of the last fifteen; it amounted to \$3,345,000, and of this total \$1,333,000 was from the fisheries. For the year ending June, 1886, the exports were:

The Mine.....	\$1,720,336
" Fisheries.....	633,110
" Forest.....	200,178
" Field.....	1,917
Animals.....	329,248
Manufactures.....	1,035
Total.....	\$2,885,824

The salmon pack for 1886 of the 17 canneries in the province amounted to 163,004 cases. The prices realized were regarded as satisfactory. The English market was reduced in the supply on hand carried over from previous seasons, thereby enabling shippers to place their pack of the coast to advantage. "The run in this province," says the *Times*, especially on the Fraser River, was slight, disappointing in fact. Nevertheless the prices realized will in a measure make up for the shortness in quantity. Many of the canneries are carrying over supplies for another season, when it is expected they will recoup themselves by an increase in the pack. Of the quantity mentioned above, there were sent: to the United Kingdom, 102,091 cases; Eastern Canada, 47,223 cases; Australia, 12,700; local dealers, 900 cases; total 163,004 cases. These were caught principally (103,000 cases) in Fraser River, the remainder in rivers Inlet, the Skeena, the Duncan and the Alert.

The city of Victoria is growing rapidly. In the year 1884, some \$750,000 was expended in new buildings, in 1885 about \$500,000, and last year a hundred and fifty structures were erected at a cost of \$550,000. A list of something over a hundred of the largest tax payers shows their assessment to reach \$2,892,000. The revenue of the city, which in 1876 was but \$57,000 was in 1886 \$134,000, a sum of \$14,000 in excess of the previous year's revenue.

From the port of Nanaimo in the fiscal year ending June 1886 there was exported \$75,000 worth of coal, iron ore, lumber and dogfish oil to the United States, Sandwich Islands, Mexico and Asiatic Russia. The imports of the same period amounted to \$300,000.

Some figures relating to the city of Vancouver will prove of interest. This city, situated on a peninsula formed by the waters of Burrard Inlet and False Creek, possesses great advantages in extensive water frontage. Coal Harbor extends along its northern front three miles, and the noble roadstead of English Bay is beyond. The city limits embrace an area of six miles in length by two and a half in breadth. Since the disastrous fire of June last, buildings valued at \$521,000 have been erected, which added to the assessment of the real estate, makes a total value of over \$3,000,000. The city has put down fire protection pipes at a cost of \$12,000. There are three saw-mills in the city having an annual capacity of 40,000,000 feet. The C. P. R. Co. has expended \$200,000 in clearing and street-making, and will expend some hundreds of thousands

more in round-houses and other buildings. The assessed value of the company's property in the city is about \$1,000,000 while some twenty-five other owners are taxed on an assessment of another million.

On Burrard Inlet is the Hastings saw-mill, which cuts fifteen million feet per year, and during 1886 shipped seven million feet to Valparaiso, Shanghai, Melbourne, Sydney, Adelaide, Callao and Iquique, or other ports in Australia, South America and Mexico. The Chemainus mill on the east coast of the Island, and cuts say twelve million feet per year, three-fourths of which was last year used for the Esquimalt and Nanaimo Railway. At New Westminster and at Vancouver are the Royal City mills, consisting of two concerns which have a capacity of some twenty millions yearly and also make sashes and doors, shingles, laths and boxes. They have three steamers, fifteen barges, and employ over 400 men. At the mouth of the Brunette River, on the west bank of the Fraser are the Brunette mills, which cut six million feet last year. The Moodyville Saw-mill Co. shipped during 1886 twenty cargoes of rough and dressed lumber, spars, pickets and laths, to Australia, China, Japan, the Sandwich Islands and South America. Their total carriage was 11,605,000 feet rough boards; 824,000 dressed boards.

The Vancouver Coal Mining and Land Co., limited, incorporated in 1862, took over mines and lands from the Hudson's Bay Co., and has since produced nearly two million tons of coal, the yearly production ranging from 21,000 tons in 1883 to 232,000 tons in 1885. It employs some 300 men at from \$2 to \$3 60 per day. The Wellington mines near Departure Bay, to which their railway, five miles in length, runs, employ some 600 hands, and their output last year reached 180,000 tons.

TERRA COTTA LUMBER.

THIS new discovery, which promises to revolutionize house construction, is but little known so far in Canada, although steps are now being taken to introduce it manufacture in Montreal. In an interview with Mr. W. O. Evans, of the latter city, who is the Canadian representative of the International Terra Cotta Lumber Co., of Chicago, THE LUMBERMAN gleaned some valuable information regarding this new and important industry.

Porous Earthenwares is the generic name given to these compositions, which afford four distinct bricked products, specifically termed by the inventor in the order of their discovery "TERRA COTTA LUMBER," "BRICKWOOD," "CELLULAR POTTERY," and "HOLSTEIN," or WOODSTONE.

As a manufacture the industry may be fairly started as yet in its infancy, ten plants only having been established, but it is calculated by the managers of the company, that the erection of twenty-four more in different parts of the world will follow during the coming season. "Terra Cotta Lumber" is composed of gritless kaolin clays and sawdust in such proportions as to afford a degree of porosity to the burned product as enables its easy working with tools commonly used in carpentry.

Its experimental manufacture, and its application as "fire-proofing" was introduced in 1882, and has ever since found increasing favor at the hands of architects and builders. The other inventions are of later origin. "Brickwood" is a composition of clays, or clayey lams, and sawdust so intimately mixed and worked into form by heavy steam or hydraulic power as to render its burned product one-third the weight of common building bricks. "Cellular pottery" is a mixture of surface clays, with fibrous vegetable matter, as straw, or its equivalent, in such proportions as to enable the safe drying and burning of hollow blocks pressed into the shape of joint and timber in lengths as great as ten or twelve feet. "Holstein" or wood-stone, is so called because compositions of clay and sawdust, with sufficient straw added to furnish the required amount of fiber in their green pressed state, to overcome the tendency of the wares to crack, while drying, will safely yield large hollow blocks, for the outside walls of houses, in the place and imitation of stone weighing as much as two or three hundred pounds.

All of these wares are of course incombustible and as resistance to the action of fire as bricks, for the final process of their firing is identical. Unlike bricks, however, their great porosity confers remarkable non-conduction properties of heat, cold, and sound. It is claimed that their production can be had of any sort of clays or clayey loams; that their first cost is cheaper than "slopped" bricks; that wooden framed buildings, at no enhanced cost, may be so sheathed and protected by their application as to be as secure against incipient fires, as the usual fire-proofed structures of iron; and that such construction affords the comfort of houses of brick in northern countries and of wooden in hot climates.

The compounding with clays, of vegetable and carbonaceous matter, to a moderate degree, which by the firing process assists in fueling or to lighten the weight of the burned product, is not an unusual practice, but the invention of processes of manipulation which allows the introduction of vegetable matter in such proportions, as to themselves after ignition serve as fuel without other to properly bake the clay; or to create a product of brick, that may be wrought with wood working tools; or to tie together green clay wares with

fibres so effectually as to overcome cracking tendencies in drying, the most trying stage of their manufacture; or to work clays from their original place of deposit to delivery to the wares in the drying room by machine process without the intervention of hand labor undoubtedly is new to the clay-workers of all countries, and combined will unquestionably form the basis for an industry, which in future importance may outrank even brick-making.

In the illustrated little work, given free distribution by this company, and descriptive of the novel manufacture and application of the wares for architectural and fire proofing purposes, the author says in reference to their production in Western towns, where, as building materials they are needed for the adjoining country and where in a measure their manufacture could reconstitute a local basin as destroyed by the too liberal establishment of market towns of competing railroad systems, a business which would afford employment to its citizens and keep the money usually spent abroad for building material at home.

"Thus from the nature of things the industry can not be checked by new inventions, or by improvements on old ones. Whenever new buildings are erected, and burned ones are replaced, there exists the market. The material is made at home, sold at home, and the demand for it never satiated.

"In forest countries a saw-mill may be found in every settlement, sometimes two or three. Its presence assures the nucleus of a future town; its pine lumber productions are utilized in the building of it; its employes are citizens. The forest which supplies terra cotta lumber lies out of sight, beneath the feet.

"The dirt which the builder throws out in the excavation of his cellar will build the house which is to surmount it. If the making of pine lumber be a profitable manufacture, why not of porous earthenwares under like circumstances? A twenty-five tone plant, the smallest which can be economically operated, may be erected with the facility and cost of a portable saw-mill. Twenty-five men are required to run it; twenty-five townsmen, neighbors, men with families—men who make homes for themselves, and spend their earnings at home.

If a reasonable porportion only of what is at present claimed in favor of this new manufacture prove true, the introduction of the art as a new industry will confer benefits incalculable upon communities in vastly more ways than one.

The pine forests of our country are rapidly disappearing. With their eradication follows the race of lumbermen, and the wide spread traffic subsidiary to their labors. Will the hybrid production of brick and wood here spoken of, measurably take the place of lumber? Will its manufacture compensate idle hands, the losses sustained by the abolition of their former occupations?

The invert on of new material or composition of matter, is of rare occurrence. Still rarer where its supply to the world even requires an output greater than the capacity of one or two manufactories. But if for the interior of buildings are required, as seems to be the case, more bricks for partitions, walls, and floors, if used for that purpose, than is demanded for the erection of outer or weather walls, the substitution of porous earthenwares for lathed and plastered constructions alone, being lighter in weight, cheaper, and every way preferable would cause the building of a factory in every town which now supports a brick yard.

WOOD-WORKING PATENTS.

The following list of patents relating to the Wood-Working Intrest granted by the U. S. Patent Office, February 25th, 1887, is specially reported by Franklin 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.

- 356 460.—Saw-set,—H. Flater & A. L. Davis, Findlay, Ohio.
- 356 462.—Saws, Adjustable Guide for band,—C. Gail, Chicago, Ill.
- 356 482.—Planing-Machine,—H. A. Lee, Worcester, Mass.
- 356 509.—Lathe,—L. W. Spencer, Hoosjack Falls, N. Y.
- 356 583.—Sawing-machine,—T. E. Goodwin, Nashville, Tenn.
- 356 678.—Lathe,—J. J. Brewlis, Minneapolis, Minn.
- 356 693.—Stamp-extractor,—R. B. Montgomery, Montour, Iowa.
- 356 820.—Saw handle,—C. W. Boynton, Brooklyn, N. Y.
- 356 920.—Saw mill, Band,—J. E. Emerson, Beaver Falls, Pa.
- 356 931.—Saws, Machine for setting and truing band,—J. E. Emerson, Beaver Falls, Pa.
- 356 973.—Log-dog,—E. H. Aldmen, Mobile, Ala.
- 357 032.—Saw-mill net-works,—W. L. Raynes, Montezuma, Ind.
- 357 087.—Saw mill feed-mechanism—A. B. Landis, Waynesborough, Pa.
- 357 091.—Saw filing machine,—R. Nolon, R. W. Bishop & J. Waltmeyer, Colorado, Texas.
- 356 182.—Sawing-machine, Circular.—H. M. Darling, Seneca Falls, N. Y.
- 356 336.—Saw-gummer,—E. Rogers, Fulton County, Ind.
- 357 437.—Chuck, Lathe,—J. H. Westcott, Oneida, N. Y.
- 357 454.—Plane, Bench,—J. Brice, Sandy Hill, N. Y.

It will pay you to advertise in The Canada Lumberman.

THE WHITE AND CHESTNUT OAKS OF THE ATLANTIC FORESTS.

NORTH AMERICA is the headquarters of the oak genus. No less than thirty-seven species occur within the limits of the United States, and about fourteen of these can be found in Pennsylvania and New Jersey. The lumber yielded by these varieties is by no means of equal quality. This fact is well known to all lumbermen and lumber dealers and workers, but not all of these classes are acquainted with the growing trees of various ages, so as to be able to tell them apart. By the characters of their leaves the oaks of the United States may be divided into (1) white oaks, which have leaves cut up into rounded lobes; (2) chestnut oaks with toothed but not lobed leaves; (3) live oaks, the leaves of which are evergreen; (4) willow oaks, with entire, narrow deciduous leaves; and (5) black and red oaks, in which the veins of the lobed leaves project beyond the end of the green lobes as so many bristles.

Six distinct species of white and chestnut oak, destitute of bristle points to their leaves, are found in Pennsylvania and New Jersey, but the live or evergreen oaks have their habitat further south.

Among the oak of the eastern states none exceed the white oak (*Quercus alba*) in an average of all the qualities which make a tree desirable. Pieces of the wood of this tree, four centimeters (1 1/2 in.) square, and eight times that length, were found to have an ultimate resistance to longitudinal compression of 8183 kilograms, and to transverse strain of 386 kilograms.

In strength, hardness and durability, few oaks surpass this, and the economic value of the tree is enhanced by its wide distribution and large size. From Maine and Ontario to the St. John's river and Tampa Bay, Florida; and from the ocean to Missouri, western Arkansas and the Brazos river, Texas, the white oak is abundant on all soils, and attains large dimensions. It is most abundant, and reaches its greatest development along the western slopes of the Alleghenies and in the valley of the Ohio, where it often forms more than half the forest growth, and reaches a height of from 80 to 140 feet, with a diameter of from 4 to 8 feet.

The acorn cup is hemispherical much shorter than the ovate acorn, which is edible, and about an inch long, and the leaves are cut into either from three to five board lobes, or into five to nine narrow ones.

It must not be forgotten that there are in the United States four other quite distinct kinds of oak which bear the name of white oak. Two of these are, however, confined to the coast region of the Pacific; a third, *Q. oblongifolia* extends in Arizona, New Mexico, and Mexico; while the fourth is peculiar to the latter regions.

The post oak or iron oak (*Q. obtusiloba*) belongs to the same section with the white oak, and its lumber exceeds that of that species in specific gravity and resistance to indentation, but is inferior in elasticity, and slightly so in resistance to transverse strain and longitudinal compression. But the tree is comparatively small, at its best rarely exceeding eighty feet in height and three to four in diameter, and usually much smaller. The wood checks badly in drying, but is very durable in contact with the soil, whence, probably, it has a name of post-oak. It is the most common and widely-distributed oak of the Gulf states west of the Mississippi, ranges north to Massachusetts, south to Florida, and west through southern Ontario and Michigan to eastern Nebraska, Kansas and to the hundredth meridian in Texas. The acorns are very much smaller than those of white oak, not exceeding two-thirds of an inch in length, and the acorn cups cover only about one-third of the fruit. The upper and larger lobes of the leaves are broad, and are often slightly notched.

The burr, mossy cup or over-cup oak is a tree equal in size to the white oak, to which its lumber, from the experiments made upon it in 1831, is superior in resistance to indentation and to transverse strain, but inferior in elasticity and resistance to compression. Its specific gravity is about equal to that of white oak, and it is said to be of all oaks the most durable in contact with the soil. The lobes of the leaves are often toothed, but the characters by which the tree may most readily be distinguished are the depth of the acorn cups and their covering of printed scales, the uppermost of which are prolonged into awns, forming a mossy fringed border.

Northward this oak ranges to Nova Scotia and New Brunswick, but it does not appear to extend further south than Lancaster county, Pennsylvania. Northwest it ranges along among the Atlantic oaks to the foothills of the Rocky mountains of Montana, and southwest to the valley of the Nueces river, Texas. It loves rich bottoms and prairies, and in the prairie region is the principal growth of the "oak openings."

Another oak which attains dimensions equal to those of the white oak is the swamp white oak (*Q. bicolor*) a tree which loves deep alluvial soil upon the borders of streams and swamps. By the older botanists, it was confounded with the chestnut oak. From southern Maine and the most southern part of Ontario this tree ranges south to Delaware and west to southwestern Iowa and western Missouri, while along the Alleghenies it extends even to Georgia. The wood is slightly heavier than that of the white oak, which it very nearly equals in elasticity, hardness, and transverse and longitudinal

strength. The leaves of this tree are broader, and are unusually and more deeply toothed than those of the chestnut oak, and the scales upon the acorn cups are more pointed.

Quercus prinus, the chestnut or rock chestnut oak, is one of the most valuable timber trees in Pennsylvania. Its range is from the Blue Hills of eastern Massachusetts to Delaware, and along the Alleghenies to Northern Alabama. In size it is inferior on the whole to the white oak, yet occasionally reaches nearly 100 feet in height, with a diameter of three to four feet. In the southern Allegheny region it forms a large portion of the forest growth. Slightly inferior to that of the white oak in transverse strength and hardness the lumber is superior to the latter in transverse strength and hardness. The wood is durable in contact with the soil; and the bark is rich in tannin. The leaves of this oak are uniformly dentate, with rounded teeth, a character by which they may be known from those of the chestnut which have pointed teeth. The acorns are large and thick, with thick hemispherical cups.

Very nearly allied to the chestnut oak is the yellow chestnut oak or chinquapin. This tree has been described under two names, as two distinct species, owing to the fact that, east of the Alleghenies, it is seldom found except in the form of a low shrub, the slender branches of which are often stretched flat upon the ground by the weight of the clustering acorns. West of the Alleghenies this oak attains a height of 80 to 100 feet, or occasionally even more, and a diameter of from two to three feet. It is found upon low, rich bottoms, and also upon dry hillsides. The presence of the dwarf form, which often grows in company with the Bear oak, a dwarf oak with bristle-pointed leaves, is proof of the barrenness of the soil. The leaves of the yellow oak are narrower than those of the rock chestnut oak, and the teeth are pointed instead of rounded, thus rendering the resemblance to those of the chestnut still closer.

This species ranges from the shores of Lake Champlain to the Delaware, and along the Alleghenies to Alabama and Mississippi, while westward it extends to eastern Kansas and Nebraska, and southwest to the Guadalupe mountains, Texas. It reaches its greatest development in southern Arkansas, and is very common in the Mississippi basin.

Although this tree is comparatively little known, its wood, according to the experiments made for the purposes of the census, is, in fuel value, hardness and both transverse and longitudinal strength, greatly superior to that of any of the oaks mentioned, while in elasticity it is inferior only to the rock chestnut oak. It is very heavy and exceedingly durable in contact with the soil, but checks badly in drying.—W. N. Lockington, in *Journal of Progress*.

ESTIMATED LOG CROP.

Careful estimates of the log crop of the streams tributary to the booms, which furnish logs to Bay City and the Saginaws, the present winter place the amount at nearly 600,000,000 feet. Of course it is not presumed that the figures are absolutely correct; but it is thought they will approximate very nearly to the actual amount when the figures are all reported officially:

Tittabawassee and tributaries.....	400,000,000
Cass, Bad and Flint.....	8,000,000
Kawkawlin.....	20,000,000
Saginaw and shore pine.....	10,000,000
Rifle river.....	90,000,000
Au Gres.....	55,000,000
Total.....	583,000,000

THE LUMBER TRADE.

AG. VAN SCHAICK, the well known Chicago lumber merchant, has been unburdening himself to a reporter of the *Chicago News*, and we make some very interesting extracts from his remarks which follow. They embrace almost every phase of the lumber trade:

"Why, the local consumption of pine and hardwood lumber alone in Chicago is 700,000,000 feet annually, and [so] long as this is a railroad center there will be an outside trade.

"Some of the largest lumber manufacturers are removing their business from Chicago to their mills. That is, the manufacturers live and sell their product here, but have it forwarded direct from the mills by rail to the purchaser. Thus they save the expense of maintaining yards and handling the stuff in the city.

"The lumber question does not cut any figure in the change that is going on. I have not met a dealer who is grumbling about strikes. Those that occurred last summer of course delayed business at the yards, but they lasted only a few days, and after they were over every merchant went to work and soon caught up with his orders. In a large city, where there are always men out of employment, a strike cannot last many days. And, as matters are shaping themselves now, pressing orders can be filled direct from the mills when labor troubles interfere with the work here.

"The capital invested by Chicago lumbermen exceeds \$60,000,000. This includes the money put into pine lands, mills and machinery, vessels, and the hundred and one ramifications of the trade. The Chicago yard trade alone represents about \$30,000,000 capital, and employs 14,000 workmen on an average for the year round and 17,000 in the busy season, including the

crowds of the vessels that bring the lumber here. The local sales, however, only reach about \$32,000,000 a year a little more than the largest dry-goods merchant in the city sells in the same time.

"Notice the changes in the lumber industry at other points. In 1886 the shipments from Green Bay ports directly to the east were 80,000,000 feet. This season they will reach 100,000,000 feet or more. All this pine product is diverted from the Chicago market, where it would ordinarily be sold. A few years ago nearly all the stuff manufactured in the Green Bay district came here, and it was a rare thing to hear of a cargo going east. This movement from that quarter is increasing every year. The same is true of all lake ports from Manistow to Duluth. Why? Because the Saginaw river and Canada are no longer able to supply the eastern demand. Timber is getting scarce in the Saginaw river section. The great primeval forests of standing pine in eastern Michigan have been cut off, and there is to-day an excess of saw mill machinery at Lake Huron ports. Sales of standing pine in the Saginaw river region are quoted at \$5 to \$8 per thousand feet. This is a very high price. A resident of Detroit told me he paid \$12 for stumpage near the Saginaw river, but that is an exceptional case. In two instances last year log-run lumber sold for \$23.50 and over per thousand feet in Saginaw. That is very dear. Last season logs were towed from Marquette, Lake Superior, to the Saginaw river, to be manufactured into lumber.

"The Saginaw river is still the largest manufacturing market in the northwest. It produces and ships nearly 800,000 feet annually. The merchants there see, though, that this cannot last. They are already reaching out into other sections. More than \$1,000,000 of Bay City and Saginaw capital was invested in standing timber in the Monominee district, Green Bay, last year. One lumberman paid \$712,000 for a single tract and has built a saw mill at Green Bay City.

"On the east shore of Lake Michigan standing timber or stumpage is now selling at \$4 at Traverse City to \$8 per thousand feet at Manistow or Muskegon, the range being governed by the location and quality of the pine. On the west shore of the lake and along Lake Superior prices range from \$3 to \$6, the first in northern Wisconsin and the last in the Green Bay region. These are just about double the prices of three years ago."

"What is the prospect for the lumber trade this coming season?"

"The outlook altogether is very satisfactory. The winter has been a fine one for work in the pines. There is plenty of snow all through the timber country and the men in the camps are actively at work. The reports indicate that the log supply will be a little excessive. Against this large stock of logs is the fact that the supply of old lumber on hand is less than a year ago. It is 10 per cent. less in two of the largest distributing markets—Minneapolis and Chicago—and a little less on the Saginaw river. There were also few logs left over last autumn. The probable liberal demand for lumber and the smallest stocks led the trade to think that prices will not fall below the present range. The average sales of lumber the last year show an average of 10 per cent. above the prices of the previous year, and in this same time standing timber advanced 20 per cent., or \$1 per thousand feet, which about equals the rise in the manufactured product.

"The manufacturers of the western district which includes Michigan, Wisconsin and Minnesota, will probably reach 8,000,000,000 feet this season. This would wholly remove their timber from 1,000 square miles of territory."

THE WASTE OF WOOD.

It has been estimated by competent persons that, comparing the dead weight of a tree as it stands in the forest with the dead weight of the lumber that is obtained therefrom, not more than 25 per cent. is actually delivered in the timber market. The remainder consists of limbs and slabs, roots and edgings, and buttings and waste in general, in the forest and at the saw-mill. However extravagant and wasteful the timber trade may have been in time past, it may now be noted with satisfaction that, owing to the increased demand in various directions for these so-called waste products, it is likely that the proportion utilized will be reversed, and the loss not exceed 25 per cent., even if it reaches that amount. This is especially due to the growing uses for wood pulp, which now enters not only into the manufacture of paper,—in itself a vast industry, but also finds employment in many other directions of almost equal magnitude.

The lumber dealers of New York have formed a corporation under the name and style of "The New York Lumber Trade Association," the objects of which are: "To foster trade and commerce, to reform abuses in trade, to protect trade and commerce from unjust and unlawful exactions, to diffuse accurate and reliable information among its members as to the standing of merchants, to acquire, preserve and disseminate valuable information relating to the lumber interests of this and the surrounding cities, to produce uniformity and certainty in the customs and usages of trade, to settle differences between its members, to establish rules for inspection, and to promote a more large and friendly intercourse between merchants."

ADVERTISEMENTS

Those wishing to BUY or SELL TIMBER LANDS, LUMBER or SECOND HAND MACHINERY will find THE CANADA LUMBERMAN an excellent medium in which to make known their wants. Advertisements of this character will be inserted at the low rate of 1 CENT A WORD, cash to accompany the order in every case. Address.

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TIMBER TRADE OF CANADA.

The special issue of the *Timber Trades Journal* of London, Eng., contains a lengthy review of the timber trade, 1886, from correspondents at every port of importance in the United Kingdom as well as from the leading timber producing countries, the Continent and the Colonies. We herewith reproduce the statements and figures furnished from Canada.

QUEBEC.

The season of 1886 has been another in the series of bad years which our Quebec timber trade has been for some time undergoing—one year worse than another, the past one worst of all.

The supplies got out last winter were full in pine in the Ottawa region, and in the spruce districts of the St. Lawrence and Saguenay a fair supply was got out. These with the wintering stocks, enabled the representatives of our shipping houses last spring to present themselves before your buyers with ample lines of all classes of wood goods. It is to be regretted, however, that sales could only be effected to a limited extent, and at close out prices in most cases. It was evident that the selling season of 1886 was not going to be any improvement on that of 1885.

The Afghan dispute with Russia, which for a time assumed a very critical appearance, gave the wood trade a momentary spurt. Buyers, fearing the cutting off the supplies from the Baltic, took heart of grace, and made considerable purchases at fairly full prices. As, however, the war-cloud broke and gradually disappeared, the reaction set in, and it became almost impossible to effect sales.

The "drives" in the Ottawa regions were, on the whole, good, and the logs reached the different mills in regular and full supply during the season.

In the spruce districts the drives were not so good; in fact, on the tributaries of the south shore of the St. Lawrence the drives were almost a complete failure. On many of the streams the logs only got down with the heavy freshets of September.

Owing to the sluggish state of your markets, this does not seem, however, to have had much,

if any, effect on the demand or prices of spruce deals.

The spring and summer brought us no cheer from your side; it was struggling up hill work all through the season to effect sales with your buyers, although almost all classes of goods could be offered at low prices, and freights were unprecedently low.

It is a blessing the stocks here were held by strong houses, who could carry them over to another season, without being forced to sacrifice them, so prices have not been allowed to fall to any great extent, as otherwise would doubtless have occurred, owing to the deplorable state of your markets, diminished consumption, and the large competing supplies from the north of Europe.

Large lines of Michigan first-pine—were purchased the past summer at high prices by some of our Canadian houses; this was unfortunate, as your markets did not need them; it has caused a glut of firsts, which, for the first time in many years, cannot be moved at your side. They must now, of course, be held until your market can absorb them, or be sold at loss.

This will, however, prevent a repetition next year, and by next spring or summer, if any vitality is shown in your markets, things should right themselves, as the supply of first quality pine deals is year by year decreasing.

For the sake of the good old port of Quebec, we regret to have to record again a still further decrease this year in our already reduced trade in export of wood goods.

We append a comparative statement of the clearances for the past 10 years, which tells the lamentable tale.

Year	Vessels	Tons
1877	796	670,627
1878	476	399,833
1879	433	364,628
1880	634	553,451
1881	459	380,186
1882	426	359,925
1883	487	416,169
1884	366	291,393
1885	369	294,789
1886	325	250,635

It must, however, be confessed that this does not mean that the total exports of wood goods from the St. Lawrence has fallen off in above proportion.

Many mills above Quebec, whose deals used to be brought down and shipped from here, are now delivered to ships and steamers direct at the mills, there being plenty of water and good anchorage all along the St. Lawrence, from Quebec to Montreal.

The cause especially of a considerable falling off our Quebec shipments on this head is the fact that the great bulk of the pine deals which came from the Ottawa districts are now shipped from Montreal.

Whether exporters have made money on their deal shipments for 1886 is questionable; there can be no doubt whatever but that for our pine deal manufacturers it must have been one of the most profitable years they have ever had. They sold large lines of their cuttings to the United States, and also considerable lines of deals to European exporting houses, who were compelled to pay the mill-owners' prices or go without stocks, as the favourable state of the United States markets rendered manufacturers completely independent of the deal buyers.

Whilst on this subject we cannot refrain from expressing the hope, in the interest of trade, that our exporting houses would in future regulate the business of the future with Great Britain to meet the reduced demand and consumption of Canadian woods in that country. This would place it on a healthy basis, and permit a legitimate profit to all concerned.

Any attempt to force on the markets of Great Britain the quantities of wood goods which were possible to be shipped in the halcyon days of the past, at living profit—because the demand and consumption were there where these latter no longer exist—cannot end otherwise than disastrously.

The log cutting this year in the Ottawa district will, from all accounts, be even more extensive than last year's, as the mill-owners look forward for a large and more prosperous year's business with the United States than even 1886.

There seems to be no halt in the onward progress of our big neighbour. Each year the volume of the trade exceeds that of the preceding year. There were probably the largest supplies of lumber from her own manufacturers, and including supplies from Canada, the past year than in any previous year in the United States; but notwithstanding in my drawbacks from labour strikes and other causes, there seems to be consumption for all; and with some vibrations in prices during the season, it closes with reports of moderate stocks from all sides, good prices, and brilliant outlook.

In view of our declining trade with Great Britain, which we cannot but deeply regret, the advantages of a new market such as that of the United States at our doors, are such as we cannot help congratulating ourselves on.

In spruce deals it is probable that the new cut will about equal that of last winter. We cannot, however, see how spruce deals can be made to sell at the miserable prices now ruling in your markets. No doubt the low prices ruling with you are due, first, to diminished consumption; and next, to the abundant supplies at low prices of North of Europe white-wood. We fear our spruce manufacturers will eventually have to give up trying to compete with the Baltic, and seek other markets for the disposal of their deals.

The winter all over Canada has been very severe, extremely cold, and snow in abundance, rather too abundant for working to advantage in the woods; but, on the whole, it may be called a very favourable winter for log making and hauling, and we have no doubt the most will be made of it by our lumbermen.

OTTAWA.

The shipments of lumber which take place yearly from Ottawa value far up into the millions. The outlook for the coming season is most flattering. All the lumbermen are unanimous in stating that the cut this season will not be below the average, while two expect to double their cut. The amount of lumber manufactured during the past season was in advance of that manufactured during any previous year, and it is clear that the amount manufactured next year will show another large increase. The amount of lumber manufactured by the Ottawa mills during the past season is as nearly as possible 288,000,000 cubic feet. The greater quantity shipped has been sent to the United States, but almost all the coarsest grades were consigned to Montreal for home consumption. The principal destinations of the consignments to the United States were Burlington, Vt. Albany, New York and Boston. Excepting in a few cases where consignments were shipped via Montreal direct to England, but little export trade was done from Ottawa, save to the United States. A large proportion of the lumber sent to the United States has been exported thence to South America, the West Indies, Africa, and other foreign markets. The prices of lumber in the various markets fluctuate according to the freight charged from Ottawa, the lumber being sold there on a basis of about 16 dollars per thousand superficial feet, to be delivered on the cars or barges, all freight charges to be borne by the purchaser. During the past season nothing has been done in square timber. Hardwood is not touched by Ottawa lumbermen except occasionally for private use.

ST. JOHN, N. B.

I have nothing to add to my last communication to your *Journal*. There has so far been very little snow along the bay shore, and operators are unable to do much in the way of getting out logs; in the upper part of the province there is I understand, an abundance of snow, and work in that section is progressing very favourably.

I hand you below a statement of the entire shipment from the New Brunswick ports for the year. I am indebted to the *St. John's Globe* for the figures, and you will notice they are so arranged as to show the shipment for 1885 as well as 1886.

WOOD EXPORTS.

The total export of deals &c., from St. John trans Atlantic ports in 1886 shows a large falling off compared with last year. The figures

are as follows, showing the ports to which the lumber was sent and the names of the ships:

Years	Port	No of Vess.	Tons	Sup feet deals, &c.
1886	Liverpool	55	62,638	51,768,613
1885	do	56	65,221	51,121,742
1886	London	4	4,163	1,739,666
1885	do	8	9,507	5,295,221
1886	Bristol Channel	33	28,588	25,872,450
1885	do	39	30,328	29,329,394
1886	Continent	11	5,958	5,601,617
1885	do	4	2,628	2,160,446
1886	Africa	4	2,758	2,623,176
1885	do	8	4,605	4,476,705
1886	Australia	1	916	696,155
1885	do	1	1,183	1,042,445
1886	Avonmouth	1	616	560,909
1885	do	1	267	274,140
1886	Aborystwith	6	5,773	5,490,863
1885	do	9	11,069	11,313,751
1886	Belfast	5	4,810	4,338,176
1885	do	6	4,944	4,694,123
1886	Ballyshannon	1	117	101,762
1885	do	1	428	482,129
1886	Bantry	1	441	489,070
1885	do	1	595	116,944
1886	Carnarvon	4	2,170	707,224
1885	do	1	270	237,752
1886	Clonakilty	1	283	348,358
1885	do	1	495	365,402
1886	Clare Castle	1	298	325,534
1885	do	2	4,576	4,471,189
1886	Cork	5	2,517	2,393,109
1885	do	1	638	586,149
1886	Crookhaven	1	2,820	2,832,813
1885	do	2	565	603,713
1886	Colemaine	1	263	298,665
1885	do	14	314	341,733
1886	Drogheda	11	314	338,986
1885	do	4	1,365	1,592,736
1886	Dundalk	41	1,393	1,654,666
1885	do	1	196	210,431
1886	Dungarvan	1	94	89,379
1885	do	7	4,876	4,540,702
1886	Dub in	7	4,761	4,514,874
1885	do	8	5,399	4,297,988
1886	Fleetwood	5	4,676	3,802,769
1885	do	1	450	348,204
1886	Foynes	1	256	234,820
1885	do	1	1,031	883,636
1886	Garston Dock	3	1,460	1,439,136
1885	do	1	499	475,028
1886	Galway	2	1,262	772,318
1885	do	2	2,617	1,787,660
1886	Glasgow	1	395	372,812
1885	do	1	395	366,941
1886	Hare Island	1	276	280,361
1885	do	2	765	708,263
1886	Irvine	1	290	297,232
1885	do	4	2,518	2,288,125
1886	Limerick	3	1,678	1,618,239
1885	do	6	3,841	3,549,654
1886	Londonderry	4	2,477	2,272,326
1885	do	3	2,802	1,921,468
1886	Mersey River	1	314	246,705
1885	do	2	855	915,366
1886	Milford Haven	2	791	791,391
1885	do	1	361	397,659
1886	Nowry	1	298	314,746
1885	do	5	4,128	3,762,880
1886	Plymouth	10	7,511	6,330,561
1885	Port Madock	1	343	392,912
1886	do	2	892	813,855
1885	do	3	996	1,098,212
1886	Rhyl	1	313	396,315
1885	do	3	1,211	1,220,243
1886	Rotterdam	1	545	443,832
1885	do	1	573	533,077
1886	Sligo	1	406	406,041
1885	do	4	2,102	2,003,885
1886	Tralee	1	192	210,666
1885	do	1	299	327,021
1886	Valentia	1	348	397,484
1885	do	3	1,150	1,065,803
1886	Warrenpoint	1	332	338,245
1885	do	1	332	338,245
1886	Waterford	191	154,659	134,123,207
1885	do	221	177,514	152,543,026

(CONTINUED ON PAGE 15.)



MINING REGULATIONS

To Govern the Disposal of

MINERAL LANDS OTHER THAN COAL LANDS, 1886.

THESE REGULATIONS shall be applicable to all Dominion Lands containing gold, silver, cinnabar, lead, tin, copper, petroleum, iron, or other mineral deposits of economic value, with the exception of coal.

Any person may explore vacant Dominion Lands not appropriated or reserved by Government for other purposes, and may search therein, either by surface or subterranean prospecting, for mineral deposits, with a view to obtaining under the Regulations a mining location for the same, but no mining location or mining claim shall be granted until the discovery of the vein, lode, or deposit of mineral or metal within the limits of the location or claim.

QUARTZ MINING.

A location for mining, except for iron, on veins, lodes, or ledges of quartz or other rock in place, shall not exceed forty acres in area. Its length shall not be more than three times its breadth, and its surface boundary shall be four straight lines, the opposite sides of which shall be parallel, except where prior locations would prevent, in which case it may be of such a shape as may be approved of by the Superintendent of Mines.

Any person having discovered a mineral deposit may obtain a mining location therefor, in the manner set forth in the Regulations which provide for the character of the survey and the marks necessary to designate the location on the ground.

When the location has been marked conformably to the requirements of the Regulations the claimant shall, within sixty days thereafter, file with the local agent in the Dominion, Lands Office for the district, in which the location is situated, a declaration or oath setting forth the circumstances of his discovery, and describing, as nearly as may be, the locality and dimensions of the claim marked out by him as aforesaid; and shall, along with such declaration, pay to the said agent an entry fee of FIVE DOLLARS. The agent's receipt for such fee will be the claimant's authority to enter possession of the location applied for.

At any time before the expiration of FIVE years from the date of his obtaining the agent's receipt, it shall be open to the claimant to purchase the location on filing with the local agent proof that he has expended not less than FIVE HUNDRED DOLLARS in actual mining operations on the same; but the claimant is required before the expiration of each of the five years, to prove that he has performed not less than ONE HUNDRED DOLLARS' worth of labor during the year in the actual development of his claim, and at the same time obtain a renewal of his location receipt, for which he is required to pay a fee of FIVE DOLLARS.

The price to be paid for a mining location shall be at the rate of FIVE DOLLARS PER ACRE cash, and the sum of FIFTY DOLLARS extra for the survey of same.

Not more than one mining location shall be granted to any individual claimant upon the same lode or vein.

IRON.—The Minister of the Interior may grant a location for the mining of iron, not exceeding 100 acres in area, which shall be bounded by north and south, and east and west lines astronomically, and its breadth shall equal its length. Provided, that should any person making an application, in pursuit of the purpose of mining iron thus obtain, whether in good faith or fraudulently, possession of a valuable mineral deposit other than iron, his right in such deposit shall be restricted to the area prescribed by the Regulations for other minerals, and the same location shall revert to the Crown for such disposition as the Minister may direct.

The Regulations also provide for the manner in which land may be acquired for milling purposes, reduction works, or other works incidental to mining operations.

Locations taken up prior to this date may, until the 1st of August, 1886, be re-marked and re-entered in conformity with the Regulations without payment of new fees, in cases where no existing interests would thereby be prejudicially affected.

PLACER MINING.

The Regulations laid down in respect of quartz mining shall be applicable to placer mining as far as they relate to entries, entry fees, assignments, marking of localities, agents' receipts, and generally where they can be applied.

The nature and size of placer mining claims are provided for in the Regulations, including bar, dry, bench, creek or hill diggings, and the RIGHTS AND DUTIES OF MINERS are fully set forth.

The regulations apply also to

RED-ROCK FLUMES, DRAINAGE OF MINES AND DITCHES.

The GENERAL PROVISIONS of the Regulations include the interpretation of expressions used therein; how disputes shall be heard and adjudicated upon; under what circumstances miners shall be entitled to absent themselves from their locations or diggings, etc., etc.

THE SCHEDULE OF MINING REGULATIONS.

Contain the forms to be observed in the drawing up of all documents, such as:—"Application and affidavit of discoverer of quartz mine." "Receipt for fee paid by applicant for mining location." "Receipt for fee on extension of time for purchase of a mining location." "Patent of a mining location." "Certificate of the assignment of a mining location." "Application for grant for placer mining and affidavit of applicant." "Grant for placer mining." "Certificate of the assignment of a placer mining claim." "Grant to a bed-rock Flume Company." "Grant for Drainage." "Grant of right to divert water and construct ditches."

Since the publication, in 1884, of the Mining Regulation to govern the disposal of Dominion Mineral Lands, the same have been carefully and thoroughly revised with a view to ensure ample protection to the public interests and at the same time to encourage the prospector and miner in order that the mineral resources may be made valuable by development.

COPIES OF THE REGULATIONS MAY BE OBTAINED UPON APPLICATION TO THE DEPARTMENT OF THE INTERIOR.

A. M. BURGESS,

Deputy Minister of the Interior.

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(CONTINUED FROM PAGE 13.)

1885 Hamilton & Co.	—	—	—	—
1886 G. Carvill & Son	—	—	—	—
1885 do.	1	765	661,069	—
1886.. Total	191	154,659	134,123,207	—
1885.. Total	221	174,514	162,543,026	—

The export of timber as compared with past year was as follows:—

Port.	1886.		1885	
	Tons Birch.	Tons Pine.	Tons Birch.	Tons Pine.
Liverpool.....	5,970	2,822	10,834	3,028
London.....	—	—	498	—
Continent.....	11	—	—	—
Avonmouth.....	—	76	—	—
Carnarvon.....	501	—	1,500	—
Crookhaven.....	—	—	363	—
Dublin.....	125	—	—	—
Fleetwood.....	400	706	—	658
Glasgow.....	512	19	—	—
Hare Island.....	—	—	7	—
Wexford.....	8	—	4	—
Queenstown.....	—	—	563	—
	7,512	3,113	13,769	3,686

Shippers.	1886.		1885	
	Tons Birch.	Tons Pine.	Tons Birch.	Tons Pine.
W. M. Mackay..	4,172	2,827	9,170	3,138
S. Schofield.....	2,265	202	4,094	548
A. Gibson.....	1,056	8	7	—
R.A. & J. Stewart	11	76	498	—
Geo. McKean....	8	—	—	—
	7,512	3,113	13,769	3,686

The total export of deals, &c., from all New Brunswick ports to Transatlantic ports during the year was about 272,159,687 ft., compared with 291,081,759 ft. in 1885, 231,000,000 ft. in 1884, and 404,287,076 ft. in 1883. St. John is given above. The other ports are as follows:—

DALHOUSIE.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	42	21,947	18,615,319
1885..	36	19,263	13,796,950

BATHURST.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	31	18,463	16,392,183
1885..	19	12,023	9,403,405

MIRAMICHI.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	148	85,693	72,276,391
1885..	169	104,451	87,259,028

CARAQUET.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	1	1,197	1,004,377
1885..	6	2,275	2,232,000

MICHIBUCTO.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	33	13,910	13,117,800
1885..	31	12,981	11,909,050

SHERBROOKE.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	19	7,013	7,209,360
1885..	15	6,336	5,797,035

SACKVILLE.			
Year.	No. of Vessels.	Tons.	Deals s. ft.
1886..	22	9,834	9,425,000
1885..	18	7,423	7,117,000

It will be remembered that the shipments from outports are included in the shipments from ports—as, for instance, Campbellton is in Dalhousie.

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NOTICE to CONTRACTORS CHANGE OF TIME.

THE time for seeing the Plans and Specifications for the NEW EXAMINING WAREHOUSE AT OTTAWA,

is hereby extended to Monday, the 21st February, and the time for receiving tenders to Tuesday, the 3th March. By order, A. GOBELL, Secretary.

Dept. of Public Works, Ottawa, 12th Feb., 1887.

MONEY to be made. Cut this out and return to us, and we will send you free something of great value and importance to you, that will start you in business which will bring you in more money right away than anything else in this world. Any one can do the work and live at home. Either sex; all ages. Something new, that just coins money for all workers. We will start you, capital not needed. This is one of the genuine, important chances of a lifetime. Those who are ambitious and enterprising will not delay. Grand outfit free. Address Taux & Co., Augusta, Maine.

TORONTO MILLING EXCHANGE

If you want to Buy, Sell, Trade or Rent a Saw or Grist Mill, send full particulars to me. I am a practical mill man. I advertise extensively, and my facilities for handling mills are unsurpassed by any in the Dominion. I also furnish contractors, sawmillers, and others with men. All orders by mail promptly attended to. Write for particulars. JOSEPH TUER, 101 York Street, Toronto.

WANTED.

A SITUATION AS SALESMAN, Inspector or in Office in connection with the Wholesale or Retail Lumber Trade. Have had several years experience in the Retail Trade, also in the Export Trade to Britain. Acquainted with the detail of R. and Ocean Freight and Shipping. Address Lock Box 33, INGERSOLL, ONT.

YOU can live at home, and make more money at work for us, than at anything else in this world. Capital not needed; you are started free. Both sexes; all ages. Any one can do the work. Large earnings since from first start. Costly outfit and terms free. Better not delay. Costs you nothing to send us your address and find out; if you are wise you will do so at once. H. HALLETT & Co., Portland, Maine.

CHRISTIE, KERR & CO.
LUMBER DEALERS,
TORONTO, ONTARIO.
Office No. 9 Victoria Street.

The HENDERSON LUMBER Co.

LIMITED.

DAVID H. HENDERSON, President; NORMAN HENDERSON, Vice-President; CHAS. H. WALTERS, Sec-Treas.

Dealers in, and manufacturers of, Dimension and Bridge Timber, Sawn Lumber, Clapboards, Shingles and Lath. Packing Cases and Boxes a Specialty.

OFFICE, MILLS AND YARDS: 312 to 306 William Street, MONTREAL, and at RIXTON FALLS, P. Q.

S. S. KIMBALL

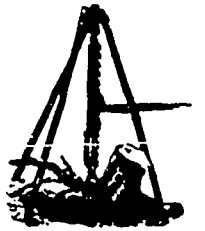
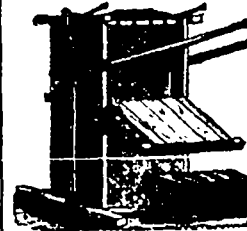
MANUFACTURER OF

CHAMPION STUMP & STONE EXTRACTORS

Cultivators, Hay Presses, Safes, &c.,

577 CRAIG STREET

P.O. BOX 945, MONTREAL.



Send for Circular.

WE ARE THE ONLY MANUFACTURERS in AMERICA OF

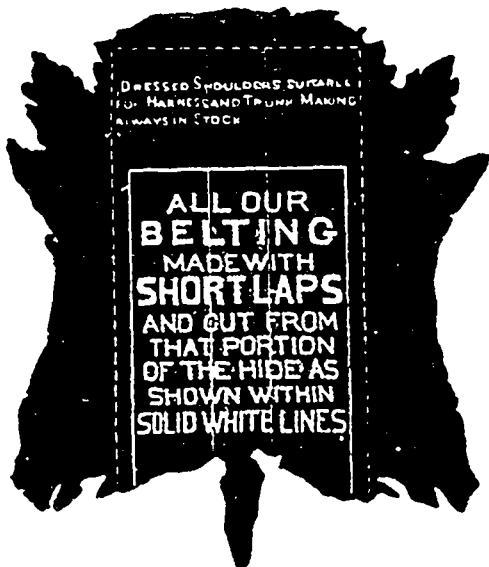
TAPER PIKE POLES

Made of the best White Maple, and turned in a Machine constructed especially for this work. These Poles are 13 feet long, and measure 1 3/4 in. at the pike end, being parallel for about 5 ft., after which they taper down to 3/4 in. to the small end.

Price, F.O.B. CARS at Peterborough, \$25 per hundred. Sample Pole sent on application. W. FORSYTH, Peterborough, Ont.

	<p>PATENTS procured in Canada, the United States, and all Foreign Countries, Courts, Trade-Marks, Copyrights, Assignments, and all Documents relating to PATENTS prepared on the shortest notice. All information pertaining to Patents cheerfully given on application. ENGINEERS, PATENT ATTORNEYS, and Experts in all Patent Causes. Established 1867. Donald C. Ridout & Co. 22 King St. East, Toronto</p>	
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Be sure and Advertise in our Special Issue.



Cotton and Rubber Belting.



All sizes of BELTING kept in stock Orders filled promptly.

ROBIN & SADLER

MANUFACTURERS OF

LEATHER BELTING AND LACE LEATHER

2518, 2520 and 2522 Notre Dame St.,

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MONTREAL & TORONTO.

Send for Price Lists and Discounts.

CYLINDER
CURTAIN
PEDESTAL
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DESKS

*Designs Unequalled! Materials the Best!
Arrangement Unsurpassed!
Workmanship A No. One! Prices the Lowest!*

TEES & CO., 300 St. JAMES ST. WEST
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The Ontario Canoe Co, Limited.

PETERBOROUGH, ONTARIO,
Manufacturers of all kinds of PLEASURE, FISHING and HUNTING



CANOES

Patent Cedar Rib Canoes, Patent
Longitudinal Rib Canoes, Bass
wood Canoes, Folding Canoes
Paddler, Oars, Tents, etc., etc

Gold Medal, London Fisheries Exhibition, 1883.

J. Z. ROGERS.

Send 3 Cent Stamp for Illustrated Catalogue. President and Managing Director
Canoes for Lumbermen, designed to carry any amount of goods and chattels
and strongly built, made to order on short notice.

THE Gutta Percha & Rubber Mfg. Co'y

T. McILROY, Jr., Manager.

MAIN OFFICES and WAREHOUSE at the
Factories, 136 to 155 West Lodge Avenue,
P. O. Box 494. **TORONTO**

*The largest Manufacturers in the world of Vulcanized
India Rubber Goods for mechanical purposes.*

Rubber Belting from ONE to SEVENTY-TWO inches wide.

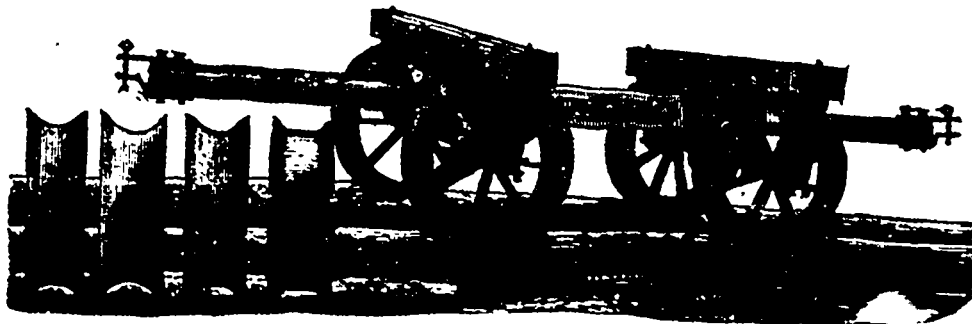
*Hose, for conducting, suction and steam. Packing, Cloth Insertion and
pure Tubing of all kinds. Rubber, Linen and Cotton Fire Hose.
Leather Belting. Extra heavy American Oak Tanned.*

A Full Stock always on hand. Write for Price Lists and Discounts.

Works also at NEW YORK and SAN FRANCISCO.

Butterworth & Lowe

GRAND
RAPIDS



MICH.,
U. S.

Manufacturers of Logging Cars, Logging Trucks, Pole Road Cars; Wheels, Chilled
and Unchilled, Flat-Faced and Concave, for every description of Logging Road.

Send for Circulars and mention this Paper.

SMITH'S
Mercantile & Land Reporting Agency

BANKERS—DOMINION BANK.
General Solicitor, JNO. LEYS, ESQ., Barrister,
Toronto. Secretary, JOHN SMILEY, M.A.
MANAGER—WILLIAM SMITH.
General Offices—Court St., Toronto, Ont.
Telegraph Address—Agency, Toronto.

Having for its special objects the furnishing to subscribers of reliable information on the financial standing of otherwise of traders and others, the collection of outstanding accounts and the procuring of the most reliable information from independent sources of the value and condition of landed and other properties in any part of Canada and the United States, with correspondents in Great Britain and other parts of Europe.

Our method of procuring for our subscribers the most reliable information is through solicitors of the highest standing, and from other equally reliable sources in the several localities indicated, who are under contract with us to supply the necessary information promptly.

The Landed Enquiry Department of this Agency, the only institution of this kind known, is invaluable to Solicitors, Loan, Investment, and Insurance Companies, Estate Agents, and others, preventing fraudulent land transactions resulting from misrepresentations.

The Department for the collection of outstanding accounts is conducted on an entire change of the system usually followed by Collecting Agencies, viz.:—Subscribers may have their collections paid either direct to themselves, or to the offices of the Agency, in which latter case remittances will be deposited to an account provided for that purpose, and immediately remitted to the parties to whom it is due, and will not be applied to any other purpose.

Another important feature in connection with this department is, that subscribers depositing accounts for collection will, if requested, be furnished with a Form of Script, on which will be entered the name of each debtor, the amount owing, and a full report of the prospects of collection, and providing that the receipts thereof be paid to bearer only, thus enabling subscribers to realize on their outstanding accounts.

The Agency will forward at least once in three months, or oftener if desired, a report and statement of all accounts in hand.

NOTE.—The offices of the Agency are open to the Solicitors and subscribers for reference to our numerous maps, atlases, directories and correspondence, and for the transaction of business with their clients and customers when in Toronto.

W. SMITH, Manager.

J. L. JONES
WOOD ENGRAVER
10 KING ST. EAST
TORONTO
SEND FOR PRICES.



Notice to Contractors.

SEALED TENDERS addressed to the undersigned, and endorsed "Tender for New Examining Warehouse, &c., Ottawa," will be received at this office until THURSDAY, 1st March, for the several works required in the erection and completion of the

New Examining Warehouse, &c.,

—AT—

—OTTAWA—

Plans and specifications can be seen at the Department of Public Works, Ottawa, on and after MONDAY 14th February.

Intending contractors should personally visit the site and make themselves fully cognizant of the work to be done, according to the said plans and specifications, before putting in their tenders.

Persons tendering are further notified that tenders will not be considered unless made on the printed forms supplied, and signed with their actual signatures.

Each tender must be accompanied by an accepted bank cheque, made payable to the order of the Honorable the Minister of Public Works, equal to five per cent. of the amount of the tender, which will be forfeited if the party decline to enter into a contract when called upon to do so or if he fails to complete the work contracted for. If the tender be not accepted the cheque will be returned.

The Department does not bind itself to accept the lowest of any tender.

By order,

A. GOBELL,
Secretary.

Department of Public Works,
Ottawa, January 27th, 1887.

ESTABLISHED 1866.

THE OLDEST BELTING HOUSE IN CANADA.

IF YOU WANT

Imported Oak Belting

MONTREAL 1882 Silver Medal.	TORONTO 1883 Bronze Medal.	St. JOHNS, N.B. Centennial 1883 Silver Medal.	DUBLIN International Exhibition 1865.	PARIS International Exhibition 1867.
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At Canadian Prices

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JOHN C. McLAREN,

292 AND 294 ST. JAMES STREET MONTREAL.

American Rubber and Chesapeake Gandy Belting at inside Prices.

EVERY MAN who is in any way interested in the Lumber and Wood-working industries of the country should send ONE DOLLAR for a year's subscription to the Canada Lumberman. The investment is a small one and will pay you ten-fold. Sample copy sent to any address on application.

ESTABLISHED 1820.

EAGLE FOUNDRY

GEORGE BRUSH,

14 to 34 King and Queen Streets,

MONTREAL.

MAKER OF

STEAM ENGINES

STEAM BOILERS

HOISTING ENGINES

STEAM PUMPS

BARK MILLS

CIRCULAR SAW MILLS

SHINGLE MILLS

ORE CRUSHERS

MILL GEARING

SHAFTING

HANGERS AND PULLEYS,

HAND AND POWER HOISTS FOR WAREHOUSES, &c., &c.,

And Agent for "Water's" Perfect Steam Engine Governor, and "Heald & Sisco's" Centrifugal Pumps.

The Canada Lumberman

SPECIAL EDITION

We have now in course of preparation the **FIRST ANNUAL SPECIAL EDITION** of the **CANADA LUMBERMAN**,

Six Thousand Copies

Of which will be issued *Friday, 1st April, next*, and circulated among the trade throughout Canada, United States and Great Britain.

This issue of **THE LUMBERMAN** is intended to surpass, both in size and variety of contents, anything heretofore produced by the trade press of Canada. Arrangements are being made whereby every Province in the Dominion will furnish a complete budget of news of interest to every man engaged in the lumbering and wood-working branches of trade. The state of trade and the prospects for the coming season's business will be discussed in all its bearings, while the list of technical contents will be unusually large and complete.

No such opportunity has ever before been offered **MANUFACTURERS OF SAW-MILL AND WOOD-WORKING MACHINERY, WHOLESALE LUMBER DEALERS, Etc.**, to introduce their business to the Canadian Trade. The tariff of advertising rates for this edition is so low that anyone desirous of doing business in this country should have their announcement prepared and duly forwarded.

From the rates specified below, advertisers will note that, if a series of insertions are ordered, they will gain all the benefit of the special issue of **6,000 COPIES** at the ordinary charge :

Tariff of Rates for Special Issue :

<i>Two Pages</i>	\$44 00	<i>Quarter Page</i>	\$8 00	<i>Three Inches</i>	\$2 75
<i>One Page</i>	25 00	<i>Eighth Page</i>	5 00	<i>Two Inches</i>	2 00
<i>Half Page</i>	14 00	<i>Five Inches</i>	4 25	<i>One Inch</i>	1 25
<i>Third Page</i>	10 00	<i>Four Inches</i>	3 50		

(Size of Page 9"x 12 $\frac{1}{4}$ ")

Advertisers contracting for half or whole page advertisements can have descriptions of machinery and illustrations of same inserted among reading matter at the rate of \$5 per column. Those not having displayed advertisements will be charged \$8 per column among reading matter.

We beg to remind you that during the months of April and May Canadian lumbermen are fitting up their mills for the season's trade ; discarding old machinery and putting in new ; and for this reason, at no other time during the year will an investment in advertising pay as well.

As the time is short, and as all matter and advertisements must be in the hands of the printer by the 20th March, in order to insure proper classification, all who feel disposed to favor us with an order, should see that the same be handed in not later than the date mentioned.

Remittances may be sent with order, payable to **A. G. MORTIMER**, Peterborough, Ontario, or within thirty days of completion of contract.

LOWEST RATES FOR CONTRACT ADVERTISING FURNISHED ON APPLICATION

It is to the interest of every man in any way interested in the great lumber industry of Canada to assist in making this special issue of **THE LUMBERMAN** a success.