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NO. 2.

PROSPECTS IN SWEDEN.

The Stockholm correspondent of the *Timber Trades Journal* says:—Work has now commenced in the woods in some places, while the process of forming gauges in others is in progress. Heavy masses of snow have fallen before the ground and morasses were properly frozen, artificial means will have to be used in many cases before "driving" can be resorted to. There is at present every disposition to restrict the "get" of logs to a moderate quantity; and this will probably be the advice given to members at the forthcoming meeting of the society of saw mill owners and timber exporters, to be held here on December 16th. It is hard to say whether this advice will be followed or not; but, if not, there is every probability of further price falls, as it is quite evident that production is getting ahead of consumption.

The returns of exports from Sweden for the ten months ending 31st of October of this and last year's totals are as follows for our trade:—

	1882.	1881.
Sawn and planed wood.....	678,780	542,170
Sq. and partially sq. wood.....	15,893,212	12,643,488

showing an increase equal to about 25 per cent. in the sawn and planed wood, and of over 20 per cent. in the hewn wood. The significance of the above figures, in conjunction with a reduction in the deliveries from London docks of over 13,000 standards during a similar period, ought to do more than anything else towards keeping the log "get" down during the present winter.

A RUSSIAN ENTERPRISE.

A correspondent sends us the following interesting account of a large saw mill estate in Russia, to the management of which he has recently been appointed:—

Gorval is a large old estate, which formerly belonged to a Polish family, but was sold last year to a Russian General. The place is very large, between 40 to 50,000 deschettins, or, to give you a better idea of its extent, I may tell you that if I wished to take a ride around its limits, I would have to prepare for a ride of about 120 English miles. It is situated about 1,000 versts, or about 650 English miles, south of St. Petersburg, where the two rivers, Beresina and Dnieper, meet.

The woods on this estate are very extensive and valuable, consisting mostly of red fir, but also oak, elm, ash, &c. The fir which is growing here is of a first-rate quality, growing most beautifully, 80 to 100 feet high, straight as candles, and of a size rare in the more northern parts of Europe. The climate is mild; a rather short, but frequently very cold winter, and the summer very warm. Grass upon the estate. The ground is free from undulations, and hardly a stone to be found on it,

which will enable us easily to get out of the woods our 150,000 blocks which we are going to cut this winter, the evenness of the ground allowing us to cart the blocks on wheels as well as on sledges.

We are building this winter a saw-mill with six frames, and next spring a planing and moulding mill, and also joinery works. A speciality will be oak parquetry, which is very much used here in Russia, and has a market almost to any extent.

All the newest machinery in use for wood-cutting and woodworking are already partly ordered, and will be taken advantage of for this enterprise. The saw-mill, as well as the factory, will be lighted up with the electric light. The motive power, both for the mill and for the joinery works, are going to be three English steam engines of 40, 40, and 50 horse-powers respectively, and five boilers of together 150 horse-power. Next summer a tramway of 10 to 15 English miles is going to be built into the woods, in order to make it easier to get the blocks out. More than 2,500,000 blocks are calculated to be growing on the estate.

What makes this business of special interest is that, as far as I know, there are neither saw-mills nor joinery works worth mentioning in this part of Russia. The next year's production is calculated to be 7,500 standards, a part of which will be sold in Russia; the most of it will have to be exported, via Libau.

Most things are very different here to what they are further north, and so is also the way of getting the timber out of the woods. In the North it is generally left in the hands of the foreman to find horses for carting the wood down to the rivers, and much depends upon them whether the blocks come out and what price.

In this part of Russia, which formerly was Polish, the peasants were up to the year of 1862, as it was called here, Kriepostnoje, or a sort of slave. Living in small communities or villages, they had nothing they could call their own. Everything belonged to the community, and the community itself belonged to the owner of the estate on the ground of which the community was situated. Since 1862 a new era for these poor peasants began. Each became possessed of a very small piece of land, which he could cultivate, and call it his own, and at the same time he became the proprietor of the poor hovel in which he was living. This certainly made a great difference to each individual. The community, however, remained very much the same as it had been for hundreds of years. In these little villages they live still that patriarchal sort of life they had always been used to. The eldest man is the head of the family and the elected eldest is the head of the community. Before his tribunal every case is brought, be it of dispute or be it of general importance to the community, and settled in an assembly where

every one has a right to a seat, without any trouble of being elected.

If I have any work to be done which requires the help of many men, I do not want to make up an agreement with each party separately. I make up a contract with the whole community, in which each individual pledges himself to do a certain amount of work; and when such contracts have been signed by the whole community, I can, without risk, advance any amount wanting to the parties in question.

This is what we have been doing here. A mass of contracts have been made out with all these little villages in the neighborhood, the one village pledging itself to give a certain amount of hands to dig, another so many hands to do carpenter's work, another for masonry work, another for transport of bricks, another for the building of food vessels, and a great many for felling of the trees in the woods and for transport of the logs to the river.

The winter came early this year, we have had frost and snow for some time and the works in the woods have already begun. We wait only for more snow to come to see such work going on, as certainly this place never dreamt of before.—*Timber Trades Journal.*

RAILWAY SLEEPERS IN FRANCE

A recent number of the *Revue des Laines et Forêts* contains the following abstract of a long delayed report on the above subject by M. Jacquen, Ingenieur en Chef des Ponts et Chaussées:—

In 1877 the six great French railway companies required 2,563,000 sleepers annually for the maintenance of their permanent way. Compared with the mileage, this amounted to 93 sleepers per kilometre (0.6 English mile) per annum, or to over 7,000 sleepers daily.

Assuming a single tree to supply on an average 10 sleepers (which is below the average of beeches, but above that of oaks), the maintenance of the French railway system necessitates the destruction of 700 large trees for every day in the year. When the projected extensions have been carried out the expenditure will amount to 1,000 large trees daily. To this enormous figure must be added the quantity required for repairs of rolling stock, which cannot be put down at less than 140,000 cubic metres (about 5,000,000 cubic feet), in the year. Besides this, the construction of 20,000 kilometres of new lines, as proposed, within the next ten or fifteen years, will cause a further demand for 20,000,000 new sleepers.

With a view to the reduction of this enormous demand, the French railway companies have long been endeavouring, like others, to impregnate them with antiseptic substances, the two heretofore most used being cupric sulphate and creosote.

On the South (*Midi*) and West (*Ouest*) of

Franco lines/sloopers and (telegraph) poles impregnated with both those substances have long been in use and are still in a perfect state of preservation. A creosoted beechen sleeper was taken up on the West of Franco line after nineteen years' service. This is a remarkable example; but similar instances may be met with on other lines; the real mean average life of such impregnated sleepers does not, however, appear to have been as yet satisfactorily determined.

After long experience, the Eastern of Franco line (*de l'Est*) gives the preference to gas-tar over all other antiseptics, and creosotes even oaken sleepers, the sapwood as well as the less indurated portions of the heart absorbing the tar freely. The sleepers are not put in creosoting chambers, but are cut and dressed so that all the bearing surfaces are thoroughly impregnated. Under a pressure of 6 to 7 atmospheres, oaken sleepers absorb 7 to 8 kilogs. of creosote, beechen sleepers 30 to 35 kilogs. There is reason to hope that the larger quantities thus absorbed increase the power of resisting the elements of destruction in a corresponding degree.

Mr. Blyth has proposed a process of treating log or sawn wood with hydro-carburetted gas close chambers, that is to say, exposing it to the action of ordinary high-pressure steam, containing liquid hydrocarbons in a state of spherical diffusion. The inventor claims for his process that it effects perfect saturation of every part of the wood, whether green or dry, sawn or unsawn, with the protective substance. These promises, somewhat over sanguine perhaps, have not yet had the full confirmation of experience.

The solution of the railway sleeper problem has been sought in another way. Stone, concrete, and cemented brickwork sleepers have come up again. But it must be remembered that these offer neither the conditions of elasticity nor the facilities for attachment which are indispensable, so that there is no prospect of their general adoption. These metal sleepers have been tried, and could a good model be found, our great metallurgical firms would, no doubt, find a new element of industry in supplying the imperious demands of the iron horse. But, unfortunately, the experiments made thus far, on different lines, have not given satisfactory results. A metal sleeper, to be successful, must combine all the qualifications of resistance to a transverse strain, a good seat on the ballast, and stability in the mode of attachment of the superincumbent rails, and without the outlay must remain the same. This is the point generally overlooked by inventors. It is not enough to have a perfect line on the opening day; it must be kept in working order, and to do this, so far as French experience goes, a larger outlay appears to be necessary with metal sleepers than with wooden ones. The results at present are therefore unfavourable to the use of metal sleepers.

CANADIAN HARDWOODS.

Our trade in hardwoods, which a generation ago was confined, as far as Ontario is concerned, almost exclusively to walnut and oak, is undergoing of recent years a remarkable development. Uses have been found for woods whose adaptability and beauty were not known or recognized in former times. And a value is now placed upon a number of these which not long since were regarded as fit for nothing but fuel. Basswood for example, was considered, at the time when the Reciprocity Treaty with the States was in force, as fit only for cordwood—poor cordwood at that, black ash was almost equally despised, soft elm was neglected, and hickory, that strong, tough timber, so much used for carriage wheels, was regarded as desirable only for snow-jumpers, or for winter fires.

An unforeseen demand having arisen for many kinds of timber within the last few years, both abroad and at home, it may be well to notice the great variety of hardwoods Canada possesses, their habitat and uses. The classification adopted by a firm of Toronto dealers, prepared for the Ontario Government and communicated to the *Northwestern Lumberman*, may serve us. It is as follows:

Ash.	Elm.
Basswood.	Hickory.
Beech.	Maple.
Birch.	Oak.
Butternut.	Sycamore.
Cherry.	Walnut.
Chestnut.	Whitewood.

Of course, there are several varieties of a number of these woods. The various sorts of oak, elm and ash, for example, differ widely in their uses and values, as we shall see further on. The kinds of hardwood lumber most in request for home use or for export, we are told, are walnut, cherry, butternut, chestnut, white oak, whitewood, basswood, white ash, black ash, and soft elm. The supply of some of these is so limited, and the demand for them so steady, that they must become scarce and dear in a very few years, and, unless care be taken to replace they must become extinct, in which case the more common kinds, such as birch, maple, black ash, soft elm, will naturally be sought to take their places. A considerable share of the Canadian hardwoods now used for decorative purposes, goes to the United States. We send thither, principally from Ontario, butternut, cherry, white ash, and birdseye maple, to be used in car fittings, or house-interiors, sycamore for tobacco boxes; butternut for cigar cases. From New Brunswick we send birch timber to Great Britain, and in that country, as well as among our American neighbors, the birch appears to enjoy increasing favor. Oak, too, we continue to ship to Great Britain in the log and in staves.

If we consider each variety in its order, we shall see what woods are most nearly exhausted, and which ones are of the the greatest value to the country.

MAPLE.—The maple, as becomes the tree whose leaf is the natural emblem of Canada, is the most plentiful of all our forest trees. In Ontario it is especially abundant. The Muskoka country, the Midland district, the western peninsula, are all well supplied. It is used for furniture and in various other manufactures, common chairs especially, and the demand is growing all the time.

BIRCH.—This is a fine-grained, handsome wood, is growing extensively, and probably increasing in value. There are those who think that, as an ornamental wood, it will supplant walnut, cherry and butternut. It is found generally distributed over Ontario and the eastern provinces, and care should be taken to preserve it. There is a market in the United States to-day for quantities of black birch, which resembles cherry, and, when stained, resembles walnut, it takes as good a polish as cherry and can hardly be distinguished from that wood. There is plenty of it on the Atlantic and in the Mississippi territory.

ASH.—White ash, which is found chiefly in the western part of this province, is in active request from railway car-builders, wagon-makers, shops, and agricultural implement factories. It commands good prices, is sound timber, and is largely exported to the United States. The

supply is not abundant, and incense are being rapidly made upon it. Black ash is more generally distributed; it is used for house-fittings and for furniture. The demand is increasing, but can be met by the supply.

OAK.—Of this tree we have several varieties; the white, the red, the gray and blue. White oak is most sought after, and commands the highest prices. Most of our cut of this, from all the provinces east of the lakes, goes the log or in staves to Great Britain. Western Ontario has in past years furnished many a stately tree, and there still remains a good deal of this kind of wood. Red oak, as well as the kinds called gray and blue, are found in the north and west of Ontario. It is used generally and extensively, for agricultural implements and for railway carriages.

ELM.—Least plentiful of the many varieties of this wood is the genuine rock elm, which is in great request, from its strength and toughness, for carriage and wagon-making. It is mostly found in the neighborhood of Lake Erie or Lake Huron. Other kinds, such as the gray, blue and soft elms, are plentiful enough, and are made use of for furniture to a large degree. Soft elm is used extensively for making oak hoops for flour barrels and staves, and is exported largely to the United States and Great Britain.

BASSWOOD.—This wood is common in most parts of Ontario and Quebec. Once rejected for all purposes but fuel, it is now in request for carriage and street-car makers, and for furniture, and interior fitting of dwellings, &c. It is a fine-grained and delicate-colored wood, and finds a ready market in the States, as well as here. From the absence of resin, basswood is preferable to pine for paneling, &c. It can be used for mouldings in interior wood-work. Large trees of it have become scarce, and the small timber is now being used.

HICKORY.—The westernmost counties of Ontario were at one time very nicely supplied with the hickory tree, whose nuts are so toothsome, and whose wood gives such intense heat in the old-fashioned wood stove, to say nothing of the uses of its bark to the Indian or the hunter for torches, by which to spear fish at night. Hubs, spokes, shafts, single-trees, and other portions of a wagon or carriage are now made from it, and agricultural implement makers understand well its properties of strength and toughness. It is now comparatively scarce, quantities of its product having been shipped to Britain from St. Thomas, Amherstburg, St. Catharines, and other points at which there are bending factories.

WALNUT.—The warm color and rich surface of black walnut when finished, have long made it a favorite wood, at first for furniture, but now for the interior structure of public buildings and private dwellings. In the wood-work of organs, sewing machines, and the like, it is regarded as indispensable, and the result of the demand is that but little walnut is left in Canada. It is now a more costly wood than ever, large trees of it being especially valuable. We have to import it from the Northwestern States, and even there, such is the demand, it is growing scarce.

WHITWOOD.—The western peninsula of Ontario once boasted a good deal of this rather attractive wood, which has been much demanded for furniture making and paneling of cars, &c. It brings good prices, and is no longer plentiful.

BUTTERNUT.—For pulpit and altar decoration, for bed room furniture and dining-room wainscoting, for cigar cases and sundry other purposes, butternut has come to be regarded as very desirable, indeed the limited supply of it, existing mainly in the north and west of this province, must soon be exhausted.

SYCAMORE.—This wood is growing scarce and dear. It is principally used for tobacco boxes, for which purpose quantities have for years been shipped from Essex and other counties to American sea ports, and even as far as Virginia. Kentucky parties have, we understand, placed saw mills at Essex Centre for cutting sycamore.

CHERRY.—A favorite and handsome wood, susceptible of a high finish, and making very rich furniture, or interior fittings for offices, &c. Ontario has but a limited supply remaining,

and for this there are plenty of customers. Cherry has always been deemed a choice wood, and to-day has more admirers than ever. In two or three years, Canadian cherry must, at the present rate of consumption, become extinct, and then birch will come into vogue.

CHERRY.—In the fitting of hotels or offices, and in some interior fitting of churches, this wood is used, but only sparingly, because the tree is a large grained one. It will have to be resorted to as the butternut, which it resembles, becomes exhausted.

BEECH.—Not many uses have been found for beech, which remains one of our cheap and common hardwoods, to be had nearly everywhere. Tool-makers have use for it to make planes and tool-handles.

BALM.—A species of whitewood. It is used in place of basswood and real whitewood. It is called by some of the Americans cottonwood, but deemed superior to the wood growing along the Mississippi and State of Ohio. It also takes the place of inferior quality of pine. The counties of Kent and Essex produce it largely. It is used for stave and heading bolts, and a large quantity is sawed into lumber and shipped to the United States, where it is used in wagon shops, agricultural works and so forth. There is still a large quantity remaining, but it is being used up fast, as the demand for it is great, and good prices are obtained.—*Monday Times.*

PROTECTION OF THE FORESTS FROM FIRE.

The following letter appears in the *Toronto Mail*.—

SIR,—From time to time articles and letters have appeared in the *Mail* and other papers lamenting the destruction of our forests by fire, and advocating measures for its prevention.

The Legislature now in session should pass some measure whereby the provisions of the Hon. J. B. Fardoe's Fire Act could be practically enforced. As it now is, as far as preventing fires the Act is a dead letter. Its 14th clause provides that it shall be the special duty of every Crown land agent and bushranger to enforce this Act, and to prosecute every person guilty of a breach of its provisions and requirements; but as these men have no instructions or authority from their department to that effect, they can do nothing. And as bushrangers taking up and prosecuting parties guilty of breaches of the Fire Act, it is simply absurd, as they would do it at the risk of having more of their limits purposely burned another year.

It would appear that some of the greatest fires have occurred since the passing of the Act, and this may be due to the fact that no person is afraid of being prosecuted under its provisions.

Most people are under the impression that it is only the license-holder who suffers from fires set out in the limits. They forget that every timber forest destroyed by fire represents so much revenue lost to the province, let alone the actual loss to the license-holder.

There is another great loss to be considered, and that is the loss to the country of the money which would be paid out in manufacturing and bringing this timber to market had it remained green.

During the summer of 1881 fires overran large parts of the Parry Sound and Muskoka districts and the country lying between the Georgian Bay and the Ottawa river, and according to an estimate made in the *week* of November 10th, destroyed \$10,000,000 worth of pine in Ontario. This does not nearly cover all the fires, as there were many fires on licensed lands of which the public know nothing, the holders of the limits burned keeping the knowledge of it to themselves, not wishing the value of their properties to be depreciated.

If these annual fires continue, in a few years they will make a large hole in the revenue of Ontario.

There was three-quarters of a million dollars in bonus alone obtained from the last sale of timber berths, and the duty on the timber growing on them will represent to Ontario, if not burnt, upwards of five million dollars, and perhaps more. As these berths are now being operated on, or likely to be within a few years, and owned by so many different parties, the

risk of fires is much increased. Before the sale, these berths were in their virgin state and not much exposed to fires, being held by the Government; but now that operations have commenced on them, they will stand a poor chance.

There should be a distinction made by the Crown Land Department between pine lands and hardwood lands fit for settlement. It is well known that in the back districts of Ontario and the Ottawa Valley the pine lands are generally not fit for settlement, and that where settlement has been made on them the settlers, instead of prospering, yearly grow poorer and poorer, till in many places they were actually driven from their holdings by starvation as witness the Opeongo road, the Bouchere and Mississippi counties, which are now nearly deserted, nothing but dry pines to be seen as far as the eye can reach, while on the other hand, those who settled on the hardwood lands have done well and made themselves comfortable.

Now that the country is mostly all surveyed, and the quality of the lands known to the Government, through the reports of its surveyors and bushrangers, it surely would be easy to make a distinction between lands for settlement and those for lumbering. A large portion of Opeongo and Bouchere country was not surveyed until after its settlement, and the Government had not therefore the knowledge they now have about their unoccupied lands.

It surely would not be too much to expect that the source of such a large revenue to this province as its timber forests should be better guarded against loss than it now is.

If the present staff of woodrangers was increased, and kept in the woods during the months of May, June, July, and August, to watch the Crown domain against fires, with authority to enforce the provisions of the Hon. Mr. Fardoe's Fire Act, they would prevent many bush-fires being set out. They should also be empowered to call on farmers, riders, drivers, surveyors, and others who may have set out fires, to turn out and assist in killing them and preventing their spread. If one-fifth of the revenue which would have been derived from the timber destroyed by fire in 1881 alone had been expended in watching the Crown domain, it would have paid the salary of a large staff of men for several years, and it is more than probable that not much damage from fires would have occurred.

If persons holding and working limits, and their agents and foremen, were all held responsible for the damage done by the fires set out by them or their men, and also the heads of surveying or hunting and fishing parties, they would be more careful than they now are.

Practical bushmen say that it is not so hard as some would suppose to trace the makers of fires in the woods as it is to trace incendiaries in cities, and that almost all fires can be traced to their starting points, and generally the parties who set them out.

Yours, &c.
LUMBERMAN.

Jan. 4, 1883.

A QUESTION OF PROTECTION.

The discussion of tariff revision in the United States has brought up the question of the conservation and protection of the forests. Under the existing tariff a protective duty of one dollar per thousand feet is imposed on hemlock, basswood, whitewood and sycamore lumber imported into the United States, and of two dollars per one thousand feet on all other kinds of lumber. The report of the Tariff Commission recommends a reduction to seventy-five cents in the former rate, but, inasmuch as the woods to which this reduction would apply, viz. hemlock, basswood, whitewood and sycamore, are either found in large quantity only in the United States, or are little employed in the manufacture of lumber, the reduction proposed will cause no substantial diminution of protection to the lumber interest. What the freetraders desire is the abolition of the duty on all other woods, and more especially of that upon pine and spruce lumber, which are largely imported from Canada. The ground upon which this abolition is urged, if well taken, makes it questionable whether the effect of the removal of the duty will be altogether advantageous to Canada. It is that, with the duty removed, American manufacturers will purchase a much larger por-

tion of their lumber in Canada and so check the exhaustion of the home supply that under the present circumstances is rapidly proceeding. The New York Post in directing attention to the subject thus states the case:—"Our forests are rapidly swept away by the drains now made upon them. They must be relieved, and their only possible relief is found in Canada. The \$22,000,000 which the tariff takes from the pockets of consumers of lumber is unimportant in comparison with the indirect damage this tariff causes to the country by hastening the destruction of the forests. We must look this matter clearly in the face; we must not deliberately allow our forests to be destroyed, and entail upon ourselves and our children all the evils which their destruction will bring, merely to make a few lumbermen rich. On this one point tariff reformers and protectionists can well meet on the common ground of public necessity. The future prosperity of the country is at stake." Taking the view that the conservation of our forests is of greater moment than their conversion into money, with the sources of employment which such conversion affords, it would be the course of prudence on our part to impose an export duty on all lumber sent out of the country. That is a proposition to which, however, scanty support would be accorded. We watch with concern the measure of our lumber exported, we trace in the expansion and contraction of that trade the measure of our commercial prosperity, we encourage in many ways the extension of lumbering operations, we are even eager to induce the United States to open its markets to the products of our forests free of duty, in order that we may more rapidly turn the fixed wealth of our forests into floating capital. It seems somewhat curious to find an influential journal in the United States urging the abolition of the duty on lumber, less because it conceives that consumers will thereby gain an advantage in lower prices, than because the American forests ought to be preserved by the sacrifice of those of Canada. Our own conviction is that the abolition of the American duty on lumber imported from Canada would check in an unappreciable degree the destruction of timber wealth of the United States. With American markets adjacent to Canada, but remote from the centres of the home supply, such as those of New York State, freedom of import would cause an enlargement of trade, but when it is stated that the import of Canadian pine and spruce lumber into the United States is only one-twentieth of the total quantity annually manufactured in that country, it will be seen how remotely the question of the preservation of the forests is affected by the duty. The importance of conserving of forest wealth is yearly becoming more generally recognized; it is being continually pressed upon the Governments of Canada and the United States by the press, and by the Forestry Congress, whose labors in this direction have been arduous and laudable. But it is a subject beyond the influence of tariffs; it is one which each country must deal with directly through legislation tending to prevent the wanton destruction and waste of the forests now prevalent, and tending to the encouraging of tree-planting. If due care is exercised in this direction by our governments, the abolition of the American duty will be a matter of congratulation to us, as contributing to the enlargement of trade with the United States, without causing a counterbalancing loss in the rapid exhaustion of our lumber supply.—*Montreal Gazette.*

THE FOREST RESOURCES OF MEXICO.

The New Orleans Times-Democrat, in reviewing an article from *La Patrie*, Mexican journal, gives the following concerning Mexican forests: "Hitherto the vast pine, cedar, walnut and oak forests that are scattered so plentifully along the slopes of the Sierra Nevada and the Sierra Madre mountains, and on the sides of the mountainous ranges of tall foot hills that corrugate the surface of the country, have never been utilized. The ports on either coast and the cities of the interior connected with said ports by wagon roads were, and yet are, supplied by the saw-mills of the Atlantic, Gulf and Pacific coasts. But the mere cost of transportation to the Mexican seaports, and from thence to the cities of the interior, renders the

price of foreign lumber very high. For example, Orizaba, which is about 90 miles by railroad from Vera Cruz, consumes a fair quantity of lumber annually, yet sapless pine wood sells readily, at the railroad depot of Orizaba, for \$75 per thousand feet. At Chihuahua, the capital city of the state of the same name, which is distant about 100 miles from one of the grandest pine forest regions on the planet, fine pitch-pine lumber often brings as high as \$90.

It is a well known fact that the Mexican Central, the Mexican National and the Mexican Oriental Railroad companies have been compelled to purchase the vast quantities of timber consumed in their construction works, in the United States. Our southern mills have hitherto controlled this great traffic, but the time has at last arrived when Mexicans begin to appreciate the value of this business, and are making arrangements to secure by Government grant or otherwise, most of the timber lands of the Republic.

Notwithstanding the fact that the greater portion of Mexico lies within the tropics, such is the peculiarity of its topography that most of the several states may be said to enjoy all varieties of climate, comprising the different grades from tropic heat to extreme cold.

Where the land attains an altitude of 4,000 or 5,000 feet above the sea, pine, oak, larch, sycamore, walnut, hickory and hard cedar trees flourish to perfection. The states of Sonora, Chihuahua, Coahuila, Durango, Sinaloa, Michoacan, Jalisco, Mexico, Hidalgo and Vera Cruz, possess an almost inexhaustible quantity of these valuable timber trees, as well as forests of mahogany, cedar, ebony, etc., which are produced in the lands lying in a lower altitude.

In view of these facts, and in consequence of the rapid development of the country by American railroad enterprise, the general government—where it possesses timber lands—and also the state governments, have determined to grant liberal concessions to all capitalists who may desire to undertake the development of the vast lumber resources of Mexico.

The time is fast approaching when our southern timber dealers will appreciate the immense value of the forests of Mexico. This enterprise should be taken in hand by southerners. Mexico, for hundreds of miles, is divided from our southwestern territory by only a narrow, un-navigable river; and while American lumbermen can supply the American market with Mexican lumber, produced on Mexican soil, they might at the same time furnish our southern timber mart with the precious woods, so sought after by the furniture makers of this section.—*Northwestern Lumberman.*

THE U. S. LUMBER DUTIES.

The New York Sun has the following article: The intelligent discussion which the action of the Committee of Ways and Means in recommending the retention of the duty upon lumber entering the United States has excited in all parts of the country, is gratifying. It indicates that purely economic questions are growing in popular favor, and that everything relating to our forests or forest protection interests the people.

It is probably this interest in forest protection, rather than the desire for cheaper lumber for the consumer, which underlies this discussion.

It is the height of folly, of course, to tax foreign lumber. The duties collected in this way by the Government are insignificant in amount, and every dollar thus collected is taken, over and over again from the consumer of domestic lumber for the sole benefit of the manufacturers. These have not the excuse of a weak and undeveloped industry which must be built up at the expense of the consumer for the general good of the country.

The manufacturers of lumber are rich, prosperous, and strong. Their methods and facilities for carrying on their business are unsurpassed. No possible competition can deprive them of large profits. If there exists in the United States a single industry which is in the position to flourish without protection, it is the lumber industry.

From purely economic grounds this duty should be removed. It has served to build up

dangerous monopolies, and it represses the prosperity of the country. It is evident, however, that the wide interest manifested in this question arises less from the feeling that it is desirable to prevent monopoly than from the fact that the removal of this duty is the first, and an indispensable, step toward forest protection. The forest question is becoming one of the popular questions of the day, and every thing which relates to the extent and condition of our forests is eagerly read and discussed. It requires no great knowledge of the subject to understand that if Canadian lumber is excluded by the tariff, the drain upon our forests must be greater than if Canadian lumber was allowed to compete on equal terms with the product of our own forests. The people understand this; they understand that the destruction of the forests means something more serious than a dearth of lumber. They apprehend that the removal of the forests will be followed by severe climatic changes; that the rivers of the country will often be changed to torrents or reduced to streamlets; that springs and streams will disappear; that agriculture will perish and manufactures languish. They see these evils hastened by the retention of this protective duty; they ask themselves by what right the prosperity of the country is placed in jeopardy because it is the pleasure of a group of men to grow rich, and because Congress is too ignorant or too indifferent to stop this abuse. No more vital question can come before Congress; perhaps no Congress has ever been called on to decide an economic question of greater moment.

Is there no man who can join the discordant elements of the Protectionists, the Tariff Reformers, and the Free Traders; who can unite Democrats and Republicans on the broad platform of public necessity, to check this destruction of our wasting forests? Such a man will deserve the name of statesman and the gratitude of the country.

Log Slide.

The *Northwestern Lumberman* says:—Par-melee & Son, Malone, N. Y., are logging on the slope of a precipitous mountain, near Lake Titus, Adirondack region. To get the logs down the mountain they have constructed a slide one-third of a mile long. It is said that the momentum of cannon-ball is hardly equal to that with which the spruce sticks are hurled from the lower end of the slide. The *Courier and Freeman*, of Potsdam, in view of this device for denuding the mountain sides, gloomily exclaims: "This, and other similar items, shows that in a few years the Adirondack wilderness will be changed into a treeless scene of desolation. Its lakes, ponds and streams will dry up; but so long as money is to be got the havoc will go on."

Devoted to Forest.

Mr. M. C. Read, of Hudson, Ohio, says:—In the Dominion of Canada are millions of acres of land which from the nature of the soil must be perpetually devoted to forest growth. They constitute the natural sources of a supply of lumber for the productive arable and pasture lands to the south of them, in the United States, as well as in Canada.

The time is at hand when we shall be wholly dependent upon this source of supply, or upon the artificial growth of timber in our own country, if the present rate of destruction of our forests is continued.

LITTLE BY LITTLE.—The constant dropping of water will wear away even the hardest stone. So the constant irritation of a cough will go wear upon the lungs as to induce incurable Consumption. Hagyard's Pectoral Balm will cure the worst cough, speedily and effectually.

GOOD ADVICE.—If our readers will accept proffered advice, if they will always keep a bottle of Hagyard's Yellow Oil at hand for use in emergencies, such as Burns, Scalds, Wounds, Lameness, Gout, Chills, Rheumatism and all varieties of aches, pains and inflammations. It will ever be found reliable.

Mr. THOMAS W. RACE, Editor and Proprietor of the *Mitchell Recorder*, writes that he had a prejudice against Patent Medicines, but being induced to try Burdock Blood Bitters, for Biliousness that occasioned such violent headache and distress as to often disable him from work. The medicine gave him relief, and he now speaks of it in the most favorable terms.

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We don't want your money until you are perfectly satisfied of their curative power: if your life is worth saving, don't delay in giving these Powders a trial, as they will surely cure you.

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not, life is sweeping by, go and dare before you die, something mighty and sublime leave behind to conquer time. 366 a week in your own town, \$5 out of free. No risk. Everything new. Capital not required. We will furnish you everything. Many are making fortunes. Ladies make as much as men, and boys and girls make great pay. Reader, if you want business at which you can make great pay all the time, write for particulars to H. HARRIS & Co., Portland, Maine.

CALIFORNIA CEDAR.

The incense cedar (*Libocedrus decurrens*) is one of the valued trees of the California coast and mountains. It is eminently noted for great rapidity of growth, wonderful lightness, stiffness, and extraordinary durability. A thousand uses have sprung up and are multiplying around this interesting cedar as its most inestimable qualities become better known. Fortunately it is one of the most extensively distributed trees of the Pacific—found from the coast range north, south to San Diego, Sierra Nevada, southern Oregon, and most of the interior mountain region from 3,000 to 4,000 feet, and it even thrives quite well at 6,000 feet altitude, but seeming to give out at 7,000 feet, though said to extend to 8,000 feet, which is questionable. As usual with the sylvia, ficus, and fauna, this also is found lowest along the coast, where it finds the requisite temperature and other essentials, with combined moisture. The base or lower trunk somewhat resembles the Western juniper (*J. occidentalis*). It is to be noted in general that trees of such broad, outwardly expanding, or expanded bases seldom blow over, and to the preceptive and artistic eye their significant character is one of firmness and stability. One hundred to two hundred feet high, six to nine feet in diameter (rarely larger), the shaft is often clear of limbs 80 to 100 feet, and although the lower limbs or even dry branches, may encumber the middle portion, joints do not damage the timber. The massive body tapers more rapidly above than redwood, and is less eccentric than juniper, yet its general port resembles most the best specimens of the latter. The light cinnamon bark is thick and of shreddy fibred texture, but so concretely compacted as to render the surface evenly ridged by very long, big bars of bark. These sweep obliquely down on the long spiral twist of swift water lines. The top is conic, the foliage is in compressed, flattened sprays, upright, thickened, and somewhat succulent; if not a languid type, at least in no sense rigid. It bears some resemblance to the great western arbutus (*Thuja gigantea*), but the tiny leaf-scales are opposite and quite awl-pointed. The general hue of the foliage is light yellowish green, warmly tinted, golden and bead tipped, with tiny, oblong male catkins, as the fruit ripens in October and November. The cones are pendulous from the tips of twigs, oblong, and seldom over three-quarters of an inch long, little more than one-third as thick, and for the most part slightly compressed. The wood is a pale cream tint in color—a delicate salmon shade. This would hardly warrant the name white cedar, sometimes applied to it, as well as the giant arbutus. The extreme lightness of the lumber and its sweetness for packing boxes will commend it for express and commercial purposes, for posts and fencing, and especially railway ties, for sleepers, stringers, and ground timbers of all varieties, and for unnumbered uses, a title of which cannot be told in a brief notice. Formerly these trees were cut away and burned up to clear the track for redwood, tamarac, and ponderous jub-junes, etc.; now all is superseded by this incense cedar. Thus is seen how hasty and ill-advised notions give place to genuine merit.

A fungus (*doxialis*) attacks and honeycombs it; and reddened as it may occasionally be, still, if spore or nail finds substance enough to hold, or sufficient solidity to resist crushing, then, for many purposes, even such lumber is practically as good as the soundest timber; because when the tree dies the fungus dies, and therefore will absorb no more moisture than the soundest part, and is likewise entirely contrary to common expectation in such cases. This is a timber nearly as lasting as solid granite. For ship or boat lumber, the clear stuff from sound wood is so exceedingly light, stiff, and durable, and so plenty and available, that few timbers excel it, unless the yellow cedar or cypress (*Cupressus nuxifera*) is excepted, which is a little tougher, stronger, and more elastic, and equally durable, if judged apart from thorough tests and careful data, which it has been remarked, the apathy or ignorance of some governments appear to deem unworthy their suitable attention. There are said to be in California a thousand times more and better kinds of naval timber on government land as important to preserve as the

live oaks of the South Atlantic states. It has been asserted as possible that, after due investigation, California would be found to possess a vast amount of the best naval timber in the world, a hundredfold more lasting than the best now in use, if a few woods are excepted, of which there is understood to be no very adequate supply.

The great Washington cedar (*Sequoia gigantea*) is another important California tree. The great sequoian timber belt lies along the Sierras, upon the first exposed mountain side—moraines of recent retiring glaciers—that face the Pacific, from Calaveras on the north to near the head of Deer Creek on the south—a distance of 200 miles, or a little above 39 degrees north to a little below 36 degrees; altitude 5,000 to 8,000 feet and rarely 8,400 feet. The belt is broken by two gaps, each 40 miles wide, caused by manifest topographical and glacial reasons, one gap between Calaveras and Tuolumne, the other between Fresno and Kings river; thence the vast forest trends south, across the broad basin of Kaweah and Tule, a distance of 70 miles, or fresh moraine soil, ground from high mountain flanks by glaciers. The inscriptions are scarcely marred by post glacial agents, and the contiguous water-worn marks are often so slight in the rock-bound streams as to be measured by a few inches. Rarely does one of these sound and vigorous cedars fall, and those that do will live 600 to 1,000 years, scarcely less perishable than the granite on which they grew. The great sequoian ditches, dug at a blow by their fall, and the tree tumuli, always turned up beside the deep-root bowls, remain; but, scientists assert, not a vestige of one outside the present forests has yet presented itself, hence the area has not been diminished during the last 8,000 or 10,000 years, and probably not at all in post glacial times. These colossal sequoias rise 275, 300, and even 400 feet aloft; are 20 to 30, and in some rare cases 40 feet in diameter, looking like vast columnar pillars of the skies. No known trees of the world compare with them and their kin, the redwoods, for the focused proximity of such a marvellous amount of timber within limited areas—as it were, the highest standard of timberland capacity. The stage coach passes through one; 120 children and a piano crowd inside another; a trunk furnishes a house for cottillon parties to dance "out on stumps;" a horse and rider travel within the burnt out hollows of others, and so on. A single tree would furnish a two-rail fence 20 to 30 miles long. The tree has great value for wood and lumber.—*Northwestern Lumberman.*

A FRENCH COMPANY.

Commenting on Mr. Senecal's late visit to Europe the *Witness* says: "Another great scheme said to have been inaugurated in Paris is a new colonization company, which, it is said, will be formed with a capital of \$10,000,000, to acquire lands for colonization purposes in the province of Quebec. Lumbering operations will also be included in the business of the company, as well as mining operations of all kinds. The company, after making all preparations, such as the building of houses, etc., will bring immigrants from all parts of the old world, and give them a home, with a certain lot of land; thus the immigrants will have every convenience. It is also the intention of the company to construct large grain elevators for the purpose of storing grain in the winter at some central shipping point. The company will also, if circumstances warrant it, extend their operations to build large mills, and instead of exporting the wheat they will export the flour. It will make an endeavour to manufacture a great portion of the North-West wheat and export it as flour."

U. S. WOOD AND LUMBER TARIFF.

The committee of ways and means have considered the wood and wooden ware schedule of the proposed tariff, and the bill which they are preparing will, unless changes are hereafter made, provide for the following rates of duties:—Timber, hewn and sawed, and timber used for wharves and in building wharves, 15 per centum ad valorem. Timber, squared or sided, not specially enumerated or provided for in this act, 2 cent per cubic foot. Sawed boards, plank, deals and other lumber

of hemlock, whitewood, sycamore and basswood, 75 cents per 1,000 feet board measure; all other varieties of lumber, \$2 per 1,000 feet, board measure. But when lumber of any sort is planed or finished, in addition to the rates herein provided, there shall be levied and paid for each side so planed or finished 50 cents per thousand feet, board measure; and if planed on one side and tongued or grooved, \$1 per thousand feet, board measure; and if planed on two sides and tongued and grooved, \$1.50 per 1,000 feet, board measure.

Hubs for wheels, posts, last blocks, wagon blocks, ore blocks, gun blocks, heading blocks and all like blocks or sticks, rough hewn or sawed only, 20 per centum ad valorem.

Staves of wood of all kinds, 10 per centum ad valorem.

Pickets and pallings, 15 per centum ad valorem.

Lath, 10 cents per 1,000 pieces.

Shingles, 35 cents per 1,000.

Pine clapboards, \$1.50 per 1,000.

House or cabinet furniture, in piece or rough and not finished, 30 per centum ad valorem.

Casks and barrels, empty, sugar box shooks and packing boxes, and packing box shooks of wood, not specially enumerated or provided for in this act, 25 per centum ad valorem.

Manufactures of cedar wood, grasshills, ebony, mahogany, rosewood and satinwood, 35 per centum ad valorem.

Manufactures of wood or of which wood is the chief component part, not specially enumerated or provided for in this act, 35 per centum ad valorem.

Wood, unmanufactured or not specially enumerated or provided for in this act, 20 per centum ad valorem.

The changes made in the above list from the existing tariff commission report are as follows:

On hewed and sawed, etc., the present tariff is 20 per cent. ad valorem; the commission report is 20 per cent.; the committee reduce to 15 per cent.

On timber squared and sided the present duty is 1 cent per cubic foot; the commission report in favor of the existing rate; the committee reduce to 2 cent per foot.

On sawed boards, planks, deals, etc., of hemlock, whitewood, sycamore and basswood the existing rate is \$1 per thousand feet board measure. The tariff commission report is the same. The committee cut this down to 75 cents per thousand feet.

All other varieties of lumber are unchanged at \$2 per 1,000 and existing rates on planed and tongued and grooved lumber are adhered to both by the commission and the committee.

On hubs of wheels, posts, last blocks or rough hew or sawed existing rates are continued.

Staves of all kinds are placed at 10 per cent., both by the committee and the commission. The existing rate of 20 per cent. on certain undressed staves appears to be put in the 10 per cent. class.

The committee put the duty on pickets and pallings at 15 per cent. ad valorem. The commission reported in favor of 20 per cent., which is the present rate.

Laths are put at 10 cents per 1,000 pieces. The commission reported in favor of continuing the existing rate, 15 cents.

Shingles, cabinet furniture, dressed and undressed, are maintained at the existing rates. Empty casks and barrels, sugar boxes, shooks and the like are placed by the committee at 25 per cent. ad valorem. The commission recommended 30 per cent., which is the present rate. Pine and spruce cl., boards, manufactures of cedar wood, etc., are maintained at existing rates.

SWEDEN.

THE Stockholm correspondent of the *Timber Trades Journal*, writing on Dec. 16, says:—Since my last report there is a decided stiffening feeling prevalent amongst holders of sawn stocks in the north of Sweden. As far as can be ascertained, this alteration has been brought about partly by the issue of a very favourable circular from the leading London brokers, and partly by the fact of two or three good contracts having been closed in Hudikewall and Gefle districts, at prices very near to those of last season. Nevertheless, looking to the extraor-

inary shipment of the past year, and the heavy stocks that are supposed to exist in at least two of the principal shipping districts, it will probably not be considered wise to stand out for the full prices obtained during the early part of the past season. This applies to red wood, but as for whitewood I cannot see that there is any necessity for our Sundwall and Hornosand exporters selling at the low figures they are said lately to have done. The prices of similar goods from Canada, coupled with the decrease of production in the Riga and contiguous districts, consequent on the burning of mills, stocks, &c., and the difficulty experienced in getting anything insured during the terrorism prevailing there, should enable Swedish holders of whitewood to insist on last season's figures at the very least. It may, I think, be taken for granted that anything less than \$5 per standard for unsorted white batons f. o. b. Sundwall or Hornosand does not leave a living profit, taking the risk of six months' credit into consideration, and there would be no difficulty in obtaining this figure at present, were the smaller mills in the two districts referred to not in the habit of loading themselves with goods beyond their financial powers.

THE PERFECT APPLICATION OF CREOSOTE.

A correspondent of the *Timber Trades Journal* says:—It is important that the attention of those who make the creosoting of timber their business should be directed to the imperfect manner in which a great deal of the creosoting work is now being done. I have it in my own knowledge that, in the case of an order for wood recently ordered to be creosoted, the wood was dipped in the creosote instead of the oil being injected into it by pressure.

When wood which has not been previously dried has applied to it a coating of creosote, or any other material which clogs the passage of air from the interior, the elements of decay, being confined, rapidly assume activity, and consequently the application is more harmful than advantageous. This fact does not appear to have received general recognition, and the system, therefore, of simply tanking wood in creosote continues in existence.

I would advise engineers and others who may be making use of creosoted timber to apply the test, here and there, of having the wood sawed, so that it can be seen whether the creosote oil has thoroughly penetrated its wood. The test is an easy and satisfactory one, and I understand that in cases where it has been applied it has been found that the application of creosote has been of a most superficial nature, and that in consequence the wood has been returned to the senders.

A SUCCESSOR TO WHITE PINE.

A noteworthy fact in the lumber business of Chicago, says the *Times*, is the annual increase in the supply of southern yellow pine manufactured in Missouri and the Gulf states. By many it is claimed that this lumber will be the successor of white pine in western markets should the supply of the latter cease as soon as now predicted. At this time, however, the cost of transportation does not allow large shipments of southern lumber, and long timber and dressed flooring are the only grades of yellow pine sold in Chicago. The latter, being dressed before shipping, is greatly reduced in weight, and at current prices affords a satisfactory profit. Enough lumber has already been received from the south to remove any fear of a lumber famine in this city for many years, as, if it can pay present rate of freight, it will come naturally to a large market when the south has more railway competition, which increasing wealth and enterprise are sure to supply.

Letter from Member of Congress.

HOURS OF REPRESENTATIVES
Washington, D.C., Feb. 19, '82.
GENTLEMEN,—Inclosed find \$1, and will you send me some of N. H. Dunn's Vegetable Balmo Elixir by express. I have a bad cold, and has almost every one else here, but cannot find the Elixir, which I used frequently at home and consider a most valuable medicine; in fact, the very best remedy for a cold that I ever used.
Very truly yours, WILLIAM W. GRANT.

WOOD OR IRON.

The Montreal Gazette says:—The great fire which did so much damage in London on the morning of the 8th instant brought out a fact with regard to the use of iron girders in buildings which is worth reproducing. Speaking of the heat evolved by the rapid combustion of the highly inflammable materials which fed the fire, the London Daily Telegraph says:—"It is of interest to note the effects of intense heat like this on different constructive substances. There has been a tendency of late years to trust to iron, but yesterday's test was altogether unfavourable to this substitute for wood. An experienced officer of the Fire Brigade remarked: "Whenever we know there are iron girders and pillars, we give them a wide berth. They expand so much that you can never be certain of them. Take a floor resting on wooden beams—say, twelve inches by eight. It will burn for hours without giving way, and will not swell at all nor displace any part near it. Not so with iron; it soon becomes red hot, expands with terrific force, and, as I think, does more harm than good." This view was confirmed by the fact that buildings like the Curriers', the rear walls of which were subjected to a terrible scorching, escaped with little damage, while in no case did the iron partition seem to be of avail. Mr. Simon, the second officer of Captain Shaw, * * * was directing operations on the top floor of the warehouse of Messrs. Rylands on London-wall. The roof was ignited, but the firemen were gaining upon it. Between the upper storey and the next building there was the protection of a stout wall, the only communication being barred by an iron door. Presently the door was red-hot, then it burst in through the resistance of the walls to its own expansion, and in a few seconds the whole of the floor was ablaze, the Brigade with difficulty effecting their retreat." Such experience is strong confirmation of the view expressed above.

The Toronto Trade.

The Mail says:—The lumber trade of this city during the year 1892 has been rather larger than that of 1891. There was more demand from outside upon merchants here, and local consumption was also about equal to that of the previous year. The supply last year of lumber was not so large as was expected, or hoped it would be, owing to the want of snow in the woods. And the average prices of lumber were therefore higher than would have been the case if the operations had been more successful in the woods.

After giving the figures of the CANADA LUMBERMAN for the year's business the Mail continues: The prospects for a large trade this year are very fair. There is no question about the steadiness of the market. The demand from Manitoba is expected to be again large, and the American market is certain to be at least as good as last year. There is said to be now some trouble in the woods from snow which is to deep for profitable work. But this is better than having too little, as was the case last year. And the cost of supplies and wages this winter are in the lumberman's favor. It is thought the production will equal what it was last year.

Preserving Posts.

A writer in an exchange says: "I discovered many years ago that wood could be made to last longer than iron in the ground, but though the process so simple that it was not well to make a stir about it. I would as soon have popular, basswood or ash as any other kind of timber for fence posts. I have taken out basswood posts after having been set for seven years and they were as sound when taken out as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece. This is the recipe: Take boiled linseed oil and stir in pulverized coal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rot."

The Ottawa lumbermen are suffering inconveniences from the dangerous character of the ice on the lakes on the Kippewa and other lumber districts.

The Duluth Lumber Lands
The Northwestern Lumberman says:—The Duluth land sales were finished up on Saturday, December 16, on which day a few less than 600 sales were made. In township 64 there was 183 sales, in township 65, 172 sales; 62 sales in township 63, and 40 sales in township 62. As high prices as \$10.50 and \$17.50 are given in the published reports of the sales, but a great deal of the land went at \$1.25, or between that figure and \$2. The sales lasted two weeks, and Uncle Sam has gone home with his pockets jingling with monopolistic coin.

The Lindsay Post says:—We believe that Messrs. Needler & Sadler are contemplating putting in a 30-h. p. engine to drive their saw-mill during the low water season. This improvement, if carried out, would probably be available to give additional power to the waterworks pumps at a time of the year when such assistance might be necessary.

The Ottawa Press says:—Mr. J. G. Doherty, of this city, who is engaged in the manufacture of portable houses, and had the contract for those supplied to the Government at Regina, is in Winnipeg. He contemplates the starting of a manufactory at Winnipeg or some other point for the manufacture of these houses.

A writer on the health of London, England, recommends that trees be thickly planted between that city and the suburbs of Essex and Kent. The idea is not merely to reclaim those marshes, but to make the trees a barrier against the winds which now drive malarious air into the city. The trees may be set out without danger, provided the work be not done at night.

The Montreal Gazette of Jan. 4, under the heading "lumber," says:—The only thing worthy of remark in this line of trade is that a slightly better local demand has been experienced since our last report at steady prices. The demand for hardwood continues good, stocks are none too heavy and the outlook is favourable for a healthy year's business.

The stock of deals in St. John, N. B., held for European markets amounts to 50,000,000 feet. Of this amount 37,000,000 feet are owned by Mr. Alex. Gibson, 12,000,000 feet by Messrs. R. A. & J. Stewart, and 10,000,000 are in the hands of other shippers and owners. All of the stock is sold for shipment except 3,000,000, and 25,000,000 of these are held by Messrs. Carlton Bros., Carleton.

An Ottawa correspondent says:—R. A. Campbell & Co. are building a new steam saw mill at Lacbute, the dimensions being 58 by 112 feet. It will be completed by May next. The sawing capacity of the new mill will be about 25,000,000 feet in the season. Messrs. Inglis and Hunter, of Toronto, have the contract to put in the boiler and engine, while Messrs. Stewart and Fleck will supply the remainder of the machinery. Mr. E. Bullis is erecting the new structure.

The Timber Trades Journal says:—It is the opinion of many in the trade that the development of steam traffic in the timber trade will ultimately result in the establishment of lines of steamers from many of the Swedish ports. Only those established in a considerable way of business are able to deal with an entire steamer load; but when lines of steamers are running to the wood ports, it will, doubtless, be quite feasible to import small parcels of stock, say 50, or even 20 standards. It is not at all improbable that the trade may progress in this direction.

WALTER LINTON, of Waterloo, writes that Haggard's Yellow Oil has done great good in his family, his wife being cured of Callous lumps that other medicines failed to remove, he also states that a neighbor was promptly relieved of Rheumatism by the same remedy.

WORLD-KNOWLEDGE.—A Fact Worth Knowing. The best household remedy known for Coughs, Colds, Bronchitis, Asthma, Whooping Cough and all throat and chest troubles tending toward Pulmonary Consumption is Haggard's Pectoral Balsam, to be procured of any druggist.

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It has performed a miracle in my case. I have no unearthly noises in my head and hear much better. I have been greatly benefited. My deafness helped a great deal—think another bottle will cure me.

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THE CANADA LUMBERMAN

DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

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PETERBOROUGH, ONT. JAN. 15, 1883

THE German empire has now about 34,000,000 acres of forest, valued at \$400,000,000, and appropriates \$500,000 every year to increase and maintain the growth of trees.

Mr. R. NAGLE, lumberman, has disposed of a timber limit of 150 miles on South River, Lake Nipissing, to Mr. Alexander Fraser, of West Moath, the price paid being \$150,000.

THE Midland Free Press says:—Shipments of lumber are going on steadily at the British Canadian mills, Chew's mill and Dollar's notwithstanding the deep snow that prevails.

THE Monday Times in its Montreal report says of lumber:—Business continues dull, and is likely to remain so for a while. Lumbermen as a rule have made their calculations to produce largely, and the season promises well so far, for snow has fallen plentifully in lumbering sections as a rule.

WM. & GEORGE STUBBS, at Moose River, Lake Winnipeg, have erected a mammoth saw mill. They have 70 men at work in that vicinity, and will probably cut enough logs to manufacture 5,000,000 feet of lumber next summer. They also intend getting about 1,500,000 feet out of the Winnipeg River.

THE Lindsay Post says:—We believe that Messrs. Needler & Sadler are contemplating putting in a 30-horse-power engine to drive their saw-mill during the low water season. This improvement, if carried out, would probably be available to give additional power to the water works pumps at a time of the year when such assistance might be necessary.

A REMARKABLE statement was made recently before a scientific body in London—the statement given is on the authority of Mr. Voitch, the well known authority on Coniferæ—that the cones of many of the species on the Pacific coast never open and permit the seed to escape unless opened by a forest fire, when they fall out and replenish the burned waste. They hang on the trees for many generations—even for thirty years.

A KINGSTON despatch says:—Messrs. Rathbun have effected a contract to furnish the Canada Southern railway with from 150,000 to 200,000 railway ties. The same firm have also recently received orders for a larger number of doors for South Africa and Kingston, Jamaica. Including those engaged in logging operations, there must be at present 1,000 men on the pay roll.

OLD Italian oak is of the darkest and richest brown, and is very rare. A masterpiece of an tique carving in this material is conspicuous upon the lid of a coffer, which is supported upon the shoulder of griffins with glaring eyes and fangs. Upon the front a sea piece, with Neptune riding his sea horses and triumphant over sea monsters, is wonderfully reproduced in carving.

THE old machinery of the big mill at Deseronto has been taken out, in fact, scarcely anything is left but the walls and roof. A large force of skilled mechanics are replacing the woodwork and preparing the foundation for the gangs. The new machinery when in operation will have cost the firm about \$50,000. The estimated output for next season exceeds 30,000,000 feet.

THE Northwestern Lumberman says:—A tall story is told of a woman of Arbela, Mich., who, it is said, has gone into the woods with her husband and done her half of the sawing, splitting, and piling four cords of wood in a day, and can keep it up for any length of time. She weighs 120 pounds, and is 33 years old, of English descent, and the strangest of all is she says she never saw a tired day in her life.

THE Duluth Lake Superior News says:—The lumber business only as far back as 1878 was dependent upon two or three small mills that turned out annually ten or twelve million feet. The next year the cut at the immediate head of the lake alone amounts to 94,500,000 feet, and in Duluth district to 145,000,000 feet. The amount of logs under contract to be cut this winter in this district is estimated at \$15,000,000 feet.

AN Ottawa correspondent says:—R. A. Campbell & Co. are building a new steam saw mill at Lachute, the dimensions being 66x112 feet. It will be completed by May next. The sawing capacity of the new mill will be about 25,000,000 feet in the season. Messrs. Inglis & Hunter, of Toronto, have the contract to put in the boiler and engine, while Messrs. Stewart & Fleck will supply the remainder of the machinery. Mr. E. Bullis is erecting the new structure.

MESSRS. WANZER & Co., Hamilton, are erecting a new building, 250x60 feet, three stories high, for the purpose of manufacturing the wood work of their sewing machines. The machinery, to be operated in this building, is valued at about \$30,000. The power to drive this will be furnished by one of Killey & Co.'s 300 horse power engines. As an evidence of the growth of the export trade of Wanzer's concern it may be stated that 1,000 of its machines are now used in Africa.

EDDY'S NEW MILLS.

Work is being carried on with wonderful rapidity at Mr. E. B. Eddy's new mills in Hull. The irregular bottom of the new saw-mill has been filled up with massive timber cribbing and broken rock making it almost as solid as rock. The northern wall is up and presents a massive appearance as does the part of the southern wall which is almost complete. The floor being laid down is three inches thick and will be more solid than any in the city. Situated on this floor are four posts on which are electric lamps which are used at night to enable large gangs to work. Altogether there are over a dozen electric lights going at night and this enables twice the work to be done that would otherwise be possible. The motive power for the generator is furnished by the water wheel in the machine shop. In this building everything indicates a rush of business. A large number of machinists are engaged turning out shafting and everything required in rebuilding

or refitting a mill. The massive planer and turning lathe which went through the fire are again in first class order and none the worse of the test. Other machines have been added and the shop is in full blast. The mill and tub factory presents a lively appearance. All the floors are replaced, and the walls have been thoroughly plastered up, and are apparently as strong as ever. Machines are already being placed in position, and hundreds of feet of shafting are suspended in position from the ceilings. A very noticeable feature here is the heavy timbers to which the pulleys and shafts are attached. From the way work is being pushed on at present, it is not at all unlikely that work will be commenced early next month. Several wood working machines, including planer and mortiser, have been placed in the new building erected on the site of the old ash and door factory. Next door is the blacksmith shop, which is the scene of industry day and night. In both of these buildings are electric lights. The masonry and carpenter work is going on marvellously, large gangs being engaged drawing, framing and placing massive beams in position.—Ottawa Free Press.

HOW WOOD WILL LAST.

The following testimony to the durability of wood is published: Charred wood, or charcoal, is almost indestructible, whether exposed to the air, buried in the ground or placed under water. Wood, in its natural state, well seasoned and kept dry, may be eaten by worms; if wet and dry alternately, it rots; if kept wet all the time it lasts a very long time—though how long nobody knows. One of the piles of a bridge built across the river Danube by the Emperor Trajan, when taken up in recent times, was found to be petrified to the depth of three-fourths of an inch, but the rest of the wood was little different from its ordinary state, though it had been driven more than 10 centuries. The oldest wood bearing the marks of human labor is said to have been found in some of the tombs at Thebes, and comprised two wooden statues a little larger than life. The oldest timber afloat is probably in a ship now sailing from Holland, that was built in 1563, when the Prince of Orange was fighting Phillip II, of Spain. In digging away the foundation of old Savoy Palace, which was built nearly 700 years ago, the whole of the piles, consisting of oak, elm, beech and chestnut were found in a state of perfect soundness, as was also the planking which covered the pile heads.

TIME TO FELL TREES.

Mr. Edmund Hersey, a farmer of exceptional intelligence and practical culture, says observation of the changes in the living productions of the earth has been a continual source of joy to him, though able to comprehend little of the marvellous teaching. His investigations have been especially directed to forestry and woodcraft during a considerable part of his life, cutting, seasoning and working up various kinds of timber in the different months, sometimes to the extent of nearly a thousand cords a year. The chemical laboratories of nature so minute yet so wonderfully efficient, are not open to him, he simply contemplates results as disclosed to "eyes that are holden." These, so far as they relate to the subject of our head line, he condenses as follows in the Massachusetts Ploughman:

"For strength, beauty and durability I have found August, September and October the best, and February, March and April the worst months to cut wood. A red maple cut in September will keep in a round log perfectly white and sound until the next August; while one cut in March will begin to blacken and decay by the middle or last of June. This is not copied from any scientific work, but is what I have found to be a fact by many practical tests. Gray birch cut in September will keep in good condition until the next September if left in the woods, cut in four-foot lengths; while if cut in March and left in the same way it will be nearly worthless by the first of August; at least such is the result on my land. White pine, like the red maple, keeps white much longer if cut in September than if cut in March, and is not injured by the worms as much. I have found that wood dried slowly in a cool place is better

than that dried quickly in a hot sun, even though cut in summer. May this not, in a measure, account for wood being better cut in autumn, it having the long cold winter to dry in?"

THE MICHIGAN LAW FOR TREEPLANTING BY THE ROADSIDES.

The American Journal of Forestry says:—The Consolidated Road Act of Michigan, approved June 8, 1881, presents one feature in respect to planting by the roadsides that deserves attention; and as the season has come around at which the Legislatures of most of the States are in session, we present below, so much of the law as relates to this subject. It will be seen that it is obligatory upon townships, unless by a vote at a town meeting, the citizens excuse themselves from its operation, and that unless so determined, the work must continue from year to year, until all the roads are planted.

We regard this law as eminently progressive, and especially worthy of imitation in the Prairie States:

CHAPTER 2.

SHADE TREES AND WATERING TROUGHS IN HIGHWAYS.

"SECTION 1. Shade-trees shall be planted along both sides of the public highways, at the uniform distance, as near as may be, of sixty feet apart, and not less than twenty-three nor more than twenty-five feet from the centre line of the highway, but the township board of any township may direct as to the distance which trees may be set from each other or from the outer line of the highway. All trees now growing upon the sides of any highway, and all trees that may be hereafter planted thereon, standing more than 60 feet apart, shall be preserved, and shall not be injured or removed, unless by direction of the Commissioner of Highways, and with the consent of the owners of the adjoining land, unless such trees shall interfere with or obstruct the travel on the highway: Provided, That the provisions of this Chapter in whole or in part shall not be deemed mandatory in townships in which the electors may by vote at a township meeting thus determine.

"SECTION 2. Any person planting shade-trees along the highway adjacent to property owned or occupied by such person, shall be entitled to be credited twenty-five cents upon his highway tax for every tree so planted, but not to exceed in the aggregate twenty-five per cent. of such person's highway tax in any one year.

"SECTION 3. In road-districts where there are no trees planted and growing along the highways to the extent required by the first section of this chapter, the Commissioner shall require that at least 50 acres per year be so planted in each district, and shall require the same from year to year, until every highway in his township where the adjoining lands are cleared, is supplied with shade-trees, as contemplated by said first section, but not more than twenty-five per cent. of the highway tax shall be appropriated for such purpose in any one district in any one year. The overseer, acting under the direction of the Commissioner may require twenty-five per cent. of the highway-tax of any person in any year, to be paid in money, the same to be applied in planting shade-trees along the highway adjoining the property of such person. The overseer shall particularly attend to the planting of such trees, and shall allow no unsuitable tree, nor any tree wanting sufficient roots or vitality to be planted, and he shall have the charge of and care for the same in the best manner for their growth.

FORESTRY IN SWEDEN.

We take the following extracts from a paper contributed to the American Journal of Forestry by the editor, Dr. F. B. Hough. It is from an account of a trip to Sweden:—

Aug. 8. Having called at the American Legation, and learned from our Minister-Resident, Mr. Stevens, that the Director of Forests, (Mr. C. A. T. Bjorkmann), was absent, but that his deputy, (Mr. E. G. Sundberg), was in town, we called at the "Skogs-Sigretens," (Forest-Administration), and made known the object of the visit. Mr. S. received us with the greatest civility, and afforded full information in the way of recent documents, blank forms, maps, and explanatory statements, concerning the forest resources of the country, and their

methods of management. The government has a Forest Academy adjacent to the city, near a public park, known as the Djurymont (Deer-garden), a place of great popular resort. It is on the main shore, but close by a large island, with many pleasant villas and beautiful walks. It is very easily accessible by steam ferries and tramway, and upon the grounds in the park are various statues and points of historical interest. The grounds of the "Skogsinstitutet," (Forest Academy), were closed for vacation, but the information already obtained from Mr. S. supplied the data for every thing relating to its organization, and the course of instruction. There are besides this, seven elementary forest schools in Sweden, for the preparation of agents of lower grade. They are of an eminently practical kind, and a part of the time of the students is given to actual labours in the forests.

In former times, there were restrictive measures, with regard to private forests, which in time were removed, but now, there is a tendency in Sweden, to a return to a policy, which although it interferes with the enjoyment of personal rights, appears to be dictated by necessity. In the district of Norrland, there has recently been established a restriction upon the size of trees that may be cut, the details of which we can not here give. They will be presented in our official report.

The forests of Sweden are chiefly fir, (*Picea excelsa*), and Pine, (*Pinus sylvestris*), with Birch, Alder, and Poplar. Some oak is found south of the Daloff, and Beech, in the extreme south, opposite to Denmark. Besides these, there are some little plantations of White Mulberry, and other exotic trees. The total area of Sweden not covered with water, is 40,672,000 hectares, of which 4,693,000 are fields and meadows. Of the balance, about 40 p. c. of "terra firma" are forests, and of these two-thirds lie north of the Daleif.

At the close of 1876, the woodlands in state parks amounted to 1,843,600 hectares;—state plantations on shifting sands, 2,200;—state woodlands not marked out 1,344,300;—woods on state domains and mannes farmed on state account, 49,100;—ceded to officials, ecclesiastical and other, 630,000;—owned by public institutions, 35,600; granted to saw mills, 244,100;—granted for metallurgical uses, 23,000;—owned by communes, 172,200; and owned by state mannes, and in clearing concessions, 971,600, making a total of 5,221,600 hectares, (12,697,165 acres), under state control. The private forests of the country amounted to 30,757,000 h., (76,972,200 a.), or about 85 p. c. of the whole.

A serious strike among laborers in 1870 in the Sunswald district, made it necessary to employ troops to prevent excesses. From this and other causes, the timber trade was disturbed, and of 890,000 dozen logs, but 600,000 dozen were got down to the Gulf of Bothnia in 1881.

Returning to Stockholm, we took passage in the afternoon of the 9th of August for Hango, in Finland, near which place my Scottish friend of Haddington, thought I would find *Krois*, the next point of interest. It is the seat of a school of Forestry, under the direction of Mr. A. Blomquist. We had corresponded much with this gentleman for several years; he was expecting our arrival and many pleasant anticipations were borrowed from the near future, which were soon more than realized.

As we were going on board the *Aura*, a young man belonging to the Forest Administration, who had been an eager listener the day before, came to place in our hands, a personal souvenir from himself, of several recent publications upon Forestry, and to ask some questions about the forestry of the future in America. Perhaps among the many thousands of Scandinavians who have found a home among us, there were some who were bound to him by ties of kindred—perhaps by something stronger. At any rate he was eagerly in quest of information about our woodlands, their extent, and their future prospects,—and we doubt not he could easily be persuaded to learn more about them by personal observations.

SUCCESSION OF FOREST GROWTHS.

Robert Douglas gives in a brief letter to the *Gardner's Monthly* some interesting facts concerning the succession of forest growths—the

result of years of observation. Where the forests are cut down, and the fires are kept out, they in the main reproduce the same species. But if a settlement is formed, and cattle are allowed to run into the cut-down woods, the seedlings are destroyed as they appear. In a burned forest everything is changed, all vegetation is swept away. Even the soil is changed, and its surface, if thin, is destroyed. After a forest fire, the first tree that makes its appearance is the aspen, a tree which naturally grows on moist lands, where its roots have the best chance to escape from the general destruction. According to Mr. Douglas, this tree predominates in burned forests in Colorado, Wyoming, Dakota, the Black Hills, Minnesota, Manitoba, Wisconsin and northern Michigan. In Wisconsin and the Black Hills it is mixed with the white birch, and occasionally, as in northeast Wisconsin, the white birch is the chief tree. Both the seeds and trees of conifers are usually destroyed by a fire. Next to the aspen and white birch, those trees and shrubs spring up over burned districts which bear seeds that are either blown to great distances, remain long in a dormant state in the ground, or are carried by birds. Where the burned forests consisted of oaks and pines adjoining or partly intermingled, the oaks will be found after a fire crowding upon the pine lands. This is due in part to the fact that oaks renew themselves from the stumps, while pines do not, and that acorns are often buried by squirrels in spots favorable to their speedy growth.—*Northwestern Lumberman.*

CEDAR HOP POLES.

The *Hamilton Spectator* says:—Mr. S. W. Davis, of Bouckville, near Utica, New York, was in the city Thursday, and went north on the Hamilton and Northwestern to visit Beeton and the surrounding country in search of hop poles. He saw Bronnen & Sons, of this city, while here, and will probably make an arrangement with them to buy some of their cedar poles in Cayuga swamp. Mr. Davis says that hops now being from 76c to \$1.05 per lb., the people of Central New York are going to extend their hop fields very much next season, and will want a good many poles. He prefers cedar poles over hardwood because they last longer and are lighter to handle. They are very expensive in Central New York, and Mr. Davis thinks he can make a spec buying the poles in Canada. They will cost him perhaps ten cents each, and the duty going into the United States is 20 per cent.

A WONDERFUL TIMBER REGION

Very far west indeed, in a lovely country which once belonged to England, but which was ceded to the United States in 1846, there grows the finest body of timber in the world. Fir and pine, oak and cedar, of unsurpassed quality, and practically unlimited in quantity, cethe the mountains, overhang the rivers, and shadow the plains of the Puget Sound district, in Washington territory. On a moderate estimate it is calculated that this region will yield the enormous and unimaginable quantity of 160,000,000,000 feet of valuable timber. The trees attain a remarkable development, both of height and beauty. The yellow fir is frequently found growing to a height of 250 feet; the white cedar to 100 feet, with a girth of over 60 feet; and the white oak to 70 feet; whilst ordinary sized specimens of the sugar pine yield from 6,000 to 8,000 feet of lumber each. For long after its discovery this marvelous store of timber remained undisturbed, its primeval quietness unbroken by the sound of the woodman's axe. But in 1851 a saw mill was built on Puget Sound, and thenceforward continually increasing broads were made upon the forests, until to-day no less than fifteen such mills are at work upon it. The largest of these has a cutting capacity of 200,000 feet per diem. During the year 1881 the export of lumber from Puget Sound amounted to 174,176,700 feet, valued at nearly \$2,000,000, and it is calculated that since the establishment of the first saw mill about 2,500,000,000 feet have been cut. Yet in spite of this great tax upon them we are told that the forest remains, for the most part, in virgin condition, except for a short distance, from the banks of the streams and estuaries. It is, of course, too late for regrets, but one cannot help



TO MILLMEN!

HODGSON'S Patent Saw Grinder

is a new, efficient, and exceedingly cheap machine and is equally well adapted to grinding long and round just as well as easily as a file. It is just THE THING for mills, cutting from one to five million feet of lumber, and costs no more than one-fourth to one-tenth the price of little better machines. It is patented in United States and Canada, and is made in Wetsport, Pennsylvania, and in Amherst, Nova Scotia.

Hodgson's Patent Monitor Shingle Machine

combines, at a moderate price, more points of excellence than any other. Jointer is built in machine, a few inches from the saw. The cast steel feed rolls are opened by a foot lever, and grip the block like a vice. The rollers of carriage to suit large or small stock, is under control of operator when running. Will run for days without cutting a shim. Warranted to cut, with one attendant, three thousand in an hour, under forfeiture of \$100. Send for circulars to

T. HODGSON, AMHERST, NOVA SCOTIA.

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NEW and SECOND HAND ENGINES and other Machinery

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CURRIE, MARTIN & Co.

Esplanade, Foot of Frederick Street, TORONTO.

117

reflecting that the loss of this magnificent region was indeed a serious one to the British Empire.—*Colonies and India.*

BUSINESS CHANGE.

The *Oswego Palladium* has the following announcement in reference to Mr. S. P. Wigg, who has for some time past been managing the lumber business of Messrs. Ross & Co., at Lakesfield, Ontario:

Ross & Co., who have done an extensive lumber business in this city for the past ten years, are succeeded by Mr. Wigg, an enterprising business man who understands the lumber trade and will push it to its fullest extent. Mr. Wigg will probably spend most of his time in Oswego. He has purchased the water front in the new harbor and adjoining premises running from Liberty street west to Crane, Belden & Co.'s property for a lumber yard, and will build a pier immediately and have it completed and ready for use by May 1, 1883.

Manitoba Trees.

The principal tree in the Manitoba woods is the poplar, the next in importance is the oak, and near the rivers will be noticed large elms. A very beautiful tree is the ash-leaf maple. Its fresh, green leaves open out in the spring. It is a most vigorous grower, and bears transplanting remarkably well. Were its qualities known it would be valued as an ornamental tree in any northern country. In the spring the ash leaf maple yields a sweet sap from which excellent sugar can be made, the chief trouble is that at the time the sap flows the flooding of the river makes it difficult to reach the trees. On the shores of the streams which enter the Red River and especially near their mouths, basswood grows in great abundance, and ironwood of a large size can be met with.

It is stated that paper made from strong fibres—as linen—can now be compressed into a substance so hard that it can not be scratched with anything but a diamond. In view of this the *Paper Zeitung* thinks that before long a great variety of house furniture will be made of paper instead of wood.

Wanted.

A PARTNER that understands the SAW MILLING BUSINESS, with capital. For information address JAMES B. DICKSON, Pembroke, Ont. 210

FOR SALE.

ONE ROTARY

SAW CARRIAGE,

Saw and Saw-Sash Complete.

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THOMAS LAMONT,

212

DOUGLASTOWN, N.B.

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PINE LANDS

FOR SALE.

THE SUBSCRIBER OFFERS A TRACT OF

8,000 ACRES

OF PINE LANDS, in St. Louis County, Minnesota, carefully selected and estimated to cut FORTY MILLION FEET, well located on good driving stream, tributary to Duluth.

A. McCALL,

Lumber Merchant, Simcoe, Ont.

\$72

A week made at home by the industrious. Best business now before the public. Capital not needed. We will start you. Men, women, boys and girls wanted everywhere to work for us. Now is the time. You can work in spare time, or give your whole time to the business. No other business will pay you nearly as well. No one can fail to make enormous pay, by engaging at once. Costly outfit and terms free. Money made fast, easily, and honorably. Address TRU & Co., Augusta, Maine.

DEAL FREIGHTS.

The London *Timber Trades Journal* says—In our last issue we made some mention of freighting prospects for next spring from Canada, and it may not be uninteresting to take a glance at the freights paid during the year now approaching its close.

At the commencement of January vessels were chartered at St. John, N. B., (which port is always open, and from which deals are shipped all the year around), to the British Channel at 60s. and 60s. 6d., and for the months of February and March 62s. 6d. was also current rate, thence to west coast of England and to Ireland, but from Halifax, N. S., in March small handy-sized crafts of 250 to 400 tons were chartered at 55s. This extremely low rate from Halifax is accounted for by the fact that all the neighboring deal ports on the Atlantic seaboard of Nova Scotia are closed at this period of the year with ice, and Halifax is the only port where they could get a charter or be loaded, unless they shifted around to St. John, which would be out of the question, on account of extra risk and loss of time. The month of April ushered in lower freights at St. John, commencing at 60s. to the Bristol Channel, then dropping to 55s. to Ireland, and charters were made at 60s. to 53s. 9d. from Nova Scotia.

This fall in deal freights was brought about by the numerous steamers which entered the deal trade being unable to get any freights from the United States ports, and it is known that some of the regular Atlantic liners, sailing between Liverpool, New York, and Boston, even paid the owners of grain to be allowed to carry it across to Liverpool? This extraordinary state of things was owing to the great grain "ring" trying to "rig" the market, and preventing the shipment of it to this side of the water, and the latter was so effectually carried out that both steamers and sailing vessels were to be had so cheaply that one steamer was fixed at 46s. 9d. per standard. When it is borne in mind that it would be preferable for vessels to load grain in the States at 2s. 6d. per quarter to shifting to St. John, N. B., to load deals at 60s. per standard, it will give our readers an idea of the state of things in the month of April. The entrance of steamers for the past two or three years into the deal carrying trade has simply been occasioned by the non-shipment of grain from the States in the spring, caused by the "ring" of grain speculators in Chicago and New York.

Steamers continued to be chartered in the month of May at rates in the neighbourhood of 50s., while sailing vessels obtained 53s. 9d. to 37s. 6d. for Ireland, and 52s. 6d. to the Bristol Channel. As, however, the bulk of the deal chartering for the St. Lawrence, Bathurst, Miramichi, Shediac, Baie Verte, and the Nova Scotian ports is done on this side, charters were effected at 60s. from the St. Lawrence, 62s. 6d. from Bathurst, Miramichi, and Shediac, 60s. from Baie Verte and Nova Scotia, all for first-open-water loading. These rates remained about the same during the summer, but vessels were fixed on the Canadian side somewhat cheaper. The month of July showed freights at St. John 57s. 6d. to 60s., but in August the scarcity of vessels was felt, for rates went up at a bound in St. John to 70s. for Bristol Channel and Liverpool, while 75s. was paid to Ireland, and Nova Scotian shippers paid 67s. 6d. In August freights advanced at St. John to 72s. 6d., while in Nova Scotia 70s. to 72s. 6d. was freely paid, and charterers on this side came to realize that tonnage was scarce, as there was a scramble for ships to remove the autumn deals, and as much as 80s. was offered for vessels from Miramichi, Shediac, Baie Verte, Bathurst, &c. without avail, and the consequence is it is believed large stocks of deals are wintering over. Shippers were able to get a little relief by chartering steamers in Montreal and Quebec at 52s. 6d. to 58s., but not more than about half a dozen were available.

Timber chartering from Quebec was mismanaged by many firms in the fall, who refused ships on this side at 23s. to 24s. and 25s., but had in the end to pay 5s. to 7s. 6d. on the rates they could have got tonnage. The majority of people did not believe in the scarcity of tonnage, and could only be brought to believe in it by paying dearly for their disbelief, or being

left without their stocks, and having to pay for the timber wintering on the other side, and remove it in the following spring.

There is no doubt the deal-carrying fleet from Canada is being seriously and continually lessened year by year without a proportion of new ships being built to replace those lost. Shippers live in the hope that steamers will permanently enter the trade and counterbalance the sailing tonnage lost, and no doubt many are fondly building their hopes on a reputation of what took place in the earlier part of this year. However, it is our opinion that charters effected on this side will be at an advance of at least a half-crown on the rates paid at the commencement of last season, and that charters early will probably charter best.

BARREL MAKING.

The Ottawa *Free Press* says—The invention of a machine that would manufacture flour barrels equal to the hand-made article, has long been a subject over which more than one ingenious mechanic has cudgelled his brains. The old machine-made barrel without the bulge, which was turned out at Harrison, was an outcome of this desire and the best that had been achieved until about two years since, when Mr. Wright, a former foreman for Mr. Wm. Bell & Co., and who left that position to enter the employ of the Guelph Barrel Company at Harrison invented something better. His invention is altogether distinct from any machine which has ever been turned out for the purpose before. While the straight barrel was made in the one piece of veneer, very much after the style of cheese-boxes, Mr. Wright's machine turns out a regular stave barrel, which does not differ from the hand-made article, except that all are of uniform shape and perhaps more neatly finished than it would pay coopers to make them as a rule.

When it was seen that there was something in the invention, a number of Guelph gentlemen were induced to form what is now known as the Guelph Wright Patent Barrel Machine Co., for the purpose of manufacturing the machine. It has been a most expensive venture. Ever since the formation of the company they had a hard fight in court, both in England and in this country, with parties who had got hold of the idea and improved it. Now, fortunately litigation has ceased and the Guelph Barrel Machine Co. are the undisputed possessors of the invention, with patents for it in almost every country in Europe besides the United States and Canada. While they are having the machines manufactured at Galt by Messrs. Cant, Laidlaw & Co., the patentee is home in England, where he has succeeded in making further improvements, which may be attached to the present machine and will make the manufacture of barrels a more rapid process even than it is by the invention as it stands.

On Friday afternoon some gentlemen paid a visit to Dr. Cowan's cooper shop, in the rear of McConnell's carriage works, Eramosa Bridge, to see one of the new machines at work. Although several barrels were set up in one minute's time, it was evident that the process would have been more speedily accomplished with stronger power. The gentlemen expressed astonishment with the invention and satisfaction with its work.

The simplicity of the machine cannot but give rise to wonder that it was never invented before. The staves are fed by hand on to a barrel-shaped revolving cylinder made of four longitudinal iron sections. Two arms surround this cylinder at either end of it, and contract the ends of the barrel while a small circular saw and revolving knife at either end cut off the staves to the exact length, and form the bevel and notch for the end pieces. Two hoops are then placed on, after which the moving of a lever causes the four sections of the cylinder to fall in, and the barrel is taken off set up. In the words of a cooper, the work of the machine is to "set the barrel up, cut the croze and chamber the chime."

What effect will this machine have on the coopering trade? is a question naturally asked. Those engaged in it apprehend a complete revolution in barrel making, and consequently have no praises to offer the invention. This can be understood when it is stated that one

machine is capable of turning out from five to six hundred barrels per day, and at an estimated saving of 4s. on each barrel, as compared with the cost of making them by hand. Already the company has received quite a number of orders in Canada for machines from such millers as Mr. J. Goldie, and some of the smaller millers who have used the barrels speak of them in high terms. There is not the slightest doubt but the machine will come into general use and the result will be to amalgamate and centralize small coopering businesses, and to throw a large number of the mechanics engaged in that trade out of work. The company have a good thing, and if they word it properly should reap a fortune from it without much difficulty.

THE SUNK LANDS OF ARKANSAS.

KEWETT, Mo., Dec. 10.—The Sunk Lands, in southeastern Missouri, and northeastern Arkansas, are a sort of *terra incognita*. The country was formerly as beautiful and fertile a plot of land as any on the globe. Rolling prairies were shaded by heavy forests and traversed by two beautiful streams, the Little and St. Francois Rivers. The rivers still exist, but the general face of the country was marvellously changed by the great earthquake of 1811-12. These streams, instead of meandering through rolling prairies and primeval forests, now keep their tortuous courses by a chain of lakes and swamps of cypress and tupelo gum, draped artistically with elk vine and grey moss. It is a paradise of lowland scenery, from which millions of photographic views might be taken, leaving millions more of equal beauty untouched.

The Sunk Lands proper are 120 miles long and average 60 miles wide. They are diversified with beautiful lakes, rolling prairies, and dense forests. The lakes contain much open water, and vary in depth from five to thirty feet. Some are covered with forests of cypress and tupelo gum festooned with moss and vines. While canoeing your way over these weird timber-grown lakes long vistas 'neath overarching trees and vines open up to view, and in the dim distance, seemingly miles away, so marvellous is the perspective, the waters of some open lake are tremulous with sunbeams.

These timbered lakes are a favorite resort for trappers and hunters. They annually capture thousands of dollars' worth of furs. Otters, beavers, raccoons, opossums, and muskrats are trapped by the hundreds. Fine game fish are also caught here.

The land is unusually fertile. Large farms under cultivation yield immense crops of corn, cotton, wheat, rye, oats, sorghum, potatoes, and other vegetables; yet to a stranger the country seems like an unbroken forest. The timber includes the most valuable timber known to commerce, black walnut, ash, white oak of the finest shipbuilding quality, post-oak, cherry, maple, hickory, hackberry, cypress, catalpa, and sassafras. There is another species used for local building purposes, which, if it ever reaches a fair market value, will prove a source of great wealth. I mean the red gum. It is susceptible of a higher polish than black walnut. It will not split, and, when properly seasoned and dressed, makes beautiful boards, having much the appearance of cedar, or of the redwood of California. In all requirements save durability it fills the bill exactly for railroad cross-ties. A driven nail will not draw from this wood. When a process is discovered which will render it durable under exposure of the weather it will be an invaluable wood.

The agricultural possibilities of these Sunk Lands are great. Before the war it was thought impracticable to grow cotton so far north. Now the average yield is about 1,500 pounds seed cotton, equal to three-quarters of a bale lint cotton, to the acre. This county raised and shipped last year in round numbers 15,000 bales of cotton, although lying in latitude 36° north. Hay is also a great product. Everything grows luxuriantly. The peculiar formation of the land renders it dry, and yet perfectly invulnerable to the ravages of the most continued drought. During the driest season of the year is not more than from six to eight feet down to the level of the surrounding lakes. The land is a rich sandy loam, highly porous. The moisture rises to the surface. Every morning

the ground is moist and fresh, notwithstanding that on the day previous it may have been parched seemingly almost to a cinder by the burning sun and dry winds.

THE TORONTO OUTLOOK.

"Instead of anticipating any reaction in the lumber trade during the coming season," said a prominent lumberman to an *Evening Canadian* reporter this morning, "I predict a continuance of the boom that has struck our business. There is no sign of any diminution in the almost unlimited demand for stuff. Every one of my five mills is being heavily stocked, and I expect to turn out a quantity far in excess of that of any year yet since I began operations."

"What sort of a season has it been for the woods so far?" was asked. "Couldn't have been better," was the reply. "There has not been a superabundance of snow, or an excess of cold, and work at the shanties has gone on fearlessly."

"How about prices?" the reporter enquired. "Well," responded the lumberman, "I don't think they are going to advance much, if anything at all. It's just like this. At the opening of the season shantymen's wages went up, for they were in demand, and, knowing it stuck out for big pay. This, of course, put jobbers who had taken large contracts at a disadvantage. But then, on the other hand, mill men know that it is not a safe proceeding to let out a limit to be cleared at too low a rate, for the jobber knowing he will not get full rates for any but the best logs, will leave many a inferior one in the woods as not being worth his while to handle, notwithstanding that it would be worth the while of the mill man to handle it. So, you see, in the end a close contract does not always yield the best results to the lumberman, and most of us recognize this and govern ourselves accordingly. The output of all kinds of timber will be very large, and while the demand, as I have said, will not abate, the market will be in such a condition as to keep prices at a normal level."

"So the N. P. hasn't ruined the lumber trade yet?" queried the reporter, as he rose to depart.

"No, sir!" exclaimed the dealer, vehemently, "nor any other industry I know of. Newspapers and persons who go on berating the National Policy either do so from pure and simple factionalism, or else they are fools. And I'm no politician either, understand me!"—*Toronto Canadian*.

Stocks in London.

The London dock deliveries do not shake the adverse balance between this year and last; there are still over 12,000 standards in arrear. The deliveries in 1881, however, surpassed those of the larger import of the previous year by 26,287 standards, though they fell off considerably towards the end of the year. In our impression of the 17th of December, 1881, the deficiency of the deliveries for the previous week as compared with 1880, was no less than 1,300 standards sawn and planed wood and 600 loads of square timber.—*Timber Trades Journal*.

A NEW paper and pulp mill has just commenced operations at Eau Claire, Wis., and the *News* of that place says it turns out print paper of excellent quality.

Just at the Wrong Time.

Mr. Robert Wilson, of the City Surveyor's office, and Street Commissioner of the Eastern Division for the Board of Public Works, Toronto, Ont., who is very fond of shooting, says: "To lose a duck hunt is a loss for which there is no adequate recompense. This misfortune lately overtook me. The boys got together recently and made arrangements for a good hunt. At the time the arrangements were entered into I was in good health generally; but, just as the shooting was to take place, my old enemy, the rheumatism, came back to stay with me awhile again, and I had to forego the pleasure. The rheumatism has been a source of great bother to me, and I have done a great deal of doctoring for it, without much good. When this last attack came on me and crippled my hands so that they were drawn up, a friend of mine recommended St. Jacobs Oil, the Great German Remedy. I tried it, I am happy to say, and the result is that I am now cured and as well as ever. St. Jacobs Oil succeeded where more than a score of other liniments and medicines had failed."

Chips.

The shipments of deals from Montreal during the past season, exceeded 44,000,000 feet, an increase of 100 per cent over 1891.

NINETY THREE thousand acres have been planted under the new arboriculture act in Kansas. Preference is given to the cotton tree because of its rapid growth.

The German empire has now about 34,000,000 acres of forest, valued at \$400,000,000, and appropriates \$500,000 every year to increase and maintain the growth of trees.

The Ottawa Free Press says:—Messrs. McCracken & Boyle, lumbermen, are at present sending up a number of teams to their shanties in the Desert for the purpose of log-drawing.

The Parry Sound North Star says:—The Midland & North Shore Lumber Co., are building a fine new iron burner at their mill. They are also overhauling the machinery and putting in some additional.

A stock of 250,000,000 feet of logs is calculated on for the supply of the Osceola mills next season. Men were scarce and hauling did not commence until late, while cutting and skidding was also retarded in consequence.

The red or sweet bay is an ornamental wood, which is practically inexhaustible in Florida. It is substantially the same as mahogany, and can be used in the same way, and for the same purpose, as the Honduras mahogany.

Two hundred thousand dollars have been refused for 85,000,000 feet of standing pine in Bayfield and Douglas counties, Wisconsin. The land is owned by Reuben Whitman, of Danville, N. Y., and was bought in 1880 for about \$50,000.

Wild cherry is a wood for which a large demand is springing up, which must inevitably make it very valuable in the future. It is used principally to supply the place of walnut. It is extremely close grained and can be very highly polished.

The extraordinary durability of cedar is exemplified just at present in the removal of some timbers of that wood by the Canadian Pacific railway company, which were imbedded some seven feet in a bank over 80 years ago, and they are quite sound yet.

A CORRESPONDENT informs the London Timber Trades Journal of several somewhat important contracts for American joinery having been entered into for next season, and says that some shipments will be sent to Liverpool of an altogether novel character.

The Lumberman's Gazette says:—There are on hand in Minneapolis, Minn., 100,000,000 feet of lumber, a stock not large enough to scare the dealers, for the booming northwestern trade ought to call for a good share of it before the next sawing season opens.

The Northwestern Lumberman says:—A good depth of snow in northern Maine and the provincial borders encourages logging in an important section, for the operators go on the British side to get out logs, bringing them to American ground to saw them, and thus escape the Canadian duty.

The Timber Trades Journal says:—It is most desirable that some better use should be found for the waste wood and sawdust so plentifully turned out at the large sawing and planing mills. We shall be happy to publish any reasonable suggestions, and invite correspondence on the subject.

The Timber Trades Journal says:—It would be interesting to be made acquainted with the cause of the rapid decay of Miramichi and other similar pine deals when piled away in yard. Why Miramichi deals should be more prone to decay than Quebec deals we are unable to say, yet such is every often the case.

The Lumberman's Gazette says:—When hardwood stumpage sells at the rate of \$1 per cord, as lately reported at Duluth, the growing importance of that class of timber may be realized. There is still a mine of wealth undeveloped in the forests of Michigan, and as we stated a few weeks since, some of our pine lumbermen will soon begin to realize the vast source of wealth they have allowed to slip through their fingers in the lands which have reverted to the state after they have denuded the same of pine.

The Timber Trades Journal says:—The long continued wet weather is reported to have had a most damaging effect upon the appearance of the new deal piles. Much of the wood imported during the last two months is said to appear as weathered as that imported last season. Several cargoes of boards, which endured the last heavy rainfall whilst on quay have been much damaged.

The attention of western furniture manufacturers is being turned to the hardwood of the south as the source of future supply. It is rather vaguely stated, though probably true, that a western firm has sent an agent to the Piedmont region, western North Carolina, with instructions to purchase 100,000 acres of timber land, and others are taking similar measures to insure a supply.

The Winnipeg Sun in an article on the Canada Pacific Railway says:—The cost of lumber consumed by the road was over ten millions of dollars. Sixteen million feet of this lumber were brought from Minneapolis, and it cost in Minneapolis \$300,000, which together with the duty and freight would make it cost over \$550,000. Six million feet of lumber were brought from Keewatin. This cost at the rate of \$25 per thousand feet.

The Chicago Lumber Trade Journal says:—At the price list meeting of the Lumberman's Exchange, December 27, only one change was made. On 2x6, 12, 14 and 16 foot, \$1 was taken off, and each member was privileged to make any special discount he saw fit on grades that he had a surplus of. The price list as sent out was practically endorsed as a farce. It will not strike any one as news, as nobody has thought of buying and selling on the list for some months.

The London Timber Trades Journal says:—Little is now heard of the cheap English made doors, for the sale of which a few years ago there was intense competition. British makers have either discovered that the manufacturing of them did not pay at the low prices which were obtainable, or the signal cessation of speculative building has stopped the demand which once so largely existed. A very large business is still being done by the English joinery mills, but we understand that a superior class of joinery work is being made, and that many mills are manufacturing mostly from architects' drawings.

The New York Times says:—To enable the lumbermen to obtain a higher price for woods which they are rapidly exhausting, we tax imported woods, which in eight years will be our sole dependence, for one of the most important necessary articles in use. This is protection run mad. It is one of many instances in which Congress under the pretence of protecting American labor, imposes a tax on the livelihood of American laborers. Nothing can be plainer than that, instead of compelling our people, by an import duty on foreign lumber, to use more of our limited and fast disappearing supply, we should admit such lumber free of duty.

The decay of wood imbedded in the earth is difficult to guard against, but, according to the British Farmers' Gazette, a simple precaution costing neither money nor labor, will increase the durability of posts put in the ground by 50 per cent. This is simply by taking care that the wood is inverted, i. e., placed in the opposite direction to that in which the wood grows. Experiments have proved that oak posts put in the ground in the same position in which they grow, top upward, were rotten in 12 years, while their neighbors, cut from the same tree and placed top downward in the soil, showed no signs of decay for several years afterward.

The Timber Trades Journal says:—Merchants at Gloucester are fairly stocked with spruce, and we believe one of the Canadian houses has a couple of cargoes yarded on Mr. Booth's ground, sooner than accept present low prices. The east coast houses have been competing keenly with the Gloucester merchants in the midland districts with Baltic whitewood, but now that spruce has come down again this state of things will cease. Cardiff houses have been importing spruce to Gloucester the last couple of months, which would not tend to improve the position of the trade here, but the buyers in the country would gain by this move of the Cardiff people. On the whole, we hear trade has been good, with fair consumption.

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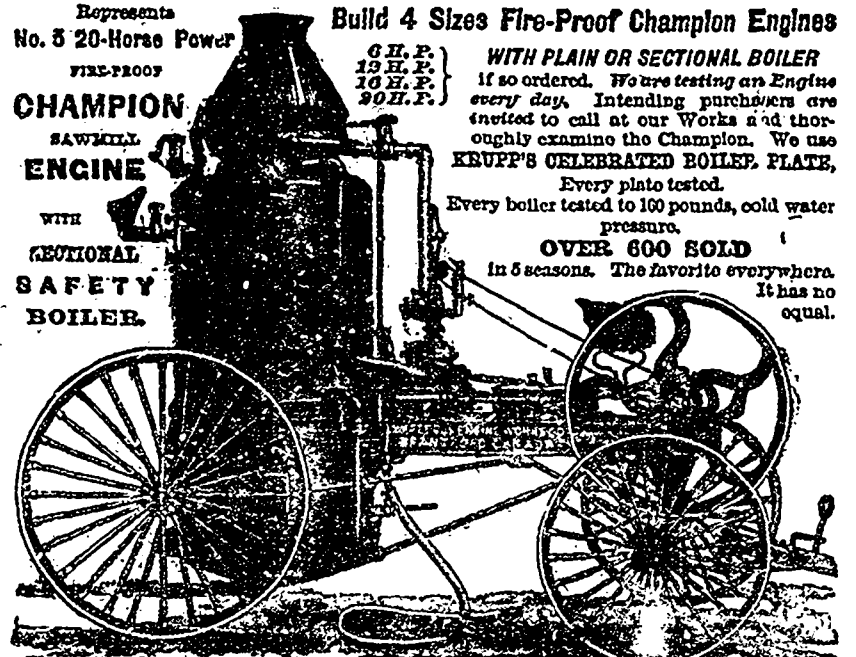
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ADDRESS WATERLOUS ENGINE WORKS CO., BRANTFORD, CANADA.
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Market Reports.

MONTREAL.

From Our Own Correspondent.

JAN. 10.—For the past two weeks up to Saturday last there have been so many holidays that business in the lumber trade has been quite at a standstill, but now that the holiday season is over, some little improvement has been experienced in business during the past two days, and a good steady winter trade is now expected.

There is some demand from Boston for ash lumber and several shipments have been made to that city. Hardwood is making in the townships for which they have had a favorable winter so far, and stocks are expected to be full next season. Prices of all kinds of lumber in our market are steady and very firm as under. We quote prices in the yards:—

Table listing lumber prices in Montreal, including Pine, Spruce, Fir, and various grades of lumber with their respective prices per 1000 feet.

TORONTO.

From Our Own Correspondent.

JAN. 10. The close of the holiday season has given retail dealers a fresh start, and the yards are nearly all in full blast again, some with whom I have conversed state that they are as full with orders as during the summer months; let that be as it may it is evident that there is little cause for complaint on the score of dull trade at the time of writing this letter.

Another retail lumber firm has opened up at the west end of the city whose shingle roads T. & S. Baldwin, both trustworthy young men, and if industry can build up a flourishing business they are sure to succeed. With the opening of the new year there have been some important changes in the personal of well-known firms doing business here.

quotations, and no surplus of stocks on hand beyond present or immediate prospective requirements.

QUOTATIONS, FROM YARDS.

Table listing lumber prices in Montreal, including Mill cut boards and scantling, Shipping cut boards, and various grades of lumber.

B. M.

Table listing lumber prices in Montreal, including 1 1/2 inch flooring, dressed, and various grades of lumber.

ALBANY.

Table listing lumber prices in Albany, including Pine, clear, Pine, fourths, Pine, select, and various grades of lumber.

BOSTON.

Cotton Wool and Iron of Jan 6, says:—The tone of the market is steady, and everything seems to be in a healthy situation, with a good prospect as to future trade.

CANADA RIVE.

Table listing lumber prices in Canada River, including Selects Dressed, Shelving, Dressed, and various grades of lumber.

BUFFALO.

Table listing lumber prices in Buffalo, including Uppers, Common, and Culls.

CHICAGO.

The Northwestern Lumberman of Dec. 30, says: Reports this week from nearly all points west of the lakes indicate an extremely moderate trade.

sortments at New York and in the New England cities are quite full—not to that degree, however, that will carry the yards many weeks, under a good export and local demand, without some replenishment by rail.

The stock on hand at Oswego is 216,000,000, as against 168,000,000 last year, and it has not appreciably decreased since the close of navigation.

Table listing lumber prices in Oswego, N. Y., including Three uppers, Pickings, and various grades of lumber.

Table listing lumber prices in Tonawanda, including Three uppers, Common, and Culls.

Table listing lumber prices in London, including Three uppers, Common, and Culls.

Table listing lumber prices in Liverpool, including Three uppers, Common, and Culls.

days, there is naturally a very marked indisposition to do business, and any transactions entered into now will be confined either to retail transactions wherein the buyers require something for immediate delivery, or for delivery when the incoming year is advanced.

Table listing lumber prices in Glasgow, including Spruce deals, 16 ft and upwards, and various grades of lumber.

The Timber Trades Journal of Dec. 23, says: The near approach of the Christmas holidays combined with the stormy weather experienced during the last few days have effectually put a stop to all appearance of business, and there has been therefore literally nothing doing during the last seven days.

The additions to Clyde stocks of wood since last writing have been unimportant, and at this time of the year the quantity of goods changing hands is of course very limited.

The Timber Trades Journal of Dec. 23, says: Even at the Baltic this week things were dull. Certainly Messrs. Churchill & Sim did not offer a very large assortment of unreserved goods in their catalogue, which partly accounts for the attendance being hardly up to the average.

The additions to Clyde stocks of wood since last writing have been unimportant, and at this time of the year the quantity of goods changing hands is of course very limited.

The Timber Trades Journal of Dec. 23, says: The imports during the past week have been composed chiefly of cargoes of spruce deals, and these goods now seem to come forward in quantities never anticipated even by those who are inclined to hold on to the old idea that they appear to drop from the clouds.

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White and Yellow Pine Lumber and Timber.

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27

growing in clusters are quite tall. The limbs project in joints around the tree, leaving a space between them of from 12 to 24 inches of perfect stock. These trees are now cut for paper stock, and trunks, limbs, bark and the needle-like leaves are all worked up by mechanical and chemical processes into roofing and other paper and paste board. It is said that the saving of the limbs and the bark of the tree now pays for the whole cost of the wood.

The carpenters of the Northern Pacific railroad are building woodsheds in Idaho in order to have sufficient dry wood for the locomotives. The shed at Sand Point is 200 feet long by 75 feet wide and those at Camp Hope, Cabinet, Gravel Pitt 3, Rock Island, Trout and Beaver creeks are 30 by 150 feet. The wood to fill these sheds is already out.

The Aztecs, before the conquest of Mexico by the Spaniards, recognized the value of trees to a country for the maintenance of moisture and the promotion of irrigation. Prescott, in his history, tells us that their law contained seven penalties against the destruction of the woods, which they deemed necessary to secure the means of maintaining irrigating canals.

The Buffalo Lumber World says—From the logging camps the news is generally favourable. In some sections an extra good start was secured, and everywhere the beginning was satisfactory. The soft spell of the week before December rather discouraged some, but since that time it has become much colder again and work is progressing rapidly. The profitable condition of lumber manufacturing during the last season encourages the belief that a very large supply of logs will be hauled—perhaps larger than ever before, if conditions continue favourable.

Lumber Sale.
Mr. J. M. Irwin's auction sale of lumber at Nassau Mills on Wednesday was very successful, the large quantity offered being readily purchased at satisfactory prices. The competition was keen, there being several buyers from a distance, besides our local builders and farmers, so the auctioneer Mr. C. Stapleton, was kept busy with the bids.

The Timber Trades Journal says—The Germans appear determined that we shall not be helped by them to ruin our forests. A proposition has been laid before the German Senate to increase the duty on imported unmanufactured wood from 10 to 30 pfennigs per 100 kilogram, and from 15 to 25 pfennigs for sawn wood!

FORTUNATELY Valvular disease of the heart is not very common, its disturbed action may be due to indigestion, liver irregularities &c. A Stomach disturbed with wind, or indigestible food will cause pain and fluttering by crowding on the nerves of the heart. Burdock Blood Bitters will speedily remedy all such difficulties.

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N. H. DOWNS'
VEGETABLE BALSAEM
ELIXIR
Has stood the test for FIFTY-THREE YEARS, and has proved itself the best remedy known for the cure of **Consumption, Coughs, Colds, Whooping Cough and all Lung Diseases** in young or old. SOLD EVERYWHERE.
Price 25c. and \$1.00 per Bottle.
DOWNS' ELIXIR

85 tons added during the year. This margin, under ordinary circumstances, should have left our tonnage at the end of 1883 fully up to the standard of 1881, but our losses were enormous, no less than 40,873 tons of shipping being written off the books of St. John during the year. The result is that the port of St. John, which this time last year had 270,186 tons of shipping on its books, has now but 245,118 tons, a lower figure than we have reached since 1871. This is partly due to the transfer to Liverpool of upwards of 20,000 of St. John shipping, including the whole Moran fleet, which, since the death of Mr. James H. Moran, has been registered in the name of his brother in Liverpool. It is mainly due to the difficulty of building wooden tonnage with profit, the increased cost of building being an element in producing this result.

The following statement shows the tonnage of his port at the end of each year since 1870, inclusive:—

1870.....	214,814
1871.....	226,727
1872.....	248,485
1873.....	247,227
1874.....	263,410
1875.....	270,762
1876.....	289,073
1877.....	270,016
1878.....	270,016
1879.....	281,178
1880.....	275,897
1881.....	270,136
1882.....	245,118

BAND SAWS VS. CIRCULAR SAWS.

The question of the disadvantages of the circular saw over the band saw has recently engaged the attention of the Gorman industrial journals. The objections urged to the circular saw are, that it is very dangerous to the workmen; requires greater power to drive it than any other kind; makes a much wider cut, producing more waste and yielding less product from a given amount of material. The only advantage allowed by these papers to the circular saw is that it costs less than the band saw. The Mechanics' Association of Muchlhausen in its yearly report, advises that the circular saw be abolished wherever it is practically possible to do so, and in Germany this is possible in a great majority of cases.

This action towards the circular saw on the part of German mill men is perfectly practicable, and, indeed, a wise measure, in view of the scarcity of timber in that country, and the necessity of economizing its manufacture in every possible way. The band saw certainly possesses great advantages over the circular saw in the saving of raw material, this saving, in the opinion of persons who have used the band saw, amounting to fully twenty per cent. In fine woods, such as walnut, cherry, maple, ash, etc., this is an item worth looking after by our mill men, and it is well worth their while to consider whether the adoption of the band saw for cutting such woods would not be a profitable investment. For the rapid cutting of the coarse and more plentiful timbers, as oak, pine and poplar, the circular saw, of course, will continue to be used, as, with our people, for a long time to come, rapid work, rather than economy of material, will be the great object in lumber manufacturing.—*Southern Lumberman.*

The Forests of Grand Isle, Vt.

The region of Grand Isle, Vt., is said to have suffered a depletion of half its forest timber in the past 30 years. Hundreds of acres of land have been cleared entirely of heavy timber and reduced to tillage or pasture, and the forests now standing have been thinned out and culled extensively. It is claimed there is hardly a farm that could replace its cedar fence from its own forests, and scarcely one with sufficient to rebuild its dwelling and out-buildings, while on many farms there is no timber for fuel. Little or no timber planting has been done. The island was at one time famous for its magnificent oaks, the stumps of many grand trunks still standing, and there is hardly a pine tree fit for a spar. Every farm once had a sugar orchard, and now there are hardly any that can be worked. In fact, the oak, pine hemlock, tamarack, cedar, and maple are practically exhausted, though at first blush it might seem

that the forests were quite extensive. The few groves of second-growth cedar are being largely utilized for hop poles, which bring, standing, 2 or 3 cents each, but if left to grow about 20 years or so they would be worth about \$1 each for posts, telegraph poles, or ship knees.—*Northwestern Lumberman.*

GAS METERS AS HELPS TO FIRES.

In most buildings designed for multiple tenancy, like great apartment houses and the capacious office buildings which comprise so large a part of the business part of a city, it is customary to provide a separate gas meter for each room or suite of rooms. These meters are commonly placed in closets and out of the way corners, and are very apt to be surrounded with much combustible matter. The connections of meters with the gas pipes are usually, if not always, of lead, a metal that is easily fusible, and the solder with which the plates of the meter are joined together yields even more readily to heat. Let a fire break out in a building containing, as many buildings do, a score or more of these fragile fire feeders, and the hot air sweeping in advance of the fire will quickly melt the lead or solder. The outpouring gas fills the building with an explosive atmosphere which hastens the spread of the flames and keeps up an inexhaustible supply of fuel. Such burning as gas jets, sometimes of great size, are to be seen after almost every city fire, when nothing is left of a building but blackened and broken walls. The gas poured into burning buildings through such openings doubtless helps materially to account for the surprising suddenness with which many buildings have been swept by flames, and in all cases the outflow of gas must seriously counteract, if it does not altogether thwart, the efforts of the firemen. The remedy for this great evil is not so easy to point out. It is obvious that where a multitude of meters are to be distributed through a building they should be more securely incased and provided with inflexible connections, or some means should be devised whereby the gas supply shall be automatically shut off whenever the temperature rises so as to imperil the integrity of the meter. There should also be near the outer door and readily accessible to firemen, some means by which the connection of the house with the gas main in the street can be quickly closed. There is clearly an opportunity here for useful and profitable invention.

WOOD PULP.

The Lumberman's Gazette says—One of the astonishing results of the wood-pulping and paper-making processes, lately introduced, is the conversion of the whole of a sapling pine into paper, without any waste. In Massachusetts, and others of the New England states, there are large growths of these pines, which are too small for box boards, and which will not pay for the cutting, in most localities, when used for firewood. These will average some six or eight inches at the butt, are smooth, and when

TIMBER CLAIM LAW.

An Iowa correspondent wrote to the Chicago *Lumber Trade Journal* as follows:—I think few of us realize the benefit of this law. Those who settled far out in our prairies twenty to forty years ago, when there was no trees for miles around to break the bleak winds, can now since trees have been planted and grown twenty to forty feet high, realize their benefit in breaking the wind. Far more will the settlers of the broader treeless countries to the west and north west be benefited by the Timber Claim Law, which will induce so general and extensive planting of timber. Whether forests do or do not induce rain I will not here stop to argue, but it is certain that when the wind is checked the dews fall more and last longer in the morning; the evaporation of moisture from the soil is less; the wind does not dry up, injure and break down the field crops; nor does the winter wind so terribly pierce both man and beast when trees planted as when the long reaching winds meet with no barrier to check them.

Wood and timber is a proper and valuable product of the farm, and the young beginner on the farm will find, if he plants valuable and fast growing varieties, the grove will be the most valuable investment on his farm.

Winter and spring is too late to gather the seed and nuts of most of our forest trees, but the cuttings of cottonwood and willow should be taken off very early, before the sap begins to circulate, and stored where they will keep slightly moist. I do not recommend these trees as being valuable, except for quick growth and easy to be had for next spring.

The nurserymen have large quantities of walnut, maple, ash, hardy catalpa, etc., which may be had by applying before their stocks are all sold, but the demand is very great, mostly sold out last fall. The catalpa has been raised by the million and sold for planting in Kansas, Nebraska, Iowa, and some in Dakota and Minnesota; but its success north of Iowa is yet in doubt. I would recommend its trial in the middle of groves of other trees, with deep planting on dry land. Wherever it can be raised it will certainly be the most valuable tree for the farmer.

When Congress passed the Timber Claim Law it was a wise provision and a great incentive for the settlement of new territories. They will soon become new states, and changed in a wonderful short time into comfortable homes with prosperous farmers.

JOINERY FOR ENGLAND.

The *Timber Trades Journal* says:—We have further information to hand respecting the coming importation of prepared American joinery, or more correctly termed "finished wood-work." Great efforts, it is said, will be made next season to establish "American finished wood-work," as a saleable item in the English markets.

The same journal also says:—Messrs. Ekman of Stockholm, the firm from which Messrs. H. Atkinson & Co., of Wharf Road, London, receive their supplies of Swedish joinery, are, we understand, in order to meet an increasing demand for their doors and other goods, about to make considerable additions to their mills. This firm were the pioneers of the Swedish joinery trade in this market, and the uniform excellence and reliability of their goods are too well known to our readers to need any further commendation from us.

RENDERING WOOD INCOMBUSTIBLE.

Accounts are published in the English scientific journals of some recent tests of asbestos mixtures for rendering wood, canvas and other materials incombustible, and it would seem, with encouraging results. Among other experiments, a piece of light pine wood, about six inches long by four inches square, painted with five coats of this substance, was placed for upwards of half an hour in an ordinary grate fire, but, although the wood itself was reduced to charcoal, there was no blaze whatever emitted during the charring. Again, a small model theatre, built of wood, with net scenes and accessories, was sprinkled with turpentine and set on fire, every portion ignited, and the whole was consumed; but a similar model with the net scenes and the wood frame all painted with asbestos, was

drenched with turpentine and set fire to, but the scenes were only partially charred at the lower ends, with the turpentine flames, while the timbering was not even ignited. Tests were also made with two models of a larger size, about four feet cube built on a bed plate of one inch real board, and set fire to by a bundle of splavings, the one was burned and the bed plate set on fire, while, in the other no ignition was effected in the parts to which asbestos has been applied.

THE GATINEAU FORESTS.

A reporter of the *Montreal Star*, in a description of the Gatineau Valley says:—"The existing forests of the Gatineau districts are as nothing in comparison to the original ones, the lumber trade or bush fires having swept off most of the huge pines which lorded over the country when Canada was discovered. They are for the most part composed of hardwood, varying in size according to the date at which the country they stand on was cleared of pine. Most of the uncultivated country is covered thickly with maple, oak, birch, elm, beech and other hard woods, which are used as fuel, and the Gatineau railway when built will be able to bring out enough cordwood from this district to alone make it a promising investment. Again there are large quantities of valuable butternut and ash, almost invaluable through its size for the manufacture of furniture and carriages, which is at present being wasted, but for which there will, undoubtedly, be an unlimited demand as soon as it is within reach of the outer world. In the moist places cedar grows in abundance, while spruce and hemlock are very often met with."

NORWAY.

The Christiania correspondent of the *Timber Trades Journal* writing on Dec. 11th, says:—We have now had thorough winter for about a month, and, notwithstanding many prognostications to the contrary, it seems to have settled down for good. A fair quantity of snow having fallen, the transport of logs from the forests will be as easy as can be, and this year's crop of hay having been abundant, the hire of horses is likely to be cheap. Under these circumstances it would seem probable that a great quantity of timber could not fail to be brought forward for next year's sawing season. However, much will depend upon the prices, which have yet to be fixed. As the peasants have had a pretty good harvest, they will be independent; and on the other hand, shippers are not likely to go in for allowing last year's rates, the same having given little or no profit, and prospects on your side not being particularly bright. It is likely, therefore, that the favourable state of the "winter roads" will not be taken advantage of to the extent that it might have been under other circumstances.

SPRUCE IN ENGLAND.

The *Timber Trades Journal* of Dec. 23, says: The heavy and somewhat sudden arrivals of spruce deals in Liverpool have had the effect of bringing down prices. Sales have been made during the week at reduced figures, and we hear of orders having been booked in the country at 27 5s. ex quay. The fall may, however, prove to be only of momentary nature, and it is quite possible that prices may rebound when the bulk of the wood ex quay has been dealt with.

Spruce deals have been offered at reduced figures, and sellers have displayed some anxiety to rid themselves of stock. Why holders of spruce should be unduly anxious to take orders is not quite clear. The demand for wood in those districts where spruce is most largely used is certainly now as good as it was during the corresponding period of last year, and there exists every likelihood that a steady demand will continue during the early spring months.

FOREST PROTECTION.

If our law makers throughout the country represented with anything like faithfulness the awakened interest of the most intelligent part of their constituents, says the *New York Tribune*, the coming winter would not pass without some efficient legislative action, state and national, in the matter of forest protection.

Special enactments are needed in different states to meet the dangers which threaten in each. In the lake region laws to protect the remaining pineries from fires should be passed at once. In the south where forests are preyed upon by browsing animals, as well as by fire, and devastated by the wasteful production of turpentine, legislation of another sort is demanded. The first duty of our own legislature is to protect the Adirondack woods from further invasion. In California the imminent danger is from mountain torrents, and the state government should co-operate with the federal government to preserve the forests about the mountains of the streams which head on the western slopes of the Sierras.—*Lumberman's Gazette*.

A Satisfactory Test.

A test of Mr. Hubert's new fire-proofing material, which is intended to take the place of iron beams in constructing fire-proof buildings, took place lately at Schilling's stone yard at 82nd street and avenue A., New York city. The material consists of coal ashes and plaster paris moulded into strips one and one-half inches thick. A large oven built of this combination was erected in the yard. The top of the oven was coated with the fire-proofing, so as to represent the ceiling of a room, and above which there were a number of wooden beams, around which were nailed strips of the same material, these being surmounted by a wooden floor. At 2.30 p.m. a fire was started in the oven and allowed to continue to burn fiercely for an hour and a half. The fire was then extinguished with water and it was found that the floor was scarcely warm, while a beam that was directly across the flue was only slightly charred and a very small piece of the ceiling of the oven had fallen. It is claimed that iron beams would not have stood so severe a test in such a satisfactory manner and that the cost of this method of fire-proofing, will be about 33 per cent of that now employed.

Muskegon Enterprise.

The *Lumberman's Gazette*, of Bay City, Michigan, says:—The late trip of the Muskegon lumberman is fraught with great significance especially in Chicago, the most important lumber distribution centre in the west, and in fact in the world, it being virtually without a rival in the amount of lumber handled, the entire product of the Saginaw Valley being insufficient to supply more than half its needs. The *Muskegon Chronicle* in alluding to the movement just inaugurated to effect a scheme for the handling of Muskegon lumber product at that point direct, says: The *Northwestern Lumberman* represents the Chicago dealers as calculated on how low a price they can offer our mill men for the lumber now cross-piled on the docks. They should save themselves this trouble, for Muskegon intends henceforth to dispense altogether with the services of Chicago dealers.

The Manchester Canal.

The Manchester City Council have confirmed the report of the sub-committee appointed to inquire into the feasibility and desirability of the Ship Canal Scheme. The sub-committee, it will be borne in mind, submitted a highly favourable report. A member of a leading Liverpool house of timber importers has publicly expressed the opinion that the Ship Canal will not materially damage the wood trade at Liverpool. It has been resolved to seek the sanction of Parliament for the scheme to be subscribed to out of the rates. Incidentally it was mentioned that a million pounds would be a fitting sum to subscribe. The project has not been well entertained by the Manchester press.—*Timber Trades Journal*.

HOOPER & CLARK, pump manufacturers at Lewiston, Me., in connection with a gentleman of Portland, have purchased 3,000 acres of timber land, and will cut spruce and hardwood lumber. Their portable saw mill will be discarded for a permanent one of respectable capacity, which will be driven by 120-horse power engine, and built in the woods. A wooden tramway several miles in extent has been laid, on which cars are now running. The lumber will be shipped from Phillips, distant 10 miles from the mill.

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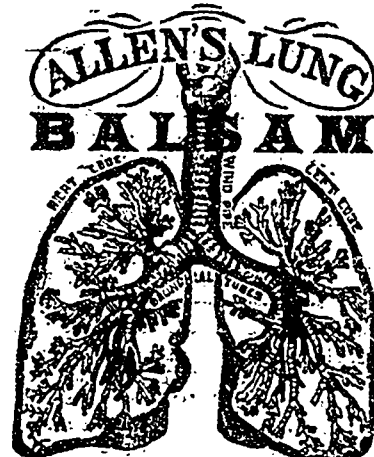
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PERRY DAVIS' VEGETABLE PAIN KILLER.

This celebrated Medicine is recommended by Physicians, Ministers, Missionaries, Managers of Factories, Workshops, Plantations, Nurses in Hospitals,—in short, everybody, everywhere who has ever given it a trial.

TAKEN INTERNALLY, it cures Dysentery, Cholera, Diarrhoea, Cramp and Pain in the Stomach, Bowel Complaint, Painter's Colic, Liver Complaint, Dyspepsia or Indigestion, Sudden Colds, Sore Throat, Coughs, &c. Used externally, it cures Boils, Felons, Bruises, Cuts, Burns, Scalds, Old Sores and Sprains, Swellings of the Joints, Toothache, Pain in the Face, Neuralgia and Rheumatism, Chapped Hands, Frost-bitten Feet, &c.

The PAIN-KILLER is sold by medicine dealers throughout the world, Price 25c., 50c., and 75c. per bottle.

FUEL FOR THE FUTURE.

It is not now thought that the electric light will come into serious competition with gas, or even oil, for some time to come. As a result of this conviction gas shares are now going up, both in Europe and America. Mineral oils are likely to share in this improvement. A factory in Mayence (Germany) lately installed gas works, not only for illuminating, but also for heating and manufacturing purposes. The gas, which is made from mineral oils from Weissenfels, is purified by using a mixture of two parts of saw dust and one part of flour of sulphur, to which a small portion of slacked lime is added. A saturated solution of sulphate of iron is then poured over. The composition can be used for three operation if the mixture is stirred. It is claimed that 50 kilos of the Weissenfels oil has as great power as 75 kilos of Scotch mineral oils. Be this as it may, there is little doubt that gas will be a popular fuel of the future, both for heating and cooking purposes. The gas stove is rapidly finding its way into Canadian households. In this city at present there are nearly two hundred coal oil stoves in use, and said to be giving good satisfaction. Between oil and gas stoves and the more extended methods of heating and cooking by steam, the solution of the question of cheap fuel is not far off.—*London Free Press.*

Timber Limits in Muskoka and Parry Sound.

Mr. Meredith inquired in the Ontario Legislature on Thursday, (1) what rates of dues were prescribed by the conditions of sale of the 437 square miles of timber limit in the Parry Sound and Muskoka districts sold in 1881; (2) whether a reduction has been made in the amount of such dues, and, if so, to what extent and during what years; (3) whether any order-in-Council was passed authorizing such reduction, and the date of such order-in-Council, if any.

Mr. Pades said the original dues were \$1.50 per 1,000. They had been reduced to the uniform rate of 75 cents, the reduction being made by order-in-Council on Nov. 20, 1876, it being ratified by the House during the following session.

Importance of Timber Culture.

The New York Tribune says:—The appointment yesterday of two commissioners in Vermont to enquire into the condition of the forests of that state and to recommend such measures as may be needed for their protection, is a step in the right direction. The forests of the eastern states are daily becoming more valuable as the western pineries disappear, and there are thousands of acres of poor land in New England and elsewhere, not available for ordinary farming, where, with a little encouragement from the State Legislatures, timber culture might be made to pay. Vermont has not appointed her commissioners a day too soon.

Second Growth Pine.

According to Professor Sargeant, of Harvard College, Michigan and Wisconsin will some day find rivals in Massachusetts and other New England states in the production of white pine, which is a second growth in those states. The product sawed in Massachusetts in 1880 was worth \$1,000,000. Vermont and New Hampshire produced 109,000,000 feet, and Maine as much more. This, of course, to a Michigan or Wisconsin lumberman of to-day, is a trifling affair, but in the future, when the pine resources of this region are exhausted, it may seem quite important.

Consumption Cured.

An old physician, retired from active practice having had placed in his hands by an East Indiana Missionary the formula of a simple vegetable remedy for the speedy and permanent cure of Consumption, Bronchitis, Catarrh, Asthma, and all Throat and Lung affections, also a positive and radical cure for General Debility and all nervous complaints, after having thoroughly tested its wonderful curative powers in thousands of cases, feels it his duty to make it known to his fellows. The recipe, with full particulars, directions for preparation and use, and all necessary advice and instructions for successful treatment at your own home, will be received by you by return mail, free of charge, by addressing with stamp or stamped self addressed envelope to

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BY THE USE OF

Brown's Patent Spalt and Shingle Mill,

for making Shingles, Barrel Heading, Box Stuff, &c., from spalts, board trimmings, slabs, and mill waste generally, turning material otherwise worthless into valuable products. I have made arrangements with the patentee to manufacture and sell for the Dominion; have made and sold a good number of these machines which are giving excellent satisfaction and can give the best of references.

Our Steam Feed for Circular Mills,

is now the Best Feed where Steam is the motive power. It is easily operated, is simple, rapid, and wears never likely to wear out, sixteen 16 ft. boards, or eighteen 12 ft. boards, have been cut by it in one minute. It is the established feed for steam mills, I make a specialty of its manufacture; will guarantee satisfaction.

Our Patent Twin or Span Circular,

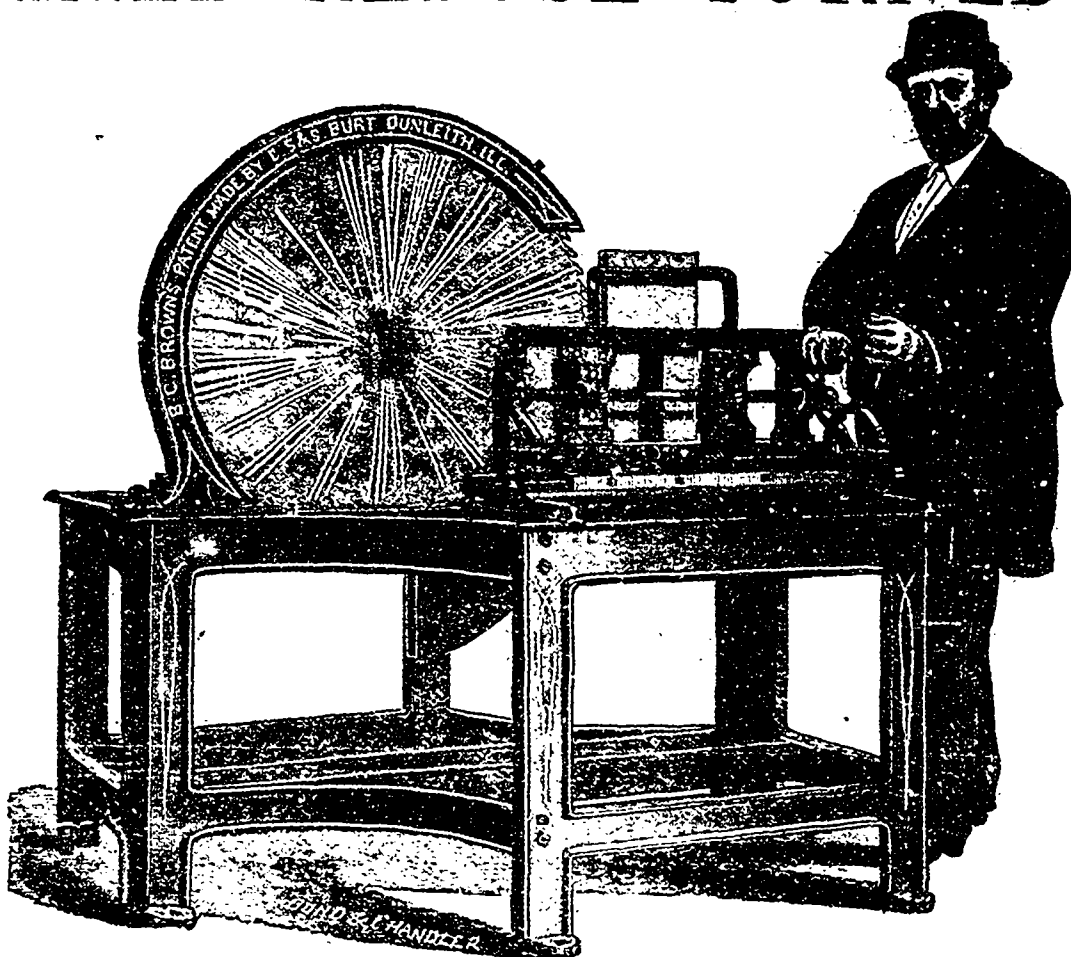
with Steam Feed for Steam Mills, and Rope or Rack Feed for Water Mills is fast coming into general estimation and is used in place of Gang Slabber in our best Canadian Mills. One of our Span Circulars which will slab logs 25 inches in diameter down to 7 and 8 inch stocks, will do the work of three slabbers, with an immense reduction in first cost, running expenses and labour. Two of these machines can be seen at work in Messrs. Gilmour & Co's Mill, Trenton, and Georgian Bay Lumber Co's Mill, Waukegan and Port Severn. I am also introducing a new style of Mill Engine, neat, substantial and simple, with Corliss Frame and Balanced Valve, all carefully designed and honestly made.

Covel's Automatic Saw Sharpener,

is now well-known and highly appreciated, when placed in the mill it sings out its own praise, I keep it constantly on hand for immediate shipment.

Our Standard Circular & Gang Mills & Machinery,

are too well known to need any reference, any further than to say that I spare no pains or expense to have my work all first-class and give satisfaction, and as I make Heavy Saw Mill Machinery a specialty, any party wanting a First-class Mill will find it to their advantage to give me a call.



WILLIAM HAMILTON, Peterborough Foundry and Machine Works, PETERBOROUGH Ont.