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DISTRIBUTION OF FOREST TREES.

The paper of Mr. Bell, of the Geological Survey, on "The northern limit of the principal forest trees of Canada, east of the Rocky Mountains, is embodied in the seventh report of the Montreal Horticultural Society. The law by which this distribution takes place has not been clearly traced or ascertained. "The range of any species," Mr. Bell says, "is not governed entirely by the mean annual temperature. The extremes of heat and cold in the west, as compared with the milder winters and cooler summers of the east, with about the same mean temperature for the year, appear to be the chief cause of the marked difference in the character of the woods in the two regions, since there is not a sufficient disparity in the amount of the annual precipitation to account for it. A great difference in the moisture of the air in the two regions, otherwise resembling each other in climatic conditions, has a powerful effect on the growth of forests, and the dryness of the air in the western prairie and arid regions is, no doubt, the chief cause of the absence of timber." Mr. Bell adds that "difference in the composition of the soil appear to have a local effect upon the distribution of forest trees." Nearly half a century ago, Dr. Richardson made a similar remark. He attributed to the nature of the soil what he called, perhaps on insufficient data, the sub-arctic vegetation on the northern shores of Lake Superior, while farther north was found a vegetation suited to a more southern region. There may, however, be other causes that affect the local distribution of forest trees. It is well known that where one kind of forest tree is destroyed by fire another takes its place; and it is therefore reasonable to conclude that forest fires have played a part in the local distribution of forest trees. So constant is the tendency for one kind of trees to displace another that, in some countries of Europe, the bugs have embalmed a regular succession of trees, each above the other.

In contrast with the great variety found in the United States, one is struck by the smallness of the variety of forest trees in Canada; three hundred and forty against ninety. Some times, however, fifty varieties are found on a single farm. And of this ninety some of the best notably the black walnut are becoming almost extinct. Here is a reason for planting, not only valuable native trees which are in danger of extinction, but also several foreign trees which thrive well in our climate. It is really astonishing to what a small extent this has been done. Let any one visit the Horticultural grounds, at Toronto, and he will be astonished at the negligence there displayed. It is so in our parks, and with few exceptions in private grounds.

Mr. Bell's paper, with the accompanying map, may be taken as fairly indicating, in a general way, the distribution of the forest trees of the

country, though it is probable that a necessity for correction in several particulars will hereafter be found. Of the distribution of the Tulip tree (*Liriodendron tulipifera*) he says. "At Niagara Falls, and in some localities westward near Lake Erie." This tree is found nearly two hundred miles north of the Falls of Niagara, north of the southern shore, on Foot's Bay, Lake St. Joseph. And even this may not be its extreme northern limit. The flowering Dog Wood, which is abundant on the flats of the Humber, is spoken of by Mr. Bell as extending only as far as Dundas. And it is found more than 100 miles north of the Humber, and the farther north the larger it grows. To the Butternut, Mr. Bell scarcely assigns a sufficiently wide range on the north. We have no doubt that, as observation extends, other corrections will have to be made.

The same report contains a paper by the Hon. H. G. Joly, on "The Returns of Forest Tree Culture." Some authorities say that an acre of black walnut, thirty years old, is worth \$20,400. This assumes that 680 trees can be grown to the acre; and we agree with Mr. Joly that the number is too great. Mr. Joly has gone into the experiment of tree-growing himself; and we trust that his example may be followed by many others; "they have," in the words of Mr. Joly, "no idea what source of pure enjoyment they will be creating for themselves." This enjoyment may grow to an absorbing passion, and it is gratifying to know that its indulgence would be of great benefit to the country.—*Monetary Times.*

PAPIER-MACHE FOR BUILDING.

A trade journal has the following regarding papier-mache.—It may claim to rival iron in the multiplicity of its industrial applications. In Europe it is employed to a considerable extent in architecture, from a complete church building in Bavaria (capable of seating 2,000 persons), having columns, walls, altars, roof and spire of papier mache, to the finest traceries of a Gothic screen. Some of the most tasteful halls in Britain and on the continent are finished in it, in preference to wood. The mantels, and the mirror frames they support, are of its composition, and, strange as it may seem, the very chandeliers, in their gilded elegance, are of this humble material. Its use in architecture can literally have no limit, for no one to-day can say what may not be made of it. In toys, tables, bijouterie of all kinds, we have examples of its extensive uses, and suggestions of its future applications. Papier mache never cracks, as wood, plaster, terra-cotta, etc., will do. In the same articles it can be made, if required, far lighter than plaster, terra-cotta, metal, or even wood. Neither heat nor cold affects it; it can be sawed, fitted, nailed, or screwed, quickly adjusted or removed, gilded, painted, marbled, or bronzed. It can be made light as cork, or heavy

as stone, never discolours by rust, as will iron, is not affected by temperature or oxygen, as is even zinc. It can be made for a given thickness stronger than any white or rare marbles, and is even tougher than slate, quite as hard, and will not chip corners nor crack off in strata. One of the great advantages of papier-mache is that it can be produced very cheaply. In architecture it can be supplied nearly at plaster price, and, taking into consideration the price of putting up, costs no more, and sometimes even less. This depends on the size of the ornament, the larger being cheaper in proportion. It can be made to imitate the rarest marbles, as it takes a polish superior even to slate, and costs not half as much as the preparation of plaster of Paris, known as scagliola, while it is infinitely stronger. Pedestals, columns, novel vases, clocks, and multifarious other articles are made of it in elegant and durable forms. Possibly, as a recent writer remarks, when the forests of the globe are regarded as curiosities, and the remaining groves are preserved with the same care that has guarded historic trees, the cast off rags of mankind, and the otherwise useless weeds, reeds and grasses of marsh and swamp, will take the place of timber in construction, and many will welcome the change, if for nothing else than that it will obviate much of the nuisance of frequent repainting.

SUPERSEDING THE STEAM ENGINE.

Israel R. Blumenburg, of Philadelphia, claims to have invented a motor that will supplant steam. It is claimed that the practical utility of his invention has been demonstrated to the satisfaction of experienced engineers and scientists, and a company has been formed to introduce it in manufacturing establishments. Mr. Blumenburg claims to utilize a principle long known to scientists—the reactive force of bi-sulphide of carbon. The heretofore insuperable difficulty was to devise means to control the power, and this was the inventor's first task. Having accomplished this, a new obstacle arose. It was found impossible to make a joint so mechanically perfect as to hold the vapor, which is much more penetrative than steam. A suitable joint-packing became necessary, the inventor hit upon it, and that forms a material part of his invention, making the success complete. The chief advantages shown for Mr. Blumenburg's device are cheapness and safety of operation. A leading manufacturing chemist of Cleveland, who has watched the progress of the motor with scientific interest, says the inventor will be able to give manufacturers a very economical and efficient power, doing away with boiler explosions and the consequent destruction of property and life. From an experience of many years in handling bi-sulphide of carbon he is prepared to say that with Mr. Blumenburg's apparatus much less danger is to be ap-

prehended than from the ordinary steam engine. The economy of the machine consists in its capacity to produce, with a temperature of 180 degrees Fahrenheit, the same power as is obtained by steam with a temperature of 350 degrees. Mr. Podrick, the company's president, says he will run his establishments with this new motor within 60 days, and that it will make steam worthless except for heating purposes.

CURIOSITY OF TREE GROWTH.

An interesting observation on tree rings is recorded by Prof. Bachelart in *La Nature*. During a visit to the ruins of Palenque, Mexico, in 1859, M. Charney caused all the trees that hid the facade of one of the pyramids of the place to be cut down. On a second visit in 1880, he cut the trees that had grown since 1859, and he remarked that all of them had a number of concentric circles greatly superior to their age. The oldest could only have been 22 years of age, but on a section of one of them he counted 250 circles. A shrub, 18 months old at most, had 18 concentric circles. M. Charney found the case repeated in every species, and in trees of all sizes. He concluded that in a hot or moist climate, where nature is never at rest, it may produce, not one circle a year, as with us, but one a month. The age of a monument has often been calculated from that of trees that have grown on its ruins. For Palenque, M. Laramar calculated 1,700 years, having counted 1,700 rings in a tree. M. Charney's observation requires the number to be cut down to 150 or 200 years, making a considerable difference, a matter of 1,500 years. Prof. Bachelart asks whether M. Charney took account of certain colored rings which some tropical trees present in cross section, and which are to be distinguished from the annual circles.

JOINERY FOR ENGLAND.

The *Timber Trades Journal* says.—Further information has reached us respecting the intended importation of American yellow pine mouldings and joinery work. There can be no doubt but that a vigorous effort will be made next season to create other forms of American manufactured wood. Some novel forms of manufacture will be introduced, and, from what we can gather, every effort will be made to introduce them to the favourable notice of the trade here. The best recommendation which American joinery has is the really splendid quality of the material of which it is usually made. Few home-made articles at all approach it in this respect. When examining a pile of ready-made doors from the States we frequently turned over door after door without finding a blemish. For moulding and architraves it may be quite possible to create an active demand, and with respect to pine doors, it may be said that this new exists.

PROSPECTS IN THE STATES.

Active preparations for work are being made on every logging stream. With a favourable winter the cut of logs will be heavier than in any previous year, and it will be very large no matter what the winter may be. The high prices which have ruled during the past two or three years will stimulate the mill men to provide for all the logs that the saws will cut, regardless, we fear, of the fact that the outlook for the coming year is not particularly bright. There are some conservative manufacturers who see that there is a great deal of lumber in the country at present, and that a large cut of logs for the season of 1882-3 is not desirable. These, however, are few in number. The majority will use their greatest efforts to make the biggest showing on record.

The cost of logging cannot, in most cases, be accurately computed until the close of the season. When there is heavy snow the wear and tear on horses and cattle, harnesses, and sleds is considerably greater than when it is just enough for convenience. As the logging outfit of the heavy concerns has a value of from \$50,000 to \$75,000, this percentage of loss, in a season of deep snow, is one that cannot be disregarded.

In some districts there is an advance in stumpage that must be considered. On the Menominee there is no advance. On some of the Wisconsin streams stumpage is from 50 cents to \$1 higher than it was a year ago. In the Duluth region it has advanced somewhat, and nearly every where in Michigan a small advance may be counted on. There are many instances where such prices have been paid for timber that if the purchaser makes any money out of it he may consider himself fortunate, but these fancy prices, when the lumber business is considered generally, should not count.

Wages, on the whole, will not materially vary from last season. A scarcity of men has been talked of on some streams, but such talk is usually heard every season, and this fall there is no excuse for it. For years men for the woods have not been so readily obtained in Chicago as now, owing doubtless, to the fact that there is a general let-up in railroad building. On one stream in Wisconsin cooks are in great demand at present, and as high as \$60 has been offered. Last year they were obtained at from \$35 to \$45. But such an exception proves little, for as soon as it is known that cooks are wanted there will be a supply at less than \$60 per month.

Horses and oxen are higher than they were last fall. The disposition grows every year to put none but the best of draught horses in the woods. Such horses are high, ranging in price from \$250 to \$300 each. Twenty spans were recently sent to the upper peninsula from this city, for which \$520 a span was paid. Last fall \$300 would have bought them. Oxen are proportionately higher, and good ones are selling at from \$175 to \$200 a yoke.

Last fall hay was not plenty, but this fall it is abundant, and sells at \$3, and in some locations more than that amount less than it did a year ago. Pork is higher, and beef about the same. Beans are cheaper. Corn is high, but oats are being bought at eight cents under the prices of last year.

The opinions of several careful operators bear a striking similarity. One places the cost of logs for the coming year at 5 per cent over the cost last year, another at 7 per cent, while another says 50 cents on the thousand, which, considering the price of logs in his district, amounts to about 6 per cent. It must be borne in mind, however, that these estimates are made on the supposition that the winter will be an average one.—*Northwestern Lumberman.*

CULTIVATION OF FOREST TREES.

There is no mystery in the scientific cultivation of forests, so far as concerns the tillage of the crop. All that is needed is to observe the action of nature in the forest, and follow it, or utilize it advantageously when that can be done. The object of the cultivation should be to obtain the utmost possible advantage from the soil by keeping it always covered with a growth of trees, and when the trees arrive at maturity to remove them in such a manner that the smallest possible interruption may be caused to the productive works of nature. When the

time has come for the removal of the timber, the ground should on no account be any where all cleared of trees at once; but a commencement should be made by felling a tree here and there, and so breaking the thick cover of the forest, as to allow sufficient light or air to reach the ground, and cause the seed which has fallen to germinate. In this way one-fifth of the mature trees should be removed every five or six years, never by making large gaps in the cover, but taking a tree here and there, and always leaving the finest and most vigorous trees till the last, so that in about thirty years the whole of the trees will be cleared off, and a new forest established in their place. Thus the seeding of the wood will be effected by the agency of the finest trees, which will be themselves all the while increasing in bulk, and the productive power of the soil will be utilized to the fullest possible amount. It is not only in the removal of the timber and the reproduction of the forest that we ought to study the action of nature, but it is equally necessary that we should do so in felling for improving the growing crop, or, as it is commonly called, the thinning. The competition between trees after they reach the full height, at half their full age, is for space to spread their heads, and from this time until they arrive at maturity they go on always augmenting the diameter of their stems, but at the same time decreasing in number. It is calculated that if 1,600 trees of 4 inches in diameter can stand and thrive on an acre of ground, there will not be more than 400 of them when the trees have grown to eight inches, 200 when they have reached 12 inches, and between 100 and 140 when they have attained 16 inches in diameter. Little more is to be done in the earlier stages of a forest's growth than to keep the heads of the most valuable species from being overtopped by those which stand near them; this can be done best, not by removing the others, but by cutting off or breaking the tops, for it is desirable at this stage, for the sake of natural pruning, to have the trees growing as thickly together as possible. At a later stage thinning can be judiciously arranged so as to pass through the entire forest at intervals of from 10 to 15 years, enabling the whole area to be operated on in turn. In executing these, the most difficult of all forest operations, it will be well to remember that the object is to give room to the head of the trees, and not to their stem, for the stem will never be too close together as long as the heads have room properly to develop themselves. The favouring of the most promising trees, and the removal of the weaker ones, together with the preservation of the continuous shade to the surface of the ground, while all the trees have sufficient room to grow, should be the particular ends aimed at.—*Popular Scientific Monthly.*

TIMBER.

In examining the transverse sections of the stem of a tree, it is shown that it consists of three parts, namely, the bark, the wood and the pith. Around the pith the wood appears to be in rings. The external rings are not so hard and possess more sap than those which closely twine the pith, forming what is termed the heart-wood. These rings are also crossed by rays called the medullary rays, which reach from the centre of the stem to the bark. In structure the tree is made up of minute vessels and cells, the sap circulates upward in the tree through the vessels, and in its descent is conveyed to the leaves through the wood, and during the life of the tree the wood performs the functions of nutrition and secretion. The solid parts of a tree consist almost entirely of the fibrous parts composing the sides of the vessels and cells. It has been learned through various experiments that in the spring of the year the sap begins to ascend through the small vessels in the wood and descends through the bark to the leaves, and having passed through them, is deposited in a changed state between the bark and the last year's wood, forming a new layer of bark and sapwood, the old bark being pushed forward. As the annual layers increase in number, the sapwood ceases to perform its original functions, the fluid parts are evaporated or absorbed by the new wood, and the sides of the vessels being pressed together by the growth of the latter, the sapwood becomes heart wood or

perfect wood, and until this change takes place it is unfit for the purpose of the builder. The vessels in each layer of wood are largest on the side nearest the centre of the stem, and smallest at the outside. This arises from the first being formed in the spring, when vegetation is most active. The oblong cells which surround the vessels are filled with fluids in the early growth, but as the tree increases in size, these become evaporated and absorbed, and the cells become partly filled with depositions of woody matter and indurated secretions, depending on the nature of the soil, and affecting the quality of the timber. There is a great difference in the character of the annual rings, in different kinds of trees. In some they are very distinct, the side next the heart being porous, and the other being compact and hard, as the oak, the ash and the elm. In others the distinction between the ring is so small as scarcely to be distinguished and the texture of the wood is nearly uniform, as in the beech and the mahogany. A third class of trees have the annual rings very distinct, and their pores filled with resinous matter, one part being hard and heavy, the other soft and light colored. All the resinous woods have their character, as larch, fir, pine and cedar. The medullary ring, are scarcely perceptible to the naked eye in the majority of trees, but in some, as the oak and the beech, there are both large and small rings, which when cut through obliquely, produce the beautiful flowered appearance called silver grain.

In preparing timber for the uses of the builder, there are three principal things to be attended to, namely, the age of the tree, the time of felling and the seasoning for use. If a tree be felled before its full age, whilst the heart-wood is scarcely perfected, the timber will be of inferior quality, and from the quantity of sap contained it will be very liable to decay; on the other hand, if the tree be allowed to stand until the heart-wood begins to decay, the timber will be weak and brittle, the best timber comes from trees that have nearly done growing, as there is then but little sapwood, and the heart-wood is in the best condition.

The best time for felling trees is either in midwinter when the sap has ceased to flow, or in midsummer, when the sap is temporarily expended in the production of leaves. An excellent plan is to bark the timber in the spring and fell it in winter, by which means the sapwood is dried up and hardened; but as the bark of most trees is valueless, the oak tree (whose bark is used in tanning) is almost the only one that will pay for being thus treated.

The seasoning of timber consists in the extraction of or evaporation of the fluid parts which are liable to decomposition on the cessation of the growth of the tree. This is usually effected by steeping the green timber in water, to dilute and wash out the sap as much as possible, and then drying it thoroughly by exposure in an airy situation. The time required to season timber thoroughly in this manner will of course much depend on the sizes of the pieces to be seasoned, but for the general purpose of carpentry, two years is the least that can be allowed, and, in seasoning timber for the use of the joiner, a much longer time is usually required.

Properly seasoned timber placed in a dry situation, with a free circulation of air round it, is very durable, and has been known to last for several hundred years without apparent deterioration.

This is not, however, the case when exposed to moisture, which is always more or less prejudicial to its durability.

When timber is constantly under water, the action of the water dissolves a portion of its substance, which is made apparent by its becoming covered with a coat of slime. If it be exposed to alterations of dryness and moisture, as in the case of piles in tidal waves, the dissolved parts being continually moved by evaporation and the action of the water, new surfaces are exposed, and the wood rapidly decays.

When timber is exposed to heat and moisture, the albumen or glutinous matter in the sapwood speedily putrefies and decomposes, causing what is called rot.

The rot in timber is commonly divided into two kinds, the wet and dry, but the chief difference between them is, that where the timber is exposed to the air, the gaseous products are

freely evaporated, whilst in a confined situation they combine in a new form, viz the dry rot fungus, which, deriving its nourishment from the decaying timber, often grows to a length of many feet, spreading in every direction, and insinuating its delicate fibres even through the joints of brick walls.

In addition to the sources of decay above mentioned, timber placed in sea water is very liable to be completely destroyed by the perforations of the worm, unless protected by copper sheathing, the expense of which causes it to be seldom used for this purpose.

The best method of protecting woodwork from decay when exposed to the weather is to paint it thoroughly, so as to prevent its being effected by moisture.

It is, however, most important not to apply paint to any woodwork which has not been thoroughly seasoned, for in this case, the evaporation of the sap being prevented, it decomposes, and the wood rapidly decays. *Timber Trade Journal.*

TAR ROOFS.

The *London Builder* says that the German Government has on several occasions pointed out to farmers and others interested in agriculture that too great an expenditure of capital on buildings is a mistake. With a view of illustrating the application of this principle of economy to roofing, the *Cologne Gazette* points out that the system of using tar for roofing purposes is at the same time economical and suitable for agricultural buildings, and what is said may serve as an answer to a recent inquiry in our own pages. The framework of the roof can be of relatively slight construction on account of the nature of the covering it is intended to support, and the perpendicular height of the roof can be one-eighth or one-tenth of the entire depth of the building. The distance of the rafters is arranged according to the width of the covering material, the scale being that from the middle of one rafter to the middle of another. The distance should be 2½ in. less than that the width of tar roofing sheets.

Immediately upon the rafters come boards, and upon these (exactly in the centre of the separate rafters) are placed strong laths, about 2 in. wide and 1½ in. thick, the upper edges being taken off. The roofing sheets are now placed so as to cover the spaces between the laths, and are nailed. Over the laths are placed strips of paper, 5 in. to 6 in. wide, fastened with nails at intervals of 2½ in.

In order to make the sheets lie smoothly upon the boarding, it is suggested, in case they are too dry, to soften them by immersion in water. It is recommended that the workmen should not wear heavy-nailed boots, and also, that if the rain comes on, the roof should not be walked upon immediately after. When the entire surface of the roof is covered with sheets, the strips of paper (or caps) already named, as well as joints, are painted over with a hot mixture of coal tar and pulverized lime. Pure dry sand is at once sprinkled over this coating, and particular care must be taken that all the nail heads are well covered. When the paint is dry the whole surface of the roof is once more coated with the same mixture, and is sanded.

The object of this careful method of overlaying the roof with several coatings of specially prepared solutions is to preserve in the tar those oleaginous and fatty properties which it soon loses if exposed to the air, and the retention of which is an indispensable condition of its resistance to water. Clay and sand do not afford sufficient protection, and they are removed by violent winds.

Reference is made to various systems of coating the tar roof with protective substances, for the purpose indicated. One of the most successful methods consists of a mixture of cow dung and thin white lime, which is spread over the entire surface of the roof. If such a coating is not applied the tar paint must, during the first four years, be annually renewed, which enhances the cost of the roof. If the fact named protective composition is used, and renewed every two years, the coating of tar and lime can be dispensed with. Particular mention is, however, made of a coating of tar mixed with Portland cement, the tar being well heated and used in the proportion of 111 pounds to 200 pounds

of com. The mixture should be kept well stirred during the preparation, and should be applied as soon as made. This particular method has been tried in many cases in Germany, and, according to the Journal quoted from, its satisfactory results have caused its adoption upon a scale of progressive importance.

SWISS FOREST PRESERVATION.

Rev. Dr. Wheeler, of the Methodist, writes from Chamouni.—The Swiss land is mostly economized. The mountain side that is nearly perpendicular in not a large acreage; the mountain side that is very steep and yet will, with the help of roots, hold soil, is valuable for the growth of wood. Hemlock and beech are the chief forest trees; and the cultivation and preservation of forest land is vigorously regulated by law. If an owner clears a piece of timber land he must replant it. In some cantons he cannot cut a tree without a permit. The sound practice prevails of clearing small plots at once—not cutting a few trees here and there through a wood as with us. A small plot is cleared, the stumps and brush entirely removed (every twig of the branches being saved for wood), and then the space is replanted (usually from nurseries) and the new trees cultivated, trimmed out or thinned as they may require. In this way Switzerland, using much timber (its rural and village buildings being chiefly wooden), and having no coal beds for its fuel, keeps up an abundant supply of timber and wood on the strictest principles of economy. The Swiss Alps are covered with wood; and the immense timbers which the traveller sees by the wayside are all the fruit of cultivation on a good system regulated by law. We Americans will have to learn in this matter of the Swiss and Germans. The native forests which we have been squandering for a hundred years will hardly last into the next century. Already I see that a convention has been held in the west to devise plans for preserving the remnants of our great woods. We shall have to come down to system and regulation—and produce our wood and timber as methodically as we "make" corn and pork. I ought not to pass over the economy of the land, which is shown in the absence of fences—which have taken so much money from the pocket of the American farmer—and the cultivation of every corner; or the excellence of the macadamized roads, which are also economically narrow. The woodgrown sides of our rural highways will by-and-by disappear, and three of the four rods of their width will be taken into the bordering fields. After we have made these little economies and learned the arts of irrigation and timber culture, the greatest country in the world will be still more worthy of our patriotic devotion.

NORFOLK (VA.) VIRGINIAN.

Yes, sir, it is all that it is claimed to be. I have tried it, and have advised and witnessed its trial on others. I tell you its effects are simply wonderful. It gives a cure, and without much trouble at that. I had been suffering a great deal for over a month with very severe pains, contracted from a cold. I first experienced the pain in my side, and from its peculiar nature, I thought that it might be the premonition of paralysis. My friends were fearful, but after it shifted about, from one side to the other, from arm to leg, shooting through my body in a most infernally torturing manner, I knew that it was rheumatism that had me, and I sought remedies of different kinds, without effect, until I chanced to see the advertisement of St. Jacobs Oil, and read of its wonderful cures, when I resolved to give it a trial. That was about two months ago, and I had then been suffering a month of considerable agony. Securing a bottle of the oil, I applied it to the parts affected, and that night I had the first good night's rest that I had since the commencement of my attack. I gave two other applications, and became perfectly cured not suffering from rheumatism since and that has been two months ago.

This was the story of his cure by St. Jacobs Oil as told by Capt. Jack McLean, who for fifty years has been a resident of Norfolk and Portsmouth, and who is as well known in Norfolk and Portsmouth as almost any of its citizens. It was in reply to some questions put to him by

our reporter, who had heard of his remarkable cure, as well as of others that through Mr. McLean's instrumentality, had been brought about by the use of St. Jacobs Oil. After he had told the story of his own case, we asked him about the others, and he did not hesitate to relate them.

One was the case of a druggist from Warren, North Carolina, who, while on a business trip to Norfolk, during the recent snowy and sleety spell, had the misfortune to fall on the ice and bruised himself very severely, so much so that he was confined to his room at the hotel. Mr. McLean happened to visit the hotel when he heard of the accident, and having formed the acquaintance of the gentleman injured, advised him to give St. Jacobs Oil a trial. The druggist, consenting, Mr. McLean brought him some of his oil, which he applied, with such a happy result, that he was enabled to go on his way home rejoicing. Another case, was that of Mr. Walter Howard, a well known fish and oyster dealer in our city. Mr. Howard had also during the recent sleety spell fallen and injured himself. Being intimate with Mr. Howard, Mr. McLean says he sought him, and finding what his injuries were, he recommended the use of the oil. The result as in the previous case was a cure—and a thorough cure. Mr. Howard is now a firm believer in the curative properties of St. Jacobs Oil.

But a more remarkable cure than all of the rest—and which our reporter had heard of before having any knowledge of Mr. McLean's connection with the case—was that of a venerable lady about seventy years of age, who, some two weeks ago, while seated at the supper table, was stricken with paralysis, the whole of her left side being afflicted. Her speech was even affected. The family physician was sent for, and he at once proscribed the usual remedies, but without effect. The old lady was a family connection of the wife of Mr. McLean, and Mrs. McLean on hearing of her affliction visited the house, and learning that no relief had been secured from the physician's remedy, recommended the use of St. Jacobs Oil, relating its effect upon her husband. The oil was procured and applied. The afflicted side was well rubbed and partial feeling was restored. The second day after the first application the afflicted lady was able to sit up, and the third day she was well enough to sew. Since then she goes about the house apparently as well as she ever was, and she considers that she owes her life to the great curative virtues contained in St. Jacobs Oil. These statements of cures coming to our notice from our interview with Mr. McLean, brought to our recollection a statement made to us by Prof. G. B. Cromwell, who last February exhibited in our city his beautiful "Art Illustrations" at the Opera House, which each night attracted crowded and cultivated audiences. It was in connection with his recommendation to a gentleman who was suffering a great deal from rheumatism, and who on that account had been unable to attend the exhibitions. Prof. Cromwell advised him to try St. Jacobs Oil—even urged him to do so—and at last bought him a bottle of the oil, that he might have no excuse for not using. The gentleman, however, was then under the treatment of his physician, and did not use the oil. In explanation of the desire on his part why the oil should be used, Prof. Cromwell stated that he had some year or so before suffered excruciating torments from rheumatism, and that he had tried all kinds of medicines and so-called cures—all without effect. He heard, however, of St. Jacobs Oil, and resolved to give it a trial, which he did, and he stated that its effect on him was almost magical. A complete cure was effected, and since then he had never suffered from rheumatism. But in order that he might be at all times prepared for the enemy, he never travelled without carrying in his trunk a bottle or so of St. Jacobs Oil.

While the above facts relate to the very remarkable curative properties of this Great German Remedy, it appears, judging from what our druggists say, that the belief in its virtues is wonderfully strong among the people of all classes, and that they secure it as a sure relief in pain. No patent medicine, it is asserted, has ever had the sale that St. Jacobs Oil has had. No doubt much of this has been due to

the extensive use of printer's ink, in the way of advertisements, almanacs, posters, sign bills, cards, puzzles, and everything in the printing line. But the many and many of certified cures and the interest which they have excited has had a vast deal to do with its popularity. It is sought by all, and is a boon to our druggists. Yesterday we detailed a reporter to visit the different drug establishments and to learn from them some facts regarding the sale of the oil. He visited, among others, the house of Walke & Williams and saw Dr. Walke, who informed him that the demand for the oil was simply wonderful. He stated that it had exceeded the demand for any patent medicine he had ever handled, and this was saying a great deal, as Dr. Walke has been engaged in the drug business for many years, and the business of his house is very great. He next called on the old and well-known drug house of M. A. & C. A. Santos. The senior of the house was not in, but his son was approached, and he said in reply to the inquiry of our reporter, that the sale of St. Jacobs Oil was tremendous—never anything like it. He next visited the extensive establishment of J. W. Burrow, and finding that gentleman present, asked him. How about the sale of St. Jacobs? His reply was: "Splendid; the demand is very great. I make large sales of the oil." The drug store of Dr. H. R. Vaughan was next sought, and in answer to our reporter's interrogatory, Dr. Vaughan readily answered: "My sales have been remarkable. The oil goes fast."

We only conclude after the above statements of cures and sales, that there is a great deal in St. Jacobs Oil—and that where the benedictions have been so great, the Messrs. Vogeler & Co. may well be classed as benefactors—deserving the blessings of the multitude who have been cured.

Non-Inflammability of Redwood.

A quality of California redwood is its ready absorption of water when heated, which for a time makes it almost fire proof. The San Francisco Call says that the quickness with which fires are extinguished in that city has often been remarked, and the celerity with which blazing buildings are often transformed into charred remnants is greatly facilitated by the entire lack of the resinous element in the redwood lumber. Resin, familiarly known as "pitch," is not only highly inflammable, but is insoluble in water and will burn while being drenched with the element, with which it will not mix. At a recent fire in that city the advantage of redwood over other lumber in the construction of buildings became apparent. The moment water struck the side of the building or roof timbers it not only quenched the flames but the wood absorbed water as a sponge would, and it became incombustible.

TREE CULTURE.

French authorities have awakened to the advantages of tree culture and have ordered that trees should be planted on barren spots belonging to the government. The reason assigned is the growing scarcity of timber in France. Here is one more good example to which those interested in the timber protection and culture movement can point with pride. It is further reported that tree planting is prospering in smoky London, and in Tooly street—which is described as a metropolitan ravine, a sort of abyss in brickwork, where anything that savored of green fields and pathless woods would appear impossible—a thoroughfare in the unsavory neighborhood called Bermondsey, it is reported that of eighty-four trees there planted only twelve have died, while the remainder are flourishing. This leads the Standard to reflect how much better it would be to employ the charms of nature to relieve the ugliness of the town than to put up statutes at which everyone shudders. There is a good deal of sound sense there.—The Lumber World.

ARRIVED AT QUEBEC.

- The Chronicle gives the following list of rafts, etc., arrived at Quebec:—
- Oct 25—King Bros, deals, St. Lawrence Docks.
 - D D Calvin (2), oak, pine, &c., sundry coves.
 - Collins Bay Co, oak, &c, Bridgewater cove.
 - Flatt & Bradley, staves, sundry coves.
 - S M' Rao & Co, do, do.
 - A Gilmour & Co, deals, do.
 - G Samson, deals, Indian Cove west.
 - Oct 26—Flatt & Bradley, staves, sundry coves.
 - Larkin, pine, etc, Dobell's cove.
 - Oct 30—J & B Grier, hemlock, &c, Russel's Dock, Leeds.
 - British Canadian Lumber & Timber Company, white and red pine, St Michael's cove.
 - Nov 2—Simon Wigle, staves, Woodfield Harbor.
 - Sundry Lots, staves Union Cove.
 - Guy Bevan & Co, deals, Hadlow Cove.

17 YEARS' EXPERIENCE.

HOWIE'S DETECTIVE AGENCY

OFFICES, 32 KING STREET EAST, TORONTO ONT. All legitimate Detective business attended to for Banks, Fire and Life Insurance Co's, also for private parties. This agency does not operate for reward. 1715

LUMBER

Shingles, Doors, Sash, Flooring, &c., WANTED,

STATE QUANTITIES AND PRICE TO SHORE & DAVIS, Head Office, 514 Maine Street, Winnipeg, Man.

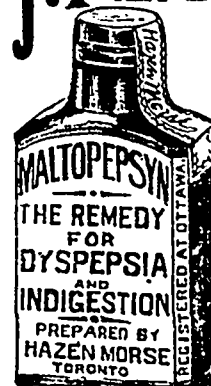
A CURE GUARANTEED. MACK'S MAGNETIC MEDICINE.



For Old and Young, Male and Female. Positively cures Nervousness in all its stages, Weak Memory, Loss of Brain Power, Sexual Prostration, Night Sweats, Syphilis, Seminal Weakness, and General Loss of Power. It repairs Nervous Waste, Rejuvenates the Jaded Intellect, Strengthens the Enfeebled Brain and Restores Surprising Tone and Vigor to the Exhausted Generative Organs in either Sex. With each order for TWELVE packages, accompanied with five dollars, we will send our Written Guarantee to refund the money if the treatment does not effect a cure. It is the Cheapest and Best Medicine in the Market. Full particulars in our pamphlet, which we desire to mail free to any address.

Mack's Magnetic Medicine is sold by Druggists at 50 cts. per box, or 6 boxes for \$2.50, or will be mailed free of postage, on receipt of the money, by addressing MACK'S MAGNETIC MEDICINE CO., Windsor, Ont., Sold by all Druggists in Canada. 123

MALTOPEPSYN



Artificial Gastric Juice.

A WONDERFUL FACT, proving the remarkable digestive power of Maltopepsyn. Two doses (30 grains), of Maltopepsyn will digest the entire white of a hard boiled egg in a bottle of water in 3 to 4 hours. How much more will it digest in the stomach assisted by that organ? About twenty times the quantity. Let this fact solve it is an interesting and useful experiment.

Get from your druggist ten drops of Hydrochloric Acid in a four ounce bottle. Fill a tumbler half full of tepid water (distilled water is best, though soft water will do), then add the finely cut white of a hard boiled egg, then add two doses (30 grains) of Maltopepsyn and shake bottle thoroughly every 15 or 20 minutes, keep the bottle warm, as near the temperature of the body (100° Fahrenheit) as possible, and in 3 to 4 hours the egg will be entirely dissolved or digested.

Maltopepsyn is endorsed by the leading Physicians and Chemists throughout the Dominion of Canada.

Send for Pamphlet, 24 pages, giving full treatment of Dyspepsia with the Rules of Diet, etc., mailed free upon application by HAZEN MORSE, TORONTO. Price per bottle, with dose measure attached, 50 cents, contains 48 doses or about one cent per dose.

THE GREAT PINERIES.

The Chicago correspondent of the New York Tribune writes as follows:—Of the rather more than 2,000,000,000 feet of white pine lumber that yearly reaches the docks and yards of Chicago, nearly all comes from the western half of Michigan, the northern peninsula of the same state and the Green Bay districts of Eastern Wisconsin. Of the total amount, as much as 1,200,000,000 is derived from a dozen places along the Eastern shore of Lake Michigan. Muskegon alone in 1881 furnished 491,824,000 feet, and 25,715,000 shingles, while Manistee sent forward 151,130,000 feet of lumber, and 257,000,493 shingles, the latter place being the greatest shingle manufacturing place on that shore. The chief district of lumber manufacture on the upper peninsula is at the mouth of the Menominee River, which empties into Green Bay and divides the States of Michigan and Wisconsin. The mills are located at Menominee, in Michigan, and Marinette, Wisconsin. A large proportion of the lumber stock that goes to make up the residue of Chicago a 2,000,000,000 feet is produced at these two points. The Menominee district in 1881 furnished 265,017,000 feet of lumber, and this year it is thought the amount will reach over 300,000,000 feet. The other Green Bay and Upper Peninsula ports of importance in 1881 shipped as follows:—Peshtigo, 52,260,000; Ford River, 25,724,000; Escanaba, 5,680,000; Oconto, 7,210,000. Of Saginaw lumber in 1881 37,573,000 feet were received, but it probable that much more will have arrived at the close of the present season, on account of the unusual reaching about after stocks this year. Alpena, on the Huron shore, in 1881 supplied Chicago with 9,439,000 feet, and more than that will arrive from that port this year. Some is furnished from other Lake Huron points. Latterly the Lake Superior region has produced considerable lumber, most of which has reached the Chicago market, the arrivals from Ashland in 1881 amounting to 20,935,000 feet, and from Ontonagon to 1,360,000. The lumber industry of that section is being greatly developed, and the time will soon come when the output along the south shore of the great lake will swell the yearly total to 250,000,000, but a large part of it will no doubt go to supply the markets of the new Northwest by way of Duluth and the three Northern Pacific railroads.

It is impossible to estimate the influence the pine of Michigan and Wisconsin has had in the development of the Northwest and of the entire country. An important factor in this great agency is the fact that a water way existed between the forests and the prairies. White pine is a light and portable timber, eminently adapted to the wants of new settlers, easily worked by partly skilled labor. It has furnished a material for the building of houses, the improvement of farms, the sudden growth of cities and villages, and by its means an empire has been created, as it were, in a day. Comparison is the most conclusive argument; and if one compares white pine with the yellow or pitch variety of the south, it will be seen that if the northwest had been dependent upon the weighty and hardly worked pine of the southern sections of the country, the progress of the prairie states would have dragged far behind its present advanced condition. Even to this day, when railroad facilities from south to north are quite ample, the weight of yellow pine amounts to almost an embargo on shipments to the northwest, though strenuous efforts are being made to overcome this difficulty by cheaper freights.

The estimate placed on the standing pine of the northwest by the Federal census forestry bulletins, however much they may be criticised, has served to awaken much interest in the present and prospective pine supply. Ten years ago it was claimed in the Saginaw Valley that the available pine in that section would be used up in ten years; yet the yearly product since then has steadily increased, and last year the output was greater than ever before. The same is true of the Lake Michigan districts. This at first blush seems an inconsistent proposition, but being better understood, it appears more reasonable. When the first estimates of Michigan pine were made, the operators took into account only such timber as was accessible to the streams, and was of certain proportions. For

instance, the time was when a pine less than fourteen inches in diameter was never cut. Now, such has become the insatiable demand that trees no more than eight inches in diameter are sacrificed to the greed of the lumbermen; and it is a common joke among the red-shirted brigade that sawed sticks 6x6, are often seen with all four corners "waney." In the early days of the industry Michigan lumbermen penetrated the forests no further than would make a short haul necessary to bring the sticks to stream. After timber became scarce on short hauls, long hauls were undertaken. At length operations had become so thorough that teams could no longer bring the logs to bank, and there was a pause and a consideration of further appliances. At each stage of denudation the pine was said to be exhausted. Estimates of standing pine were always made with reference to the operator's ideas of what constituted available timber, both as to size and distance from water. When lumber was cheap it was, of course, impossible to put too much expense into logging. The cost of stumpage came in for consideration. At first it was worth nothing but the value of the land on which the trees grew, which was obtainable at Government price. In process of time, as the demand for lumber increased, stumpage began to rise in value, and passed through the scale from 25 cents a thousand to its present average Michigan price of \$1.50; that is, the trees are worth that much a thousand as they stand on the stump, or two-thirds the average price of sawed lumber fifteen years ago. Stumpage in Michigan is now often sold at \$5, \$6 and \$7 a thousand, according to quality and accessibility.

Recent estimates of the quantity and value of standing pine have become very different from what they were ten or twelve years ago. Now estimates are made as to quantity on a basis of eight inches in diameter and upward, and all the standing pine is reckoned, be it never so far from stream or lakeside. The demand for lumber has wrought the change in regard to size, and the new method of logging by pole and iron railroad has brought the remotest pine within reach of mills and market.

In the earlier days of the lumber industry of the north snow was relied upon for moving logs from the stump to the stream or lake, and is still to a large extent. But in Michigan the demand for raw material to feed the mills has become so urgent that snow and frost are elements too fickle to base a year's operations upon. In the old days the loggers operated near streams, had an investment of a limited capital, were supplying a rather profitless demand, and did the best they could with ice and snow. In open winters they brooked the loss of idle men and teams and unfulfilled contracts as best they could. Latterly lumbering has become a profitable enterprise. Vast capital is invested in lands, stumpage mills and outfit. The yearly demand calls for 7,000,000,000 feet of lumber, and it must be met by a supply. The energy of money has grappled the logging industry, and dispenses with the agency of frost. Logging railroads have largely taken the place of the sled for long hauls. Pole roads are used for shorter hauls, and together they furnish a means whereby logging is carried forward in the snowless season as well as in the winter. The log supply no longer depends on the character of the season, as was once so much the case. The requisite number of sticks can be put in to keep the mills running in any event.

The pole road is a simple tramway of poles, flattened for the car wheels, and placed end to end along the surface of the ground. Broad flanged wheels run on this rude track, and bear up immense loads of logs and convey them from the stump to the water with a great saving of power. The cars are drawn by horses, mules or oxen. This kind of road is much used in the south. But the iron or steel track logging railway is triumph of modern forest industry. By its agency vast forests of splendid pine in the interior of Michigan have been penetrated, and their crude wealth brought out to the manufacturing centres. But for this means the annual forest product of Michigan would have been one-third less than it is to-day, but regions that are now denuded would still have been clothed with a heavy growth of pine. Still it must be said that the logging railroad has saved a

vast amount of timber wealth from destruction by fire. It is well known by those familiar with forestry that in all the pine regions, especially in Michigan, devastating fires annually sweep over wide areas, and a large proportion of the most valuable timber is scorched and killed before the lumbermen can reach it. If pine is not cut and put into the water during the winter following its being killed by fire, the succeeding season it becomes worm-eaten and "powder-pasted," and nearly or quite useless for sawing into lumber. Immense amounts of pine were formerly lost in this way. But since capital and enterprise have promoted the building of logging railroads, a great saving of burned timber has been made. A pine owner nowadays would be considered considerably lacking in enterprise if he permitted a large tract of burned pine to go to waste by neglecting to penetrate it with a railroad. The construction of railway lines like the Grand Rapids and Indiana, the Flint and Pere Marquette, the Detroit, Mackinac and Marquette, and others, through northern Michigan, has greatly developed the lumber industry of the State, by furnishing facilities for conveying the product to market. Like railroad facilities are being extended through northern Wisconsin, and are bringing the remotest timber resources of that State within reach of the lumbermen.

THE LUMBER INDUSTRY OF THE UNITED STATES.

The census department has issued a bulletin upon the lumber industry of the United States, from which we have compiled some interesting figures. The number of establishments for the entire country is 25,793, having an aggregate capital of \$181,166,122, and employing 148,000 hands. During the census year the value of lumber used by these mills was \$139,835,869, and the value of the product, after being sawed, was \$223,367,729. Over \$31,000,000 was paid out in wages. According to the value of products, Michigan ranked first, with \$52,449,928; Pennsylvania second, with \$22,457,359; Wisconsin third, with \$17,652,347; New York fourth, with \$14,336,910; Indiana fifth, with \$14,260,830; Ohio sixth, \$13,864,460; Maine seventh, 7,933,868; and Minnesota eighth, \$7,366,038. The statistics for the southern states are as follows:

State.	No. of establishments.	Capital.	Value of products.
Alabama	354	\$1,542,655	\$2,640,082
Arkansas	310	1,007,040	1,700,313
Florida	185	2,017,560	3,000,291
Georgia	652	2,031,458	2,827,310
Kentucky	670	2,000,558	2,064,261
Louisiana	115	903,050	1,704,640
Maryland	300	1,237,693	1,920,322
Mississippi	294	1,220,120	1,720,700
North Carolina	774	1,743,217	2,672,708
South Carolina	420	1,054,503	1,314,407
Texas	175	904,000	1,604,440
Tennessee	324	1,600,052	2,074,449
Virginia	907	2,623,082	3,011,419
West Virginia	472	1,663,920	2,431,657
Total	6,028	\$23,550,070	\$29,930,028

While these figures show that there is a large lumber business at the south, yet at the same time, they give some idea as to how very small it is with what other sections do, or when compared with the amount of standing timber in the South. A few comparisons may show the force of this. During the census year the value of the lumber cut in Michigan was over \$52,000,000, against \$3,600,000 for Texas; but the latter state now has 67,000,000,000 feet of pine standing, while the former has 35,000,000,000 feet. Louisiana has 48,000,000,000 feet of pine standing, and the value of her lumber products for the census year was only \$1,751,640, while Wisconsin has 41,000,000,000 feet standing, and her lumber product was valued at nearly \$13,000,000. The vast lumber interests of the south are just beginning to attract the attention they deserve, and there are already signs of a local development which promises to be very rapid in the future.

The northern and western states have in many instances cut the bulk of their best timber, and the mill owners are now looking to the south with a view of transferring their operations to that section. In some of the southern states, especially Florida, the demand for lumber for building purposes is very active, due to the heavy immigration, and this must continue for many years. — Baltimore Journal of Commerce.

THE SAWDUST CONTROVERSY.

The Northwestern Lumberman says:—Notwithstanding the result of the investigation of the Minneapolis Minn., sawdust committee on the navigation question, the St. Paul opposers are as aggressive as ever, and propose to clean out the Minneapolis interests on general principles, whether they are injuring or benefitting navigation. Ignoring entirely the subject-matter of the committee's report, the irrepressible Chamber of Commerce of St. Paul proceeds to "resolute" the Minneapolis mill men out of existence, as follows:—

Resolved,—That this Chamber of Commerce, in behalf of the citizens of the state of Minnesota and the entire Northwest, respectfully requests the attorney-general of the United States to ask for an injunction restraining all saw mills in the state of Minnesota from depositing mill refuse and sawdust in the Mississippi and Rum Rivers, and other navigable rivers of this state, as recommended by Col. Farquhar, United States engineer, formerly in charge of the improvement of the Mississippi at and below St. Paul, and by Maj. Mackenzie, now in charge of the same work, in his recent report to the chief engineers, the deposits being, in the opinion of the government engineers and steamboat men, the fruitful cause of obstructions to navigation, and injurious and destructive to the works of the government now in progress. The above was unanimously adopted.

There is one feature about the sawdust controversy, which is to be deprecated. The matter has been utilized as political capital to furnish the basis for continued agitation. St. Paul and Duluth are red-hot after Minneapolis and its "pine land rings," and its journals pour out gall and wormwood in endless quantity, as tonic bitters for their river neighbour. For this reason much that is said on the sawdust question is apt to be the product of prejudice, and largely political fustian. That is no way to treat an important question. If the agitators have any real grounds for complaint, and can disprove the assertions of the committee that has reported in the premises, they should go about their work intelligently and prove what they allege. The milling interest is a heavy one, contributing in an enormous degree to the general prosperity of the Mississippi valley, and navigation as a whole is of immense importance likewise. To warrant inconveniencing the former interest it is necessary to show that navigation will suffer the most by the alleged evil.

While very radical in their assertions the agitators are decidedly meager in their demonstration, and it is an important fact that nearly all the volcanic wrath on the subject has emanated from the jealous rivalry of sister cities, the general community having rested very easy on the question.

The Pioneer Press is inclined to believe that the hullabaloo that has been raised up is without much ground, and produces the following as a probable proof that the St. Paul agitators are on the wrong track:—

"Canada furnishes an interesting contribution to the current discussion of the sawdust question in the shape of a pamphlet containing the reports, made in 1873, by Hon. Wm. J. Alpine and Prof. D. M. Greene, civil engineers, on "Wood and Sawdust Deposits in the Hudson and Ottawa rivers." The points considered are: "What are the causes that induce the formation of bars and obstructions in navigable and other streams? What material usually compose such bars and obstructions? What are the specific gravities of these materials? What velocities of current are necessary to take up and transport these materials to a point of final deposition in the bar?" The conclusion reached, after careful investigation and experiment, accord with the facts found by the committee of the Minneapolis board of trade in their recent investigation of the channel of the Mississippi

river between Minneapolis and the head of Lake Pepin. They find that "a current velocity considerably less than one-fifth of a mile per hour suffices to take up and transport slowly coarse, saturated pine sawdust; that a velocity of one-fifth of a mile per hour produces a very decided movement down stream of such particles, and that a velocity of one-fourth of a mile per hour suffices for their entire and instantaneous removal," and the general conclusions were that "saturated pine sawdust will be permanently deposited in water when the velocity of the current exceeds twenty-five hundredths of a foot per second, or one-sixth of a mile per hour, and that bars of sand and sawdust combined will not be formed under any circumstances unless there exist expansions of the river below such sand-bars sufficient to make a cross section more than double that at the site of the bar." These conclusions are the more important from the fact that they are based upon investigations in streams where sawdust has been annually deposited in vast quantities during the last fifty years.

SOUTHERN LUMBER.

Several Grand Rapids lumbermen have invested in pine lands and organized the Pascagoula Lumber Company. The *Eagle* says:—"These parties have been for some quietly examining and estimating time through a large portion of the pine belt of the Mississippi. Much of the work has been done by members of the company and the remainder by men of known experience whom they have employed for that purpose since March, 1881.

Instead of hastily locating whatever they found vacant, they have taken time to examine a large portion of the available lands in the state in order to make the very best selections possible. The result is, they have obtained, partly from the government, and partly from private parties, a choice tract of 50,000 acres of the long leaf yellow pine, chiefly located on the Pascagoula river and its tributaries, where they can reach inland markets by rail and also have the facilities of river floating, and manufacturing where they have seaport navigation to almost any part of the civilized world, and they will immediately commence active operations in the manufacturing of the timber into lumber.—*Lumberman's Gazette.*

PRODUCE OF CROWN FORESTS.

The sixtieth report of the Commissioners of the Crown Forests, Woods, and Land Revenues has just been published, from which we gather that the amount received from all sources for forest produce, during the year ending March 31st, 1882, was £36,619 14s. 4d. This was divided as follows:—Windsor park and woods, £0, 119 9s. 6d.; New Forest, £12,222 10s. 6d.; Dean Forest, £7,984 5s. 9d.; Uighmeadow Wood, £3,798 7s. 7d.; Alice Holt Woods, £1, 190 6s. 9d.; Woolmer Estate, £3,354 19s. 8d.; Bere Woods, £1,255 1s. 6d.; Parkhurst Woods, £643 13s. 1d.

In addition, the revenue from Crown Estates for timber during the twelve month was as follows:—

Stagden (Beds)	32	12	4
Windsor (Berks)	—	—	—
Delamere (Chester)	611	6	11
Chopwell (Durham)	2	12	6
Eltham (Kent)	806	4	2
Torver (Lancs)	—	—	—
Hazleborough and Salcey (Northampton)	966	15	8
Manor of St. Brivels (Gloucester)	0	3	0
Carlsbrooke (Hants)	0	6	0
Billingborough and Gedney (Lincoln)	93	20	0
Egham and Esher, &c., (Surrey)	909	10	6
Poyning (Sussex)	42	8	2
Bromham (Wilts)	1	5	0
Total	£2,968	14	2

WANTON DESTRUCTION.

The *Lumberman's Gazette* says:—"Timber destruction of the most wanton description is among the great evils which threaten the lumber industry of the country. Vast quantities of hemlock and oak are being destroyed for the bark alone, where the timber might be put to practical use. Untold thousands of feet of hemlock have been destroyed in Michigan alone in this manner, notwithstanding the growing importance and value of the wood, and still the work

of destruction is continued. Young trees which, in a few years would come into the market are slashed down with the most shameful and wasteful extravagance, and larger trees are left to rot in the forest after having been stripped of the bark. In California, one of the hardiest trees in the state, known and designated as chestnut oak, is being sacrificed in the same ruthless manner. This slaughter is being accomplished in both cases to satisfy the demand for bark for the purpose of tanning. The leather business has been unusually good for a few years past, and the consequence is that over large districts in different states, oak and hemlock is being sacrificed in the interest of present pecuniary gain, the trunks being peeled and then left to decay. Some action to prevent such wanton destruction is demanded.

Russian Export Duty on Wood.

The following appears in the *Timber Trades Journal*:—

Sir,—Can you inform me what foundation there is for the rumor that a duty will be put on all timber exported from Russia next season? My Cronstadt representative writes me, under date October 7th, that nobody there knows anything about it. However, as the Russian Custom House has this season compelled us to specify the value of goods exported by each ship in the declaration now required by them, and the Guild Papers Commission, in going their rounds, are requiring from each shipper a schedule of his last year's exports, with values, &c., there may be some truth in the report.—I am, &c., J. R. BOYCE, Granite Wharf, Wapping, E., Oct., 19th.

[We have no further corroboration of the above report since our last notes on the subject; but, as there is no smoke without a fire, we may conclude that something of the nature referred to by our correspondent is on the tapis. The large increase in the trade in timber with Russia the last ten years has no doubt been taken into consideration by those in authority as a means of increasing the revenue.—(Ed. T. T. J.)

Lumber Business.

In speaking of the increasing importance of the lumber business at Duluth, the *Sec.* of that city, is very exuberant, as it is probably warranted in being. It says "there will be between seventy-five million and one hundred million feet of logs come down the Nenadji river next season. There have been contracts for that amount made already. This is a good instance of the growth of the lumber interests of Duluth. This amount would almost cover the entire cut of this season here, while last year only about one-third of the supply came from that river; should the supply from all the other sources increase as on the Nenadji there must necessarily be a very large increase in the lumber business in Duluth next summer."

Veneers and Panels.

The enterprising and wideawake city of Grand Rapids, Mich., is to have a new wood-working establishment in the shape of a veneer and panel manufactory, which will answer to the name of the Grand Rapids Veneer & Panel Company. The building, which is already up, is a large one, and new and heavy machinery will be used. The veneers will be cut from the log, and will be an eighth of an inch thick. For panels these veneers will be glued together. The stock of the company is owned principally by the furniture men.

Consumption Cured.

An old physician, retired from active practice having had placed in his hands by an East Indian 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 on return mail, free of charge by addressing with stamp or stamped self addressed envelope to

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

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DEVOTED TO THE LUMBER AND TIMBER INTERESTS OF THE DOMINION.

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PETERBOROUGH, Ont. NOV. 15, 1882.

THE cut of the N. Ludington Company, at Menominee, Mich., will be 30,000,000 feet by the close of the season.

THE head office of the Keewatin Lumbering and Manufacturing company has been transferred from the Lake of the Woods to Hamilton.

WOOD worms in woodwork can be destroyed with benzine. When used in proper quantities it kills off the insect as well as the larva and eggs.

It is said that at Evansville, Ind., more hardwood lumber is cut than in any locality of the same size in the world. There are fourteen saw mills running which are capable of cutting 100,000,000 feet a year.

THE *Northwestern Lumberman* says:—Elisha Pike, of Bayfield, Wis., offers to donate a large and well located mill site on Pike's Bay to any one who will erect a first-class mill thereon. This winter 5,000,000 feet of logs will be banked on the bay.

A NEW pulp mill has been built at Great Works, Mo., to utilize the poplar growing in that section. The new demand will permit many of the farmers to realize on a wood that has been of little value, either for fuel or lumber, the variety not being desirable for the latter purpose.

CHICAGO, being the great centre of the lumber trade, is naturally well supplied with organs for that special industry. The *Lumber Trade Journal* of that city is a new aspirant for the patronage of the trade, and should obtain a large share of it as it, seems to be carefully edited and compiled, and its "get-up" is excellent.

It appears that government land, in Dakota especially, is being covered with fictitious timber claims. Land agents file these claims in the names of non-existent persons, and then when a bona fide settler comes along, the agent sells him a relinquishment of his claim, at as great a price as he can obtain. The law should certainly be changed so as to head off these pirates,

AN Ottawa correspondent writing on Nov. 6th, says:—Owing to the high price of pork lumbermen are dealing extensively in beef. Three hundred head of cattle were shipped to-day for the shanties of the British Canadian Lumber Company.

ONE morning recently about 2.30 o'clock Mr. John Kincaid's steam saw and shingle mills, Omece, were discovered to be on fire. Mr. Kincaid's loss is about \$6,500, on which there is only \$1,400 insurance. A number of men are thrown out of employment by this disastrous fire, which is supposed to be the work of an incendiary.

FOR the first time in several years there has been a clean drive in the Eau Claire, Wis., river. All the mills of the Eau Claire Lumber Company are turning out their full average product, but the log supply exceeds what can be sawed by the close of navigation. There are 13,000,000 feet in store. The company will have 10 camps, half of which have been started.

THE *Buffalo Lumber World* says:—From all quarters come reports that every indication is for a very busy season among the loggers. Many of the prominent lumber firms have decided to largely increase the output of logs during the coming winter and it seems probable that more logs will be banked than ever before. It might be well to remember that there is such a possibility as "getting too much of a good thing."

IN the course of a few years the Northern Pacific railway will run through an avenue of shade trees hundreds of miles in length. This extensive tree planting is being done to protect the road from storms and snowdrifts. In addition to having a large gang of men at this work between Fargo and Bismark, in Dakota, the officers have distributed immense quantities of seedlings and cuttings to the farmers settled on the land grant, and offered prizes for skill in forestry.

WE have received from the office of the *Northwestern Lumberman* a neat little pamphlet which is a detailed prospectus of that great organ of the trade. Among its contents are some valuable and very clear colored diagrams, eight in number, showing at a glance the estimated quantity of white pine and the long and short leaf yellow pine in the various states, the quantities of lumber and shingles supplied for the last twenty years and the prices for ten years past.

THE Carson river, in Nevada, is almost choked for miles by a heavy cordwood drive. The sticks lie low in water, giving evidence of being thoroughly soaked. The wood comes from the mountains, as far as 60 to 100 miles from Carson. Under ordinary circumstances a good drive costs but 15 cents a cord, but the present one will cost 10 times that. Just as the wood started the water fell, and instead of reaching its destination in June last, the drive was delayed till now, incurring heavy additional expense.

WE have received the *American Journal of Forestry*, the new organ devoted to the interests of forest tree planting, the formation and care of woodlands and ornamental plantations generally, and to the various economies therein concerned. It is edited by Franklin B. Hough, Ph. D. Chief of the Forestry Division of the United States Department of Agriculture, and is published by Robert Clarke & Co., of Cincinnati, Ohio. It seems admirably fitted to advocate the interests for the benefit of which it is published.

A St. Paul paper says:—The Big Woods of Minnesota are rightly named, for they cover 5,000 square miles, or 3,200,000 acres of surface. The Big Woods contain only hardwood growths, including white and black oak, maple, hickory, basswood, elm, cottonwood, tamarac, and enough other varieties to make an aggregate of over 30 different kinds. This hardwood tract extends in a belt across the middle of the state, and surrounding its northeastern corner is an immense pine region covering 21,000,000 square miles, or 13,440,000 square acres.

THE *Lumberman's Gazette* says:—Visitors to the field of lumber operations in Michigan or Wisconsin pineries, on viewing the destruction and wanton waste of timber that is being added to that already in existence to feed the fire fiend in case of an outbreak in a dry season, would hardly believe that forestry congresses are being held throughout the country having in view the prevention of the very thing which is being accomplished so steadily and persistently.

THE Grand Rapids Democrat says that dealers in oak, maple, cherry and other varieties of Michigan timber, who attempted to follow the lead of the pine manufacturers by crowding up prices, overreached themselves. Furniture makers found it impossible to buy the timber mentioned and at the same time compete with those who cut their own timber. The outcome has been that a number of Grand Rapids furniture men are investing heavily in the splendid hardwood lands of northern Michigan. Other manufacturers, who purchased sufficient lumber when it was cheap to carry them through for several years, "will probably be forced to go to the woods for supplies" when stocks are gone.

OUR CROWN LAND POLICY.

THERE is no subject with which the Ontario Government and Legislature has to deal of greater importance to the people than that of our Crown Lands, and there is to-day no subject which requires the earnest and immediate consideration of our public men more than this one. That the Crown Land policy of this province since confederation has not been what it should have been will be generally conceded by every one who has any knowledge of the subject, no matter how much they may differ as to what our policy should be. In this, as in most other things, it is much easier to point out defects than to suggest practical remedies—to pull down than to build up, especially when in the up-building one will be brought face to face at every turn with interests created by our past policy, which no honest and just man dare ignore. But, great as are the difficulties in the way of a remodeling of our Crown Land policy, they will have to be faced at no distant day, and the sooner the better, if we desire to avoid much the same awakening as that which awaits the apothirist when he, all at once, discovers that he has spent his last shilling. This province, like him, is unquestionably spending, if not its last shilling, its timber patrimony, at a rate which will soon bring it to grief if we do not speedily change our present wasteful policy. Great as will be its loss to the province as a revenue producer, its disappearance must prove a much greater loss to the people by reason of the enhanced price which they will have to pay for every board and stick which they consume and the loss of employment which its decreasing manufacture will entail. About the certainty of these results we apprehend there will be no dispute, we will therefore pass on to the consideration of the principles which seem to us as necessary to the attainment of the object which we assume all claim to have in view.

In the first place let us say that we look upon our crown domain, with all either growing upon or lying beneath it, as the property of the people, to be managed so as to yield the largest possible return to the owners, and in the second place that we are of the opinion that the great defect of our past and present administration in this respect consists in the attempts to promote settlement and protect the timber for the lumberer in the same districts and even upon the same lots—an attempt which we venture to assert has lost to this province more revenue, and to the people of the country more employment, than we have gained, or can gain for years to come, from the settlers which have gone into, or will go into our free grant districts, for the purpose of agriculture. However, there is no use crying over spilt milk; the question is, what should now be done? Speaking generally we should say that it is the duty of the Provincial Government, before another license is granted or another township is opened for settlement, to ascertain whether the townships proposed to be licensed or settled are more valuable for their timber or for settlement. If the former, then they should not be opened for settlement, and the licenses should be sold upon that under-

standing in order that the greatest possible inducement may be held out to the purchaser to husband the timber; if on the other hand it be decided that the township is so well adapted for settlement that its lands will be generally taken up for bona fide agricultural purposes, notwithstanding the inducements now held out to such settlers to go west, then no license to cut timber in such a township should be granted, but the timber which may be therein should pass to the settler with his location ticket subject to certain restrictions and to the payment of a rate of dues which would be equal to the current value of the timber at the stump. So far as the lands, already not opened to settlement, or already not largely surrounded by townships in which settlers have been located are concerned, we can see little difficulty in adopting some such policy as that which we have indicated, but the accomplishment of anything practical and substantial in the same direction in those districts covered by lumbering licenses, and opened for settlement and already partially settled, will be a matter of very great difficulty, although we should hope not an impossibility with the right man in the Crown Lands Office. Vested rights, and both the licensee and settler are in possession of vested rights, must be respected, no matter what the consequence may be. The Province cannot afford to break faith with those with whom it has entered into engagements, and upon the faith of which private individuals have invested their means, perhaps their all, but that is no reason why, even in these districts, an honest effort should not be made to bring about a change which would put an end to the present strife between lumberman and settler, and to that destruction of valuable property which is occasioned more or less by their antagonism.—*Peterborough Review*.

LUMBERING IN WINNIPEG.

To the Editor of the *Canada Lumberman*.

DEAR SIR,—The idea of pretty extensive lumber manufacturing in the capital city of the Prairie Province, may appear to many as somewhat singular; but such is the fact. The immense lumber market is manifest at one glance, but the material is nowhere to be seen. The logs from the mills at Winnipeg are obtained chiefly in Minnesota; being raw material they pay no duty; they are principally white and red pine with a small quantity of oak. Spruce and tamarac are obtained around Lake Winnipeg and are generally sawn there.

There are three first-class circular mills which have commenced operations this fall and fully as many more second rate mills. All are busy. The Rainy Lake Company have a large two circular mill with engine and machinery principally from Stearns. The edger and trimmers we observed were from Sewrys, of Barrie, Ontario. This is a good mill with large cutting capacity, but we think not the kind of mill that has earned for Stearns & Co. their enviable reputation. Messrs. Jarvis & Berrigo's mill has been remodelled this past summer and an excellent gang added. However, their motive power, though apparently ample, is not equal to its demand, so the gang hangs up its music.

The latest, and as respects quantity of machinery the least, is Mr. D. E. Sprague's single circular mill, it is the only thoroughly Canadian mill of the three. It, however, asks no favours of the critical lumberman. One of these made the apt remark that the mill was built by men who know what was wanted and knew how to make it. It was planned by Mr. Charles Elvidge, of Newmarket, Ontario, the boilers, engine and machinery were built by Mr. Wm. Hamilton, of Peterborough, and placed in position by W. H. Trout of the same town, and is now ably superintended by S. C. Saunders, formerly of the Thompson Smith mills, Bradford, Ontario.

The boilers and engine deserve special mention, the boilers being of steel well set in good brickwork with neat, durable and convenient fronts, and an excellent arrangement of heater, pump, &c. In the engine Mr. Hamilton surpasses his well known good reputation. It is a slide valve engine, 18x24, runs 120 revolutions per minute, got up somewhat in the direct and effective style of the Corliss, has the valve balanced and it can be adjusted to cut off for any required work. Has the Judge governor; has

large wearing surfaces, and seems to be got up on liberal principles throughout. It performs its duty with an ease and grace of motion that is pleasant to see; an engineer must surely take pride in it. We regard it as about the ne plus ultra of saw mill engines.

The building is a genuine modern lumber factory quite different from the shedlike structure we mentally associate with a saw mill. This is a completely finished building; men can work in it comfortably in all weather. Apparently the logs come up from the Red River and enter the mill on their own account and after a brief career of merciless cutting they are metamorphosed into boards and found shooting out through a small opening in the opposite end, meanwhile special machinery takes care of the refuse, all of which is valuable here, the better part of the slabs being made into the usual lath, pickets, &c.

Millmen in Winnipeg have one great advantage over those in other places—they are in their market, and the most of their stuff is cut to order, consequently the immense piling grounds and large tramway systems, so common at the large lumbering mills of Ontario, are not required here, as the lumber goes direct to the customer.

At Mr. Sprague's mill there is a large elevated platform, on which the lumber is assorted, and from which it is loaded on to specially made waggons and delivered up town or in the yard as required. These waggons deserve a passing notice. They are arranged to be loaded without the team being kept waiting. Winnipeggers know the value of good horseflesh and the value of time, so they provide two or three pairs of hind wheels to one pair of front wheels, then with the help of a simple tressel, the hind wheels are loaded, teamster backs the front wheels under, readily couples up, and is away. To unload he generally uncouples, draws out the front wheels, turns around, catches on to the back end, and draws out hind wheels, then couples up again and returns to repeat the operation on another load.

Much the greater part of the lumber used here comes from St. Paul. It is also noticeable that in this trade we do not get what we give. In the east we furnish the Americans full dimensions, that is 1 1/2 for one inch, &c. In the west we get 7/8ths for one inch, and all dimensions scant.

Yours truly,
ONTARIO.

Winnipeg, Oct. 28.

FORESTRY.

The subject of American forestry at this moment possesses a broad and sweeping significance, and in view particularly of the results of a long series of investigation and experiments, as presented and discussed at the two great forestry meetings, held in Montreal and Cincinnati during the year, should not fail to impress its importance upon the minds, not only of those directly interested, but the consideration of the public generally. There is no object of interest to the farmer that should engage more of his attention for deliberation, discussion and earnest action than the resources whence he is to draw his building material, and in the nature of its durability and economy. For years past our extensive white pine forests, whose magnitude in the early years of colonization might well have challenged the unwelcome prophecies of to-day have been pillaged, destroyed and neglected, right and left, without a consideration given by those who controlled them to the necessity of surplanting the devastated lands with new growth, or of protecting the standing timber from the ravages of forest fires.

The Eastern States afford the best evidence of this monument of self-aggrandizement, and closely following come the States of Michigan, Wisconsin and Minnesota, with their resources predicted by good figures to fail within a few years. Of course it cannot be expected that men eager to become rich and powerful would give much thought to the fact that they were under some little obligation to shield and repair as well as destroy. It is, however, the special province of others interested in the science of forestry, with doubtless some degree of philanthropic desire, and its practical demonstration in a large sense, to present to the judgment

and understanding of our general government, as well as those of the various states in which there is still left evident reason for attention to the matter, the necessity of immediate steps in the direction of retrieving—before it becomes too late—a few at least of the neglected opportunities consequent upon the indifference and inattention of individual corporations.

With an apparent and undeniable demand for timber in the future progress and growth of the country, and unquestionable evidence that these lands which once teemed with the best white pine in the world are again nurturing a similar growth, it is to be hoped that no measure may be overlooked that will secure early encouragements in regard to the means to be employed and adequate provision from the numerous authorities appealed to for the required aid and action.

Several estimates have recently been made as to the quantity of standing white pine, and if there is any correctness in the figures, it only points to the rapid consumption of the past and present, and creates an anxiety as to the future destiny of every other kind of timber standing in the states. Men may conjecture and speculate upon the wonderful invention of the future, which is to be the substitute for an exhausted timber supply, but the light which falls upon the subject from the careful study and investigations of many able scientists, reflects the assurance that the best substitute is a new crop of timber.—Timber Trades Journal.

PORTABLE HOUSES.

The Lumberman's Gazette, of Bay City, Michigan, says:—The construction of portable houses which was commenced at Ottawa, Ont., some time ago, on a small scale, has reached great dimensions and the investors in the enterprise have secured a veritable bonanza. The cheapness and adaptability of these novel buildings, and the ease and quickness with which they can be utilized, is their chief recommendation. It is an old and true saying that necessity is the mother of inventions. The progress of the growth of Manitoba and the northwest, and the demand for comfortable shelter for the thousands of newly arrived immigrants there, was the necessity in this case which aroused the ingenuity of man to supply an absolute and imperative want. A bright idea flashed across the brain of one of those who realized the necessity and also the fortune for him who should immediately supply the demand. Houses could be constructed by machinery, in sections, ready for occupancy as soon as put together, much cheaper than the lumber could be transported and the houses constructed with the rude available appliances. The idea no sooner presented itself than it was acted on and the result is that the business received an impetus by the continued emigration to the northwest, and has reached mammoth proportions, and the novel buildings are not only being utilized in the new settlements, but a demand has arisen for them in other quarters. An Ottawa dispatch says that these houses are being shipped off at the rate of ten carloads per week for the demands of a single line of railroad. It is also stated that the manufacturer has interviewed the consul-general to Canada from Brazil, with a view of establishing a trade with that country in these buildings, and the business commenced with small beginnings to supply a present want is now one of the important industries in the capital of Ontario, and the inventor has not only furnished employment for an army of laborers, but is reaping a handsome reward for his shrewdness. It is said also, that these buildings are desirable not only because of adaptability under pressing circumstances, but that they are absolutely preferable to the ordinary cheap class of building in the rural districts because of their comfort and convenience.

A GREAT FOREST.

In the Century for October, E. V. Samloy gave another of his sketches of a journey across the continent on the line of the Northern Pacific railway, in which he describes the great forest in the region of Lake Pend d'Oreille. This timber belt, probably 200 miles in extent, east and west, lies west of the Rockies, and covers the D'Aleao and Spokane mountains,

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ranges that are not so high or rugged as to preclude lumbering operations. The district is watered by Pend d'Oreille and Spokane rivers, streams adapted for logging and mill sites, and Lake Pend d'Oreille, an irregular body of water of considerable size lies in the midst of it. This forest stretches quite across the Panhandle of Idaho, and laps over on the eastward into Montana, and on the westward into Washington territory. The Northern Pacific road sweeps through it in a curve, bending northward toward the British line, because a passage over the Rocky Mountains had to be sought to the southward of the direct shoot of the line from east to west. A few small mills have been started along the Pend d'Oreille and Spokane rivers and on the lake for the purpose of sawing lumber and timber for the railroad. The road is being graded in the neighborhood of the lake, 2,000 or more Chinamen being employed in the work. Six hundred miles of roadbed is to be finished, and the track laid before the Pend d'Oreille forest will be opened up to coast and west traffic. When the road is opened through, grand rush of lumbermen to these primeval woods will surely follow. A great drawback on operations will be the Flathead Indian reservation that lies in the midst of the region. But the Indian will have to go when the lumberman puts in an appearance. Mr. Smalley's description of the region, though more rhapsodical than business like, is graphic and interesting, and exhibits the country as one not only rich in forest growth, but beautiful to the eye of the lover of striking landscape views, and capable of profitable husbandry.

A CURE FOR HEADACHE.—Thousands are suffering martyrs to this distressing trouble. If you have pure and properly vitalized blood coursing through your veins; if the stomach, liver, kidneys and bowels act rightly, you will never experience headache. Burdock Blood Bitters will effect this desirable condition, if properly used. Try it.

There is no better cough medicine in the world than the preparation known as "Pectoria." It promptly cures all throat, lung and chest affections. Its good effects can be felt after the first dose. It soothes, warms and penetrates the bronchial tubes, affording immediate relief and a speedy cure. Have you got a cough or cold? Then try it. For sale everywhere, price 25 cents.

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The extension of the Canadian Pacific Railway westward towards Manitoba, the establishment of steamboats on Lake Tomiscomingue, Upper Ottawa, and other recent improvements, have made this property, formerly considered remote, very accessible to the operator for the United States as well as the European markets, both as regards getting in supplies and in driving the lumber to market. A raft of large board pine timber cut in the immediate vicinity of this property reached Quebec this year long before timber cut on limits only half the distance away, but forced to rely on the precarious height of water of creeks and subsiding streams, while the timber on this tract has the large volume of the "Grand" River itself to float it to market.

Full particulars will be promptly sent on application to

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AT TWO O'CLOCK P. M.

Table with 3 columns: River/Gatineau, License Number, and Miles. Lists various timber limits for sale.

Terms and conditions made known at time of Sale. Further information can be obtained by application to R. C. W. MacCuaig, Auctioneer, or Crown Timber Office, Ottawa.

R. C. W. MacCuaig, Auctioneer and Real Estate Agent, 63 Sparks Street.

Ottawa, 1st September, 1882.

4113

PREVENTING DECAY OF WOOD.

The *Timber Trades Journal* contains the following contribution by M. Powis Bale, M. I. M. E., author of "Wood-working Machinery, its Rise, Progress, and Construction," &c.:

Some woods decay much more rapidly than others; but they will all, in some situations, lose their fibrous texture, and with it their properties. To ascertain the causes which act upon woods, and effect their destruction, is an important object both to the builder and to the public.

All vegetable as well as animal substances, when deprived of life, are subject to decay. If the trunk or branch of a tree be cut horizontally it will be seen that it consists of a series of concentric layers, differing from each other in color and tenacity. In distinct species of trees these layers present very different appearances, but in all cases the outer rings are more porous and softer than the interior. Wood is essentially made up of vessels and cells, and the only solid parts are the coats which form them. These vessels carry the sap which circulates through the tree, gives life and energy to its existence, and is the cause of the formation of leaves, flowers, and fruit. But when the tree is dead, and the sap is still in the wood, it becomes the cause of vegetable decomposition by the process of fermentation. There are five distinct species of vegetable fermentation—the saccharine, the coloring, the vinous, the acetous, and the putrefactive. We are indebted to Mr. Kyan for the discovery that albumin is the cause of putrefactive fermentation, and the subsequent decomposition of vegetable matter.

Something may be done towards the prevention of decay by felling the timber at a proper season. A tree may be felled too soon or too late, in relation to its age and to the period of the year. A tree may be so young that no part of it shall have the proper degree of hardness, and even its heartwood may be no better than sapwood; or a tree may be felled when it is so old that the wood, if not decayed, may have become brittle, losing all the elasticity of maturity. The time required to bring the several kinds of trees to maturity varies according to the nature of the tree and the situation in which it may be growing. Authors differ a century as to the age at which oak should be felled—some say 100 and others two hundred years; it must therefore be regulated according to circumstances. But it is also necessary that the timber trees should be felled at a proper season of the year; that is to say, when their vessels are least loaded with those juices which are ready for the production of sapwood and foliage. The timber of a tree felled in spring or in autumn would be especially liable to decay, for it would contain the element of decomposition. Midwinter is the proper time for cutting away, between the months of November and March, as the vegetative powers are then expended. There are some trees the bark of which is valuable, as well as the timber; and as the best time for felling it is not the best time for stripping the bark, it is customary to perform these labors at different periods. The oak bark, for instance, is generally taken off in early spring, and the timber is felled as soon as the foliage is dead; and this method is found to be highly advantageous to the durability of the timber. The sapwood is hardened, and all the available vegetable juices are expended in the production of foliage. Could this plan be adopted with other trees, it would be desirable; but the barks are not sufficiently valuable to pay the expense of stripping.

For the prevention of the ravages of worms and insects in timber, Evelyn recommends sulphur which has been immersed in nitric acid and to distilled dryness, which, being exposed to the air, dissolves into an oil. A solution of lime or an infusion of quassia wood are also recommended for the same purpose.

To cure dry rot in timber, subject it to a heat of 300 deg., thus destroying all reproduction of fungus. A solution of corrosive sublimate (bichloride of mercury) makes an effectual wash. Chapman says an ounce of corrosive sublimate to a gallon of water laid on hot; no other metallic solution should be mixed with it. A solution of sulphate of copper (commonly called blue vitriol) in the proportion of about half a pound of sulphate of copper to one gallon of

water, used hot, makes an excellent wash, and is cheaper than the preceding one. A strong solution of sulphate of iron is sometimes used, but it is not so effectual as that of copper, and sometimes a mixture of the two solutions has been used. Coal tar is said to have been found beneficial, but its strong smell is a great objection to its use; where the smell is not of importance it would assist in seasoning new timber which had been previously well dried. Charring new wood can only be expected to prevent infection, as decay may begin at the centre, and proceed without ever appearing at the surface of the beam; and therefore, if timber be not well seasoned, no permanent good can be obtained from charring.

A plan recently introduced into Belgium for preserving wood from the decay produced by the atmosphere, water, &c., is to fill the pores of the wood with liquid gutta-percha, which is said to effectually preserve it from moisture and the action of the sun. The process employed consists in exhausting the air from the pores of the wood and filling them with a gutta-percha solution, or by forcing the solution into the pores. The solid gutta-percha is liquefied by mixing therewith paraffin in the proportion of about two-thirds of gutta-percha to one of paraffin; the mixture is then subjected to the action of heat, and the gutta-percha becomes sufficiently liquid to be easily introduced into the pores of the wood. The gutta-percha, liquefied by this process hardens in the pores of the wood as soon as it becomes cold. Railway sleepers, telegraph poles, roofs, &c., treated in this way are said to stand well.

The improved method adopted in France for the preservation of wood by the application of lime is also reported to give excellent results. The plan pursued is to pile the planks in a tank, and to put over all a layer of quicklime, which is gradually slaked with water. Timber for mining purposes requires about a week to be thoroughly impregnated, and other wood more or less time, according to its thickness. The material acquires remarkable consistence and hardness, and, it is stated, on being subjected to this simple process, that it will never rot. Beechwood prepared in this way for hammers and other tools for ironwork is found to acquire the hardness of oak, without parting with any of its well known elasticity or toughness, and it also lasts longer.

Wood may also be preserved from rotting by impregnation with paraffin. As this, however, renders it more inflammable, it should be used with care, and as protection chiefly against water or acid and chemical fumes or liquids. It may be further protected by an external varnish or silicic acid. Wooden vessels which become totally rotten in two months under the action of acid and alkaline lyes, will last for two years when impregnated with paraffin. The wood is prepared by drying it in warm air for about three weeks, and then by steeping it in a bath of melted paraffin, to which has been added some petroleum, ether, or sulphuret of carbon. Care must be taken at this part of the process, as the bath is exceedingly inflammable.

TESTS ABOUT WOOD, &c.

Timber for posts is rendered almost proof against rot by thorough seasoning, charring, and immersion in hot coal tar.

Increase in Strength of Different Wood by Seasoning.—White pine, 9 per cent.; elm, 12.3 per cent.; oak, 26.6 per cent.; ash, 44.7 per cent.; beech, 61.9 per cent.

Comparative Resilience of various Kinds of Timber. Ash being 1, fir '4, elm '54, pitch pine '57, teak '59, oak '63, spruce '64, yellow pine '64, cedar '66, chestnut '73, larch '84, beech '86. By resilience is meant the quality of springing back, or toughness.

To Bend Wood.—Wood enclosed in a close chamber, and submitted to the action of steam for a limited time, will be rendered so pliant that it may be bent in almost any direction. The same process will also eliminate the sap from the wood and promote rapid seasoning.

Fireproofing for Wood.—Alum, 3 parts; green vitriol, 1 part; make a strong hot solution with water; make another weak solution with green vitriol in which pipeclay has been mixed to the consistence of a paint. Apply two coats

of the first dry, and then finish with one coat of the last.

To Prevent Wood from Cracking.—Place the wood in a bath of fused paraffin heated to 212 deg. Fahr., and allow it to remain as long as bubbles of air are given off. Then allow the paraffin to cool down to its point of congelation, and remove the wood and wipe off the adhering wax. Wood treated in this way is not likely to crack.

Comparative Value of Different Woods, showing their crushing strength and stiffness:—Oak, 6,555; English oak, 4,074; ash, 3,571; elm, 3,468; beech, 3,070; Quebec oak, 2,927; mahogany, 2,571; spruce, 2,522; walnut, 2,374; yellow pine, 2,103; sycamore, 1,833; cedar, 700.

Relative Hardness of woods.—Taking shell-bark hickory as the highest standard and calling that 100, other woods will compare with it for hardness as follows:—Shell-bark hickory, 100; pig-nut hickory, 96; white oak, 84; white ash, 77; dogwood, 76; scrub oak, 73; white hazel, 72; apple tree, 70; red oak, 69; white beech, 65; black walnut, 65; black birch, 62; yellow oak, 60; white elm, 58; hard maple, 56; red cedar, 56; wild cherry, 55; yellow pine, 54; chestnut, 52; yellow poplar, 51; butternut, 43; white birch, 43; white pine, 30.

Tensile Strength of Different Kinds of Wood, showing the weight or power required to tear asunder one square inch.—Lance, 23,000 lbs.; locust, 25,000 lbs.; mahogany, 21,000 lbs.; box, 20,000 lbs.; oak, African, 14,500 lbs.; bay, 14,000 lbs.; teak, 14,000 lbs.; cedar, 14,000 lbs.; ash, 14,000 lbs.; oak, seasoned, 13,600; elm, 13,400 lbs.; sycamore, 13,000 lbs.; willow, 13,000 lbs.; Christiana deal, 12,400 lbs.; mahogany, Spanish, 12,000 lbs.; pitch pine, 12,000 lbs.; white pine, American, 11,800 lbs.; white oak, 11,500 lbs.; lignum-vitæ, 11,800 lbs.; beech, 11,500 lbs.; chestnut, sweet, 10,500 lbs.; maple, 10,500 lbs.; white spruce, 10,290; oak, English, 10,000 lbs.; pear, 9,800 lbs.; larch, 9,500 lbs.; walnut, 7,800 lbs.; poplar, 7,000 lbs.; cypress, 6,000 lbs.

WESTERN LUMBER LANDS.

The statement was made in a recent issue of a New Orleans paper that the lumber market of Chicago had not a sufficient supply on hand to meet the demand of the trade. The article went on to say that the vast amount of building which is now going on throughout the west, and especially in Colorado, Kansas and New Mexico, creates a constant demand for lumber, and as for some time past Chicago has controlled the trade, the west naturally looks to her for all the building material it requires. Owing, however, to the increased trade, and to the fact that the terrible forest fires in 1881 destroyed about 800 square miles of the best Michigan pineries, lumber is becoming remarkably scarce in the north-west. The agents of Chicago lumbermen are said to be buying up pine lands in the south, and it is rumored that 1,000,000 acres, well timbered, have been purchased in Louisiana and Mississippi. A reporter for the *Times* called the attention of several Chicago dealers to these statements, and Mr. Carpenter and others who were spoken of agreed in saying that the supply of lumber in the west would not be exhausted for eight or twelve years yet. Moreover, the demand was by no means as great as was represented. The farmers having generally held their wheat for higher prices than were offered, had not enough ready money to create a boom in the lumber business. It will consequently be a long time before the lumbermen of the west will be forced to seek their supplies in the southern forests. No foundation could be found for the rumor that immense tracts had already been purchased in Louisiana.—*Chicago Times*.

A HINT TO FORESTERS.

The *Northwestern Lumberman* says.—There is a great deal said now-a-days about tree raising, but when the object of that industry—if it can be called so—is to add to the lumber supply of the country, there is a serious objection of which the enthusiasts make no mention. These enthusiasts teach that when there is place for a tree, along the bank of a creek, by a fence, or elsewhere, by all means plant one. That is all right so far as it goes, but by all means let the man who plants it understand at the start that

while the tree he fosters may beautify, shade, or turn the wind, it is not likely to be of any value to speak of for lumber. It is no news to any one acquainted with the forests that the trees best suited for lumber grow surrounded by other trees. Shaded on every side, in order to get the sunlight they reach up after it, and consequently grow tall. When there are no surroundings to shade them the limbs spring out close to the earth, and the trees grow more to top than trunk. Neither will the desired end be gained by planting trees as thickly as nature planted them in the woods which supply our saw logs. It seems to be a law in nature, if not in humanity, that the great should help forward the more feeble, and this is nowhere better illustrated than in the growth of forest trees. The tall tree is always standing in the way of the sapling, and the latter, that it may get the sustenance it needs from the light of the sun, shoots up and up, and this sapling in turn protects and urges forward the little staddle that starts its race of life under its protection.

EXTENSIVE LOGGING.

The *Northwestern Lumberman* says:—In every direction extensive logging preparations are being made. The indications are at present that more logs will be put in the coming season than in any one season before. No man can tell why there should be, but the fact that he cannot will have no tendency to lessen the cut. Operations on the main Michigan streams will be unusually heavy, and on several of those streams will be left over an unusually large number of old logs. The Muskegon will hold in its icy embrace something like 300,000,000 feet, nearly half as many as the mills at that point cut last season, and many will be wintered in the Manistee. In Wisconsin and Minnesota the amount carried over will not be large. Late rises in the streams have carried out many that were supposed to have been hung up, and the most of these that find their way down stream at this late day will be saved. A heavy manufacturer in referring to the extensive work that is likely to be done in the woods remarked, "the fools are not all dead yet." There are a few conservative saw-mill men, but when their lumber yields them the profit that it has for two or three years past the temptation to turn out as much of it as possible is very strong.

Georgia Woods.

At the Boston fair the state of Georgia exhibited the following list of native woods, which is supposed to cover all the varieties: Georgia pine, which is used largely for car building; poplar cherry, which is well adapted for cabinet work; whitewood, laurel, beech, red cedar, yellow poplar, maple, sycamore, red hickory, cypress, black walnut, China wood (not very well known), white pine, sassafras, dogwood, post oak, black gum, white ash, white oak, tight-eye (not unlike boxwood), sparkle berry, crab-apple, apple haw, willow, scaly-bark hickory, tupelo gum, white elm, May cherry, black locust, osage orange, chinquapin, cottonwood, red-bark, magnolia, black jack (resembling birds-eye maple), catawba, maple, red oak, white holly, red bay, white bay, red elm, mulberry, ironwood, black-haw, persimmon and parsley-haw.

Satisfactory Results in Montreal.

While Montreal is a model city in many respects, it is not exactly a quarter section of Paradise, as Capt. Goc. Murphy, Chief of Government police, can testify. A reporter of a Montreal journal waited upon this gentleman a short time ago, and put him the following query:

"Chief do you find the duties irksome and dangerous in your strange calling?"

"Irksome," replied Mr. Murphy, "I seldom find them; but that they are attended with danger is very true. There is danger to be faced, of course, from wind, weather and criminals, and the least of these dangers, is not those of exposure and bad weather. The heavy, moist atmosphere that gathers over the water is very conducive to rheumatism, and many of my men suffer from that complaint more or less. I believe that our danger from exposure from this time forward is past, as St. Jacobs Oil, if applied in time in cases of rheumatism, has a wonderful way of knocking that malady out of people. It certainly relieved me of a severe pain in my shoulders."

Chips.

It is estimated, from a proper source, that besides the lumber used for shelters at home, the territory of Washington will this year send abroad 365,000,000 feet of lumber.

At Houlton, Me., an important business in shingles and bark is done. F. Shaw & Co., of Boston, are building large hemlock bark extract works that will consume 20,000 cords of bark per annum.

SOME of the Manistee mills are engaged in cutting piece stuff and piling it up, in the expectation that it will bring two dollars in the spring, when seasoned, or two dollars more than it is worth at present at that point.

THE lumber business of the Pacific coast has increased from a single saw mill in 1848, situated near Bodega, Sonoma county, Cal., to over 350 mills at the present time, with a cutting capacity of nearly 1,000,000,000 feet annually.

BIG knots seem to be the thing now a-days. The Indianapolis Veneer Works, of Indianapolis, Ind., recently purchased a huge walnut knot which, when cut and trimmed, weighed 7,000 pounds. It is a sort of big bonanza knot.

THE burning of the lumber and planing mill of A. Backus & Sons at Detroit, was a severe blow to the industrial community as well as to the proprietors of the extensive institution. By it over 250 men were thrown out of employment, and property verging on half a million dollars destroyed.

A NOTABLE timber industry is being prosecuted in Lincoln county, Mo., where a man has a contract for getting out about 50,000 feet of pecan timber. He has a large force of men at work. The timber is to be shipped to St. Louis on barges, where it is sawed into lumber for making ice slides.

THE Wisconsin lumbermen are making preparations for a big winter's work, and standing pine is exchanging hands at high prices. A few days since 2,000,000 feet changed hands at Neillville, the consideration being \$12,200. The haul is four miles. Good No. 1 logs are worth \$9.50, and No. 2, \$8.50.

LOYD, Melrose & Polleys, of Neillville, Wis., will ship a saw mill, grist mill and cotton gin from Ohio to southern Georgia, next month, and get ready for business in 1883. The gentlemen mentioned own about 225,000,000 feet of pine, and about 20,000,000 feet of cypress, oak, red cedar and other woods, which they will manufacture into lumber.

THE Belleville *Intelligencer* says:—T. I. Pearce & Co. will cut half a million feet of stuff for jobbing purposes during the coming winter. They will operate in the township of Marmora, and will float their cut in Beaver Creek. This firm has already sent a large force of men to the woods and will largely increase the number when the cold weather sets in.

A NEW line is being surveyed in Wisconsin that is intended to connect with the Chippewa Falls and northern road, near Chetek or Cartwright, striking the Chippewa near Big Bend. The project is being engineered by, and in the interests of lumbermen, who desire to form a supply and shipping line for the timber country not now profitably accessible.

THE comparative cost of transportation by rail and river is illustrated by the statement that a short time ago the La Crosse Lumber Company paid \$1,860 for towing 3,000,000 feet of lumber to Louisiana, Mo. To have carried the same amount of lumber by rail would have required 400 cars, which, at \$50 per car, about the rate the railroads would give, would amount to \$20,000.

THE new line being built by the Wisconsin Central road from Chelsea, a station on the main line, to Rib Lake, a lumbering point 16 miles northeast, will probably be completed next fall, at an estimated cost of about \$200,000. This project is said to be the forerunner of an extensive system to be eventually constructed by the Wisconsin Central to push into the northeastern woods, at present undisturbed by railway connections, and up through the iron country. Next spring it is intended to begin work on a branch from Winnebago to run along the iron range northwest into Michigan, a distance of 40 miles.

THE Hudson River Power & Pulp Company is building a dam and paper and pulp-mill, at Mechanicsville, N. Y. The pulp-mill will probably be finished in March. It will be of brick, and consist of five connected buildings, besides boiler and engine rooms, the whole covering a surface of 35,376 feet, and fronting 400 feet on the river. When finished it will grind 40 cords of wood daily.

JEROME & WILLIAMS, and Eaton, Potter & Co., of Saginaw, have purchased of the estate of Jesse Hoyt and Hill Brothers 40,000,000 feet of pine timber on the Chippewa, paying therefor \$175,000, \$80,000 to Hill Brothers for lands that cost them only four years ago \$17,500, and \$90,000 to Hoyt estate for lands which cost them much less a few years earlier. This timber is all reached by a log railroad which brings it to the Chippewa.

REGARDING the antiquity of the saw, it is intimated that a frame saw is shown in a painting at Herculaneum. The sawyers are at each end, one standing and the other sitting. The bench to which the timber is secured by clamps is supported by four-legged stools. The saw blade is strained in the middle; the teeth stand perpendicular to the plane of the frame. Frame saws were common in Egypt many centuries previous to this time.

THE *Lumberman's Gazette* of Bay City, Mich., says:—Reports from nearly all the lumbering sections in the west and northwest are to the effect that great preparations are being made to secure a large stock of logs the coming winter. Large numbers of the red ash brigade and vast quantities of supplies and all the necessary accommodations are being sent to the pineries, where the ring of the woodsman's axe will resound, and the crash and roar of the giant pines as they are levelled to the earth will be the uninterrupted music in the forests during the long months which intervene between now and the commencement of milling operations in the spring.

THE *Northwestern Lumberman* says:—Jerome & William, of Saginaw, Mich., have purchased the Wentworth logging railroad, eight miles long, with a locomotive, 25 cars, and a complete equipment. The road starts in town 16 north of range 8 west, leading in a southwesterly course to the banking ground near the forks of the Chippewa. The purchase includes the banking ground, dams, etc., and the new owners will put in thereon 12,000,000 feet of logs during the coming winter. After the 40,000,000 feet of timber in the vicinity owned by Jerome & Williams and Eaton, Potter & Co., are lumbered, the road will be removed to the Au Gres, and thereon will be handled the heavy body of timber owned by Jerome & Williams in that vicinity.

A GREAT storm has prevailed in western California, which has seriously affected logging interests, and reduced the intended output considerably. The *Eureka Times* states that the damage sustained will mount up into the hundreds of thousands of dollars. In all the camps large crews were at work, and efforts were being made to get down to market before the rain set in, so that a sufficient amount of logs to supply the mills all winter would be at hand. The storm lasted two weeks, and during that time camps were shut down, and it is estimated that the log supply will be 10,000,000 feet short of the amount that would have been put into stream had the weather been more favorable. The mill men and contractors have suffered great loss by reason of heavy expenses during the storm.

A Boom in Pine Lands.

THE *Lumberman's Gazette* says:—Probably no one circumstance or chain of circumstances better illustrates the peculiarities of the boom in pine lands than the facts which have lately come under our notice in regard to a tract of pine on the Au Gres. About two years ago it was purchased by a Saginaw party for \$26,000. Last spring the same tract was sold to another Saginaw party for \$35,000. A few months later that party sold it to a Lapeer concern for \$50,000, and not long since this firm sold it to outside parties for \$90,000. A raise in less than eight months of \$55,000 and in two years of \$64,000, or a little short of 250 per cent. on a figure that was considered all that it was worth.

A. L. UNDERWOOD

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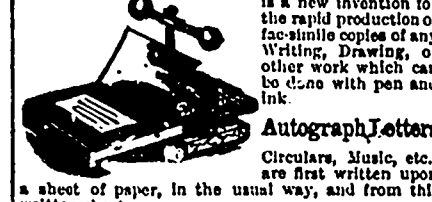
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Market Reports.

MONTREAL.

From our own Correspondent.

NOVEMBER 8.—Merchants have been fully occupied filling up their yards for the winter, and the supply of nearly all grades is fair. The demand still keeps good for all kinds of lumber. There is beginning to be felt a scarcity of 1 1/2 in. lath, the quotation for which is revised this week, there have been some enquiries made for them here for Ontario, but the order could not be supplied, Hardwood is in good general demand, and also cherry for local consumption. Ash is in active request both for local and United States account. Prices throughout our list are still firm and steady. We quote prices in the yards as under :

Table listing lumber prices in Montreal, including Pine, Spruce, Hemlock, Ash, Oak, Walnut, Cherry, Butternut, Birch, Hard Maple, Lath, and Shingles.

SHIPMENTS.

Shipping is pretty nearly closed for the season, there being only one vessel now in harbour to load. Since the date of our last report four vessels with lumber have cleared for South America, and one to Liverpool. Shipments from this port since the 25th ult., have been as follows : To Buenos Ayres, 619,209 ft, and to Monte Video, 1,142,998 ft.; to Liverpool, 470 standard deals. The total shipments to the River Plate since the opening of navigation to date, was 21,232,886 ft., against 12,880,396 ft. in the same period of 1881, being an increase of 8,352,490 ft.

CORDWOOD.

Most of the cordwood barges have now arrived and the quantity is smaller than what has been usual at this season of the year, and there is very little coming in by rail. Prices on the wharf keep steady. There is a fair demand for long maples and the price is likely to advance. We quote ex cartage from the cars and on the wharf :

Table listing cordwood prices for Long Maple, Short, Long Birch, Short, Long Beech, Short, and Tamarack.

TORONTO.

From our own Correspondent.

NOVEMBER 9.—Since my last letter a brisk trade has been done over the docks, and the R.I. Companies, over whose lines the shipments of lumber has to pass, have been taxed to the utmost to supply the increased demand for cars, and it is quite impossible to obtain one-third of the number required for the western Ontario trade. Vessel owners are now sharing in the general prosperity, freights having steadily advanced and now stand at \$2.00 per M. to Oswego, and will doubtless continue to advance for the remainder of the navigable season. There has never been any doubt in my own mind for the last two months, as to our having a rushing fall trade, and my predictions in former letters are now being fully verified, and by the close of the season I think the total quantity shipped will exceed that of last season, and although the prices at present ruling cannot be considered as being low, yet it is quite certain manufacturers will not be able to make the crop of 1883 at present figures, and leave them sufficient margin, owing to the increased cost of production, this I think may be taken as a settled fact, but unfortunately past experience proves that the unalterable law of supply and demand comes in and regulates prices irrespective of the wants or wishes of the lumberman. It is therefore much to be desired that the demand for the season of 1883 may be brisk. On visiting the various yards in this city I found most of the dealers in the best possible humor, and the only complaint I heard made was on account of not being able to procure sufficient

dimension stuff of some kinds to meet the wants of customers, this want is more especially felt in the matter of 2x4 scantling and sawn lath, the latter will now command \$1.60 per M. at the mills in bulk lots, and possibly just at the present time \$1.70 might be obtained for a few millions. In former years few laths have been shipped to the American market, but the demand this year has been exceptionally good for shipment to American ports. If the present fine open weather should continue up to the end of the present month considerable lumber will yet find its way over the docks, and at the close of the year I will endeavour to give you reliable figures, or as near as it can be got at, of the entire quantity shipped from this port, but the quantity sold on the local market will be difficult to obtain, owing to the fact that only a few of the dealers keep accurate account of the quantities sold. Prices at the various yards remain at last quotations :

QUOTATIONS, FROM YARDS.

Table listing lumber quotations from yards, including Mill cull boards, Shipping cull boards, Scantling and joist, Cutting up planks to dry boards, Sound dressing stocks, Picks Am. inspection, Three uppers, Am. inspection, B. M., 1 1/2-inch flooring, Beveled Sheeting, Clapboarding, XXX sawn shingles, XX sawn shingles, and Sawn Lath.

QUEBEC.

NOVEMBER 7.—Allan Grant's lot of white pine timber, containing about one million feet, is reported to have been sold at 28c. per foot.

The spruce deal market continues firm, for next season's sawing. The following sales have been made :—First quality, \$46.50; second do., \$33.50; third do., \$24.50; fourth do., \$20. All per Quebec standard hundred, with the usual shipping and half-culling charges. It should be stated that the above sale includes 20 per cent. of eleven inch board, a size decidedly prejudicial to the manufacturer, and which will account to a great extent for the strong prices obtained. There is a rumour of a heavy sale of Hamilton's floated pine for next season's delivery, but the price and other details have not transpired.

ALBANY.

Table listing lumber quotations at the yards in Albany, including Pine, Spruce, Hemlock, Ash, Cherry, Oak, Hickory, Maple, Chestnut, Shingles, and Lath.

BOSTON.

CANADA PINK.

Table listing lumber prices in Boston, including Selects, Dressed, Shelving, Dressed, 1st, Dressed Shippers, Dressed Box, Sheathing, 1st quality, and Sheathing, 2nd.

RUFFALO.

We quote cargo lots:—

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

CHICAGO.

The Northwestern Lumberman of Nov. 4, says. The season's cargo business is beginning to taper off. For several days, up to last Thursday, the arrivals were very light, a half dozen cargoes being a fair average array at the docks, with only two or three, part of the time and a dozen being the most. The falling off was very marked, making the receipts the lightest of the season. On account of the low freight rates, many vessel men are taking their crafts from the lakes. With the receipts meager, there was naturally a free movement in what was offered. The cargoes were readily disposed of at firm and enhanced prices. Lumber and shingles have been in sufficiently good demand to take all that came, notwithstanding there is plenty at the district. The cargoes have generally been placed in short order, the vessels that have lingered around the docks very long being the exception.

CARGO QUOTATIONS.

Table listing cargo quotations, including Short dimension, green, Long dimension, Boards and strips, No. 2 stock, No. 1 stock, No. 1 log run, culls out, Standard shingles, A*, Clear, and Lath.

STOCK ON HAND OCT. 1.

Table comparing stock on hand for October 1st in 1881 and 1880, including Lumber, Shingles, Lath, Pickets, and Cedar posts.

OSWEGO, N.Y.

Stocks held here are larger than usual; trade has been dull for the past two weeks; prices of the coarser grades of lumber have declined from one to two dollars, which it is thought will work off the surplus. Lake freights have advanced from \$1.00 to \$1.75 from Port Hope which has had a tendency to check receipts.

Table listing lumber prices in Oswego, N.Y., including Three uppers, Pickings, Fine, common, Common, Culls, Mill run, Siding, selected, 1 inch, Mill run, 1x10, 12 inch, selected, Strips, 1 and 1 1/2 inch mill run, 1x6 selected for clapboards, Shingles, XXX, 18 inch, pine, Lath, and XXX, 18 inch, cedar.

TONAWANDA.

CARGO LOTS—SAGINAW INSPECTION.

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

LONDON.

The Timber Trades Journal of Oct. 23, says. The shortness apparent in the pine and spruce stocks, as far as regards the outports, seems likely to be made up, yet before the shipping season terminates, and the information to hand (to which we referred in our last), implies that large shipments of spruce are on their way, and though we do not anticipate there will be very large additions to the stocks in London, yet we often find November prolific in cargoes from the westward, the tail of the fall fleet generally dropping in towards the end of the year. At Messrs. Churchill & Sim's sale on Wednesday there was nothing specially worth recording; the prices were weak throughout. Though the few spruce lots submitted went fairly well, still there was nothing like an advance traceable in what they fetched on this occasion when compared with recent sales. The

intelligences of large stocks on their way may have had its influence on prices, though sale buyers do not in a general way look so far ahead. Should the spruce stocks be largely added to it, is very problematical if the fresh supplies would be immediately put under the hammer.

LIVERPOOL.

The Timber Trades Journal of Oct. 23, says: The prevalence of westerly winds has brought up a rush of timber-laden vessels during the past few days, and for a short time we may expect our quays to show a brisk and lively condition of business.

With regard to spruce deals, the railways and canals will have sufficient work to employ them for some time to come, as a large proportion of the cargoes, especially those from lower ports, will go to fill contracts and engagements entered into early in the season, and will really have little effect upon the stocks on hand, or affect in any way the future position of the market.

There is a fair business doing in all kinds of timber, and the last imports of Quebec goods are going into consumption steadily. From the latest advices from Canada, those who are chiefly interested in getting out timber and converting it into logs, deals, boards and other marketable shapes look for high prices for next season's wood; the cost of labor, provisions and other expenses promise to be higher than have been experienced hitherto. This appears to be anticipated in a marked degree in reference to hardwoods of all sorts from the Canadian provinces.

GLASGOW.

The Timber Trades Journal of Oct. 23, says: The Clyde timber market has been firm during the week. As reported below an auction sale was held at Port Glasgow on the 19th inst. and one here on the twenty-fifth instant. These were well attended and a fair business done. A large cargo of Pictou birch at the sale here was disposed of rapidly, with spirited bidding, prices ranging from 17d. to 20d. per cubic ft. The wood was of good quality.

Several cargoes of deals, Quebec pine and lower port spruce, have arrived at Glasgow within the week, and a cargo of Tabasco mahogany from Santa Anna, which is to be exposed at auction by Messrs. Wm. Connal & Co., in Yorkhill Yard, on the 7th prox.

NEW SAW MILLS AT EMERSON.

The Emerson Express says:—Besides the Emerson Agricultural Works, which is soon to pass into the hands of a joint stock company with a capital of \$100,000, Belfour & Co. have commenced the erection of their extensive saw-mills, which are to occupy the whole block, including the river frontage between Morris and Dufferin streets. They have already delivered at their mills over six thousand saw-logs, which they will commence work on as soon as the machinery is in position. The capacity of the mill will be 20,000 feet per diem to commence with, but will be increased as the demand for lumber increases. The firm will give employment to twenty-five men. There is every prospect that the Government will, during the coming winter, remove the duties from lumber, which will give our saw mills the benefit of the markets of both countries. With the opening of the Pembina Mountain branch, there is but little doubt that the lumber supply for all Southern Manitoba will be cut at Emerson. This spring more than 12,000,000 feet of white pine from the Minnesota pineries was floated down the river in front of our doors, to be saved into lumber in Winnipeg, and from the preparations now being made, it is estimated by Minnesota papers that fully twenty million feet of logs will be put down the Red River next spring.

MIDLAND.

The Free Press says:—The steamer barge Teacumseh is loading 750,000 feet of lumber at the B. C. L. & T. Co's dock to be consigned to parties in that land of promise, Manitoba.

Mr. A. Paxton has secured the contract for building a large steam saw mill on Sepent River for the American Lumber Co., capacity 80,000 feet per day. A part of the work, we understand, is to be done in Midland.

BELLEVILLE.

The *Intelligencer* says:—If the predictions of those who are engaged in lumbering operations in this locality are fulfilled the prospects are for the coming season will be unusually active. Thus early the advance parties of several firms have established quarters for operations during the winter and locations for work are now being sought after by others. Gilmour & Co. expect to perform some very lively work in the woods this winter and the force of operators they will send out will astonish the remnant of the aborigines who dwell in the woods. They will establish four shanties and give a show for nine live jobbers to make a substantial living by their work on Beaver Creek, north of Millridge, in the township of Tudor. Deer River will be more than lively, as three shanties and six jobbers will make it the scene of their labors. (Each of these parties will number 400 men.) Six shanties and eight jobbing gangs will operate on the "Scot"; there will be one shanty in the township of Harvey, one in the township of Lake, near Clear River; one in Tudor, near the Moira River; one on the North River, in Methuen; and each will give employment to fifteen men. The cut will come to the front by the Trent and Moira Rivers, and will embrace 300,000 logs, besides ash, cedar, tamarack, spruce, and foata. The product, it is confidently expected, will be as large as that of 1881.

FORESTS REPRODUCED.

Many people entertain the idea that remuneration for forest culture during the lifetime of the persons engaging therein is an impossibility, but facts are frequently furnished which demonstrate that this idea is incorrect. In illustration the following from a Virginia correspondent is quite pertinent: "We would like to have some of the forestwise people—wise from a European, but not from an American standpoint—who are croaking about the destruction of our forests, and predicting that we will have a treeless country in a short time, see how rapidly and how beautiful Culpapper and other counties along the Virginia Midland, that were almost deforested during the late war by the great armies that camped and wintered there, are now becoming afforested in the lifetime of half a generation. We noticed a few days ago fuel and fencing being cut where Mead's army burned up every tree in the winter of 1863-4."

GOVERNMENT PROTECTION.

The commissioner of the general land office at Washington has issued a circular to the timber agents throughout the country, instructing them to protect public timber from waste and destruction by fire, by every means in their power. It refers especially to the danger arising from leaving tree tops and branches to dry upon the ground after the timber has been removed, and closes with the following significant sentence:—"A failure on the part of woodsmen to utilize all of the tree that can profitably be used, and to take reasonable precaution to prevent the spread of fires, will be regarded by this office as wanton waste, and subject them to prosecution for wanton waste and destruction of public timber." If the instructions be complied with, much good will result and forest fires on government land at least, will decrease both in number and destructiveness.—*The Lumber World.*

NORTHERN LIMIT OF THE HEMLOCK.

The Abbe Provanche, in his *Flore Canadienne*, corrects an error in the statement of Michaux, and copied by the Abbe Brunet, concerning the northern limit of the hemlock tree. In the pamphlet entitled "Voyage d'Anax Michaux en Canada," p. 16, it is remarked, that this tree begins near the Hudson Bay, and that around Lake St. John it forms whole forests. The writer cited affirms that he has never met the "Pruche" in those regions, and that it is wholly unknown both on Lake St. John, and on the Saguenay. He assigns its northern limit at Cape Tourment, north of Quebec, although a few specimens may occur in Charlovoix county.

According to Dr. Bell, (*Geographical Distribution of the forest trees of Canada*), the eastward and northern limit of this species is at the Bay of Chaleur. It is scarce near the eastern coast of New Brunswick, but very abundant in the

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northern part of Nova Scotia. It crosses the St. Lawrence a little below Quebec, extending further down on the north than on the south side. Thence it reaches the north end of Lake Temiscaming, and the eastern extremity of Lake Superior at Agawa; south of the Michigan River. On the south shore of Lake Superior it does not reach the western extremity but turns southward in the neighborhood of Ashland. An outlying grove is mentioned at Thompson, about 25 miles west of Duluth. The hemlock maintains a good size, to the verge of its range, and always appears to terminate abruptly.—*American Journal of Forestry.*

A TIMBER SUIT.

The following case was decided at the recent assizes at Barrie, according to the report of the *Midland Free Press*:—*Prentiss v McGirr*. The Ontario Government sold some land to the Dominion Government on to which the Oka Indians were removed from the Province of Quebec. Prior to this sale the Ontario Government had sold the right to cut all the timber to the Georgian Bay Lumber Company, who, in turn, sold their right to Mr. Prentiss, the plaintiff in the present action. Mr. Prentiss, not thinking that anything was wrong, put in a gang of men last winter, who cut a considerable quantity of timber. As the men were about to draw it away the defendant, who is one of the officials connected with the Indian Department, forbade the removal of the timber, which was seized by the Dominion Government as belonging to the Indians. The plaintiff failing to get redress from the Dominion Government, brought this action against their official, who prevented the timber being taken away. His Lordship, at the conclusion of the plaintiff's case, nonsuited, holding that the defendant only acted as ordered by the Department, and could not therefore be held responsible personally. Plaintiff's remedy, if any, would be in a petition of right or in the justice of the Government. Strathy for plaintiff; Martin Q. C., for defendant. This case seems to be a hard one, as the plaintiff expended a large sum in the manufacture of the timber which is now lost to him.

Increased Use of Sawdust.

The *Northwestern Lumberman* says:—A large amount of sawdust is being used in a profitable industry, which, it is given in the future as it has in the past, may solve the Minneapolis problem, and cause the St. Paul Chamber of Commerce to eternally hold its peace. Boxes, of all sorts of sizes, containing sawdust, are daily sent out all over the country, and sometimes there is talk kicking on the part of the recipients, who paid their money for something else. The secret of the transaction is that the sawdust crowd answered a counterfeit money advertisement, and got sold, and, considering their design, they have little to kick about. If the fools continue to increase, an immense amount of sawdust will be required for this one line of enterprise.

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And all other Kinds of HARDWOOD LUMBER.

White and Yellow Pine Lumber and Timber.

Oak Ship Plank and Timber. Pine Deck Plank and Ship Stock Generally.

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A recent chemical treatment of veneers has been successful in London, it is said, whereby the veneer can be made supple as leather and of less than the usual thickness, while the strength and beauty of the wood are unaffected. The veneer thus prepared can be used with the utmost ease and safety on the most elaborate workmanship, bending around the most acute angles and most intricate curves. They do not need any pressing by mechanical methods or conforming with hot irons, a simple laying on with glue and hand pressure being all that is required.

One dose of Baxter's Mandrake Bitters will relieve Sick Headache. One bottle effects a cure. Price 25c. per bottle.

MR. J. R. SEYMOUR, druggist, St. Catharines, writes that he finds an over-increasing sale for Burdock Blood Bitters, and adds that he can, without hesitancy, recommend it. Burdock Blood Bitters is the grand specific for all diseases of the Blood, Liver and Kidneys.

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DISASTROUS FIRE.

OTTAWA, Nov. 2.—The most disastrous fire which for years has visited the vicinity of Ottawa occurred this evening, and in the course of three hours laid in ashes nearly \$1,000,000 worth of property, temporarily thrown over 1,000 hands out of employment, and for a time destroyed industries which have taken over a quarter of a century to build up. Among the many hard-working men who have converted wooded wastes about the "Big Kettle" into a hive of industry, who in most cases starting unknown and with comparatively little capital to back them, but who with undoubtable energy and untiring perseverance have built up the lumber interests of Ottawa and Hull, it is no discredit to the others to say that she name of E. B. Eddy stands in the front rank. His name for years past has been identified with the best interests of Ottawa and Hull, and no misfortune which overtakes the vast industries which he controls can fail to be felt by the whole population. The fire alarm sounded last evening at 6:11 from box 21. This is one of the boxes considered dangerous by the brigade, and the whole force at once turned out. When the alarm was first heard there was no sign of any particular danger. It was also a time when most persons were at their supper, and as the public are now pretty well used to see the fire drowned out in a very few moments, little attention was paid to it.

In less time, however, than the reels could reach the point indicated, a bright light spreading over the whole north-western sky indicated that a more than ordinary blaze was in progress. In less than ten minutes from the time the alarm was first given the ruddy glare was so bright over the whole city that the smallest print was easily readable in the worst lighted streets. The exact locality of the fire was not known, and in Ottawa was first discovered by those who flocked to vantage points on Victoria street and the Government Hill. Then the news spread lightning-like, "Eddy's is on fire," and soon a stream of pedestriars and vehicles were rushing to the scene of the disaster. Those from the centre and lower portion of the city, no matter how rapid their progress, only reached the place in time to find the suspension bridge and the Hull causeway crowded with anxious spectators, while around the burning building hundreds of hardworkers crowded, doing their best to fight the unconquerable fire which raged with fearful fury from the outset. From one to another of the great area of the factory buildings the flashing tongues of flame leaped laughing at the puny efforts of the poor streams to stay their progress, and in less than an hour some ten acres of ground were covered with the debris of what had in the early part of the evening represented a handsome fortune. Such a rapid destruction of property has probably never been seen about Ottawa before, not even on the wild windy Friday night when the villages of Dell's Corners and Chelsea were swept away, when the fire devastated the whole Ottawa valley.

It was not possible to ascertain the origin of the fire this evening. Those who were best able to speak about the matter were too busy at work to give any reliable information. It is, however, pretty certain that it originated in the north-western part of the large saw-mill. At present, the mill is only running day time, and all hands had left at six o'clock. There was no light about the place but what was furnished by electricity, and the general opinion is that it was by friction. The rapid spread of the fire was almost incredible. The big mill was almost instantly in flames. From that the fire spread in every direction, taking in the stone offices on one side, and the ash and door factory and the pail factory, and other building on the other. It next licked up the wooden arch which spanned the causeway, and laid hold of the match factory, all of these falling victims to the fury of the flames.

The Union Fire Company turned out and did excellent service. One of the firemen remained so long on the second story of the match factory that he had to leap for his life, and broke one of his legs. Many others had narrow escapes. All the water that could be reached was utilized, but it was insufficient to stay the fury of the flames. The fire burned itself out

westward, while the efforts of Eddy's own appliances, the Chaudiere fire-engine, of Ottawa, and all the other appliances that could be had from the various lumber men, kept it from spreading eastward. Had the wind been blowing southward the probability is that not a house would be left standing in Hull. In addition to the buildings already mentioned being burned, McCormick's flour mills were also destroyed. The loss is generally estimated at from \$500,000 to \$700,000. It is partly covered by insurance. Mr. Eddy, who has been ill for some time past, is at present in Boston. The fire at the time of writing (midnight) is still burning, but entirely under control.

Mr. Eddy's loss will in all probability reach \$750,000, on which there is said to be an insurance of \$225,000. Mr. C. B. Wright owned the flour mill. He estimates his loss at \$30,000, on which there is an insurance of \$4,000. The occupants of the mill, McCormack & Co., lose about \$7,000; insurance, \$3,000. Mr. Eddy has been very unfortunate during the past six years, suffering extensively from fire, but through undauntable pluck and energy has succeeded in keeping his head above water. Within that time he has wiped out a liability of over a million dollars; and this year, had he been fortunate enough to carry out his programme, would have placed half a million dollars to his credit. Much sympathy is felt for him, and the feeling prevails that he will at once commence rebuilding.

THE INSURANCES—THE ANTICIPATED LOSS.

The Montreal Witness says:—The fire at Hull has created a good deal of excitement here. The following is a list of insurances on the Eddy property:—

Royal.....	\$ 33,000
Fire Insurance Association.....	22,000
The Atlas.....	16,500
The Hartford.....	16,500
British American.....	11,000
Commercial Union.....	11,000
Royal Canadian.....	11,000
The Queen.....	11,000
North British & Mercantile.....	11,000
German American.....	11,000
Citizens.....	5,000
Quebec.....	5,500
Niagara.....	5,500
Connecticut.....	5,500
	\$176,000

The larger amounts are well re-insured. The insurance companies do not anticipate a loss of over sixty per cent of the above amounts. About half the property was burnt. The west half on which stands the match factory was simply injured.

Incendiarism is supposed to have caused the fire. The managers suspect a certain individual who was discharged a short time ago for stealing. Incendiarism suggests itself by the fact that the fire burst out in a place convenient to the public highway and at the time when there were few men around the premises. It was also a dark night and the watchman was in the other mills a quarter of a mile distant. Word has been received to-day that Mr. Eddy is lying sick in Boston.

Wooden Water Pipes.

In an account given in the London Daily Chronicle respecting the recent opening of the first portion of the inner-circle extension of the Underground Railway, the writer says:—"Not the least interesting feature was the antiquarian discoveries which have been made. Besides a singular collection of Roman pottery and other things, a large portion of the old London wall was found between the Crescent (in the Minorities) and Trinity Mews. The wall was 8 feet thick, composed of Kentish ragstone, and gave the employees no little trouble. Among the debris lying near the shaft in Trinity Gardens was a piece of rotten timber about a yard and a half long. On examination this proved to be a portion of the wooden piping first used by the New River Company early in the seventeenth century."

Tree Planting.

In the season of 1881-2 more than 3,000,000 trees were planted in Great Britain, out of which number Scotland claims about 2,000,000, England 600,000, Ireland 300,000, and Wales 40,000.

QUEBEC.

The Chronicle says:—Timber transactions are about drawing to a close. The shippers here having pretty well stocked themselves. But the few rafts remaining for sale are held at good prices. A raft of white pine, of about 52 feet average, was placed at 27 cents; 47 feet at 24 cents, and a large parcel of 47 to 48 feet average, at 29 cents. A choice parcel of waucy board, and two or three other rafts, have also changed hands at prices which have not yet transpired.

Red pine is rather dull of sale, common and ordinary being worth about 14 to 16 cents. Good and Superior 17 to 18 cents, in the raft.

Oak is in good demand if of choice quality; but inferior wood is difficult of sale. We hear of no sales in elm.

QUEBEC CULLERS' OFFICE.

The following is a comparative statement of Timber, Masts, Bowsprits, Spars, Staves, &c. measured and culled to Oct. 27:—

	1880.	1881.	1882.
Waucy White Pine..	2,180,389	2,637,935	2,784,325
White Pine.....	3,992,103	5,004,350	7,680,997
Red Pine.....	1,019,900	1,000,252	1,446,574
Oak.....	1,504,073	2,750,059	1,149,452
Elm.....	932,050	1,010,395	701,020
Ash.....	238,410	399,025	203,481
Basswood.....	363	3,939	1,348
Butternut.....	645	2,991	2,939
Tamarac.....	30,863	24,577	61,793
Birch & Maple.....	576,404	151,742	208,333
Masts.....	4 pcs	— pcs	33 pcs
Spars.....	23 pcs	25 pcs	51 pcs
Std. Staves.....	195,711	363,722	352,032
W. I. Staves.....	485,415	467,010	1150,012
Bri. Staves.....	10,822	10,822	75,432

JAMES PATTON,
Supervisor of Cullers.

Quebec, Oct. 27.

A Windfall.

The library of Cornell University received, not long ago, by the will of a friend an estate which at the time was believed to be of only moderate value. It was found, however, to be chiefly invested in Wisconsin pine lands, and turns out, at the present price of such property, to be worth something over \$2,000,000 in hard money. This is an addition to the \$5,000,000 that Cornell has derived, or will derive, from the sale of her scrip pine lands in the same state.

Advertising by the Car Load.

The Wisconsin Central railroad management is collecting a car load of samples of northern Wisconsin timber, gathered from points on the line from Stevens Point north. The car will be sent through southern Wisconsin, Illinois and other sections, and the samples exhibited at manufacturing towns for the purpose of showing what varieties of timber can be found in northern Wisconsin. The scheme will be under the direction of A. J. Perkins.

New Forests.

Several small prairies, which were common in the Wabash Basin at the time of its first settlement, have been transformed into woodland, and the area of the forest has increased of late years. Extensive woods of oak and hickory, more than 80 ft. high, and with trunks nearly 2 ft. through, are now growing upon what was open prairie within the memory of some of the present owners of the land.

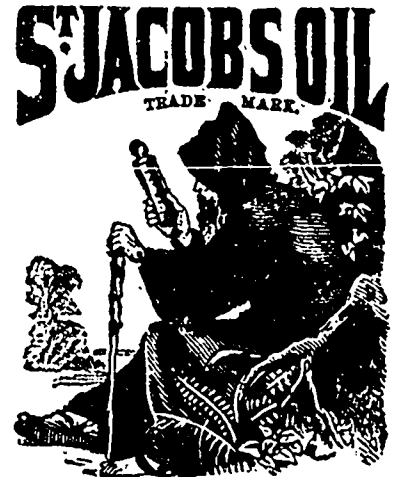
BAXTER'S MANDRAKE BITTERS never fail to cure Costiveness and regulate the Bowels.

SURE, safe and effectual, that old remedy, Down's Elixir, for the cure of Coughs and Colds.

A NERVE and brain food is needed in all cases of nervous and sexual prostration. Mack's Magnetic Medicine meets this want more effectually than any other preparation, and the price brings it within the reach of all. Read the advertisement in another column.

Mrs. B. M. GIFFORD, of Fort Rowan, was for many years a sufferer with liver complaint and a serious complication of diseases. In a recent letter she says she has only taken two bottles of Burdock Blood Bitters, and has nearly recovered her health, and authorizes us to use her name in advertising to suffering humanity.

BEST OF ALL.—Our rigorous and changeable climate and our mode of life induces frequent colds that often lead to severe coughs, bronchitis and other lung troubles that are liable to end in consumption. The best and most pleasant remedy for these difficulties is Hagar's Pectoral Balsam, to be obtained of any druggist.

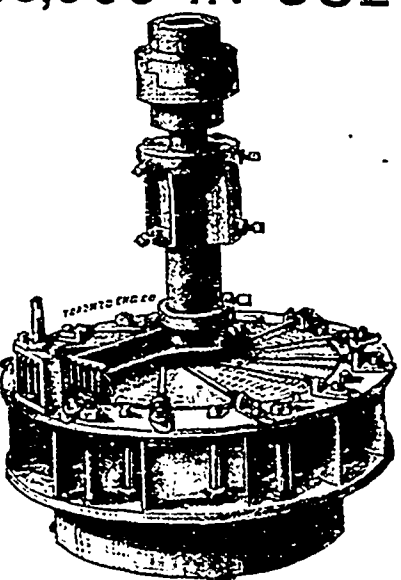


THE GREAT GERMAN REMEDY FOR RHEUMATISM,

Neuralgia, Sciatica, Lumbago, Backache, Stiffness of the Chest, Gout, Quinsy, Sore Throat, Swellings and Sprains, Burns and Scalds, General Bodily Pains, Tooth, Ear and Headache, Frosted Feet and Ears, and all other Pains and Aches.

No Preparation on earth equals St. Jacobs Oil as a safe, sure, simple and cheap External Remedy. A trial entails but the comparatively trifling outlay of 50 Cents, and every one suffering with pain can have cheap and positive proof of its claims. Directions in Eleven Languages. SOLD BY ALL DRUGGISTS AND DEALERS IN MEDICINE. **A. VOGELER & CO.,** Baltimore, Md., U. S. A.

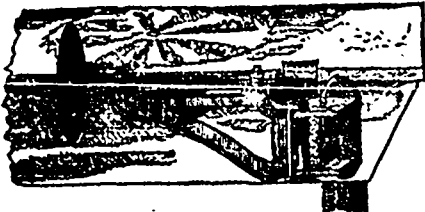
15,000 IN USE!



JOSEPH HALL Mfg. Co., (ESTABLISHED 1851.) **OSHAWA, ONTARIO**

MANUFACTURE THE CELEBRATED **JAMES LEFFEL'S Double Turbine Water Wheel,**

All Sizes of Stationary and Portable Engines and Rollers, Shuffling, Pulleys, Hangers, Gearing, latest improved English and American Gears. The Steam's Circular Saw Mills with Fractional Head Blocks and King of Dogs—this Mill is acknowledged in the United States and Canada to be superior to all others—also a very complete Circular Saw Mill with Iron Frame and cheaper Head Blocks for Small Mill Saw Mills, Flour Mills, Paper Mills and Water Works Machinery a Specialty. For further particulars address, **JOSEPH HALL Manufacturing Co.,** 12-12 OSHAWA, ONTARIO



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 saws of every description. Wheel is moved along the length, and in the depth of the tooth, and can be placed just where wanted 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 like better machines. It is patented in United States and Canada, and is made in Welsport, Pennsylvania, and in Amherst, Nova Scotia.

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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. Traverse 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 forecure of \$100. Send for circulars to

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The Wheels are adjustable on the Axles to accommodate themselves to any bend in the poles.

The Iron Work complete, including Bolts and Washes, with a diagram of Car, are supplied by the undersigned. Prices on Application.

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LIGHTNING CANT-DOG

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The Lightest, Cheapest and Most Durable Cant-Dog in the World.

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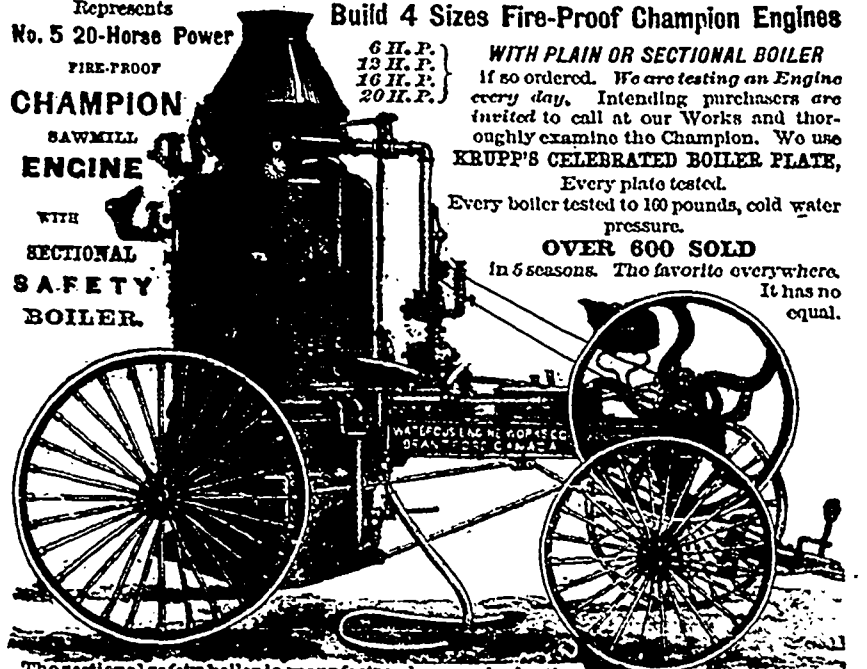
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Every plate tested. Every boiler tested to 160 pounds, cold water pressure.

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in 5 seasons. The favorite everywhere. It has no equal.

The sectional safety boiler is manufactured expressly for the "North West" trade. This boiler is so arranged that it is readily taken apart in sections enabling purchasers to clean thoroughly every part of it and prevent burning out. We know from experience this is absolutely necessary with the alkaline waters of the great Western prairies. Largely used by the Pacific Railway Company and all the large Colonization and Rancho Companies.

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These Wheels are
Wire Strengthened



And Specially Adapted
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Neither Animal nor Vegetable Glue or Gum being used in their composition, they are NOT LIABLE TO HEAT, and give out no Odors, while

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WILLIAM HAMILTON, ESQ.,
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Manufacturer of the Covell Saw Sharpeners.

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we have arranged with the well-known firm of

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BY THE USE OF

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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 seems 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,

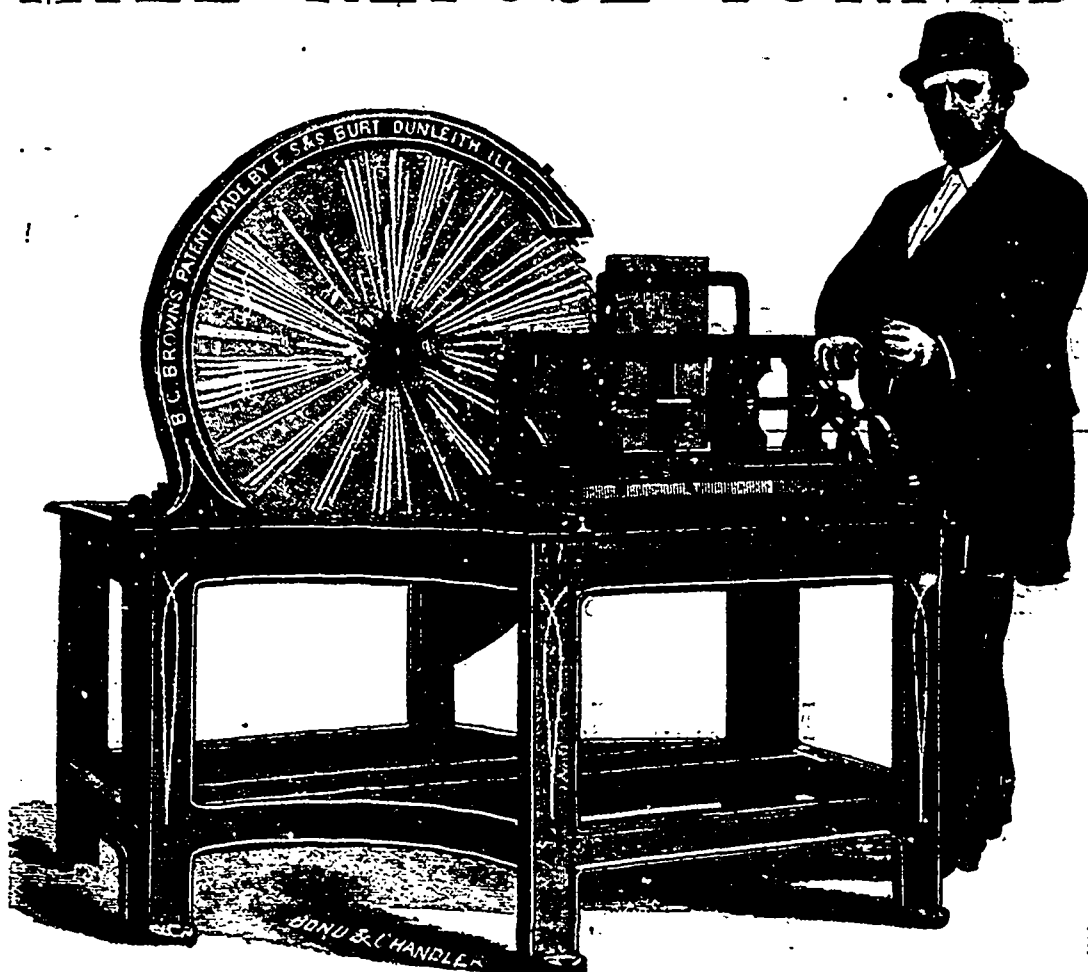
with Steam Feed for Steam Mills, and Rope or Rack Feed for Water Mills is fast coming into general estimation and is used in place of Gang Slabber in our best Canadian Mills. One of our Span Circulars which will slab logs 25 inches in diameter down to 7 and 8 inch stocks, will do the work of three slabbers, 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, Wausauone and Port Severn. I am also introducing a new style of Mill Engine, neat, substantial and simple, with Corlies' Frame and Balanced Valve; all carefully designed and honestly made.

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is now well-known and highly appreciated, when placed at work the mill it stings out its own prisms; I keep it constantly on hand, ready 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.



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