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PETERBOROUGH, ONT., JANUARY 1, 1884.

NO. 1.

THE ADIRONDACK WILDERNESS.

The eminent New York banker and practical philanthropist, Morris K. Jesup, whose name will always be revered by friends of forest protection everywhere, on account of the active interest taken by him in the subject, as intimated by his munificent donation to the Museum of Natural History of New York of the finest collection of specimens of forest trees to be found anywhere, obtained through the agency of Professor Sargent from every state in the union, at an expense of over \$100,000, has added another obligation to the many due him by getting the Chamber of Commerce of New York to memorialize the state on the subject of preserving the remaining forests in the Adirondack wilderness.

The memorial presented by Mr. Jesup, after a very able speech on the subject, was couched in the following words:—

"The Chamber of Commerce of the State of New York is alarmed at the dangers which threaten the water supply of the rivers in the northern part of the state through the destruction of the forests which protect their sources.

The Chambers believe that the preservation of these forests is necessary to maintain an abundant and constant flow of water in the Hudson, the Mohawk and other important streams, and that their destruction will seriously injure the internal commerce of the state. As long as this forest region remains in the possession of private individuals, its protection from fire and lumbering operations will be impossible. Believing, then, that this matter is one of very great importance and that the necessity exists for immediate legislative action, we humbly pray your honorable body to adopt such measures as will enable the state to acquire the whole territory popularly known as the Adirondack Wilderness and hold it forever as a forest reserve.

This memorial was adopted without a dissenting voice, and the Chamber also unanimously authorized the chair to appoint a committee of seven, with power to invite the co-operation of other associations and individuals throughout the state, to secure the necessary legislation. President Geo. W. Lane named the following committee:—Messrs. Morris K. Jesup, Samuel D. Babcock, D. Wallis James, Charles S. Smith, C. N. Bliss, Solon Humphreys and Thomas B. Coddington.—*Montreal Gazette.*

INTER-PROVINCIAL TRADE.

It is gratifying to note the steady and rapid growth of inter-Provincial trade in Canada. There is probably no section of this wide Dominion that has not experienced a great change in this respect within the past few years. Nowhere, however, is the change more apparent than along the great inter-provincial highway known as the Intercolonial Railway. The amount of the products of the manufacturing

establishments of the Maritime Provinces passing over the Intercolonial for Quebec, Ontario, and points further west has grown to large dimensions, and this is, perhaps, the most gratifying feature of trade that presents itself just now. The market for probably more than half of the products of the six cotton mills now running in New Brunswick and Nova Scotia is found in the Upper Provinces and the West, and the same may be said of our sugar refineries. Nor are these industries altogether exceptional; for we find that the products of the lock factory at Moncton, the hat factory at Truro, the skate factories, the nail works and the starch factories all find a ready market in the West, and in the aggregate the benefits derived are not inconsiderable. The same is true of the coal industry. The sales of the Nova Scotia mines in Quebec and Ontario have wonderfully increased within the past few years. Almost any day there may be seen in the Moncton station yard evidences of the extensive nature of this traffic, the manufacturing establishments and the railways of both Quebec and Ontario being large buyers.—*Moncton, N. B., Times.*

CANADA AND THE FORESTRY EXHIBITION.

The correspondence of the Toronto *Globe* writes from London, England:—In an unostentatious way much is being done now to promote the success of the International Forestry Exhibition to be held at Edinburgh next year. Although the promoters of the scheme do not possess the financial and influential support which was extended to the council of the Fisheries Exhibition, they are nevertheless well backed up, and are setting to work with the determination to make the venture a complete success. There is every prospect, I believe, of the co-operation of two or three of the Colonial Governments being secured, and if present promises are fulfilled, a comprehensive and thoroughly representative show will probably be got together. As regards Canada, I hear that in addition to whatever exhibits may be sent by the Dominion Government, there is a great probability of a novel Canadian feature being introduced by the Canadian Pacific authorities here. It has been proposed to the exhibition Council by Mr. Begg, of the C. P. R., that space outside the exhibition buildings should be allotted for a model farm, which he is willing to arrange, to be called the Canadian or Manitoba farm, and intended while illustrating practically every branch of trade springing out of the forest industries, to show also to those who are contemplating emigration the mode of life it will be necessary to adopt when establishing themselves in their new homes. Among the prominent features would be a small ready-made, wooden house, such as settlers can purchase for erection on their farms in the North-West, a small stable built of logs, showing this

mode of housing cattle. The house itself would be furnished with chairs, tables, and all articles of wooden manufacture, such as barrels, bowls, tubs, brooms, etc., that are used by settlers. With these will also be displayed samples of roots, grains, vegetables, and other products of the Northwest. In the stable would be placed some prairie hay and specimens of oats and barley. The space occupied by the farm itself would be divided off by the different kinds of fencing used in the Northwest, and in the parts thus enclosed would be shown a breaking plough and agricultural implements in which wood plays a principal part. In the shed it is also proposed to place specimens of the different kinds of lumber obtained from the North West, and the woods grown on the prairie, as used for fuel, etc. Possibly, too, some illustration will also be given of tent life, during the settler's first two or three months on the prairie. I believe the exhibition authorities are not yet able to intimate the amount of space they may be in a position to set apart for this purpose. But assuming that this preliminary difficulty is got over, there is every likelihood of the exhibit being satisfactorily arranged, and if so, it will prove undoubtedly the most novel and popular feature of the exhibition. No doubt Mr. Begg, if he carries out his plan, will be glad to receive the hearty co-operation of those in Canada to whom the matter may be of special interest.

THE TALLEST TREES IN THE WORLD.

It is usually considered that this epithet belongs, *par excellence*, to the famous big trees in California, variously known by the names of Wellington or Sequoia. These are, however, far surpassed in height, and probably also in the total amount of timber in a single tree, by the real giants of the vegetable kingdom, the noble gum trees of the genus *Eucalyptus*, which grow in the Virginia State Forest, on the slopes of the mountains dividing Gipps Land from the rest of the colony of Victoria, and also in the mountain ranges north of Cape Otway, the first land which is usually made by any vessel bound from England to Melbourne direct. As will presently be shown, there are only four of the California trees known to be above 300 feet high, the tallest being 325 feet, and only about sixty have been measured that exceed 200 feet in height.

In the large tracts near the sources of the Watta River, however, (a northern branch of Yarra-yarra, at the mouth of which Melbourne is built), all the trees average from 250 to 300 feet in height, mostly straight as an arrow, and with very few branches. Many fallen trees measure 350 feet in length, and one huge specimen was discovered lately which was found, by actual measurement with a tape, to be 435 feet long from its roots to where the trunk had been broken off by the fall; and at that point

it was three feet in diameter, so that the entire tree could not have been less than 500 feet in total height. It was 18 feet in diameter at five feet from the ground, and was a *Eucalyptus* of either of the species *E. obliqua* or *E. amygdalina*. It should be noted that these gigantic trees do not, like their California prototypes, grow in small and isolated groves, towering above smaller specimens of the same or of closely allied kinds, but that, both in the Dandenong and Otway ranges, nearly every tree in the forest, over a large area, is on this enormous scale.—*World of Wonders.*

TRANSPLANTING TREES.

A writer in *Farm and Fireside*, in his directions respecting the treatment of trees before their removal, states as follows:—

"A tree in full leaf may be compared to a powerful pump, the roots absorbing water from the soil, which is carried upward through the stem and exhaled from the leaves in the form of vapor. This exhalation from the leaves is really the primary operation; however, being simply a process of evaporation. If, now, the principal portions of the roots be cut away, and especially the fine rootlets which are farthest from the stem, and through whose extremities nearly all the water is absorbed, the leaves, if allowed to grow, will exhaust the water from the stem and roots more rapidly than it can be supplied by the remnant of the latter, and the consequence will be the destruction of the tree. Hence, in transplanting trees, the leaf bearing twigs should be cut away in proportion to the loss of roots, and it should be remembered that the root surface is generally equal to that of the twigs; consequently the safest rule is to remove nearly all the branches, trimming to bare poles. It is hard to do this, but the aftergrowth of the tree will be enough more rapid to compensate the apparent loss. In moving large trees it is an excellent plan to dig down and cut off a large portion of the roots a year before transplanting, removing a portion of the tap at the same time. This will cause the formation of new rootlets near the stem, which may be preserved in the final transplanting."

From different points on the St. John river, Mr. A. B. Spence, of this town, has shipped to Boston during the present season 50,000 cedar railway ties, the production of which, in the northern counties, is becoming an industry of considerable importance. From St. John, Moncton and Hillsboro, he has shipped 40,000 hachmatac ties to Philadelphia. On the Pennsylvania roads few ties of any other description are used. Mr. Spence has brought to St. Stephen three cargoes of ship knees, and a considerable quantity by railway, which are here planned and held for orders.—*S. Stephen, N. B., Courier.*

FINNISH TIMBER RAFTS.

In an account of a trip from St. Petersburg to the interior of Finland, Prof. John Croumbie Brown, author of "Forest Lands of Finland," makes mention of two immense timber rafts he met in his trip. He says:

A little below Nyalot we met two Finnish timber rafts containing each, it was estimated by a Finnish gentleman, about 5,000 logs; and above Nyalot other two containing according to the estimates of a Finnish engineer engaged extensively in the manufacture of machinery for saw mills and other purposes in Nyalot, 10,000 logs each. I have called these Finnish timber rafts. The movement of all the Finnish timber rafts seen by me on the Saima See was affected by a boat carrying out an anchor to a considerable distance ahead, and the raft being warped thither by a windlass on the raft, to which motion was given by a horse on board. The men had on board a fire for cooking, and a small hut for shelter.

In regard to the form of the raft which is known in Northern Russia, if not also here, as the *koshell*, M. Judrae, a distinguished member of the Imperial Forest Service in Russia, gives the following information:

Up to 1860, logs designed for floatage on the lake were generally made up into rafts at considerable expense; but in 1861, a peasant, a native of Finland, devised the system of floatage in the so-called *koshell*. These *koshells* are of two kinds, designed respectively for transit by lake and by sea. The former are of a less complicated structure than the latter. The lake *koshell* consists of two parts, a head and a body. The head is a simple raft of logs of ordinary size one row deep. On this the navigators take their places, and sometimes horses, together with a windlass or other machinery for which an anchor is attached. The head is formed of logs arranged lengthwise in a regular row, the number varying with the intended size of the *koshell*. It goes foremost, and on it the moving person operates. To the left side of the head there is attached a string of logs, joined end to end, where they are hewn thin, and through a hole about an inch in diameter they are tied together with twigs twisted like a rope, each end of this being twisted or tied up into a knot not likely to slip. One log is thus added to another, until a sufficient length has been prepared. When the last is attached to the right side of the head and there is formed an extensive loop or circle of connected logs—a chain, of which these are the links. This is called the body of the *koshell*, and into the interior of this circle are tumbled, without any determined order, the logs which are to be floated away. Into these lake *koshells* there are put from 4,000 to 8,000 or 10,000 logs; and sometimes, as a prevention against rupture in a storm, there is superadded to the encompassing chain of logs a thick rope.

The sea *koshell* differs somewhat from the lake *koshell*. The head consists not of one layer, but of several layers of logs, either laid in alternate directions, or, if all be in one direction, bound very firmly by cross logs. Short logs are generally employed, the so-called seven *archine* logs, about 16 feet long. What is of first importance in these is their power of resistance, as they are frequently subjected to the strain of severe storms, and in view of this the logs in the body of the *koshell* are all laid in regular rows. The first row following the head may consist of 45 logs, the second of 50, the third of 60, and so on, increasing till the row in the middle of the body may consist of 150 logs, after which the number in each successive row diminishes till the body presents the outline of a lengthened ellipse. Besides this, in several places the ends of the body are connected by means of logs fastened across them, so as to keep the *koshell* more compact. *Koshells* formed thus can withstand very severe storms. They may contain from 1,200 to 3,000 logs, but not more.

Such *koshells* are generally towed by steamers; and to show how much cheaper the floats, if timber by *koshells* than the floatage by rafts of single logs, and how much the first proprietor of the merchant gains in profit from this contrivance of the Finnish peasant, though it is not very easy to do so completely I may state the following particulars: In the floating of tim-

ber on the Mt Kosoro by the old system, the log of timber costs about five kopecks; now, by floating it in these *koshells* it costs about one and one half kopeck, or less than one-third of the former cost. The bringing of timber to the Koumsa saw mill, in consequence of this new method of floatage, costs for each log, about thirty kopecks less than it did formerly. If we assume that the transport of each log to the saw mills in the Government of Olonetz costs, upon an average, ten kopecks less than it used to do; and if we take 237,000—the number of logs cut up by these saw mills in 1865—as the average annual number, then it will be apparent that the saving of expense will be 23,700 roubles, or £2,870 per annum. Such results have followed this so-called trifling contrivance. The name of the peasant has not been made famous, but it is said that he is now a very rich man, and the other peasants speak of him as a very knowing one.

EDINBURGH FORESTRY EXHIBITION.

We have been favored by Mr. G. Cadell, of 3 George IV Bridge, Edinburgh, Secretary of the International Forestry Exhibition to be held at Edinburgh in 1884, the following documents in connection with that event:

CLASSIFICATION.

CLASS I.—PRACTICAL FORESTRY.

Sec. 1. Implements and tools used in forestry. Draining, enclosing, and surveying instruments, chains dendrometers, etc.

Sec. 2. Models of foresters' huts, drying sheds, charcoal kilns, timber slips, sluices, bridges, and weirs.

Sec. 3. Plans of embankments, rafts, and appliances for floating timber.

Sec. 4. Machinery or models for transporting timber and transplanting trees.

Sec. 5. Saw mills—woodworking machinery of every description, and pulping apparatus, in motion or otherwise.

Sec. 6. Fencing materials of all kinds including gates and stiles.

CLASS II.—FOREST PRODUCE, RAW AND MANUFACTURED.

Sec. 1. Collections of timber specimens and ornamental woods; a. indigenous or naturalized; b. exotic.

Sec. 2. Woods used for ordnance—as gun carriages, etc.

Sec. 3. Woods used for railway purposes—natural or prepared.

Sec. 4. Wood pavements.

Sec. 5. Cooperage—tubs, barrels, etc.

Sec. 6. Wood carving and turnery, with tools used.

Sec. 7. Basket and wicker work.

Sec. 8. Fancy woodwork, including veneers, parquetry, bog oak articles, stained and colored woods, etc.

Sec. 9. Wood engraving, with samples of wood.

Sec. 10. Bamboos, canes, reeds, and manufactures therefrom.

Sec. 11. Tanning substances—barks, extracts, etc.

Sec. 12. Dyeing substances—woods, roots, flowers, etc.

Sec. 13. Barks, including cork.

Sec. 14. Fibres and Fibrous substances.

Sec. 15. Materials for paper manufacture.

Sec. 16. Gums, resins, and gum elastics.

Sec. 17. Wood oils and varnishes—including lac of sorts.

Sec. 18. Drugs, foods, spices.

Sec. 19. Charcoal for gunpowder, tinder, etc.

Sec. 20. Peas and its products.

Sec. 22. Cones, seeds, and fruits of trees and shrubs.

CLASS III.—SCIENTIFIC FORESTRY.

Sec. 1. Botanical specimens of forest flora.

Sec. 2. Microscopic sections of woods.

Sec. 3. Parasites—fungi and lichens injurious to trees.

Sec. 4. Edible fungi—in their natural state or preserved.

Sec. 5. Forest fauna injurious to woods,

Sec. 6. Forest Entomology.—Useful and noxious insects, with specimens illustrative of the damage done by the latter.

Sec. 7. Preservative processes applied to timber.

Sec. 8. Specimens and diagrams illustrating

the geographical formations adapted to the growth of trees.

Sec. 9. Fossil plants—collections illustrative of the trees of coal measures, etc.

Sec. 10. Trees found in bogs—oak, fir, etc.

CLASS IV.—ORNAMENTAL FORESTRY.

Sec. 1. Growing specimens of rare and ornamental trees and shrubs—in tubs or otherwise.

Sec. 2. Rustic work—arbours, bridges, gates, seats, etc.

Sec. 3. Dried specimens of ornamental objects, including foliage, &c.

CLASS V.—ILLUSTRATIONS OF FORESTRY.

Sec. 1. Paintings, photographs and drawings of remarkable or historical trees, foliage and scenery.

Sec. 2. Delineations of trees in their native countries, or of recent introduction.

Sec. 3. Illustrations showing effects of blight, accident, parasitic growths, or any abnormal condition.

Sec. 4. Sketches of practical work and operations in the forests.

N. B.—[Special attention is invited to this class.]

CLASS VI.—FOREST LITERATURE AND HISTORY.

Sec. 1. Reports of Forest Schools or Departments—forest periodicals and other publications manuals and almanacs,—treatises on measuring and valuing woods,—forest floras of different countries,—on fixation of dunes, and on ancient or extinct forests.

Sec. 2. (a.) Working plans of forests and plantations, valuations and surveys of estates, etc. (b.) Charts illustrative of the geographical distribution of forest trees and their altitude.

(c.) Maps illustrating the distribution of forest produce, forming articles of British commerce.

(d.) Forest book-keeping and accounts.

N. B.—[Special attention is invited to section 2.]

CLASS VII.—ESSAYS AND REPORTS.

Essays and reports on specific subjects, for which premiums are offered as per separate schedule.

CLASS VIII.—LOAN COLLECTIONS.

Collections within the scope of the foregoing classes—for example, illustrating the fauna, flora, or forest produce of a province or district—would be acceptable.

CLASS IX.—ECONOMIC CONDITION OF FORESTERS AND WOODMEN.

CLASS X.—MISCELLANEOUS.

Articles not particularised in the above divisions, if bearing on the objects of the exhibition, are admissible, with the sanction of the Executive Committee.

N. B.—[Exhibitors in making their entries must quote the class and section in this column.]

REGULATIONS.

1. The exhibition is intended to include every thing connected with, or illustrative of, the forest products of the world, and will be open to exhibitors from all countries.

2. Entries close on the first of March 1884. All exhibits must be intimated by a certificate of entry, forms of which will be issued on application to the secretary.

3. The committee reserve power to restrict the space applied for, or to decline any application, in either of which cases the secretary will, as soon as practicable, notify the same to the applicant.

4. Exhibitor will be charged one shilling per square foot of floor space. Open air space free. Cases for exhibits must not exceed ten feet in height.

5. Exhibitors must pay all expense of transit, delivery, fixing, and removing their exhibits.

6. All packages containing articles intended for exhibition must bear the distinctive mark I. F. E. EDINBURGH, in red paint; and they must also have painted on them, the name and number (which will be sent on allocation of space) of the exhibitor. The way-bill must accompany all packages, and contain the name of the exhibitor, his number and address.

7. Arrangements will be made by the committee for the reception of exhibits, at a date to be afterwards fixed.

8. The committee will not be liable for any loss or damage, from whatever cause, which

exhibits may sustain in transit, at the exhibition or otherwise.

9. Exhibitors must provide, either personally or by their agent, for the reception, setting up, and removal of their exhibits, and the verification of the same; in default whereof, the committee reserve the right of doing whatever they may consider necessary at the expense of the exhibitor.

10. Exhibitors of machinery requiring the use of water, gas or steam, must state, on making their entries, the quantity of water, gas, or steam which will be required. Exhibitors of machinery in motion must state the rate of speed at which it is to be driven. The furnishing of all connections, shafting, pulleys, belting, etc., must be at the expense of the exhibitor. Gas, water, or steam power will be supplied on terms to be hereafter arranged by the committee, and be under their entire control.

11. Medals, money prizes, and diplomas for exhibits and essays, will be awarded by competent jurors.

12. No photographs, copies, or other reproductions of any objects exhibited, will be permitted to be taken without the consent of the committee and the exhibitor.

13. Contributors to the loan department are requested to communicate with the secretary, who will supply special forms to be filled up by them. Free space will be given for workmen's approved models.

14. No exhibitor will be allowed to transfer any allotment, or to allow any other than his own duly admitted exhibits to be placed thereon, except by permission of the committee.

15. No articles can be removed before the close of the exhibition, unless perishable, regarding which special arrangements will be made.

16. To ensure uniformity of decoration and general effect, no exhibitor will be allowed to put up any sign, flag, banner, or any other kind of decoration or erection, without the approval of the committee.

17. Exhibitors will be required to provide all necessary attendance, and to keep their stands and exhibits properly cleaned, and in good order, during the whole period of the exhibition.

18. Exhibitors may mark the selling price of articles exhibited complete, for the information of the jurors and visitors.

19. No placards will be permitted either within the exhibition or on the enclosure except by special permission of the committee. No handbills, newspapers, books, etc., are allowed to be sold in the exhibition without their sanction.

20. All fulminating and explosive substances, and all dangerous materials, are absolutely forbidden to be sent.

21. All cases must be unpacked as soon as received, and the empty cases taken away by the exhibitors or their agents.

22. The committee reserve the sole right of compiling and publishing a catalogue of exhibits, which can be purchased only within the exhibition.

23. Smoking is strictly prohibited within the exhibition buildings.

24. All persons admitted to the exhibition shall be subject to the rules and orders of the committee.

G. CADELL, Secretary,
3 George IV Bridge, Edinburgh.
26th September 1883.

NOTE.—The committee will endeavor to obtain from the various British railway companies special terms for the conveyance of exhibits to and from the exhibition, and should they succeed, such arrangements will be duly intimated to exhibitors. The committee, however, do not undertake any responsibility between the railway companies and exhibitors with reference to the despatch, transmission, delivery, or return of exhibits.

Official London Agent—WILLIAM H. RIDE, Esq., 14 Bartholomew Close, E.C.4.

A PARALYTIC STROKE.—W. H. Howard, of Geneva, N. Y., suffered with palsy and general debility, and spent a small fortune in advertised remedies, without avail, until he tried Burdock Blood Bitters. It purified and revitalized the blood, caused it to circulate freely, and quickly restored him to health.

ONE HALF A MILLION OF DOLLARS FOR POSTAGE.

George Stinson & Co., the celebrated Art Publishers, of Portland, Maine, undoubtedly pay more money for postage than any other firm in the world; for the last five years their postage bill has averaged over two thousand dollars per week, making a grand aggregate of over five hundred and twenty thousand dollars; this is about the three-hundredth part of all postage of every description collected by the United States government during that time, and in this connection it must be borne in mind that the country now has over fifty million souls, and fifty thousand post-offices. But the enormous sum paid for postage represents only the cost of sending the light packages, letters and circulars, for large, heavy packages are sent by express and freight. Messrs. Stinson & Co. publish every description of pictures of the better class, and their trade now extends over the entire world. As an illustration of the fact that their trade reaches the furthestmost parts of the earth, the following may be interesting. A short time since an order for an assortment of over three thousand large and expensive pictures was received from Tasmania, away down under the South Pole. Not many years ago Tasmania was a penal colony of England, and its population was entirely of convicts and their keepers. Since the removal of the convicts, it has become a thrifty colony; this place is so remote, that three months are required for an answer to a letter. Tons of pictures are sent to South Africa by Messrs. Stinson & Co., and West Africa sends to Portland for Works of Art; they have trade in every quarter of the globe where civilization has gained a foothold. Commencing at the bottom, they have worked their way to the top, step by step, and thereby, added to the greatest push and enterprise, they have that solid, practical experience that is always necessary to the best results, in all things. They carry in stock millions of pictures, and are at a moment's notice ready to fill a five cent order, or one for thousands of dollars; they employ some five hundred artists, clerks, and workmen; their machinery and appointments are on a magnificent scale, and a trade of ten thousand dollars a day, on an average, is required to keep them moving in full blast. Their assortment of steel plates is especially fine, and ranks very high in artistic merit; many thousands of dollars are often spent on a single plate. They appreciate the value of printer's ink, and know how to use it to the best advantage; therefore they advertise largely and liberally in the newspapers—newspaper advertising was an important factor in laying the sound foundations of their great success, and without it, they state that it would have been utterly impossible for them to have reached their present position. Stinson & Co. are a striking illustration of what can be accomplished by energy, industry, and good judgment. There is "room at the top"—all honor to those who fight their way up. This firm believes in standard goods and low prices, and on that principle their business is conducted. American homes should be made beautiful by refined and meritorious works of Art; no one has any excuse for not adding to their homes the charms of pictures, for fine works of high art are within the reach of all.

A Sawing Match Arranged.

LONDON, Ont., Dec. 27.—Messrs. J. D. McColl and S. Happer, of Parkhill, have accepted the challenge of R. S. Darby and R. Brown, of Bluevale, to match them in sawing. They will "saw" Messrs. Darby and Brown for \$200 a side at Parkhill on 1st February, 1884. They would prefer the log to be 22 inches in diameter, or two cuts of a 20-inch maple log, but will leave that matter for their opponents to decide.

Sanitary.

An English engineer has provided Wanamaker's great Philadelphia store with a pair of huge mechanical lungs, which draw in the outside air, cool it with showers of spray, and distribute it through thousands of orifices in the building, to the comfort of clerks and visitors.

An excellent authority in medicine recommends a little common sugar as a remedy for a dry, hacking cough, and gives scientific reasons

for it. If troubled at night or on first waking in the morning, have a little cup on a stand close by the bed, and take half a teaspoonful; this will be of benefit when cough syrups fail.

The vapor bath is a thorough cleanser of the skin, because it softens the surface so entirely that all foreign and effete matter can be rubbed off with the hand. It is a favorite remedy in domestic medicine as well as with the profession. There is no reason why the vapor bath should be an unusual luxury in this country. In England at several large factories the waste steam and hot water are diverted into rooms where the employees can have vapor and water baths in the evening. A small sum is charged for soap, towels, and the services of a bath-keeper. Well disposed owners of great manufacturing works in this country might greatly promote the comfort and health of their people by employing similar means. The cost of fitting up such bathing-rooms would be small, and the two sexes could use them on alternate evenings.

Dr. Henry Macaulay, M. D., of Belfast, has recently made a suggestion which, if followed in tropical countries, will turn the tables on the sun with a vengeance. He suggests that Mouchot's sun engine should be used to pump cold air into dwellings, factories, etc., pointing out that the temperature can in this way be reduced from 100° or more to 60°. He points out that not only will this reduce the temperature especially at night, thus rendering sleep possible, but fresh air will be guaranteed during the day, and the plague of flies and insects would be excluded. The weak point about this arrangement is that it requires ice. We think, however, adds Nature, that sooner or later in America, where the heat in summer is more distressing than in any other part of the world, and ice is everywhere, this arrangement, or one like it, is certain to be adopted.

Wonderful Sunsets.

Mr. Norman Lockyer, the eminent English astronomer, has been explaining the causes of the glorious sunsets which have recently delighted the inhabitants of the Old, and to a less extent, the New, World. During August and September remarkable phenomena were noticed at sunrise and sunset from East India to Brazil; and lately the same appearances in a modified form have been apparent in Europe. Wonderful blues and greens and crimson have dyed the skies at dawn and evening, which, in the latter part of August, were so deep as to pale the sun's light most noticeably. The source of these strange appearances has been traced to a mass of minute floating particles of pumice stone ejected from the volcano of Krakatoa in the Straits of Sunda. Tremendous volcanic action, all will remember, took place during the days of the 26th-28th of August, accompanied by earthquakes and marine commotions. To the fine dust then thrown out and carried by atmospherical currents over Southern India, the Mauritius, the Cape, Gold Coast, Brazil and Europe, these appearances are due.

Professor Brooks, of Western New York, noticed towards the end of last month shortly after sunset, "a red light, intensely bright, almost dazzling, reaching nearly to the zenith, a phenomenon visible over a large part of the North-Western States." Doubtless this was also due to a part of that fine Java dust having been wafted to these north-westerly regions. Prof. Brooks, however, ascribes it to a "shower of telescopic meteors." Mr. Lockyer's theory is, we think, infinitely more plausible. Many will remember a somewhat similar appearance of the sky in Canada some two years ago after a prolonged period of drought, when bush fires were raging in all directions, due, doubtless to vast quantities of microscopic floating wood ashes.

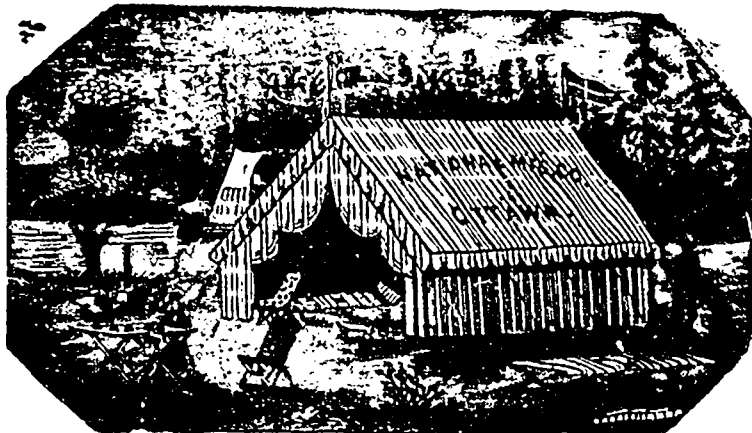
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BE CAREFUL WHAT YOU EAT—The best medical authorities declare that worms in the human system are often induced by eating too freely of uncooked fruit and too much meat, cheese, etc. Whatever may be the cause, Freeman's Worm Powders are speedy and sure cures; they destroy the worms, and control their own chattering to expel them.

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OUR LUMBER INTERESTS.

The seventh of the course of lectures on Canadian Industries and Commerce, under the auspices of the Montreal Young Men's Christian Association, was delivered in the Association Hall on Monday evening, December the 10th, by Mr. J. K. Ward, the subject being "The Lumber Industry of the Dominion." The chair was occupied by Mr. William Little, who, in the course of a few introductory remarks, referred to the fact that there were few, if any, men in Canada more competent to deliver a lecture on the subject of lumber interests than the gentleman who was about to address them.

Mr. J. K. Ward then proceeded to deliver his lecture as follows:—

Mr. Chairman, Ladies and gentlemen—In coming before you on this occasion in the role of a lecturer, I do so with a good deal of diffidence, not because the subject on which I intend to speak is void of either interest or importance, but on account of my inability to treat it as it merits. However this may be I claim your indulgence, should I fail to make it as interesting and as useful as I would wish it to be. I have heard it said that long dull sermons have their uses as they sometimes call into exercise the virtue of patience. I trust, however, that none of you will be put to such a test to-night. I will therefore proceed with my paper on the Lumber Industry of the Dominion in the following order:—First, the quantity of lumber manufactured, and the extent of territory on which it is made, and from whence our future supply is to be derived; secondly, the importance of this trade in a commercial and economic point of view; next, some points in its history, and a short notice of some of those men who have taken a prominent part in developing the trade; and lastly, a few remarks of a personal nature, intended for the younger portion of my hearers should time and circumstances permit. It is estimated from statistics derived from Government returns and other sources that I have had access to, as well as having some personal knowledge of the business, that there is manufactured annually in the Dominion, east of the Rocky Mountains, lumber and timber approximating to 2,600,000,000 feet board measure—comprised of hewn timber and sawn lumber, railroad ties, cedar, round and flatted timber. The quantities quoted do not agree with those furnished by the census of 1881, being less. Take British Columbia; it is credited with producing 24,043,877 cubic feet of white and red pine in addition to 3,291,113 saw logs—at an average of say 150 feet each making nearly 500 million feet B. M., besides 86,000 cords of lath and firewood. The quantity of hewn timber is almost double that made last year in the older provinces, and one-fourth as many logs; that is certainly a large yield to be produced in a province credited with a population of less than 50,000 souls, the two districts of Yale and New Westminster, with a population of 25,000, producing nearly the whole of this large quantity of timber and logs. The total value of her forest exports was only \$362,871, or a small portion of the value of the timber and lumber divided to her credit in the census. I have divided the whole product of the provinces as follows:—Ontario furnishes 4,474,000 pieces, equal to 2,600,000 standard pine logs of 200 feet each, producing 520,000,000 feet of lumber, 6,790,000 cubic feet of white and red pine, or 81,000,000 feet B. M.; dimension timber—23,000,000 feet B. M., hardwood, cedar, &c., equal to 5,000,000 feet, making in the aggregate 657,500,000 feet B. M., paying to the Provincial Government for timber dues \$701,000, and ground rents, &c., \$16,000, with eighteen thousand square miles under license. Quebec has under license, 48,000 square miles, producing \$2,400,000 more logs, equal to 300,000,000 feet B. M., and 1,308,000 spruce logs, producing 106,000,000 B. M., white and red pine timber 3,110,000 cubic feet equal to 31,100,000 feet B. M., hardwood 51,000 cubic feet, or 611,000 feet B. M., railroad ties 143,000 pieces, 32 feet each, making 4,570,000 feet B. M., cedar equal to 4,500,000 feet, pine and spruce round timber 5,760,000 feet B. M., tamarac 175,000 feet B. M., hemlock 50,000 feet, cordwood equal to 6,600,000 feet, making in all 549,970,000 feet, giving a gross revenue of

\$668,596 to the province. [New Brunswick cut on Government lands equal to 160,000,000 feet of all classes, principally spruce. The pine in this province, once so famed, is almost exhausted. There being a large extent of private lands in this province, I think it is safe to estimate that there is not less than 500,000,000 feet of lumber and timber produced, considerably more than three-fourths of which is exported, the balance being for home use. The extent of territory is 17,500,000 acres, 10,000,000 of which is granted and located, leaving 7½ millions still vacant, and giving to the province a revenue of \$152,000 for timber dues, ground rent, etc. Nova Scotia is estimated to produce about 250,000,000 feet, of which about \$1,600,000 worth is exported, this province furnishing a large quantity of birch and maple. Manitoba and North-West Territories produce say 75,000,000 feet. These figures give us a total of 2,010,476,000 feet. The difference between this total and 2,600,000,000 feet is made up by the product of private lands, principally in New Brunswick and Eastern Townships of Quebec, and including also the output of scores, if not hundreds, of small mills scattered through the country, known only in their own localities. Of the total there is about three-fifths exported, realizing \$24,000,000. I think there is hardly any person at all familiar with the business, who will admit that there is much forest product taken out of private lands as off the public domain. Yet we are led to believe by the census that there is in the aggregate three or four times as much. This may appear strange, but when we get into the region of thousands of millions, it may not be wondered at if people add to or take off a cypher or two occasionally. I find by one of our trade reports the estimate made of the output of timber is 83,800,000 logs. Now, the product of this quantity of logs at the moderate average of 125 feet, would make four times the quantity of lumber and timber made in the four provinces. The reports of the Crown Lands departments, the exports and quantity per head of population as compared with other countries will, I think, be a very fair guide to go by.

As to the extent of territory on which these lumber operations are carried on there are in the three provinces of Quebec, New Brunswick and Ontario 75,500 square miles under license, besides about seven thousand square miles owned by private parties in these three provinces and Nova Scotia, the whole being equal to 52,800,000 acres. This, however, is not all the timber territory from which we have to draw our future supplies. The older provinces of the Dominion embrace an area of about 360,000 square miles, which, after deducting the territory under license, leaves an area of 270,000 square miles, or 180,000,000 acres. Only a small proportion—comparatively of this is occupied for agricultural purposes, thus leaving a very large extent of territory on which, no doubt, there are vast quantities of timber, not only for export, but for home purposes. I have no doubt whatever that more than half of the whole of this territory is unfit for settlement, and will remain for ages as bush land. This bush land, in a sanitary point of view, will be useful in attracting the rains, holding back the water in its natural beds, so preventing sudden rises and falls in the rivers, which often cause much damage by overflowing lands as well as loss by excessive drought, so that many streams that once afforded good water powers are now useless as such. The Province of Quebec in particular is highly favored by its numerous streams and magnificent lakes, many of which are turned to good account by lumbermen, who often build dams at the outlets of the lakes, thus creating great reservoirs of water which are held in reserve to be used when the streams go low, enabling the drivers to get down their logs and timber perhaps the first year, whereas, if the drive depended on the natural flow of water, it might not reach its destination in less than two or three years, entailing much loss of interest on capital as well as depreciation in the value of the logs or timber by their becoming sap-stained or worm-eaten. For the system

of dam building, making side quays, blasting boulders and introducing improved driving tools, such as the steel cant dogs, patent pick and pointed barge, we are indebted to the Maine lumbermen, daring and profane, if you will; many of whom found watery graves in St. Maurice and other rivers. Before their advent into our country what was known as rear limits, though ever so well timbered, were considered of little value, but by the adoption of the improvements referred to these limits became almost as valuable as those fronting the Maine river. Notwithstanding the great praise due to these men they tried to introduce methods of lumbering found to be not suitable to this country or profitable to themselves, such as hauling out the whole tree to the bank of the river and there cutting it into logs, in place of having done so in the woods, and thereby often saving the cost of hauling worthless timber; also introducing oxen on a large scale for hauling long distances, where horses from their speed would prove more profitable. The use of horses for lumbering purposes instead of oxen is now almost universal. I have heard it said that an ox team and men started for the Tique from Three Rivers with a load of provisions, oats, &c., and had to stop on the way, having run short of supplies, and were compelled to send back for a fresh stock to enable them to reach their destination. In coming back to the question of the extent of timbered territory, from which we are glad to draw out future supplies of merchantable lumber, you can hardly meet with two lumbermen who will correspond in their opinions. It is extremely problematical as to the average quantity of lumber which a given acre will yield. I have seen five, ten or even twenty thousand feet come off an acre; and have heard of as much as fifty thousand; but this I consider as very rare. It has been estimated that our timber territory in Ontario and Quebec would yield from one to two thousand feet per acre, which I consider not an unreasonable estimate. It would therefore be fair to adopt the medium estimate of fifteen hundred feet per acre, which would give, at the present rate of production, a thirty-seven years' supply. This in addition to a very large extent of territory not under license, would, it is reasonable to suppose yield enough to make fifty years' supply, as stated in my paper read before the Forestry Congress. This calculation refers exclusively to pine; spruce and hard woods, in which our country abounds, that have been comparatively neglected, will as pine grows scarce become more used for finishing purposes. As years pass by and the timber increases in size, the territory cut over by the lumbermen who in the past took nothing but the choicest, will be found to contain a large quantity of material that will be considered valuable. As to providing against loss by forest fires, we may reasonably hope that they will be less frequent than in the past, and that the natural increase in size will, as some argue make, make up for the loss occasioned by them. It may seem strange that to produce the annual output of wood goods, supposing the annual yield per acre to be 1,500 feet, that it requires 1,700,000 acres to be gone over, or equal to an area of sixteen times that of the Island of Montreal. Timber limits are sold in Quebec by auction or at private sale at so much per square mile. Licenses have to be renewed annually, and the license holder pays an annual ground rent of two dollars per mile. He pays four cents per cubic foot for oak and walnut, two cents for pine, twenty-two cents for pine log of thirteen feet long and of seventeen inches and up in diameter; eleven cents per log for those of less diameters, and five and one-half cents per piece for spruce logs. Pine trees under twelve inches in diameter are prohibited from being cut, also all hemlock and ash. The regulations are somewhat similar in Ontario, only pine and other saw logs are charged so much per thousand feet, board measure. In New Brunswick timber berths rarely bring over the upset price of \$5 per mile, and there is no charge for the cut or stumpage of timber, but the revenue is put on in the shape of an export duty, which simplifies collection. In Nova Scotia there are no rules under which licenses can issue. To procure a right to the timber the land itself has to be purchased from the crown. The Quebec

Government receives on an average \$11.50 per square mile per annum for all territory under license. The Upper Ottawa yields \$18.50 per square mile, the Lower Ottawa \$10, and the St. Maurice only \$4. Ontario receives annually about \$26 per square mile for territory under license. The Federal Government own extensive and costly works on various rivers in Quebec and Ontario to facilitate the descent of timber and logs. The works are to be found in the Saguenay district, St. Maurice, Ottawa, Gatineau, Madawaska, Conlonge, Petawawa, Dumoine, and Trent. They embrace 5,071 feet of canals, 22,063 feet of slides, 112,670 feet of booms, 2,440 feet of bridges, 21,402 feet of dams, 346 bulkheads, and 274 piers, most of which involve a large annual outlay for repairs. The tolls collected on these works go to the public works of the Dominion. Before closing this part of my subject, I would refer to that portion of my paper mentioned in which I remarked that to the uninitiated travelling through the woods, he would hardly know that the shanty men had been there, except for seeing an occasional stump or few chips, or the top of a tree. This may require a little explanation. In my experience of nearly forty years' lumbering, it has been my fortune to work mostly in what is called a hard wood country, where the best pine is usually found in very scattered quantities; but where, in a few cases, I have worked in what is known as a green country, where pine mostly prevails, it has generally proved so faulty that but a small proportion of the whole was considered as merchantable, so that the country, to a casual observer, looking from a distance, appears to be covered with timber. It is a matter of congratulation that, through the efforts of the Forestry Congress, held in this city in August, 1882, the attention of our provincial governments has been aroused to the necessity of legislative action for the preservation of our forests, and that they have taken some steps for the prevention of forest fires and for the detection of those who carelessly or willfully destroy that which is the principal source of revenue to our province, as well as affording the greatest amount of labor to the industrial classes, likewise the setting apart as timber reserves those portions of our territory not suitable or profitable for agricultural purposes. Objections have been raised by some, who contend that lumbermen carry on their operations over a too extensive territory, and that they should be constrained to cut clean as they go. I think that every lumberman who understands his business will recognize this as the right policy, but the law, as it stood up to 1868, actually offered a premium to license holders to extend their operation over all their limits by compelling them to cut a certain number of logs on each limit held by them. Failing to do so, the rental doubled on all unworked limits until it reached a maximum. However, in 1868, the government adopted a wiser policy by establishing a fixed rental on all licenses, whether worked or not, thus inducing lumbermen to concentrate their operation and thereby lessening the cost of lumber and obviating the necessity for making additional roads, clearing streams, building shanties and numerous drives. Too much credit cannot be given to the present Commissioner of Crown Lands for the Province of Quebec, the Hon. W. W. Lynch, for his hearty co-operation with public sentiment, and his enlightened policy in the management of the Crown Lands, and also to the Hon. Mr. Joly, legislator and lumberman, for his efforts in calling the attention of the Government and people to the necessity of taking active measures to protect the source of so great an industry. It is to be regretted that in the last report of the Surveyor General of New Brunswick for 1882, no steps are recommended to be taken for the prevention of forest fires and the enforcement of all possible means for the protection of the source of one of her principal items of provincial revenue. Otherwise the land policy of New Brunswick is fair to the settler, and affords all necessary protection to the Government, inasmuch as the Governor-in-Council has the right to set off and have surveyed such lands as are fit for settlement, and reserved for actual settlers in lots of 100 acres each; such settlers must be eighteen years of age, or over, and not possessed of any real estate or land acquired

under the provisions of the Provincial Land Act. This I think is wise, as it prevents any one person from monopolising large tracts of public lands through the use of minors or others' names. Neither can the settler in any way alienate land allotted to him until settlement duties are performed, the price paid in full, and the patent in his possession. Prince Edward Island does not produce more lumber than is required for home use.

The importance of this industry may be measured to some extent by the value of our exports, which for the past year has amounted to about \$24,000,000, a sum largely in excess of any manufacturing industry in the country. In addition to this there is a large quantity of lumber used in the Dominion, about two-fifths of the whole. If we compare the value of our lumber exports with that of exports from fisheries, mines and agricultural products, it amounts to one-fourth of the total value. The amount of capital invested in timbered lands and mill property is, at least \$35,000,000, and the value of the output is \$38,000,000, and that annually invested in working capital is about \$20,000,000. Fifty per cent. of the whole products of the forests represents labor, and thirty-five per cent. stumpage, ground rents, interest on mill property, cost of limits and working capital. There are employed in producing this lumber about 18,000 men during the winter in the woods; 15,000 during the summer in the mills, and over five thousand employed in loading and manning the craft that conveys it to market. These 33,000 men, the greater proportion of whom have families, represent a large population. When we take into consideration the indirect benefits derived from this industry, such as the construction of mills, machinery, barges and steamboats for its manufacture and conveyance to market, add to this the benefit derived from the great number of ships and other crafts which take away our lumber product, we may well conclude that it is hard to over-estimate its importance, in addition to the home demand created for farm products, generally at better prices than could be obtained elsewhere. It behoves the parties on whom these vast interests depend, to preserve well our forests, as these are the well-spring of them all.

Before closing this part of my subject I would mention that Quebec, for the past ten years, has loaded on an average 620 vessels, representing 800 tons each, and carrying about 400 million feet B. M. of lumber and timber, or say one-sixth as much as was received in Chicago last year; as much more was shipped in the other parts of the Dominion on sea-going crafts. It is reported that Burrall & Co. sent a cargo of shipbuilding timber the past season to Norway, notwithstanding this country and Sweden with a timber producing territory not larger in extent than that under license in Canada, (although S. and N. contain 290,000 square miles), exports more of forest products than does the Dominion. Montreal exported in 1882, by steamship principally, 88,000,000 feet of 3 inch deals to Europe, and 22,000,000 feet of boards and planks to South America. The business of this port is steadily increasing, and no doubt will for years on account of sawn lumber taking the place of square timber for exportation, which, no doubt, is a step in the right direction, as it saves much waste in the wood as well as costly freight on nearly worthless wood contained in the centre of nearly every piece of square timber and slabs, as well as keeping much labor in the country, such as sawing, piling, &c. I might safely say that the lumber trade is with us from the cradle to the grave. There are over forty industries in the Dominion in which timber alone is employed. We find it in the stately three-masted that sails the ocean, down to the tiny match with which you light your lamps. It is, indeed, impossible to enumerate all the industries into which wood enters as part of their products, so I may here close this second part of my subject. As to the history of lumber business in the Dominion, I might say that up to the close of the last century little was done beyond providing for local wants. I find that the first timber exported from Canada was sent to La Rochelle in France as early as 1667 by Talon. Lieutenant Hocquart shipped some timber and boards

to Rochefort in 1735. Philemon Wright, who came from Woburn, Mass., in 1766, was one of the first, if not the first, lumberman, who took timber down the Ottawa. He settled at Hull in 1797, deciding to make his home in Canada. He was accompanied from Woburn, Mass., in February, 1800, by five families, and had in his train fourteen horses, eight oxen, and seven sleighs. He brought his first square timber to Quebec in 1807. He built the first timber slide on the Hull side of the river in 1829; was elected to represent the County of Ottawa in 1830, and died in 1839, and was buried in the little cemetery on the Alymer road. It must have been a fine sight to an enthusiastic lumberman to look upon such magnificent forests of pine as once stood in the township of Hull. A grand son Mr. Wright stated to me in coming down the Ottawa years ago, that he thought no township on the Ottawa contained as much and as fine timber as did Hull. The first mill at the Chaudiere was built by Philemon Wright on the Hull side of the river in 1808. It was unfortunately burned down; it was rebuilt in sixty days. About 18 years prior to this the first saw mill on the Ottawa was built at Point Fortune by a Mr. Storey. It had one upright saw, and it is recorded that when the man in charge giggered back the carriage for a fresh cut he would seat himself on the log and eat his dinner, and would go through by the time the saw was through the log. N. E. Treadwell, another American, father of the late sheriff of L'Orignal, built the first saw mill at Hawkesbury, which was carried away by the high water, when a Mr. Meets built another mill and afterwards sold it to the late George Hamilton, father of the present proprietor of the extensive mills at Hawkesbury. Among those who have taken a prominent part in developing the lumber trade of the Ottawa may be named Mr. Hamilton above referred to and the late Mr. Lowe, who managed the business for many years, and who, it is said, was so methodical that for 30 years he never missed ringing the bell at five o'clock in the morning during the sawing season. For many years this concern has done the largest business of any in the country, under the name of Hamilton Bros. The late John Egan, who might with propriety be called a lumber king, also took a prominent part. He owned enough of very valuable territory, had he survived to manage it, to have made him one of the richest men in the country. After John Egan I would mention the late Mr. McLachlan, of Arnprior, and the present extensive proprietors of mills at Ottawa city, many of whom manufacture, each, fifty million feet B. M. per annum. The difference in the production of these, compared with the little mill of Mr. Wright in 1808, is truly marvellous. It is pleasing to note the harmony that exists in the present day among workmen of different nationalities, compared with the bloodshed and murder that prevailed when the Shiners of little Bytown held sway.

Coming to the St. Maurice, a river next in size to the Ottawa, of the tributaries of the St. Lawrence, the first of which I have any knowledge, was Thomas Webster from Vermont, who took timber down that river about the year 1830. He was followed by the late Angus McDonald, of Beaconsport, Edward Graves, of Three Rivers, Baptist & Gordons, Norcross, Phillips & Co. (myself), and the American Lumber Company, who have been succeeded by the present firm of Ross, Ritchie & Co. The first trade in sawed lumber with South America, with the exception of two small parcels shipped in 1838 and 1841 from Quebec, included in general cargoes made up for the River Plate, really commenced in Three Rivers in 1864, and shipped by myself, consigned to Hall & Co., of Buenos Ayres, on account of A. & S. E. Spring, of Portland, Me. Similar shipments were continued for many years to Callis, on the West Coast, and sugar box shooks, & Co., to the West Indies. The trade to South America from Montreal commenced in 1866 and has continued since with varied success. Descending to the Lower St. Lawrence we come in contact with names famous for founding the timber trade of that region, and who in our future history will rank with the Molsons, Torrance, Armstrongs, and the late George Briah, in promoting steamboat enterprise, as

developers of the resources of our country, such as the late William Price and his sons, who were said to have owned at one time from six to twenty sawmill establishments, on the Sagueny, the north and south shores of the St. Lawrence, and on the Batiscan, the late Sir John Caldwell, who founded the mills of Etchemin, River du Loup en bas, and Grand Falls, in New Brunswick; the late Peter Patterson, of the mammoth establishment at Montmorency, a Yorkshireman, a ship carpenter by trade, who had been in Russia and gained some experience there, was met in England by a Mr. Osborne, who built the first large mill at Montmorency, but having experienced much trouble from ice, induced Mr. P. to come to Canada, where he settled and became proprietor of the largest establishment of the kind in the country, capable, it is said, of sawing eighty millions a year, and which manufactured the first deals for the English market. Not to forget on our way back westward the Gilmours, of the Gatineau and Trent, with Rathbun, of Mill Point or Deseronto. Among the great manufacturers of New Brunswick, I might mention Alexander Gibson of Fredericton, who is said to manufacture some ninety million feet a year, as well as Mr. Snowball, of Miramichi.

The average annual shipments of lumber and timber for the last ten years from the port Quebec was about 400,000,000 feet B. M., carried by 620 vessels. Before closing this part of my subject I will take occasion to say that the young men of our country, either French or English origin, are usually expert in the handling of an axe, or the management of a canoe or driving boat. It may appear almost beyond belief that some of the portages on the St. Maurice before the existence of roads, when provisions and materials had to be transported by canoe, carried on their backs, secured by tump line, equal to 250 pounds, consisting of half a barrel of pork and a bag of flour over such a portage as that of the Shawenigan and on some special occasions when put on their mettle some men by name of Belmore, of Le Gres, portaged as much as 500 pounds each, and I have it from reliable authority that one Louis Decoteau carried as much as 700 pounds on the same portage, but the effort broke him down, as he had to be brought home in a canoe; he recovered sufficiently to do ordinary work, and years after went with others on an explorative expedition for me, on the Vermillion, he had an epileptic fit resulting in the burning of his feet in the fire, before which they were lying, as to incapacitate him for much more labor, and finally becoming insane was taken to Beauport, where he died. I refer to this man more particularly as a fine type of a voyageur, combining the suavity of the Frenchman, and a little of the African, making him one of the best cooks and attendants for a hunting party, with whom he was a great favorite, being

known to many English and French gentlemen who have hunted on the St. Maurice and Sagueny. In my experience of thirty-four years lumbering, I have heard stories of very big trees. The largest it has been my lot to have seen, grow on the River Blanche, a tributary of the Masquinonge. It measured forty inches in diameter seventy-five feet from the ground, it made five logs producing 6,000 feet B. M., when sawed. Well do I remember helping to roll the logs into the river, where they floated about like empty puncheons, half out of the water a sure indication of superior wood in a pine log. In those days we did not take many logs with knots, so that perhaps two or three common logs were left in the woods to rot. Some of the poets have sung of the glories of the oak as the king of the forest, but to a true lumberman there is nothing that can compare to such a tree as the one I have referred to, towering toward the sky 150 feet. There is a majesty about its straight, well-proportioned stem and bushy top, that must force conviction on any person who has had the good fortune to have seen such a tree, that there is nothing to equal it among the products of the forest. It is said of the Chinese, who you all know are a sensible, practical people, that they classify the different callings and they have their status in the social scale accordingly, as follows:—The farmer first, as he produces most; the mechanic second, as he takes a natural product, such as a

piece of wood and turns it into a chair or other article, thereby adding to its value; the merchant comes last, as he only passes product from the producer to the consumer, adding nothing to value, and making the world no richer. I think they have no lumbermen in China, or they would place him at the head of the list, as he makes a thing worth a dollar represent fifteen by his labor and capital; the product of the farmer being mostly enhanced by the action of soil and air, while the lumberman's material is increased in value by the action of labor. An account of the lumber trade in Canada would be incomplete without some reference to our late friend, Mr. William Little, who might be called the pioneer lumberman of Western Canada. His operation beginning on the Grand River in 1833, or just half a century ago, afterwards extended over nearly the whole of the Niagara peninsula. It sounds strange to-day to hear of Canadian pine lumber being a novelty in the Albany market, and yet Mr. Little could speak of encountering the same difficulties in introducing the choice white pine of the Grand River into the American markets that the Ottawa lumbermen did into the British markets, the Americans objecting to its softness—a quality now considered one of its most valuable characteristics. And as showing the changes taking place during the business life of an individual he could speak of shipping single cargoes of pine not exceeding 100 thousand feet to overlook the markets of Cleveland and Toledo, whereas these cities now find sale annually for about 200 and 300 millions respectively, while Chicago, not then in existence, finds markets for over 2,600 millions, or about as much as the entire sawn product of pine of the whole Dominion. Seeing during his business life such extraordinary changes in the consumption of lumber, it was hardly to be wondered that Mr. Little should in his declining years become, as we all know him, one of the most ardent advocates of forest protection.

After serving an apprenticeship of five years, learning the trade of joiner and carpenter in the Isle of Man (the Eilan Vannin of the Manx), my native place, so that I am a British subject by inheritance, and a Canadian by choice (some contend that there is more merit in choosing to do well than to do so when there is no option in the matter, and the contrary when we decide to do wrong), I emigrated to America when still young. I landed in New York in 1842, almost forty two years ago, after a passage of fifty-three days, with just half a dollar in my pocket. After paying a few necessary expenses, and after spending a day there in a vain attempt to find employment, I worked my way up the Hudson in the steamboat Swallow, which was afterwards lost in a snow storm near Athens, thirty miles below Albany, in March 1845. I found employment at my trade, longing sadly for my old home and friends, but determined to prostitute that fickle dame Fortune, with strong hopes, yet anxious to pry into the unknown and untried future, I, to some extent succeeded in getting into her favor, so that after some years of hard work, patient industry, aiming to do right, following almost any sort of employment, always keeping in view that I had my trade to fall back upon, but often in those hard times I had to turn my attention to other work, and in the course of events got down to driving a horse to unload canal boats; afterwards got the rank of captain of one of the Hudson River barges, with a crew, all told, of two, which included myself and a young Scotchman. Well do I remember the night, dark and at midnight, when in New York Bay we came very nearly being capsized, had our deck-load not rolled off (it was beer in barrels); perhaps some might not consider it a great loss, may be less than it had been the speaker. Had it been the latter, you might have had from another something better than you have been treated to to-night. Boating having become unprofitable, or unsuitable, I tried my hand at candle making and soap boiling, having acquired some experience in this line with my first employer who followed this business in Albany, and for whom I superintended the building of two houses. After trying for nearly a year along with another, to make this a success, I abandoned it, as my partner withdrew too freely. That is the rock on which two

many wreck their hopes. One day he allowed the soap to boil over; much of the contents ran into the drain, which was fully as bad as if the fat went into the fire. I then concluded it was best to dissolve, which I did by selling out. I fell back on my trade again. You can gather from this the advantage of having a trade; it is equal to fortune and often better, as it cannot be dissipated as long as you have health and strength. It need not prevent boys from getting a good education, one that will fit them to mix in any society or to fill any position in business, and giving them great advantages in the event of becoming employers of labor. Mr. Ward then gave some particulars of his lumbering experience, and concluded.—If what I have said will aid or encourage any young man who may be listening to me, to take heart and never be weary of trying, I would say try; there is nothing like trying, even though he be without friends, with only half a dollar to commence with. Remember that—

"Honour or fame from no condition rise,
Act well your part, there all the honour lies."

At the conclusion, a hearty vote of thanks was passed to Mr. Ward for his interesting and valuable lecture.—*Montreal Gazette.*

INDIA RUBBER MANUFACTURES.

One of the features of every exhibition in the Dominion for years past, has been the display of clothing, utensils, and other goods manufactured by the Gutta Percha and Rubber Manufacturing Company, of which Mr. T. McIlroy, jr., is the manager; and great is the surprise expressed as the visitor observes the numerous and varied uses to which the enterprising firm has put the plastic juice of the rubber plant. But whilst the ingenious adaptations of rubber to domestic and artistic purposes chiefly attract the eye of the casual visitor, the merchant and scientist most admire the more useful, if plainer, section of the exhibit—the broad machine belting, tubing and fire-hose which have made for the firm its world-wide reputation. The latter class of goods, embracing among other brands the celebrated Maltese Cross fire engine hose, has been tested in every conceivable way, and has invariably come out of the trying ordeal with added laurels. Mr. McIlroy's firm are the happy possessors of the only gold medal ever given in Canada for fire-hose, which was awarded at the great International Firemen's tournament held at London, Ont., in August last. The success met with in Canada has led the company to commence the erection of a new factory at Parkdale, the cost of which, including plant and machinery, will reach \$250,000.—*Toronto News.*

Forestry Commission.

The Boston Herald is of the opinion that the establishment by congress of a commission of forestry would be a wise measure, if it could be made up of men who know something on the subject—of whom the number is so limited that selection would not be difficult—to consider the whole subject of forest conservation and report what should be done. If, as the Herald suggests, we could have at the head of such a commission such a man as Professor Charles A. Sargent, of the Arnold Arboretum, assisted by that intelligent arboriculturist, Charles A. Dana, editor of the New York Sun, and others whose studies have been in this direction, we should be sure of a report of great value, and so ably presented that even the average congressman might be stirred to action for the preservation of our forests.—*Lumberman's Gazette.*

A Timber Find.

The St. Croix Courier has the following:—Edward Jack, Esq., has been exploring in the wilds of Northumberland county, N. B., lately, and has discovered a river and numerous lakes which do not appear on any of the published maps, and which are bordered by extensive and valuable forests. From all that we can learn, this is likely to prove a better tract of lumber land than any at present known in the province. Mr. Jack is preparing a full report of his explorations, which, in due time, will be submitted to the surveyor-general and made more generally public.



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Communications intended for insertion in the CANADA LUMBERMAN, must be accompanied by the name of the writer, not necessarily for publication, but as a guarantee of good faith. Communications to insure insertion (if accepted) in the following number, should be in the hands of the publishers a week before the date of the next issue.

The CANADA LUMBERMAN is filed at the Offices of Messrs. SAMUEL DEACON & Co., 164 Leadenhall Street, London, England, who also receive advertisements and subscriptions for this paper.

PETERBOROUGH, Ont., JAN. 1, 1884.

TO OUR SUBSCRIBERS.

THOUGH a great number of our subscribers have responded to the notification which we sent to every one of them who was in arrears, to remit to us the amount due for their subscription to THE CANADA LUMBERMAN, yet there are too many instances in which this matter is still neglected. Once more we must remind those who have paid us the compliment of taking our paper, that journalists and printers can no more live upon compliments than any other men. Those who are debtors for such small sums may think them insignificant, as they are individually, but taken together, they represent an amount that is of consequence to us. Our disposal of the business to a joint stock company, also renders necessary the closing of all outstanding accounts. We would, therefore, be glad to see each one remitting promptly the amount due to us.

TOKER & CO.

DENSE forests are increasing in Australia, the climate is growing more moist, and even the great central desert may become habitable.

News from the Eau Claire, Wisconsin lumber district is to the effect that the log cut will not be curtailed as much as has been predicted, and that it will fall very little short of that of last year.

Six additional miles of the Chippewa & Monomonic River Logging Company have been finished this fall, making 12 miles in all completed. The iron for the last six miles was hauled 21 miles by wagon.

THE American Lumberman says:—Walnut lumber is again on the boom, and train after train loaded with it, both rough and dressed, is passing through Louisville, Ky., to the north, east and northwest, some of it being billed to the furniture factories in Maine and Massachusetts.

THERE is something worthy of consideration in the fact that there was an excess of 248,000,000 shingles, and 40,000,000 lath put on the Chicago market this season. The American Lumberman says it demonstrates that there has been a great excess of poor logs cut in the northwest, and that it explains why the better grades of lumber keep climbing up in price.

A RATHER sensational case has developed in Whitney township, Mich. A party at that point has been detected in cutting away the marks from a lot of logs, and of appropriating some lumber that came ashore, which belonged to an insurance company. The transactions are said to have occurred in the months of September and October, 1883. The owners of the property are now investigating the matter, and music will doubtless follow.

SAW-MILLS IN RUSSIA.

The number of saw mill in Russia is very considerable, as the abundance of standing woods and forest and the large home and foreign demand for timber would lead us to expect. The industry is most developed in the vicinity of the export ports, as it is more advantageous to ship the timber sawn than rough. The official estimate of the annual value of the produce of Russian saw mills, given below at 13,000,000 roubles affords no idea of the real extent of this branch of industry. There is quite 30,000,000 roubles worth of timber exported annually from Russian ports, of which only a small portion is shipped in a rough state, whilst the demand for home consumption is probably still larger. The estimate takes account only of the largest and most important saw mills. Besides these are a great number belonging to landed proprietors who own tracts of forest and have small saw mills on their estates, which are not included in the estimate.

The largest export of ship and other timbers is from Riga, which is not to be wondered at, as Livonia is one of the chief seats of the timber-sawing industry. In Riga itself are fifteen saw mills of the largest size, worked by steam and giving employment to 1,763 hands. In 1879 they delivered 3,687,800 roubles worth of sawn timber. Besides these are three others, two of them driven by steam, at Dorpat, and others at Pernau and Wolnar. Next in importance to Riga stands Ss. Petersburg, with nineteen saw mills, sixteen of which use steam of an aggregate of 390 horse-power, and which employ 746 hands, and produced in the last-mentioned year 1,141,700 roubles worth of sawn timber. There are other large steam saw mills in the neighborhood, at Ladoga, New Ladoga, Schlüsselberg, &c., and some smaller ones, driven by water, in the Tarkoe Zelo district. Of all the Governments into which Russia is divided, that of Lublin contains the largest number of saw mills, 83, but, except those in the Novo-Alexandrovsk district, none are of any size. At Wendau, in Courland, is a very large steam saw mill, employing 131 hands, which in 1879 produced 235,000 roubles worth of sawn timber.

In all, there are included in the official statistics for 1879, 397 saw mills, employing 865 hands, and having an annual production of 13,000,000 roubles of sawn timber. The actual amount delivered in 1879 was 13,000,000 roubles worth. Statistics of earlier decades are wanting; but from the returns of the Finance Ministry it appears that the estimated number of saw mills in Russia (including Finland) in 1869 was 179, which employed 3,556 hands, and produced 3,688,798 roubles worth of sawn timber in the year. It therefore seems that in the course of the ten years 1869-79 the number of saw mills had increased 122 per cent., the number of hands employed in them 142 per cent. and the value of the produce 235 per cent. This rapid increase has been due to the introduction of steam-power.

Besides saw-mills proper, there are manufactures of wooden articles, or of corks, scattered through the country. In St. Petersburg are 102, employing 855 hands. At Piotrkov and in Lublin are numerous factories of the same kind, some of which employ 100 to 130 hands. These are chiefly engaged in the manufacture of parquet for flooring. At Riga are eight, employing 1,250 hands and two steam-engines,

and which produced, in 1879, 1,281,000 roubles worth of corks and roof shingles. At Odessa are two factories devoted to the cutting of corks, the demand for which is increasing with the growing use of beer. At Minak and Olgopol wooden pegs are the articles of manufacture; at Tambov, spokes; at Novogorod, turnery. Many of these factories, which are nearly all of small size, are employed in the manufacture of household furniture and utensils, which are lacquered in particular or bronzed in the Russian style. There are numerous carriage factories and waggon builders' establishments in Russia, but they are all on a small scale. Of the former Ekaterinoslay possesses the largest number, 25; St. Petersburg next, 19. At Archangel, on the White Sea, are two. Of waggon-building factories about the largest are that of Potroff, of Moscow, employing 133 hands, with an annual turnover of 132,000 roubles, and that of Tubakoff, of St. Petersburg, which employs 192 hands, and has an annual turnover of 130,000 roubles.

Matchwood manufacture is a widespread industry in Russia, but the establishments are all small. With the exception of one at Kiev, none use steam power, and none have a higher average annual production than 7,000 roubles. The wood is said to be excellent of its kind, and there is a considerable export to Austria and Sweden.

In 1869 there were 85 matchwood factories employing altogether 2,214 hands, which produced matchwood to the value of 488,421 roubles in the year. In 1879 there were 239 such manufactories, employing 8,249 hands, which in the year produced 1,802,000 roubles worth of goods.—*Timber Trades Journal.*

[A roubles may be roughly said to be worth 75 cents].—Ed.

THE LIVERPOOL TRADE.

James Smith & Co.'s wood circular and prices current, dated Liverpool, 1st December, says the arrivals since our last have been 69 vessels, 59,284 tons, against 79 vessels, 53,470 tons, in the corresponding period last year, and 61 vessels, 49,223 tons in 1881.

The import still continues too large, and only through the reduced values has the consumption been stimulated, stocks therefore are generally heavy, and, with prospects of strikes in this district, there is little hope of any improvement for some time to come; there must also be a much reduced supply before any change for the better can take place. The late failures have done much to shake confidence. Money continues low, and freights are easier.

COLONIAL WOODS.—Yellow pine:—The import has been large, consisting of 452,000 feet; the consumption has been well maintained, but the stock is heavy, viz., 1,006,000 feet against 723,000 feet at this time last year. Square pine of 50 feet average, and of f. a. q. quality, has been sold at 16d per foot, and of waney board pine the sales have been of 23 inch average at about 2s. 11d. per foot; 20 inch average at 2s. 6d. per foot, and 19 inch average, 2nd quality, at 2s. per foot ex quay. Of maple the last sale was of a parcel from Quebec, nearly 18 inches average, at 2s. 4d. per foot. Pine deals are excessive in stock, especially of the lower qualities, and those offered at auction found no buyers. Prices rule very low; and sales are difficult to make. Quebec pine deals have gone largely into consumption, and the present stock is only an average one. The sales have been of 1st quality (undersized) at £18 per standard; 2nd quality (chiefly undersized) at £14 per standard; 3rd quality (poor specification) at £8 10s. per standard; and 4th quality Ottawa at £8 per standard.

LUMBER SHIPMENTS FROM QUEBEC.

From the Chronicle's yearly review of the wood trade of Quebec, it would appear that a determined effort has been made to limit production this season. It says:—

"Merchants held off more than ever from purchasing, apparently determined to make the lumbermen carry the weight of the stock this winter, and this policy they pursued to the end of the season, so that of the stock wintering over at least two-thirds are still in first hands, an almost unparalleled occurrence. This anomalous condition of things would naturally have

the effect, and, from all we can learn, has had the effect of inducing a policy of caution and prudence on the part of manufacturers, nearly all of whom loudly proclaim their determination of reducing the production from at least one-third to one-half in most lines; and there is plenty of collateral evidence that, for once, they are sincere in this determination, one proof of the fact being that only about half the usual number of axe-men are said to have been engaged in Quebec for work in the woods this winter. . . . The production of both pine and spruce deals will be curtailed at least one-third, probably one-half. We hear that the Montmorenci establishment will not operate at all this winter, and some other mills have also decided to shut down. These are favorable omens, and, if the square timber manufacturers abide by their very avowals as to a limited production, the trade may come right again in time."

The stocks wintering at Quebec include about 8,000,000 feet of square white pine, which will probably all be wanted for the spring vessels. The stocks of waxy and oak and elm are light. As regards the extent of the fleet carrying wood from Quebec the review says that in 1881 there was a deficiency as compared with 1880 of 252 vessels, 207,470 tons, and in 1882 there was again a deficiency as compared with 1881 of 50 vessels, 49,088 tons. "This year," says the review, "we have not made up last year's shortage as regards the number of vessels, but we have a little more than done so in the amount of tonnage. In ocean steamers the increase in arrivals this year has been very considerable." The following is a comparative statement:—

Comparative statement of arrivals and tonnage at Quebec, from sea, in 1882 and 1883, up to 22nd November inclusive:—

	Vessels.	Tons.
1882.....	593	449,783
1883.....	627	504,962
More (1883).....	34	55,180

Number of ocean steamers which arrived here up to date, and to the corresponding date last year:—

	Steamers.	Tons.
1882.....	220	356,254
1883.....	269	451,509
More (1883).....	49	95,255

Of the increasing use of steam vessels for carrying deals to Europe the review says:— "A large quantity of deals were carried by steam tonnage. In addition to the regular lines, there were a number of outside steamers that had been engaged on time charters to carry coals from the Lower Provinces to Montreal, but through some trouble in Montreal these charters fell through, and the steamers were placed on the market to carry deals to Great Britain. Considering the amount of steam tonnage offering, it was astonishing how the rates of freight were maintained. This feature of shipping deals by steamer is one that is likely to increase year by year, and, unfortunately for Quebec, there is a growing tendency to make these shipments from Montreal, owing to the fact that the cost of loading there is so much lighter than in Quebec. Both steamers and sailing ships are said to prefer to load their deal cargoes in that port, as they are not subjected to the regulations and restrictions that obtain here."

This testimony to the advantageous position which Montreal holds as a shipping point for deals is valuable. The question of loading charges is one which is being discussed in every Atlantic port in America, and it is well that all who are interested in building up the commerce of Montreal should keep the fact here stated constantly in view. Indeed, the policy of freeing shipping seeking our port from every form of port charges is one which should be persistently urged until Montreal is made practically a free port in this sense.—*Montreal Herald.*

Fashions and the Timber Trade.
Changes in fashion for the interior fittings of houses are not without effect on the timber trade. With the introduction of the Queen Anne style of decoration, and the use of stained glass and Turkey carpets, has come in a revival of the use of oak floor boards. In new country mansions and the better class of houses in London, since doctors say that the entire flooring of

rooms should not be covered with carpets for sanitary reasons, it has been quite the fashion to lay oak flooring as a border, superceding the stained wood lately in favor. To meet this new demand of fashion Mr. T. Forman, of Walnut Tree Walk, Kennington, has laid himself out to supply 3/4 in., 1 in. and 1 1/2 in. oak flooring in narrow widths of the very best quality. We have had the opportunity of inspecting Mr. Forman's large stock of this class of goods, and no better could, we think, be found. The boards are all carefully stacked, well seasoned, in good lengths, cut full, and made from the best selected waincot oak. The very fine figure, its solidity and durability, and high polish it will take, render oak an unrivalled material for flooring, and now that the fashion is revived is likely to have a good run.—*Timber Trades Journal.*

A Beautiful Gift.

The Great Rock Island Route has issued a new and most comprehensive Cook Book, of 128 pages, filled with new and reliable receipts from the best caterers of this and other countries. No housewife can afford to be without it; and though worth one dollar, it will be sent to any address, postpaid, upon the receipt of ten cents in stamps. As they will go like hot cakes send at once to E. St. John, G. T. & P. A., Chicago, Illinois.

Saginaw Shipments.

The Bay City Lumberman's Gazette gives the following summary of Saginaw shipments for a series of years:

1874.....	4,636,068
1875.....	3,119,781
1876.....	6,641,209
1877.....	4,970,859
1878.....	3,372,428
1879.....	4,221,731
1880.....	1,953,000
1881.....	1,597,073
1882.....	758,682
1883.....	882,511

Who Owns the Pine?

Says a Muskegon mill owner to a News reporter:—"The great bulk of the pine lands have been bought up by capitalists, a kind of a syndicate whose numbers can nearly be counted on the fingers. They will control the market in the future, and you can write it down now that the day of cheap lumber is gone forever. Logs that could be put into the river in years past for \$8 to \$9 per M. are away up to \$12 and \$26 this winter, and when you add the cost of getting them and sawing them, you can figure for yourself how high lumber will be next summer. Like everything valuable, the scarcer it becomes the more it will be hoarded up, but in the lumber business economy begins too late. We should have commenced saving many years ago, not only in the cutting of logs, but in the finer handling of the lumber after it was cut. There was too much waste, and we are beginning to feel it now. The day of the reckless slaughter of pine has passed away with the day of cheap timber."

Ship-Building in Maine.

PORTLAND, Maine, Dec. 27.—The Maine ship building industry has been more satisfactory this year than was expected on account of the prevailing low freights. There were 174 vessels built against 168 last year, comprising 9 steamers, 43 ships, 4 barques, 6 barquentines, 2 brigs, 133 schooners, and 7 sloops. The work was more evenly divided than last year.

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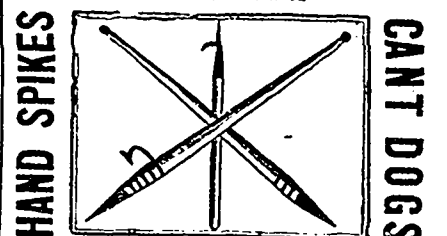
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OHAUDIÈRE, OTTAWA, 120-17

FOREST CLEARING.

Those who are laudably endeavoring to stop the wholesale destruction which has been carried on in clearing out the forests of this country will be glad to hear that the lumber manufacturers of the northwest have decided that the work of cutting off the valuable timber of the northwestern states must now be retarded. Their reasons for coming to this decision are not from any love of the beauty or the benefits which the forests confer on the country, but simply because they find that it is not paying them to clear off the forests at the rate they have been doing, and that if continued it will pay them still less. They have overstocked all the markets, and as a consequence prices have sunk so low that the trade has become comparatively unprofitable. In this way the destruction of the forests has unintentionally received a check, and before the havoc is resumed perhaps the matter of their better preservation may receive the attention of the national legislature.

It is time that the subject did receive attention. The commissioner of agriculture has shown that the supply of various kinds of timber will be exhausted within a very few years if the present rate of consumption is kept up. In the state of Maine pine will only last four years and spruce 15, and the pine forests of Michigan and Minnesota will be cleared out in 10 years, and those of Wisconsin in 20. Already lumbermen are turning their attention to other states. According to Governor Berry they "are pouring into the state of Arkansas every day from Michigan and Wisconsin." The saw mills in that state have more than quadrupled since 1860, and the production of lumber there is twenty times greater than it was just seven years ago.

As before pointed out, the question of preserving a proper proportion of forests for the benefit of the climate, the streams, the soil, and indeed the general good of the country, is a national one. Private individuals cannot reasonably be expected to sacrifice their rights and interests for the good of the community at large without due compensation. To the lumbermen the forest is just so much money as soon as he can clear it out and place it in the market, but in the northwest he finds he cannot do that profitably and so he has called a halt; however, he will be up and at it again so soon as the markets improve, quite regardless of any other result than simply what the lumber will bring. And no one can blame him; it is not his duty to preserve the forest, but that of the nation or the state.

MECHANICAL INVENTIONS.

HEATING RAILWAY CARS.—An improvement bearing on the present manner of heating railway cars has been patented by Mr. Michael Hurly, of Quebec, Canada. The invention relates to safety couplings for connecting steam conducting pipes, the two sliding parts of the coupling being connected together by a spiral spring, to secure a more perfect steam tight joint, etc.

NEW TRUCK.—A railway car truck has been patented by Mr. James E. Squire, of Glencoe, Ontario, Canada. Its construction is such that the load rests upon the periphery of the wheels in succession as they come under the treads, thus diminishing friction; the wheels are intended to turn only half as often as ordinary trucks with the same speed, so that less oil will be required and there will no danger of hot boxes.

TWO WHEELED VEHICLES.—An improvement in two wheeled vehicles has been patented by Mr. John C. Bach, of Hillsdale, Mich. This invention is designed to meet a want widely felt since two wheeled carriages have recently become very fashionable. The body is so pivoted as to oscillate at its rear end, and a centrally arranged spring is so made to operate that the body is protected from the swing of the horse so as to prevent the forward and backward rocking motion of the rider.

ILLUMINATION OF STEAM BOILERS.—The lighting up of the interior of steam boilers was long suggested. It has lately been carried into practical operation by the Patent Steam Boiler Company, London. They arrange lights within the boiler in such a way that the cascades, currents, and miniature whirlpools of the water

may be clearly observed. It is believed that useful information will be derived from observations touching the cause of priming, the best modes of separating steam from water, etc.

DELICATE CALIPERS.—A micrometer calipers have been patented by Mr. Leopold L. Remacle, of New York city. While it can be folded compactly and used to measure considerable spaces, it will likewise measure twentieths and thousandths of inches. A screw works longitudinally in a U-shaped frame, and the rimmed head of the screw is divided into measures: against this head, when the calipers are in use, is brought down a pivoted straightened rule. The pitch of the screw being one-twentieth of an inch, and its rimmed head being marked off into parts, any required measurement as low as thousandths of any inch can be readily obtained.—*Sci. Am.*

CUTTING HARDWOOD.

The *Northwestern Lumberman* says:—A gentleman who has worked for many years among hardwoods, and who recently visited this office, gave some information that may be of value to others. In his opinion the best time to cut and stick hardwood lumber is in the summer, so it will get a good start at seasoning before cold weather comes on. Its tendency to check, he thinks, is due to the difference in the temperature of the inside of the wood and the surrounding atmosphere. Hickory is the most difficult wood to handle, and should not be worked in the spring months. Often when sawing it before the weather has become warm and settled, as soon as a hand saw enters a stick it splits from end to end. He would not cut hickory in August or September, as worms are liable to work in it if cut during those months. Why this is so he is unable to tell. He once visited a store-room of a large carriage shop, and on the floor under the wheels he noticed fine dust, which, upon inspection, proved to be worm dust from the hickory spokes. The wagons were painted, and the worm holes were so small that they could hardly be detected without the aid of a microscope. The worms delight in working in the hardest, finest wood. It is not the gentleman's theory that the wood is attacked from the outside, but that the worms propagate in the wood if cut in the season named. When once the worms show themselves in a piece of hickory, it is doomed. The powdering goes on, until at length the stick will break in two by its own weight. All hickory cut in August or September does not become wormy, but so much of it does that the gentleman thinks that by far the safest way is to cut it during the other months.

The Lumber Trade.

The following letter appeared recently in the *Toronto Telegram*:—

SIR,—Noticing your remarks in a recent issue about the dulness of the lumber trade, and that a large concern was said to be in difficulties, it would lead to the supposition that this branch of trade was in a shaky condition. If, however, it were known that one company at least, in which English capital is heavily invested, has been paying much more for the manufacture of its lumber, (something like \$30 per thousand more than current rates at other mills), occasioned by the employment of highly salaried officials, who know nothing practically about the business, it need not be wondered at that they are beset with "difficulties," but it does not necessarily follow that the lumber business is in a bad way. The writer is in a position to know that the production of lumber has been profitable for several years past, and that those engaged in the business—who have properly attended to it—have made money out of it; and that, although the coarser grades of lumber are at present somewhat heavy, and slow of sale, there is a fair margin on them, and, further, that both mill men and dealers generally are in a better condition financially at the present day than ever before.

LUMBERMAN.

A Swedish Match Factory.

At Jonkoping, Sweden, says an exchange, is the oldest and largest match factory in the world. It was established 100 years ago, and there are now to be seen specimens of the

matches used at the beginning of the present century, consisting of big fagots of wood finished with a handle and a tip to dip in a bath of sulphur. The wood from which the present kind of matches is made is taken from the adjacent forests, which are divided into 50 sections. Every year one section is cut and then replanted with young trees. The trees are hewed into planks in the forest and cut into slivers in the factory. The boxes are made of the outside of trees. The factories are on the banks of lakes which are connected with one another by wide canals. Millions of matches are turned out each day. Some idea of what they all go to may be obtained from the statement that there are at least 250,000,000 of matches burned each day in the United States, or an average of five matches for each person.

THE LUMBER TRADE.

The *Quebec Chronicle* of Dec. 18th publishes a lengthy review of the lumber trade during the past season, of which the following is an extract:—As regards the stocks wintering, square white pine will be about 8,000,000 feet, but it must be remembered that there is not this year any old timber left behind in the Ottawa streams to come down next spring, and considering the reduced production contemplated, and the fact that it will be late next season before the bulk of the new wood can reach the market, it may be inferred that all of this quantity that is good enough to be shipped will be wanted for the spring vessels. The wintering stock of waney will be small, and it contains very little large wood. In oak and elm the wintering stock will be light, not more than about one-half that of last year in oak and about one-fifth in elm. The production of both pine and spruce deals will be curtailed at least one-third, probably one-half. We hear that the Montmorenci establishments will not operate at all during the winter, and some other mills have also decided to shut down. These are favorable omens, and if the square timber manufacturers abide by their very distinct avowals as to a limited production the trade may come right again in time. Nature may be said to be working with these gentlemen in their own interests this season, for, if we are to believe the weatherwise, the present winter is going to be anything but favorable for lumbering operations, there being up to the present, no snow in the lumbering districts of Western Canada and the States, which will materially interfere with hauling to the different streams. Under all the circumstances, and from all we have been able to gather, we should hope that the end of next season will show that things have taken a turn for the better. This season has been depressing enough. We cannot close this review without alluding to the unfortunate financial difficulties which have seized upon certain lumber firms in this city, in which they have the sympathy of the community. We have, however, fortunately been free from any panic or very great fluctuation in value, and bad as things are, they might certainly have been worse.

Failures in the Lumber Trade.

There were rumors about the 18th of this month that another extensive lumber firm at Quebec had succumbed to the financial depression in the export trade. The liabilities are set down at a large figure, but the assets are said to be equally large, and there will be little if any loss.

The Beaver Lumber Company below Quebec has failed, and owes bank in Quebec & Montreal as well as other creditors \$108,000. About \$90,000 are due to the banks, which are safely secured, but the other creditors are expected to fare badly.

Another Great Lumber Failure.

There was some commotion observable in financial circles at Montreal on Monday, on the news of the great lumber exporter of St. John, N. B., Mr. George F. Hood's suspension for a quarter of a million dollars. The information came privately, and has not been published yet, but it was well known at the bank of Montreal, with which Mr. Hood did some of his business. His account, however, was kept in the Bank of New Brunswick, where the most of his paper is held. The Bank of Montreal has

only \$30,000 of it maturing, and the authorities here do not anticipate any loss, as Mr. Hood shows a large surplus and is only asking time to pay in full.

HOW WOOD PULP IS MADE.

No other manufacturing interest has made greater progress in securing new raw materials during the last few years than paper makers. There has been such an enormous multiplication of books and newspapers in recent years that the invention of wood pulp is all that has prevented a great increase in the cost of paper.

The pulp which is used in the manufacture of the cheapest newspapers is simply ground wood, and its presence can be detected by letting a drop of nitric acid fall upon the paper. The acid unites with the resinous substance of the wood, and leaves a brown stain upon the paper. A large portion of the wood pulp now in use, however, is subjected to a chemical process which removes all but the pure fibre, and makes a material worth 4½ to 5 cents per pound, whereas the ground wood pulp sells at 1½ to 2 cents. One of our walks this week shall be through a pulp mill.

The wood comes in perfectly free from bark, but otherwise resembles cordwood for burning. Its cost at this mill is \$8 or \$9 per cord, and two cords of wood make a ton of pulp, worth \$35 to \$30. The log of wood first goes through a machine provided with a cylinder of oblique knives revolving against a bed knife like a hay cutter, which speedily converts the whole log into small chips. This machine thus cuts up 25 cords per day. A blower carries these chips through a pipe into an upper apartment, whence they are fed into huge boilers called "digesters." About three and one-half cords of wood are fed into one of these digesters, and the boiler is then filled up with caustic liquor composed of 60 parts of lime and 100 parts of soda and dissolved in hot water. The wood is boiled eight hours in these liquors under a pressure of 110 pounds. The pressure is then reduced to about 60 or 80 pounds, and the contents of the digester are blown into a receiving tank.

Being thus blown out under pressure, the fibres of the wood are disintegrated and resolved into separate particles. The receiving tank has a perforated bottom, and clean water is now let in and carries the liquor with the gum of the wood down through the perforations designed for the purpose. The apertures are then closed and clean water is again let in and mixed with the fibres. Meantime, the waste liquor from the digesters runs into reclaiming furnaces, which are simply huge pans arched over and lined with fire brick. These furnaces are fired to a great heat so as to evaporate the water and burn out the gum, thus recovering about 80 per cent. of the soda ash. The reclamation of this soda ash constitutes the entire profit of some mills.

The fibre which we left in the receiving tank immersed in a second bath of clean water after washing out the gum which had been loosened in the digesters, is now pumped into engines like the washers of a paper mill consisting of a huge tank about 21 feet in diameter one way by 7½ the other, and three feet deep. In this tank is a huge cylinder with a metallic fluted surface, which works against a similar fluted surface in the bottom of the tank. The cylinder occupies the radius of a circle of which the tank is the circumference, and the mass of pulp with which the tank is filled flows round and round in a constant current under the cylinder and out again. Clean water is flowing into the engines during the first 30 or 60 minutes of this process, and dirty water is flowing out at the same time in such a manner as to give the fibres a thorough washing. Bleaching powder is then put in and the pulp converted to the whiteness of driven snow.

The pulp is then run into the "stuff chest" or reservoir, from which it can be pumped into the final process as needed. The last process consists of mechanism very similar to a paper machine, upon which the pulp is run in a thin sheet over brass wire cloth so that the water drops through. The wire cloth bed of the machine has a lateral vibratory motion which lifts the fibres together and discharges them in the shape of a large continuous sheet of pulp ready for use by the paper-maker. The pulp is

sold on a dry basis, but as taken from the mill often contains 60 per cent. of water.—*Doston Commercial Bulletin.*

QUEBEC.

The *Monetary Times* says:—The three seasons last past have shown limited shipments of wood at Quebec, compared with such years as 1874, 1876 and 1877. Last year's even, was 25 per cent. below 1880, in shipments laden with timber or lumber. A comparative statement of sailing vessels cleared at the Port of Quebec from sea from the opening to the close of navigation in the past ten years is as under:

Year.	Vessels.	Tons.
1874.....	854	630,672
1875.....	642	478,441
1876.....	780	624,110
1877.....	790	670,617
1878.....	476	309,833
1879.....	433	304,628
1880.....	634	555,451
1881.....	460	380,163
1882.....	423	350,925
1883.....	487	416,169

In some of the large saw mills in the North-western lumber districts a small appliance is attached to the trimmer.

The largest single contract ever made by St. Croix lumbermen is that entered into between Messrs. F. H. Todd & Sons, of the one part, and Messrs. Tracy Murchie & Love, of the other part, for the cutting and yarding of 7,000,000 feet of logs during the coming winter. The ground to be operated on covers a block six miles square on the Wissataquoik stream, in Piscataquis county, Maine.—*St. Croix, N. B., Courier.*

SOME dealers, says the *Northwestern Lumberman*, are arguing in favor of lath of smaller dimensions. The old size of 3x1 1/2 inches has given away to some extent to 3x1 1/4, but less width is wanted, say 3x1 1/8. The latter size would permit the loading of 60,000 lath in a car of 24,000 pounds, while but 50,000 can be loaded of the present size. Less plastering is required for thin lath, and they are preferred by many on that account.

NEGOTIATIONS have been opened at San Francisco recently for the shipment of a large quantity of Oregon pine and California Red wood to Liverpool. Shipments made some months ago appear to have created a demand for certain kinds of lumber, of which the above are most desired. Recently northern lumber was sent east by clipper, and two ships now in berth are taking Washington Territory and California lumber, including a large amount of shingles. It is believed that the next two years will witness a live trade with Europe.—*Victoria, B. C., Standard.*

GEORGE C. TYLER, at Baltimore, Md., is a manufacturer of packing cases for canned goods. He obtains logs from the forests of Virginia and North Carolina, towing them to the mill and splitting them into all sizes for ship, bridge and ordinary use, including the manufacture of lumber for boxes. During the late severe gales on the Chesapeake bay, he towed two immense rafts safely in, though the gale was the worst ever known. Some of timbers brought in are 80 feet long, and 12 or 15 inches square. The Canton Box Factory, of East Baltimore, occupies six acres of ground with its buildings and goods.

The great French walnut log brought across the waters by L. Hirsch & Brother, New York City, was recently cut in two, and half of it made into veneers. A 12-foot cross-cut saw was especially made to cut it, but in a half day it was broken, and a larger one used. Two days of constant sawing was required to complete the job. Then the log had to be quartered, because the largest veneer knife was not equal to the emergency. The veneers made from the log are described as having a handsome black and orange color, and beautifully figured. The quarter that was cut contained about 12,000 feet of veneers, which is a basis for estimating the contents of the whole log at \$6,000 feet.

The *Waterloo Advertiser* of Dec. 7, says:—It being Mr. S. S. Hall's intention to move from Waterloo in a few days to engage in the manufacture of wooden ware on a large scale at Boobo Plain, last Saturday evening a number of Mr. and Mrs. Hall's host of friends in this place gave them a surprise party. During the evening they were presented with a rich and handsome butter dish, accompanied by an address. Mr. Hall made a suitable reply on behalf of Mrs. Hall and himself. A pleasant evening was spent.

Advice to Mothers.
Are you disturbed at night and broken of your rest by a sick child suffering and crying with pain of cutting tooth? If so, send at once and get a bottle of Mrs. Winslow's Soothing Syrup For Children Teething. Its value is incalculable. It will relieve the poor little sufferer immediately. Depend upon it, mothers, there is no mistake about it. It cures dysentery and diarrhoea, regulates the stomach and bowels, cures wind colic, softens the gums, reduces inflammation, and gives tone and energy to the whole system. Mrs. Winslow's Soothing Syrup for Children Teething is pleasant to the taste, and is the prescription of one of the oldest and best female physicians and nurses in the United States, and is for sale by all druggists throughout the world. Price 25 cents a bottle.

On Thirty Days Trial.
The Voltaic Belt Co., Marshall, Mich., will send Dr. Dye's Celebrated Electro-Voltaic Belts and Electric Appliances on trial for thirty days to men (young or old) who are afflicted with nervous debility, lost vitality and kindred troubles, guaranteeing speedy and complete restoration of health and manly vigor. Address as above.—N.B.—No risk is incurred, as thirty days' trial is allowed.

SINGERS and public speakers are always benefited by using Down's Elixir, as it removes the hoarseness and increases the power of the voice. Take small doses often. Price, 25¢ per bottle, and \$1.00.

RAILWAY ACCIDENT.—Frank Spink, Wilson Avenue, Toronto, some time ago received a bad injury by an accident on the G.T.R. The severe contusions were quickly healed by the use of Hungary's Yellow Oil.

HIGHLY AGREEABLE.—One very valuable feature of Dr. Low's Pleasant Worm Syrup, that it is highly agreeable to take, and all varieties of Worms, tape worm included, can be safely expelled by it, without recourse to harsh and sickening drugs.

DOWN'S ELIXIR

N. H. DOWNS'
VEGETABLE BALANCE

ELIXIR

Has stood the test for FIFTY-THREE YEARS, and has proved itself the best remedy known for the cure of

Consumption, Coughs, Colds, Whooping Cough and all Lung Diseases in young or old. SOLD EVERYWHERE.

Price 25c. and \$1.00 per Bottle.

DOWN'S ELIXIR

Burdock BLOOD BITTERS

WILL CURE OR RELIEVE.

BILIOUSNESS, DYSPEPSIA, JAUNDICE, HEADACHE, ERYSIPELAS, SALT RHEUM, HEARTBURN, INDIGESTION, HEADACHE, DIZZINESS, DROPSY, FLUTTERING OF THE HEART, ACIDITY OF THE STOMACH, DRYNESS OF THE SKIN,

And every species of diseases arising from disordered LIVER, KIDNEYS, STOMACH, BOWELS OR BLOOD.

W. JOHNSTON & CO., Proprietors, Toronto.

The American Hotel,
BARRIE, ONT.
Collier Street, Adjoining the Market.
RATES REASONABLE, CENTRAL LOCATION,
FREE BUS TO AND FROM ALL TRAINS.
Every accommodation for Commercial and LUMBERMEN.
W. D. McDONALD, Proprietor.

J. K. POST & CO.
LUMBER MERCHANTS
And Shipping Agents.
OSWEGO, N. Y.

HILLOCK & KENT,
Wholesale and Retail Dealer in
Pine and Hardwood Lumber, Lath, Shingles
Veneers, Wave Mouldings & Fancy Woods.
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(ESTABLISHED 1842.)

STEWART & FLECK, Jr.,
Manufacturers of every Description of
Saw and Grist Mill Machinery,
Water Wheels, Steam Engines, Derricks,
Boilers, Steam Pumps, Mining Machinery
20c REPAIRS PROMPTLY EXECUTED. 1y
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WHOLESALE AND RETAIL
LUMBER MERCHANTS
And MANUFACTURERS,
Dealers in WALNUT, BUTTERNUT, CHERRY,
CHESTNUT, ASH, OAK, WHITEWOOD, and all kinds
of Hardwood and Fine Lumber. PLYMOUTH, BUCKING,
HOLLY, EBONY, LIGNUM VITE, RED CEDAR, &c.
American and French VENEERS.
Orders for Lumber and all kinds of Factory Work
promptly attended to. Lumber Kiln dried to order.
Yard: Cor. Wellington & Strachan Aves.
Factory: Corner Boho and Phoebe Streets.
Office: 39 Adelaide Street East, (First Floor, nearly
opposite the Post Office.
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GRATEFUL—COMFORTING.

EPPS'S COCOA
BREAKFAST.

"By a thorough knowledge of the natural laws which govern the operations of digestion and nutrition, and by a careful application of the fine properties of well-selected Coconos, Mr. Epps has provided our breakfast tables with a delicately flavored beverage which may save us many heavy doctor's bills. It is by the judicious use of such articles of diet that a constitution may be gradually built up until strong enough to resist every tendency to disease. Hundreds of subtle maladies are floating around us ready to attack wherever there is a weak point. We may escape many a fatal ailment by keeping ourselves well fortified with pure blood and a properly nourished frame."—*Civil Service Gazette.*
Made simply with boiling water or milk. Sold in tins only (4-lb. and 1-lb.) by Grocers, labelled thus.
JAMES EPPS & Co., Homoeopathic Chemists,
15, 21 London, England.

HILL'S
English Extract of
BUCHU,
One of the Best
KIDNEY
INVESTIGATORS IN USE.

This is a specific in the cure of all diseases of the Kidneys, Bladder, Prostatic Portion of the Urinary Organs, Irritation of the Neck of the Bladder, Burning Urine, Gleet, Gonorrhoea, in all its stages, Mucous Discharges, Congestion of the Kidneys, Brick-dust Deposit, Diabetes, Inflammation of the Kidneys and Bladder, Dropsy of the Kidneys, Acid Urine, Bloody Urine, Pain in the Region of the Bladder, PAIN IN THE BACK, Urinary Calculus, Renal Calculus, Renal Colic, Retention of Urine, Frequent Urination, Gravel in all its forms. Inability to retain the Water, particularly in persons advanced in life. IT IS A KIDNEY INVESTIGATOR that restores the Urine to its natural color, removes the acid and burning, and the effect of the excessive use of intoxicating drink.
PRICE, \$1.00 or Six Bottles for \$5.
Send for Circular. Sold by all Druggists.
W. JOHNSTON & CO.,
161 Jefferson Ave., DETROIT, MICH.

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Lumber and Commission Agent.

ORDERS FOR DIMENSIONS AND ALL OTHER
KINDS AND GRADES OF
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AXES
And LUMBERMEN'S
HARDWARE
Broad, Scoring, Blocking, Timber
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(Of Superior Shape and Quality.)
Chalk Lines, Rassing Knives, Timber
Guages, Cross-Out Saws, Files,
Sleighshoe Stool, Chains, and gen-
eral line of HARDWARE at the
LOWEST PRICES.

SOLE AGENT IN CANADA for
the Sale of the following CELEBRATED
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WETMORE'S HAND MADE, wanted.
The Best in the World.

GEORGE STETHEM
IMPORTER OF HARDWARE,
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By the central position of its line, connects the
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A New and Direct Line via Sucoo and Kankakee, has recently been opened between Chicago, Norfolk, Newport News, Choptank, Atlanta, An-
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All through Passengers Travel on Fast Express
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CHICAGO.

Market Reports.

MONTREAL.

From Our Own Correspondent

Dec. 26.—The weather has been cold and favorable for this line of business, which, however has been kind of slack, and most firms have been busy stocktaking. News from the lumber regions on the Ottawa is rather contradictory, some lumbermen reporting that they are putting out only about half the quantity of last year, while others are reported as turning out about double the quantity, but the general opinion here is that the output will be much beyond the requirements of trade. The demand here for lath is not very large but is in excess of the supply, which has caused another advance in price, and it is thought probable that the quotation next month will be \$3.00, other prices are strong. We quote ex yard:

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

CORWOOD.

Although the weather has been very severe most people had supplied themselves beforehand, so that the last two weeks the demand has been light, but prices are on the turn dearer and are likely to continue firm during the winter. We now quote prices from the wharves ex cartage as follows:—

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

LIVERPOOL MARKETS.

Latest mail advices report imports as being fair but consumption not so large as during the previous month but on the whole satisfactory. Several cargoes of spruce deals from St. John, N. B., were sold at \$6 15s. Quebec square white pine 1st class 2s. 5d. per cubic foot, and mixed quality 16d. per foot 50 feet average. Quebec red pine deals \$6 10s. per standard. A number of cargoes of spruce deals had been offered at auction, but were all withdrawn with the exception of a parcel of Miramichi which averaged about \$6 10s. 6l. per standard. Several of the foregoing cargoes have since been sold at private terms.

TORONTO.

From Our Own Correspondent.

Dec. 24.—There is no change in the condition of the trade here worthy of note, no move of any consequence will now be observable until after the opening of the new year. There is a feeling of confidence noticeable amongst the wholesale dealers in regard to the coming season's operations. The firm stand taken by the various banks not to loan money for stocking this winter, leads to the belief that not more than 50 per cent. of the usual stocks will be got in, therefore dealers believe they have a certain thing and a sure margin on the stocks now held. This feeling imparts a firmness in quotations which would have been impossible under any other conditions. All kinds of bill stuff especially remains firm at previous figures furnished you, and dealers do not feel like forcing their lumber on the market, feeling confident that the demand will shortly come fully up to the supply. Dealers in western Ontario are carrying extremely small stocks. The railway companies having so hampered the trade by the rigid system adopted of weighing all cars that they felt the time must shortly come when the companies would come down off their high horse and feel disposed to give their customers better terms, and in this they will not be mistaken, that time is now at hand, empty cars and silent engines is now the rule and not the exception, and railway freight agents are now inviting lumber dealers to confer with them on matters pertaining to the trade, which might

have conduced to the interest of both parties if taken into consideration at a much earlier period.

The much vexed question as to the charge made for shunting by the N. & N. W. R. R. is also likely to receive a practical solution ere long, one of our prominent lumber firms having positively declined to pay this onerous charge, and it now remains to be seen if the company will dare try to collect by the only method available. I dare venture the assertion that they will do nothing of the kind, they will pluck all who tamely submit to the operation and those who are too plucky to be plucked will go scott free.

With the slackness of trade at the retail yards I find a feeling of dissatisfaction is prevalent amongst the retail dealers in consequence of the practice by wholesale men of selling to consumers by carload lots. This is a grievance which might well be discussed by the parties interested, but, like most questions, it has two sides. Before retailers are in a position to bring this matter to the front they must at the same time remedy the complaints made by the wholesale dealers, and instead of purchasing direct from the manufacturer, deal exclusively with the middlemen, and in that case they in town could well afford to dispense with the trade done with the consumer.

Table listing prices for Mill cull boards and scantling, Shipping cull boards, Scantling and joist, etc.

Table listing prices for Cutting up planks to dry boards, Sound dressing stocks, Picks Am. Inspection, etc.

Table listing prices for 1 1/2 inch flooring, Beaded Sheeting, etc.

WINNIPEG.

The Winnipeg Commercial of Dec. 18, says: There is very little demand at present, and until building operations are commenced next spring there will not be much movement. Quotations are as follows:—Pine lumber, 1st, common boards, dressed, \$26.50; 2nd, dressed, \$25.50; 1st, do rough, \$26.50; 2nd, do., \$25.50; sheathing, rough, \$25; timber, 16 feet and under, \$24; do over 16 feet, for each additional 2 feet, \$1; dimension and joists 16 feet and under, \$24; do. over 16 feet for each \$1; fencing, \$25; 2 and 3 inch battens, \$30; A. stock boards, all widths, \$50; B. do., \$45; C. do., \$40; D. do., \$35; 1st clear, 1, 1 1/2, 2, and 2 1/2 in., \$60; 2nd do., \$56; window and door casings, \$50; base boards, dressed, \$50; 1st pine flooring, siding and ceiling \$40; 2nd do \$35; 3rd do., \$30; 1/2 inch split siding, dressed, \$30. Spruce lumber—timber 16 feet and under, \$22; do. over 16 feet, for each additional 2 feet, \$1; dimensions and joists, 16 feet and under, \$23; do. over 16 feet, for each additional 2 feet, \$1; boards, 22; 1st flooring, siding and ceiling, \$28; XX shingles, \$3.25; Star A shingles, \$3.25; X shingles, \$5.00; A do. \$4.50; lath \$4.50.

BOSTON.

CANADA PINE.

Table listing prices for Selects, Dressed, Sheling, Dressed, 2nds, Dressed Shippers, etc.

BUFFALO.

Table listing prices for We quote cargo lots:—Uppers, Common, Culls.

TONAWANDA.

CARGO LOTS—SAGINAW INSPECTION.

Table listing prices for Three uppers, Common, Culls.

CHICAGO.

The Northwestern Lumberman of Dec. 20th, says:—It is too soon after the shutting down of the mills of the North, and too near the beginning of the next year, for the lumber business of the country to take any new feature indicative of the future. Quietness and consideration prevail in every branch. Hard stocks are held at steady prices, the general opinion being that the lumber in sight is good for all the money that is asked for it. While there is no activity on the part of purchasers of bulk stocks, the holders of them at the mills evince no anxiety to crowd sales for future delivery by making concessions in price. The late cold snap has caused the shutting down of all the mills that cut white pine, excepting some of the railroad mills, and this stock for the season of 1883 is now in sight, so that calculations as to its amount can be reached. It is generally conceded that stocks are not excessive in the wholesale yard markets though they are ample for a good demand in future months. Dry stock is rather moderate, for the reason that consumption the past season has been active, and the supply has been constantly drawn down to a minimum.

There has been a complete cessation of arrivals by lake since the coming of severe cold weather. Early in the week Sinclair & Morris received a cargo of inch lumber, which sold for \$14; and classed as medium, running quite a percentage to fine common and better. Goodenow & Hinds had two cargoes of extra and clear shingles unsold on Thursday, which they held to be worth \$3 and \$2.70.

Table listing prices for Quotations as follows:—Short dimension, green, Long dimension, green, Boards and strips, etc.

Receipts of lumber, shingles, etc., for the week ending Dec. 20, as reported by the Lumberman's Exchange:—

Table showing Receipts of Lumber and Shingles for 1883 and 1882, and Stock on Hand Dec. 1, 1883.

ALBANY.

Table listing prices for Quotations at the yards as follows:—Pine, clear, Pine, rough, Pine, select, etc.

OSWEGO, N. Y.

From Our Own Correspondent. No change to make in quotations; trade is very dull, though shipments and stocks were

never better. Dealers are anticipating a fair trade during the winter.

Table listing prices for Three uppers, Pickings, Pine, common, Common, Culls, etc.

GLASGOW.

The Timber Trades Journal of Dec. 8, says: There have been few arrivals of wood goods here for the past week, and, from what can be learned, the import business of the season in the timber line is drawing to a close.

On 29th Nov., at Greenock, an auction sale of Canadian timber and deals was held, at which there was a fair attendance, and a good many lots disposed off at prices as noted below. Also on the 5th inst. a sale took place at Yorkhill Yards here, the catalogue comprising a varied assortment of woods, chiefly boards and deals, a portion of which was sold without reserve. There was a large attendance, but the rates indicated a weakness in the market meantime. Pine deals, 1st quality, of which there has been a moderate import, bring fair prices.

With reference to the reduction of wages in the Clyde shipyards, work in all the yards is going on as before the reduction was announced, and at present there are no signs of any interruption to this state of things. However, the change will be fully tested after the new year.

For the month of Nov. there has been activity on the Clyde in the latter stages of shipbuilding; 36 vessels of an aggregate tonnage of 45,430 tons have been launched by the various firms on the river, as contrasted with November, 1882, 46,513 tons, and November 1881, 31,600 tons. The amount of work on hand, however, is now comparatively small, and firms have been obliged to reduce their establishments.

AUCTION SALES.

On 29th Nov., at Greenock, Messrs. Singleton, Duni, & Co., brokers:—

Table listing auction sales for Quebec waxy loadwood, Do. yellow pine, Do. birch, Do. Sycamore, Do. round hickory, Pitch pine planks, etc.

LONDON.

The Timber Trades Journal of Dec. 8, says; We hoped ere this to have had to record an upward tendency in the market, and with such a good harvest after a long interregnum of low values, it was pardonable to be somewhat sanguine as to a favorable reaction, but other things did not fit in, and the fall in the autumn freights market at its present low ebb. There has been

a very large business done throughout the season, and every day that brings us nearer to its close shortens the interval between now and when values will begin to strengthen; nor will the strong indications of winter we have just experienced be any disadvantage to the trade.

LIVERPOOL.

The *Timber Trades Journal* of Dec. 8, says: The steady demand which has for some time past characterized the course of this market is beginning to show signs, by the reduced deliveries, that the year is rapidly coming to a close, and until we find ourselves in the second half of next January it is not probable that we will find any marked animation in business. Fortunately the agitation in the labour market, which has been recently impending in the coal and cotton trade, appears to be subsiding, and this in a measure will tend to give a degree of confidence in the future which was not apparent a fortnight ago.

There is still no change to report in market prices, which, taken all around, remain low; but with the close of the season, now imminent, it is probable a firmer tone will soon exhibit itself.

The table of stocks on hand at the end of the last month, together with the imports and consumption, is given herewith.

No public sales have taken place since our last issue, nor is it likely there will be many during the remainder of this year unless something should come forward under special circumstances, or some arrivals which might go to make up an attractive auction.

The Cantilever Bridge.

BUFFALO, Dec. 20.—The new cantilever bridge at Niagara Falls was thoroughly tested this afternoon. Large crowds occupied every available spot from which a view of the proceedings could be obtained. At nine o'clock eight heavy locomotives passed over the structure. At twelve, twenty locomotives crossed the bridge while observations were made about every fifteen feet. No official declaration has as yet been made, but the test has been considered perfect and the bridge thoroughly satisfactory. At three o'clock an elegant repast was served at the Montezelle Hotel at the Suspension Bridge by a Rochester caterer. Provision had been made for 600, but fully 1,000 persons helped to make away with the dinner. The repast cost over \$1,000. After dinner the gathering was called to order. Mr. Carter Harrison, Mayor of Chicago, made a vigorous speech, in which he congratulated Canada and the United States on the completion of the splendid structure. General Field, president of the Central Bridge Works, which built the bridge, was loudly called for. He simply said: "I'm not a speech-maker, I'm a bridge builder."

Trade Healthy

The monetary *Times* says:—There is really no ground for general despondency. Canada as many and various interests now, and some of them are in a wholesome and sound condition. The various branches of our importing trade are healthy, as a whole, payments from the interior continue remarkably good. Bills are well met at the banks. Few renewals are asked; purchases are made prudently; credit is given with reasonable caution. Neither in the wholesale nor retail trade is there any general reason for complaint.

Internal use of Hot Water.

The number of invalids, semi-invalids, and those in fair health, who sip hot water in the morning of each day, is astonishingly large. The habit has become suddenly fashionable; and, if we had no worse fashions to complain of, the world would be vastly improved. Still, however beneficial the free employment of hot water may be to some, it is not an agent which can be indiscreetly used without harmful effects. The employment of hot water for internal use originated in this country; and so eminent a medical authority as the *London Lancet* speaks of it as a "valuable American contribution to medicine." Dr. Salisbury of Cleveland claims to have been the first to suggest its use, and it is probable that his claim is well founded. Hot water is at present used very much at random,

and but little is popularly known regarding the proper and safe methods of its employment. The questions relating to the proper times of administration, the number of ounces to be swallowed (both at meals and in the intervals between), and the temperature, are very important, and should be well considered. The therapeutical uses of hot water may be varied; but it would seem that its beneficial employment is pretty well established in those diseases arising from unhealthy alimentation. In these affections the stomach and bowels become distended and obstructed by the abnormal acetic, butyric, hydrosulphuric, lactic and saccharic acid fermentations; and the idea is to wash away these offending matters, and thus aid in introducing normal functional action. Cold water is in most cases inadmissible, as it is apt to produce distress in sensitive stomachs, as has been stated in a former article. Hot water is well borne in most cases; but it must not be lukewarm it must be hot. And here is a distinction it is well to observe.

Tepid water, if taken in considerable quantities, will sometimes produce vomiting; but, if the water be raised to temperature of from 100° to 150° F., it produces downward movements of the bowels instead of upward. Tea as drunk by dyspeptic tea-drinkers is preferred at a temperature of about 120° F., and this decoction at this temperature affords great relief to persons of weak stomachs. The demand by dyspeptics for tea "hot and weak" is founded on observation that in this form it affords genuine relief. If the tea-leaves were left out altogether, the agreeable relief would follow from the use of the hot water with a little milk and sugar added. By hot water is meant water which is so warm that it can only be sipped slowly, and not poured in; the stomach as a draught. In the absence of a thermometer, the proper temperature may be determined by the efforts upon the tongue and fauces: it must not be "scalding hot," but so warm as to be swallowed without inconvenience or danger.

As regards quantity, no fixed rule can be given. Perhaps half a pint may be regarded as a minimum, and a pint and a half, a maximum quantity, to be taken at one time. The object being mainly to wash out the alimentary canal, carrying down the slime, yeast, and bile through normal channels, a few ounces can have but little effect in accomplishing such results. It is assumed that the liver and kidneys are greatly influenced by the hot water treatment, and that they are washed as well as the intestinal canal; the bile being eliminated through the bowels, and not through the blood, via the kidneys.

The best time to use hot water is probably about one hour before meals, and, in some instances, half an hour before retiring to bed. The most important time of all, however, is the hour before breakfast in the morning. The digestive apparatus of the weak and morbid needs cleansing after a night of rest—or unrest as in the case of invalids. A half or whole pint of hot water taken upon getting out of bed in the morning will in most instances soon break up morbid conditions of the bowels; and natural peristaltic motions will be established even in obstinate cases.

It may be necessary, in some instances, to medicate the water slightly, and thus improve its taste, and add to its activity. A few drops of tincture of ginger, a half-teaspoonful of tartrate of soda, or sulphate of magnesia, are unobjectionable adjuncts to the water, and indeed sometimes are necessary. The practice of using hot water may continue as long as it is found to give relief, and as long as it contributes to the establishment of "inward cleanliness," and consequent robust health. Those in sound condition may use hot water with advantage occasionally throughout life.—*Popular Science News.*

FOR A HEAD-COLD, with pain in the head, bones or through the chest, take Down's Elixir at once and in liberal doses, cover up well in bed, and your cure will be complete.

HOW TO TREAT WEAK LUNGS.—Always breathe through the nose, keeping the mouth closed as much as possible. Walk and sit erect, exercise in the open air, keep the skin scrupulously clean, and take Hagar's Pectoral Balsam for coughs, colds, and bronchial troubles.

THE BEST PROOF.—THE GLOBE.—"I sell more Burdock Blood Bitters than I do any other preparation in stock," says B. Jacke, druggist Toronto. If the reader will ask any druggist in the city he will get a similar answer to his query—a proof that it is the most popular medicine for the blood, liver and kidneys known.

GOLD for the working class. Send 10 cents for postage, and we will mail you free, a royal, valuable box of sample goods that will put you in the way of making more money in a few days than you ever thought possible at any business. Capital not required. We will start you. You can work all the time or in spare time only. The work is universally adapted to both sexes, young and old. You can easily earn from 50 cents to \$5 every evening. That all who want work may test the business, we make this unparalleled offer; to all who are not well satisfied we will send \$1 to pay for the trouble of writing us. Full particulars, directions, etc., sent free. Fortunes will be made by those who give their whole time to the work. Great success absolutely sure. Don't delay. Start now. Address BRISTOL & Co., Augusta, Maine.

LIVERPOOL STOCKS.

We take from the *Timber Trades Journal* the following Comparative Table showing Stock of Timber and Deals in Liverpool on Nov. 30th, 1882 and 1883, and also the Consumption for the month of Nov. 1882 and 1883:—

	Stock, Dec. 1st, 1883.	Stock, Dec. 1st, 1882	Consumption for the month of Nov., 1883.	Consumption for the month of Nov., 1882.
Quebec Square Pine	404,000 ft.	331,000 ft.	241,000 ft.	189,000 ft.
Waney Board	402,000 "	271,000 "		
St. John Pine	40,000 "	5,000 "	43,000 "	90,000 "
Other Ports Pine	94,000 "	60,000 "	8,000 "	12,000 "
Red Pine	47,000 "	69,000 "	31,000 "	3,000 "
Pitch Pine, hewn	202,000 "	701,000 "	50,000 "	95,000 "
" Sawn	560,000 "	520,000 "	201,000 "	60,000 "
Planks	68,000 "	90,000 "	28,000 "	2,000 "
Danitic, &c., Fir	116,000 "	38,000 "	7,000 "	9,000 "
Sweden and Norway Fir	110,000 "	21,000 "	15,000 "	0,000 "
Oak, Canadian and American	324,000 "	343,000 "	71,000 "	63,000 "
" Planks	173,000 "	137,000 "	53,000 "	52,000 "
" Baltic	21,000 "	43,000 "	0,000 "	2,000 "
elm	17,000 "	49,000 "	15,000 "	32,000 "
Ash	28,000 "	15,000 "	1,600 "	10,000 "
Birch	121,000 "	60,000 "	80,000 "	42,000 "
East India Teak	37,000 "	20,000 "	2,000 "	4,000 "
Greenheart	112,000 "	138,000 "	14,000 "	3,000 "
N. B. & N. S. Spruce Deals	23,942 stds.	10,808 stds.	8,042 stds.	8,476 stds.
" Pine	1,240 "	810 "		
Quebec Pine & Spruce Deals	9,224 "	8,033 "	4,008 "	2,978 "
Baltic Red Deals, &c.	5,205 "	4,030 "	1,063 "	392 "
Baltic Beards	203 "	603 "	28 "	136 "
prepared Flooring	3,600 "	2,718 "	303 "	816 "

The Improved CLIMAX Sash Lock

MANUFACTURED BY MILLER BROS., GUELPH.

Holds the Sash in any position so that it cannot be moved either up or down, can be put on by anyone, only requiring two screws.

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Oak, Ash, Cherry, Black Walnut, Poplar, Butternut

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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AMERICAN LUBRICATING OILS A SPECIALTY.

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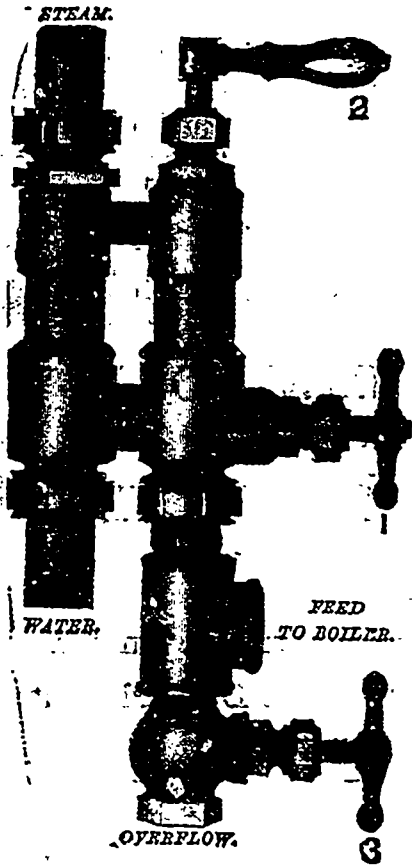
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THE Hancock Inspirator

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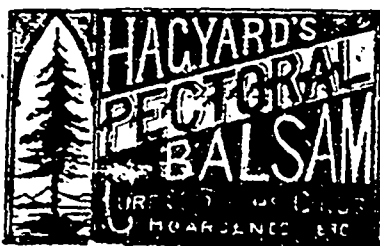
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Also, Sole Manufacturer of BLAKE'S CHALLENGE STONE BREAKER.

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Spinal Complaints, General and Nervous Debility, Nervousness, Rheumatism, Gout, Liver, Kidney, Lung, Throat and Chest Complaints, Neuralgia, Bronchitis, Incipient Paralysis, Asthma, Sciatica, Sprains, Consumption, Sleeplessness, Colds and Indigestion.

Ask for NORMAN'S ELECTRIC BELTS and you will be safe against imposition, for they will do their work well and are cheap at any price.

A. NORMAN, ESQ.—Dear Sir,—Please send me a waist belt. Enclosed find price. Head band I got for my wife has almost cured her of neuralgia. Yours truly,
C. L. TILLEY, WATERVILLE, N.B.

Numerous of such testimonials can be seen at my office, proving that they are doing a good work and worthy the attention of all sufferers. Circulars free. No charge for consultation.

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NORMAN'S ELECTRO CURATIVE TRUSS is the best in the world. Guaranteed to hold and be comfortable. Circular free. N.B.—Trusses for Rupture, best in America, and Electric Batteries always on hand at reasonable prices.

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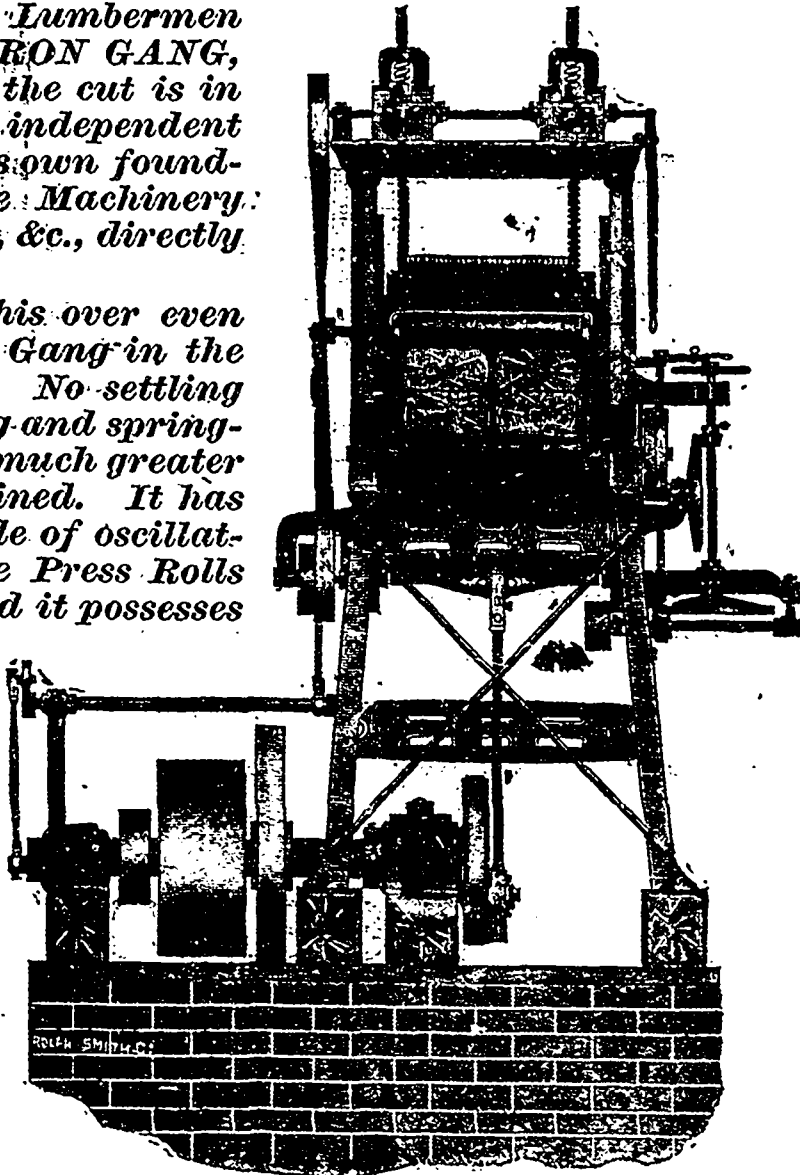
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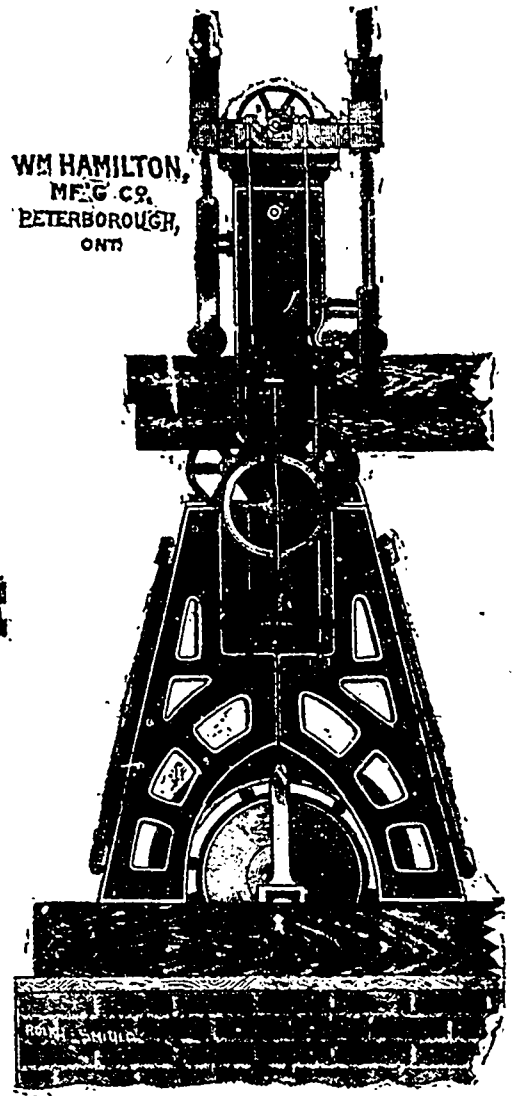
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The advantage of this over even a well built ordinary Gang in the mill frame is evident. No settling out of line, no yielding and springing of timber, while a much greater working speed is obtained. It has the most improved style of oscillating motion, it has the Press Rolls operated by power, and it possesses generally all the good features of best American Gangs, with heavier frame work and heavier shafting, all with a view to rapid, steady & correct working. A good look at one of these massive machines satisfies the sawmill man that they are in every way capable of continuously performing heavy duty throughout the season.



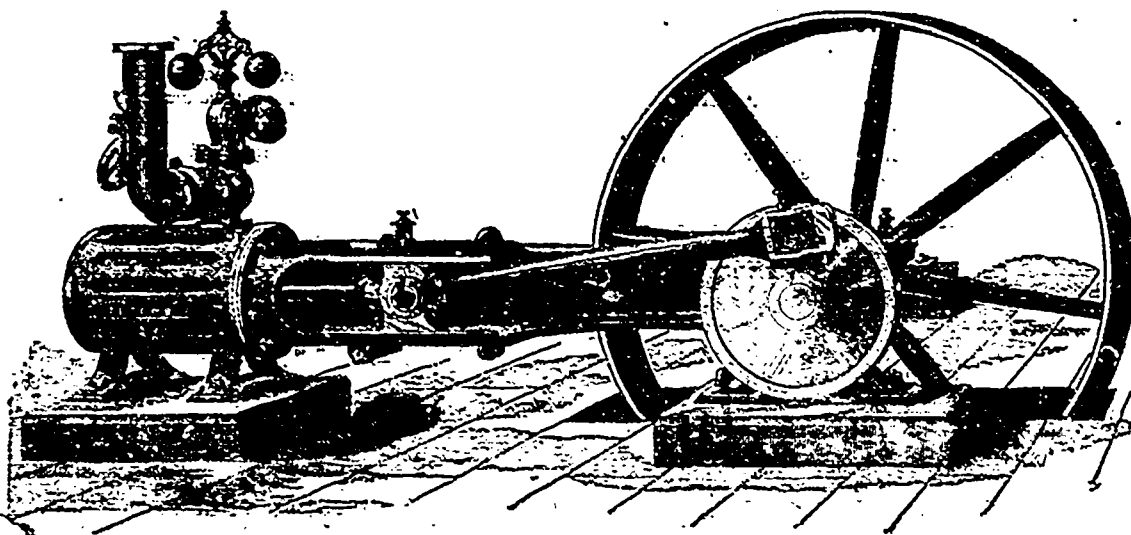
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This cut represents our SAW MILL ENGINE, of which we make the following our Standard sizes, 12x16, 16x20, 18x24, and 24x30, built Strong and Substantial for Heavy Work. The Piston Rod, Cross-head Pin, and Wrist Pin, are made heavy and of the best steel; the Connecting Rod has solid ends and is tightened up by screw and wedge, avoiding all danger of keys getting out; the Slide Valve has a simple balance valve, requiring no attention from the Engineer, as it is self-adjusting. The Engine Shaft and Fly Wheel made very heavy. Belt Pulleys put on when required in place of Fly Wheel, and all regulated by the Judson Governor.

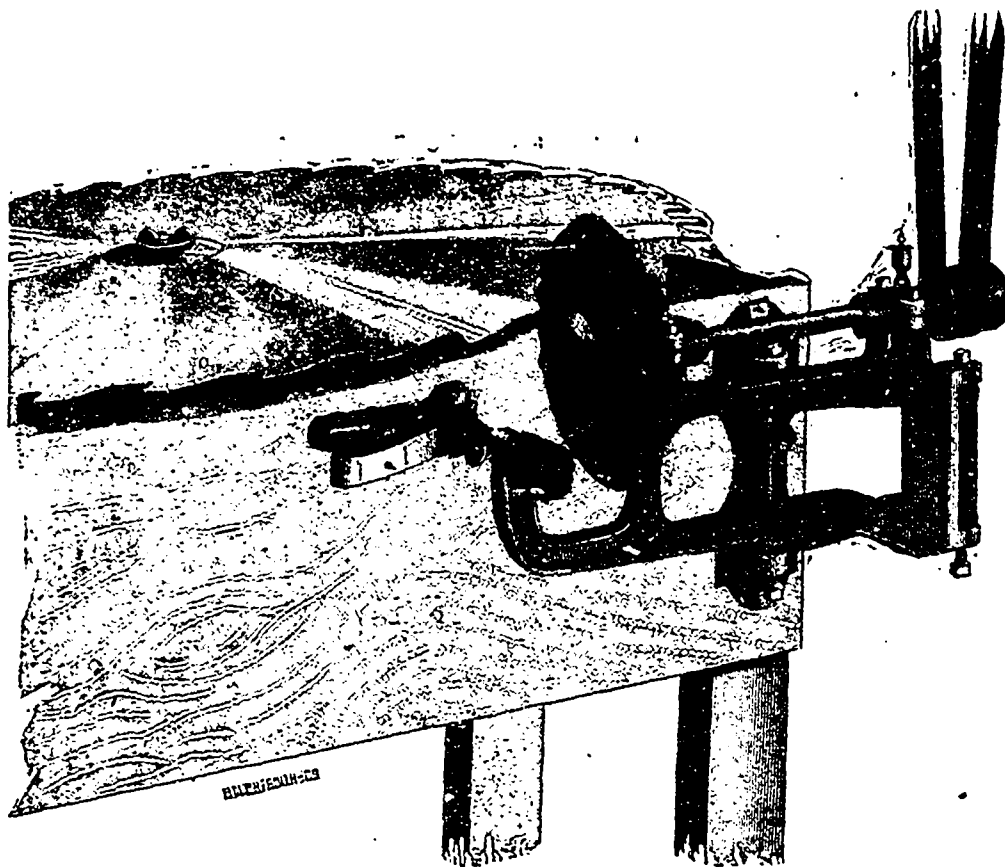
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Don't Heat!

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Accurate!

Works Fast!

Complete!

Lumbering Season, 1884

Saw Mill Owners in providing for the season of 1884, ought not to lose sight of ROGERS' SAW GUMMER for it will save them more money in proportion to the amount invested than any other machine.

Only \$30, including Emery Wheel ; Table and Countershaft, \$10 extra.

A few of ROGERS' SAW GUMMERS were put on the market last season, and we quote some of the commendations received :

J. A. ADDEN, Foxmead, says :—
"Your machine is all I expected."

CHAS. ANDERSON, Anton Mills, says :—

"I have given it a good trial, and am well pleased with it.
"I find it is one of the indispensables in a saw mill."

ROBT. R. WEIR, Orillia, writes :—

"It works like a charm, and is very accurate in its work."

CRONE & PATON, Hoc Roc Mills, Gravenhurst, says :

"The Rogers' Saw Gummer purchased from you gives
"good satisfaction, it cannot be beat."

D. DAVIDSON, Pentanguisheno, writes :—

"We are well pleased with the Gummer."

W. W. BELDING, Wyovale, writes :—

"I have the Gummer running and it is giving good
"satisfaction."

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It has a circulation among saw mill owners, manufacturers, lumber and timber dealers and all classes connected with the timber business.

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for placing your goods or wares before the saw mill men and lumber and timber dealers of the Dominion

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Made in 4, 6, 8 and 10
Ply Thickness.

Any Length without joint.

Endless, if desired.

Any Width to 60 inches.

Four Ply is as cheap as good leather belting,
stronger, runs truer, does not stretch, is not
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THE BEST MAIN DRIVING BELT IN EXISTENCE! Send for sample and quotations, stating work belt has to do. Replace all troublesome belts with the GANDY.

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SAVE YOUR TIMBER

By using THIN SAWS!

16 Horse-Power Sawmill, driving a 48-in. 10-Gauge Trenton Saw.

GEORGE A. DOUGHERTY writes from Leamington, Ont., 12th May, 1883:

Gentlemen,—I would say that my 16 horse-power Champion Engine drives the thin saw, 48 inches in diameter, 8 and 10 gauge, with 40 teeth, (No. 2 Trenton short teeth), admirably. Our speed is 360 revolutions of the saw per minute. We have sawn over 50,000 feet of white ash in ten days; often having to stop on account of belt breaking, never hurrying at all, but taking great pains to saw the lumber to the best advantage; nor did we commence before seven a.m. or work after six p.m. During this time the saw has not made one bad run, or spoiled one foot of lumber, or once been hot. In maple, black ash or elm, I can, without pressing matters at all, cut 600 feet per hour into inch boards. One half day, running from eight a.m. till 12 noon, we sawed bill stuff, 1 in. x 12 in. and 2 in. x 4 in., 12 feet long; and joints 2 in. x 5 in. and 2 in. x 7 in., 22 feet long, making no effort to work fast, yet we cut 3,053. When cutting into inch lumber, we save at least 1,000 feet in every 16,000; besides, we cut more than when using the 5 and 7 gauge to amount to at least \$5.00 per day for sawing. If our belt could stand it, we could run most of our time on 3½ inch feed. I think I would have no difficulty in running a 10x12 gauge.

9-Gauge Damascus Tempered Saw gives best of Satisfaction.

A. CALDWELL & SON write from Almonte, 12th June, 1883:

The saw we got from you recently (60 inch solid 9 and 9 gauge 60 teeth Emerson Damascus tempered saw) is giving the best of satisfaction, and is undoubtedly a great saving of lumber compared with the heavy gauge saws we used last summer, and runs with less strain on our engine, it being rather too small for the work it has to do. Send us by express a new Dominion Gummer and an Elliott 1880 Lacocutter.

Damascus Tempered 60-in. 10-Gauge Saw on 6-in. Feed.

RALPH MATHER writes from Ruscom, Ont., May 14th, 1883:

I have yours of the 10th inst., and in reply would say, that the 60-inch 10 gauge solid saw I bought from you gives every satisfaction. The inserted tooth saw I have is gauge 5. The new saw cuts nearly an 8 less kerf, and saves about 1,000 in 10,000, makes better lumber, and runs with one-third less power. Where a high and uniform speed can be obtained, a good sawyer will have no trouble with one of the same size as thin as gauge 12 at the edge. I feed this one as high as 6 inches to each revolution in sycamore.

60-in. Lumberman's Clipper 10-Gauge Saw.

SMON PROCTOR, sawyer and manager for W. C. V. Hall & Co., Quebec, writes from Lyster Station, Quebec, November 19, 1883:

The Lumberman's Clipper, 60-inch Saw that I ordered from you is giving the best possible satisfaction. I have been running it six weeks in large Rough Twist Spruce Logs, and must say it does better work than any other saw I have ever run, and it takes less power to drive it than any saw of same size with less teeth and thicker blade. I run it on one of your 30 horse-power Portable Mills—Locomotive Boiler—and have cut 50 logs with it without using a wrench on either arbour or guides, without filing, and never made a bad board, all inside of four and a half hours. You need not be afraid to recommend that kind of a saw to your customers.

Send for Sawyers' Hand Book; Illustrated Saw Circular; Large Lithograph to hang in your Mill.

Waterous Engine Works Company, Brantford, Canada