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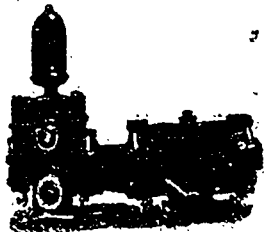
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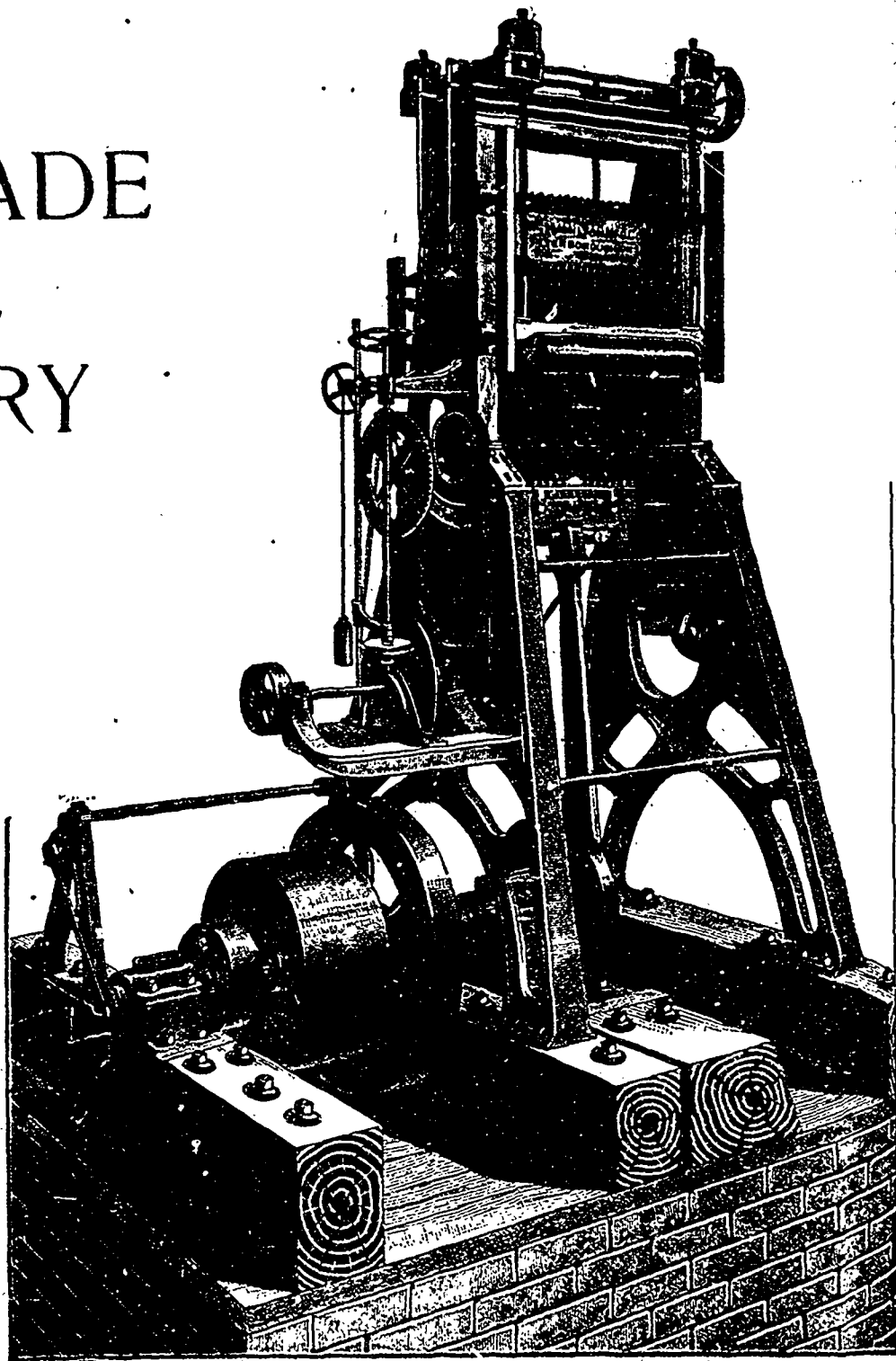
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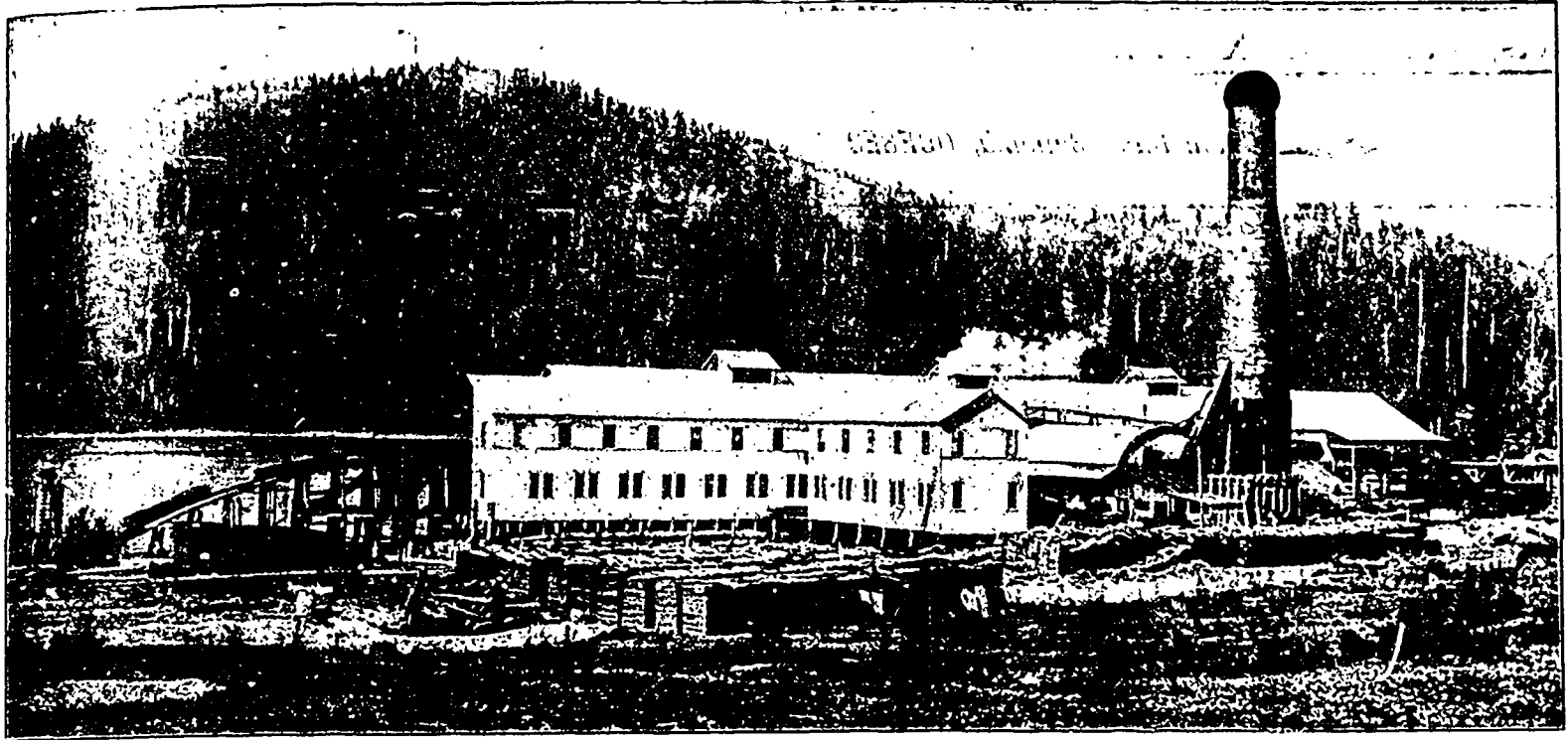
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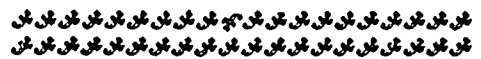
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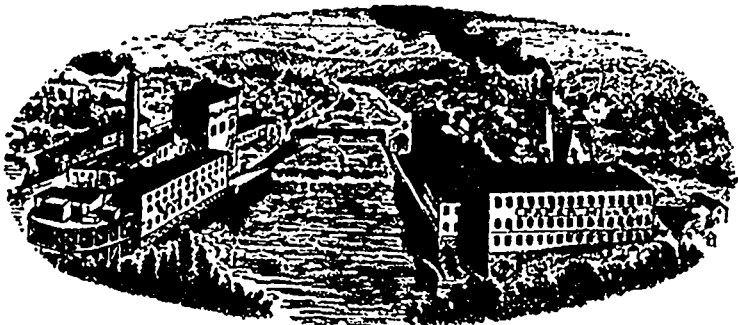
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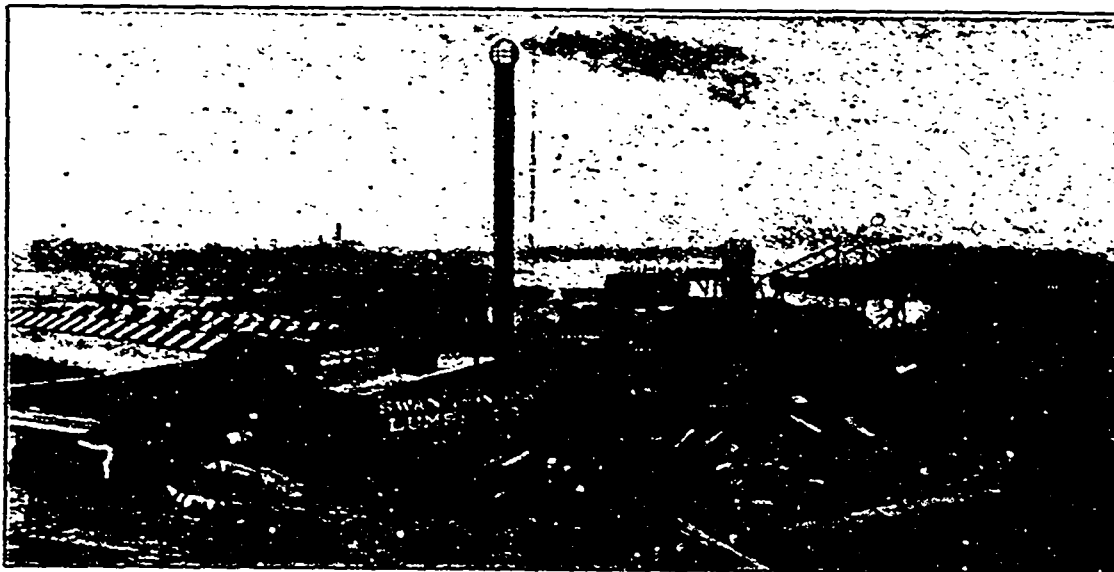
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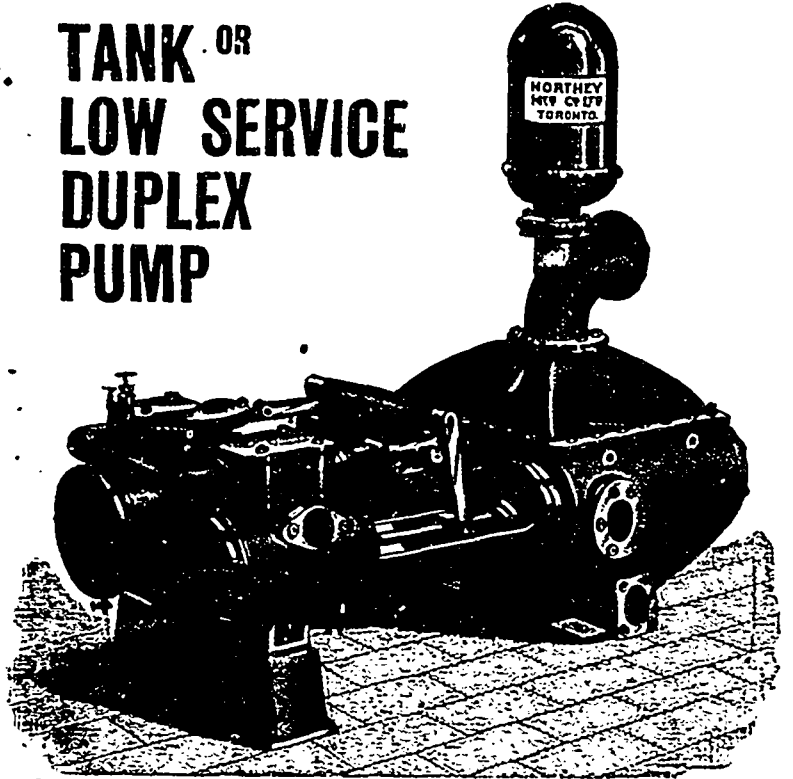
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~ The Timber Resources of Canada ~

TIMBER LANDS UNDER THE CONTROL OF THE DOMINION GOVERNMENT

BY E. STEWART,

Chief Inspector of Timber and Forestry for Canada.



VERY general impression seems to prevail that the Dominion of Canada, as distinct from the provinces, is not the possessor of any extent of timbered lands. No doubt this idea is suggested to the traveller

when crossing the continent on the Canadian Pacific Railway. The tourist going west by this route leaves the wooded district some forty miles east of the Red River, and from this on to the foot hills of the Rocky Mountains, a distance of about nine hundred miles, he sees very little timber, and as the older provinces on entering into Confederation retained their land, the inference hastily drawn is that the Dominion has no timber under its control. This, however, is a very erroneous conclusion, as I shall attempt to show, and arises from viewing the country as if it were a line having very great length to be sure, but very little breadth.

Let us take a glance at the map of the Dominion. We find that the total area of the five eastern provinces and the whole of British Columbia is 880,000 square miles, while the area of the territory outside of this is no less than 2,436,500 square miles, or nearly three times as great in extent. Let us now take from the latter the un-timbered areas and the remainder will then, of course, be the extent of timber land directly under the control of the Dominion Government, except the very small part that has been granted to individuals or companies by the government.

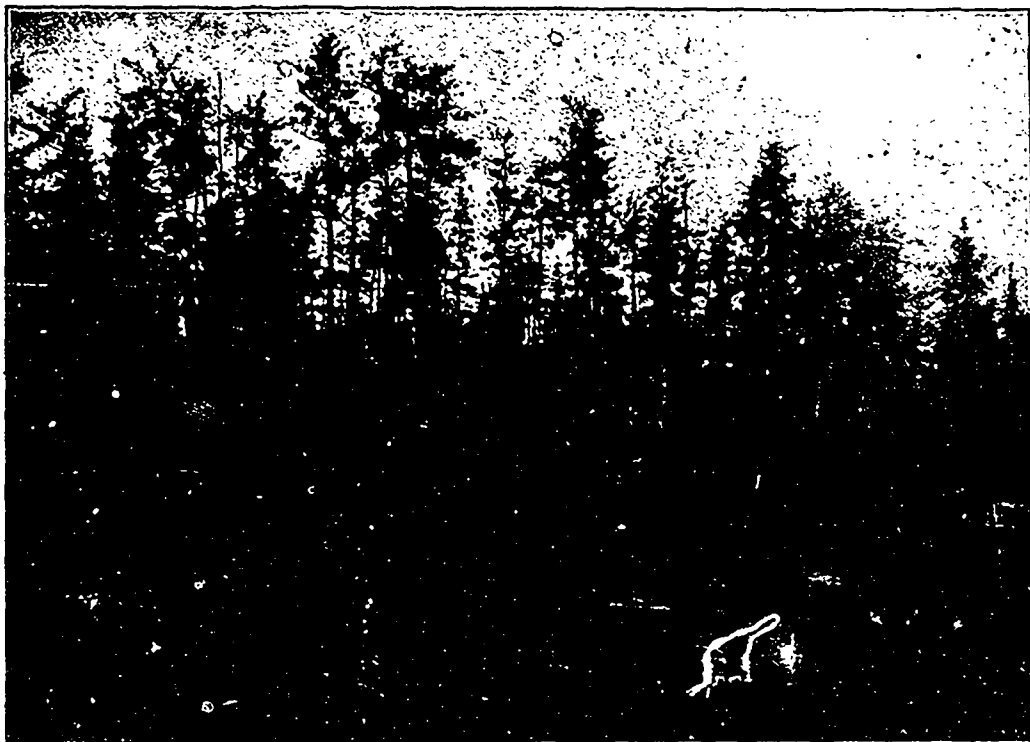
It is not necessary in this calculation to subtract the area of the Indian Reserves, for the Dominion Government is charged with the administration of these, not only in the Dominion territory, but in all the provinces as well.

The prairie lands of the west may be roughly

estimated at 250,000 square miles, and the barren lands of the north, that is, north of the timber line, at 1,000,000 square miles, amounting in all to 1,250,000 square miles, and this taken from the said 2,436,500 will leave 1,186,000 square miles as the timbered portion in Dominion territory, as compared with 880,000 square miles which is the united area of the eastern provinces with the whole of the Pacific Province of British

fail to realize the vast extent of the country which they possess, as well as the undeveloped and unexplored riches which it contains.

It would be difficult to define accurately the limits of the various forest belts under consideration, but the following may be considered as approximately correct: The first, which might for convenience be called our Great Northern Forest, extends from Alaska on the west to Hud-



LUMBERING IN CANADA.—WHITE PINE FOREST ON THE UPPER COULONGE, OTTAWA DISTRICT.

Columbia added, or an area of timbered land belonging to the Dominion greater by 306,000 square miles than that of the combined areas of these Provinces.

But this calculation is too favourable to British Columbia and unfair to the Dominion, inasmuch as we have included its whole area as belonging to the province, whereas the Dominion owns a very large tract consisting of 40 miles in width, twenty miles on each side of the C. P. R., and extending from the summit of the Rocky Mountains to the Pacific Ocean a distance of 500 miles, or an area of about 20,000 square miles.

The fact is that the people of Canada utterly

son Bay on the east, and is bounded on the south by the northern boundry of British Columbia, the prairie lands of the Territories and the northern boundry of Ontario, and extends north to the limit of tree growth. East of Hudson Bay we have also an area partly timbered of 300,000 square miles.

Of course it would be incorrect to assume that all this is thickly covered with timber. Dr. Robert Bell, F.R.S., estimates one-third of this territory to be brule (burnt country), in some cases bare of timber and in others covered with small second growth. Probably another one-third might be set down as consisting of lakes,

rock and muskeg, containing very little timber, and the remaining one-third as timbered land. In this vast extent of country the white and black spruce, now becoming so valuable for pulp, are everywhere likely to be met with, as they extend from beyond its southern limit up to the verge of the timber line, and are the varieties found skirting the tundra of the arctic regions. The other varieties in this northern forest are the larch or tamarac, the Banksian pine, balsam fir, aspen, balsam poplar, canoe birch, willow and alder.

The next to the notice is the belt along the eastern slope of the Rocky Mountains and west

for getting the product out. Being along the valley of the Fraser River the whole distance, and extending only twenty miles on each side of it, the facilities for floating the logs to tide-water are apparent.

Of the district between the "dry belt" and the summit of the Rocky Mountains Professor John Macoun says:—

"Descending from the Rocky Mountains summit by the Kicking Horse Pass, we meet the western cedar as a mere shrub, but in the Columbia Valley it comes a gigantic tree, often having a diameter of ten feet in the valley of the Beaver creek. Ascending the slope on the west side of

of the same species. Passing westward from these mountains we come gradually into the drier region, and the country becomes open, with only scattered groves of single trees on the lower slopes and plateaus, and the yellow pine (*pinus ponderosa*), so characteristic of the dry interior of British Columbia, is the chief feature in the landscape."

In addition to these districts there is a considerable extent of timbered land in what is usually known as the prairie belt, notably in the Riding mountains, Moose mountains and the Turtle mountains, as well as that found in smaller quantities surrounded on all sides by the prairie. The latter, though perhaps of not much value to the lumberman, is invaluable to the settlers in the neighborhood for building, fencing and for fuel.

FOREST FIRES.

I have now to refer to a destructive agency that has done more damage to this country than any other that could be named. It has been estimated that even in the Ottawa valley ten pine trees have been destroyed by fire for every one that has been cut by the lumbermen, and I believe this estimate to be quite within the mark not only in the Ottawa valley, but also in the pine producing districts of Ontario west of the Ottawa, and when we examine the coniferous forests on Dominion lands, whether in the northern belt or in the foot hills of the Rocky Mountains, or in the Railway belt in British Columbia, this proportion is greatly exceeded, and when it is known that most of these fires are caused by carelessness on the part of those living in the neighborhood or travelling through the territory, it is certainly not creditable to the people of this country that they have not adopted more adequate means to guard so valuable a heritage.

Mr. W. C. Edwards, M. P., one of the large lumbermen of the Ottawa valley, in a recent communication, writes as follows:— "Imperfect though the system of fire protection now in vogue in the Province of Ontario and Quebec may be, at the same time the result has been the saving of millions of dollars worth of timber to these Provinces. Previous to the employment of fire rangers in the Province of Quebec, annual serious fires took place in the Ottawa region, destroying enormous quantities of timber. Since the adoption of the fire ranger system there has not been, so far as I am aware, one very serious fire."

It is also worthy of notice in this connection that a forest fire is far more destructive than any system of lumbering no matter how irrational and destructive it may be. The lumberman removes the larger trees and leaves the younger ones standing. By his removal of the larger timber he lets in the light and gives room for the more rapid growth of the smaller trees, but when a fire sweeps over a district in a dry time it destroys every living tree and sapling and even the seeds that may be lying on the ground. In fact, so great and so wide-spread is this destruction that in nearly every report where the forests of the country are referred to their rapid disappearance from this cause is commented upon and urgent recommendations made for the adoption of means for their protection.

There can be no question that the monetary loss that Canada has sustained through forest



LUMBERING IN CANADA—A LOG DUMP.

of the prairies. The varieties are similar to that in the northern belt, with a few added species, such as the mountain fir (*pinus albicaulis*) and the Douglas fir (*Pseudotsuga Douglasii*).

THE RAILWAY BELT IN BRITISH COLUMBIA.

Next we have the railway belt in British Columbia, above referred to. This tract of country was granted by the province of British Columbia to the Dominion as a contribution to the latter for the building of the Canadian Pacific Railway. The timber in this belt is divided into two parts by the "dry belt," a semi-arid district extending from Lytton to Shuswap Lake, a distance of about 130 miles. The latter contains but little timber, though there are some belts of yellow or hull pine (*pinus ponderosa*) scattered through it. The country west of the "dry belt" and extending to the Pacific coast deserves to be ranked with the most productive forest producing regions of the globe. This is the home of the magnificent Douglas fir (*Pseudotsuga Douglasii*), which increases in size as the coast is approached; of the western cedar (*Thuja gigantea*), the Menzies spruce (*Picea Sitchensis*) and the western hemlock (*Tsuga Mertensiana*). Unfortunately an enormous amount of this valuable timber has been destroyed by fire, and nearly every year the burnt area is being increased. This tract of country derives its great value as a lumbering district not alone from the quality of the timber, but from its position and the facilities

the valley we come at once into a belt of the western hemlock and white pine, which is characteristic of all the mountains from here to the Coast range. Above these trees, but often intermixed with them, as at the Glacier hotel, Selkirk mountains, Patton's hemlock is found capping the mountains or forming the last groves on their sides. On the coast range a change takes place, and the upper slopes are clothed with this tree and the white fir (*Abies amabilis*).

"Fine groves of this shapely tree are to be seen here, and the difference between it and the Rocky Mountain species (*Abies subalpina*) is very apparent, as the former has green cones and the latter bright purple ones. Descending the Columbia river, groves of the western larch are seen below the Upper Arrows lake, and this fine tree is not uncommon on the lower slopes of the mountains on both the east and west sides of the Gold range.

"Generally speaking, all the valleys throughout both the Gold and Selkirk Ranges are filled with cedar and spruce, and the mountain slopes are covered with Douglas fir and hemlock. The trees are in all cases well developed, and from their size are suited for any purpose. This is the character of all the timber from the Columbia river to the Gold range. The valleys of the streams discharging westward from the latter ranges into the Eagle and Spallumcheen rivers and Shuswap lake are also filled with fine timber

fires would be more than sufficient to pay our national debt. By this actual monetary loss, enormous as it is, is only one phase of the injury that the country sustains through its being denuded of its timber. The effect on the climate must be taken into account, the change in the distribution of moisture and the flow of the water in the rivers and streams.

One writer, in dealing with this phase of the subject, says: "The forest with which the hills and mountains are covered act as reservoirs to hold, retain and economize the water which rainy seasons shower upon them. The soil in the forest is loose and spongy. The roots and root-lets are so many pipes penetrating the earth, leading the water into deeper soil. The heaps of leaves, the layers of brambles, the beds of moss, all combine to hold and retain the waters, while the shade afforded by the foliage protects the ground from the parching rays of the sun and prevents too sudden evaporation. The waters thus retained percolate slowly through the ground to feed the numberless springs, creeks and rivers, which thus supplied will flow on evenly and continuously. Remove the forests and what will happen? The plants that thrive and flourished 'neath their grateful shade all die, the moss withers, the parched leaves are blown away by the winds. Then comes the rainy season. Rain falls in torrents and washes down the sides of hills and mountains, carrying off the rich mould, the deposit of ages, the life of the land; overflowing the valleys, obstructing river

tion if given opportunities, will in time reclothe the denuded areas, fill up the gaps where only partial destruction has occurred, and in time (perhaps long as measured by the life of the individual, but short in that of a nation) the wounds will be healed and the first conditions restored. When the early colonist landed on the western shores of the Atlantic they were confronted by the forest everywhere, and it was necessary to subdue it in order to appropriate the land on which it grew to agricultural purposes, and they naturally looked upon it as one of their greatest enemies. They waged a long and laborious warfare with it, but in the end they were too successful, for had they allowed a fair proportion of the trees to remain, the country to-day would not only be much more attractive in appearance, but more productive as well.

I am old enough to remember hearing an old settler of Western Ontario tell of his experience in the beginning of this century in clearing the land of the valuable timber that grew in such abundance on his homestead, such as the oak, hickory, maple, beech, whitewood and black-walnut. At that time the timber was not saleable, and after felling the trees they were cut into logging lengths and then drawn into large heaps and burnt, and he said that black walnut was most difficult of any to burn.

No doubt these pioneers were working along lines that were necessary under the circumstances, but how much more beautiful would that favored district be to-day if they had left along the roadsides and a few acres here and there on

"God gave us mother earth full blest
With robes of green in healthful fold;
We tore the green robes from her breast,
We sold our mother's robes for gold.
We sold her garments fair, and she
Lies shamed and bleeding at our feet,
In penitence we plant a tree
We plant a tree and count it meet."

The conditions being so different in Canada from those prevailing in the older European countries, to adopt here any of their policies in detail would scarcely be practicable.

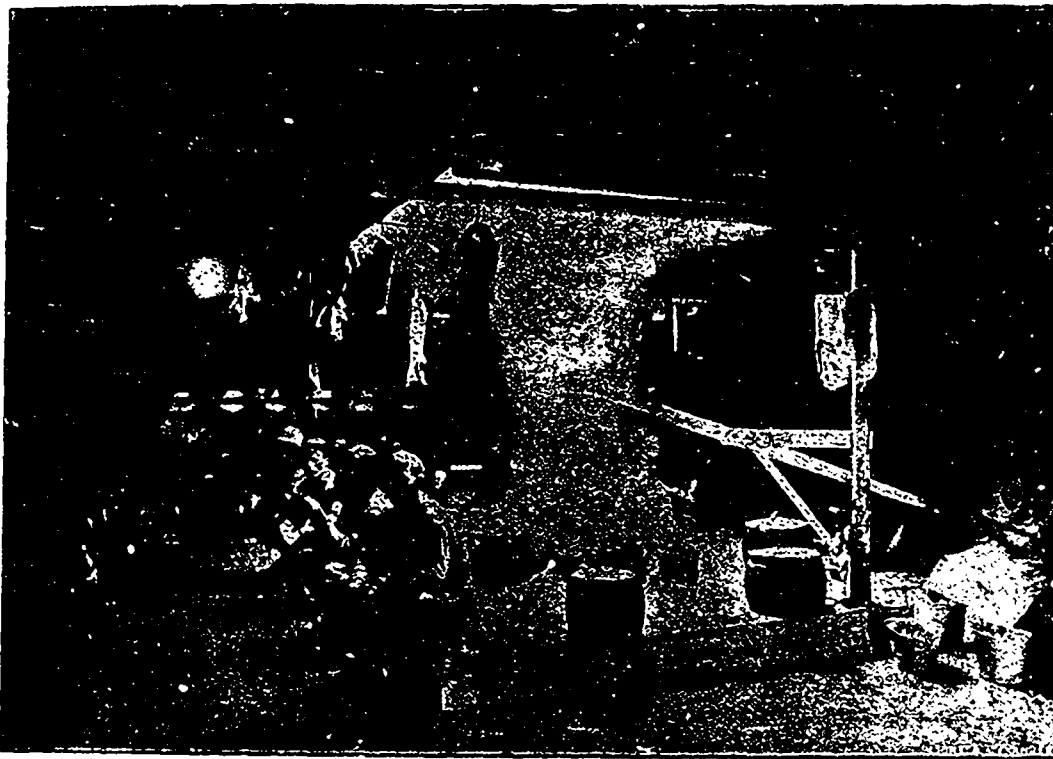
The United States, usually foremost in matters of interest to their people, have only within recent years moved in the direction of scientific forestry. They have now a well organized bureau in connection with the Federal Government at Washington, known technically as the "Division of Forestry."

Mr. Edward A. Bowers, formerly secretary of the American Forestry Association, says "large areas of the finest pine lands have been disposed of by the Government in Minnesota and elsewhere under the settlement laws. There was no other way by which the timber could be acquired, and so the lumbermen hired hundreds of choppers, who in addition to their regular work, were required to enter a tract of 160 acres under the pre-emption or homestead laws, and after a nominal compliance with the law, to deed the land to their employers.

After stripping the timber from the land it was abandoned, and over great areas once located for homes one can pass now without finding an occupant, the dead trees and barren stumps or an occasional cabin alone attesting the former occupancy of man."

Our system in comparison with this is preferable in several ways. In those parts of the country where timber is scarce and unevenly distributed certain portions are withheld from home-steading and divided into wood lots for the settlers who had none on their locations. In other cases permits can be given to settlers to get a certain quantity of timber from reserved areas, and in the heavily timbered land a large revenue is obtainable from the lumberman for the valuable timber thereon, and as the policy generally adopted both in the Provinces and the Dominion is to only grant yearly licenses to cut on certain areas under regulations that may be varied from year to year, it will be seen that the State may be said to still hold the management of its own forest, and is quite free to adopt from time to time a policy best suited to preserve the product and to conserve the national interests.

Though our system of granting land to the settler is favorable for the enactment of a wise forest policy, we have not been as ready to adopt methods as we should have been. There is no question that in the early days those who were far-sighted were enabled to appropriate at a small cost most valuable timber properties. We have also erred in the older provinces in not making a distinct classification of what lands should have been permanently set apart for the production of timber as distinct from others on which settlers should have been invited. The wise farmer will divide his homestead in certain parts for pasture, others for crops, and others for the growth of timber, and similarly the nation should explore its territory in advance of settlement and direct the settler to tracts suitable to



LUMBERING IN CANADA.—THE "CAMBOOSE" SHANTY.

The "Camboose" shanty is still in evidence on the Coulouge River. This old style has been abandoned on almost all other streams for the American style—the cooking range and the box stove, which is considered more up-to-date and economical, but there are concerns who prefer to keep up the old style on account of its being more cheerful for the men and because they think it more cleanly and healthful. The cooking is all done over the open log fire. The bread and beans are baked in the hot sand.

channels, and often destroying life and property in its restless force."

Enough has been said regarding the loss that has been sustained, and the question is what can be done to lessen the destruction that is now taking place.

It must not be forgotten that though the axeman and fire may do their worst, they are unable to destroy the laws of nature, and the element of growth still remains, and the law of reproduc-

tion if given opportunities, will in time reclothe the denuded areas, fill up the gaps where only partial destruction has occurred, and in time (perhaps long as measured by the life of the individual, but short in that of a nation) the wounds will be healed and the first conditions restored. When the early colonist landed on the western shores of the Atlantic they were confronted by the forest everywhere, and it was necessary to subdue it in order to appropriate the land on which it grew to agricultural purposes, and they naturally looked upon it as one of their greatest enemies. They waged a long and laborious warfare with it, but in the end they were too successful, for had they allowed a fair proportion of the trees to remain, the country to-day would not only be much more attractive in appearance, but more productive as well.

I think the words of the poet Jouquin Miller exceedingly applicable to our case in this respect in Canada:

his vacations. Those districts best adapted for the production of timber should be set apart for that purpose and guarded from destruction by fire or other destructive agencies, and the regulation for cutting should be on proper methods so that the territory may continue indefinitely to produce its crops.

LICENSES.

A license to cut timber can be acquired only at public competition. A rental of \$5 per square mile is charged for all timber berths excepting those situated west of Eagle pass in the province of British Columbia, for which the rental is at the rate of 5 cents per acre per annum.

In addition to the rental, dues at the following rates are charged:—

Sawn lumber, 50 cents per thousand feet B.M.
Railway ties, six and eight feet long, 1½ and 1¾ cents each.

Shingle bolts, 25 cents a cord.

All other products, 5 per cent. on the sales.

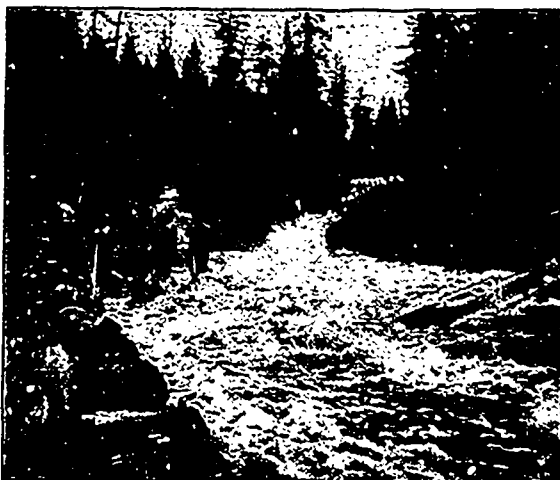
THE TIMBER RESOURCES OF ONTARIO.

THE importance of the lumbering industry of this province and the leading position occupied by the forest as a factor of our prosperity may be estimated from the annual returns of Canadian exports. During the fiscal year ending June 30th, 1899, the total value of exports from the Dominion, produced in Canada, was \$132,801,262. Of this amount forest products furnish the second largest item, their aggregate value being \$28,021,529, as compared with animals and their products, \$46,734,130; agricultural produce, \$22,952,915; mining products, \$13,368,150; and manufactures \$11,706,707. Ontario furnished considerably the greater portion of the amount, although the official returns give the value of the forest produce exported from Ontario at only \$6,513,141, while the province of Quebec, the timber resources of which are much smaller, is credited with \$12,459,064. The reason for this is that nearly all the lumber and timber exported from Ontario, other than that shipped to the United States, is entered for export at Quebec ports and consequently returned as being exported from that province. Ontario's shipments of forest produce to the United States alone were valued at \$6,408,124, from which some estimate may be formed of the total extent of the output.

WHITE PINE.

By far the most valuable feature of the provincial timber resources is the white pine (*pinus strobus*), the great staple of the lumbering industry, for which there is a permanent and increasing demand from all quarters for building and manufacturing requirements. In its still extensive pine forests Ontario possesses a source of wealth and a provision for the industrial activities of the future equalled by few, if any, communities, for despite the inroads made upon them in the necessary work of clearing the agricultural portions of the country for settlement, there remain vast regions which, from the character of the soil, are unsuited for tillage, that with due care in exploitation will remain a permanent source of timber supply. A glance at the map will suffice to show that by far the greater portion of our pine-growing territory is as yet intact, settlement being largely as yet confined to the Ontario peninsula and the region between Lake Ontario and the Ottawa River, the northern portion of which is but partially cleared. Of the 142,000,000 of acres comprising the province, only some 23,000,000 is sufficiently settled to admit of the establishment of municipal government. North of the great lakes lies a broad belt of forest land covering about one-third of the province and extending from the

Ottawa to the Manitoba frontier, much of which is pine bearing, particularly in the eastern and western portions. The existing timber licenses comprise about 22,000 square miles, or some 14,000,000 acres. It is therefore evident that the white pine areas of Ontario are far from exhausted. Much of the portion of New Ontario now covered with pine may be found adapted for farming, but making every reasonable deduction on this score, a very considerable area will remain which can more profitably be retained in forest than devoted to any other use, and it will enable us to maintain our position as a timber producing country, so long as it is managed so as to secure the natural reproduction of the crop. A large portion of the 22,000 square miles under license may also be regarded as a permanent source of supply, as where fire is



LUMBERING IN CANADA—A RAPID IN THE CREEK

kept out, the timber cut away is succeeded by a new growth.

The output of pine timber cut on the Crown Domain in 1899 was as follows, in feet, board measure: Saw logs, 498,607,068; boom and dimension timber, 29,361,695; square timber, 20,679,288; making a total of 548,649,051 feet. In 1898 legislation came into operation requiring all saw-logs cut upon Crown lands to be manufactured in Canada. As previous to that date a large number of owners of saw mills in the United States had been in the habit of exporting the logs cut on Ontario timber limits to be manufactured abroad, it was anticipated that the output would be largely decreased in consequence of the new regulations. Owing, however, to the general prosperity and the considerably increased demand for lumber, the falling off, as compared with previous years, was comparatively slight, and was largely compensated by an increased output of other kinds of timber. This year's

business has been characterized by a steady expansion, and the beneficial effects of the manufacturing restriction have been apparent in the construction of new mills and the increase in the capacities of those already existing throughout the lumber districts.

In addition to the pine cut on the lands under license there is still a large amount taken from lands belonging to private individuals. There are about 1500 mills throughout the province engaged in producing lumber from this source, mainly for local supplies, concerning the operations of which no accurate data are available. A rough estimate made by the Bureau of Forestry on the basis of partial returns from the mill owners in answer to enquiries as to their output, gives a total yearly production of about 375,000,000 feet board measure. Of this probably about two-thirds is hardwood and the remainder mostly pine. This would bring the total production of pine timber upon Crown and private lands up to about 660,000,000 feet.

SPRUCE.

The value of the forest resources of Ontario has been enormously increased by the development of the art of manufacturing paper out of wood, spruce (*abies nigra* and *alba*) being the variety best adapted for that purpose, though poplar (aspen), balsam and basswood (*linden*) are also used. A few years ago the extensive spruce forests were hardly regarded as an asset in estimating the wealth of the woodlands, now they occupy a place second only to the white pine. The demand for paper is steadily increasing, and the supply of the kinds of wood available for the manufacture of wood pulp is being rapidly exhausted in the United States. Spruce is found largely in the region already referred to as the pine-belt, but usually scattered and intermixed with other growths. In the region north of the Height of Land it is the dominant tree, that country being covered with great spruce forests. This area, commencing a short distance north of Lake Temiscamingue at the eastern boundary of the province, extends westward to the sources of the Albany River and runs north to the Albany and James Bay. The spruce, in addition to growing more thickly, here attains much larger dimensions than in other parts of the province. The white pine is only found as a sparsely scattered tree, the principal other growths being tamarac, cedar, Banksian pine, birch and poplar. The best spruce land possesses a stand of about 7,000 feet to the acre, representing a product of 11½ tons of ground wood pulp. The magnificent water powers which abound throughout this region, combined with the unlimited supply of raw material in the

spruce forests, will in the not distant future make this now uninhabited and little known part of Ontario the seat of extensive pulp and paper making activities, with their allied industries. The market is an ever-extending one. At present Great Britain and the United States consume yearly about 900,000 tons of pulp wood, or the product of about 90,000 acres of spruce woodland. Last year the total cut of pulp wood on the Crown Domain amounted only to 29,838 cords, so that our pulp industry as yet is only in its infancy.

Owing to the large investments of capital required in order to establish the manufacture, the Ontario Government, in pursuance of its policy of building up home industries, has given considerable concessions involving the right to cut pulp wood on Crown lands on payment of the regulation dues for a term of years to several companies, on condition of their erecting mills of a

eastern Ontario. The wood is much inferior to pine for ordinary building purposes, being coarser fibred, but it is in demand where strength and toughness are specially required, as for instance in bridge building. Being cheaper than pine it is used to some extent for rough carpentry. The principal value of the hemlock lies in its bark, which is in demand for tanning, some of that cut on private lands being exported as raw material, though the shipments of this article have latterly fallen off considerably. During the last fiscal year the export of tan bark from Ontario was only 13 cords. Hemlock bark cut on the Crown domain in this province is now required to be manufactured in Canada. The diminution of the export trade in this commodity is by no means to be regretted, as formerly, owing to the great demand for tanbark in the United States, many trees were stripped of their bark and their trunks allowed to go to decay in

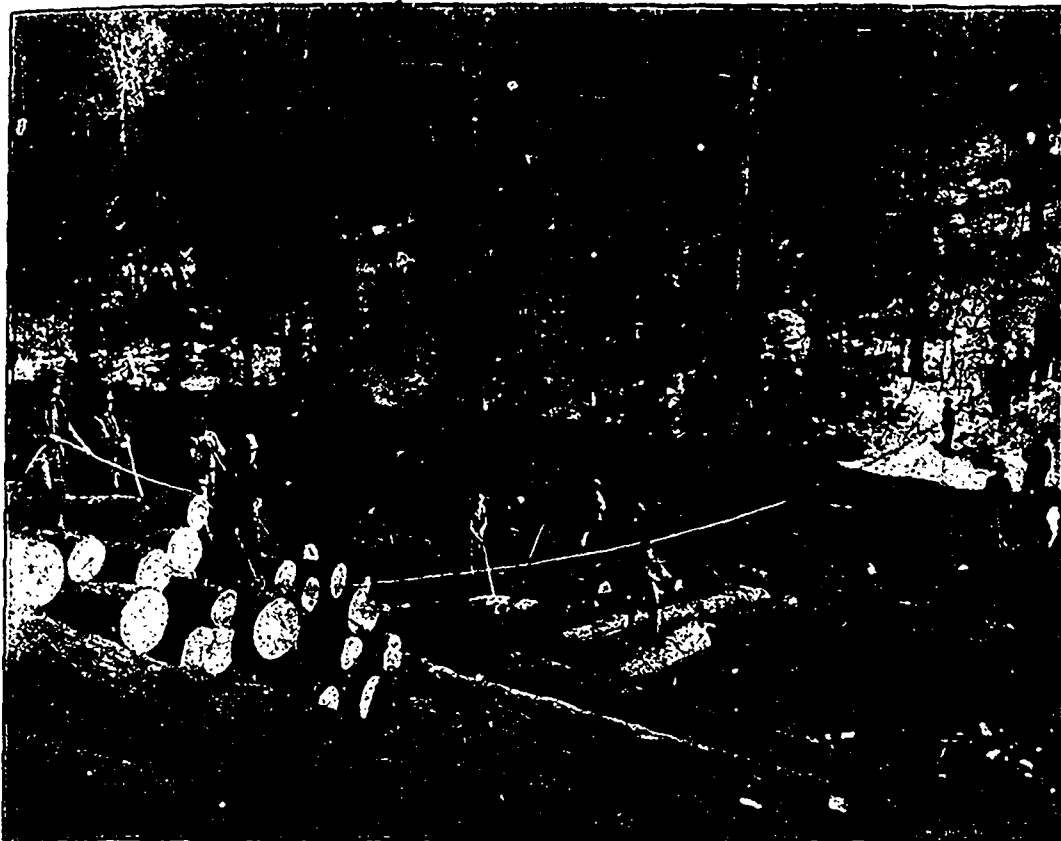
timber in the districts now being opened for settlement and industry is certain to increase greatly.

HARD MAPLE.

This tree (acer) is very widely distributed throughout the province and was one of the characteristic features of the hardwood forests which once clothed the settled portion of Ontario. It still furnishes a considerable proportion of the timber supplied by private land-owners to the smaller mills. There are considerable growths of maple, intermixed with birch and other woods, throughout Muskoka, east Algoma and the Nipissing district, where it is found principally upon the high lands. It is highly prized in the settled portion of the country for sugar production, large groves having been spared, especially in eastern Ontario, on this account. The timber of the maple is valuable for many architectural and manufacturing purposes. It is hard and close grained and has come much into vogue for flooring and finishing in buildings, as it is susceptible of a fine polish. The growths known as curly and bird's eye maple are much prized for fine cabinet work. Maple is used very largely in the manufacture of shoe lasts, and considerable quantities of maple blocks are exported to Britain for the manufacture of mangle rollers and for printing wall paper. Its timber occupies a leading position among the commercially valuable hardwoods, and is a source of profit to the settler, who instead of burning it in log heaps, as was the universal wasteful custom a few years ago in clearing land, can in most localities readily find a market for it at a remunerative price. Settlers in Muskoka district and other neighborhoods realize from \$6.50 to \$8 per 1,000 feet for hardwood logs. As the remoter parts of the country are opened up the maple and other hardwoods will become a valuable asset, provided the land owners have sufficient foresight to avoid the mistake of so many of the early settlers of Ontario who frequently burned up timber of greater value than the farm when cleared.

BIRCH.

The black birch (*betula lenta*) is the most valuable tree of the birch family. It is found generally throughout southern Ontario, and grows in large numbers in the forest region, being among the hardwoods which flourish north of the Height of Land. The timber possesses strength, firmness and durability and is easily worked, hence it is much used in manufacturing. It is coming largely into requisition as an ornamental wood. When properly cut and stained it much resembles cherry, and owing to the scarcity of the latter is frequently substituted for decorative purposes. It is in demand for cabinet furniture as well as for some kinds of wooden ware, and also for carriage making. The black birch attains a much larger size in the northern forests than in the older settled section, the trees, which are often found growing in groups, being frequently two and three feet in diameter. The white birch (*betula alba*) is also a widely distributed tree and a prominent growth in the country tributary to James Bay. It is also used in furniture making and for other industrial purposes, while the bark is valued as furnishing the material for birch canoes.



LUMBERING IN CANADA—USING DOG AND LINE ON THE CREEK.

stated capacity and producing a specified output. The extensive works at Sault St. Marie and Sturgeon Falls have done much for the development of the surrounding districts, and the manufacture of wood pulp promises to be one of the leading industries of the newer portion of Ontario. The mills erected will form a nucleus of settlements and afford the incoming population a market for the timber on their farms as well as for their produce, and give them opportunities for remunerative employment.

Besides forming the raw material for paper, wood pulp is used in a large number of other articles in which it is desired to combine lightness with strength and durability, and is being employed very largely for constructive purposes.

HEMLOCK.

The hemlock (*abies Canadensis*) is found extensively in the Parry Sound district and on the north shore of Georgian Bay, and is distributed more sparsely throughout the northern part of

cases where no local demand for the lumber existed.

CEDAR.

Comparatively little cedar (*thuya occidentalis*) of commercial value remains in the older settled portions of the country. It is common in the forest region of northern Ontario, especially in swampy and low-lying localities, and will be a considerable factor in the industrial development of that section. The wood of the cedar is soft, light and fine in the grain and can be split exceedingly thin. Its extreme durability renders it highly valuable for out-door purposes, as it will bear exposure to any weather. Very large quantities of cedar are used for fence posts, street construction, railway ties, electric wire poles and similar purposes where the wood is liable to be continually exposed to wear and tear and must undergo severe strains. The consumption has been so great and the purposes to which it is better adapted than any other wood so numerous that the value of the cedar

OAK.

The red and white oak (*quercus alba* and *rubra*) rank high among the valuable hardwoods. They flourish in eastern Algoma and Nipissing and are found in the timbered portion of Old Ontario in lesser quantities. The white oak, which attains a height of from 60 to 80 feet, is the preferable variety, the grain being straight and the wood tough, elastic and durable, on which account it is adapted for implements, carriage making and cooperage work. The wood of the red oak is more variable and the tree somewhat more widely scattered than the white oak.

OTHER WOODS.

The poplar (*populus tremuloides*), a very numerous tree in northern Ontario, especially in parts where the pine woods have been destroyed by fire, was until lately despised as of little value, but latterly its worth has been more appreciated as raw material for pulp wood.

The elm, owing to its toughness and straightness, has many industrial uses and is particularly valuable for piling and the construction of wharves. It is principally to be found on low lying damp soil. There are several varieties which have a marketable value. The white or swamp elm (*ulmus Americana*) sometimes attains a height of eighty feet and a diameter of six

or eight feet. It is the hardiest variety and is found in the extreme northern part of the province. The rock elm (*ulmus racemosa*) is also a large tree, the timber of which has a fine grain and is used in the manufacture of wagons, wheels and heavy furniture. The slippery elm (*ulmus fulva*) is a smaller tree found mainly along water courses.

The white ash (*fraxinus Americana*) is a tree which is not numerous in Old Ontario, but is found in the latitude of Algoma in considerable quantities. Its wood is used for the making of implements, furniture, baskets and barrels, as it is light, strong and separates readily into layers.

There are large supplies of beech (*fagus ferruginea*) in the forest region, which will before long be drawn upon to fill the demand of the factories for this wood, the principal use of which is the manufacture of tools and implements.

Basswood or linden (*tilia Americana*) is a durable though soft wood, and its combination of lightness and toughness renders it especially suitable for some purposes of the carriage and furniture makers, and also for wooden ware. It is found both in northern and southern Ontario.

The tamarac or larch (*larix Americana*) grows extensively in Algoma district and other parts of New Ontario. Being a strong, close-fibred

wood is very difficult to split. It is in requisition for ship and railway building, and also for joists, rafters, etc., and also for some kinds of implements. North of the Height of Land it attains a much larger growth than when found elsewhere.

TIMBER REGULATIONS.

The timber on Crown Lands in Ontario is disposed of by auction to the highest bidder. The regulations state that all timber berths shall be subject to an annual ground rent of \$3 per square mile, together with the following Crown dues, viz.:

Black Walnut and Oak, per cubic foot.....	\$0 03
Elm, Ash, Tamarac and Maple, per cubic foot.....	0 02
Birch, Basswood, Cedar, Buttonwood and Cottonwood and all Boom Timber, per cubic foot.....	0 01
Red and White Pine Timber, per cubic foot.....	0 01
All other woods.....	0 01
Basswood, Buttonwood and Cottonwood Saw Logs, per standard of 200 feet board measure.....	0 15
Red and White Pine Saw Logs and Boom Timber, per standard of 200 feet board measure.....	0 20
Walnut, Oak and Maple Saw Logs, per standard of 200 feet board measure.....	0 25
Hemlock and other Woods, per standard of 200 feet board measure.....	1 10
Spruce, per standard of 200 feet.....	0 20
Spruce pulpwood, per cord.....	0 40
Staves, Pipe, per mille.....	7 00
" West Indian, per mille.....	2 25
Cordwood (hard) per cord.....	0 20
" (soft) ".....	0 10
Hemlock, Tan Bark, per cord.....	0 20
Railway Timber, Knees, etc., to be charged 15 per cent. ad valorem.	

NOTES ON THE FORESTS OF THE PROVINCE OF QUEBEC.

By W. C. J. HALL.

THE area of the Province of Quebec since the recent addition of the new northern territories is 346,928 $\frac{3}{4}$ square miles, the extreme eastern point being at Blanc Sablon, in the straits of Belle Isle, the northernmost on lake Astray on Hamilton river, the southernmost the 45th parallel, and the westernmost being Lake Temiscamingue and the boundary between Quebec and Ontario as far as James Bay, and up to the mouth of East Main river.

The cutting of timber began as a matter of course on the banks of the main waterways, and gradually spread and extended itself inland and up the large tributaries in proportion to the expansion of colonization, until at the present time one can listen to the hum of the saw from Anticosti and the Gaspé peninsula to Mattawa, lying south of Lake Temiscamingue.

The quantity of timber of all varieties exported from the province would make up a very formidable total, Quebec having always been a large feeder of the British and other markets. A few may question the ability of timber lands to maintain the supply for an indefinite period, but with reasonable care and intelligence exercised by the controlling power and the trade, none need be anxious as to the forests lasting in perpetuity. In this connection an object lesson would not come amiss. The present Lieutenant Governor General of British Columbia, Sir Henry Joly de Lotbiniere, has, all his life, carried on a lumber business on freehold lands in the county of Lotbiniere, about 40 miles from Quebec City. The territory was cut over in sections, no trees under a certain size being taken, a generous

nucleus of forest always remaining when each section was left, the result of such action being that there is now as much timber as ever on the whole tract, and certainly the quality is by no means inferior to the first cutting.

The local government has, of course, made provision in a measure for the perpetuation of the forests on Crown lands, the regulations now reading that pine trees 12 inches in diameter



LUMBERING IN CANADA—RAFT OF TIMBER ON THE COULONGE RIVER.

at the stump, spruce 11 inches, and other trees 9 inches, are the minimum sizes allowed to be cut. This ruling is in a great measure well lived up to by the trade. Thinking men naturally see where their interests lie, and co-operate with the authorities; the license-holders also work hand in hand with the government in protecting the forests from fire, a very satisfactory system being now in operation over a large area, which will probably be extended to the rest of the province before very long.

One must admit that removing the mature trees in a forest is a great stimulant to the younger growth, and under such circumstances

the annual increase on the residue is materially hastened. Instances could be cited where areas have been rather closely cut and before 20 years had elapsed a very considerable second growth took place, permitting of a large second crop being taken off.

From the experience gained by judicious cutting, and the regulations duly respected, we conclude with good reason that our forests can be perpetuated whilst allowing a generous annual cut of timber. On comparing the relative rate of growth of pine and spruce, one is forced to the conclusion that the white pine actually grows as fast as spruce, but it seems that certain conditions of soil and surroundings must prevail before the pine will make a start in districts where it has been closely cut. In localities where the mature growth only has been removed there seems to be no difficulty experienced, and here the annual increase is probably greater than with the spruce; but

where fire has run it would seem that until the ground is fairly covered with a new growth of young timber of different varieties the pine will not assert itself, naturally at least. On the other hand, our experience goes to show that the spruce will take hold in burnt and denuded areas very much more quickly, and as far as one can see adapts itself to almost any conditions of soil provided nature is left to its own devices. For argument's sake say that the pine will some day be exhausted (the day is far distant yet), we can with confidence look forward to the natural afforestation of these areas with spruce. Such conditions have arisen in the eastern townships

are apparent now on the river Gatineau. Lands formerly cut over, and where fire subsequently ran, are now developing a goodly growth of spruce.

Without going into an elaborate array of figures, we will broadly glance at the future prospects of the timber supply of Quebec. In round figures we have 32,000,000 acres of Crown lands under license in the province; of this, say 10,000,000 acres are pine bearing. Computing the stand per acre at a conservative figure with an annual increase, and providing no serious conflagration occurs, the supply should certainly not be exhausted for the next 50 years. We have, then, spruce bearing lands under license covering an area of 20,000,000 acres. Assuming that the present amount of cutting is maintained and nothing done on other Crown lands, a supply for 75 years or more is actually in sight. But we have, apart from the Crown lands under license, a vast territory as yet untouched, in round figures 150,000,000 acres. It is known that some considerable part of this is very fairly timbered, but let us suppose that one with the other, the very modest stand of two cords per acre exists, and computing one and one-half cords as necessary to produce a ton of pulp, we are thus in a position to supply the British markets with 500,000 tons per annum for the next four hundred years, from the undeveloped areas of the province. If, therefore, we lay claim to being the source from which the pulp and paper industries must eventually look for their supply, none can very well dispute our pretensions, particularly when those interested observe the natural facilities in the shape of water powers which exist on the many important waterways for the exploitation of the raw material.

Of course, prominence is naturally given in this article to spruce as the staple timber of the province, and the fact that the black spruce has been found to produce, if anything, a superior fibre to the white has immediately given an increased value to the ordinary spruce timber limit, and furthermore has put a value on lands until now regarded as worthless. But besides pine and spruce we have an abundance of other varieties of timber. Throughout the Gaspé Peninsula and as far west as Lake Temiscouata a large

quantity of cedar is to be found. The trade in shingles and railway sleepers has become a very large industry. We have on either side of the St. Lawrence large tracts of land heavily timbered with white birch admirably suited for the spool trade, and there need be no such waste in this line of business as formerly existed, for the red heart of this timber has been found to work up admirably for making trunks and boxes. The balsam also must be made mention of; it grows wherever the spruce flourishes, all over the province, and is really an excellent timber, although unsound as a rule at the stump like the cedar. It is claimed that the balsam produces a first-rate grade of pulp, and there can be little doubt of the truth of this assertion; it certainly cuts up into very good lumber and is especially adapted for box shooks, as there is hardly any shrinkage or warping.

In hardwoods, in which this province is rich, the principal trade so far carried on has been with Great Britain for what is known as square birch. No very large operations in sawn hardwoods have ever been carried on, but the day cannot be very far distant when our comparatively uncut hardwood groves, of which there is an abundance, will be exploited.

The Banksian pine is found on the north shore of the St. Lawrence, and on the St. Maurice river particularly there appears to be the heaviest growth, according to reports. It is rapidly growing in favor in the sawn lumber trade, and has long been known as an excellent timber for railway ties. The red pine is confined chiefly to the counties of Pontiac and Ottawa.

In conclusion, it must be remarked that apart from the Crown lands of the province, we have some 10,000,000 acres of seigniorial grants and fully as much territory conceded by sales, grants, etc. Upon this area there is a vast amount of timber still standing, which of course belongs to the owners of the soil, and mention is made of it only to still further demonstrate that there is, practically speaking, an unlimited amount of timber within our borders, and that judgment and care of the forests is alone necessary to ensure its lasting for all time.

Appended is a copy of the present tariff on timber cut on Crown lands under license, also

a copy of the clause referring to ground rent charges:

All timber, saw logs and wood goods of all kinds cut under licences now in force, or under any licenses which may hereafter be acquired, shall be subject to the payment of the following Crown dues, that is to say:

Oak and walnut, per cubic foot	4 cents.
Pine, birch, basswood, cedar, spruce, elm, ash, tamarac, and all other square timber, per cubic foot.....	2 "
Pine saw logs, boom and dimension timber and all other logs or woods intended for sawing, except spruce, hemlock, cypress, balsam and cedar per standard of 200 feet board measure.....	26 "
(Equivalent to \$1.03 per thousand feet board measure.)	
Spruce, hemlock, cypress, balsam and cedar saw logs, per standard of 200 feet board measure	13 "
(Equivalent to 65 cents per thousand feet board measure.)	
Cord wood (hard), per cord of 128 cubic feet.	20 "
Cord wood (soft), per cord of 128 cubic feet...	10 "
Cedar rails, not exceeding 12 feet long, per 100	30 "
Cedar pickets, per 100	15 "
Rails of other wood than cedar, and not exceeding 12 feet long, per 100.....	15 "
Pickets of other wood than cedar, per 100	10 "
Cedar and pine shingles (short), per thousand.	10 "
Cedar and pine shingles (long), per thousand	15 "
Cedar, or other, telegraph, telephone or electric light poles, not exceeding 10 inches in diameter at the butt or larger end, per lineal foot.....	¼ "
Ditto exceeding 10 inches at the butt, per lineal foot.....	½ "
Railroad ties of all kinds of wood, each	2 "
Hemlock lathwood, per cord of 128 cubic feet.	20 "
Hemlock bark, per cord of 128 cubic feet.....	32 "
Pine, cedar, spruce, birch or other small logs, not exceeding 10 feet in length, nor 10 inches in diameter at the smaller end, for shingles, spool, small board stuff, or paper pulp, per cord of 128 cubic feet.....	25 "
Futtocks, knees, floors of birch and other ship-building material, and all wood goods not enumerated in the foregoing list, an ad valorem duty, on the invoice or bill of sale, of.....	10 per cent.

The duties on timber for export shall be charged upon the quantities shown by the specification of measurement at the office of the Supervisor of Cutlers at Quebec, or at the offices of his deputies, or by other reliable measurement, but when such actual measurement cannot be obtained, each stick of white pine shall be estimated as containing 60 cubic feet, and red pine and all other woods as containing 30 cubic feet.

Newly acquired licenses, and renewals of licenses to cut timber, shall be subject to a yearly ground rent charged at the rate of three dollars for each square mile or fraction thereof, embraced within the area they cover, but no license shall be charged for at less than one square mile of area, nor shall any claim for refund of ground rent over calculated be entertained after the issue of such license.

THE TIMBER OF NEW BRUNSWICK AND NOVA SCOTIA.

THE province of New Brunswick is about 230 miles from north to south, and 190 miles from east to west. It is so situated that water shipments may be made from the south and east, while it enjoys the advantages of two great river systems, the St. John and Miramichi, with numerous small rivers and lakes, which afford facilities for floating the timber from the interior to the coast. It is also well provided for in respect to railway accommodation.

The total area of New Brunswick is 17,400,000 acres, and it is estimated that more than three-fifths of this is timber land. About 5,000,000 acres have been placed under license by the Government to lumbermen, the land, however, being still the property of the Crown, and reverting thereto at the expiration of the twenty-

five years' lease. The New Brunswick Railway Company owns 1,647,772 acres of timber land. Mr. Alex. Gibson, of Marysville, owns 200,000 acres on the Nashwaak river, the Nova Scotia Land Company have still a considerable tract, and other large tracts are owned by private individuals and corporations. It has been estimated that there are over ten million acres of timber lands in New Brunswick on which lumbering operations of some sort could be carried on.

Spruce is the predominant timber. Other woods include, birch, maple, ash, beech, cedar and hemlock, but the commercial value of these is not to be compared with that of spruce.

The Crown lands of the province are leased by public competition for a term of twenty-five years. An upset price of eight dollars per square

mile is fixed by the Government. This sum must be deposited by an applicant for license; the property is then offered at auction and sold to the highest bidder. The lessee is required to pay also an annual license of \$4 per square mile and the following stumpage dues: Spruce, pine or hardwoods, \$1 per thousand superficial feet; pine timber up to 14 inches, \$1 per ton, with 25 cents for each additional inch; spruce timber, 50 cents per ton; hardwood timber, up to 14 inches square, 90 cents; cedar logs, 80 cents per thousand feet. Every pine or spruce tree cut must make at least a log 18 feet long and ten inches at the top end.

The great manufacturing centre of New Brunswick is St. John, where are situated a number of large saw mills, most of them doing an export trade. The lumber shipments from

St. John to trans-Atlantic ports last year were nearly 200,000,000 feet, while from the Miramichi there was shipped over 125,000,000 feet. Other ports from which large shipments are made are Moncton, Campbellton, Shediac, Sackville, Dalhousie, Richibucto and material Bathurst.

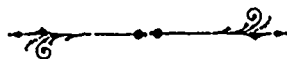
The next few years promises to witness a great development of the pulp industry in New Brunswick. Four large mills are now in operation, and capitalists are about to undertake the erection of others at different points where excellent water powers and an abundance of raw are available.

NOVA SCOTIA.

The area of timber lands in the province of Nova Scotia is in the neighborhood of 3,000,000 acres, of which over 2,000,000 acres are held by lumber operators. In this province the lands are not leased by the Crown as in the other provinces of the Dominion but are sold outright, the only rights reserved by the Crown having relation to minerals. Besides spruce, of which there are extensive areas and which is of the greatest commercial value, the native woods consist of birch, beech, ash, maple and oak. There is also a small growth of pine. The export of lumber from Nova Scotia is considerable, and

represents by far the greater portion of the production. For the last three years the shipments to trans-Atlantic ports have been on an average of 150,000,000 feet. Large shipments are also made to South America, West India, and the United States.

Among the leading lumber exporters might be mentioned Dickie & McGrath, of Tusket; Parker, Eakins & Company, Yarmouth; Rhodes, Connors & Company, Amherst; Alfred Dickie, Lower Stewiacke; E. D. Davidson & Son, Bridgewater; Nova Scotia Lumber Company, Sherbrooke; Chas. T. White, Apple River; and Clarke Bros., Bear River.



THE FOREST LANDS OF BRITISH COLUMBIA.

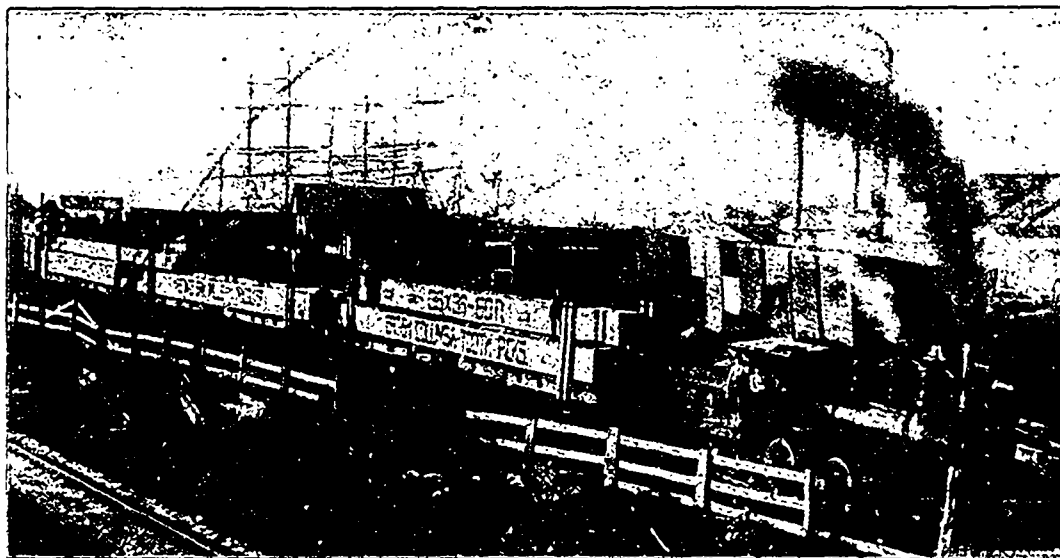
THE principal areas of timber lands in the province of British Columbia are situated on the western slope of the Cascade or Coast Range, and on Vancouver and adjacent islands. The largest compact area is on the eastern portion of Vancouver Island, extending north from, and including the valley of the Cowichan River to Hardy Bay, comprising about 4,400 square miles, all of which is densely clothed with a large growth of fir, spruce, cedar and some hemlock.

On the mainland the principal area of timber lands is in the valleys of Gordon Pasha and Powell Lakes and on the banks of the streams which flow into them and the rivers which are their outlets, on the Theodosia River valley, and along other streams of more or less size which flow into the many inlets of the sea with which the coast is indented, as far north as Queen Charlotte Sound, north of which point fir is not met with in any great quantity, its place being taken by a very dense growth of hemlock. In favorable situations the hemlock reaches a very considerable size, specimens 30 inches in diameter and 50 feet clear to the lower branches being not uncommon. The wood of the northern hemlock is of a very superior quality and will some day—perhaps soon—be much more generally used than it now is.

Very considerable areas of spruce, red and yellow cedar, (or cypress), are also found to the north of the point above mentioned and on Queen Charlottes Islands. The number of square miles of these sections of timber bearing lands may be placed approximately at 40,000. In addition large portions of the coast are covered with second and third class timber of various kinds, but which, owing to the cheapness and facility with which better timber can be procured, are entirely neglected by lumbermen in the province.

The principal exporting mills in British Colum-

bia are those owned by the British Columbia Mills, Timber and Trading Company, who operate three saw mills—the Hastings saw mill in Vancouver, the Royal City planing mills in Vancouver and New Westminster, having a combined daily capacity of 215,000 feet, and the Moodyville Land & Saw Mill Company on Burrard Inlet (north side), which has a daily capacity of 105,000 feet. We might also mention the Brunette Saw Mill Company in New Westminster, with a daily capacity of 65,000 feet, the Victoria Lumber & Manufacturing Company, of



SHIPMENT OF TIMBER AT THE HASTINGS SAW MILL, VANCOUVER, B. C.

Chemainus, Vancouver Island, which is one of the best constructed and most modern mills in the province, with a daily capacity of 220,000 feet, the J. A. Sayward Company, of Victoria, which has a daily capacity of 40,000 feet, and the North Pacific Lumber Company at Barnet. In addition to the above there are some sixty-five saw and shingle mills of greater or less capacity, which cut principally for local consumption, the North-West, and Ontario trade.

The exports of sawn timber from British Columbia for year ending June 30th, 1900, were:

Over sea.....	162,000,000 feet
By rail eastward.....	34,000,000 "
	196,000,000 "
Cut for local uses, railroad construction, etc.....	58,000,000 "
Total cut in the province being	254,000,000 "

VISIT OF BRITISH PAPER MAKERS.

THE delegation of British paper manufacturers which have been visiting this continent returned to England by the steamer Parisian from Quebec on the 21st ultimo. The party first visited the United States, and inspected some of the leading pulp and paper mills in that country. From Duluth they went to Sault Ste. Marie by steamer and were there the guests of Mr. F. H. Clegg, president of the Sault Ste. Marie Pulp and Paper Company. They evinced much admiration for the magnificent plant of the Sault Ste. Marie

Company. At Toronto they were dined at the National Club and afterwards taken in charge by Mr. John R. Barber, M. P. P., the well-known paper manufacturer of Georgetown, and others representing the paper and pulp industry. A trip round the harbor and island was furnished by Mr. F. B. Polson, of the Polson Iron Works, builders of pulp digesters, etc. In the Province of Quebec they visited Three Rivers, Shawinigan Falls, Grand Mere, Roberval and other places, and in Montreal were entertained by the

Paper Manufacturers' Association and the International Paper Company. The extensive pulp mills in New Brunswick were, we understand, also visited.

The British paper makers were, it is said, delighted beyond measure with what they saw, and particularly with the extent of the timber resources of Canada. One of the party stated that since their arrival they had been constantly remarking upon the great possibility of the introduction of British capital to work up the forests of spruce and other pulp wood. He said that several of the delegates had their eyes tempted with water privileges which had been brought to their notice. The paper makers of the United Kingdom had come to the conclusion that they had to look this way for pulp as the supply from Sweden and Norway was rapidly becoming exhausted.

CANADIAN EXPORTS OF TIMBER PRODUCTS.

The accompanying three tables will help to an understanding of the Canadian trade in wood and wood products.

The first table shows the extent and development of our export trade in forest products. We began our life as a Dominion with an export trade in wood, and industries requiring wood as the chief staple, of \$19,651,000. We ended the fiscal year 1899 with an export of the kinds of articles valued at nearly \$31,000,000, an increase of 60 per cent.

We began with a despatch of squared timber equal to 650,928 tons. We ended the last fiscal year with an export of 175,186 tons, a decrease of 475,642 tons or 73 per cent. The decrease in total value is equal to 40 per cent., so that on the whole prices have not only been maintained but increased. The average export price of a ton in 1868 was \$6.39 and in 1899 it was \$14.30. Exports can alone tell how much more it cost in 1899 than in 1868 to obtain the ton, square it and convey it to the shipping port.

We began by sending out 630,800 pieces of wood in the shape of railway sleepers. We ended the period of 32 years by exporting 529,068 pieces, a decrease of 101,742 pieces, or 16 per cent. in quantity, accompanied by a decrease of 31 per cent. in value, showing that the value per gross has decreased more than the quantity.

The decrease in the value of fire wood exported has been \$371,937, equal to 75 per cent. The value per cord has also decreased from \$2.20 in 1868 to \$1.75 in 1899, a drop of about 20 per cent.

"Other wood" being products of the forests almost untouched by the transforming hands of labour shows a large increase from \$691,013 in 1868 to \$2,803,033 in 1899. There has, however, been a considerable decrease in the value of the export under this sub-head during more recent years. It reached its highest point in 1894, when the value for export was \$3,859,036. With this fluctuation in recent years and this large increase when the whole period of Confederation is taken into account, further analysis of this column may prove interesting. The articles included in this column are saw-logs of all kinds, knees and futtocks, spars, basswood, hickory, hop poles, etc. Saw-logs formed 56 per cent. of the total of 1899 (\$2,803,033), and wood blocks for pulp 30 per cent., leaving other articles to form 14 per cent. In 1894 saw-logs formed over 74 per cent. of the total of \$3,859,036, and pulpwood about 10 per cent., leaving other articles to be represented by 16 per cent. It appears, therefore, that the decrease seen in 1899 when compared with 1894, is due to a diminution either in the value or the quantity of the sawlogs. An examination of prices will show that the decrease is altogether due to a diminution in the quantity of the sawlogs exported in 1899. From the point of view of labour and capital both, this fact cannot but be deemed a gain. In 1894 we exported 340,900 thousand feet of logs, and in 1899 only 185,363 thousands.

The great gain in the amount of lumber measured in dollars exported in 1889 as compared with 1894 sufficiently emphasizes the importance of the change. We sent abroad \$2,862,152 worth of logs in 1894 and \$19,411,500 of lumber. In 1899 we exported \$1,581,783 of logs and \$22,392,000 of lumber, a decrease of \$1,280,000 in

the raw material—logs—but an increase of nearly \$3,000,000 of sawn lumber upon which capital and labour both take or ought to take larger toll than upon the unsawn logs.

By those who hold that the more labour that is put upon an article before it goes out of the country the better, it will not be deemed a fact to congratulate ourselves over that the pulp wood which in 1894 was of the value of \$393,260 was in 1899 of the greater value of \$842,086.

The table giving the export of squared white pine is instructive.

In the first two years of Confederation the export of square white pine was 821,427 tons, equal to 410,714 tons a year. In the next ten years, 1870-79, the export was equal to an average of 313,435 tons a year. In the next decade, 1880-89, it was equal to an annual average of 181,144 tons, and the last ten years, 1890-99, it was an annual average of 106,932 tons.

The following statement shows changes which have taken place in the export trade measured by dollars :

	First 5 yrs. 1869-72	Last 5 yrs. 1895-99
Timber, sleepers, railway ties	26%	9%
Other wood.....	3	10.6
Lumber.....	65	72
Ships.....	3	0.4
Other manufactures.....	3	8
	100	100

TABLE NO. 3.
EXPORTS OF WHITE PINE (SQUARED) TO UNITED KINGDOM.

	TONS.	VALUE.	PER TON.
1869.....	407,731	\$2,317,474	\$ 5 69
1869.....	413,096	2,531,787	6 24
1870.....	341,791	2,707,438	7 92
1871.....	332,234	3,265,417	9 82
1872.....	413,073	4,078,129	9 87
1873.....	355,227	3,837,466	10 80
1874.....	243,235	2,651,724	10 90
1875.....	338,976	3,460,850	10 21
1876.....	282,753	2,908,641	10 28
1877.....	408,698	4,211,752	10 30
1878.....	292,108	2,766,961	9 47
1879.....	126,259	1,077,478	8 54
1880.....	144,253	1,175,751	8 15
1881.....	330,079	3,506,641	10 62
1882.....	182,841	2,153,839	11 80
1883.....	201,825	2,837,159	13 45
1884.....	249,745	3,160,812	12 66
1885.....	168,443	1,984,523	11 80
1886.....	167,356	1,748,055	10 45
1887.....	104,050	1,325,246	12 73
1888.....	122,784	1,480,771	12 06
1889.....	149,065	2,005,457	13 50
1890.....	173,479	2,650,847	15 30
1891.....	138,736	1,952,082	14 07
1892.....	118,454	1,572,138	13 27
1893.....	97,446	1,367,071	14 03
1894.....	109,098	1,566,060	14 34
1895.....	70,181	1,036,730	14 77
1896.....	90,999	1,514,760	16 67
1897.....	88,191	1,281,468	14 52
1898.....	86,331	1,530,379	17 73
1899.....	96,594	1,338,069	13 85

QUESTIONS AND ANSWERS.

"Filer" writes: "Will some one who has had experience tell me the most convenient way of setting up a band wheel grinder?" Answers through the CANADA LUMBERMAN are invited.

TABLE NO. 1.

EXPORTS OF WOOD FROM THE DOMINION OF CANADA IN THE YEARS 1868 TO 1899, INCLUSIVE.

Years.	Timber.		Sleepers and Railway Ties.		Wood.	Other wood.	Lumber.	Ship.	Other manufacturer's	Total.
	Tons.	Value.	Pieces.	Value	\$	\$	\$	\$	\$	\$
1868	650,928	4,160,547	630,810	122,834	495,648	691,013	12,552,970	837,592	791,106	19,651,706
9	634,369	4,481,508	432,620	81,123	527,883	640,053	13,909,368	1,080,000	788,610	21,508,546
70	563,995	4,525,595	543,780	104,059	520,235	610,590	15,190,441	725,080	662,972	22,344,912
1	568,806	5,628,630	1,156,270	217,621	473,246	704,033	15,403,173	558,144	700,624	23,745,471
2	628,795	6,309,912	936,326	194,698	469,781	732,753	16,114,440	332,462	790,707	24,944,602
3	567,373	6,216,128	1,659,718	311,662	710,742	1,255,897	20,025,872	782,900	788,240	30,180,434
4	448,631	5,488,353	1,869,547	469,443	570,413	889,228	19,371,260	796,475	513,649	28,105,021
5	568,284	6,593,507	966,020	208,404	408,352	802,734	16,451,185	780,450	653,791	25,907,423
6	455,819	4,909,944	866,300	174,291	349,472	596,548	14,053,173	2,180,270	445,988	22,118,686
7	643,344	6,972,956	915,886	194,042	337,935	738,025	14,457,097	1,570,244	607,648	24,883,947
8	459,322	4,655,775	914,186	231,636	319,037	705,671	13,586,587	1,218,145	322,042	21,038,913
9	207,061	1,880,966	1,010,585	191,076	299,709	551,721	10,185,137	529,824	453,938	14,092,101
80	265,507	2,370,491	913,296	184,497	295,187	1,095,791	12,761,516	464,327	526,763	17,728,572
1	513,818	5,795,897	3,651,965	324,568	312,170	1,275,907	17,139,770	348,018	526,024	25,722,354
2	305,777	3,610,520	2,743,848	537,964	367,484	1,593,704	17,770,098	402,311	612,173	24,894,259
3	344,819	4,634,864	2,126,668	554,328	388,910	1,336,980	18,444,021	506,538	552,498	26,418,139
4	390,659	4,907,150	1,429,319	415,313	353,829	1,328,827	18,921,489	416,756	506,244	26,849,608
5	274,582	3,314,065	760,435	197,826	316,647	1,098,727	16,085,540	246,477	662,902	21,921,984
6	285,723	3,106,888	1,358,398	307,457	313,480	1,048,401	16,113,085	266,303	632,891	21,938,565
7	168,300	2,840,179	1,797,260	355,946	311,931	793,168	16,519,088	143,772	963,985	21,201,730
8	186,966	2,342,472	2,626,263	519,918	338,002	1,924,154	15,777,599	289,909	680,776	21,839,889
9	226,319	3,098,288	2,403,685	470,558	340,030	1,280,688	17,871,834	266,817	678,567	24,006,782
90	281,640	4,259,688	1,686,820	303,639	281,298	1,535,891	19,855,295	442,781	845,425	27,524,017
1	216,366	3,005,597	1,605,716	310,676	314,870	1,803,769	18,971,389	280,474	961,485	25,648,260
2	194,208	2,546,903	1,467,462	259,467	370,301	2,111,416	16,878,999	506,747	1,247,899	23,921,731
3	175,803	2,419,202	1,410,701	214,892	354,429	2,604,370	20,646,151	363,916	1,450,556	28,053,516
4	174,955	2,556,297	891,254	131,765	287,036	3,059,086	19,411,500	243,429	1,491,154	27,980,267
5	123,034	1,786,963	881,143	130,208	222,184	3,377,987	18,250,602	172,563	1,434,667	25,375,174
6	173,624	2,676,128	1,287,661	213,622	222,389	2,955,032	19,972,704	99,392	2,726,435	28,866,272
7	164,004	2,262,128	1,325,938	229,790	173,921	3,400,168	25,090,554	105,164	1,780,837	33,043,140
8	194,208	2,551,128	1,018,110	101,191	140,897	3,220,750	20,385,292	191,069	2,489,525	29,079,828
9	175,286	2,507,128	29,068	84,305	125,711	2,803,033	22,392,303	92,181	2,937,275	30,940,258
Totals	11,232,335	123,747,664	500,773	8,488,814	11,320,159	49,432,115	550,625,580	17,264,450	31,317,328	792,116,110

TABLE NO. 2.

WOOD EXPORTS, 1899, SHOWING TO WHAT COUNTRY EXPORTED.

Articles.	Quantity.	Value.	Great Britain.	United States.	France.	Germany.	Other Countries.	B. N. A. Provinces.	British W. Indies.
Timber, tons.....	175,286	\$2,507,450	\$2,466,573	\$19,478					
Sleepers and Railway Ties, pieces.....	529,068	84,305	4,776	79,529					
Firewood, cords.....	70,741	123,711		123,540					
All other.....		2,803,033	51,407	2,692,035					
Lumber.....		22,392,303	13,212,630	6,941,804	393,181	28,698	1,601,440	10,363	204,187
Ships.....		92,181	7,500	3,715					
Other Manufacturers.....		2,937,275	2,069,321	724,250	1,446	352	96,054	37,108	8,744
Totals		30,940,258	17,812,207	10,584,351	396,041	32,956	1,846,340	53,592	214,717



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ADVERTISING RATES FURNISHED ON APPLICATION

THE CANADA LUMBERMAN is published in the interests of the lumber trade and allied industries throughout the Dominion, being the only representative in Canada of this foremost branch of the commerce of this country. It aims at giving full and timely information on all subjects touching these interests, discussing these topics editorially and inviting for discussion by others.

Special pains are taken to secure the latest and most trustworthy market quotations from various points throughout the world, so as to afford to the trade in Canada information on which it can rely in its operations.

Special correspondents in localities of importance present an accurate report not only of prices and the condition of the market, but also of other matters specially interesting to our readers. But correspondence is not only welcome, but is invited from all who have any information to communicate or subjects to discuss relating to the trade or in any way affecting it. Even when we may not be able to agree with the writers, we will give them a fair opportunity for free discussion as the best means of eliciting the truth. Any items of interest are particularly requested, for even if not of great importance individually they contribute to a fund of information from which general results are obtained.

Advertisers will receive careful attention and liberal treatment. We need not point out that for many the CANADA LUMBERMAN, with its special class of readers, is not only an exceptionally good medium for securing publicity, but is indispensable for those who would bring themselves before the notice of that class. Special attention is directed to "WANTED" and "FOR SALE" advertisements, which will be inserted in a conspicuous position at the uniform price of 25 cents per line for each insertion. Announcements of this character will be subject to a discount of 25 per cent. if ordered for four successive issues or longer.

Subscribers will find the small amount they pay for the CANADA LUMBERMAN quite insignificant as compared with its value to them. There is not an individual in the trade, or specially interested in it, who should not be on our list, thus obtaining the present benefit and aiding and encouraging us to render it even more complete.

THE POSSIBILITIES FOR LUMBER IN
SOUTH AFRICA.

THE present is an opportune time to draw the attention of Canadian manufacturers generally, and lumber manufacturers in particular, to the possibilities that will exist, upon the termination of the war, for the development of our export trade with South Africa. The annual imports of British South Africa are in the neighborhood of \$110,000,000, or only \$30,000,000 less than the imports of Canada, and this notwithstanding that the white population is but one-fifth that of the Dominion. From these figures, representing the imports of a country in which very little has been done to develop natural resources, some conception may be formed of the possible extent of the imports during a period of industrial development such as will undoubtedly follow as soon as British supremacy is established over the whole of South Africa.

No single article of merchandise will be more in demand than timber. The forests of South Africa are of little account, and the people are almost entirely dependent on other countries for their supply. Although in the past no special effort has been made by our lumber merchants to develop a trade with that country, we find that in 1897 the province of British Columbia exported to South Africa timber to the value of \$70,000, and in each of the two succeeding years to the value of \$50,000. An immense quantity of timber will be required in connection with the development of

mines, railway building, reconstruction of destroyed buildings, and as a result of the general commercial development.

It is only reasonable to suppose that there will be more competition to secure the trade of this country than heretofore, but there seems no reason why Canada should not supply a large portion of the requirements in timber products. British timber merchants have been and are now shipping timber to the South African market which was purchased either in America or in the Baltic, and it may be presumed that Canadian merchant would find a handsome profit in supplying the market direct.

It is not too early to consider this question and weigh carefully the possibilities of materially extending our business connection with South Africa. The United States is already taking action in this direction, and Canada should not be left behind. A feature which will facilitate trading with that country is that the productions of Canada and South Africa are so different in character that there should be no difficulty in obtaining return cargoes for steamers. A first requisite is a direct steamship service between the two countries, and we look to the Dominion government to take steps immediately to establish such a service.

THE SITUATION IN RESPECT TO EXPORT
TRADE.

THE Canadian export trade in timber products is one which has gradually expanded each year, the figures representing the export of last year being over thirty million dollars. The interest which foreign importers have shown in the timber of this country has been more apparent in the past year or two than at any previous time, and there are indications that further expansion of the export trade in timber products will be witnessed. This issue of the CANADA LUMBERMAN is intended to furnish information regarding the timber resources of Canada, and, figuratively speaking, to bring together the exporter and the importer. In the advertising pages will be found the announcements of manufacturers and exporters of almost every variety of wood goods, such as pine and spruce lumber, box shooks, spool wood, dowels, bobbins, staves, clothboards, mangle rollers, pulp, wooden-ware, etc., also the advertisements of leading importers of timber products in Great Britain and other foreign countries. These advertisers are, we believe, thoroughly honorable and responsible, and are among the most enterprising in the trade.

The information given in this number regarding the requirements of foreign countries is recommended to the careful study of Canadian timber merchants. In it they may find valuable hints pertaining to business methods, as well as much information specially bearing on the timber trade. The communication from the Curator of the Canadian Section of the Imperial Institute is particularly suggestive. Mr. Watson reports that last year he received fully two hundred letters in connection with woodenware, and points to this as evidence of the opportunities that exist for the extension of trade.

In respect to British trade, it has been said that in some instances business has not developed as satisfactorily as was desired, and that there has been some disappointment on the

part of both exporter and importer. It may not be amiss to point out the peculiar conditions which have existed during the past year or two, and which have in a measure been responsible for this. Following some years of depression, the lumber trade of Canada rapidly improved towards the end of 1898, and since that time a period of marked prosperity has been enjoyed. The result has been that producers of timber products found a ready market in Canada and the United States for almost their entire production, at high prices. Consequently, export trade was given secondary consideration, and orders for stock offered by dealers in Great Britain were refused. It is also said that the prices which are sometimes offered by foreign merchants are by no means tempting and do not warrant the risk which is involved in doing an export trade. Further, it is a common complaint that the ordinary specification, from Great Britain in particular, is so exacting that the Canadian manufacturer does not feel disposed to supply the stock unless at a price which he considers represents the value of the most carefully selected goods.

On the other hand, it is manifestly in the interest of the Canadian manufacturers to give greater attention to the manufacture of their stock, cutting it to sizes common to foreign markets. It has been suggested that business would be facilitated if recognition could be secured in this country for a system of grades.

It would also assist trade very greatly if foreign dealers who are in the market for timber products would open up correspondence in the fall of the year, so that lumbermen on this side would be in a position to get out the necessary stock and quality of logs to supply the requirements. Business conducted along this line would, we feel certain, be fruitful of good results to all parties concerned.

There are many exporters of Canadian timber products who are not in a position to maintain a branch establishment in foreign countries, and who may be in some doubt as to the most practical course to pursue to extend their foreign connection and place their goods on the markets of other countries. Much of the trade from the United States has, we understand, been carried on with considerable success through agents and brokers. These brokers are closely in touch with the requirements of the market, and advise their clients as to the classes of goods which should be exported. In some instances the brokers will purchase the stock outright, but it is the usual custom to make consignments pending a sale, the practice of the most reliable brokers being to allow the shipper to draw on them for three-fourths of the estimated net proceeds against bills of lading. Thus it is apparent that it is necessary that the shipper should carry out his engagements in a straight-forward and business-like manner, and that the business can only be carried on with a basis of mutual confidence; on the one hand, the producer must feel that he is dealing with reliable and capable people, who will sell his goods to the best advantage, and on the other hand, the broker must be assured that the shipper is a man whom he can thoroughly trust.

It may not be generally known abroad that the Canadian government has adopted a preferential tariff which gives a preference of 33 1/3 per cent. in the duties on goods imported from Brit-

ish possessions. This should be the means of increasing very materially the trade between Canada and the Mother country.

The above remarks, while specially referring to Great Britain, are in a measure applicable to other countries.

The extent of our timber resources is well set forth in this number. It may not be amiss to say a word regarding the saw milling establishments. There are, in Canada, it is estimated, about six thousand saw mills, large and small, varying in capacity from two to three thousand to several hundred thousand feet per day. Mr. Booth's total annual output is in the vicinity of one hundred and twenty-five million feet, and the total output of the Ottawa Valley reaches six hundred million feet. And the Ottawa Valley is but one of the lumbering districts for which Canada is renowned. The equipment of our saw mills is equal to anything in America, our lumbermen having shown themselves alive to the necessity of adopting modern and up-to-date improvements. Recently there has been installed in some of our mills the double acting band saw, by which a board is cut from the log by the reverse as well as the forward movement of the carriage. There is also to be found in connection with our pine and spruce producing saw mills modern wood-working plants in which the lumber is worked up into manufactured and partially manufactured articles, such as doors, sashes, boxes, etc. Likewise some of the hardwood mills are equipped with machinery for making hardwood specialties, such as mangle rollers, bobbin stock, spool wood, and similar lines.

EDITORIAL NOTES.

THE Minnesota labor authorities have recently published some valuable statistics regarding the lumber industry. The most interesting, perhaps, refer to the average production of lumber per man per day, which was found to average 517 feet. In the Southern States, however, statistics collected show the average daily production for each man to be 1,365 feet, the highest being 2,500 feet and the lowest 470 feet. It would seem fair to place the annual daily production of lumber per man at less than one thousand feet. This is a factor in the cost of lumber which is not always given full consideration, and which represents an expenditure, we would say, of about two dollars on every thousand feet of lumber. It should be stated also that these figures do not include logging operations, but simply the process of manufacture after the log has reached the mill.

THE discrimination of the insurance companies against steamships loading at Canadian ports is apparently affecting the shipping trade of this country. It is learned that more than the usual quantity of lumber from the Ottawa valley is being shipped to England via Boston, while the shipments from Montreal have been no greater, if as great. It is to be hoped that our Canadian legislators have not yet given up the fight to have this unjust discrimination removed, and that in the near future Canadian ports will be placed on an equal footing with those of the United States. The trade of this country is also suffering from excessive freight rates charged from certain points. The rates on manufac-

tures of wood are considerably higher than for corresponding distances in the United States, and the manufacturer in the United States thus enjoys a decided advantage over his Canadian competitor. It should be the duty of the Railway Committee of the Privy Council to endeavor to compel the railways to grant more equitable terms to shippers.

TRADE OPPORTUNITIES IN THE ORIENTAL MARKET.

UNTIL very recently the eyes of Canada were turned almost exclusively towards the east, and her thoughts occupied with commercial matters in Europe. During the last few years it has occurred to many that the Pacific ocean, instead of being the back road from the country, might become a highway fully as important as the Atlantic, and this idea is certain not to be disappointed by results. Trade with Australia, China, Japan, Malaya, and Polynesia is no mean prize to strive for, and the splendid Pacific highway at our doors places us in a position to compete favorably with any country. The rapid advances made by the United States and Japan in the Oriental trade show that business methods adjusted to the established ideas of the east will bring a quick return, and that the lack of flexibility inherent in British trade methods is resulting in the loss of the previous overwhelming commercial supremacy. If Canada is to take part in the Oriental market which should be expected owing to her favorable geographical position, it will have to be brought about by a careful study of the existing and prospective conditions and demands and by enterprise in pushing sales.

Many discussions have taken place regarding the trade possibilities of China, and as many diverse opinions have been expressed, varying from the optimistic idea that the millions of China represent a market for our exports equivalent to a similar population in Europe, to the pessimistic opinion that these Chinese millions will eventually swamp our markets by their cheap productions. Both of these extreme opinions are based on the supposition that the country has been opened up to trade and that foreign investments have been rendered secure. The truth, as is generally the case, appears to lie between these extremes, for on one hand no one who knows in any degree the conditions existing in the east will allow that its ability to absorb western products is at all commensurate with its population, and that any deductions made from results in European countries are very misleading. On the other hand, Japan has progressed far enough to act as an object lesson in the increased cost of labor which results from an increase of production, and, speaking generally, it will be conceded that when a nation has arrived at some state of stability in her manufactures, the labor cost of the output will not be found to vary from the standard all over the world. For instance, labor in Europe is cheaper than in America when reckoned by the cost per hour, but it is found that in spite of this fact the labor cost of turning out manufactured articles is not very different owing to the greater rate of production per hour of the American artisan. This equalizing effect will be found to act as a corrective, and it does not appear at all probable that our western commerce is in danger of ex-

tingtion at the hands of Oriental competition. The Oriental will be a keen competitor, but judging from his character he will not originate, but will be a very successful copyist. The initiative will be found without doubt in Europe and America.

Apart from China and the French colonies in the East, trade there is less restricted than in Europe. In China the unwillingness of the ruling classes to admit the foreigner, the insecurity of capital, the fluctuating currency, and greater than all, the poverty of the millions, are the great obstacles in the way of the western trader. These are obstacles that cannot be appreciated at their full value without a knowledge of the Chinese character, of its inertness, its placid content with things as they are, its sense of superiority over the Barbarian. Under these existing conditions no opening of the trade door will take place from within, but the country will have to be burglarized by the Occidental nations, and this will probably not be long deferred. What form the forcible entry will take is not apparent, but it appears that as it requires an Asiatic to deal with an Asiatic, Japan and Russia are best fitted to obtain the advantage and to hold it when obtained. If the open door policy prevail there will be large openings for railway enterprise. Many lines are already projected, but the question as to whether they would pay in many cases is exceedingly problematical, as China has a tremendous canal system, with cheap native labor as the motive power. However, many will be built, and this will require the services of many engineers and great quantities of materials. In the mining field the prospects are exceedingly good, the country having coal in many provinces and minerals in abundance. This, with cheap labor, will stand in the way of great importations of raw materials, and whatever staples are required will be manufactured in the country, so that given the open door policy, the first effect would be the importation of engineering materials and machinery, but it seems improbable that any great increase in staple exports could take place. This lesson may be learned from the history of Japan, where imports are decreasing and exports increasing although the process in China may be very much slower.

There is no effort made to thrust manufactures under the eyes of the customer and make trade. The Canadian Pacific Railway Company, in establishing the splendid steamship service to the East, has done much for Canada and Canadian trade, and it is owing to this fact that most of the Europeans and many of the Orientals have crossed Canada, and its products are known and could be largely extended in this world, where enterprising management is seldom met with.

TO FOREIGN MERCHANTS.

Foreign merchants desirous of importing Canadian timber products will find it to their advantage to correspond with the manufacturers and dealers whose announcements appear in this number and from whom almost every variety of wood goods may be obtained. When writing kindly mention the CANADA LUMBERMAN as the medium of communication.

A WELCOME VISITOR.

Messrs. Clarke Bros., Bear River, Nova Scotia, write: "We regard the CANADA LUMBERMAN as a very welcome visitor, and do not wish a break in its visits."

THE CANADIAN FORESTRY EXHIBIT AT THE PARIS EXPOSITION.

The Canadian Forestry Exhibit at Paris is a collective exhibit got together by Mr. J. M. Macoun, who represents the Dominion Government at Paris. The Provincial Governments of British Columbia, Manitoba and Quebec contributed largely to the material shown; the remainder of the exhibit was secured from private individuals, principally in Ontario, or by purchase. The result as shown at Paris is a very complete representation of the woods and wood products of Canada. Sections, 3 feet 6 inches long, of every tree of commercial value form the basis of the exhibit, these have all been cut and polished on one face with the exception of large specimens of Douglas fir, spruce and cedar from British Columbia and of elm, oak, sycamore, beech and maple contributed by Sutherland, Innes & Co. and by John Harrison & Sons. Next in importance to these is a collection of 38 deals six feet in length and of varying width. These represent the principal Canadian commercial woods and have all been polished in Paris by an expert.

From a commercial point of view the Canadian exhibit far excels that of any other country, and a jury made up entirely of men engaged in the lumber trade, either as importer or broker, has awarded the Grand Prize for the best commercial exhibit to Canada.

The high wall which forms the back of the Canadian exhibit is covered with chair-stock furnished by the North American Bent Chair Co. and hickory and oak spokes from the factory of John Heard & Sons, while the pillars which support the second storey of the Forestry building are decorated with handles of all descriptions and with wood specialties from the Columbia Handle and Novelty Co. and J. H. Still. Dobell, Beckett & Co. show a fine collection of square timber and the Sutherland, Innes Co. a complete line of cooperage stock. The restricted space allows of no very careful grouping of the specimens, but each article is carefully labelled and either Mr. Macoun or his assistant is always on hand to furnish information.

The principal exhibitors of deals and other unmanufactured lumber are the W. C. Edwards Co., the Hawkesbury Lumber Co., Henri Menier and Gilmour & Co., while in special lines Ker & Harcourt (spools, bobbins and turned wooden boxes), John Harrison & Sons (butchers' skewers), Adam Beck (cigar boxes and flooring), The Patent Cloth-board Co. (cloth-boards and veneers), John H. Grout & Co. (fruit baskets of all kinds), Jean Roux (hubs), and Wm. Cane & Sons (woodenware) are the principal exhibitors. Very beautiful collections of polished woods are shown by Carl Zeidler and the Canadian Office and School Furniture Co. A very fine office of antique oak made by the latter firm attracts much attention.

Two collections of photographs do much to beautify the exhibit; one of these is a series of eighty photographs of trees framed in their own wood, furnished by the Geological Survey Department, the other is a series of more than 100 photos illustrating lumbering operations in Canada.

Altogether the exhibit is a most creditable one and has already done much to make the forest resources of the Dominion known to foreigners

visiting the exposition. It is to be regretted that so few of those engaged in the manufacture of wood products have sent specimens of their work. Though examples of no branch of the industry are lacking, very many lines shown were secured by purchase. It is to be hoped that the Glasgow Exhibition next year will be taken advantage of by Canadians to make a magnificent display of our forest products.

TIMBER RESOURCES OF LAKE ST. JOHN.

A remarkable illustration of the vast forest wealth of the great north of the Province of Quebec is furnished by the unexpected development of an enormous field for lumbering operations in the region made accessible to shipping ports by the construction of the Quebec and Lake St. John Railway. A decade or two ago, when white pine was considered to be almost the only timber that gave value to Canadian forests, it was erroneously supposed by many people that Messrs. Price Bros. & Co. had practically denuded of the profitable merchantable timber all the timber lands in the Saguenay and Lake St. John country. Now that spruce is virtually king in most of the forests of Quebec, and pulp wood the delight of millionaire speculators, the eyes of the public, and of the lumber, pulp and paper trades are being gradually opened to the enormous wealth of the spruce forests in the territory tributary to the Quebec and Lake St. John Railway and its connections.

Some idea of the present proportions of the lumber trade in the country traversed by this line may be formed from the fact that in 1899 the shipments of the various mills located in it, apart from the local consumption of their produce, amounted to the equivalent of 83,196,000 feet board measure, and consisted of 5,472 cars of sawn lumber, 636 cars of square timber, 763 cars of ties and 12 cars of logs. In addition to this, there were 2,426 cars of pulp and paper, though this industry is practically in its infancy in the Lake St. John country. There are between twenty-five and thirty saw mills in this territory, and many times that number would undoubtedly follow the extension of the road through the richly wooded country between Lake St. John and James Bay. More than half the export deal trade done by the port of Quebec in recent years is furnished by these mills over the Quebec and Lake St. John railway.

An official report to the provincial government made in 1898 shows that out of a total area of 19,200,000 acres in the territory of Lake St. John, less than 500,000 acres are under cultivation or cleared, and the remainder is covered with forests. The principal kinds of timber are spruce, balsam fir, white birch, cypress and a little pine. White, black and red spruce constitute more than 75 per. cent of the timber. Fire has ravaged this territory in some places, but the disastrous effects of the great fire of 1875 in the Mistassini region are no longer visible; the second growth is as fine as the first as regards the size of the trees, while the wood is sounder and less knotty.

The quantity of pulp wood in this country is practically unlimited. Taking an average of only five cords to the acre, we obtain fabulous results, showing that this territory can provide an almost inexhaustible supply of raw material.

Mr. Langelier, who recently explored this section of the country for the Department of Lands, Forests and Fisheries, estimates that the first cut of pulp wood in it would be about 100,000,000 cords, which would yield over 65,000,000 tons of pulp, or a million tons per annum for 65 years. It is calculated that this would be sufficient for the half of Europe, and that "the coniferous forests of the region of Lake St. John exceed in extent those of Norway, are nearly equal to those of Prussia, and to half those of Sweden.

The water powers of the grand discharge of Lake St. John, and of the several large rivers by which the lake is fed, greatly exceed those of all the rivers in Sweden and Norway, where the pulp industry is carried on to a considerable extent. It is calculated that they total over 630,000 horse power. Already there is a large saw and pulp mill at Chicoutimi which turns out thirty tons of dry pulp per day. Its capacity is about to be quadrupled. Another one is about going into operation at Jonquieres, and a third is about to be constructed on the Metabetchouan. Two large companies, one English, the other American, with a combined capital of nearly \$6,000,000, are at present negotiating for water power privileges on the Grand Discharge. One proposes to erect the largest pulp and paper mill in the world, and the other an enormous calcium carbide factory, and in the magnitude of their operations they may exceed the tremendous works at Grand Mere and Shawenegan, on the Great Northern branch of the Quebec and Lake St. John railway. It may be mentioned, en passant, that the output of the industries at Grand Mere consists of fifteen to twenty million feet annually of sawn white and red pine and spruce, 130 tons daily of dry ground wood pulp, 60 tons per day of sulphide pulp, 40 tons daily of paper and 30 of cardboard. The new pulp and paper mill at Shawenegan is expected to have four times the capacity of that at Grand Mere. There are also valuable timber and pulp lands to the great extent of country stretching away from Lake St. John to James Bay. Mr. Henry O'Sullivan, Dominion Land Surveyor and Civil Engineer, who headed a government exploring party through this territory in 1897, reports immense areas of magnificent spruce forest to the north of the height of land. Of other sections of the country traversed by him he says: "In the virgin forests, spruce, fir, tamarac, and cypress or banksian pine, are the chief conifers, while the deciduous trees are limited to poplar of different varieties, white birch, willow, alder, hazel, pembina and similar undergrowth, with, occasionally, black ash along the river and lake shores. I saw no white pine, and although the cypress or Banksian pine is decidedly a native of that region, it is only in the dry burned districts, and on the poorer heights in the neighborhood of Lake Nemiskan, on the Rupert river, that it was seen in abundance. In fact, pine of any kind seldom flourishes on such rich clay soil as is found in the basin of the Nottoway. There is an abundance of spruce and tamarac wherever the country has not been burned. Here and there areas more or less extensive were swept by fire from twenty-five to fifty years ago, and are now well grown up with poplar, white birch, spruce, tamarac and cypress of fair size, according to age, insuring an abundance of pulp wood for ages to come.

Canadian Manufacturers of Timber Products

THE HUNTSVILLE LUMBER COMPANY.

ONE of the first firms in the Georgian Bay district of Ontario to engage in the export of lumber to Great Britain was the Huntsville Lumber Company, illustrations of whose mills appear on this page. The head offices and mills of the company are located at Huntsville, and are modern in every respect. The company manufacture white pine lumber and shingles, hardwoods, etc. They are owners of valuable timber limits from which their log supply is obtained. For some years past a large percentage of their output for export has been purchased by Messrs. F. A. Lightbody & Company, of Glasgow, Scotland. The close attention which they devote to the manufacture of their lumber has gained for it a high reputation. The officers of the company

The lumber cut is almost all of the white pine variety. It is sorted off the carriers onto the rollers, and from the latter automatically transferred to cars, on which it is hauled to the piling ground near by, where it is filed in line from high platforms by tramways. There are no less than 250 piles, for all kinds and sizes, qualities and assortments of lumber. The piling grounds adjoining the mill, and facing the Ottawa river, are 50 acres in area, fitted with a network of platforms. Railway communication is established with them by a spur line of the Canadian Pacific Railway,



YARDS OF THE HUNTSVILLE LUMBER COMPANY, HUNTSVILLE, ONT.

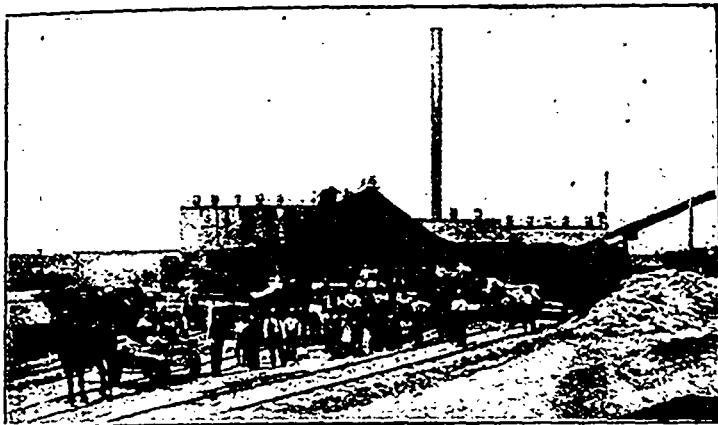
while transportation by water is conducted from the docks with which the river front of the premises is lined. All lumber is kept in the yards at least 60 days before being shipped.

Fire protection is afforded by an extension of the Hull waterworks system and by the company's fire engine and private hose. The main mill, built of frame on stone foundation, is roofed with galvanized iron, while the engine house is built of stone, thus affording immunity from fire.

ritory along the Gatineau river, and are 3,500 miles in extent; some are 200 miles distant. Each season there are four main drives of about 80,000 logs each. All these drives come down the Gatineau, which empties into the Ottawa a short distance above the mill. On these limits employment is given during the season to 700 men and more. There is a greater quantity of spruce than pine on the limits, but nevertheless the supply of the latter is sufficient to keep the saws busy for a number of years to come.

Mr. John Gilmour, a member of the firm, is a grandson of the founder of the original mill. Relatives also operate large mills at Trenton, and have lumber interests elsewhere. Mr. W. C. Hughson, the other partner, is a son of the late John C. Hughson, who was well known in the early days of Canadian lumbering. He had similar interests in the United States, but established his first Canadian mill at Peterborough in 1855. He also operated, with the present member of the family, mills at Rice Lake, Sarnia, and in Muskoka, on the Georgian Bay.

The Gilmour Hughson Co., Limited, has a reputation for honest dealings and enterprise on two continents, and in Ottawa and Hull its business interests are booked on as a mainstay in these communities.



MILL OF THE HUNTSVILLE LUMBER COMPANY, HUNTSVILLE, ONT.

are: A. Tait, president; Wm. Turnbull, secretary; and Orville D. Tait, treasurer.



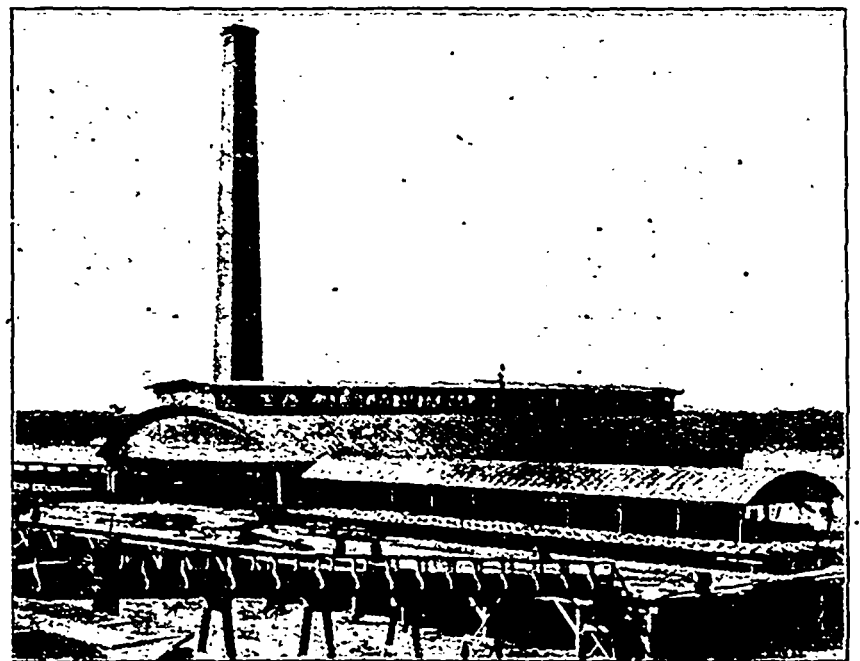
GILMOUR & HUGHSON.

The claim is made for Gilmour & Hughson's mill, with all show of reason, that it is the best equipped modern steam saw mill in the world. Situated on the Ottawa river about a mile east of Hull and directly opposite the city of Ottawa, the mill in its architectural lines of beauty, and general appearance of activity, is an object of interest to the stranger and citizen alike. The present mill was built six years ago and fitted with modern machinery at a cost of \$200,000. The main mill is 160 feet long and 50 feet wide, flanked with a platform 250 feet long and 50 feet wide. The engine and boiler house, a stone and brick structure, is 60 feet long and 30 feet wide. The mill proper is equipped with a Wickes' gate, a pair of twin circular saws and two band saws. There are also well equipped lath and shingle mills, containing four modern lath machines and two up to date shingle machines. The machinery is driven by engines of a capacity of 1,000 horse power. The fuel used is sawdust, fed automatically in less than two minutes after the log leaves the water. All the sawdust and waste is used for this one purpose, and the experience of the managers is that the mill is thus operated with greater economy than if driven by water power.

cut extensively on deals for the British market, but this season's cut will be mostly of thin lumber for the American market. This cut, it is expected, will exceed 40,000,000 feet. The cut of deals last year amounted to 10,000,000 feet, and thin lumber 30,000,000 feet. A considerable quantity of deals will be cut this season also.

Over 250 men are employed in and about the mill, and 25 teams are constantly engaged between the mill and piling ground. The importance of this industry to the sister cities of Hull and Ottawa may be realized when it is stated that the monthly wage bill for the mill and yards amounts to \$10,000. Labor troubles are unknown problems in this business, and the army of employees, many of whom have passed almost a life time in the employ of the Gilmour firm, are happy and contented.

The Gilmour-Hughson limits cover the principal lumber ter-



SAW MILL OF GILMOUR & HUGHSON AT HULL, QUE.

CLARK, SKILLINGS & COMPANY.

On this page is shown an illustration of the spool wood mill of Clark, Skillings & Company at Newcastle, N. B. This mill is situated on the deep water terminus of the Intercolonial Railway, and has specially good facilities for summer shipment of goods, as well as the advantages of the railway for ocean transport via St. John during the winter months.

Clark, Skillings & Company have been engaged



SPOOL WOOD MILL OF CLARK, SKILLINGS & COMPANY AT NEWCASTLE, N. B.

ed in the spool wood business for the last nine years, their annual output being about three and one-half millions. Their principal mill is situated at Newcastle, to which centre is taken the manufactured stock of two movable mills situated in the same district. The wood is sawn in the winter and early spring and bundled when dry. A special feature is made of the shed accommodation to protect the wood from damp as soon as it is bundled.

The company also manufacture large quantities of dowels, backsets and spool blocks. They have an establishment in Maine, and the head office is at 21 Bothwell street, Glasgow, Scotland.

**GILMOUR & COMPANY.**

Messrs Gilmour & Co., of Trenton, Ontario, in addition to their regular lumber operations, are making and forwarding large quantities of box shooks to England and Mexico, the firm having been successful in opening up an extensive trade with these countries within the past year or two. The company have recently enlarged their box factory, equipped it with the latest labor-saving machinery, and are working hard to keep pace with their orders. The box factory has a capacity of 35,000 to 40,000 feet per day. Their door factory is now taxed to its utmost capacity to fill orders for their well-known brands of English pine doors, large quantities of which they are shipping weekly to the various English ports. The factory is capable of turning out from 400 to 500 doors per day.

Recently Messrs. Gilmour & Co. obtained patents for lumber manufactured under a new process, and they are now engaged in making doors out of this lumber, veneered in walnut, mahogany, cherry birch, maple, or any other wood that the trade may demand. Several sample orders have been filled for the continental markets and the buyers report them satisfactory. Their prospects are bright for an enlarged trade in this make of door, as well as for all kinds of

interior finish in patent lumber. The firm are also engaged in the manufacture of veneers, and are prepared to quote on bones for export trade.

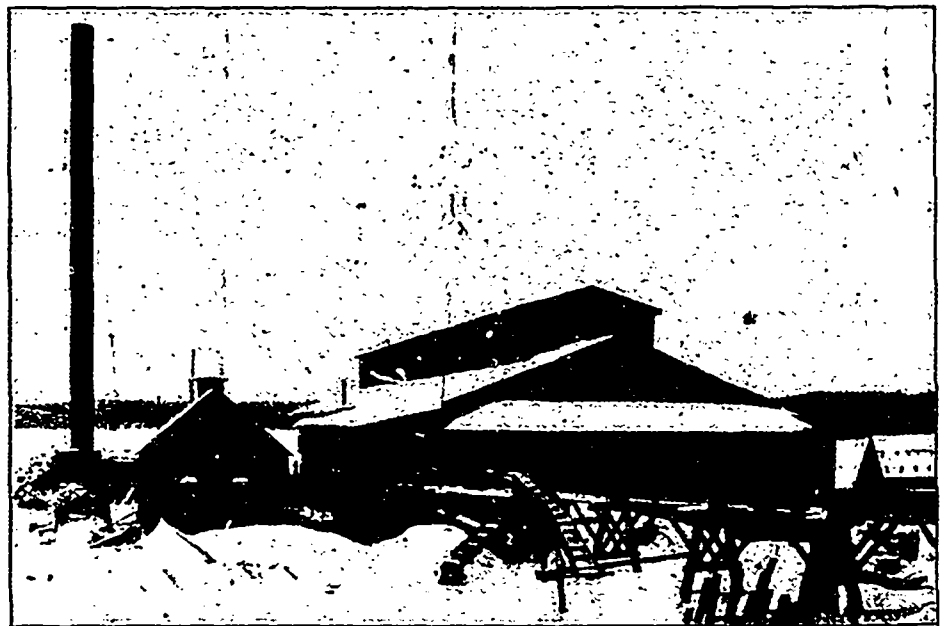
**DONALD FRASER & SONS.**

One year ago the above named firm acquired the Quebec timber limits of the late James Miller, of St. John, N. B. Operations for getting out ten million feet of logs had been arranged, and

450 h. p. The saw mill contains twin saws for slabbing logs, two stock gangs the "Wickes" patent, being of the largest (made), two re-saws, two patent parallel slab slashers and latest improved deal trimmer. The equipment also comprises the most modern machinery for hauling logs into the mill, including live rolls, transfers, slab, sawdust and carriers, conveniently situated. Near the mill are two "Ross" patent lath machines with a capacity of one hundred thousand laths per week. Later in the season box making machinery will be added. The firm will then be in a position to utilize about everything in their logs except the bark and surplus sawdust.

Extending along one side of the mill is the shingle department, comprising butting, barking machines and eight "Dunbar" shingle machines, the stock for which is carried from the barking machines by a chain sluice just in front of each machine. The shingles are assorted according to grade by the operator of each machine. The bunchers work on a floor ten feet lower than the mill floor, and have a very clean and light room. Continuing along beyond the shingle machine is a two block clapboard machine, the device of the senior member of the firm. It is unique in construction, rapid in operation and correct in principle. The yard room is ample and the railway connections with it are complete.

The firm have already erected a fine boarding house and several houses for their men, and intend building about forty more this season, well as a first-class store. They have a tug boat on the lake to handle the logs and are now building several lighter scows at River Du Loup to load large vesse's that cannot lay at the wharves.



MILL OF DONALD FRASER & SONS AT CABANO, QUE.

Cabano, on the western side of the lake and near Fort Ingalls station, on the Temiscouata Railway, forty miles from River Du Loup, on the St. Lawrence, and thirty-five miles from Edmundston, the northern New Brunswick terminus of the C. P. R. They are thus in a position to ship via the St. Lawrence route or by St. John, the winter port of Canada.

The mill is a very large one, being 200 x 80 feet, with a brick boiler and engine house, detached, 40 x 50 feet, with engine capacity of

Their limits are principally on the Touladi river and comprise about six hundred miles, said to be of the finest description of timber.

The firm also have mills at Fredericton, steam power, and at River Dechute, water power. They expect to saw this year thirty million feet of long lumber, sixty million shingles, besides lath and box shooks correspondingly during the year. An enterprise such as this means a great advance in the prosperity of the surrounding country and is duly appreciated.

RANDOLPH & BAKER.

Two miles from the mouth of the great St. John river, which for generations has been discharging lumber in quantities comparable with any in the world, are the mills of Randolph & Baker, Limited. This firm is known as one of the most prominent in the lumber manufacturing business in the Maritime Provinces. About the end of this year the business of the firm was transferred to a joint stock company, composed of Messrs. A. F. Randolph and C. P. Baker and their sons, Mr. A. F. Randolph being president of the company.

The business of Randolph & Baker is now confined almost exclusively to manufacturing for European trade, though years ago they did a

neck of land joining it to the shore for the purpose of allowing logs to be taken through by a shorter route from Grand Bay. There are nearly a quarter of a mile of wharves in front of the mill, upon which are enormous piles of lumber awaiting shipment. The mill property is 151x62 feet, with engine and boiler rooms attached 120x40 feet. In the mill are two large gang saws and three lath machines, run by two engines of 150 h. p. each.

The boilers, of which there are eight, are shell boilers, the furnace and boilers being designed with a view of destroying the abundance of fuel and not for economy.

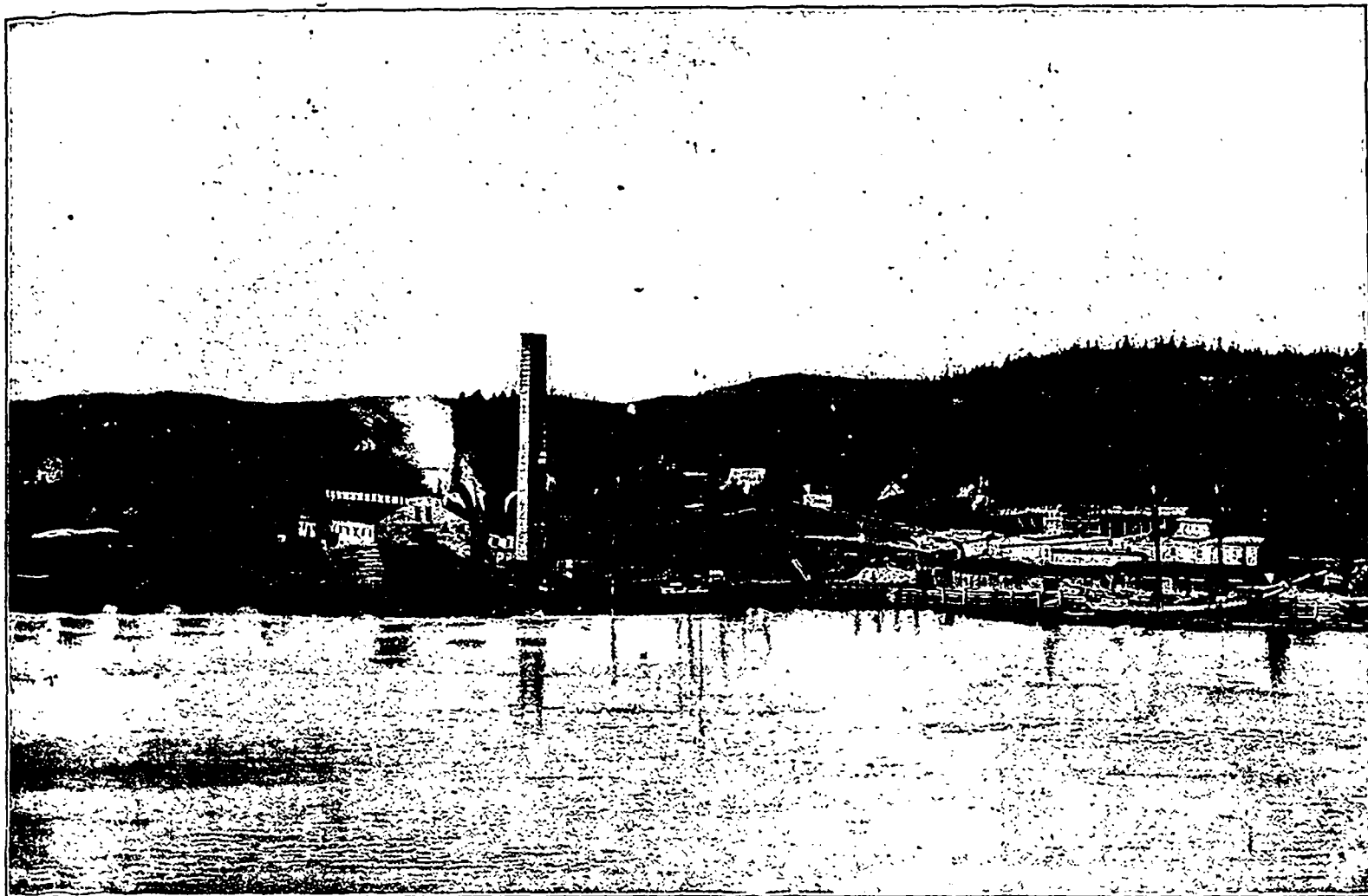
The haul up, put in a few years ago, is a patent improved device, being an endless chain of

almost entirely, comes from the upper reaches and tributaries of the St. John.

A great advantage which this mill enjoys is the ability to co-operate with the manufacture of lime. Great quarries of the purest of lime rock stretch along the cliffs near by. In the manufacture of lime much fuel is needed in the burning, and this the mill is able to supply in abundance. In the lime kilns adjoining the mill about 70,000 barrels of lime per year can be manufactured.

There are good cooerage works in connection with the mill, where all the barrels are manufactured in which to ship the lime.

The waste from the mill is carried to the kilns over tramways, and the destruction of this waste



RANDOLPH & BAKER'S SAW MILL AND LIME KILN AT RANDOLPH, ST JOHN, N. B.

large business with the United States, sending as much as 8,000,000 feet of lumber over the border in one year.

The bulk of the lumber exported is handled by brokers, Mr. Malcolm Mackay, of St. John, at present acting in that capacity for them. Besides their British shipments they have exported considerable lumber to Australia and South Africa, and at time of writing two vessels are loading lumber at their mill for Australia.

Though the mill of this firm was built in 1871, nearly thirty years ago, it is to-day considered one of the best and most modern of mills sawing dimension lumber for the English market. In that time, of course, many improvements have been made, for its owners are believers in the policy of keeping up to date. The mill stands about a mile up the river from St. John, on what is now an island, though formerly a peninsula, the government having cut a canal through the

heavy square links, fitted with rigid dogs and running upon a steel track up the slip. By it a continuous stream of logs, butt to butt, run into the mill from the river without break and without any attention but that given by one man, who touches them with his pole alone as he stands upon the raft. Improved steam roll flippers pick the logs right and left from the bed to the gang carriages, and the longer ones are sawn upon the bed by circular cut-offs.

From the mill the lumber goes to the wharves or to live rolls and is from there distributed by gravity on branch runs in the various directions required. Of long lumber about 20,000,000 feet is manufactured, while of laths between fifteen and sixteen million are produced. These laths are sold to the United States trade entirely. In the booms near the mills about 3,000,000 feet of logs can be accommodated. The timber, spruce

in such an advantageous manner is no small item, as it saves the expense of destroying by other means. The lime is disposed of almost entirely in the Maritime Provinces.

In and around the saw mill there is usually engaged a force of 125 men, while including the lime works a total of 140 men are employed by the firm.

Mr. A. F. Randolph, the president of the company, is of Fredericton, and is the senior member of the firm of A. F. Randolph & Sons, wholesale provision merchants, of that city. He is a native of Digby, N. S., and is now President of the Peoples Bank of Fredericton.

Mr. C. P. Baker, the managing director of the company, is a native of St. John, and has been in the lumbering and milling business all his life. He and Mr. Randolph formed their partnership in 1871, when the mill was erected. He now has his residence in Randolph, near the mill. His son, Mr. Chas. F. Baker, is the secretary of the company.

THE SUMNER COMPANY.

This company is very extensively engaged in the manufacture of wood products, comprising sawn lumber in dimension suitable for export and home markets, cedar shingles, railway sleepers, telegraph and telephone poles and fence posts, "Princess" pine sleepers and timber, spruce pulp wood, etc. Their principal mills and offices are at Bathurst village, on the line of the Intercolonial railway, thus placing them in a position

from which they derive their supply of logs for the Bathurst mill, in addition to which they own one hundred and fifty square miles on either side of the Intercolonial Railway a few miles south of Bathurst, from which they get most of their stock of sleepers and cedar poles. In the winter they run a single mill on these limits.

Mr. F. W. Sumner, the principal of the company, resides in the city of Moncton (of which he is at present Mayor), and conducts the largest

over of fifty million feet. They have recently added a bonded yard for handling Canadian lumber for export. Their planing mill, dry kiln and box factory are fully equipped with the latest machinery for the manufacture of all kinds of lumber, box shooks, mouldings and maple flooring, and have a capacity for turning out ten cars daily.

In the plant are included two sheds under cover of which two million feet of seasoned lumber



THE SUMNER COMPANY'S MILL AND DEAL YARD AT BATHURST, N. B.

to make shipments by either rail or water. The capacity of the saw mill is eight million superficial feet per year, although it does not usually produce above five to six million feet. There are the necessary lath and box making machines, and re-saws to work up into marketable products the slabs, edgings, end pieces, refuse deals and boards, and boom poles. The mill is also equipped with four "Dunbar" shingle machines each with a capacity of fifteen to seventeen thousand shingles per day.

The mill is operated with steam power; the engine being 300 h.p. The boiler house is built of brick and is separated from the mill

hardware business in New Brunswick outside of the city of St. John.

The company also have a very fine general store at Bathurst village.

Mr. Frank Curran (of whom we show a portrait) is general manager of the lumber branch of the business.



SWAN-DONOGH LUMBER COMPANY.

The Swan-Donogh Lumber Co., of North Tonawanda, N. Y., ranks among the foremost of the lumber firms engaged in the export trade. North Tonawanda is situated on the Niagara river, about ten miles above the world famed Niagara Falls, and is the point at which lake navigation ends and the Erie canal commences.

ber can be stored and kept ready for immediate shipment. The company also operate a lime kiln, using for fuel the waste products of the factory, and do a large business in white lime of a superior quality for chemical and building purposes.

This company do an extensive trade with the United Kingdom, shipping constantly white pine and hardwoods in the rough or worked to order in any thickness. Their maple flooring is thoroughly kiln-dried and worked 7/8 and 1 1/8 inch thick by 2 3/4, 2 3/4 and 3 1/4 inches in width, and is bored, butted, hollow-backed and polished ready for laying. Box shooks and mouldings are made to order and schedules of sizes and prices will be furnished on application.

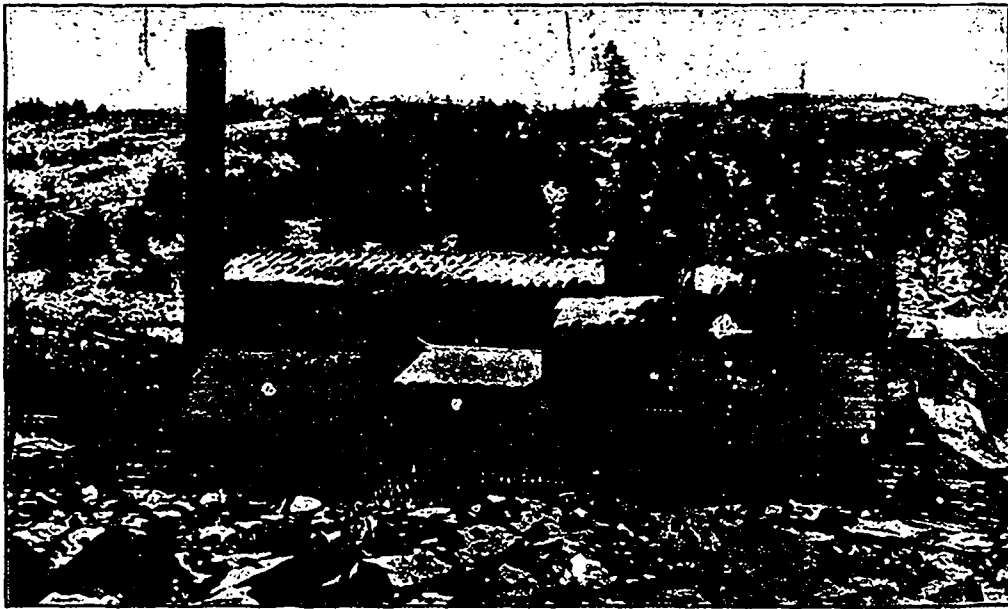


MR. FRANK CURRAN,
Manager of The Sumner Company

proper, thus ensuring safety from fire. A part of the sawdust and refuse is used for fuel, the remainder being conveyed by chain to a furnace situated a safe distance from the mill.

A noticeable feature is the taste shown in the mill yard—the piles being neat and well arranged. In connection with their shipping the company have a large tug boat for towing lighters to the vessels laying out in the harbor, towing logs to the mill, etc.

The Sumner Company own two hundred and fifty square miles of timber limits on three rivers,



SAW MILL OF ALFRED DICKIE AT SHIP HARBOR, N. S.

It is the great distributing market for the forest products of North-Western Ontario and the states of Minnesota, Wisconsin and Michigan. The Swan-Donogh Lumber Co. have a dock frontage of one-third of a mile on the Niagara river, with a piling capacity for an annual turn-

The high standing of the company is well known, and the directors are men of large experience and with a thorough knowledge of the trade, whose personal reputation is a guarantee that all business transactions with them will be mutually satisfactory.

ALFRED DICKIE.

No name is more widely known in lumbering circles in Eastern Canada than that of Alfred Dickie, whose operations are in the province of Nova Scotia. The illustration on the previous page shows his new saw mill at Ship Harbor, where Mr. Dickie owns about 40,000 acres of tim-



MR. ALFRED DICKIE.

ber lands, covered for the most part with spruce of the first quality. The past winter was the first in which Mr. Dickie carried on lumbering operations on this property, and the cut of logs was about 6,000,000 feet. The mill is modern and thoroughly equipped in every way for the manufacture of lumber; in fact, it is one of the best mills now owned by Mr. Dickie.

The location of the mill is both beautiful and convenient, the site being on a bank overlooking the harbor. In this harbor vessels can load two and one-half million feet of lumber to within

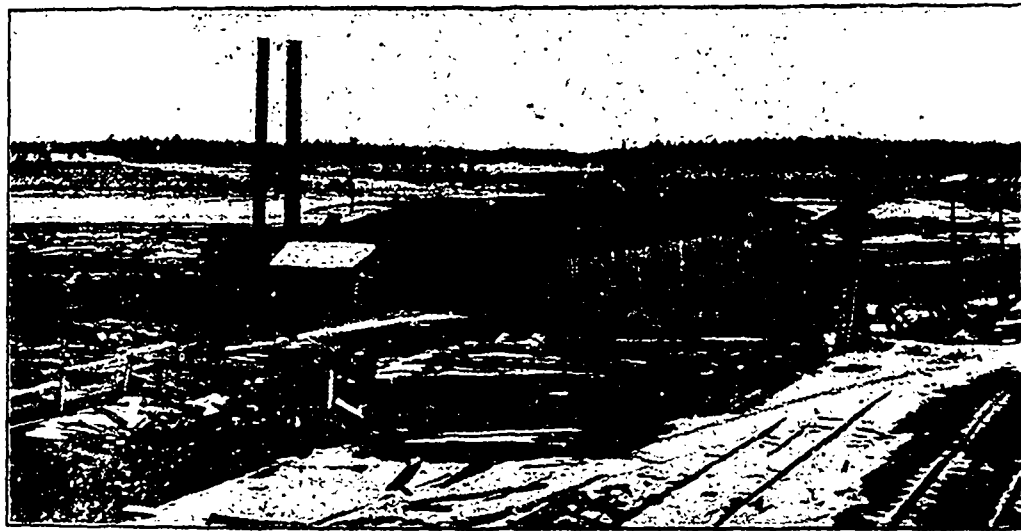
driven by water power, of which there is a never-failing supply.

In connection with the mill there are lathes, drills and every equipment of a first-class machine shop, so that all repairing and machine work is done within the mill. There is also a first-class electric light plant which permits of operations being carried on day and night.

The second illustration is a view of Mr. Dickie's new mill at Lower Stewiacke. About one year ago his large mill at that place was destroyed by fire. At that time he had a number of contracts on hand which required immediate execution, but with his usual pluck Mr. Dickie was equal to the emergency, and by the assistance of portable mills he succeeded in filling his contracts punctually. A new mill rose from the ashes of the old one in an incredibly short time, being in full running order within two months.

It will be interesting to give some figures of the quantity of deals to be manufactured by Mr. Dickie this year. His total output will be about 40,000,000 feet, of which 6,000,000 feet will be cut at Ship Harbor, 15,000,000 feet at Tusket (Dickie & McGrath); 6,000,000 feet at Stewiacke; 3,000,000 feet at Three Fathom Harbor; and about 10,000,000 feet by outside mills. Mr. Dickie is a man thoroughly qualified by education and practical experience to carry on in a most thorough and scientific manner a business of such magnitude.

Mr. Dickie has been fortunate in having associated with him men who would labor conscientiously in behalf of his interests. Mr. J. H. Gillis, his manager at Ship Harbor, entered Mr. Dickie's employ some four years ago, and since that time has had practically the entire oversight of his lumbering operations with the exception of those at Tusket. Last summer he superin-



MR. ALFRED DICKIE'S NEW MILL AT STEWIACKE, N. S.

one hundred and fifty feet of the mill, which is only ten miles from the open sea. The dimensions of the mill are 130 feet long by 40 feet wide; it has brick engine and boiler house 36 x 34 feet, containing three large tubular boilers and a 300 h. p. engine. The equipment consists of gang and rotary saws, patent edgers, lath machines, etc. The cutting capacity is 80,000 feet of lumber and 60,000 lath and palings per day. At present the equipment is being enlarged by the putting in of a pulp plant for the purpose of grinding the offal of the mill into pulp. The machinery for this latter purpose will be

tended the building of the new mill at Stewiacke, and then removed to Ship Harbor to superintend the construction of the new mill there.

Mr. M. L. Killam, millwright for Mr. Dickie, has been in his employ about one year, and came from New York. He is thoroughly acquainted with millwright work in every department, and has proven his ability beyond a doubt in the construction of the two mills at Stewiacke and Ship Harbor.

Portraits of Mr. Dickie, Mr. Gillis, and Mr. Killam are presented on this page.

KEENAN BROS.

The firm of Keenan Bros., of Owen Sound, Ont., are extensive dealers in hardwoods. In making their purchases they cover the territory between Windsor and Montreal, and consequently are in a position to supply anything in



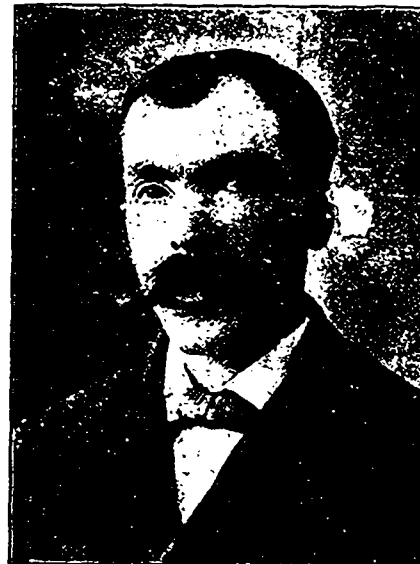
MR. J. A. GILLIS.

their line. Their specialty is soft elm or orham wood, although they have recently placed themselves in a position to supply maple flooring in long lengths, or flooring blocks, and solicit enquiries for dimension stock in maple, birch or elm. They are prepared to quote prices on birch, basswood, maple, rock elm, black ash, or soft elm, delivered to any point in Europe.



HYDRAULIC AND CIVIL ENGINEERING.

Attention is called to the advertisement of C. Errol LeMoine, C.E. & D.L.S., on page 12 of this issue. Mr. LeMoine has had a lengthy and thorough experience in the exploration and surveying of territory in the province of Quebec and in Newfoundland, and can consequently furnish accurate and reliable reports on timber lands, water powers, mining propositions, and fishing



MR. M. L. KILLAM.

privileges. His office in Quebec is well equipped, and he and his staff are prepared, on short notice, to undertake hydraulic work, surveying and exploring. Special attention is given to the selection of pulpwood property, on which Mr. LeMoine can impart valuable information.

Knechtel & Young, of Turtle Lake, Ont., propose moving their saw mill to Rosseau in the fall. They will considerably increase the capacity of the mill.

CANADA WOOD SPECIALTY COMPANY.

In December, 1899, there was incorporated the Canada Wood Specialty Company, Limited, with head office in the town of Orillia, Ont. The capital stock of \$50,000 was subscribed by Orillia capitalists. The purpose of the company, as might be inferred from the name, is to manufacture lumber wood specialties. The company have erected at Orillia a three story brick factory, 50x150 feet, with large dry kilns in connection. Two floors are used for manufacturing purposes, and the third for store and shipping rooms. The machinery installed is the most modern an up-to-date that could be found. It is the in-



MR. J. H. LAVALLEE.

attention to engage in all kinds of special wood working and to manufacture stock lines of flooring in maple, birch, pine and spruce mouldings in all domestic woods, and turned goods of every description, including square, octagonal and hexagonal turnings, broom-handles, curtain poles, ends and rings, parquette flooring in maple, oak and birch, etc.

The company is under the able management of Mr. J. H. Lavallee, whose portrait appears herewith. Mr. Lavallee organized the Orillia Export Lumber Company in 1897, and this company, under his management, has succeeded in working up a large trade in pine and hardwood lumber throughout Canada, United States and Europe.

Mr. Lavallee started his career as a lumberman in the Ottawa valley twenty-three years ago, but he is yet a young man, being only 38 years of age. He has made several trips to England for the purpose of making himself thoroughly familiar with the requirements of that trade, and in addition to his willingness to give customers just what they purchase, he possesses an actual knowledge of what they require. We feel certain that intending purchasers will make no mistake in placing their orders with the companies he represents.

J. S. FINDLAY.

Perhaps no manufacturer in Canada has given more attention to the manufacture of specialties for local and export purposes than Mr. J. S. Findlay, whose hardwood lumber business has now been established for seventeen years. His mills and factory are located within the limits of the thriving town of Owen Sound, Grey County, Ont., and are devoted exclusively to the manufacture of hardwood lumber and specialties pertaining thereto. The annual output of lumber is upwards of 2,000,000 feet, and consists of maple, ash, soft and rock elm (orham), basswood, beech, birch, oak, etc. The mill is on the main line of the C.P.R., and shipping is facilitated by a switch placed at the mill yards. The plant is furnished with steam power generated by two 60 h.p. boilers, and the machinery is driven by two engines. The equipment consists of a very complete and modern sawmill plant, and machines for the manufacture of various specialties, such as octagonal and turned maple mangle rollers and blocks, maple flooring and flooring blocks, elm coffin stock and various other specialties for foreign markets. There is also a steam dry kiln in connection for thoroughly drying such stock as requires to be dry when shipped. Mr. Findlay has lately purchased extensive tracts of timber lands in close proximity to his mill,

and is in a position to fill orders for the various lines he manufactures in a most satisfactory manner. He will be pleased to communicate with foreign importers of hardwood lumber and specialties.

THE SUTHERLAND, INNES COMPANY.

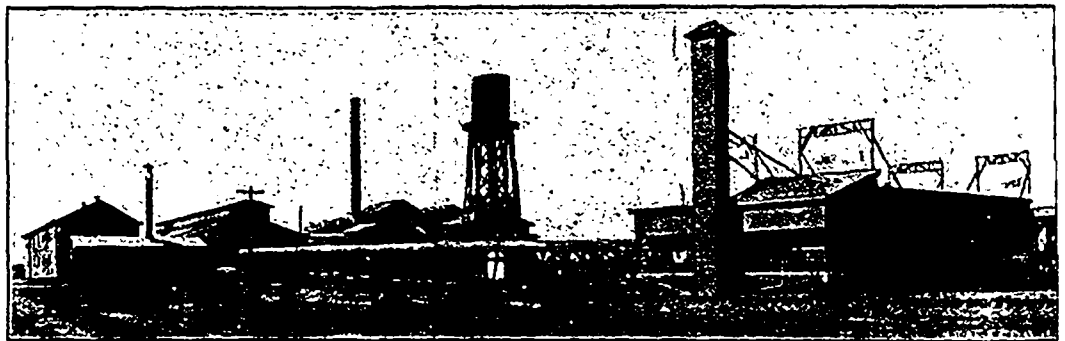
The Sutherland, Innes Co., Limited, manufacturers of cooperage stock, lumber and other wood goods, have their head office at Chatham, Ontario, Canada. They also have branch offices and agencies in New York city; New Orleans, La.; Mobile, Ala.; Liverpool, Eng.; Bordeaux, France; Hamburg, Germany; Rotterdam, Holland; Barcelona, Spain; Genoa, Italy; Bergen, Norway; in fact, in all the principal cities in the world. Their mills are situated in Ontario, Michigan, Ohio, Indiana, Mississippi, Louisiana, Arkansas and other points. The New Orleans office attends principally to the shipping of tight barrel stock, cottonwood box shooks, cottonwood and hardwood lumber. The Mobile office is being engaged in looking after shipments of pitch pine and gum, or what is known to the European market as satin walnut. The New York office attends to the shipment of goods from the northern and eastern mills, and also to the New York and Pennsylvania local trade of the company, which is very extensive. The Liverpool office looks after the interest of the company's clients in Great Britain and Ireland, while the Continental agencies look after the business of their own districts.

The company at the present time is making a specialty of high grade cottonwood lumber, in which they are doing an immense export business. This lumber, they state, is not as well known or as extensively used in Europe as it might be, but the trade is increasing yearly as the lumber becomes better known.

The company have warehouses at all of their mills, and in addition to this, carry heavy stocks at their warehouses at Duluth, Minn., Suspension Bridge, New York City and New Orleans, so that they are always in a position to supply their customers promptly with goods in first-class shipping condition. They make a specialty of high grade goods for export, and in fact control the export markets in their specialties, as their reputation is such that buyers can depend upon their goods being exactly what they represent them to be. Parties desiring barrel stock of any kind, lumber of any description, or in fact any kind of wood goods, cannot do better than write to The Sutherland, Innes Co., Ltd., Chatham, Ontario, Canada.

THEIR MILL AT RENWICK.

The mill of the Sutherland, Innes Company at Renwick, of which a view is shown, is specially built for the manufacture of lumber, staves and hoops, being fully equipped with dry kilns, storage sheds, shipping sheds, and a



MILL AT RENWICK OF THE SUTHERLAND, INNES COMPANY, CHATHAM, ONT.

tramroad running back from the mill into the timbered lands owned by the company. The saw mill is of the circular pattern, with a capacity of 25,000 feet per day, and the stave mill has a capacity of 40,000 staves per day, with a full set of the latest Greenwood pattern stave machinery made by Park Bros., of Chatham, Ont. The hoop mill has a capacity of 50,000 hoops per day, with a triple set of Ward Michael machinery made by Messrs. McKeough & Trotter, of Chatham, Ont.

The boiler house is of brick with iron roof, and has a battery of three 16x60 boilers, plenty of steam being necessary for steaming the hoops and stave timber and for use in the dry kiln, as well as for operating the engines.

There is one 50 h.p. engine for the saw mill and a 45

h.p. engine for the stave and hoop mills, and smaller engines for the fan in kiln, pumps, etc. This mill is probably the best in Canada for the purposes for which it was built, and is so constructed that it can run the year round. It takes from seven million to eight million feet of logs annually to keep the mill running. The products are distributed not only in Canada and the United States, but reach Europe, Asia and South America. There is no heading made at this mill, the heading department having been burned out, and the heading for matched cases from this mill is hauled in by teams from the heading mill a few miles away.

KER & HARCOURT.

The business of Ker & Harcourt, now carried on in Parry Sound, Ont., was first established in Streetville in 1850 by William Ker & Bros., in connection with their furniture factory, and in 1857 they added the spool and bobbin business which is now being conducted. On the death of the senior partner the business was conducted by John and Henry Ker under the style of J. & H. Ker. They moved to Toronto some years later, and carried on business on Adelaide street. Later some inducements in the way of cheap lumber and water power at Walkerton induced them to move to that place. The business was then given over to T. Ker, the older members retiring from active business, and J. Harcourt securing an interest in the same after being for fifteen years in the employ of the firm.

After eighteen years successful business in Walkerton, the firm decided to move to Parry Sound, where they have been established for two years. Of late they have been enlarging their plant, putting in many new and expensive machines. They employ about fifty hands, and turn out a large variety of work in the wood turning line, in addition to spool and bobbins, including druggists' boxes, dowel handles, and wood turned work of all description.

THE ANDERSON FURNITURE COMPANY.

What is said to be the the largest furniture factory in Canada is owned by the Anderson Furniture Company, Limited, and situated in the town of Woodstock, Ont. The factory site occupies some 25 acres of land; the space of the building in actual use for manufacturing is in round numbers 200,000 square feet. In the yards are railway switches upon which a hundred cars could find siding if necessary. The cars run to the doors of the drying kilns and the shipping rooms. Speaking generally of the equipment, it may be said that in no other furniture factory in Canada are the materials used in furniture making produced to such an extent upon the premises. The company is the maker of its own glue, varnish, rattan reeds and chair canes, importing directly from the source

of supply all their rattan; they manufacture all their lumber in their own saw mill, in fact, they produce nearly everything at first cost, enabling them to put furniture on the market at the lowest possible cost.

They have a battery of boilers aggregating 900 horse power, and twenty-five drying kilns, with a capacity of a quarter of a million feet of lumber. Their saw mill is equipped with the best bandsaws obtainable, with a capacity of 50,000 feet per day; they have their own fire protection water works, their own photograph gallery and electric light plant, their own weaving plant for making wire spring beds.

The market of the Anderson Furniture Company is the world at large, and Canada in particular. They have representation in Australia, New Zealand, South Africa,

Great Britain and Ireland, in fact, in every country and clime where Canadian furniture can be sold.

With an able and efficient corps of foreman and skilled mechanics, consisting all told of 600 hands, they turn out about 2,000 chairs a day, and a vast amount of every kind of furniture, including 930 different styles of chairs and numberless different styles of tables, sideboards, bedroom, parlor and dining room suites, wire spring beds and mattresses, reed and rattan goods of every description, baby carriages, cradles and cribs, secretaries and chiffoniers. The carving room is equipped with the latest machinery for doing the finest work. The number and variety of the styles of the company's rattan goods are simply endless; their designs of sideboards, parlor, diningroom and bedroom goods are as bright and up-to-

a short bay or nook runs a short distance inland at the angle, then divides, one running west, the other north—the former a half and the latter a quarter mile, and each about thirty rods wide with deep water. A row of piers across the corner of the main river holds a boom, so that the logs—either loose or rafted—are entirely protected at any time and in all weathers. The logs are rafted about six miles up the river, then floated to the mill on ebb tide.

The saw mill contains, on main mill floor, one "Allis" band mill, band resaw, patent edger and trimmers, jump-up slab saw, jump-up log saw, and "snap-dragon" sawing machine. The logs are taken in by patent haul-up. Live rolls and transfers convey the stock to any point desired. Steam kickers and niggers are used to handle logs on log bed and carriage.

present there is about three miles of platform, and the piling ground covers about forty acres.

Last year the company erected a complete modern box mill, altogether apart from the saw mill, except the steam to run an engine of 125 h.p., which is the motive power. The machinery in the box mill is the latest and most up-to-date that could be obtained. The cutting off and edging of box stock entails a great deal of manual labor, and to make the work as easy on the men as possible, and at the same time get more and better work, the sliding tables on the machines, wherever possible, are made with ball and roller bearings, and all are so arranged that each process advances the work with the least possible amount of handling.

Adjoining the box factory there is a building fitted with planers and trimming saws for finishing up the clapboards. The sawn stock is all air dried before being finished; after being finished the clapboards are housed ready for shipment. All the edgings and trimmings of box stock is "hogged," that is, put through a machine that cuts them into small pieces, which, with the sawdust and shavings, are conducted through a system of galvanized iron piping to the boiler house and fed automatically to the furnaces. The sawdust from the different machines in the saw mill is also conducted to the furnace, and with the box factory refuse makes an excellent fuel.

In connection with the mill the company have an hotel, the accommodations of which are equal to the average first class country town hotel. A large number of the employees board in it, and there is an air of neatness and cleanliness about it that is refreshing. The example set by the management in having the surroundings neat is emulated by the men employed, which is not only seen in the hotel but in all their work.

A large steam fire engine, with capacity of 1,000 gallons per minute, is placed outside the mill with a plentiful supply of hose to reach to any part of the premises. The Gulf Shore rail road—a branch of the Carleton road—has its terminus at the mill, over which the company ships its products. The company have ample territory to draw their supply of timber from for a long time, with a drive not exceeding thirty miles on the Big Tracadie river.

The capacity of the saw mill is ten million feet, and of the box mill four million feet per annum. Mr. Henry B. Foster is general manager, and Mr. R. H. Wing superintendent. These gentlemen have had large experience in lumber and box manufacturing in the State of Maine, and both carry the necessary enthusiasm into the business to make it a success. Mr. Foster is also interested in a horse stock farm.



THE LACHUTE SHUTTLE COMPANY.

A somewhat unique industry in Canada is that of the Lachute Shuttle Company, of Lachute, Que., manufacturers



SAW MILL AND BOX FACTORY OF THE TRACADIE LUMBER COMPANY, TRACADIE MILLS, N. B.

date as efficient and artistic designers can make them.

The shipping facilities of this company are perhaps unequalled by any other manufacturing concern in Canada. The shipping wharf can accommodate forty cars, and such are the arrangements in the matter of obtaining cars that consignments of furniture can be shipped over almost any road in North America without trans-shipment. Side by side in the shipping room can be seen at all times consignments of furniture for both extremes of this continent, embracing every part of Canada, for England and Scotland, for South Africa and Australia, all testifying to the rapid growth of Canada's foreign trade.

Among the most recent improvements of the plant might be noted the following: The whole plant overhauled and the equipment revised up to date with the latest machinery, a new storage-room 300 feet long, the saw mill already mentioned, new and commodious drying kilns, besides a number of the latest and best machines obtainable for the chair and other departments.

It might be mentioned that special designers are employed in special order departments, and sketches and estimates will be furnished for special orders upon application to the company. Catalogues illustrating the manufactures of this company will be supplied to all applicants sending their business card.



THE TRACADIE LUMBER COMPANY.

SOME four years ago Mr. Henry B. Foster, of Bangor, Maine, who for some years had been connected with one of the largest lumber operators in the Eastern States, concluded to inspect some of the lumber chances in New Brunswick, and finally deciding that the "Sweeney" grant, on the big Tracadie river, was a good investment, purchased it and in 1897 began the erection of a mill. It being estimated that about 80 per cent. of the timber was pine, Mr. Foster decided to build a band saw mill, deeming it the least wasteful in point of saw kerf. The machinery was supplied and erected by the Waterous Engine Works Co., Brantford, Ont.

The site upon which the mill is built is an ideal one. It is on the northerly bank of the Big Tracadie, about three miles from its outlet into the Gulf of St. Lawrence. The mills stand upon a point at an abrupt bend in the river, but instead of the bank forming a regular curved outline,

The pine logs are all sawn into one inch boards—being cut by the large band saw into 2 1/8 inches thick, then split into boards with the band resaw. This is done perfectly, and practically doubles the capacity of the mill.

All very crooked pine logs that are too large for the snap-dragon are sawn alive on the band saw and piled up to dry for box stock. In this way from one-third to one-half more can be taken from the log than if edged in the long lengths.

The system of yard piling is complete. The boards are delivered from the trimmer on a platform at the side of the mill, are sorted on two-wheel trucks and run to their respective piles.

The best logs of both spruce and pine are sawn into clapboards, being cut the proper length on the mill bed

with the large jump-up saw. The bolts so cut drop through a slide and go to the machines on the floor below; two clapboard machines are run.

Stock that is short or not suitable for clapboards is sawn into box stock on the snap-dragon, as is also the small, crooked logs and boom poles; the latter and the slabs and edgings are put through a circular re-saw and piling machine in four-foot lengths and are used in the meantime for sticking the boards, and later they can be used for pickets.

The yard is well equipped. A wide platform level with mill floor runs parallel with mill across the water front of piling ground. At right angles other platforms, alternating with railway tracks, are run, on each side of which the boards are piled. The foundations of the lumber piles are set with a spirit level to ensure uniformity. At

of shuttles, bobbin and spool tubes, skewers, picker sticks and cloth rolls for use in cotton and woollen mills. This company have also just installed machinery for the manufacture of broom handles, dowels and excelsior, and employ about sixty hands. The business was originally started by David Hambleton about fifteen years ago, and was afterwards run for about ten years under the name of John Hope & Company. The Lachute Shuttle Company took over the business about one year ago and have been increasing it ever since. At the present time they have orders booked to take the output of their factory for the next six months, but are always pleased to give quotations. The mill machinery is operated by steam and water power, the latter being quite sufficient to double their present capacity, which it may be necessary to do in the near future.

TIMBER PROPERTIES FOR SALE.

Mr. Thomas Coolican, timber broker and financial agent, Quebec, Canada, is authorized to offer for sale a large lumber establishment controlling nearly 700 square miles of timbered lands, water powers, saw mills, stores and other equipments. As there is an inexhaustible supply of spruce and balsam on this property, it offers unequalled advantages for starting pulp and paper industries. The shipping facilities are excellent, being favored by railway and ocean transport. Mr. Coolican has also on his list other valuable timber locations, quarries, sea-island moss for upholsterers, etc. His announcement will be found on page 7.

**THE NORTH PACIFIC LUMBER COMPANY.**

Prominent among the large manufacturing firms in British Columbia is the North Pacific Lumber Company, of which Mr. J. M. Foitrais is the general manager. The mills being located

mill. After the new mill is built the old one will be used exclusively for a shingle mill. The company own about three hundred and fifty square miles of limits on the Rimouski river. Mr. Seale is general manager of the company's mills on the lower St. Lawrence.

John Fenderson & Company, Sayabec, have been improving their yard facilities by building elevated platforms. The lumber is taken up from the mill by carrier chains and deposited on a table, where it is sorted on two wheel trucks and then run out to the respective piles. The firm have also put in a very complete system of fire protection; two inch iron pipe was laid through the yard, with hose connections where convenient, the whole system being operated by a powerful steam pump. They are now running to full capacity on lumber, shingles and lath. Mr. Charles Fenderson is superintendent.

J. & P. Nadeau, Port Daniel, P.Q., have a new shingle mill equipped with three "Dunbar" machines, and are turning out good stock.

Thos. J. Caldwell, New Carlisle, P.Q., has a saw and shingle mill seven miles out of town, but is not operating it during the summer. He is building a planing mill in the town and expects to have it ready for work by 1st September.

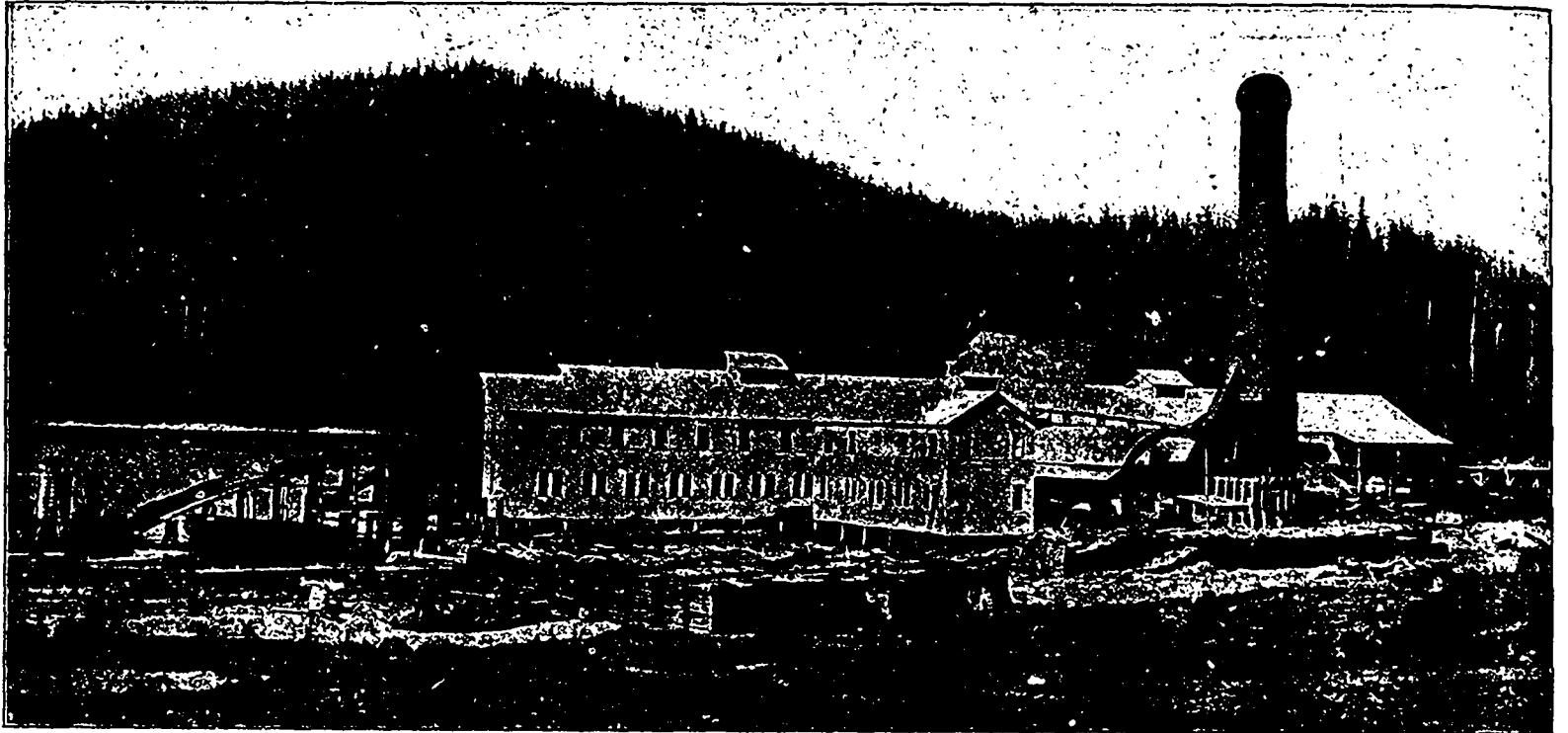
R. J. Miller, Carleton West, P.Q., has a steam saw and shingle mill which he operates in the summer

F. R. Mooneault & Co., Sayabec, have purchased a limit at St. Moise and intend building a saw and shingle mill there this season. They will remove the machinery of their mill at Sayabec and add to it, making the shingle machines and a rotary.

King Bros. & Co., Ltd., Cedar Hall, have added a shingle plant to their saw mill, and are now running four "Dunbar" shingle machines. Cedar Hall is a pretty village on the westerly side of Lake Metapedia, about midway its length, which is fifteen miles with a width of about two miles. It was on this lake, within sight of the mill, that the lamentable boating accident occurred a few weeks ago in which Mr. James King, president of the company, lost his life. Of a party of six people in the boat not one was saved. Mr. Nowlin is manager for the company at Cedar Hall, and his wife and only child were in the party. The company have saw mills in a number of places throughout the province of Quebec, and are also largely interested in asbestos mining at The Mines. Their head offices are in Quebec city.

CANADIAN FORESTRY ASSOCIATION.

The report of the first annual meeting of the Canadian Forestry Association, held at Ottawa March 8th, 1904, has been issued. It contains a complete report of the



MILLS OF THE NORTH PACIFIC LUMBER CO. AT BARNET, B. C.

at Barnet, on Burrard Inlet and the Canadian Pacific Railway, affords the company excellent shipping facilities. A view of the mills is shown on this page.

The output of the mills is very large, and consists of fir, cedar, and spruce lumber and timber, both rough and dressed, a specialty being made of dressed dimension timber. The timber planers face up to 24 inches by 30 inches. The company are also in a position to supply car and ship material, box shooks, sash and door stock, and other manufactures of timber, and solicit correspondence from buyers. Their announcement will be found on another page.

LUMBERING OPERATIONS IN THE EASTERN PROVINCES.

[Correspondence of the CANADA LUMBERMAN]

Price Bros. & Company, Quebec, have purchased the timber limits and mills of the Rimouski Lumber Company at Rimouski, and are preparing to build a large steam saw mill just below the Intercolonial Railway bridge, at the mouth of the Rimouski river. The mills of the Rimouski Lumber Company are run by water power and are situated about two miles up the river. There are eight shingle machines, a rotary saw and a planer in the

season. He has a winter mill at New Mills, N.B., also.

New Richmond Lumber Co., Limited, New Richmond, P.Q., are taking out only about three million feet of spruce lumber this season. They also supply cedar for three shingle machines run by James Starrak. Mr. Wardeoper is manager of the mills.

R. H. Montgomery, New Richmond, has a rotary saw mill and will saw about three million feet during the season. He has fine timber limits on both Grand and Little Cascapedia rivers.

Nadeau & Sons have a steam saw and shingle mill at Grand Cascapedia—seven miles up the river. Their sash and door factory was burned, and as yet they have not decided on rebuilding.

George McKeen, of St. John, N.B., has a fine steam saw and shingle mill at Nouvelle, P.Q. The mill is a rotary and has a capacity of thirty thousand feet per day. There are five "Dunbar" shingle machines with a combined daily capacity of eighty thousand shingles. C. B. Dever built the mill the past winter. Mr. W. K. McKeen is superintendent.

David Richards, Campbellton, has made a number of changes and improvements in his mill. During the winter he added three "Dunbar" shingle machines and also an engine to run them. He now manufactures lumber, lath, shingles and clapboards. The mill is very conveniently arranged.

George Moffatt, Dalhousie, has added a rotary to his gang mill, for sawing timber and dimension stock.

proceedings of the Association, a list of the officers, and some excellent forest scenes. The objects of the association are also fully set out. Persons interested in forestry should identify themselves with this association, which promises to do much towards the preservation and perpetuation of our timber supply. Applications for membership should be sent to Mr. R. H. Campbell, treasurer, Department of Interior, Ottawa.

By September the sulphite mill of the Riordan Paper Company at Hawkesbury, Ont., will be turning out eighty tons of pulp per day. Shipments are now being made to England as well as the United States.

Persons interested in the timber trade who are not already subscribers to the CANADA LUMBERMAN are reminded that the subscription price throughout Canada and the United States is only one dollar per year. The price to foreign countries where extra postage is charged is two dollars per year. For this sum both weekly and monthly editions are given. A subscription form will be found in each paper for the convenience of persons who wish to become subscribers. Attention is also directed to the "Wanted and For Sale Department" of the weekly edition, which has been found of great service to those who have availed themselves of it. It is an excellent medium for persons who have lumber or second-hand machinery for sale, or desire to purchase same, and almost invariably brings results.

Foreign Markets for Canadian Timber

GREAT BRITAIN.

DEAR SIRS.—The general timber trade practically runs itself and is conducted through certain established channels. It is rather the trade in manufactured or partly manufactured articles that has come before my notice within the past year or so, and in these directions I should judge Canada has great opportunities, and also, from what I hear, a great deal to learn before these same opportunities can be taken due advantage of.

Probably due partly to temporary trade activity, British importers have not been able to obtain their customary supplies from the United States and elsewhere, and enquiries have been addressed to this office, often by influential firms, for the names of Canadian manufacturers of such articles as broom, tool and implement handles, mouldings, doors, chair parts, furniture, skewers, dowels, etc., all goods for the production of which Canada possesses great natural facilities. Names have been supplied, correspondence has ensued, and in some cases British firms have sent out representatives to examine into the possibilities of arranging for supplies of goods.

There are, as has been mentioned in previous letters, a certain number of Canadian manufacturers who have, through personal enterprise and a careful investigation of this market, established a steady trade. Apparently, however, their output is fully arranged for and they are unable to entertain offers of additional trade. As regards the majority of the others who might under certain conditions develop export trade, my general information is to the effect that many are at present debarred from doing so from various reasons, amongst which may be noted: (1) Lack of sufficient capital to permit of the production of goods upon the considerable scale necessary for a profitable export trade; (2) the absence, from the same cause, of the latest and most improved machinery as used in the large United States mills and elsewhere; (3) ignorance of the requirements of the United Kingdom market in the way of patterns, shapes, etc., in general use.

I need hardly say that the above does not refer to the Canadian manufacturers who possess an established trade, but to many who have taken up the question of possible export with United Kingdom houses who have made enquiries through this or other Canadian commercial agencies. I presume that it is largely for their benefit that you are making the present enquiries, and even if not altogether palatable, the views of British importers as they have been expressed to me, must be of some practical value.

Personally, I should judge that Canada is destined to develop a very considerable trade with this country in goods of the nature indicated. Something can be achieved by correspondence, but my advice to anyone possessing the plant and capital necessary for export trade would be to pay a visit to the United Kingdom and devote a few weeks to studying its chief centres. A personal knowledge would then be obtained not only of the kind of goods in use in this country, but, further, of the business methods in vogue, a very important detail. Many Canadian manufacturers possess, I am told, a very erroneous idea as to the immense quantities of goods handled by the large importers, and write to United Kingdom houses as if they could supply half a dozen different lines, whereas one of these importers would often take the total output of half a dozen large factories devoted mainly to the production of a single line. Another highly important matter is for the Canadian exporter who has neither a permanent nor temporary agent in this country, to place himself in the hands of one really first-class house instead of trying to carry on transactions with a dozen or more smaller buyers. There are in most of the large cities influential firms who possess an excellent connection and are, further, familiar with the features of the particular country of origin of the goods, and their services are invaluable. Some of these large houses are also prepared under certain conditions, to render valuable financial assistance to manufacturers who require it.

For the benefit of the smaller manufacturers and the education of the Canadian workman, I have often thought

that a most practical step would be for a journal such as yours, or some central authority, to send over a representative to purchase and collect current samples and models of the woodware and manufactures of wood in demand in the United Kingdom, and to exhibit the collection at the principal Canadian fairs, exhibitions, etc. It is quite obvious that in a conservative country like this, people will have what they want, and it is absolutely a waste of time to endeavor to sell them anything different, even if, as occasionally happens, the article offered is a superior one.

I have been able to place a good many United Kingdom and Canadian houses in communication, and am pleased to say that in many cases the preliminary information furnished has been advantageously followed up. I am always pleased to receive such enquiries and can generally place correspondents in touch with first-class houses. There is, however, no road to success save by personal application and enterprise, and if Canadian exporters of manufacturers of wood will study the requirements of this market in an intelligent manner, the result should amply repay the initial trouble.

HARRISON WATSON,

Curator Canadian Section Imperial Institute
London, England.

REPORT OF THE HIGH COMMISSIONER.

Much valuable information is contained in the last annual report of the High Commissioner of Canada to the Department of Trade and Commerce. Of the market in Great Britain for wood specialties he says:

BROOM HANDLES, ETC.

Inquiries frequently reach me from English and Scotch houses who are desirous of importing broom and tool handles, dowels and other wooden ware of various kinds, and I have been able to place a number of my correspondents in communication with Canadian lumber firms and others who are in a position to supply the goods. The following information has been supplied by a firm engaged in the import of wood handles to this country, and may prove of use as a guide to those who may contemplate engaging in the trade:

"Broom Handles in Basswood or White Pine:—Dimensions, 50 inches by 1½ inches. The diameter to be the same throughout the length and not tapered like the broom handles in use in Canada.

Quality.—They must be well sandpapered and graded as follows:—First, all white wood and free from knots; second, free from knots but with some discolourments; thirds, with some knots.

Quantity.—We buy by the carload and the proportions of the different grades should be: Firsts, about 50 per cent.; seconds, about 35 per cent.; thirds, about 15 per cent.

Importers here have some reason to complain of unfair grading, and it will pay millers to be scrupulously attentive to this matter.

Hoe Handles in Basswood or White Pine:—Dimensions—60 inches by 66 inches and 72 inches by 1½ inches. Quality and grading same as broom handles.

Irish Shovel Handles in Basswood:—Dimensions.—72 inches by 1½ inches.

Quality.—One grade only—the best. These handles are used for heavy work and knots weaken them too much, therefore handles having knots in them must be discarded and not shipped, as they are only good for firewood here. This, of course, increases the cost of this handle, but that cannot be helped.

Packing.—All these handles are put up in bundles of 12 dozen, sewn in cheap sacking to prevent them being soiled.

Prices must be quoted, freight and insurance paid to the following ports:—Glasgow, Liverpool, Dublin, Belfast, Londonderry and Cork. The railroad agents quote through rates from any station in Canada. It is quite useless to quote f. o. b. cars, as we cannot ascertain the freight here. We might point out that when selling freight and insurance paid it is not necessary to prepay the

freight. The freight can be made payable here, but of course in that case the amount of the freight must be deducted from the invoice.

Payment.—We will pay cash against bills of lading and insurance policy for two-thirds of invoice amount, balance to be remitted promptly upon receipt and well-finding of the goods. As we get to know the seller we would of course pay the full amount against documents."

It may be mentioned that other inquiries have been received from time to time from firms requiring laths for Venetian blinds, plasterer's laths, wooden mantel-pieces, spruce wood for boxes (planed and cut to size), spruce bars, hickory for golf sticks, vehicle wheels, 3-ply hardwood (veneers), blocks for paving, rings for sieves, hardwood for furniture, wood meal or wood flour, staves for barrels, birch and maple dowels, fir props for mining purposes, walnut boards of good quality, wooden screws, doors, sashes and moulds, white birch caps for mucilage bottles and brushes for the same.

SPOOL WOOD.

Occasionally I receive inquiries from those who desire to supply the large thread and cotton firms in this country with spools and spoolwood. Generally speaking, these people purchase spool wood direct, although some of the business is done through agents. Several of the most important, like J. & P. Coats, Ltd., Paisley, Clark & Co., Paisley, and Jonas Brookes & Co., Huddersfield, have purchased largely from Canadian sources in the past, but owing to various causes (principally perhaps the careless selection of the wood), they have been more inclined to purchase from American shippers.

DEAR SIRS.—The timber products for which a large demand exists in this country, and towards which the careful attention of Canadian manufacturers and exporters may very profitably be directed, are imported from the Dominion of Canada in great and increasing quantities. They comprise wood manufactured from almost every description of tree grown in the colony, embracing oak, elm, birch, ash, hickory, etc., and also the different varieties of the pine, yellow, red and white, for all of which a ready and desirable market can almost invariably be found on this side. So numerous and diverse are the dimensions used by our consumers that it would be impossible within the limits of a short notice like this to specify them at any length, but we may say briefly that the following are the principal sizes shipped to the Clyde ports, in the various wood goods, with the current prices attached, viz:

OAK—Logs of first class quality, the dimensions of which run from 10 ft. and up long, averaging from 50 to 70 cubic feet per log, are quoted at 28 10d to 35 2d per cub. ft.; second class wood at 18 10d to 25 2d per cub. ft.

ELM—First class wood, from 45 to 50 feet average per log, is quoted at from 38 to 38 3d per cubic foot.

BIRCH, in logs from 8 feet and up long by 13 to 20 inches square, price 18 9d to 28 for 15 to 17 inches average diameter; 18 5d to 18 6d for 13 to 14 inches average diameter. It should be noted that there is always a good market for birch planks and boards, the sizes of the former running from 8 feet upwards in length and from 6 inches and up wide by 2 to 5 inches thick. Boards of similar lengths and widths by 1, 1½ and 1¾ inches thick.

ASH logs from 10 feet and up long by 8 inches and up diameter with bark on, used for cartwright purposes, prime logs, 18 10d to 28 3d per cubic foot, according to size and specification. For cabinet work, 12 feet and up long by 16 inches and up, with bark off, hewn almost square, price from 28 to 28 3d per cubic foot.

HICKORY—Second growth, in the round, with bark on, 10 feet and up long by 8 inches and up diameter, price from 18 8d to 28 6d per cubic foot, according to quality.

SQUARE AND WANEY YELLOW PINE LOGS, under 23 feet long, and averaging 50 to 100 cubic feet per log, over 23 feet long, averaging 60 to 100 cubic feet per log, are quoted at 28 8d to 28 10d for prime wood; second class wood, 18 8d to 28 2d per cubic foot.

WHITE PINE DEALS, graded in four qualities, numbered

1st 2nd, 3rd and 4th. Boards, first quality, from 12 ft. up x 12 in. and up x 3 in., from 3s 3d to 3s 6d per cubic foot; undersized, first quality, 12 ft. up x 7-11 in. and up x 3 in., from 2s 3d to 2s 7d per cubic foot; boards, second quality, from 12 ft. up x 12 in. and up x 3 in., from 2s 4d to 2s 6d per cubic foot; undersized, second quality, from 12 ft. up x 7-11 in. x 3 in., from 1s 10d to 2s per cubic foot; regulars, third quality, from 12 ft. up x 11 in. and up x 3 in., from 1s 6d to 1s 8d; undersized, third quality, from 12 ft. up x 7-10 in. x 3 in., from 1s 1/2d to 1s 2d per cubic foot; regulars, fourth quality, from 12 ft. up x 11 in. and up x 4 in., from 1s to 1s 1/2d per cubic foot; undersized, fourth quality, from 12 ft. up x 7-10 in. x 3 in., from 11d to 1s.

WHITE PINE SIDINGS—The sizes constantly in demand are 1, 1 1/4, 1 1/2, 1 3/4 and 2 inches, more especially 1 1/2, 1 3/4 and 2 inches thick. These usually run 12 to 16 feet long by 8 inches and up wide, average 11 inches, and the price is 2s 3d to 2s 8d per cubic foot.

SPRUCE DEALS—The dimensions of these are from 9 to 18 feet in length by 6 inches and up broad by 3 inches thick, and the price, which depends on width and quality, is from 10 1/2d to 13d per cubic foot.

RED PINE DEALS are very much enquired for, and the sizes going into consumption are 12 feet and up long by 7 to 12 inches wide by 3 and 4 inches thick; price, 1s 9d to 2s per cubic foot.

Glasgow, Scotland.

CANT & KEMP.

DEAR SIR,—We take it that our Canadian friends are wishing to do an export trade in the manufactured article rather than in logs, also that they are desirous of doing the trade in such manner as will bring them the most profit and of a permanent nature. A permanent trade means that they must gain the confidence of their clients.

Our experience with American hardwood is that there is no reliance to be placed in large ash logs, i.e., 16 to 20 inches diameter, because of the dead wood that is shipped, and which may amount to 20% of the bulk, or even more. Consequently, timber merchants in England feel that their only security is to buy timber of second growth, which means small trees that throw out but little stuff, except when sawn into very small scantlings, and which is very wasteful.

In England we do not buy what we term "low meadow" ash if we know it, because that is sure to dry up light, same as some of your ash (that is not dead wood). Neither do we buy any ash plank that is artificially dried.

As regards exporting ash lumber, partly manufactured, if your lumbermen wish to cater for the general market, they cannot do better than saw it into planks 3, 3 1/2, 4 and 4 1/2 inches thick, as they would be sure of ready sale at fair prices, even if sold by auction. If they wish to supply scantling it would be too risky unless sawn to order, which means supplying the consumer direct. In order to create a trade of this kind it would be necessary to gain the confidence of each individual consumer, if he has to pay cash down on your side of the Atlantic before shipment, which, by the bye, is, I imagine, the only workable system, unless lumbering firms open out their own establishments on this side the same as your other manufacturing firms do, and which our export experience (of 40 years) teaches us to be the right course; or in other words, follow out the old adage, "If you want anything done well go and do it yourself," don't trust to agents solely.

Hitherto the principal importation into England from America has been to the west coast, to the neglect of the east side of this country, whereas the railway freights in England are almost prohibitive to the effecting of sales from Liverpool, although freights from America to Liverpool may be more favorable than to other ports. Consequently there is undoubtedly an opening for enterprising Canadian lumbermen to establish themselves at eastern ports and import entire cargoes, which might include all kinds of lumber.

My remarks, although thus far confined to ash, apply pretty much to oak, and here I would remark that all hardwood lumber (barring birch), whether in planks or scantlings, would be best stacked 12 months in the open air before shipment, and would also pay good interest for the trouble taken. Whitewoods, in 1-inch boards, ready planed, are a good sale, because they are naturally already seasoned ready for use; in fact, last November I myself bought £350 worth of canary whitewood (Ameri-

can), and I know other manufacturers do the same. Spokes sawn to special dimensions should also be in demand where the consumer is catered for, even if not turned up ready for use, but must be of good quality and sawn from small trees.

As regards the present demand for lumber generally, I imagine that we have seen the maximum for a time. The great "boom" of the last 18 months was too artificial, being the result of unsound and fleeting causes, consequently likely to produce a slight reaction for a time at least.

The price of iron to a certain extent influences the consumption of lumber, but a slump in the price of iron may be nearer than the iron manufacturers desire, but will not be able to stop. The tendency is towards substituting iron for wood wherever possible, because one scarcely knows what timber costs, there being so much waste, and then the capital which it sets fast is far greater than in iron, which is procurable much more easily if one's stock of materials runs short; whereas to buy seasoned hardwood, it is almost impossible to get it even at prohibitive prices.

In our business we have to hold a 3 or 4 years' stock of timber because we dare not force the seasoning of hardwood artificially.

Suffolk, England,

Yours truly,

JAMES JOSIAH SMYTH.

DEAR SIR.—Wood goods are so thoroughly well known to your readers that it makes it somewhat difficult to give you any details of interest. It is, of course, quite unnecessary to tell you that Canadian lumbermen obtain a large share of this country's business in timber of all descriptions supplied by your country, and in cut timber particularly there has been a great development of late years. As to wood specialties you mention, we presume you refer to finished stock, such, for example, as doors, architraves, etc., but this is hardly in our line of business, as we supply the raw material to buyers, who manufacture in their mills here the finished article. Naturally enough, our buyers are not anxious to develop the trade in manufactured goods, but it is year by year becoming a more prominent feature in the imports from Canada and America to this country.

If we might venture an opinion between the Canadian and American timber exporters, we would say that the former are more conservative in their operations than the latter, which is particularly noticeable in cut timber. American shippers were not slow to observe that instead of in all cases shipping timber in the log, they could, with more advantage to themselves and also to the buyers here, ship it in lumber, and in this manner they have practically monopolized a trade which was formerly in the hands of Canadian lumbermen. To give an instance of this we might mention oak, which the Canadians ship in the log mostly, whereas the Americans cut the logs into the finished sizes required by railway companies here—the chief consumers of it. This is an enormous trade now, and must be a corresponding loss of trade to your country. The same remarks apply to oak cut into boards of all thicknesses from one-half inch upwards, suitable for the furniture and similar trades here. Ash also used to come almost entirely from Canada, now the bulk of it comes from America. This further applies to walnut, hickory and butternut (poplar), all of which now come almost entirely from the United States, and represents a large import.

As you will gather from our remarks, our opinion is that to retain a larger share of the timber trade of Europe, Canadian lumbermen must give more attention to the lumber requirements rather than the log requirements of buyers here.

Glasgow, Scotland.

EDMISTON & MITCHELLS.

DEAR SIRS.—Until the last three or four years the imports of timber from America to the east coast were limited chiefly to cargoes of white pine, oak, birch and ash timber, with some white pine deals and cargoes of pitch pine lumber, sawn and hewn, with some pitch pine deals, in both cases deals as stowage. Spruce formerly was limited to the west coast and London chiefly, because manufacturers would stick to the old style of sending these in short lengths, and mostly consigning them for sale by auction, never knowing either what prices they would get or what the charges would be. However, in later years there seems to have been others besides ourselves who have endeavored to educate shippers to take

contracts for spruce deals, battens and boards (we believe even spruce flooring would go), of fair average lengths, c.i.f., and we are advised that many thousands of such boards have been sold to this neighborhood. The advantage to shippers ought to be clear, as there is no risk of auction prices or of landing charges.

In round figures, the dimensions required (there may be others) for well-sawn properly dried square spruce for east coast ports, are: 2 1/2 x 11, 3 x 11, 3 x 9 inch, chiefly 11 inch, not under 16 ft. average, say 9 to 24 ft.; 2 1/2 x 7, 2 1/2 x 6 1/2 in., not under 15 ft. average, say 9 to 24 ft.; 2 x 6, 5, and 4 1/2 in., not under 14 ft. average, say 9 to 24 ft.; 1 x 11, 9, 6 and 7 in., not under 14 ft. average, say 9 to 24 ft.

Prices probably, if separated, instead of, as has been usually, all-round at one price, might be: 1st deals, £4 c.i.f.; 2nd battens, £7 5s c.i.f.; 3rd scantlings, £6 10s c.i.f.; 4th boards, £6 10s c.i.f. But the market may go down, as it has been driven up pretty high.

There is certainly an opening at present for red pine deals, battens, and flooring, if shippers would only make what is wanted, say 3, 4 x 11 and 9 in., not under 15 ft. average; 3 x 7, 2 1/2 x 7 and 6 1/2 in., not under 15 ft. average. Flooring, tongued and grooved, 1 1/4 x 7, 1 1/2 x 7 in., chiefly 1 inch, would no doubt sell also, and deals and battens still better, if they were sorted, 1st and 2nd as one quality, and 3rd and 4th as another.

For the last forty years it has been true that when anything became too dear something else has been used. The same law of supply and demand still exists, and it seems that with communications extending changes are more rapid, but we have seen falls from 20 to 100% on standard c.i.f., and may see something thereof again.

For the benefit of exporters we can add that 3 and 2 1/2 x 11 inch, 150 standards each, are coming here from Black Sea, 17 to 18 feet averages. This we have not heard of before but it only confirms the above paragraph.

Yours truly,

"IMPORTER."

GERMANY.

DEAR SIRS.—For the German market the dimensions of 1 1/4, 1 1/2, 1 3/4, and 2 inch spruce are mostly in demand, only lengths of 10 ft. and up, selected clear, 6 in. widths and up. There is no demand for 1 1/4 in. thick boards either in American or in English trade, but large quantities of this dimension are required in Germany all over the Continent. American manufacturers do not like to produce this thickness, therefore there is a difficulty in importing American lumber. Mills on the Gulf of Mexico in the Eastern and Southern States of the U.S.A., have lately found that a continental trade is not possible in producing 1 1/4 inch stock. I am quite sure that spruce will find a good market in Germany, but only first quality in above quoted thicknesses, particularly 1 1/4 and 1 1/2 inch stock.

For myself, I am willing to take large quantities of spruce 1 1/4 and 1 1/2 inches thick, first and second qualities, clear 1 1/2, 1 3/4 x 5 and 6 inches, 10 feet and up. I have already had correspondence with Canada, but without success. A good export trade with Germany in Canadian lumber to all continental ports in large quantities is possible as soon as manufacturers adopt continental dimensions.

Kastel Mainz, Germany.

AD. MESSERSCHMIDT.

WEST INDIES.

DEAR SIRS.—The principal imports of white pine lumber in this market are from the Maine ports of the United States, and a large proportion of Canadian wood brought through in bond to New York, also pitch pine from the southern section of the United States. The class of lumber required is shown by the following specification furnished by a leading lumber merchant:

White pine boards, in lengths from 12 to 16 ft. long by 1 x 12 in. A large quantity of 1 in. white pine is used, grooved and tongued, planed 1 and 2 sides; square edge, planed 1 and 2 sides.

White pine planks, in lengths from 12 to 16 ft. long by 1 1/2 and 2 x 12 in.

Spruce pine boards, various lengths, 1 in. thick, 6 in. wide and upwards.

Hemlock is not liked in this market.

Pitch Pine Boards—Flooring boards, 6 in. wide,

rooved and tongued, planed 1 and 2 sides, 1, 1 1/4 and 1 1/2 in. thick. Round boards, 10 and 11 in. wide, 1, 1 1/4 and 1 1/2 in. thick. Lengths preferred.
 Pitch pine planks, long lengths, 2 x 12 in. and 3 x 12 in.
 Pitch pine scantling, varying in size from 2 x 3 in. to 12 x 12 in., smaller sizes more used.
 The above should be of good wood, more especially pitch pine, to be free of sap. Most importers of pitch pine forward their own cargo specifications for market requirements.

Yours truly,
 EDGAR FRIPP,
 Commercial Agent for Trinidad and Tobago.

DEAR SIR, - The lumber imported into this and the other Leeward Islands includes pitch pine scantling and flooring boards, white pine boards of the three qualities known as "New York," 1st quality Canadian shipping, and 2nd quality Canadian shipping, and spruce boards, both 1st and 2nd quality, but very little of the latter. As regards white pine and spruce boards, only the ordinary shipping widths and lengths are imported. Prices vary according to the state of the market, and are governed by the supply and demand in this and the neighboring islands, including Barbados, from whence cargoes are generally offered. It is not the practice here to import direct from Canada, so far as Canadian white pine and spruce are concerned. There is, however, a quantity of so-called "New York" white pine boards imported here from New York direct, by steamer. This lumber is superior in quality to the ordinary run of "shipping" Canadian, being, however, if I am rightly informed, Canadian lumber selected in New York. The same lumber could therefore be shipped from Canadian ports. The price paid for New York white pine is generally about \$3 to \$4 per foot more than for Canadian 1st quality.

Yours faithfully,
 R. BRYSON,
 Canadian Commercial Agent.

St. Johns, Antigua.

SOUTH AMERICA.

DEAR SIR, - In recent years the forests of Southern Chile have been made to supply a great part of the local demand, but lumbering operations are primitive, and the moving of logs is considerably hampered by natural conditions, so for long or large timbers and good flooring stock the trade has to fall back upon Oregon Pine (Douglas Fir), which is imported from Puget Sound and Burrard Inlet in cargo lots. Formerly there was a considerable trade in white pine, whole or part cargoes, from New York and the St. Lawrence, but importations are now greatly diminished, and limited to straggling lots of 10,000 to 25,000 feet at a time, mostly "clear" or "good cutting up" stock. There is also a limited demand for white oak, ash, and black walnut for cabinet purposes, although native Rauli wood, which is fine grained and somewhat resembles Californian redwood, now enters largely into the local furniture trade, and the Rauli finishes nicely in imitation walnut or imitation mahogany.

All foreign lumber is subject to a heavy import duty, equivalent to about \$4.65 per thousand feet. Ourselves and other merchants here are always keenly alive to any

possibility of extending trade, and would long since have availed of Canadian lumber to a greater extent if the way was open to business, so we must confess that we see no prospect of developing the consumption of your lumber in this market.

W. R. GRACE & CO.

Valparaiso, Chile.

CORRESPONDENCE

EXHIBIT AT THE IMPERIAL INSTITUTE.

LONDON, S. W., July 11th, 1906.

Editor CANADA LUMBERMAN:

DEAR SIR, - Your article on the Canadian, and more especially the Ontario exhibit at the Imperial Institute, will be of great practical value if it induces Canadian business men to assist in making the present unequal display more representative of the great and varied resources of the Dominion. The industrial features of Ontario in particular are almost wholly lacking, and this at a time when, to judge by the very marked increase in commercial inquiries received at this office, the presence of exhibits of wooden ware, leather, paper and pulp, preserved goods, and many other lines in which export trade is being developed, would be of material benefit. There are, however, several inaccuracies in the article in question which call for explanation, if not correction. There are no specimens of Indian work in the Ontario court. Although the major portion of the fine collection of fruits has been here for some years, there are nearly 50 jars selected from the crops of 1899, as indicated on the labels. Some of the older specimens have certainly rather deteriorated, but the whole collection was examined only last winter by one of the largest fruit buyers in this country, and since then such specimens as he considers serviceable have been refilled with preservative liquid and those past redemption have been thrown away. This fruit collection has rendered yeoman service insofar that specimens have been lent to many agricultural and other exhibitions, where they have attracted attention to Canada's fruit growing resources. Probably it will be brought quite up to date in the near future.

Although Niagara Falls are represented by a dozen views—and the Falls have probably attracted more tourists to Canada than any other scenic feature—the writer has neglected to mention the presence of more than a dozen large photographs of vineyards, peach farms, etc.

Another feature of the fruit industry is further represented by part of the contents of a large show case of canned goods, fifteen of the Guelph Agricultural College, several of the Petrolia Oil Wells, the Sudbury Nichol Mines, and a number of the Ottawa Houses of Parliament, etc., whilst no reference is made to an exceedingly good mineral collection of some 500 specimens.

However, there can be no doubt that the display in the Ontario and also the Canadian sections is not what it should and might be. It is hoped that many of the exhibits now at Paris will subsequently be handed over to the Institute, and a number of Canadian business men who have visited London in connection with the Congress and other matters have promised their assistance in rendering the display more adequate. Every effort has been made by Canadians and others on this side interested in the welfare of Canada, to have the resources of

Canada worthily represented in the capital of the Empire, but it is quite obvious that no satisfactory results can be obtained without the active co-operation of Canadian manufacturers, shippers and others associated with the development of Dominion trade.

Yours faithfully,

THE CURATOR.

AT THE PARIS EXPOSITION, 1900.

Messrs Joseph Owen & Sons, Limited, Stanley Saw Mills, Liverpool, have branches at London, Manchester, Leeds, Tunstall, Staffs. The business of the firm includes every variety of timber. They are large importers, selling wholesale at docks, and are manufacturers in all departments of the trade. While thus comprehensive, their specialty is probably in the supply of timber exactly adapted to the wants of railway and tramway carriage constructors and carriage builders generally. They have a connection with carriage builders throughout Great Britain and also on the Continent. With the latter place their trade has increased rapidly since the Paris Exposition in 1889, on which occasion they secured two awards. Their stand in this year's Exposition is No. 632, in Group vi. The exhibit, though small, being confined to a space of 12 feet by 10 feet, shows as much of the variety we have alluded to as possible. To show the large range of boards kept in stock we might say that the stand is lined with splendid specimens of Honduras Mahogany, Walnut, Wainscot Oak, American Ash and Birch, Figured Pitch Pine, Haurie Pine and Whitewood, effectively placed so as to contrast in colours and display the figure of the wood. The floor is paved with parquetry in Oak, Walnut, Sycamore, Yellow and Pitch Pine. On three of the walls of the interior of the stand (lined as described) are hung, artistically grouped, bent rims for wheels, carriage head and wings, car and cab bent shafts, carriage poles, spokes and felloes and Warner wheels. There are also Caspstan bars and handspikes as supplied by the exhibitors to the British Admiralty. A handsome Mahogany counter has been provided whereon are shown two Diplomas of the former Exhibition. Under the counter are Elm Naves of different designs, and over the entrance there are rims bent to various sizes and a stand of spokes. The space has certainly been utilized to the best advantage, but it is to be regretted that it is so limited as not to afford means of displaying the large planks of Ash, Oak and other timbers which it has long been the practice of the firm to exhibit at the Royal Agricultural and other shows in England where their allotments have been much larger.

The construction of the Crocker improved turbine is well shown in the fourth edition of the Jenckes Machine Company's water wheel catalogue. The various illustrations pertaining to the Crocker wheel show the adaptability of the turbine to the varying requirements and local conditions. The table of horse powers, which are guaranteed to be substantially correct, have been extended from 40 feet to 100 feet head. The figures are given for any wheel from 15 to 55 inches. There are also other valuable tables and rules which evidently have been prepared to meet the needs of the practical man and to facilitate the calculations and estimates required in connection with water wheel works. Diagrams of the principle methods of setting have also been inserted.

Gookburn, Whaley & Co.

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Complete outfit, Horses, Gear, Booms, Dams, Steamer—a working concern now in operation.

Go and examine this Property. Will be sold at a reasonable figure.

Apply to the Proprietors

WHITEHEAD & TURNER,

Quebec, 27th July, 1906.

QUEBEC

THE NEWS.

—The death is announced of R. W. Warne, saw mill owner, Hillgrove, N. S.

—It is reported that the insurance rates will be increased in the lumber district of Ottawa.

—As yet no steps have been taken to rebuild the Stetson & Cutler saw mill at Kingsville, N.B.

—J. Hickling, of Maxwell, Ont., proposes to rebuild his mill destroyed by fire on June 20th.

—Gilmour & Company, Limited, of Trenton, have been granted incorporation as a joint stock company.

—Wm. Playfair has recently bought the old Duncan saw mills at Lavant, and has removed to that place.

—McLachlin Bros., of Amprior, Ont., are refitting one of their saw mills for the purpose of cutting shingles and cedar ties.

—The Dominion Paving Company, of Toronto, is establishing a mill at Lindsay, Ont., for the manufacture of paving blocks.

A factory for the manufacture of cooperage stock will likely be established at Glasgow, Ont. A Mr. Davidson is interested.

—Haley & Sons, of St. Stephen, N. B., are shipping box shooks to England. They employ 38 hands in their mill, and are doing a splendid trade.

—The First National Bank of Vancouver, B.C., is said to have sold the Michigan saw mill there to eastern parties, who will put in new machinery and increase the capacity to 100,000 feet per day.

—Jos. Howard, of Howard Station, Newfoundland, is organizing the St. George's Lumber Company. He owns 50 square miles of timber lands on the line of the Newfoundland railway, and is building a large steam saw-mill.

—The insurance appraisers have fixed the insurance losses of the Hull Lumber Company, as a result of the recent fire, at \$58,000. This does not cover the loss on lumber sold, but simply the lumber in their yards which had not been contracted for.

Kalte & Teshemasher, proprietors of Port Elgin Iron Works at Port Elgin, Ont., have asked the corporation for a loan of \$5,000 and exemption from taxation for ten years. In return they agree to put in a plant for the manufacture of wood-working machinery.

The W. C. Edwards Lumber Company, of Ottawa, have secured control of the Capital Planing Mill Company and the Ottawa Specialty Company, and will in future carry on the business conducted by these two concerns. They will install considerable new machinery.

—Dr. W. Stewart Webb is said to have completed one of the largest jobs of tree planting ever undertaken in the United States by one man. He set out 155,000 white and Scotch pine on his Shelburne farms in Vermont, and it took 400 men a whole month to do the work. The trees are two or three feet high, laid out in 24 groves. Drives have been laid through them in two places, the rest being accessible only on foot. About 12,000 of the trees form a covering especially for pheasants. About 50,000 smaller trees have since been planted. The trees came from Illinois, and cost, with the planting, \$50,000.

—The following statistics are furnished by R. J. Skinner, timber inspector for British Columbia, and are for the fiscal year ending June 30th: There were collected in royalties on cut timber during the last twelve months \$77,000, an advance of \$15,000 over the previous year, while the estimate was exceeded by \$7,000. There were no returns from the Cowichan or Chemainus mills, as they cut off the E. & N. railway reserve. During the year 50,000,000 feet of non-royalty producing timber was cut. In 1896-97 timber royalties were estimated at \$50,000 and \$52,000 was collected. In 1897-98 royalties were estimated at \$55,000 and \$57,500 were collected. In the following year the estimate was \$60,000 and \$65,000 was collected, while in the 1899-1900 the estimate was \$70,000 and \$77,000 was collected.

—Chief Game Warden Tinsley is trying to lessen the number of outbreaks of forest fires by sending out the following rules for campers on the public domain:— "Never build a fire where its flames can communicate to grass or brush or branches. Never build a fire without first noticing the lay of the land with respect to controlling it after it is kindled. Never leave camp for the day with the fire to burn unattended. Extinguish it thoroughly.

Under no circumstances, when moving camp, leave the fire to burn or to smoulder. Put it out. To extinguish a fire built upon the ground, where there is turf or the roots of trees in the soil, pour water upon it until the ground is thoroughly soaked; then dig around about and well outside the circumference, throwing the earth in toward the centre, and then wet it down again."

CASUALTIES.

—While working at E. P. Hoar's saw mill at Moncton, N. B., Chas. Claire was severely crushed by a log, and at last report was in a precarious condition.

—C. W. Bubar, manager of the Columbia River Lumber Company's logging operations, was accidentally drowned on July 5th while attending to his duties at Cedar Creek, B.C.

—On July 6th the heading jointer in the Sutherland & Innes' mill at Alvinston, Ont., burst, seriously injuring a number of workmen. Daniel McLeod had his skull fractured and was not expected to recover.

Samuel Howard, who was injured in a saw mill at Powassan, Parry Sound district, died at the General Hospital in Toronto a fortnight ago. Howard was cutting a log when the gear of the saw became deranged. The log was thrown from the carriage and pinned deceased against the wall of the building.

PERSONAL.

The death took place last month of the wife of Joshua Prescott, jr., the well known lumber merchant of Sussex, N.B.

Mr. L. H. Hamilton, Land Commissioner of the Canadian Pacific Railway, has returned from Cuba, where he devoted himself to prospecting certain timber and mineral fields in which Sir William Van Horne and other Canadians are understood to be interested.

Mr. Robt. Dollar, of San Francisco, Cal., was recently on a visit to the East. Mr. Dollar was at one time engaged in lumbering operations in Ontario, where he has many friends. He visited Camden, N.J., and placed a contract with the New York Shipbuilding Company for the construction of a steel steamer of 5,000 tons capacity.

Mr. James Sharpe, of Burke's Falls, Ont., has recently returned from British Columbia. Mr. Sharpe has decided to erect a large shingle mill at New Westminster, on the Fraser river, and will put in four Dunbar shingle machines manufactured by Alex. Dunbar, of Woodstock, N.B. Mr. T. B. Tait, late of Burke's Falls, will be the manager of the new concern.

Mr. David Bell, formerly one of the best known lumbermen of Canada, died in New York on June 29th. Mr. Bell went to Pembroke, Ont., in 1842, and after engaging some time in the boot and shoe business, entered into partnership with his brother John and conducted a large lumbering business. He also entered into partnership with Mr. A. T. White and Hon. P. White, and afterwards with Mr. W. Hickey.

CANADIAN MANUFACTURERS' ASSOCIATION'S TRADE INDEX.

The Canadian Manufacturers' Association have prepared a classified list of members of that organization for circulation in foreign countries, with a view to the promotion of Canadian trade. It is to be regretted that this pamphlet should have been titled "Canadian Trade Index". The title is misleading, conveying as it does the impression that the book is an index to manufacturers in all lines in Canada, instead of which it is, as stated, simply a list of members of the Canadian Manufacturers' Association, and comprises but a small proportion of the total list of manufacturers of the Dominion. It is consequently misleading and calculated to give foreigners the idea that as a manufacturing country Canada occupies an unimportant position. True, it is stated in the preface that the book "is by no means a complete directory of the manufacturers of Canada and comprises only those who have formed themselves into a voluntary association for the purpose of advancing as far as possible the manufacturing interests of the country as a whole". This statement, however, being printed in small type, is likely to be overlooked. It is very desirable that a work of this kind, designed to be distributed abroad, should be of a more comprehensive character, and should properly represent our manufacturing resources.

OBITUARY.

JAMES KING.

The late James King, of Quebec, mention of whose untimely death was made in our last issue, was born at St Antoine de Tilly, Lotbiniere county, on February 4, 1848. He was the youngest son of the late Chas. King, of Sylvester, Megantic, and received his early education at Lennoxville, taking the degree of B. A. in 1867, and that of M. A. in 1873 at the University of Bishop's College. In early life Mr. King turned his attention to commercial pursuits, notably that of lumbering, and at the time of his death was a member of the timber and exporting firm of King Bros., who are among the largest operators in the province of Quebec. They have mills at various points in the eastern townships, and in this way have contributed much to the development of Lower Canada.



THE LATE JAMES KING.

King Bros. are also largely interested in the asbestos industry, and the late Mr. King was vice-president of the Mining Association of the province of Quebec. He was also a director of the Union Bank of Canada.

In 1892 Mr. King was elected to the Provincial Legislature by the conservative party as representative of the county of Megantic, and proved a valuable member of parliament. In religion he was a member of the Church of England.

The deceased was buried at Lyster, and as a graceful tribute of respect nearly every door on the route from the station to the cemetery bore a wreath.

HON. A. R. DICKEY.

The news of the drowning of Hon. A. R. Dickey, which occurred on July 3, was a great shock to the residents of Amherst, N. S., and to many friends of the deceased throughout the Dominion. Hon. Arthur Rupert Dickey was the second son of Senator R. B. Dickey. He was born in Amherst, N. S., in 1854 and educated at the College school at Windsor, N. S., and at the Macauley University, where he graduated in 1875 with the degree of B. A. He was called to the Nova Scotia bar in 1877 and practiced law until the time of his death. In July, 1888, he was returned to the House of Commons as the Conservative representative for the riding of Cumberland. He held three successive portfolios in the late Conservative government, being appointed Secretary of State in 1894, Minister of Militia in 1895, and Minister of Justice in 1896.

Deceased was connected with several business enterprises, and had lately devoted considerable attention to the lumber business, being the owner of valuable timber properties.

Amongst the numerous processions in Liverpool on the occasion of the celebration of the occupation of Pretoria was a grand patriotic exhibition on a large scale by Joseph Owen, Ltd., timber merchants, Bootle. There was a fine representation of an armour-clad train filled with soldiers dressed in khaki. A great swarm of soldiers, some in khaki and some in red, followed the procession. It wound up with a triumphal car made of raised terra-cotta lorry covered with cloth and decorated with flags. Many military figures were seated in the car, and in the place of honor, was a living effigy of John Bull.

A CORRECTION.

OTTAWA, ONT., July 9th, 1900.

The Editor of the CANADA LUMBERMAN:

DEAR SIR,—My attention has been called to the concluding portion of the paragraph at the bottom of the first column page 12 of the July number of the CANADA LUMBERMAN, which reads, "It is understood that the Ottawa Saw Works, whose factory was burned in the recent fire, are not likely to rebuild," and I therefore write to say that you have been misinformed, as the factory of the Ottawa Saw Works is about two-thirds rebuilt at this writing, and by the time you go to press will have been completely finished.

The recent disastrous fire did, unfortunately, completely demolish our factory, and necessitated a dissolution of partnership, but the business is being continued by myself; and when the new factory is completed, which will be more than double the size of the old one, a limited

company will be formed with a capital of \$100,000 in order to extend the business and meet the increasing demands which have been made upon us. The new company will equip the works with the most modern machinery, some of which will be imported from Sweden, so that when we are ready for work, which will be some time in October, our capacity for band-saws will be equal to the combined capacity of all our Canadian competitors put together; whilst our other departments manufacturing gangs, circular and other saws will be proportionately increased.

Associated with myself in the general management of the new company, especially in the band-saw department, will be the head saw-filer of one of the largest, if not the largest, saw mills in the Dominion; a man of great experience and foresight, whose intuitive knowledge of the requirements of band-saws and band-sawing have placed him at the head of his profession, so that the users of band-saws and proprietors of large saw mills will have

the added confidence of knowing that every band-saw which leaves our works will have been personally overhauled, inspected and examined by a thoroughly practical mill man. The other parties associated with me will be prominent New York business men, who will provide the necessary capital, in addition to which the Sandvik Steel Works of Sweden, from whom we have secured the sole and exclusive right to use their saw steel in the Dominion of Canada, have determined that, inasmuch as the Ottawa Saw Works made its reputation for band and gang saw by using their steel, the future of the new company shall be well taken care of; hence, the prospects are very bright indeed, and we hope, therefore, that you will publish this letter so that those who may have read the paragraph above referred to may see that the source of inspiration was, to say the least, erroneous. I remain,

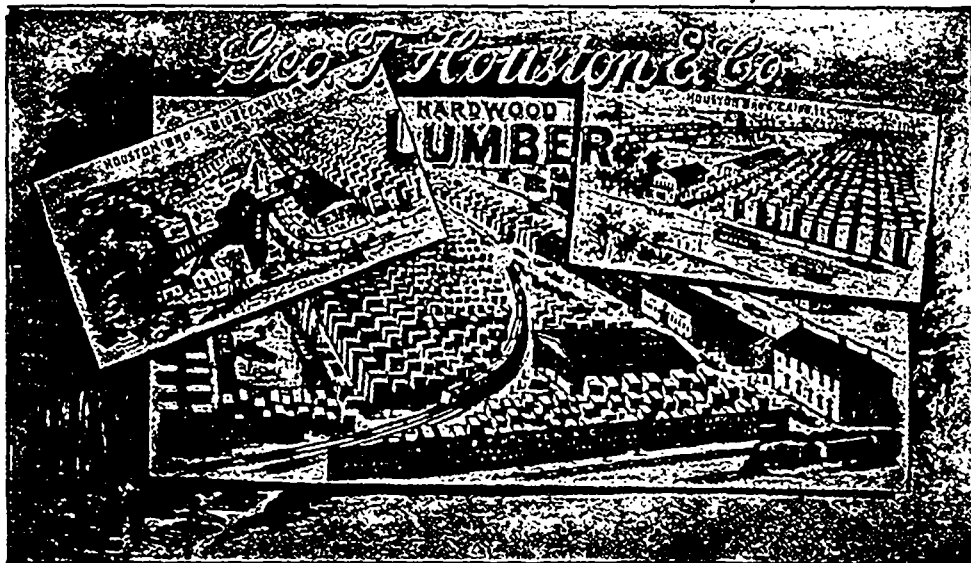
Very respectfully,

P. M. FEENEY,
Ottawa Saw Works, Ottawa.

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- GUM
- ASH
- CYPRESS
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WOOD PULP ~ DEPARTMENT

THE ST. JOHN SULPHITE FIBRE COMPANY.

The manufacture of pulp in New Brunswick is to-day interesting capitalists more than ever before, and one of the reasons might be said to be the great success attending the operation of the new mill of the St. John Sulphite Fibre Company at Mispec, some six miles from St. John, N. B. This mill is situated on the Bay of Fundy, at the mouth of a small stream, where schooners may load the pulp to be taken to St. John for trans-shipment to Europe. The wood supply for years will likely come from the Mispec stream, but the output of the St. John river is almost as easily available, and that from the numerous streams emptying into the bay can be easily towed to the mill.

The buildings are brick and are situated on the bank of the Mispec river. Nearest the stream is a building with frontage of 430 feet and extending back 68 feet. Back of the wood room and above it is the acid system, which extends back about 120 feet. This structure is 150 feet in length. Above this department is the sulphur room 120x40 feet. The digester building occupies a still higher level and is 130x36 feet, the main portion being 100 feet high. The blow tank building and filtering plant are between the digester building and the paper-making department. It is one story above the machine room and one floor below the digester department, which places the blow tank sufficiently below the digesters to cause the pulp to flow by gravity into them from the digester.

The logs are taken up into the wood room by means of a patent haul up, and cut by two steam jump saws into lengths of 2 feet 6 inches. These pieces are carried by a conveyor to the barking machines. From the barkers the cut up logs are moved along on a conveyor to the chippers. Immediately under the chippers and on the floor beneath are chip breakers. The small pieces of wood next pass through the shaker, which separates the sawdust and slivers from the chips and deposit the latter on a conveyor which carries them up to the chip loft in the digester building. The chips are placed in the digesters, two immense iron tanks, each capable of turning out ten tons of pulp at each cook. The digesters are filled with chips and 20,000 gallons of sulphurous acid put in. Then the digesters are made steam tight, and steam admitted at the bottom and the temperature brought up to the desired point and kept at that till the wood is cooked into pulp, which occupies from 10 to 14 hours. The pulp flows from the digesters to the blow tanks, which are 20 feet beneath the bottom of the digestors. These tanks are hard-pine vats, 28 feet long and 18 feet in diameter. The pulp is washed in them and acid and resinous matters removed. Then it goes to the pulp opener, where the fibre is opened up, and next to the riffler or sand trap to be further cleaned, and after to the stuff chest in the machine room. From this chest the pulp passes on to the first screens and from them to the paper machine, which run it out and dry it in sheets similar to paper. At the end of the last mentioned machine there is a reel which winds the pulp up into rolls. The slitting and cutting machines having done their part, it goes into the baling press, where it will be made ready for shipment.

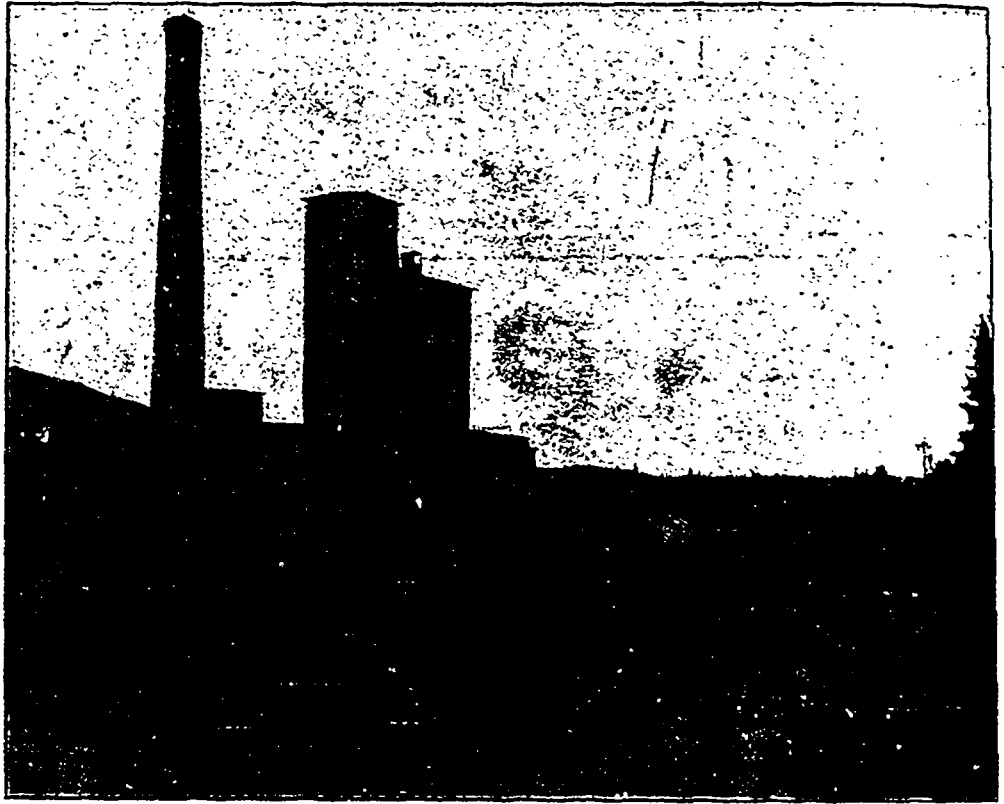
There is ample water power to run the mill. The stream has been dammed at a spot where the greatest power possible to be obtained can be had. The dam, which is built of solid masonry, is 54 feet high and 240 feet long at

the top. Its length at the bottom of the gorge is 80 feet. It is 120 feet wide at the base, and tapers off to eight feet at the top. The stone work is faced with timber on the water side. The flume, which is made of iron, is five feet in diameter. It leads from the dam on the surface of the ground down to the water wheels in the mill, and is 830 feet long. There are four water wheels in all, one for each department, which will develop 600 horse power. In addition to this the company have a 250 horse power compound steam engine as an auxiliary in case the steam gets blocked up at any time. In the boiler room they have 500 horse power of steam boilers for use in the cooking and drying of the pulp.

A most complete electric lighting plant has been put in.

The daily capacity of the mill is 30 tons, but the building is so arranged as to permit of doubling the output.

Mr. M. F. Mooney, of the firm of B. Mooney & Sons, contractors and builders, St.



PULP MILL OF THE ST. JOHN SULPHITE FIBRE COMPANY AT ST. JOHN, N. B.

John, N. B., who had previously had much experience in the building and operation of pulp mills, recognized the advantages of the site, and about two and a half years ago went to Scotland to float the enterprise. This was easily accomplished, and the mill was built entirely by Scottish capital. Its directors at present are: John Galloway, of Leggie, chairman; Chas. Anderson, of Fitzkil, Leslie; Wm. Dixon, of Markinch, and Philip Grosset, of Leven, the last of whom is managing director. Mr. M. F. Mooney and Mr. Grosset are the managers in St. John.

Arrangements are now under way for the securing of capital from Buffalo and New York for the Blanche River Pulp & Paper Company, which received a concession from the Legislature at last session, and it is the intention to push on the work at once should negotiations prove successful.

THE CUSHING SULPHITE FIBRE COMPANY

The Cushing pulp mill, as it is commonly called, owned by the Cushing Sulphite Fibre Company, stands on Union Point, which juts into the St. John river just above its mouth. A few stones' throws from the big suspension and cantilever bridge at St. John, N. B. Just in front of the mill site are the famous rapids where the St. John river rushes in sections rapids seawards at low tide, and the water of the Bay of Fundy stream inland at high tide. The descent is equally tumultuous. Rivers that break their monotony by rushing up river in full flood half of their time are indeed plentiful phenomena which are seldom seen elsewhere.

The Cushing mill is nearing completion, and is expected that by the first of September it will be in operation. It has been erected with an expedition, and it sprawls and towers over Union Point in such magnitude as to give rise to wonder at its early completion. Its location at the mouth of a river down which comes more lumber than in almost any other river in Canada. It is also the first pulp mill on the river, though there are several others in the province, and more are projected.

St. John has for years been one of the great lumber manufacturing centres of Canada. The St. John river drains some 30,000 square miles of timber lands, which doubtless will supply material for pulp for many generations. The Cushing lumber mill, which is just beside

pulp mill, is known as one of the most modern in equipment, and its output has been something enormous. It will now serve a second purpose in catering to the needs of its new rival, and the refuse material will be utilized in the making of pulp instead of being destroyed as formerly. The two mills will be worked in conjunction, the pulp mill being designed and erected so as to take advantage of the output of the saw mill. Horse carriers transport the refuse from the lumber mill across the yard to the furnace of the pulp mill, and much that is useless as lumber and might have been burned, will find its way into the pulp mill.

The machinery in the pulp mill will be operated largely by electric power, which will make a great saving in belting and mechanical power transmission contrivances. A splendid electrical system is being installed, which will form one of the best electrical plants for manufacturing

AUGUST, 1900

during purposes in the maritime provinces. The buildings stand upon sloping ground, giving an advantageous location. Some hundreds of yards of wharf stretch along the waterfront, affording excellent shipping accommodation. The sizes of the different buildings are as follows: Machine house, 180 x 66 feet; screen house, 144 x 60 feet; blow-off house, 144 x 30 feet; digester house, 144 x 28 feet; wood house, 131 x 45 feet; boiler house, 131 x 75 feet; engine house, 50 x 60 feet; chemical house, 156 x 50 feet.

The mill is to be of a capacity of 50 tons per day, requiring in its manufacture an equivalent of some 150 cords of wood per day. The building is so adapted that the plant may be increased to a capacity of 100 tons.

A few details of the fittings and machinery will interest our readers, though a complete description is not now available. In the machinery house is a Fourdriner pulp machine built by the Stratherns, of Edinburgh. It is 158 inches in length and has 25 drying cylinders. The screen house contains 10 Wendal screens, built by Messrs. Wendal, of Bury, England. There are three blow-off tubs, having a capacity for one digester. Gravitation carries the pulp from these tubs to the screens. The three digesters each have a capacity of 10 tons of pulp. They were made in Liverpool by Fawcett, Preston & Co., Ltd.

In the wood room are ten American and eight English barking machines. The chipper was made in the Glorsop Iron Works. Knots are to be removed by means of automatic screens which separate them from the chips. The plant will be run on the vat system.

The engines which provide the power are of 200 h.p., and were supplied by the Salford Iron Works, of Manchester, Eng. This firm also supplied the electrical machinery, including generators and dynamos. The boilers are twelve in number and these supply the steam for the

digesters as well as the engines. The conveyors were furnished by the Jeffrey Manufacturing Company, of Columbia, Ohio. Wm. C. Hill & Co., of Kalamazoo, Mich., supplied the log stop and loader and the two cylinders for the steam jump saws. The St. John Iron works supplied the log bed and considerable of the shafting. The larger part of the shafting and pulleys came from the Phoenix Foundry, of St. John, owned by the Jas. Fleming

with the plant was a few weeks ago badly shattered by lightning, and as a consequence will probably be taken down and rebuilt. It was an 11-foot chimney of a height of 200 feet, and said to be the tallest in Canada. Though insured, it was not equipped with lightning rods, and the electrical shock cracked it in places, for a distance of 70 or 80 from the top.

The saw mill of Andre Cushing & Co. cuts about 30,000,000 superficial feet of lum-



PULP MILL OF THE CUSHING SULPHITE FIBRE COMPANY AT ST. JOHN, N.B.

ber annually. The firm ship to Great Britain, Australia, Spain, Canary Islands, Argentine Republic, South Africa and the United States.

The construction and equipment of the mills is in the hands of the well known firm of B. Mooney & Sons, of St. John, the brick coming from their brick yards a few rods distant. Nearly 3,000,000 bricks have so far been laid, and the buildings complete will contain 3,500,000. Mr. W. K. Bradbury is the superintendent and Mr. C. A. Allen the engineer of the works.

The magnificent brick chimney in connection

with the plant was a few weeks ago badly shattered by lightning, and as a consequence will probably be taken down and rebuilt. It was an 11-foot chimney of a height of 200 feet, and said to be the tallest in Canada. Though insured, it was not equipped with lightning rods, and the electrical shock cracked it in places, for a distance of 70 or 80 from the top.

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ST. JOHN SULPHITE FIBRE CO., LTD.
ST. JOHN, N. B., CANADA

MESSRS. B. MOONEY & SONS.

Elsewhere in this issue will be found illustrations of two large pulp mills—that of the St. John Sulphite Fibre Company, Limited, at Mispec, about six miles from St. John, N. B., and that of the Cushing Sulphite Fibre Company, Limited, in St. John. We regret that we cannot make the illustrations of this article complete by the addition of another—that of the pulp mill owned by the Maritime Sulphite Fibre Company, Limited, of Chatham, in the same province, the firm of B. Mooney & Sons being the builders of these three mills. By their work in connection with them they have not only added to their reputation as contractors and builders, but have fairly established themselves as the largest pulp mill building concern in the Dominion.

At a time when pulp and its manufacture is creating interest in Eastern Canada as it never did before, and when new pulp projects are coming forward in so many directions and in such promising manner, it is most opportune to give our readers a short sketch of the firm which is so well able to carry out from start to finish the building, equipment, and even operation, of the largest mills. A conception of the magnitude of the mills of the Cushing Sulphite Fibre Company and the St. John Sulphite Fibre Company may be obtained from the illustrations. The Maritime Sulphite Fibre Company have the oldest and one of the largest mills in the Maritime Provinces, and it was in the construction of this mill that the firm gained its first experience in the building of pulp mills. It is not as builders alone that the firm may be spoken of, but as practical pulp mill operators, for Mr. M. F. Mooney can operate



MR. PATRICK MOONEY.

a mill when erected as few others can. He knows every detail of the manufacture. He is at present manager of the Mispec mill, and its success is beyond dispute in every way.

To mention a few of the other large contracts fulfilled by the company in late years, one may speak first of the large Gibson cotton mill in Marysville, N. B., which is one of the largest in Canada, occupying as it does an entire block, with a front of 418 feet, being four stories, with deep basement, and containing some 8,000,000 bricks.

Centenary church, one of the finest Gothic edifices in the Maritime Provinces, the churches of St. John the Baptist, Holy Trinity and St. Peters, all in St. John, were built by this firm. Miserecordi hospital, Aberdeen school, the elec-

tric light station, Pender's nail works, and the new high school, in St. John, are from their hands. Of outside work, to speak briefly and of but a single instance, they built seventeen large brick buildings in Eastport, in the State of Maine, in one summer—that of 1887.

We present the portraits of the two senior members of the firm, Messrs. Patrick and Michael Mooney. Mr. Edward Mooney is a third partner, all being sons of the lately deceased Bernard Mooney, whose name the firm still bears.

Bernard Mooney came to this country in 1861, from the south of Ireland, and after a short time in Musquash, near St. John, he moved to



MR. MICHAEL MOONEY.

Carleton and then into the city. For some years he worked at his trade as stonemason, which he had learned in Ireland. After the great fire in St. John in the memorable year of 1877, he opened a brick yard in Fairville, a mile from the city, and engaging in contracting had no small share in the rebuilding of the city after the fire in which nearly \$23,000,000 worth of property had been swept away. Nearly 200 buildings were erected under his direction in the few years following. His sons grew up in the business, were part and parcel of it, and since his death, in 1890, have carried it on with steadily increasing success, until now the concern is the largest building firm "down east."

The old brick yard has now an area of 10 acres, with all its plant lately remodelled and enlarged, so that it turns out about 50,000 bricks daily. It is but a stone's throw from the new Cushing mill into which so many of its bricks have found their way. Its clay supply is unexhaustible, and it seems destined to aid in the construction of many other mills.

The Messrs. Mooney have always been well known in the community and are held in high esteem by their fellow citizens.

PULP NOTES.

It is said that Mr. Menier purposes building pulp mills on Anticosti Island. He owns 2,500,000 acres of excellent pulp wood land.

Olin Scott, builder of pulp machines, Bennington, Vermont, recently shipped six screens to Hamelin & Ayres, of Lachute Mills, Quebec.

Capt. L. F. McKenzie, of the firm of McKenzie Bros., shippers and traders at Vancouver, B. C., has just returned from a trip up the British Columbia coast, his mission being to select a suitable site for a pulp mill. Mr. McKenzie is understood to be acting for an eastern syndicate. He states that at the point selected there is an abundance of water power and raw material, and that the work of building will be commenced in a few weeks.

THE PILING OF PULP WOOD.

A correspondent asks the Paper Trade Journal the question: "What is the best outfit for piling pulp wood for winter use?"

The answer given is as follows: "Several appliances are in use for that purpose. The one seems to be a chain conveyor working in the bottom of a V-shaped trough. A speed of 60 to 100 feet per minute will enable two 80-foot logs to be carried up each sixty seconds. There must be a distributing carrier at the top of the hill along which the logs are to be distributed, and a man is necessary at the transfer from one conveyor to the other. There will also be necessary a gang of men to roll down and pile the logs after they are discharged from the conveyor. To handle two logs per minute, at least four men will be necessary, and they will have their hands full, too. This means that at least six men will be needed on the piling ground, besides those engaged in floating logs to the carrier. Again, with this device, the carrier must extend to the extreme point to be covered by the piling ground, and cannot be changed except at great expense. There is another way of piling logs, viz., the aerial cable. When this method is employed, a scow is fitted with a hoisting engine and put in the water among the logs. A pair of shears on each bank of the river serve to sustain the cable, which is anchored at convenient places beyond the shears. As the piling proceeds, the shear on the hill is carried right up on the top of the log pile, thus enabling the logs to be piled much higher with quite a short set of shears. A double cable is used, both ends being passed to winding drums on the scow, and suitable shears being supplied on the shears. From two to six logs can be carried at the same time on the carrier, chains being passed around the bunch of logs which the shipper decides can be handled at one load without trouble. Two men have plenty of time to attach the chains to logs, as well as to bunch them, while two more can do all the floating and rafting necessary. One man can handle the boiler and the hoisting engine, making with two men at the top of the log pile, seven hands to do the whole trick. A single cable arrangement of this kind will easily handle one or two logs per minute, where they range from 15 to 60 feet in length. But the beauty of this arrangement lies in the fact that no piling of the logs is necessary after they have been dropped by the carrier. The man on the log pile has the load dumped just where he wants it, and the engine pulls the chains out from under the bunch. That is the last of it. The logs do not have to be touched after thus being left, and the whole business can be easily and quickly shifted along the river as often as a pile is finished. An actual count of logs handled by one of these rigs showed the handling of nine loads of logs in twenty minutes, aggregating twenty-five logs in nine loads. This is better than two logs per minute, at a less expense than with the chain conveyor, to say nothing of the saving of wages in the piler's gang.

It is expected that the new pulp company at Lorne, Que., will commence operations next month.

The Quebec Government has sold to American purchasers two valuable water powers at Lake St. John. The purchasers bind themselves to erect within four years pulp and other establishments at the Grand Discharge to the value of \$4,000,000.

B. MOONEY & SONS

— St. John, New Brunswick

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The Maritime Sulphite Fibre Co., Ltd.

The St. John Sulphite Fibre Co., Ltd.
(Illustrated on another page)

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B. MOONEY & SONS

ST. JOHN, N. B., CANADA

DEMAND FOR CANADIAN PAPER AND PULP.
LONDON, E.C., JUNE 30TH, 1900.

Editor CANADA LUMBERMAN:

DEAR SIR,—I am quite convinced that Canada has not yet grasped the importance of assiduously cultivating the English market in paper. She has given signs occasionally that she intended turning her attention to us, and has even gone so far as to ship consignments of News at intervals, just to show us, as it were, what she could do if she chose to grapple with the business seriously.

I have watched with interest these spasmodic samplings, and have had not a little direct experience of them. In fact, so much have I been impressed with the idea of Canada's ability to do an immense business here that I have striven hard for two years to urge upon the leading makers in Canada the importance to them of this market. With your permission, I should like to give those interested some facts as to the magnitude of possible business and other useful particulars.

English mills can only turn out a small proportion of the daily demand for "News." Of box boards they make none of the class made from wood pulp used in such large quantities here, present supplies coming chiefly from Austria, Finland and other "Continental" countries in higher qualities, and "News" boards chiefly from the States, but these are sent only at rare intervals now.

It is computed that we use from 7,000 to 10,000 tons of "News" every week, and of this quantity English mills cannot produce more than a third. It is scarcely necessary to add that the demand increases at a rapid rate, and that English mills are doing little to increase their output. In fact, the tendency is quite in the other direction. English makers of "News" find they can turn their machines to more profitable uses. The making of glazed and unglazed printings pays better than "News," and the future will see less and less "News" made here and more

and more imported. The question is, will Canada wake up and step into the arena and fight for her position. Canadian makers can sell "News" paper here at prices which mean ruination to home makers, and still make a good profit. There is no reason for this to be done, a good price can be got for Canadian News, and whoever cuts prices to a lower price than English and Scandinavian makers usually quote, is needlessly throwing away profit. Personally, I think Canadian News such as has recently been sent here should fetch the highest market quotations. It is much superior to any European make, and most large buyers here would be willing to pay as much for Canadian News as for English.

The whole of the "News" trade in this country should in years to come be in the hands of Canada. There are other reasons besides her

natural position as mistress of vast timber limits to urge this. It is certain that England must look outside for her supply of pulp and "News", and if the mother can hand over her orders to her daughter she will naturally prefer to do so than to buy from alien sources.

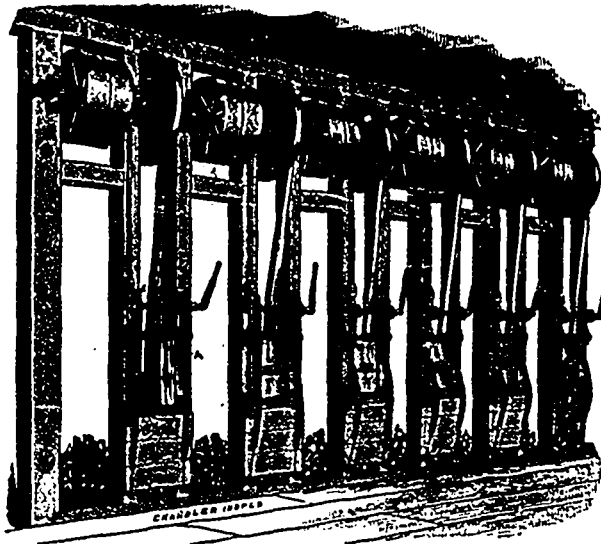
In box boards made from either mechanical or chemical pulp there is a very large business to be done, and Canadian mills as certainly should supply us with these as with "News."

Another time I may, if you will permit me, go more fully into the "board" question, also into the subject of better class wood pulp papers.

I shall be glad to give fuller information to any manufacturer and reply to any enquiries as fully as I am able. I am, Sir,

Yours truly,
GEO. MAWSON.

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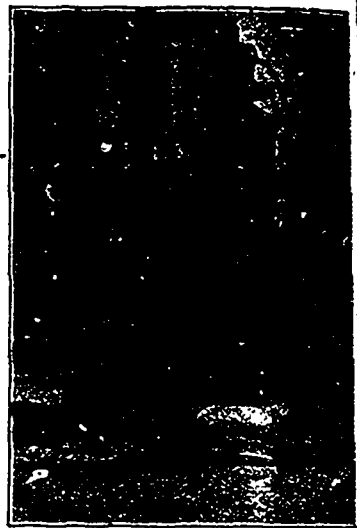
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AUGUST, 1900

CANADA'S COMMERCIAL AGENTS.

Following is the official list of Canada's Commercial Agents in Great Britain, British possessions and foreign countries:

- J. S. Larke, Sydney, N.S.W., agent for Australasia.
- G. Eustace Burke, Kingston, Jamaica, agent for Jamaica.
- Robert Bryson, St. John, Antigua, agent for Antigua, Montserrat and Dominica.
- S. L. Horsford, St. Kitts, agent for St. Kitts, Nevis and Virgin Islands.

Edgar Tripp, Port of Spain, Trinidad, agent for Trinidad and Tobago.

C. E. Sontum, Christiania, Norway, agent for Sweden and Denmark.

D. M. Rennie, Buenos Ayres, Argentine Republic agent for Argentine Republic and Uruguay.

In addition to their other duties, the undermentioned will answer inquiries relative to trade matters, and their services are available in furthering the interests of Canadian traders:

J. G. Colmer, 17 Victoria street, London, S.W., England

Thomas Moffat, 16 Church street, Cape Town, South Africa.

G. H. Mitchell, 15 Water street, Liverpool, England.

H. M. Murray, 40 St. Enoch Square, Glasgow, Scotland.

Harrison Watson, Curator, Imperial Institute, London, England.

There is nothing outside the four walls of his establishment which could be made so valuable to the business man as his trade paper. The man who knows so much that his trade paper is of no use to him is rapidly going to the rear.—Current Advertising.

TALISMANIC BELT DRESSINGS
WILL INCREASE YOUR POWER
Prevents Belts Slipping Prolongs Life of Belts



"WHAT WE'RE ON WE'LL CLING TO"
TALISMANIC BELT CLINCH—For Leather Belts
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Send for our Illustrated Catalogue and Price List of

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AN EXPERT ACCOUNTANT

Desires further work or permanent engagement. Thoroughly acquainted with lumbering and mining accounts. First class references.

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High Grade Silver

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For Band Saws

In various widths and thicknesses.
Price 90c. per ounce—Troy.

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We make a Specialty of all kinds Supplies for Lumber Camps.

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Please Mention this Paper when Corresponding with Advertisers.

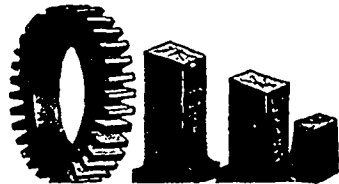
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SAMUEL ROGERS, President.

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SPECIAL SAW-MILLING



To Stand the Hardest Service—Heavy "Peerless"—"Capitol" Cylinder Renown Engine—"Atlantic Red" Summer and Winter Black—Cup Grease—Castor—Lard Oil—Cotton Waste.

Lumbermen's Supplies

Quotations and Samples promptly furnished.

A Specialty with us. We carry large stocks especially adapted for Contractors wants at Right Prices, and supply some of the largest firms in Canada.

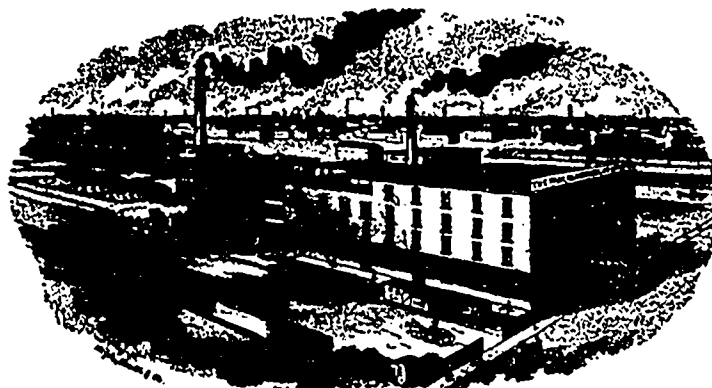
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Quality Finest.

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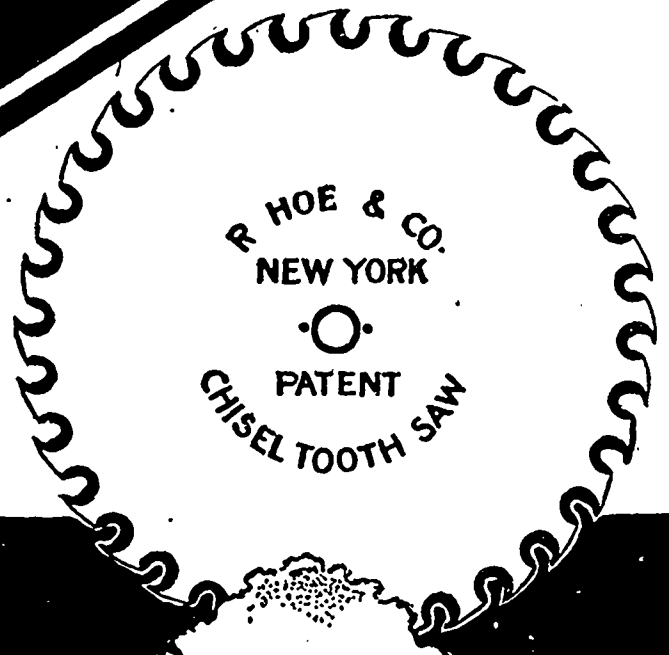
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8 YEARS ON THE MARKET.

THE HOE CHISELTOOTH SAW



IS ON THE HIGHEST
WAVE OF
POPULAR FAVOR 

Province of Ontario

CANADA

THE Province of Ontario offers one of the most inviting fields for the employment of capital and labor in the development of natural resources to be found anywhere in the world.

The extensive forests of White Pine in the northern districts have long furnished large quantities of Sawn Lumber, as well as Deals and Square Timber for the export trade. Birch Timber for cabinet making, Hemlock for bark and rougher building purposes, and especially Spruce and other woods suitable for the manufacture of pulp and paper, have come very actively into demand.

Extensive tracts, comprising thousands of square miles, covered with the foregoing and many other useful varieties of hard and soft woods, are still in the hands of the Crown.

The mineral wealth of Ontario is very great, but as yet is for the most part undeveloped. This Province is one of the two sources of the world's supply of Nickel, and a large portion of the Nickel Belt remains unexplored. The Goldfields of Northwestern Ontario are steadily growing in number of mines and value of output. Important developments are in progress in Iron ore, large bodies of both the magnetic and hematite varieties of which exist in various parts of the Province. Copper, Silver, Zinc, Graphite, Corundum, Talc, Actinolite, Mica and other valuable minerals occur in workable deposits, besides Marl for cement-making, Limestone, Building Stone, Granite, etc., also Clay for brickmaking and pottery. The Petroleum, Salt and Natural Gas industries of the Province are well known and extensive.

There are numerous water powers on the rivers of northern and northwestern Ontario, many of them of large capacity and suitable for manufacturing purposes. Crown leases on condition of actual development are obtainable on easy terms.

The Crown is owner of immense tracts of wild land, much of it suitable for agriculture. In fact, the unsettled part of the Province is of much greater extent than Old Ontario. In certain districts the lands are disposed of as free grants, in others sold for 50 cents an acre; and the occupants obtain their Crown patents upon completion of settlement duties.

Trout, Bass, Whitefish, etc., are abundant in the great lakes and inland waters, and there is plenty of game in the forests, such as Deer, Moose, Grouse, etc., which may be taken in the lawful seasons.

For fuller particulars, methods of acquiring title to land, timber and minerals, etc., also for copies of reports and publications descriptive of the newer regions of Ontario and their resources, apply to

HON. E. J. DAVIS,

Commissioner of Crown Lands,

Parliament Buildings, TORONTO, ONTARIO, CANADA



OUR EXTRA HAND-MADE AXE

This Axe stands better in frosty weather than any axe made. . . . Send for sample. Can supply any pattern.

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Having these Brands are a guarantee in themselves of excellence.

We make a point of making quick deliveries. All sizes up to 14 inch 4 ply stocked in Montreal and Toronto. Any belt made to order and shipped within twenty-four hour's notice.

"We have excellent results from your 'Lumber King' and 'Star' Brands. THE RATED COOP"

"Your Belting has given us uniformly good satisfaction."

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CAPITAL, \$1,500,000.00

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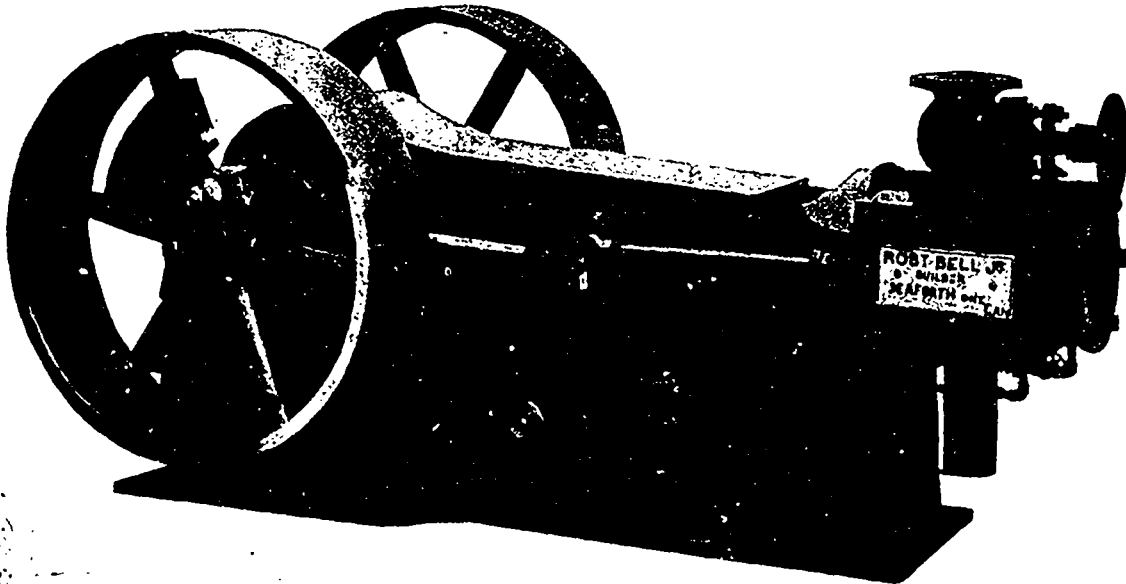
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ALSO

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Where the Highest Economy and Closest Regulation is required

Send for Catalogue and ask for Prices.

ROBT. BELL, JR., Seaforth Engine & Machine Works SEAFORTH, ONT.

THE PROVINCE OF QUEBEC CANADA



THIS particular portion of British North America might appropriately be called "The Land of the White Spruce," and in view of the rapid development of the Pulp and Paper Industry, merits marked attention from Capitalists interested therein.

Quebec Province will be a large producer of White Pine for many years to come, being by no means exhausted of this variety of timber, but the major portion of the Pine-bearing lands are under license.

The area of DISPOSABLE timber lands, principally Spruce-bearing, in round figures is, say 150 millions of acres; upon a great many of the rivers important water powers exist, capable of developing an enormous amount of energy for pulp-producing industries; labor throughout the Province is cheap; and facilities for inland transportation are excellent; in a word, Quebec Province can hold out to the Pulp and Paper Trade the most tempting inducements for heavy investments.

The Minerals of the Province are well worthy of attention; it is admitted that the Apatite and Asbestos of this country stand at the head of the list; the Province is rich in Iron, Magnetic and Bay ores being particularly abundant. The vast beds of Magnetic Black Iron Sand on the North Shore of the Gulf of St. Lawrence are receiving attention at the hands of experts, and may shortly be worked. Mica (Black, Amber and White), exists in abundance. The prospects of the Gaspé Oil Fields appear to be better than ever. Graphite, Copper, Gold and Silver are being exploited without any sensible diminishment, and the Building Stone and Brick-making industries continue to be as extensive as in the past.

The Province has at its disposal between 6 and 7 millions of acres of land surveyed and laid out for Colonization purposes, and offers excellent inducements to intending Settlers; the price per acre is, in the main, nominal.

The Fisheries of the Province have a world-wide reputation; the Cod, Herring and Mackerel fishing of the Gulf are very important and flourishing industries; the shore and inland Salmon fishing, especially the latter, are unsurpassed, whilst the Brook Trout fishing on inland rivers and lakes, taken as a whole, is unequalled anywhere in the world.

As regards Game, Quebec also takes a prominent and leading position; the greatest of the Deer family (the Moose) is increasing in numbers all over the Province; the Caribou and Red Deer are found in profusion. Migratory Feathered Game, Geese, Ducks and Shore Birds seem to be as plentiful as ever, and the same may be said of the Ruffed Grouse throughout the length and breadth of the Province.

Fur-bearing animals are as numerous as heretofore, and it is expected that the Beaver, which has received special protection of late years, will rapidly increase in numbers and once more be a factor in the Fur trade.

Intending Investors, Settlers, or people interested in Fish and Game, can obtain particulars and information by addressing

HON. S. N. PARENT,
Commissioner of Lands, Forests and Fisheries,
QUEBEC, P. Q., CANADA.

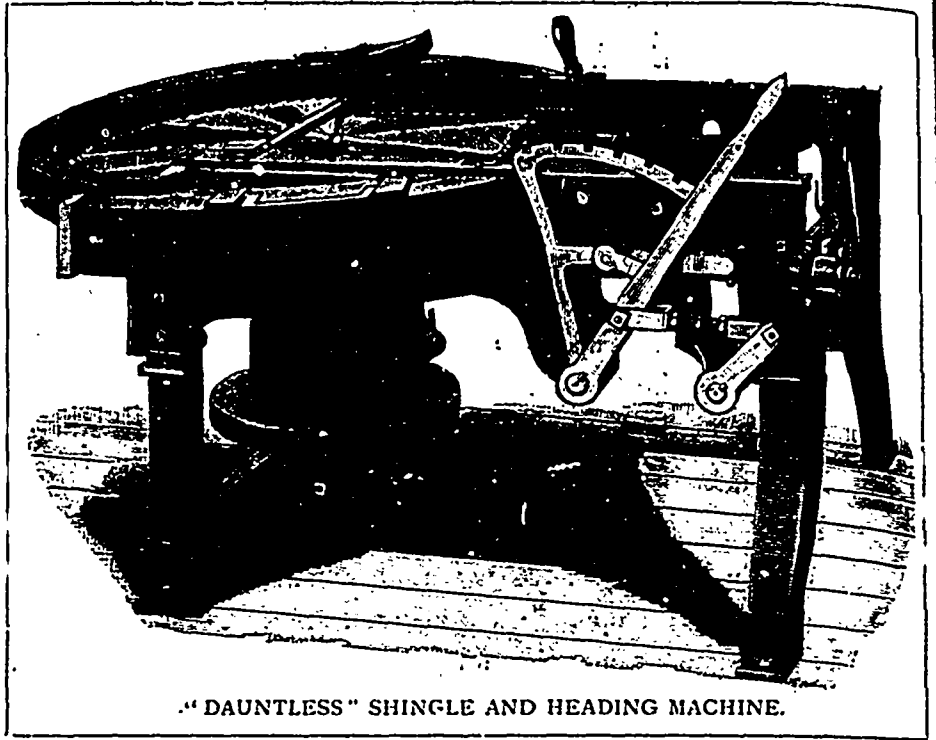
DRAKE'S PATENT "DAUNTLESS" SHINGLE AND HEADING MACHINE

CAPACITY, 30,000 TO 50,000 PER DAY

I am making a specialty of this machine and quoting reduced prices for cash or short terms of payment.

I guarantee them strictly high class in every particular.

I build complete outfits of Saw and Shingle Mill Machinery—furnish plans and drawings, and when desired send competent millwright to superintend erection of mill.



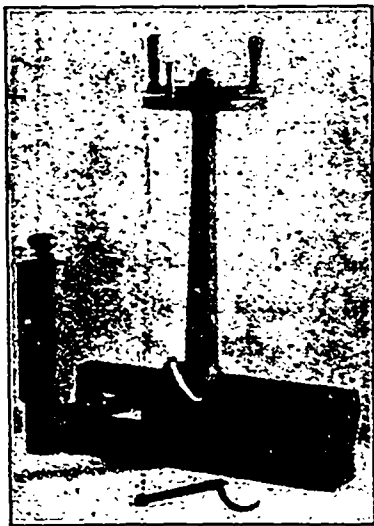
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F. J. DRAKE - Belleville, Ont.

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Embodies all of the Advance Features of the heavier sizes. It is Light, Rigid and Durable. The carriage excels for handling long timber—can't cut anything but parallel with it, unless you want to.



IMPROVED FAIRBANKS ROLLER GAUGE.

NOTICE this "Fairbanks" Roller Gauge, which is supplied with all Lane Mills. Can be used on any Mill. The same applies to the "Gurnsey" Saw Guide here illustrated.

We don't like to miss a chance of telling water power owners about

**"Leffel," Vulcan"
and "Perfection"**

TURBINES

They've never gone back on us, and are guaranteed equally faithful to all purchasers. The same catalogue that describes these Turbines, and gives their tal led powers under various heads contains interesting matter on *Saw Mills, Lath and Shingle Mills, Pulleys, Gears, Hangers, Etc.*

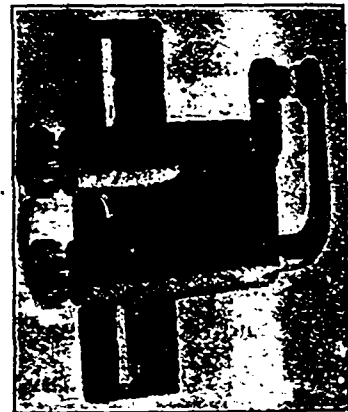
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GURNEY SAW GUIDE.

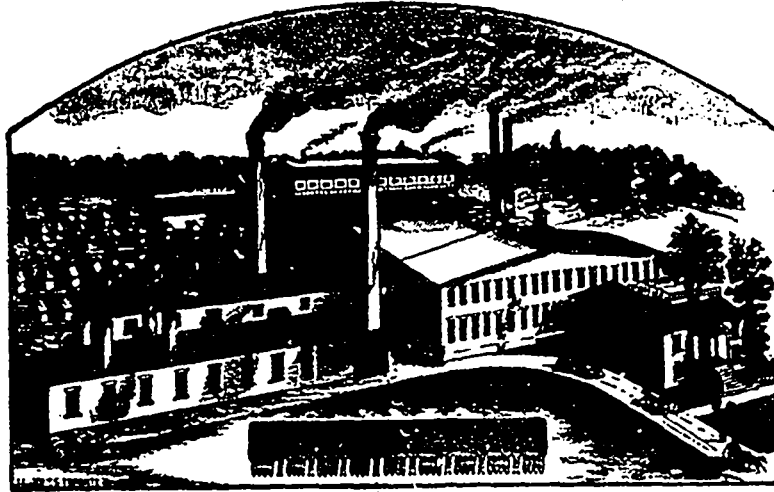
THE MAPLE LEAF SAW WORKS



Shurly & Dietrich GALT, ONT.

Manufacturers of

- CIRCULAR SAWS
- CANG SAWS
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GROUND THIN ON BACK

- Save Labor
- Save Gumming
- Save Time
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This Saw Stands Without a Rival

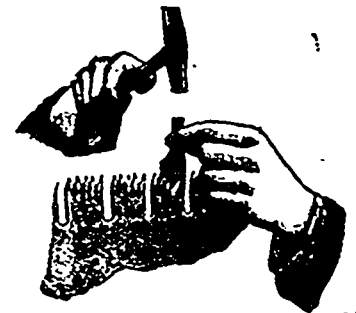
AND IS THE
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Its Superiority consists in its Excellent Temper. It is made of "Razor Steel," which is the finest ever used in the manufacture of Saws. We have the sole control of this steel. It is tempered by our secret process, which process gives a keener cutting edge and a toughness to the steel which no other process can approach.

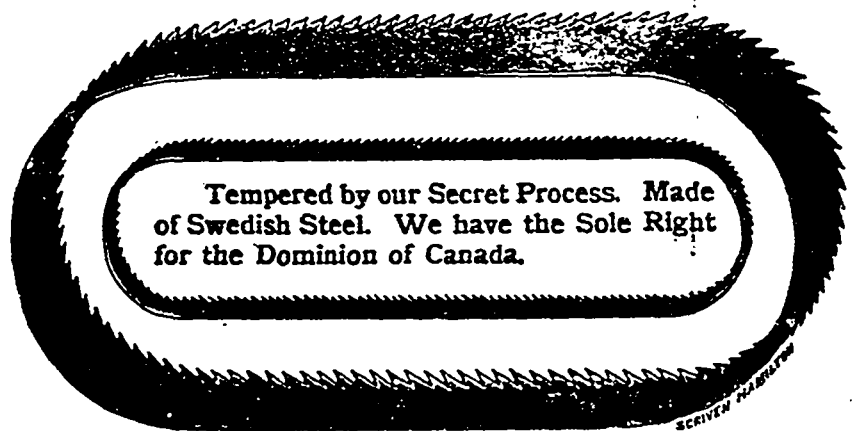
Maple Leaf Saw Set

MANUFACTURED BY
SHURLY & DIETRICH, Galt, Ont.

Directions.—Place the set on the point of tooth, as shown in the accompanying cut, and strike a very light blow with a tack hammer. If you require more set, file the tooth with more bevel.
If you follow directions you cannot make a mistake. Be sure and not strike too hard a blow, and it will set the hardest saw. On receipt of 40 cents we will send one by mail.



We are the only manufacturers in the world who export Saws in large quantities to the United States.



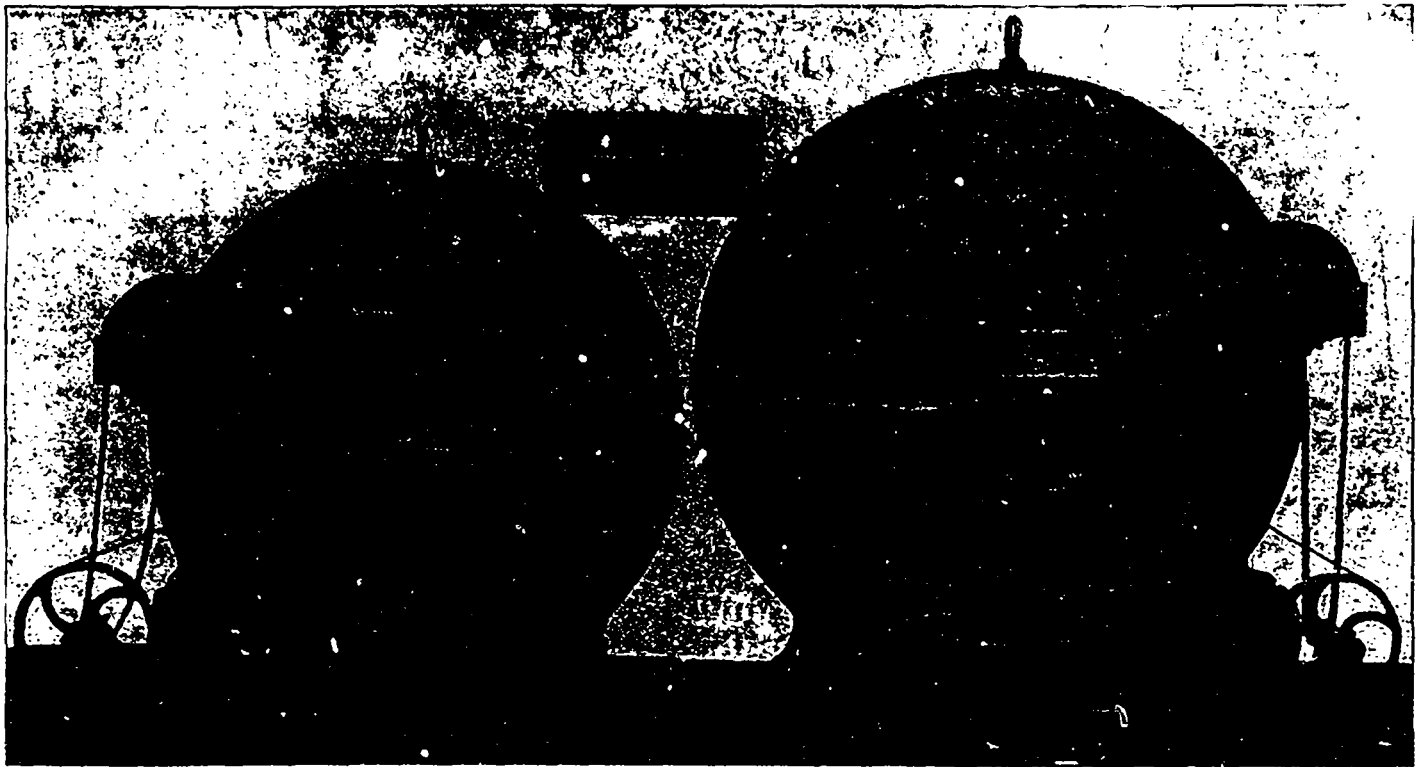
We Manufacture

HIGH GRADE BAND SAWS

of All Widths and Lengths.

These Saws are made of Refined Swedish Steel imported direct, and tempered by our Secret Process; for Fine Finish and Temper are not excelled.

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Large range of
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52" Banks to
Medium Diameter
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96" Banks Slabs
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Cases faced, making perfect fit and tight joint—bottom of bearings and brackets they bolt to explained, making perfect alignment.

Runners heavily banded.

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Machines all very heavy, built for best work.

Butterfield's Patent Turning Attachment fitted to these machines.—Our cutting up rig handles 100 to 125 cords per day, taking logs from the water and delivering them cut into 16 to 26 inches, or any length, to the barkers.—Only 2 men required to operate this outfit.

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SUCCESS GRINDERS

(Like cut) with adjustable take-up to bearings.

No piping.

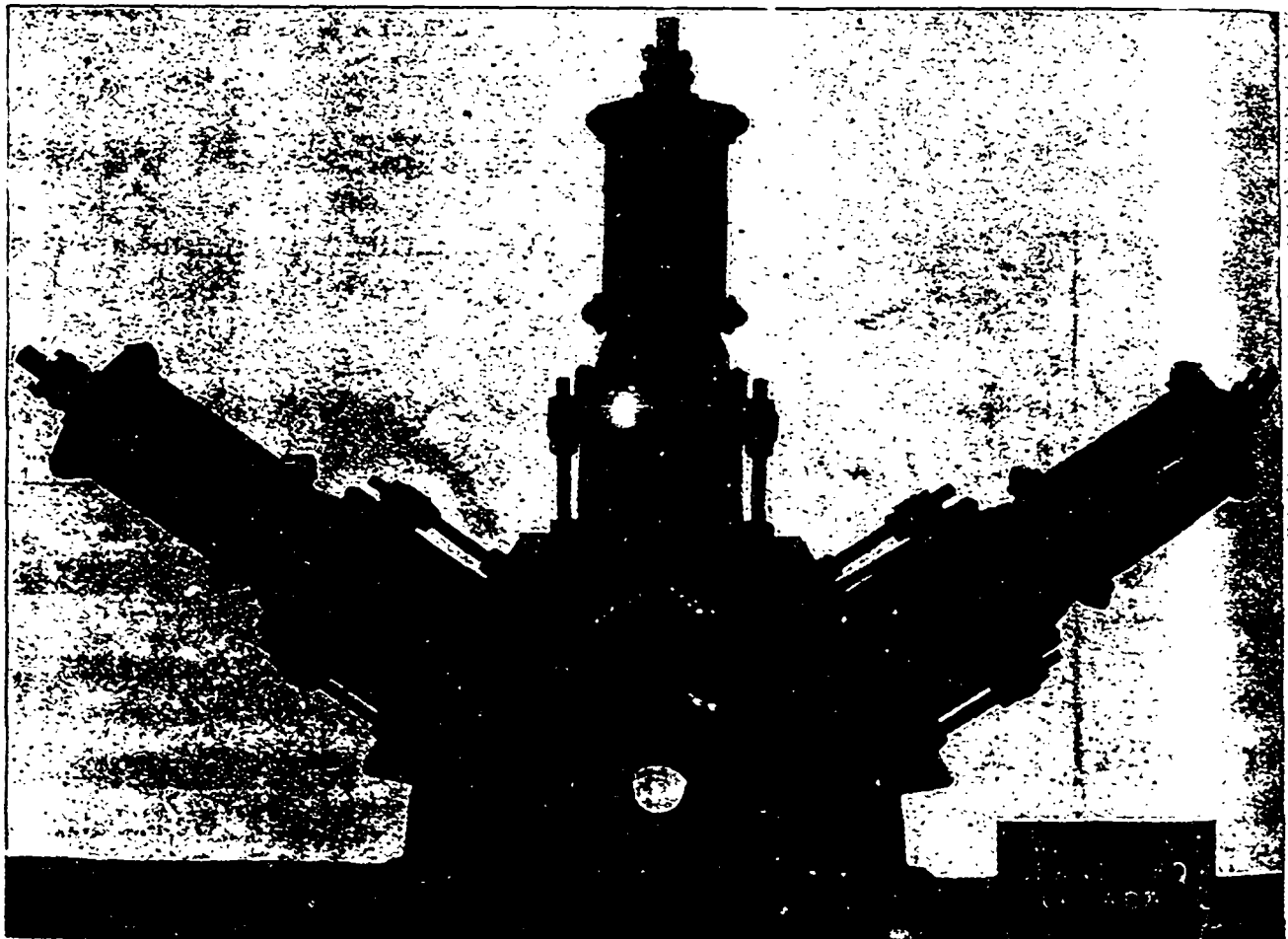
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Many valuable improvements.

Best grinder made.

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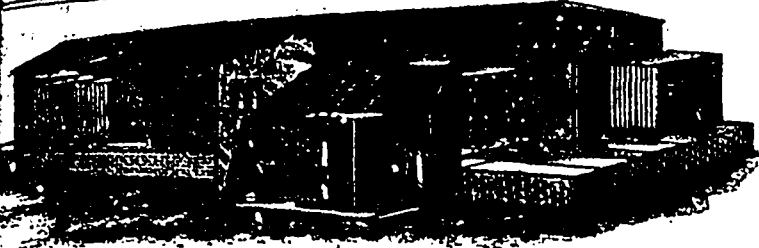


Save your Spruce Slabs—Bark then on our 8-foot Barker, when they make perfect pulp wood—equally as valuable as the round.

We manufacture up-to-date Saw Mill Machinery.

Waterous Engine Works Co.

Brantford, Canada



McEachren's PROGRESSIVE LUMBER DRY KILN

Our Heater and Fans are Economical with Steam and Power, are Safe as a Fire Risk. Plans and specifications furnished with each apparatus.

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Wherever the Standard Dry Kiln goes, more are sure to follow. We never knew it to fail. This is the best evidence that

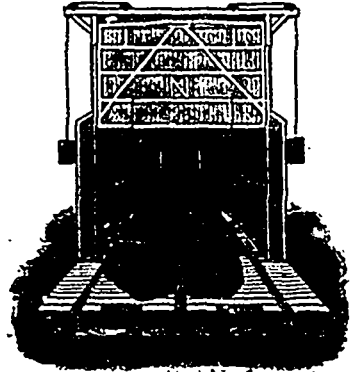
THE "STANDARD" NEVER DISAPPOINTS

"In reply to your enquiry as to how we like the two kilns you furnished us a year ago, we are pleased to say that after having given them a thorough test, we are very much satisfied with the change from the BLOWER SYSTEM. The Kilns are easy and simple to handle, both during the cold winter weather as well as summer weather.

Your roller bearing trucks are all right; would use no other."

THE J. C. SCOTT CO., Ltd.

Toronto, Ont., March 17, 1900.

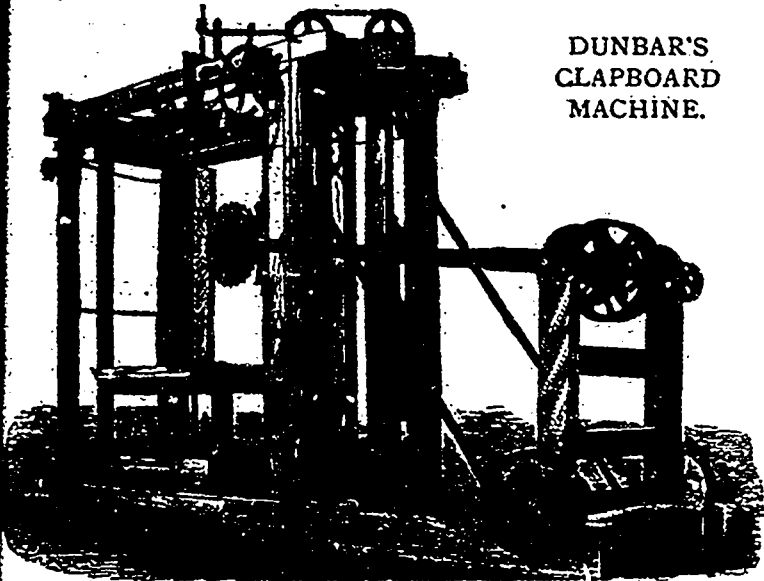


THE STANDARD DRY KILN

Is sold under a specific guarantee as to results, so there can be no question about what it will or will not do. It will dry your stock and do it economically, no matter what the nature of it. Ask for illustrated booklet.

We can supply you promptly.

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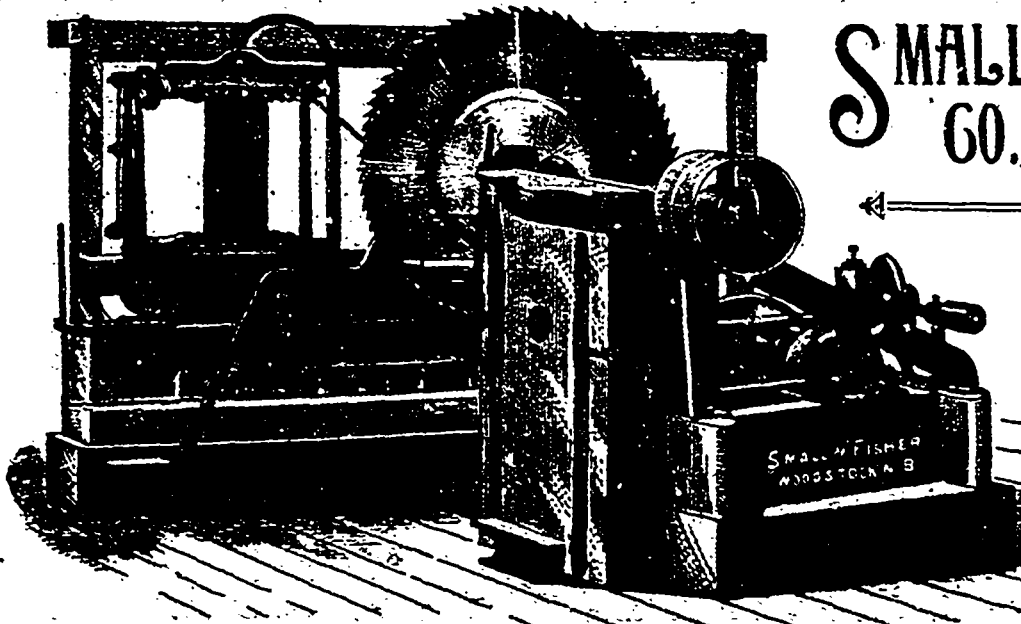
Including ROTARY SAW MILLS (3 sizes), CLAPBOARD SAWING MACHINES, CLAPBOARD PLANING AND FINISHING MACHINERY, SHINGLE MACHINES, STEAM ENGINES, Etc.

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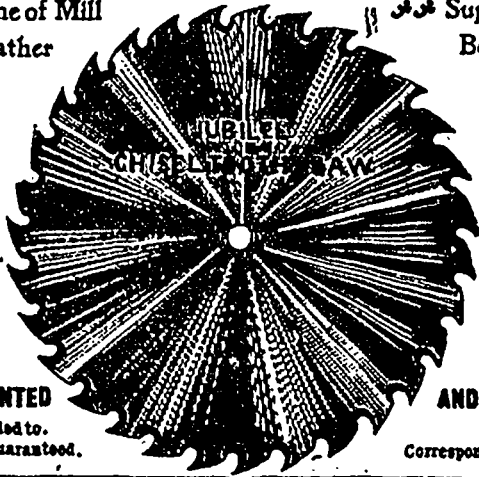
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Rubber and Leather
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Every Lumberman wants it **35 cents buys**

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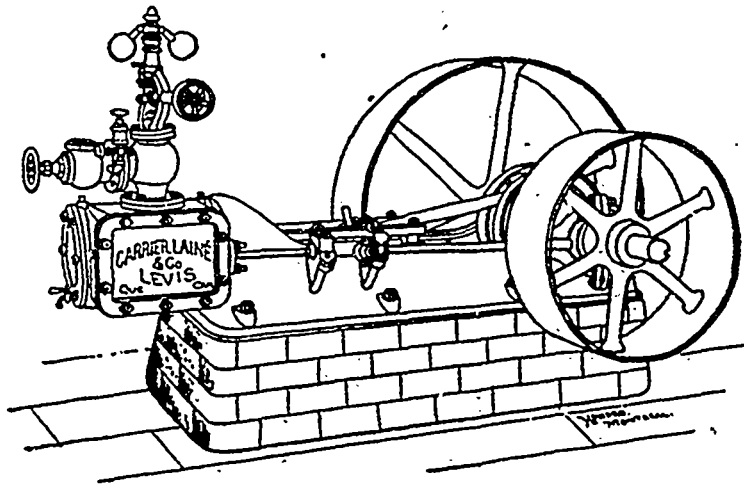
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No better Mill Machinery is made in Canada or elsewhere than that supplied "DIRECT" from our Machine Shops.



Portable and Stationary Engines and Boilers

CIRCULAR SAW MILL PLANTS
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SHINGLE MILLS, LATH MILLS

EDGERS,
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Modern Patterns in Every Line.

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We are equipped to build any special machine you may require.

IF YOU HAVE PLANT TO EXCHANGE GET OUR ESTIMATES

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Duck Bill Peavies, Round Bill Peavies, Finest Duck Bill Winter Cant Hooks

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Cant Hook Handles | By Car Load of C...
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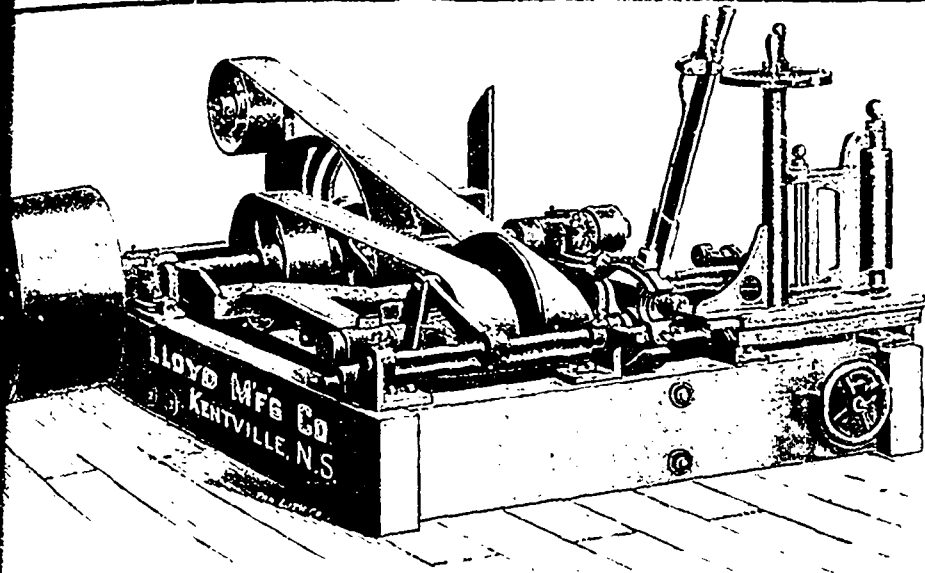
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Sawdust and Shaving Conveyors

By the use of our Sawdust and Shaving Conveyors, labor is saved and your pay roll reduced.

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- with Green Mountain Dogs,
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Our Lumbermen's Tools are acknowledged to be Canada's standard. Write us for Prices, etc, on

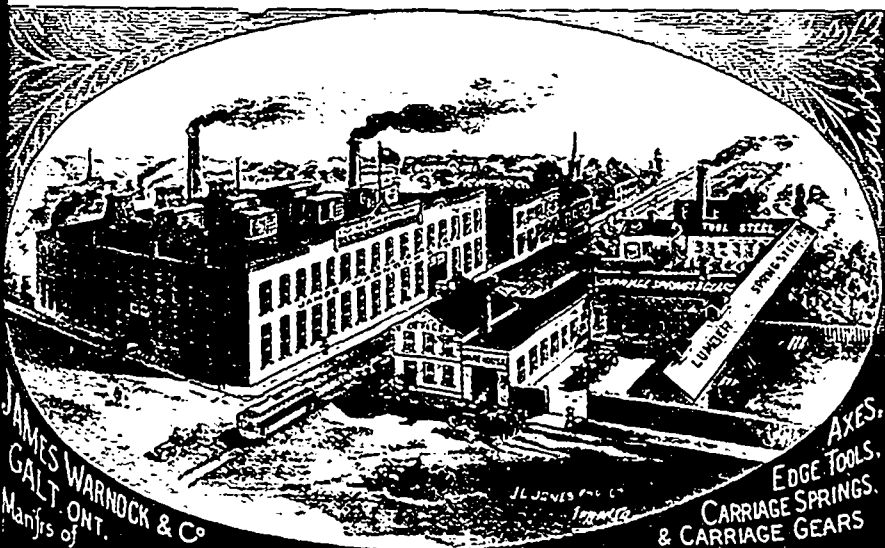
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OVER 30 YEARS IN THE BUSINESS



One Dollar

Is as Good
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But some people get More for
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This certainly is true when applied to
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Band Saw Mills, Lath Sawing Mills
Edgers, Planers and Butters, &c., &c.

Our Machinery is strictly Up-to-Date in every detail, and our Outfits
can be found in every province from Atlantic to Pacific.
We carry a large assortment of Furnishings, and are as careful in the
selection of these small requirements as we are particular in the
manufacturing of our Machinery.

WE HAVE A REPUTATION AT STAKE AND TAKE NO CHANCES

Quotations for purchase outright or in exchange
{for discarded machinery willingly furnished.

Our terms and conditions are always fair.



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