

THE FORESTS OF CANADA.

Dr. R. D. Lyons, M. P. for Dublin, of whom we have already made honorable mention in previous number as an investigator of the timber resources on which this country depends for its future supplies, has, under the authority of the Earl of Derby (as Secretary of the State for the Colonies) obtained a variety of reports from the various provinces of Canada as to the state of its forests and the future outlook, apparently with a view to ascertain the probable powers of production that may be reasonably counted on as available for the customary requirements in that kind which this country is in the habit of importing.

The result is a Blue Book which has just been presented to Parliament "by command of Her Majesty," from which a good deal of useful information may be gleaned, and which has a special interest for the trade of this country.

The reports are furnished by the heads of departments and lieutenant-governors, and contain the official experience of the forestal authorities. While generally admitting that there has been a great deal of wanton waste in the working of timber limits in the past, there is nowhere to be traced any despair of the future as to an absolute scarcity of timber, within any given number of years, and none of them seem to adopt in *extenso* the hypothesis of Mr. Little, whose predictions can only be explained as referring specially to the larger and choicer kinds of timber which are only to be come at now, with greater labor and expense than formerly, when they were not so far to seek. But Mr. Little put his own opinion on record in these columns eleven years ago, where it is stated that in thirty years from that date there would not be enough wood in the United States to make a fagot at the rate of consumption then going on. But from these reports nothing like that is to be apprehended, and none of them venture a prediction as to the possible extinction of the Canadian forests within a cycle of years to come. On the other hand, some do not hesitate even now to pronounce the resources of the Dominion and British Columbia, its supplement on the Pacific side, as absolutely inexhaustible.

On this point Mr. J. H. Austin, of the Crown Land Office, Halifax, states:—

"After having made inquiry of several gentlemen engaged in the lumbering business in this province (Nova Scotia), I find that in all probability all, or nearly all, the timber lands will have been cut over for the first time by, or perhaps before, the expiration of six years from this date; but it does not follow that the timber supply will then be exhausted. It is found that by carefully husbanding those trees that are too small for conversion into lumber, at the timber of the first cutting, after 15 or 20 years a second cut nearly equal to the first can, in many localities be obtained, consequently, if it were not for forest fires, those lands which are carefully looked after would never become denuded of their timber."

We learn from this paragraph, what has not been pointed out by those who inculcate the theory of forest extinction in the near future, viz., that the forests reafforest themselves, under ordinary circumstances, for instance, if not utterly destroyed to make room for agriculture, and further on in the report we find the following:—

"Suppose 18 in. diameter to be the standard adopted by a lumberman in felling trees, that is, he will fell no tree of a less diameter, and that he cuts from his land every tree of that dimension and upwards (generally about 50 trees to the acre), let the forest then rest for 15 years, when the same quantity of that dimension and upwards may again be taken. If active measures were adopted to put a stop to the ravages of forest fires, and to prevent the felling of trees of a less size than say 16 in. diameter at 10 feet from the butt, I am sure that Nova Scotia will continue to be a timber producing and exporting country for all time to come, as our best timber lands can never be used for profitable agricultural purposes."

The writer also refers to the "marvellous productiveness" of the timber lands of Nova Scotia, by reference to a small section of 8 or

10 square miles through which the Sackville River flows, thus:—

"Up to the year 1840 every house in Halifax was built of timber from that section, and, as every one knows, it has produced an enormous quantity of cordwood, house-frames, boards, deals, wharf logs, shingles, etc., ever since. Within three years the writer has travelled through every part of the section referred to, and it appears as far from exhaustion now as it did 40 years ago."

In Nova Scotia it seems there are no forestry restrictions, but every man is allowed to cut as he pleases; consequently the destruction of young trees is enormous. But forest fires are more destructive to timber in this province than all the lumbering put together. "The axe makes sad havoc, but may be regulated; fires are terrible." He further says that "the annual timber production of Nova Scotia has never been correctly estimated, but from returns obtained I know it to be greater by several millions of feet than is generally supposed."

Appended to this report, signed Mr. W. A. Hendry, of Halifax, some angular phenomena appear, in a table setting forth the result of an experiment on the comparative age and size of ten trees, from which it would appear that size is no certain criterion of age, as two trees of the same size and in the same neighborhood may be of very different ages. Here are the particulars:—

Red Spruce	9	in. diam.	48	rings (years).
Black "	9½	"	51	"
"	9½	"	54	"
Red "	9½	"	54	"
"	10	"	58	"
White Pine	9	"	58	"
"	16	"	72	"
Red spruce	16	"	43	"
"	13	"	44	"
"	12	"	47	"

Red spruce is unknown in this country by that designation, if it comes here at all; but it appears to be a fast growing wood, achieving a size in 43 years which it took 72 years for white pine to accomplish. But in explanation it is stated that "the difference in growth could well be accounted for by the different degrees of shelter."

The writer also states that—

"There is no reason to anticipate any sudden or even defined period for the extermination of our forests, but that they are gradually being exhausted is true, and it is proper to look this fact fairly in the face."

The report of Ontario, furnished from Toronto, by Mr. R. W. Phipps, Clerk of Forest Preservation, is to much the same effect, and he tells us that—

"With regard to the timber supply of the Dominion of Canada no accurate calculation can be made—a general idea can be given by observing that altogether the area of timber lands in the Dominion is calculated to be about 280,000 square miles."

This space of land would be equal to about 179,200,000 English acres; to pursue the calculation say producing 50 merchantable timber trees to the acre, and renewable every 20 years, the imagination would be lost inextricably in a whirl of figures that it would baffle an actuary to apportion to generations yet to come, with a view to determine when these forests would finally give out. This writer, referring to the contrary opinions expressed by men of equal experience and authority as to the forest extinction theory, says:—"It is probable that over a great extent this territory many of the largest trees have been taken out. But it should be remembered that the forest has great reproductive power; that young trees continually replace the old, and that in 20 years' time trees, now but of medium size will furnish excellent timber;" and he further adds presently: "In my opinion there is no doubt that, if care be taken of the remaining forests of Canada, a very large portion of them will continue in a perpetually reproductive condition, capable of furnishing an annual yield equal to the present yearly cut." And he believes that when railroad and shipping facilities shall have given better access to markets, British Columbia will give timber of a size larger than most that has been heretofore exported. From this latter colony also we have a report, dated Government

House, Victoria, from the Lieut.-Governor, Mr. O. F. Cornwall. In this we are told that the southern and western portions of the territory are a densely wooded country, both mountains and plains being covered with thick and stately forests. It is in this region that the Douglas pine (*A. Douglasii*) abounds, of which it has been stated that "so closely do the trees stand, and withal so tall and straight, that the united navy yards of the world might draw thence their supplies for years without more than partially exhausting these spacious and majestic forests." The report is brief, but very much to the point, and was furnished by the Governor's Executive Council.

One more quotation, we may venture to make from it: "In refutation of the assertion that Canadian forests are within six years of exhaustion, so far as this province is concerned, an extract may be quoted from the Government prize essay of 1872, by the late A. O. Anderson: "The forests of British Columbia are productive of an inexhaustible supply of timber of the most serviceable kind."

The report from Quebec alone which is most voluminous of all, would be worthy of an exclusive notice, but what we are most interested in learning for the trade is not the distribution of the woods and forests, their revenues, taxes, and obligations, so much as their capacity of production and accessibility, as we can only refer to the main subject of a report to give a general idea of its value. The rest must be sought for in the pamphlet itself. Though Quebec is a household word among timber merchants, who suppose themselves to know all that is necessary about it for the purpose of their business, they will, perhaps, be surprised to learn that in the northern part of the province are thousands of square miles of forest as yet untouched by the woodman's axe. The whole area of the territory comprises about 117,800 square miles, a considerably larger space of land than England, Scotland and Ireland, with all the islands around them, and though the forests that adjoin the banks of the St. Lawrence have doubtless been denuded of their finest timber at various times, it would be a false conclusion to assume that they have been therefore annihilated. Of the 177,800 square miles of territory not one-fourth, it is stated, will ever be fit for agriculture, but must remain from its very nature forest, and devoted to the production of timber, by reason of its climate, soil and seclusion. The writer says: "On the southern tributaries of the Saguenay that interlace with those of the St. Maurice there is much good soil, and where the trees fit to make saw logs of have been cut away the small trees left, if not destroyed by fire, will soon be of a useful size. This remark is applicable to all timber regions, as I have had ample occasion to notice. In one case, where no error could occur, a small timber berth with well marked timber lines, which had been stripped of every tree fit to make a saw log, under an able manager, was cut over again by him eight years afterwards when by the increased size of the small trees formerly left as unfit a greater number of saw logs were made from them than was got by the first cut eight years before. On the Gatineau I passed through an extensive grove of young red pine trees of fine growth, that had been previously three times completely cut over since the commencement of lumbering there." Is not this the secret why the European forests have lasted through all ages, and are in great abundance still?

We cannot bring this brief notice to a close without referring to one important omission from Dr. Lyon's reports. While Ontario, Quebec, and Nova Scotia are done justice to, there is no mention whatever, good or bad, of the great timber-producing province of New Brunswick. An account of our North American forests, without any notice of New Brunswick is like the play of Hamlet with the part of Hamlet omitted by particular desire from the performance; for New Brunswick is perhaps as a timber-shipping province the most convenient and indispensable of all to this country, and its area is one-third larger than that of Nova Scotia. The port of St. John is the first to open in the spring, and the last to close in the autumn, as the waters of the Bay of Fundy are never frozen. That this omission is accidental,

from a parliamentary paper, seems very unlikely, but that it should be by design, and without a word of explanation seems still more unaccountable. At all events, the fact remains.

Dr. Lyons has added a *precis* of the regulations that govern settlements, occupation and purchase of lands, timber limits, &c., which will be found very useful to emigrants and others; and there is a map to show the proportion of forest land remaining in each townland or county of Ontario. The book contains 35 folio pages, is published by Messrs. Eyre & Spottiswoode, and may be had through any bookseller for the small price of sevenpence-halfpenny.—*Timber Trades Journal*.

ITEMS FOR RECORD.

Manufacturers who use large belts are often at a loss to decide which way of the leather will stand the greatest strain. Generally speaking, a belt will stretch much more evenly the long way of the hide, but for actual tension, across will stand the most; while to combine evenness of expansion and strength a hide cut diagonally, answers best. Besides imparting to large belts both these properties, a hide will cut with less waste when cut diagonally than any other method that will use the best parts of the same. Some persons, and we judge them more theoretical than practical, advocate the idea that large belts will wear longer and retain their strength better by running continuously in one direction; that is, when once used, the direction of running should never be reversed; but the closest examination fails to reveal any tendency to displacement of parts, providing the belt is not too heavily strained. This we find to be the principal source of dissatisfaction, and the cause of premature uselessness. One might as well expect to push an engine and boiler with an estimated power of four horses, as to do the work of one with a six horse capacity, as to drive the machinery requiring a medium sized belt with one light. There are certain limits of various strengths of all substances, and when we go beyond this limit, we have violated a physical law, the penalty being a displacement of particles, an overstrain which has wrought more injury than years of actual wear; and what is true regarding belts, applies with all its force to all motive power and machinery of whatever name or nature. In basing calculations it is always best to make provisions for at least one-third reserve power, it being a fact well known to nearly everyone, that rarely, if ever, less power is required than the estimate when the plant was built first on paper; but generally a little, sometimes considerable more is needed than the engineers calculated. Again, any power can be more economically transmitted with a liberal reserve than when run to the greatest capacity. Hence it is safe from a financial standpoint to have all belts and machinery at least twenty-five per cent. stronger than ever expected to use. We might carry the argument still farther, and mention the general cramped condition of buildings, warehouses, lots, and the like; for with an experience dating back no few years, we have yet to see an original plant built for the express purpose of any specific line of trade or manufacture, that was ever too large for the successful business that followed. With these as with machinery and means of transmitting power, it is safe, as a rule, to make liberal allowance for the increased demands for space when things are all in place and moving. Many an otherwise successful concern has had to sell goods in a poor market simply because they had no the necessary room in which to store their accumulations. Others have been made the subjects of extortion by grasping owners of adjoining properties simply because, in their haste to build and get to work, they neglected to make precautions to protect themselves against the rise of property so enhanced by their own success.—*Lumber Trade Journal*.

Especially, to Women.

"Sweet is revenge especially to women," said the gifted, but the naughty, Lord Byron. Surely he was in bad humor when he wrote such words. But there are complaints that only women suffer, that are carrying numbers of them down to early graves. There is hope for those who suffer, no matter how sorely, or severely, in Dr. R. V. Perce's "Favorite Prescription." safe in its action it is a blessing, especially to women and to men, too, for when women suffer, the household is askew.