

## FORESTRY.

SIR.—Perhaps you will allow me the use of your widely circulated journal on a topic not uninteresting to many who view with concern the too complete disforestation of older settled Ontario.

At present, according to much correspondence I receive on the subject, very many of our farms have no forest left; while a great number have but few acres. In many neighborhoods the average is not more than ten acres of bush to the hundred, and while of course other sections have much more, the axe is over at work, and the small average first mentioned will probably soon be that of a very large portion of our country indeed. One farmer is apt to think his bush will last his time, another thinks he will clear his and buy wood of his neighbour, a third that he will chop down his and use coal. Very many admit that it's a pity the woods are going so fast, but think that unless some general effort were being made to preserve them their own individual assistance can effect little, so that they themselves might as well chop down nearly their last ten acres which is in wood and might grow wheat.

A letter writer in your columns lately was kind enough to desire an article on political economy from my "ready and facile pen," instead of a long dissertation on trees, which he thought of lesser consequence. I must decline his request and disagree with his estimate. I get half a dozen such long dissertations by post every morning, and always wish them longer and more of them. Let me here take this opportunity of thanking my correspondents for the interest add trouble they take.

There are notes of warning in these letters it might be well to re-echo. Some farmers who, out of wood, are using coal, find the annual bill greater and the comfort less than they anticipated. Some complain that over clearing now exposes them to wintry tempests, severe to cattle and consumptive of fodder, blowing the snowy covering of the winter wheat from the centre to the sides of the field, freezing out some portions of the crop and drowning others, rendering all human life less comfortable, and that of the drift-impaired traveller peculiarly so. Many, too, state that in consequence of the same operation the living springs on the farms—once their greatest comfort and satisfaction—are fast drying up.

The Ontario Tree-planting Act of last session is being adopted in many sections, and the resultant lines of trees will do much to provide wind-breaks, but they will not provide timber. The roadside wind-break grows well, indeed—densely branching of head, and excellent of shade—but the forest is the genial birth place of the forest tree, which, drawn upward by the forcing process of its own attempts to reach the light above the high, overshadowing foliage, rises rapidly, tall, straight, and almost branchless, till you will often see healthy and beautiful young trees sixty or seventy feet in height, while but five or six inches through at the ground. These tall columns, then, in a few years enlarge into your barn timber, your cordwood, your rails-cuts, your anything that the forest will give you. But the tree of the roadside would never have done this.

There are yet small patches of timber dotted over the whole of Ontario, and every one of these, or a portion of them would form an excellent nursery for forest re-production. It is but a small matter, it is but, if it could be done, to induce farmers to fence in and utterly exclude cattle from a portion of their woodlands, and a young growth will presently cover the soil. Though every leaflet be now bitten to the ground, in four years you will have a miniature forest, perhaps a couple of yards in height—little basswoods with trunks of red and olive, small beeches, white and blue black ashes, now beautiful stems of yellow grey, white oaks, now reds of mottled whatebone, elm, hickory, maple, and many another one, all crowding together, emulously rising to the light above. These also preserve the older forest, for at the edge these trees will be like those of the roadside, grown in the sun, immovable by the wind, and acting as wind-breaks to the inner trees.

For the continuance of the forest in a re-productive state, the presence of this undergrowth is absolutely necessary. Without it, grass gets

in, overpreads the earth, injures the larger trees and prevents the growth of any smaller ones. The drying winds sweep through the bush, the roots are loosened, the soil appears to shrink from them, and many trees fall. There is no more vivid contrast than that of a piece of forest left unfenced, and another better protected. I had opportunities lately of seeing many such as they stood side by side. On one side of the fence all was life, the bright strength of farvid life, everywhere the small buds of infant saplings just rising from the earth, above them the interspersing underwood, high above them many a magnificent tree, old and ready for the axe, and many a younger one closely at hand to replace them. But all had an air of health and of brightening verdure. On the other side of the fence the leaf-stem soil was bare of vegetation, every earth-springing leaflet had been destroyed, the wind whistled shrilly over the denuded ground and among the moss-covered trunks of the old trees; for there was nothing but old trees; no young ones had grown to replace them, and they, themselves, the earth below them deprived of their natural covering, seemed sickly and many of them tottering to their fall.

If every farmer could be induced to preserve rigidly in forest but ten acres of his hundred, besides what bush (it need not be much) he wishes for his cattle, the good resulting to himself and to the country would be incalculable; for a few acres of dense forest thickly undergrown holds and distributes much moisture, and is of more climatic benefit, especially to the surrounding farms, than a far greater surface of woodland dried up and impoverished by the destruction of its undergrowth. For his own benefit, too, and that of his successors, especially in the too probably coming scarcity of timber, it should be remembered that this patch will yield a valuable amount yearly. Timber of many descriptions which may be taken from it, tree by tree, as needed, and yet the remaining bush be all the better.

Let, in the face of this knowledge, we find many farmers, instead of preserving, destroying their last patch. In this state of affairs it is probable that legislative aid could do much. It is indeed the farmer's own interest to preserve a portion of the forest, but he is apt to think that the principal benefits to be obtained can only be secured by the co-operation of many individuals—a co-operation which legislation, even if only permissive, would give him.

Let us think of the manner in which this might be secured. A suggestion has been made that a Government enactment might permit any farmer to say to the assessor, "I intend to fence and keep cattle from this piece of bush, five, ten, fifteen acres or so, as he might choose." Let it be then the duty of the assessor to look at this portion every year. As long as it is properly fenced and cattle excluded let that portion be free of taxes; but if the farmer choose to cease preserving it, or to chop it down, let it be understood that he is to pay the back taxes which were remitted to him. As years passed on each owner of such a portion would find himself bound under penalty of a considerable sum, to preserve the portion properly, and yet he could by no means grumble, for he would actually have received the money. He would in fact have accepted a certain amount on condition that he should do himself good with it.

This would, of course, slightly reduce the amount of assessable property in each township, but nobody would, at this day, object; in fact everyone who understands the matter would be well pleased if the Government had reserved some timber land in this township for this very purpose, which reserved land would not have been assessable. Then, in the newer and better forested sections, the assessment on wild land is light; while in the older counties, nearly at the end of their timber (for how they could replace their barns, many people write to me they do not know), the benefits resulting would almost immediately be very great. We should shortly have on every farm, a reservation closely resembling the original forest, retentive of moisture, prolific of timber, and of great climatic benefit to the country at large.

These reservations would answer another purpose, which would please many who remember

former Ontario, who like life in a landscape, and do not care to see the country becoming destitute of every untamed thing, game, and many birds beneficial to the farmer would live there, a thing which, in the absence of undergrowth, but few of them can do.

I would be much obliged if any persons throughout the country would write me their views concerning the suggestion, or any changes they think might profitably be made in it, and I would be much gratified to see the subject discussed at the various county councils, as I intend shortly to take the liberty of asking the various county authorities their opinion in the matter.

R. W. PHIPPS,

233 Richmond street West, Toronto, Jan. 3.

## HOW A BOAT WAS BUILT

Last summer Captain James Smith, for some years in command of the Saskatchewan steamer Lily, was sent to Fort Chippewyan to superintend the construction of a steamer suitable for the navigation of the inland waters, and the result of his labors is the boat now under notice. Her dimensions are as follows: Length, 130 feet; breadth 24 feet; draft when wooded up for a trip, 15 inches. She is propelled by a pair of first-class engines of sixty-five horse-power, of the same pattern as those of the Marquis which runs on the Saskatchewan, and which are said to be the finest on any of the northern steamers. These and the boilers were taken overland from Edmonton to the Athabasca thence to their destination by water.

Some idea of the difficulties overcome by Captain Smith may be inferred from the fact that every board and every piece of timber used in the construction of the craft was taken out by hand, and that the only skilled labor at his command was that of one of the Hudson Bay Company's boat builders, the bulk of the work being done under the Captain's direction by Hudson Bay Company's employees and Chippewyan Indians. From the taking out of the timber in the forest to the cutting of boards for finishing the cabin, all had to be done by manual labor. It must not, however, be inferred from this that the boat is built of small stuff, or that anything of her construction has been slighted. Three-fifths of the boards used were fifty-five feet in length and of proportionate breadth, and laying the ways on which to launch her, timbers 60 feet long and a foot square were freely used. The captain took a stick 80 feet in length, and a foot square out of one tree, and could have made it one hundred and thirty feet long had he desired it. The possibilities of a country producing such timber as this are really illimitable, and to the railway first bringing it within reach of the prairie market there is assurance of an unbounded traffic.

All the lumber used was cut with a pit-saw and the men who undertook that part of the work became so expert that the boards made by them would compare favorably with mill-cut lumber. Boards of twenty-four inches in width were cut. At the outset of the work, when Capt. Smith spoke of what was to be done, he was told it was impossible; but when they saw that he always accomplished what he undertook, they received his orders quietly, and believing that nothing was impossible with him, waited and watched to see how he would overcome the difficulties which to them appeared to be insurmountable.

But great as the difficulties were, midsummer found the boat ready to take its place on the waters that were soon to bear it to regions seldom visited by white men other than those interested in trade, or the zealous missionary whose footsteps carried the message of love to the inhabitants far ahead of the crowd of what we are pleased to call civilization, and one bright summer day it was successfully launched, amid the rejoicings of those who could understand the results sure to follow the enterprise, and the wonder of those who looked at it as something beyond their comprehension—as the work of some one more than human. As the boat gracefully glided into the water the usual ceremony of christening it was performed by Mrs. Macfarlane, wife of the Hudson Bay Company's officer in charge of that district, who named it "Grahame," in honor of the Chief Commissioner of the Hudson Bay Company.

Encouraged by their success with the Grahame, the company contemplate putting a deep draft steamer on the Mackenzie River, the building of which will probably be offered to Capt. Smith. —Globe.

## EXTENDING TIMBER GROWTH IN IRELAND.

Considering the large amount of attention periodically directed to a solution of the problem as to what shall be done to restore the condition of Ireland to the state of prosperity that existed within its confines in centuries past, and even in later times, it may fairly be matter of surprise that the pecuniary, social, and permanent advantages accruing from an extended growth of forest timber have not taken rank amongst the innumerable and varied remedies suggested. Time was when Irish timber was of such admitted excellence that it was at a premium throughout the continental and European market generally, and was much prized for the purpose of naval construction. Properly considered, the growth of timber—on the uncultivated wastes of this country—is of the highest importance. In a few years forests would furnish the material for re-housing the tenant farmers and labourers, and for the construction of all kinds of buildings required in agricultural pursuits. The fuel supply, too, would be extended, and the privations now experienced when the turf harvest is scanty be no longer possible. The improvement of soil and herbage by the fall of leaves, and the retention of fine clay now swept away, would give an abundant and rich pasturage in the vicinity of forests. Planting is essentially the poor man's question, and when the tenant farmers realize this they will recognise the utility of "planting loans" to enable them to enclose and shelter a hill slope by judiciously placed belts of trees for the protection of their stock.

Along the range of the Galtees, and amidst the wooded slopes, extensive saw-mills are in constant operation. The great feature of timber growth here lies in its commercial importance as an article of export. The principal sources of our foreign timber supply are becoming rapidly exhausted, and the time must come when the Baltic and Canadian forests will no longer be available. It is computed that at least 12,000,000 acres of forests have been consumed within ten years in the United States alone. Their 100,000 miles of railways use up forest at the rate of 5,000 miles per annum in sleepers and fuel. In the face of this, it is no matter of surprise that the Dominion should be anxious to treat with Her Majesty's Government for the importation of able-bodied Irishmen to re-afforest her wastes and mountains. But with a more genial climate, capable of producing oak, pine, and birch, that can vie, as in the past, with the best forests in Europe, there is ample work for all Irish hands at home. Mr. Howitz (the forest Conservator of Copenhagen), who made a survey of Ireland, and who is now engaged in the consideration of the problem of the control of floods by forests, observed: "We have found the key to open a paradise of wealth and prosperity for Ireland." The member for Dublin is negotiating with the Treasury to get the planting loans adjusted to the deferred nature of the problem, as a financial operation, while the security of the state for repayment in full of principal and interest is amply preserved.—*Timber Trades Journal*.

BANDS of music are forbidden to play on most of the large iron bridges of the world. This is due to the well-known phenomenon that a constant succession of sound waves, especially such as come from the playing of a good band, will excite the wire vibrations; at first, these vibrations are very slight, but they increase as the sound waves continue to come.

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