

Forestry in Ontario.

A report of great value and interest, recently issued by the Department of Crown Lands for Ontario, is that of the Clerk of forestry, Mr. Thomas Southworth. The importance of scientific forestry reforestation to the people of this Province has previously been commented upon in these columns, and this additional literature on the subject is of an exceptionally readable nature. The feeling of the general public with regard to Crown lands forestry is outlined as follows in the opening paragraph of the report.

"Until recently it was generally accepted as certain that the wonderful crop of pine and spruce now being harvested was the only one we could hope for; such a thing as the natural reproduction of white pine was considered quite out of the question, and leading newspaper articles have been devoted to devising other means of securing revenue to take the place of the million or so of dollars annually derived from our timber lands when the present crop of pine shall have been removed. Even yet the opinion among lumbermen and the great majority of the general public is that as soon as our lumbermen have exploited the whole of our vast white pine areas, there will be no white pine of any consequence to cut, and the great lumber industry, with its millions of invested capital and tens of thousands of workmen, will be a memory only, except for the smaller custom mills, which during a short time in the spring, cut up a few logs taken from the farmers' wood lots.

Just what the meaning of "reforestation" and "scientific forestry" would be to the citizens of Ontario is instanced by the following striking example:

"In the county of Hastings there is a block of pine timber estimated at 150 to 200 million feet, board measure, that was under license in 1854. The limits around it present a picture of desolation caused by repeated fires, but this block, through the efforts of the limit-holders, assisted by the neighboring settlers, has been preserved. Ten million feet of timber was taken from it in the past season without any apparent decrease in the supply. So great would be the annual growth on this tract of eighty square miles, under even a modified forestry practice, exempt from fires, that three times this amount of timber could be cut from it annually in perpetuity without impairing the limit. Just what this means to the people of the Province is not generally understood. The land on which the timber stands is not considered valuable, or is not suited for agriculture. Most of the land in the vicinity suitable for general farming has been taken up by settlers for whom the lumber operations in this forest provide a market for much of their produce, and work for themselves and teams through the winter, when they would otherwise be idle. In addition to

the indirect benefits, this forest has already paid into the Provincial treasury a good deal more than would have been obtained from the sale of the lands. As this tract was placed under license as far back as 1854, little was received from it in the way of bonus, but from ground rent and timber dues the Province has received fully \$5 an acre for the whole area of the township, while if the water-covered and other useless areas were deducted, the amount would reach nearly \$10 an acre, and the Province still owns the land."

Elsewhere the report says:

"Competent Judges of forest conditions in the United States estimate that the supply of white pine in that country will not be adequate for their home consumption for many years to come at the present rate of cutting, while the fact that all or nearly all their white pine lands are held by private parties, renders any attempt at reforestation by the state on any large scale out of the question. When this period arrives, when the United States has no more pine to export, the price of this wood will be considerably enhanced, rendering scientific forestry in Ontario not only possible but profitable. In countries where the price of lumber is much higher than here, a very expensively managed forestry system returns a handsome profit over all expenses. The net revenue to the state from the forests of Prussia is about \$6,000,000 yearly and this in spite of their limited area as compared with ours, and the expense of their forest administration, which reaches about \$8,000,000 per annum.

Aside from the advantages of the protection of climate and water supply and the revenue of the Province there are other factors in this question of reforestation of the waste lands of the Crown that are frequently overlooked. At our present rate of cutting unless something is done in the way of restoring to a tree covered condition the non-tillable portion of the crown lands now lying waste, the lumber business and allied trades will become extinct for want of raw material. Just what this would mean to the people of the province is not generally understood. Besides the large mills cutting timber from crown lands there are over 1500 other mills, large and small, in the Province, employing a large number of men, furnishing the farmers with a local supply of lumber and affording a market for their mature and, sometimes it is to be feared, immature timber.

"Forestry on the Farm" is discussed in a manner which will throw much new light on the matter for the agriculturists of Ontario. Other topics are: "Nature Study in the School," "Entomology," dealing chiefly with galls, and "The Manufacture of Wood Charcoal." An appendix is included in the report, showing area of township municipalities, with the proportion of cleared, waste and wooded land to the whole, for the year 1896, in that

portion of Ontario which is now thickly settled.

In accordance with a memorandum addressed to the Commissioner of Crown Lands by Mr. Southworth, a Royal Commission was issued early in the year, composed of E. W. Rathbun, of the Rathbun Company, Deseronto; John Bertram, of the Collins Inlet Lumber Company; Alex. Kirkwood, Department of Crown Lands; J. B. McWilliams, Provincial Superintendent of Forest Rangers, and Thomas Southworth, Clerk of Forestry. The purpose of the commission is to investigate and report upon the subject of restoring and pre-foresting and preserving the growth of white pine and other timber upon lands in the Province which are not adapted for agricultural purposes and settlement. With this object in view, the commission has already visited the Rainy River District and Hastings County.

Copies of the report can doubtless be obtained on application to the Clerk of Forestry, Parliament Buildings, Toronto.

Repairing Roads.

If a road could be induced to wear evenly downward, the task of repairing would then be limited to occasional extensive reconstruction work; but whatever be the rate of wear the inevitable irregularities in the strength of the structure will lead to the formation of ruts and pitchholes of varying depths and sizes. The aim of the pathmaster or superintendent should be to detect these as soon as they begin to form so that the destructive process may be arrested as soon as possible. Once a depression is allowed to form and go uncared for, each passing vehicle dropping into it enlarges it with wonderful rapidity, water accumulates and softens the metal and soon the road at this point becomes dangerous and impassable. When these depressions are slight they may be repaired by a little clean gravel or broken stone. Where the depressions or ruts are wide and deep and the whole surface of the road-bed is worn and out of repair, the ruts and holes should be filled with coarse gravel or stone broken to about 1½ inches and this should be covered with a finer grade of gravel and dressed with screenings, and the whole rolled until firmly compacted. Wherever new material is applied for the purpose of repairs, care should be taken to see that the surface of road is given sufficient crown to perfectly shed the water. For all the directions which may be given in the matter of road repairs, the result depends mainly on the skill of the superintendent and workmen in contriving the work so that the surface of the mended place may be in the end exactly to its proper level. If higher or lower, the effect is only temporary. A depression will form in the old place if it be left too low, other holes will form along side of the patch or at either end if it be left too high. The ability to do such work well depends upon the experience and craft of the workmen.