

## FORESTS OF NORTH AMERICA.

It is only within the last few years that public attention has been directed to the subject of the preservation of the forests and that efforts have been made to stay the wholesale destruction of trees, which threatened before long to denude the country almost entirely of its woods.

The mere utilitarian will regard the matter of consequence only from his industrial standpoint, and will regret the destruction of trees from a consideration of their marketable values, relegating to the scientist the more abstruse and less tangible reflection of the climatic and other effects of such denudation. That the latter consideration is not the least important is becoming now evident, when it is almost too late to remedy the evil. Whole sections of the country have been divested of their natural summer verdure of foliage, except in isolated patches, and the consequence has been a decreasing rainfall, a more dry and less fertile soil, while it is also generally admitted that in such sections the climate is less salubrious than previous to the clearance of the forests. Aesthetic considerations, it is presumable, ought to weigh less in the public estimation, still to many it is a subject of sincere regret that the charming variety and beauty of wooded hills and valleys have wholly disappeared in large areas all over the country, and that cool shade and summer foliage may be found frequently more readily in the environs and parks of cities than in the country. The sameness of aspect and absence of scenic effect resulting from the disappearance of the forests has seriously marred the beauty of the country, and in the level sections the uniform, dull monotony of the landscape is only relieved by an occasional orchard surrounding the farm houses from an unvarying uniformly totally destructive of beauty.

## GEOGRAPHICAL DISTRIBUTION OF TREES.

The Continent of North America possesses a great variety of forest trees, so many as 340 different species being known to exist. Of this number about 100 species exist in Canada, its less varied climatic conditions precluding such a general diffusion of arboreal growth. Some species of trees are not only widely diffused but are persistent over great areas, being found almost everywhere within the limits of their distribution, while others although having an extensive range are nowhere very common and are sometimes absent for considerable intervals. Other species are confined to comparatively small tracts, or appear in detached sections, where the nature of the soil and the locality is favorable to their growth.

As a general rule the more northern species occupy the greatest extent of country, while the southern ones are more and more restricted as we proceed south. This is owing to the great difference existing in climatic conditions in going from the east to the west in the more southern latitudes. Along the northern borders of the forests of the continent the elevation of the land above the sea level is more uniform and comparatively slight, and other physical conditions are tolerably regular. As a consequence of this we find the most northern group of trees extending from Newfoundland to Alaska—a distance of 4,000 miles.

The study of the distribution of the various forest trees possesses an interest even to the geologist, as bearing upon questions in regard to the condition of the continent in later geological times. The outlines of the areas occupied by the different species and other circumstances connected with their characters and distribution may throw some light on their dissemination from certain centres or lines, or possibly in some cases their contraction from wider limits, or it may be found that some of them still have a tendency to retire or to advance.

## FORESTS IN CANADA.

The correctness of the Frenchman's provision, of the time of Jacques Cartier, would no doubt be questioned who would predict within even centuries the disappearance of the apparently interminable forests extending in almost unbroken solitude from the Atlantic to the Pacific Ocean. The continuity of the vast canopy of foliage was only occasionally broken by meadow marshes, and the small clearances of underwood surrounding the wigwags of the aborigines. In

other sections the vegetation was so luxuriant that only an occasional gleam of sunlight could dart through the interspaces of the thick mantle of green to the ground below. Then, as now, the vast prairies in the centre of the continent were destitute of trees, but to the Frenchman first landing in Canada, and his progeny for more than two centuries, these regions were a *terra incognita*, far removed from the range of vision and observation. So far as he had penetrated during over two hundred years the vast sea of foliage, extending everywhere, awayed and quivered in the sunlight, or changed from the light green of early summer to the darker shades as the season progressed, finally ending in the vermilion, carnation and the thousand various tints that still throw a glamour of glory peculiarly their own over Canadian forests preceding the fall of the leaf. Into those sublime and gloomy solitudes, undisturbed save by the whoop of the savages, the howl of the beast of prey, or the moan of the wind through the needles of the pine, the Trappist Fathers penetrated, and, far removed from the verge of civilization, acted as the pioneers of progress in sacrificing the comforts of life, and frequently life itself, in their noble efforts to Christianize the heathen.

Habits of self denial incalculated by their order, and a gloomy asceticism which had nursed religious ideas until they became a second nature, peculiarly fitted them for such a work. Social ties they had few or none, and the dominating idea or object of their mission became so all absorbing as to render a life long residence in those profound and gloomy forest shades the only phase of existence they could really desire. Their day has long since gone by, but the historian who would fail to credit them as the pioneers of the now existing age of progress would be guilty of an act of injustice as well as of falsifying the records of the past.

At the period of the conquest of Canada by the British in 1759, the forest had been cleared only from detached sections of the country adjacent to the St. Lawrence, but in no instance had the labor of the colonists extended to any considerable distance from the river toward the interior. At that time Upper Canada was an unbroken wilderness, the few settlements that existed being restricted to the banks of the St. Lawrence and the shores of Lake Ontario and Erie.

## WOODS OF ONTARIO.

So late as 1850 the Western peninsula of Upper Canada (now Ontario) was a tree covered expanse, the settlements being confined to the shores of Lake Huron, Simcoe and the Georgian Bay. Since then, however, the progress of the settlement has proceeded with such rapidity that but few sections remain now unoccupied. As the trees formed the primary and chief obstacle to cultivation it was but natural that the squatter would regard the forests with no favor, and that he would in consequence direct all his energies to the speedy clearing of the land and the destruction of what involved years of the hardest labor before he could expect any but the most meagre returns for his toil. All that he cared for was to leave enough of the timber for fuel and for rails, and such was and is the existing dislike to trees that the spontaneous growths of such along the fences and boundaries of farms were and are ruthlessly destroyed. So much is this the case that in large areas in Ontario some of the farms are entirely destitute of timber, even pasture fields being unprovided by a solitary tree to shade the cattle from the glare of the noon day sun.

A reaction, however, has set in and the idea has dawned upon the public mind quite recently that the wholesale destruction of the woods is a great evil, and efforts are now being made to retard the process as much as possible where it is now in progress, or to partially remedy the evil where it has gone too far.

This spring a number of advanced thinkers inaugurated a movement looking to a partial restoration of the destroyed forests, and an "arbor day" in all the large cities of the Dominion, and towns and villages, will doubtless result in not only making tree planting fashionable, but will, before long succeed in enhancing the beauty and salubrity of the country.

In the uncleared portions of Ontario the forests present a remarkable richness in the

number of species to be found growing together. In some localities as many as fifty different kinds are to be found on one farm. Maples, alms, beeches, basswood, with a proportion of evergreens, the hemlock and balsam being the most common, except where the pine flourishes. The underwood is usually of the same species as the larger trees, unless on low ground, where other varieties peculiar to such localities prevail. In isolated places, where the nature of the soil is suitable, groups of wild cherry, butternut, oak, white and black ash, birch and many other trees grow luxuriantly and attain great dimensions. The forests of Ontario are, however, now but shadows of what they were, and the glory of their foliage and the mysterious depths of their dim umbrageous spaces have disappeared before the woodman's axe and firebrand, and like other vanished things, good and bad, have been consigned to the region of the past. The pioneer now recalls, with visible pride and a sigh for his departed strength, the time forty years ago, when he carried the flour for the sustenance of his family a distance of forty miles through an almost trackless expanse of wood to his steading on the shores of the Georgian Bay or Lake Huron. He recalls also with regret that early period when life, even with all its hardships, was happy and free from care, and primitive wants, few in number, were almost entirely supplied from the virgin soil, and he and his family, if possessing fewer luxuries, had fewer desires, and the free and exhilarating air of the forest, a simple diet and constant occupation precluded those enervating influences so frequently accompanying the more complex and luxurious modern style of living.

## LUMBER SUPPLIES.

Commercially considered the most valuable products of the Canadian forests are the pines which have now been very effectually culled from the settled portions of Ontario and other parts of the Dominion. With the exception of detached clumps scattered over the inhabited part of the country, the lumberman must now seek his supply in the region of the Upper Ottawa, in the Nipissing and Muskoka districts, and in the occasional patches existing on the north shores of Lake Huron and Superior, British Columbia, Quebec and New Brunswick. The dense pine forests in the latter provinces have virtually disappeared, while the supply from Quebec, never large, is now less than ever before.

Still, the quantity of lumber now exported is larger than a number of years ago, which is doubtless owing to higher prices, more vigorous prosecution of the trade in lumber, and the extension of the labour of the lumberman to newer and more distant forests, which now, instead of supplementing the ordinary production, are almost the sole sources of supply. That the limit of the production of pine has now been reached in Canada is generally conceded by experienced dealers, and they contemplate with anything but a feeling of satisfaction the approach of the time, by no means distant, when the most difficult problem presented to them for solution will be that of supplying the market demand for lumber when the sources of supply have become exhausted. That this exhaustion is now taking place at a rate that seriously threatens the complete extinction of this valuable tree at no distant date it is needless to deny, and it is quite as undeniable that the generation now living, the present process of destruction continuing unabated, will witness the supply so seriously impaired as to make pine lumber too valuable to be applied to many of the uses for which it is now considered indispensable.

The same destructive influences are at work in our own country, and the day is probably not far distant when the principal sources of pine in Maine, North Carolina, Michigan, Oregon and other sections, shall have become exhausted, and the builders will be confronted with the difficult question of supplying the place of boards by other materials combining their advantages of lightness and ease of workmanship with cheapness.

Next to pine, hemlock is the most valuable tree to the builder, for the rougher sorts of lumber. It existed in connection with hard wood over a more uniform and extended range of country, but never like the pine in separate sec-

tions, to the almost entire exclusion of other species of wood. It has now become almost as scarce as pine in many sections, and on farms where thousands of trees were destroyed the owner would now find it impossible, unless in rare instances, to secure sufficient hemlock to furnish lumber for the erection of a barn. Maple, one of the most valuable and most plentiful of Canadian trees, is also rapidly disappearing, the vast quantities used for fuel and firing purposes on farms, added to the quantities destroyed in clearing the bush lands, having reduced this most useful and beautiful of trees to straggling and narrow limits.

## TREES OF BRITISH COLUMBIA.

The most valuable trees in British Columbia are the Douglas spruce, yellow and red pine, which extend from the Pacific to the Rocky Mountains. The other varieties of trees are the western larch, found in the Rocky Mountains and the valley of the Selkirk and Gold ranges; hemlock and vine and other maples, and western scrub pine, which forms dense groves in the interior of the province.

Douglas spruce, commercially known as Oregon pine, is the most important timber tree of British Columbia, and is the only one of which the wood has yet become an article of export on a large scale. It is found in all parts of Vancouver's Island, with the exception of the exposed Western coast. On the mainland, near the 49th parallel, it extends from the sea to the Rocky Mountains, being found even growing at an altitude of 8,000 feet in a stunted form. In the dry southern portions of the interior it is confined to the higher uplands between the various river valleys, coming down northward to the general level of the country. The best grown specimens are to be found near the coast in proximity to the numerous bays and inlets by which it is indented.

In those places it forms prodigious and dark forests, the foliage being so dense as to be impervious to sunlight. The trees here attain very large dimensions, many of them being over ten feet in diameter and two hundred to over three hundred feet high.

## REGION NORTH OF THE LAKES.

The region north of Lake Huron is generally timbered with beech, maple, pine and cedar, where the land is fertile, but as a great extent of this section is sandy and rocky, the area of timber is rather detached and restricted. At some distance from the shores of Lake Superior and extending from Sault St. Marie to Fort William, a large portion of good rolling land, occasionally broken by trap rock, and heavily timbered exists. On approaching the lake the country becomes mountainous and barren, varied at intervals with richly wooded fertile areas.

The Nipigon River, the largest to the north of Lake Superior, takes its rise in Lake Nipigon, and flowing through several smaller lakes empties itself through a wide, deep channel into Nipigon Bay. Adjacent to its banks are many fine white and Norway pine and other varieties of trees. The river swarms with trout, weighing from one to twelve pounds each, and in it and the surrounding lakes and rivers the most enthusiastic disciple of Isak Wilton would find ample means for enjoying his favorite sport.

Lake Nipigon, 120 miles long by 60 wide, is dotted with beautiful islands, some of which are very large and heavily timbered. The coast of the lake is generally mountainous and barren and but sparsely wooded.

Black Sturgeon River, connecting Lake Nipigon with Lake Superior, flows through a valley about six miles wide, which contains excellent soil, composed of disintegrated trap rock, of which the surrounding hills are composed. The adjoining country is wooded with large birch, elm, poplar, spruce and balsam trees.

The Kaministiquia, the only river on the Canadian side of Lake Superior that is navigable for vessels for any distance from the mouth, flows into Thunder Bay at Fort William. For the latter part of its course it winds through a rich valley of alluvial soil, between banks varying from five to forty feet in height. The valley is covered with a profuse growth of elm, ash, poplar, birch, spruce, pine and a thick underbrush of flowering shrubs.

This region of country is the sportsman's paradise, and is becoming yearly more fashion-