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WHAT WE OWE TO THE TREES.

In the April number of *Harper's Monthly Magazine*, Mr. N. H. Egleston has a very interesting and instructive article, entitled "What We Owe to the Trees." As it affords valuable lessons to Canada as well as to the United States, we take from it the following extracts, and will give others in our next issue—

SCHOOLS OF FORESTRY

So important a place have the forests come to occupy in the estimation of European people, on account of their value as sources of fuel and lumber, as well as their relations to agriculture, to climate, and to health, that the care and management of them have become one of the most important employments of private landholders, and of the many corporate bodies, including states and kingdoms, which are the possessors of forest domains. The state forests of France, for instance, amount to 3,000,000 acres, it is said, and reach an annual revenue of \$5,000,000. Many of the provinces and departments also are large forest proprietors. Germany has about 35,000,000 acres in forest, nearly one-third of which belongs to the state, one-sixth to the communes, and somewhat less than one-half to private individuals. Other European countries have larger forest areas, with correspondingly large revenues. The recognized importance of the forest interest has led to the establishment in most European countries of what are known as schools of forestry—institutions ranking in importance with our colleges and polytechnic schools. They furnish a course of instruction from two to two and a half years in length. During these terms the pupils are expected to spend five hours daily in study, and as many more in attendance upon lectures, or to do about twice the work required in our colleges. Taking for illustration the school near Berlin, the faculty embraces a director, who occupies the chair of forest science, with two assistants in the same department, a teacher of mathematics, physics, mechanics, and meteorology, one of chemistry, mineralogy, and geognosy, one of botany, one of zoology, and one of jurisprudence; and, in addition, a royal forest officer as assistant teacher of construction of roads, geodesy, and plan-drawing, and also a chemist as assistant teacher of geology.

It will be seen, even from such general statements, that the instruction in these schools includes not only the technical or botanical study of forests, but embraces also a complete course in natural science and mathematics, as well as, to a considerable extent, political economy, finance, and jurisprudence. Captain Campbell Walker, chief conservator of forests in New Zealand, giving an account of his visit to the school at Neustadt-Eberswalde, says: "Nothing struck me as more remarkable than the extent and varied nature of the studies required from forest candidates or probationers in Prussia, and the number of years they are contented

to spend, first in studying, and then in waiting for an appointment." The students at these schools or academies are expected to spend several years, either before or after their graduation, in practical work in the forest, under the watch and instruction of the forest officers, and it is only after five or six years of such employment that they can reasonably expect to receive a fixed and permanent appointment in connection with the forest service. Yet so respectable and desirable is this employment considered, that it is stated on good authority that a few years ago there were not less than thirty-three barons or baronets holding appointments in the crown forests of Prussia.

The important place which forestry holds abroad may be seen from the fact that there are nine of these schools in Germany, and one or more in every European country except Great Britain, which has hardly any forests to take care of, while the abundant moisture from her surrounding seas, and her exemption from severe summer heats on account of her high latitude, prevent her from suffering from the absence of trees, as she otherwise would.

THE WORK OF DESTRUCTION.

In our own country we have gone to the forests in a kind of freebooter style, cutting, and burning more than we could cut, acting for the most part as though all the while in a frolic or fight, until now at length, after a century or two of this sort of work, we are waking up to the fact that our once boundless woods are disappearing, and that we are likely to suffer no little loss thereby. But it is only the few who seem now to have any adequate sense of our condition as affected by the threatened loss of the trees. In a recent publication, issued by authority of one of our Western States for the express purpose of attracting settlers from European countries, the statistics of its great lumber production are elaborately set forth, accompanied by the assurance that the present enormous consumption of trees for this purpose may be continued ten or fifteen years longer before the forests will be destroyed. The cool unconcern in regard to the future shown in this is very noticeable. "After us, the deluge." A corresponding feeling, though working on a much smaller scale, is seen in an advertisement, and of a class often appearing in our older states. "Brace up, Young Man. You have lived on your parents long enough. Buy this farm, cut off the wood, haul it to market, get your money for it, and pay for the farm. The owner estimates that there will be 500 cords of market wood." And so, all over the country, on the large scale and on the small, the axe is laid at the roots of the trees, and our forests are fast disappearing. It is estimated that 8,000,000 acres of forest land are cleared every year, and that in the ten years previous to 1876, 12,000,000 acres were burned over simply to clear the land.

PLANTING ENCOURAGED.

The very necessities of their situation have aroused the people of some of our Western States to action. In Kansas, Nebraska, and other states liberal premiums have been offered for the encouragement of tree-planting, and already in many portions of the prairie region a perceptible change has taken place, and the eye no longer wanders over great spaces without sight of tree or shrub. Minnesota has her Forestry Association, and its secretary reports that between seven and ten millions of trees were planted in that state during the year 1877, of which more than half a million were planted in a single day, "Arbor Day," as it is called, or tree-planting day, the first Tuesday of May having been fixed upon as the day, and every owner of land invited to devote the day especially to the planting of trees. Similar efforts have been made in other states which are similarly situated in respect to the supply of forest. The great railway companies, whose roads stretch across the treeless prairies, have become in some instances planters of trees, feeling the need of them both as screens from the fierce storms that sweep down from the Rocky Mountains, and as a source of supply for the ties which are constantly needing renewal.

Tree-planters manuals are published and distributed freely, with a view to aid those who would plant by giving them the experience already obtained in regard to the most profitable trees to plant and the best methods of planting. Thus in some places there is already quite a movement in the right direction. In the reports of planting the figures make an imposing aggregate. But a liberal discount needs to be made for the probable failure of a large percentage of the trees planted. And even with the most generous estimate in regard to the work of planting, what is accomplished as yet is but a fraction of what needs to be done. It is but the feeble beginning of a vast work. The talk is of millions of trees planted. This sounds well. But a good many trees can stand upon an acre, and the latest estimates put the annual decrease of our forest area at seven million acres. So that Minnesota, with all her ardor in this work, has only planted one tree for every acre of trees destroyed. An area equal to that of the State of Maryland is every year swept clean of its trees. This is a large section to be taken yearly out of our forest resources. With all that we are yet doing in the way of tree-planting, the balance is largely against us. With all the interest and energy manifested by the young West on this subject, stimulated by her most pressing need, we are only planting one acre while thirty-five are laid bare by the axe and by fire. And we must consider also that the work of destruction goes on at an increasing rate from year to year as our population and our industries increase, and that the trees which are felled are the product, on the

average, of more than a century's growth, while those we plant must grow during a century before they can fill their place.

DESTROYING FORESTS.

In an able article on the subject of forest removal, the Cincinnati Commercial says that the conditions that affect the Ohio are still more strikingly apparent in the Cumberland. This great river nearly disappeared in the heats of last summer, and a few weeks ago was so high as to do frightful mischief. There was a time when the water supply was hardly sufficient for Nashville, and again a considerable portion of the city was overwhelmed. * * * It is not the grain, the rails, the bridges and houses that are swept away, the loss of which inflicts in the largest degree impoverishment upon the country, but the yellow floods waste the wealth of the land. There is talk that the Jews will return to Palestine. They can not do it. The country would not sustain a great people. The forests are gone, and with them the soil, washed off into the Mediterranean and Dead Sea. There are hundreds of creeks within 100 miles of Cincinnati that 50 years ago were ample and beautiful all the year around, and populous with sunfish and silver sides, and that were serviceable in turning mills, that now alternate between dusty gullies and turbid torrents, and the danger of water famine is constantly increasing. * * * The last vestiges of timber will be cleared from the Ohio valley in the course of a few years if the necessity for the abominable system of fences can not be obviated. The thing to do is to abolish it altogether. Then trees should be intelligently cultivated.

LAND GRABBING.

One of our exchanges says that for several years past it has been known that a large area of timber land in northern Minnesota, especially in the region drained by the St. Louis river and streams emptying into Lake Superior, has been unlawfully secured by lumber operators for the purpose of cutting off the pine, or speculating in the lands, or stumpage. This illicit business has been stimulated by the building of the Northern Pacific railroad from the Duluth district westward through Minnesota and Dakota, which has opened up a vast demand for lumber. The method by which the land grabbers proceed is by taking advantage of the pre-emption law. By a liberal application of its provisions a single speculator is able to locate himself repeatedly, and he becomes a permanent homesteader, as it were, on numerous quarter sections of land, and always where the pine stands the thickest and best, and is handy to streams. The way which a single individual, afflicted with the pine craze, will multiply himself for the purpose of covering as much pine land as possible, is a terror to the law.—*Lumberman's Gazette*.