

THE GROWTH AND DECLINE OF LUMBER ECONOMICALLY AND COMMERCIALY CONSIDERED—THE TRADE AS IT IS TO-DAY.

We find the following in the Brooklyn *Eagle*: Four years ago the then Secretary of the Interior reported that from all the information he could obtain there was not enough timber in the whole of the States to last thirty years. In 1878 a timber journal estimated the supply to last twenty years. Yet, notwithstanding these assertions, doubtless based upon accurate figures, merchantable lumber to-day is cheaper than it was ten years ago. Proof of this fact will be given further on. How to reconcile this apparent discrepancy is one of the purposes of this article. Statistics, as a rule, are not interesting to the general reader, and they will be avoided as much as possible, except where absolutely required for necessary illustration. The primary causes of the depletion of our forests (apart from the necessary clearing for homesteads and corn fields) are waste and carelessness. On taking up a farm the first thought and act of the farmer was to cut down every tree growing on it; and he never seemed quite happy until the last one had fallen. His government idea was doubtless to make every square inch of his land productive. The result of late years has shown him how great was his mistake. With the clearing away of the timber he has pretty well cleared away the climate also, and he has succeeded in reducing the number of rainy days to the detriment of his crops. Possibly some one will reply "but our grain products of late years have largely increased. How do you account for that?" True. This, however, is due to increased emigration and increased acreage in virgin soil, but it does not apply to the older settled States, as New York, Massachusetts, Indiana, and many others. The trouble has been that the boundless forests of the North-west promised to endure forever, and their seemed no incentive to any care of the original growth of timber. The fine old forests of the South have been more shamefully ill-used than those of the North. The negro has so little regard for trees that he never fails to cut down the young saplings, because they yield firewood with less trouble than other trees.

To appreciate more fully the rapid exhaustion that is now going on, it should be stated that it was quite usual, thirteen years ago, for a square timber to average in length from seventy to seventy-five cubic feet per log, whereas, at the present day, the average of the season's log crop does not average beyond fifty-five cubic feet—an average decrease of say seventeen feet in thirty years. Against this place the fact it requires something near 150 years for a pine tree to attain maturity, and a fair idea will be formed of the seriousness of the situation.

The initial causes of this rapid decline, it has been stated, are waste and carelessness. With regard to the waste, how does it arise? Take pine and hemlock as illustrations. In cutting out a square stick of pine lumber, twenty-five percent. is loss. A long train of dry chips marks the route from the spot where the tree is felled to the place of transportation on the way to the rough road. These trains, for they are almost as inflammable as gunpowder, easily catch fire, and when once started thousands of acres are in danger of destruction. Again, only one pine tree in every five is cut down in sound, for mercantile purposes. Consequently, four are left to rot in the woods, and thus increase the danger. Instead of utilizing the healthy parts of the stick, by using it up, thousands of dollars literally rot in the ground, annually, through this want of foresight. But would it pay to transport these unsound trees to a saw mill? Undoubtedly it would, for while the neglected stick may be quite useless as square timber, it would be useful for mouldings, laths and various other purposes for which pine is used. In the future, when pine becomes much scarcer than it is now, the collection of felled trees that have hitherto been supposed to be useless, will become a very valuable business. The same remarks also apply to hemlock. Thousands of these trees are stripped of their bark, year by year, and are left to share the same fate as the pine.

As to carelessness: Forest fires mainly proceed from the want of precautions on the part of lumbermen and hunters, who fail to see that

their camp fires are properly extinguished. A sudden breeze, a spark falls on a dead leaf, and, behold, a conflagration. In several instances fires have been known to originate from a passing locomotive, the smokestack of which has not been provided with a safeguard. But very few cases have been reported of extensive forest fires where engines have been furnished with this necessary article. Thus we see the results of waste and carelessness. It is a singular fact that very few fires are caused by lightning, which is almost invariably accompanied by heavy rain storms. Mr. Stewart Thayer, an English journalist, who has given the subject much attention, said in his evidence before the Select Standing Committee of the Canadian House of Commons, in April, 1878 (see report, p. 123):—"I have never been able to trace fires to lightning. I have been able to trace them, however, to almost every other cause." At a meeting of the Liverpool Board of Trade last fall the same gentleman remarked that it was within the bounds of moderation to say that within the past ten years the supply of timber that had been recklessly and unnecessarily cut down would, at the average rate of legitimate consumption, have lasted one hundred years.

THE REMEDY.

The remedy is simple enough and suggestive. In Europe every forest of any extent has its regular staff of officers and rangers, whose special duty it is to watch over its safety. Open spaces and broad belts of cleared land are kept up on purpose to keep fire from spreading. The ground is not incumbered with such a quantity of debris as is usual in the United States and Canada. There the people employed in the forests are interested in their preservation, and stringent official regulations control all others.

THE CLIMATE.

The subject of forest depletion is not alone important in its relation to the waste and consumption of timber. In its climate aspect it has great significance. The reports issued by the United States Government prove that a most notable change has taken place in the climate of the New England States, in New York State, New Jersey, and also in the Southern States.

In this State, where the error of a total clearing away was first observed, the replanting of forest trees has been attended with very good results. In these sections the rainfall has largely increased, and the rainfall is more evenly distributed throughout the season than in districts almost completely denuded of timber. On the prairies of Kansas and Nebraska, where a good natural growth of wood is lacking, the results obtained from the planting of forest trees are even more strikingly illustrated. The planted forest serves as a good wind break, and the influence of the wood's growth is seen in lessened periods of drought and an increase in crops. What is needed, however, is accurate information about the branches of trees adapted to particular soils, and to provide this the Government has set apart an appropriation, and placed in charge of the work Mr. Charles Sargent, professor of arboriculture in Harvard College. In San Francisco the cultivation of the almond tree has been attended with great success, as also that of the eucalyptus, or blue gum tree, indigenous to Australia, and admirably adapted for firewood. In the vicinity of San Jose there were planted last year 350 acres in almond trees, and the growers claim that it is the best paying industry in that part of the country—the profits being larger than are obtained from any other enterprise. In Massachusetts the Legislature has given large tracts for forest culture, in addition to liberal bonuses for the best variety of trees grown within a certain period. This part of the subject is especially interesting, but sufficient has been said to show that the public attention is being aroused to the absolute importance of remedying a condition of affairs which is becoming more serious every year. To ameliorate a climate presenting violent contrasts of temperature, there is only one method—that of planting wherever the nature of the soil will permit, and forming settlements under the shelter of these plantations.

THE LUMBER TRADE TO-DAY.

It was stated at the outset of this paper that merchantable timber is cheaper now than it was ten years ago. In an interview with a well-known lumber merchant of New York, who is

thoroughly posted on the subject, he said:

"Yes, lumber is much cheaper now than ten years since. The white pine was worth \$75 per 1,000; to-day it is quoted at \$55. Pitch pine, ten years ago, was \$45; now it is worth \$32.50. Hard woods, with the exception of black walnut, are also cheaper. Ash is now worth \$30 per 1,000; ten years ago it was \$75. It is the same with oak. Spruce then realized from \$25 to \$30. To-day I can buy it for from \$17 to \$20."

"How about black walnut?"

"Black walnut is the same price to-day as it was ten years ago \$120 per 1,000, jobbing price. But four years since the price of black walnut that now sells at \$120 was \$90. The reason is that we can see the end of it. It is now brought from the Missouri River to Indiana to be sawn up. Ten years ago it was growing at Indiana's own door."

"But how do you account for the cheapness in other woods, especially pine?"

"Over production. And yet the building trade was never more brisk and exports were seldom so large as now. But you must remember that the over production of lumber is the natural outcome of good times, and growers will soon see the mistake they are making by not saving their timber till they can get more for it."

"What will take the place of black walnut?"

"Mahogany from Mexico, which sells at from sixteen to twenty cents a foot."

"Does the export of square timber continue as large as formerly?"

"Well, I am scarcely prepared to say, but I should think not, because we are now manufacturing a class of goods that formerly were made from the log."

"What class may I ask?"

"We are sending, for instance, house trimmings to Scotland, as mouldings, sashes, etc. There is quite a trade springing up in portable houses in Chicago that are shipped to the West Indies and Australia. Formerly these were made in Norway and Bavaria, right near the forests. But America is getting ahead of those places."

"Does the introduction of iron in buildings affect the lumber interest?"

"Not much, as yet. I do not know but that it may eventually. In some large buildings that are going up iron beams, and even iron laths, are being extensively used, though whether they will stand the test of oxidation remains to be seen. These are used mostly in fire-proof buildings. The beams cost fifty cents more than wood beams."

"What is your impression about the scarcity of the lumber supply, taken as a whole?"

"The difference in the prices I have quoted does not carry out the supposition that the capacity of our forests is seriously declining, but there is no doubt much waste in the cutting of trees. But that waste is being rectified by new industries springing up by which much that was formerly thrown away is now utilized into mouldings, small panels, etc. If I were a proprietor of a pine forest I should decidedly keep my timber standing until it paid me to cut it. But I am not, being interested in buying all I can as cheaply as possible. You see it makes all the difference in the world how a man is situated. My impression is that at the present rate of consumption the people will only realize the full value of their timber when it is nearly all gone. But that is their business. My business is to sell."

Upon inquiry at the offices of a large sash manufacturer on Barclay street, who does an extensive export business, one of the partners said:

"We are shipping sashes and mouldings to London, and the trade is growing every year. In time it may turn out quite a large industry, as it is only of late years that the British have taken to buying such goods of American manufacture."

The over production theory certainly appears to be borne out in the following figures taken from the *Lumberman's Gazette*, for the week ending June 25, when the total shipments of lumber, lath and shingles from the Saginaw, with comparisons, were as follows:

	1880.	1881.
Lumber.....	211,650,362	164,839,369
Shingles.....	35,320,000	31,653,000
Lath.....	12,909,650	2,748,000

Again, in the comparative statement of stock on hand in the Chicago market on June 1, the figures are as follows:

	Lumber and Timber.		Lumber and Timber.
1875.....	188,212,186	1879.....	225,739,000
1876.....	205,551,023	1880.....	272,467,878
1877.....	216,150,985	1881.....	270,817,946
1878.....	243,366,400		

In the one case it will be noted that while the sales from the Saginaw were much less on the date specified this year than in 1880, the accumulations of stock on the Chicago market on June 1 have been increasing until the present season. The reason of the sudden decline in 1881 is owing not to the fact that the over production has been sensibly reduced, but that prices have fallen so low that dealers can no longer afford to hold their stuff. Were it otherwise, it would be found that the shipments from the Saginaw would have increased in 1881, instead of being reduced. The same remark applies to other lumber centers. F. J. H.

Tree Cisterns.

It has long been known, through the reports of travellers, that in certain arid districts of Africa water is often found, even in the driest seasons, in hollow trunks of the great baobab tree (*Adansonia*), and it was supposed that the preservation of water was, so to say, natural; but it appears from the investigations of officers attached to surveying parties sent out by the Egyptian Government, that these reservoirs are neither formed nor filled by the accidents of nature. They are in reality prepared and filled by the inhabitants of the country, who carefully remove the decayed and spongy fibers from the interior of the trunk and laboriously transfer water to the cisterns thus made, bucketful by bucketful, from neighboring pools in which it collects in the rainy season. The importance of these reservoirs is illustrated by the fact that trunks containing 15,000 gallons of water are not uncommon in Kordofan, and that individual trunks have been measured which might store 33,000 gallons. The officers of the survey urge that it would be well for the Egyptian Government to organize a service for the protection and maintenance of these trees on the post roads and telegraph lines, so that couriers, linesmen, inspectors, etc., might always find a store of water. They cite one particular post-route, where in times past the people of the country had carefully filled the *Adansonia* tree during the season of rains, and thus ensured water during the dry seasons for much travel. But when troops were moved in that direction, the inhabitants took alarm, abandoned the vicinity, and neglected to fill the trees, so that the road became as good as impassable.

The Sand Blast.

Among the wonderful and useful inventions of the times is the common sand blast. Suppose you desire a piece of marble for a grave stone; you cover the stone with a sheet of wax no thicker than a wafer, then you cut in the wax the name, date, etc., leaving the marble exposed. Now pass it under the blast and the sand will cut it away. Remove the wax and you have the raised letters. Taking a piece of French plate glass, say two by six feet, cover it with fine lace and pass it under the blast, and not a thread of the lace will be injured, but the sand will cut deep into the glass wherever it is not covered by the lace. Now remove the lace and you have a delicate and beautiful figure raised upon the glass. In this way beautiful figures of all kinds are cut in glass and at a small expense. The workmen can hold their hands under the blast without harm, even when it is rapidly cutting away the hardest glass, iron or stone, but they must look out for finger nails, for they will be whittled off right hastily. If they put on steel thimbles to protect the nails, it will do little good, for the sand will soon whittle them away, but if they wrap a piece of soft cotton around them they are safe. You will at once see the philosophy of it. The sand whittles away and destroys any hard substance—even glasses—but does not effect substances that are soft and yielding, like wax, cotton, or fine lace, or even the human hand.

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