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CONSUMPTION OF WOOD PRESERVATIVES AND QUANTITY OF WOOD TREATED IN THE UNITED STATES IN 1910.

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INTRODUCTION.

Although the practice of impregnating wood with various chemicals to prolong its life has been in existence for many years, the commercial treatment of timber in the United States did not begin until 1848, when a Kyanizing plant was established at Lowell, Mass. About 1874 a treating plant using creosote was built at West Pascagoula, Miss. From that time until the first part of the present century the growth of the timber-treating industry was gradual, and even as late as 1904 there were approximately only 30 treating plants in operation in the United States. Since that time, however, wood preservation has grown very rapidly, and there were in the United States in 1909 more than 80 commercial plants.

PRESERVATIVES USED.

The principal preservatives which have been used from time to time include creosote, zinc chloride, corrosive sublimate, and crude oil. The ones most largely used at present are creosote and zinc chloride, in the order named

In 1910 over 63 million gallons of creosote and nearly 17 million pounds of zinc chloride were used in preserving timber in the United States. There were also used small quantities of corrosive sublimate, water-gas tar, crude oil, and refined coal tar. These figures are based upon reports of 49 firms operating 71 treating plants, which represent 96 per cent of the plants in operation during that year, and show a greater consumption of creosote than has ever been reported in any previous year.

Table 1.—*Consumption of creosote and zinc chloride in the United States in 1908, 1909, and 1910.*

Years.	Creosote.	Zinc chloride.	Firms reporting.	Number of plants.
	Gallons.	*Pounds.*		
1908	56,000,000	19,000,000	44	64
1909	51,431,212	16,215,107	46	64
1910	63,266,271	16,802,532	49	71

SOURCE OF PRESERVATIVES.

Since timber treating began on a commercial scale in the United States the domestic supply of creosote has never been equal to the needs of the industry. With the rapid development of wood preservation in recent years the insufficiency of the home production has become more marked. Table 2 shows the relative amounts of domestic and imported creosote used during the three years ending in 1910.

TABLE 2.—*Relative amounts of domestic and imported creosote used in the United States in 1908, 1909, and 1910.*

Years.	Total gallons creosote used.	Domestic creosote.		Imported creosote.	
		Gallons.	Per cent of total.	Gallons.	Per cent of total.
1908	56,000,000	17,360,000	31	38,640,000	69
1909	51,431,212	13,862,171	27	37,569,041	73
1910	63,266,271	18,184,355	29	45,081,916	71

Nearly three-fourths of the imported creosote came from England and Germany; some was obtained from other European countries and some from Nova Scotia. The domestic creosote was obtained chiefly in New York, Philadelphia, Chicago, and other large cities.

Were all the tar produced, which the coal annually coked in the beehive and by-product ovens in the United States is capable of yielding, it would distill considerably more creosote than is now used in preserving wood in this country. Unfortunately, American operators do not even get the fullest use of the limited quantity of coal tar made in this country, for it does not pay the operators to distill coal tar for creosote alone; so, unless they can find a market for the associated products, it is not separated. Germany has gone far ahead of the United States in the development of coal-tar products, and European exports of creosote to this country are steadily increasing.

The zinc chloride used in wood preservation was all obtained from domestic sources, according to the reports, most of it being produced by a few large chemical companies.

MATERIAL TREATED.

Seventy-one plants reported a treatment of 17,933,918 hewed ties and 8,500,657 sawed ties during 1910. There were also treated by these plants 9,383,366 board feet of switch ties; 1,402,109 board feet of bridge ties; 7,826,749 lineal feet of piling; 1,809,723 square yards of paving blocks, 85 per cent of which were yellow pine, the remainder being made up of Douglas fir, red gum, larch, and Norway pine;

453,462 lineal feet of poles; 142,093 cross-arms; 43,648,101 board feet of bridge timbers; and 49,638,844 board feet of other construction timbers. Approximately 30 million board feet of various other materials, such as, posts, flooring, mine timbers, wood conduits, car sills, car flooring, tie plugs, barge timbers, etc., were also treated.

The following comparative statement of material treated in the United States during the years 1907 to 1910 has been compiled from statistics collected by the Wood Preservers' Association and by the Forest Service. The table is instructive mainly in showing the tendency toward the use of certain preservatives. It will be noted that of the approximately 100 million cubic feet of material treated in 1910 with creosote and with zinc chloride, considerably more than half was treated with creosote. In 1909 there was less material treated by these preservatives than in 1908; 1910, however, shows a decided increase in the amount of material treated.

Crossties are particularly liable to decay, since they are used under conditions which are favorable to the growth of wood-destroying fungi. Consequently, the railroads have always taken a leading part in timber preservation in the United States. Fifteen railroads report the operation of timber-treating plants; many also have ties and other materials treated by commercial plants.

The perusal of the individual reports for 1910 shows also a tendency toward the treatment of certain classes of material which have not heretofore been treated to any great extent. For example, the railroads report the treatment of large amounts of tie plugs, pole brackets, fence posts, pole steps, tunnel wedges, and planks. Other commercial concerns also report a treatment of much material which goes into conduit and sewer pipes, barge timbers, and lumber for use in exposed places. The treatment of mine timbers also shows a decided increase.

TABLE 3.—*Wood material treated with preservatives in the United States, 1907–1910.*

Preservatives.	Crossties.	Piling.	Poles.	Paving blocks.
Creosote:	*Cu. feet.*	*Cu. feet.*	*Cu. feet.*	*Cu. feet.*
1907 [1]	17,252,622	4,423,611	[4]	2,874,560
1908 [1]	28,861,260	6,059,919	[4]	1,260,020
1909 [2]	29,830,080	4,421,726	659,664	2,994,290
1910 [2]	44,525,529	5,219,254	265,597	4,692,453
Total	120,469,491	20,124,510	925,261	11,821,323
Zinc chloride:				
1907 [1]	29,594,295	[4]	[4]	[4]
1908 [1]	25,920,690	[4]	[4]	[4]
1909 [2]	24,153,162	[4]	[3]	[4]
1910 [2]	27,587,583	[3]	[3]	[4]
Total	107,255,730			
Zinc creosote:				
1907 [1]	7,037,010	152,541	[4]	[4]
1908 [1]	9,781,590	426,610	[4]	[4]
1909 [2]	8,095,794	[4]	[4]	[4]
1910 [2]	6,354,219	38,392	[4]	[4]
Total	31,268,613	617,543		
Grand totals of materials by classes	258,993,834	20,742,053	925,261	11,821,323

Preservatives.	Construction timbers.	Cross-arms.	Lumber and miscellaneous.	Totals of each treatment by years.
Creosote:	*Cu. feet.*	*Cu. feet.*	*Cu. feet.*	*Cu. feet.*
1907 [1]	1,687,450	238,742	4,561,327	31,038,312
1908 [1]	2,657,398	480,640	6,065,717	45,384,954
1909 [2]	4,902,311	41,764	417,787	43,267,622
1910 [2]	7,801,272	88,069	2,682,713	65,274,887
Total	17,048,491	849,215	13,727,544	184,965,775
Zinc chloride:				
1907 [1]	325,886	[4]	74,564	29,994,745
1908 [1]	640,606	[4]	95,900	26,657,196
1909 [2]	320,891	[4]	2,333	24,476,386
1910 [2]	541,514	[4]	71,060	28,200,157
Total	1,828,897		243,857	109,328,484
Zinc creosote:				
1907 [1]	[4]	[4]	5,691	7,195,242
1908 [1]	95,700	[4]	35,858	10,339,758
1909 [2]	62,918	[4]	43,699	8,202,411
1910 [2]	181,143	[4]	30,646	6,604,400
Total	339,761		115,894	32,341,811
Grand totals of materials by classes	19,217,089	849,215	14,087,295	326,636,070

Total material treated each year:	*Cu. feet.*
1907	68,228,299
1908	82,381,908
1909	75,946,419
1910	100,079,444

[1] Figures furnished by Wood Preservers' Association.
[2] Figures compiled by the Forest Service.
[3] Figures, if used, would reveal operations of reporting firms.
[4] No statistics collected.

Approved.
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Secretary of Agriculture.

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