

effect that certain trees in the forest should be avoided during electrical storms, the "searchlight of science" is now being applied by the Forest Service, United States Department of Agriculture, to the question of just what trees are most frequently struck by lightning.

The value of this study, according to the Forest Service, lies not only in the fact that it will give very useful information on where it is wise not to be when thunderbolts are being let loose, but it will furnish valuable data on the forest fire hazards incident to lightning storms and the types of trees most likely to be ignited. In view of the fact that lightning is the cause of an average of about 3,450 forest fires in the United States every year, this study is considered of great importance.

Lightning probably strikes all species of trees, but it is known that it strikes certain species much more frequently than others. European studies indicate that pine, oak, and spruce are the species most subject to "lightning stroke," and beech perhaps the least. An American study, based on more than 76,000 trees in the West, showed that 72 per cent of the trees hit were western yellow pine and Douglas fir.

"The question is," says Richard E. McCardle, of the Pacific Northwest Forest Experiment Station, "why should one species attract lightning more than any other? Consensus of opinion, both American and European, seems to be that height of trees, especially of isolated ones, and the character of the bark have much to do with it. This means that the smooth-bark trees are less likely to be struck than those with thick, furrowed bark, and that dominant trees are more liable than the shorter trees in the forest. It has been claimed that there is no evidence to show that trees growing in any particular class of topography are struck more often than those in other classes beyond the natural tendency of lightning to hit trees on the ridges.

"There are very meager data to show what influences character of soil, its moisture content, and the like have on the attraction of lightning. Nor is there reliable information concerning the character of the trees that are struck, whether they usually have spike tops, whole green tops, or if snags are hit more frequently than green trees. This opens a fertile field for conjecture involving such questions as: What percentage of the trees are killed? Do lightning fires originate from trees struck, from snags only, or from strikes to the ground? What proportion of the tree or snags struck are ignited, and does this vary with species?"—*U. S. Dept. of Agriculture "Clip Sheet."*

EARLY OPENING OF NAVIGATION ON THE GREAT LAKES IN 1927

That portion of the public which had faith in the "forecasts" of a hard and long-lasting winter for 1926-27, has already had time to realize that something went wrong.

One of the criteria of the character of a winter in this country is the date of opening of navigation on the Great Lakes in the spring following. It is therefore interesting to learn (through an Associated

Press dispatch from Buffalo, dated April 4), that on April 3rd a freight steamer from Detroit arrived at Buffalo, "the first arrival of the season, marking the earliest opening of navigation in many years. Captain F. Fred O'Haken reported the south shore clear of ice."

The Hydrographic Bulletin prints the following item from the Branch Hydrographic Office at Sault Ste. Marie, Michigan, dated April 6th: "ST. MARY'S RIVER AND WHITEFISH BAY.—Above canal, ice broken up and drifting; below canal, ice in channel broken up. Three vessels, with aid of tugs, made passage down from Sault Ste. Marie successfully."

For Lake St. Clair and Detroit River, the same Bulletin reports: "No ice. Navigation will probably be resumed during the present week, and the display of storm signals will be resumed on April 10, 1927.—U. S. Weather Bureau, April 5, 1927."

The General Superintendent of the St. Mary's Falls Canal, Sault Ste. Marie, Michigan, has kindly furnished a list of the dates on which navigation through the canal has been resumed each spring. It appears that the opening date this year is the earliest since 1903, when it was April 2nd. In 1902 it occurred on April 1st. That is the earliest of record. To find a date at all comparable with the 1927 opening (except the two just noted) one must go back to April 11, 1898; and the "record" early resumption of navigation previous to that was on April 8, 1878.

The arithmetical mean of 72 opening dates (1856-1927, omitting the original opening on June 18, 1855, obviously not determined by ice conditions), is April 24th, the earliest being, as noted, April 1st, and the latest "April 42nd" (May 12th).

The most frequently occurring dates of opening do not at all group themselves about the arithmetical mean date, nor even about a single most frequent date. Instead, there are two peaks in the distribution, one reaching its maximum on April 20th, the other on May 2nd. The distribution of the 72 dates is this:

		APRIL OPENINGS													
Date ..	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
No. ...	1	1	0	0	0	1	1	2	0	2	1	1	2	1	1
	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
	0	2	3	3	5	4	2	1	2	2	1	2	2	2	1
		MAY OPENINGS													
Date				1	2	3	4	5	6	7	8	9	10	11	12
No.				4	5	2	3	2	1	2	2	1	0	2	2

—B. M. V.

TESTS OF TREE SEED DISPERSAL BY WIND

We are indebted to one of our western members, Mr. Charles R. Fletcher of Los Angeles, for the following clipping, presumably from a Los Angeles newspaper:

PORTLAND, ORE. (Special Correspondence)—How far does the wind carry the seed of trees? This is a question that often has been asked