

TORNADOES, WIND-STORMS, AND INSURANCE

The Weather Bureau received not long since a request for data bearing on the question of whether there was a basis for what were said to be high wind-storm insurance rates in Florida. The Climatological Division of the Bureau sent the inquirer the figures printed below.

It is evident that if one considers the frequency of, and destructiveness of storms considered tornadoes, for the states listed, Florida makes by far the best showing, with Kentucky a close second as regards frequency, and North Dakota as regards property damage. With respect to wind-storms not considered to have been tornadoes, Florida's record for the nine years considered is not so favorable. Wind-storm damage was slightly more than twice that reported for the next following state, Kentucky. Mr. H. C. Hunter of the Climatological Division points out that this figure for Florida is due to hurricanes, of which the paths are wide, and the duration of high winds usually several hours.

COMPARATIVE DATA FOR 9 STATES ON TORNADOES AND WIND-STORMS,
1916 TO 1924 INCLUSIVE

State	Storms considered tornadoes		Wind-storms not considered tornadoes
	Number reported	Property damage reported (thousands of dollars)	Property damage reported (thousands of dollars)
Florida	6	53	9,872
Indiana	22	5,049	2,796
Kansas	85	5,764	1,668
Kentucky	8	2,080	4,426
Missouri	66	3,811	1,347
North Dakota	21	428	1,171
Ohio	28	15,742	* 200
Oklahoma	57	3,939	2,311
Tennessee	28	1,066	1,201

* For those storms reported in dollars; believed to be only a very small part of the actual damage.

THE VEGETATIVE SEASON

The vegetative season usually begins when the daily mean temperature reaches 43 degrees Fahrenheit. Not till the daytime maxima reach 50 or 55 and the nighttime minima no longer go below freezing often, does vegetation awaken. A single frost may later, however, kill the new growth and require a second, belated start. Thus the growing season for crops is commonly counted as the period between the last killing frost in spring and the first in autumn.

Along the Gulf and south Pacific coast, it is never cold enough to produce a definite winter rest period; the vegetative season extends through-

out the year, except when interrupted by the occasional killing frost. South of Tennessee, crops can grow generally for at least 9 months. For a large part of the central plains region the growing season lasts about 7 months. In a belt including Chicago, New York and southern New England, plants will grow during half the year, but farther north and in the Rockies generally not more than five months of growing weather is the rule.

Unlike the South, Mr. J. B. Kincer has shown that the frostless and vegetative seasons in the North nearly coincide. The fast rate of ascent of temperature in spring and descent in fall bring frost and vegetative dates close together. On clear days the range of temperature is about 20 to 25 degrees Fahrenheit, so a frosty minimum of just under 32 normally goes with a mean of 43.—*C. F. Brooks*, in "Why the Weather." (Science Service).

MIRAGE OVER A FOG

Mr. V. E. Jakl in his monthly aerological summary for February, 1926, writes as follows (*Monthly Weather Review*, February, 1926):

The occasional extreme stratification of the air attending inversions in the lower levels, characteristic of the northern stations in the winter season, was shown at Ellendale, North Dakota, several times during the month by the occurrence of a mirage or looming phenomenon. A description of the more pronounced one occurring on the morning of the 13th is given in the following extract from the report from that station:

Low-lying dense fog occurred with Ci. St. and A. St. clouds at 7.30 A. M. The surface wind was almost calm and it was necessary to carry out the head kite 600 metres in order to launch it into a sufficiently strong wind aloft to support it. The land slopes downward about 10 metres in the distance of 600 metres to which the kite was carried, and the kite instrument record shows that at this distant point the temperature was about 5° lower than at the reel house, where the temperature was —4.5°. The record further shows that immediately the kite was launched, the temperature rose rapidly the first few hundred metres. A little later when the dense fog had thinned to light fog an interesting mirage was observed. A grove of trees about 2,700 metres east of the reel house was visible at the top of the fog, probably about three times their height above the ground. The trees could not be seen through the fog on the ground, but the upper third of their height was seen ranging along the top of the fog layer. Another solitary tree about three miles southeast of the station was also observed in the same manner. This is the first time that relatively close objects have been observed in mirage; on other occasions distant objects only have been observed in connection with a low-lying smoke layer.

Runaway Kites

Seven kites, with 6 miles of wire, broke away from the aerological station at Royal Center on February 21 and landed at a distance of 190 miles, north by east, from that station. So long a journey, which has been exceeded only twice in the experience of the Weather Bureau, was made possible by the stabilizing effect of the trailing wire.—U. S. Weather Bureau, "Topics and Personnel."