

TORNADOES IN THE UNITED STATES, 1950-1956

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1. INTRODUCTION

During the period 1950-1956 a total of 3,204 tornadoes was recorded in the United States as compared with 5,204 during the years 1916-1950 [1]. These data give an average of 458 tornadoes per year for the 1950-1956 period as compared with the 149 per year for the 1916-1950 period. Because of the increased number of observations during the more recent period, it was decided to study the distribution State by State, monthly and hourly, for comparison with results of the earlier study.

2. DATA

The 1950-1956 data were obtained from *Climatological Data, National Summary*. Every effort was made to include only those tornadoes which touched the ground. Funnel clouds aloft were not included because of the more likely chance of mistaken identity.

Due to the difficulty of determining in "family type" outbreaks whether the same tornado was sighted several times or whether several tornadoes developed, the material in *Climatological Data* was used to make the decision.

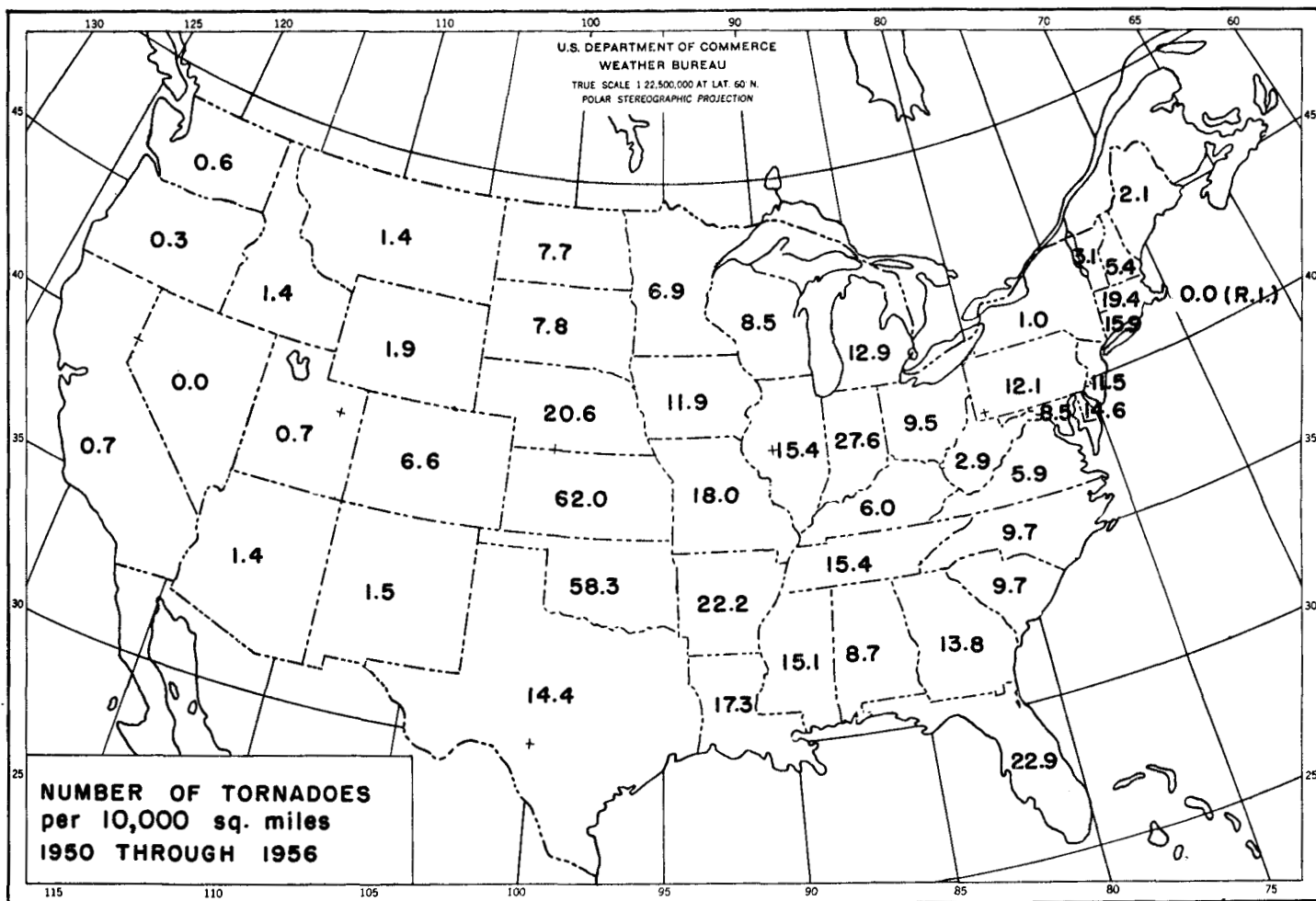


FIGURE 1.—Number of tornadoes per 10,000 square miles, 1950-56.

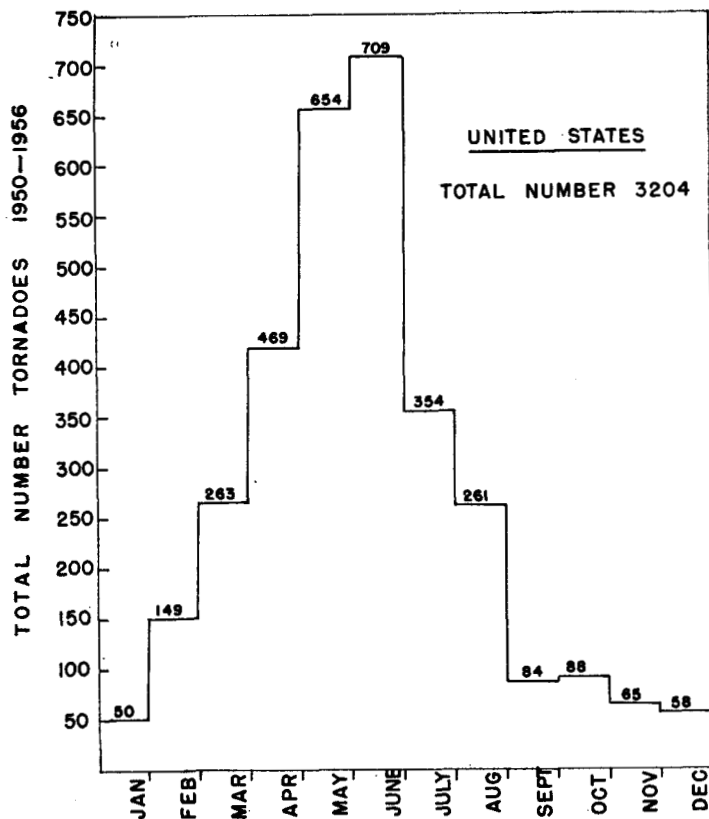


FIGURE 2.—Total number of tornadoes in the United States, 1950-56.

When a report indicated the occurrence of several tornadoes but gave no exact number, the number "two" was arbitrarily used as the number of tornadoes.

The time (CST) of the first report of a tornado was used in the hourly distribution data. All tornadoes which had no definite time assigned to them were lumped in a miscellaneous category in the hourly tabulation. For example, a tornado reported at an indefinite time, such as "morning," "early morning," "early evening," fell in this category.

3. RESULTS

Figure 1 shows the distribution by States of reported tornadoes per 10,000 square miles for the period 1950-1956. In figure 2 the total number of tornadoes reported in the United States during the years 1950-1956 has been broken down according to month. This figure shows a definite majority (2,859 or 89 percent) of the tornadoes occurring between February 1 and August 31, with 2,186 or 68 percent occurring between April 1 and July 31.

Figures 3 through 12 show the monthly distribution for each State, except the New England States and the Far West. In these two regions, insufficient tornado activity precluded a separate graph for each State. Graphs were not made for Rhode Island and Nevada, as no tornadoes were reported in these States during the period of study. States were not grouped as in previous studies because there was a significant shift in monthly tornado activity among States previously grouped together—such as the case of Florida, Alabama, and Georgia. This difference in the 1950-56 figures is also shown by the March maximum in Arkansas compared to a general March to May maximum in Missouri, a May maximum in Oklahoma, and a June maximum in Kansas. There is also the April maximum in Iowa compared to a July maximum in North Dakota.

The graphs of figures 3-12 were studied and grouped within the same geographical region according to similar hourly distribution curves. These groupings were then used in figures 13 through 20 for the hourly studies. Because the time of the first report of a tornado was used in compiling the hourly distributions, figures 13-20 might appropriately be interpreted as the time distribution of first reports of tornado activity.

The actual number of tornadoes reported was used rather than a percentage frequency distribution so that in case a relatively small number of cases was reported, too much weight would not be given to the distribution. In all cases where several months are combined into a graph and/or several States are included in one graph, individual graphs had been originally prepared and then these were used to form the final composite graph.

Like the earlier study, figures 13-20 show that the great preponderance of tornadoes occurred in the hours between 12 noon and midnight (CST). Again the southeastern States (Alabama, Georgia, Mississippi, and Louisiana) displayed the main diversity from this pattern. Oklahoma and the groups, Wisconsin-Illinois-Indiana-Michigan and Arkansas-Missouri-Tennessee-Kentucky, showed a tendency for occurrences to continue to be numerous for several hours after midnight, especially in the spring months.

REFERENCE

1. U. S. Weather Bureau, "Tornado Occurrences in the United States," *Technical Paper No. 20*, Washington, D. C., 1952, 42 pp.

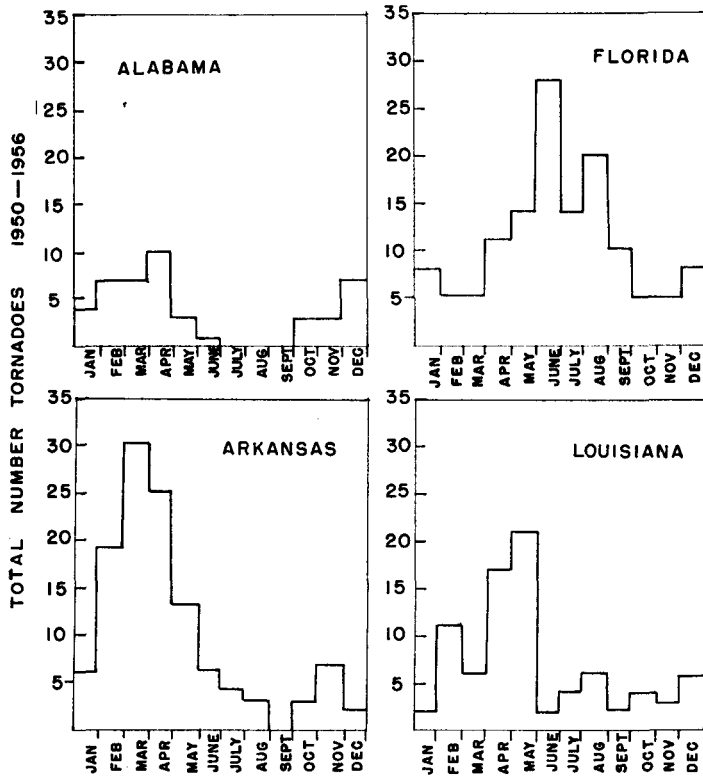


FIGURE 3.—Total number of tornadoes in Alabama, Florida, Arkansas, and Louisiana, 1950-56.

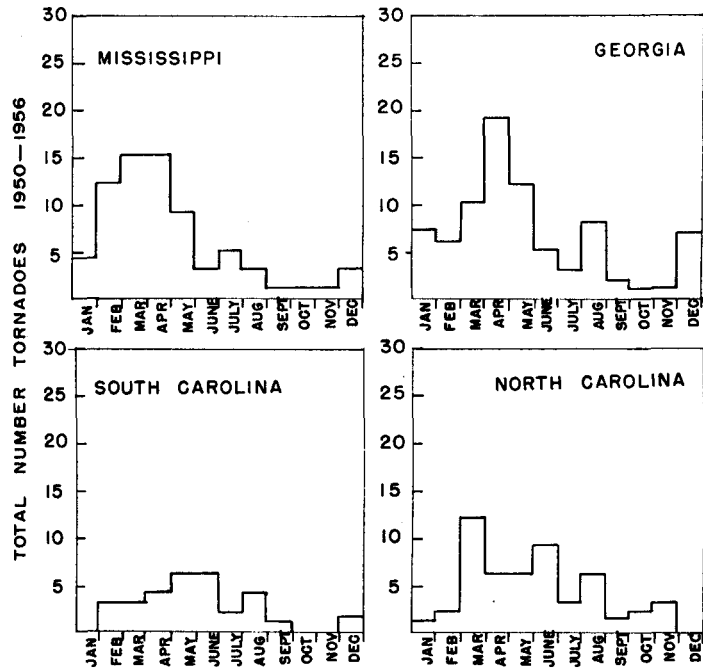


FIGURE 4.—Total number of tornadoes in Mississippi, Georgia, South Carolina, and North Carolina, 1950-56.

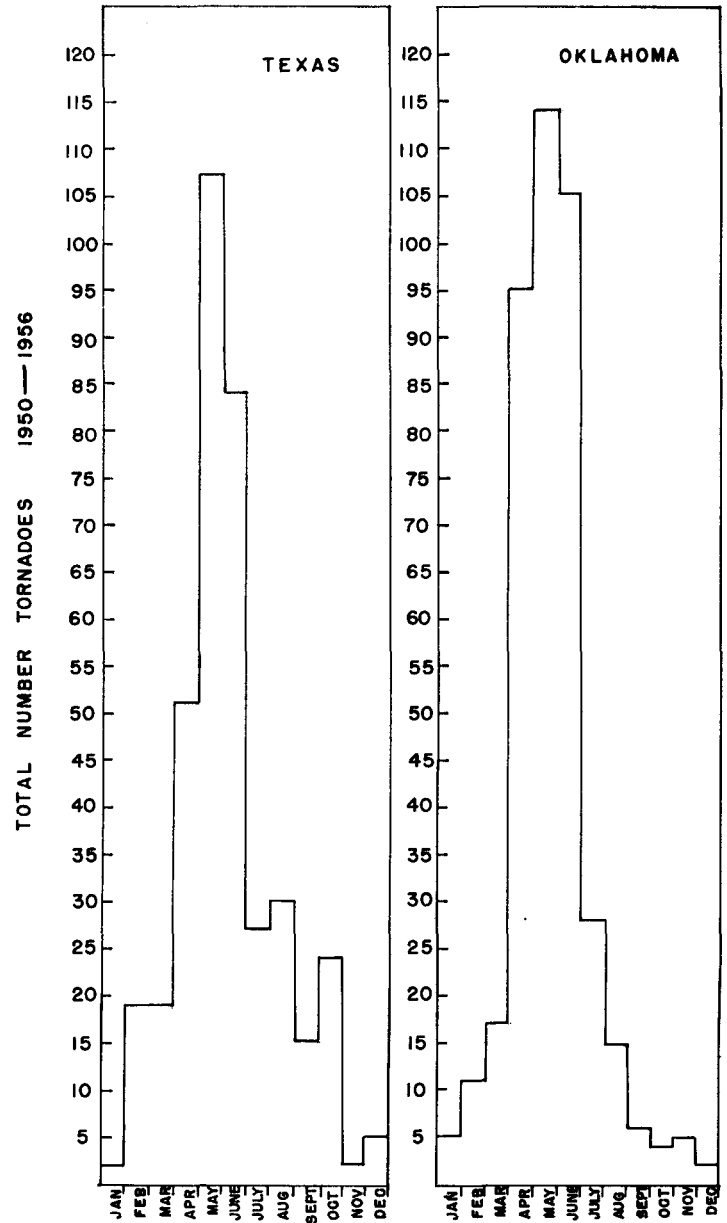


FIGURE 5.—Total number of tornadoes in Texas and Oklahoma, 1950-56.

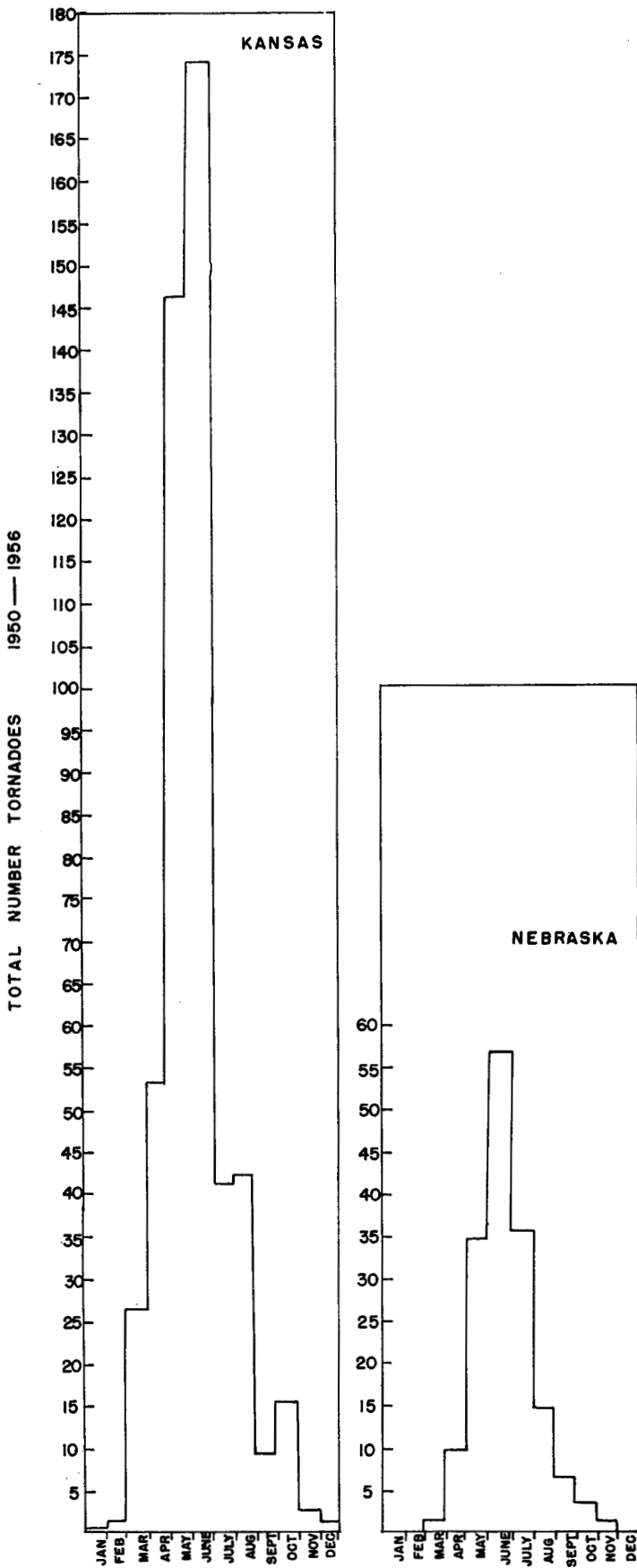


FIGURE 6.—Total number of tornadoes in Kansas and Nebraska, 1950-56.

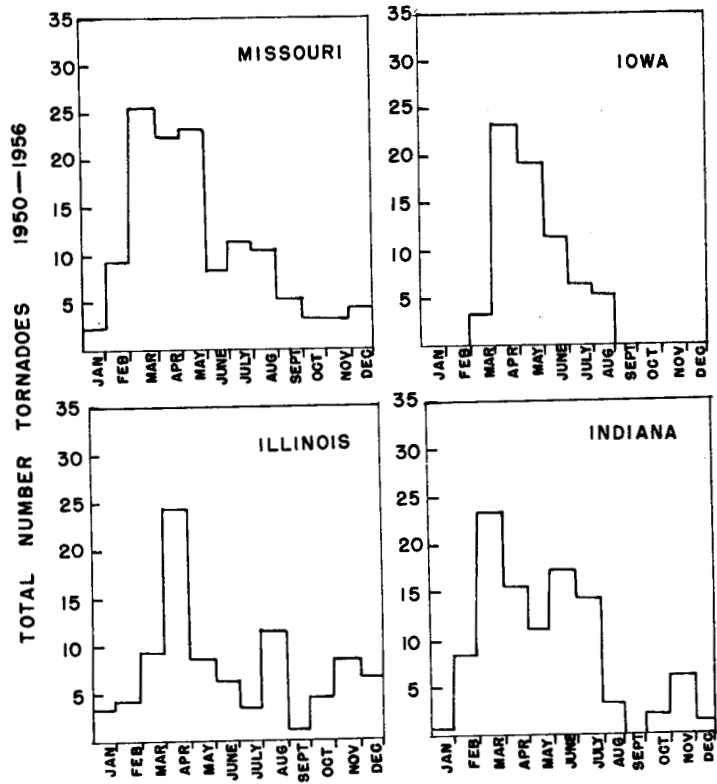


FIGURE 7.—Total number of tornadoes in Missouri, Iowa, Illinois, and Indiana, 1950-56.

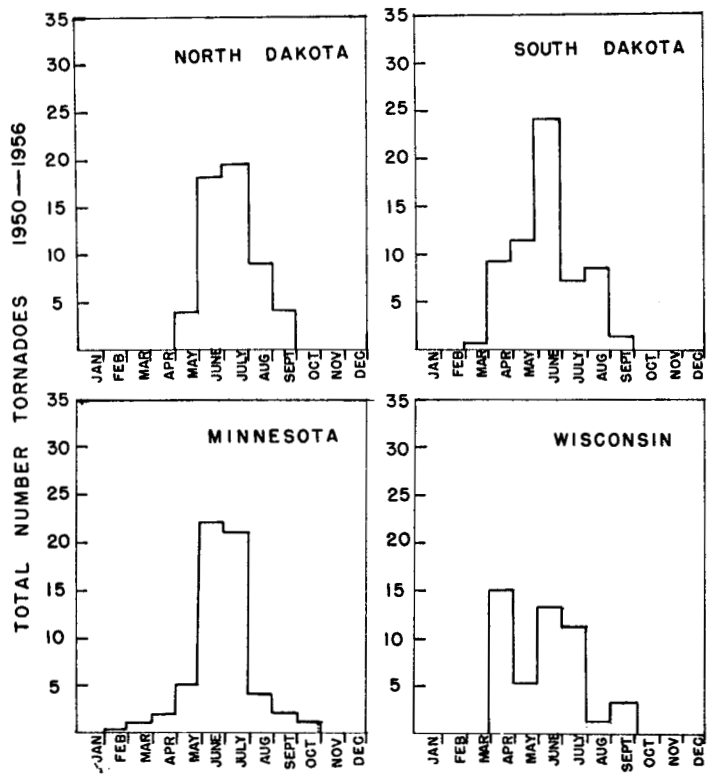


FIGURE 8.—Total number of tornadoes in North Dakota, South Dakota, Minnesota, and Wisconsin, 1950-56.

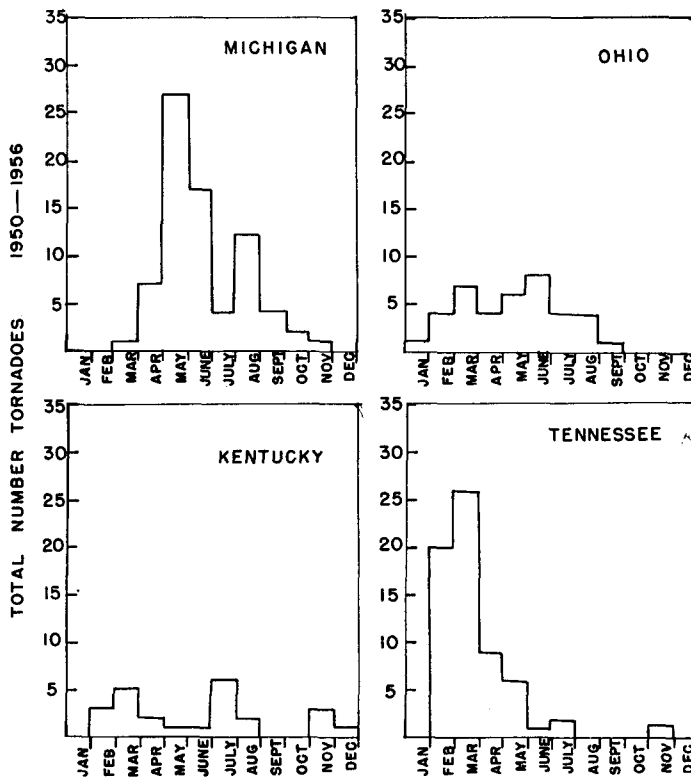


FIGURE 9.—Total number of tornadoes in Michigan, Ohio, Kentucky, and Tennessee, 1950-56.

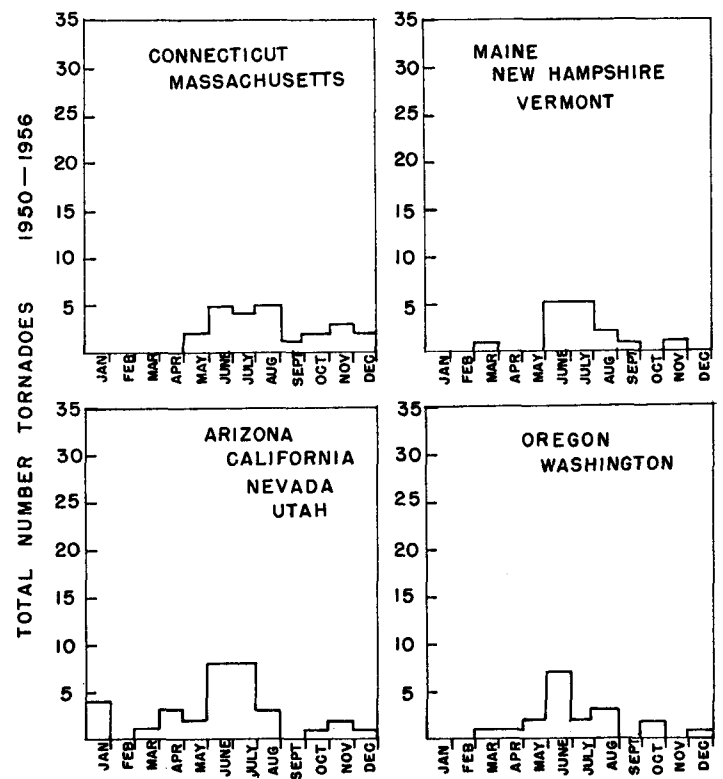


FIGURE 11.—Total number of tornadoes in Connecticut-Massachusetts-Maine-New Hampshire-Vermont, Arizona-California-Nevada, Utah, and Oregon-Washington, 1950-56.

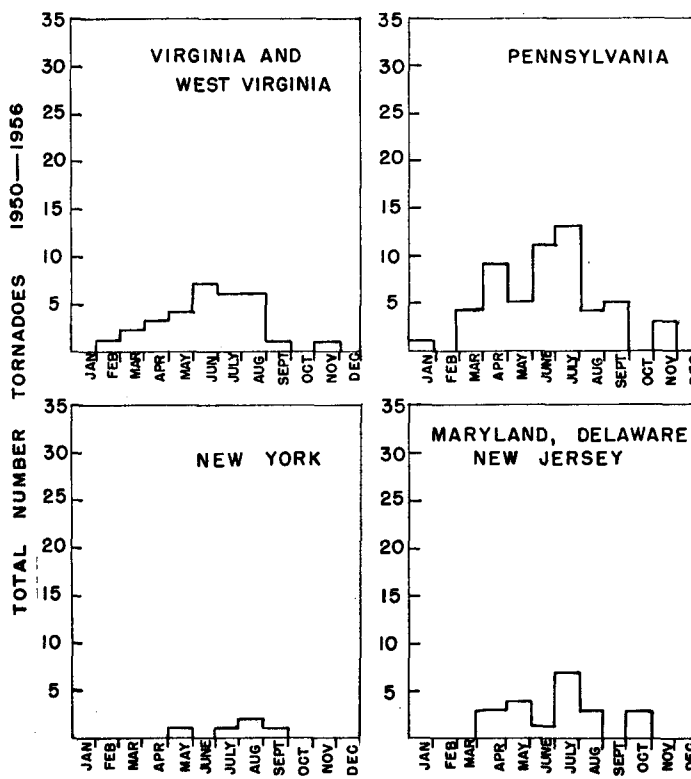


FIGURE 10.—Total number of tornadoes in Virginia-West Virginia, Pennsylvania, New York, and Maryland-Delaware-New Jersey, 1950-56.

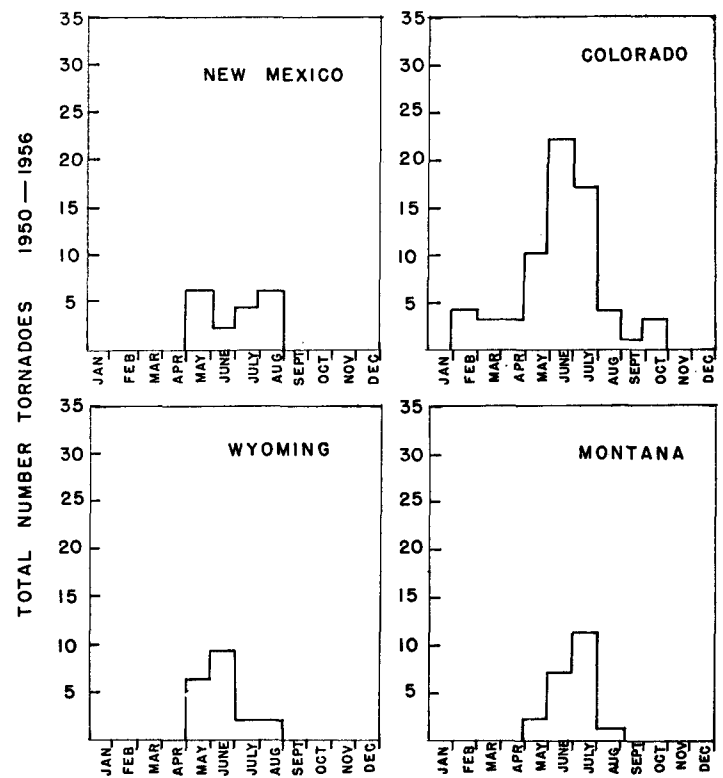


FIGURE 12.—Total number of tornadoes in New Mexico, Colorado, Wyoming, and Montana, 1950-56.

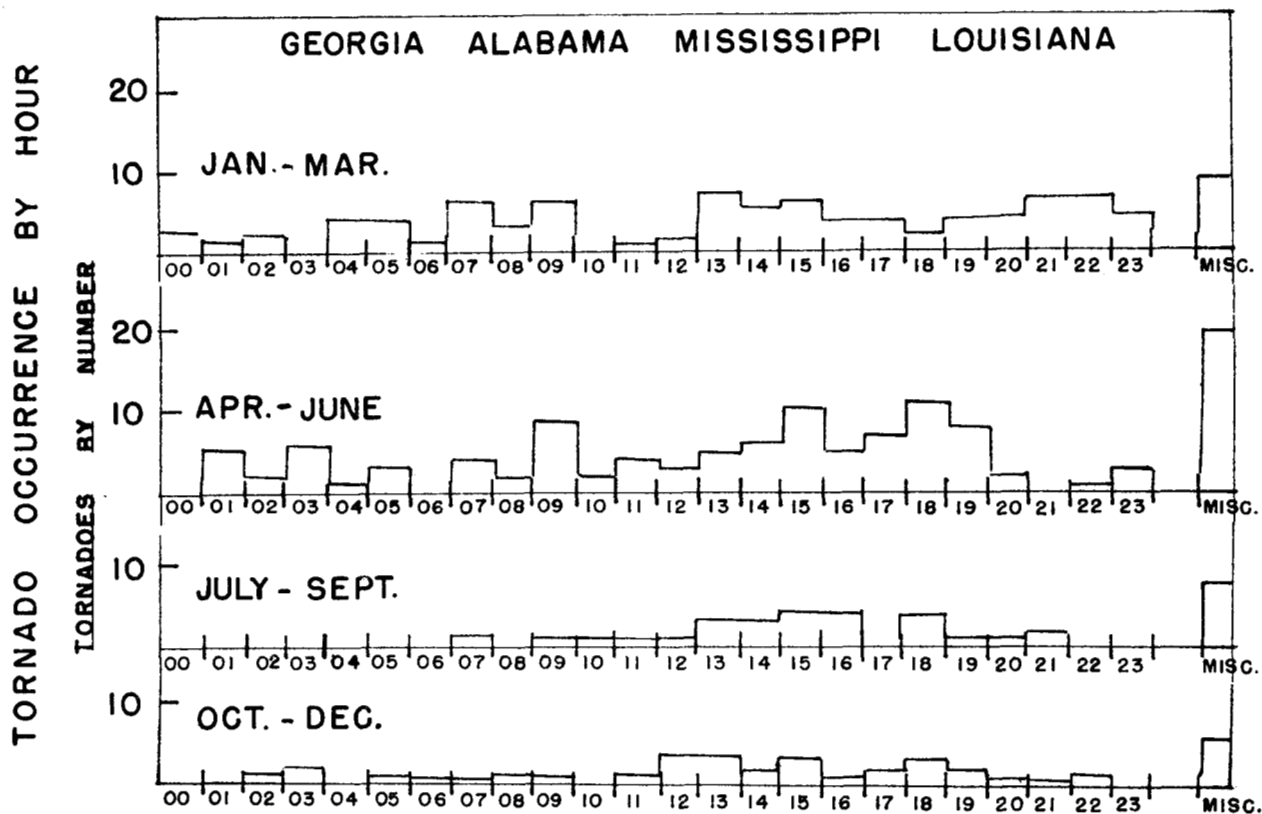


FIGURE 13.—Tornado occurrence by the hour (cst) for Georgia-Alabama-Mississippi-Louisiana, 1950-56.

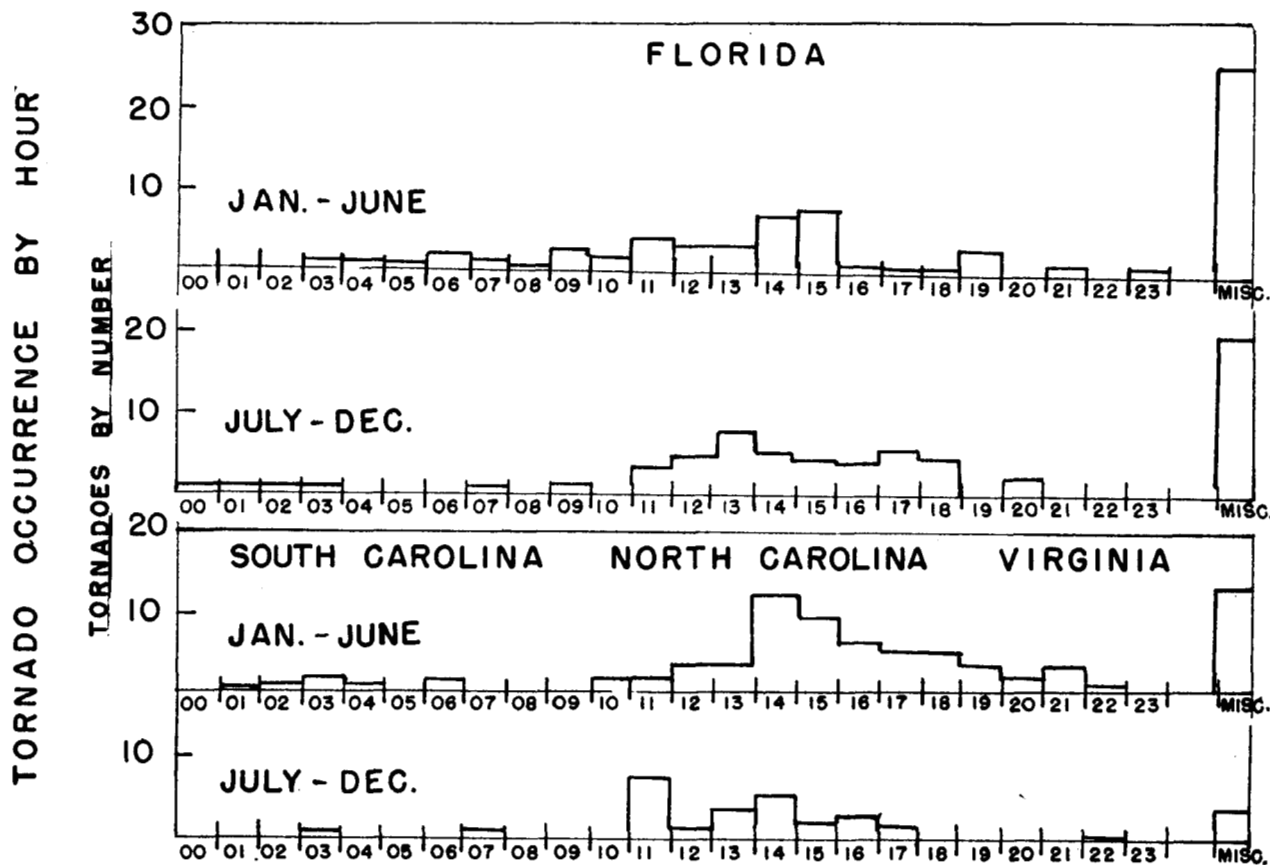


FIGURE 14.—Tornado occurrence by the hour for Florida and South Carolina-North Carolina-Virginia, 1950-56.

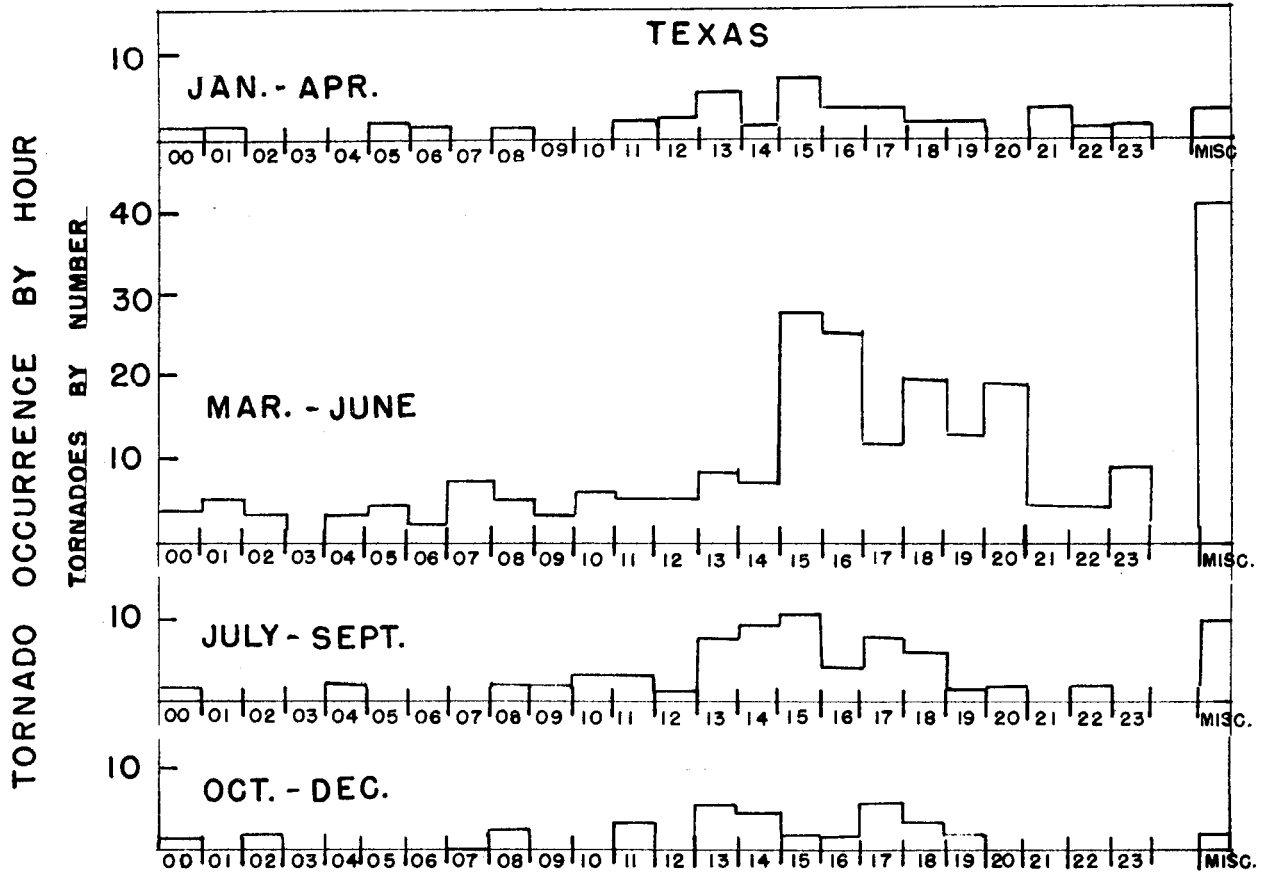


FIGURE 15.—Tornado occurrence by the hour for Texas, 1950-56.

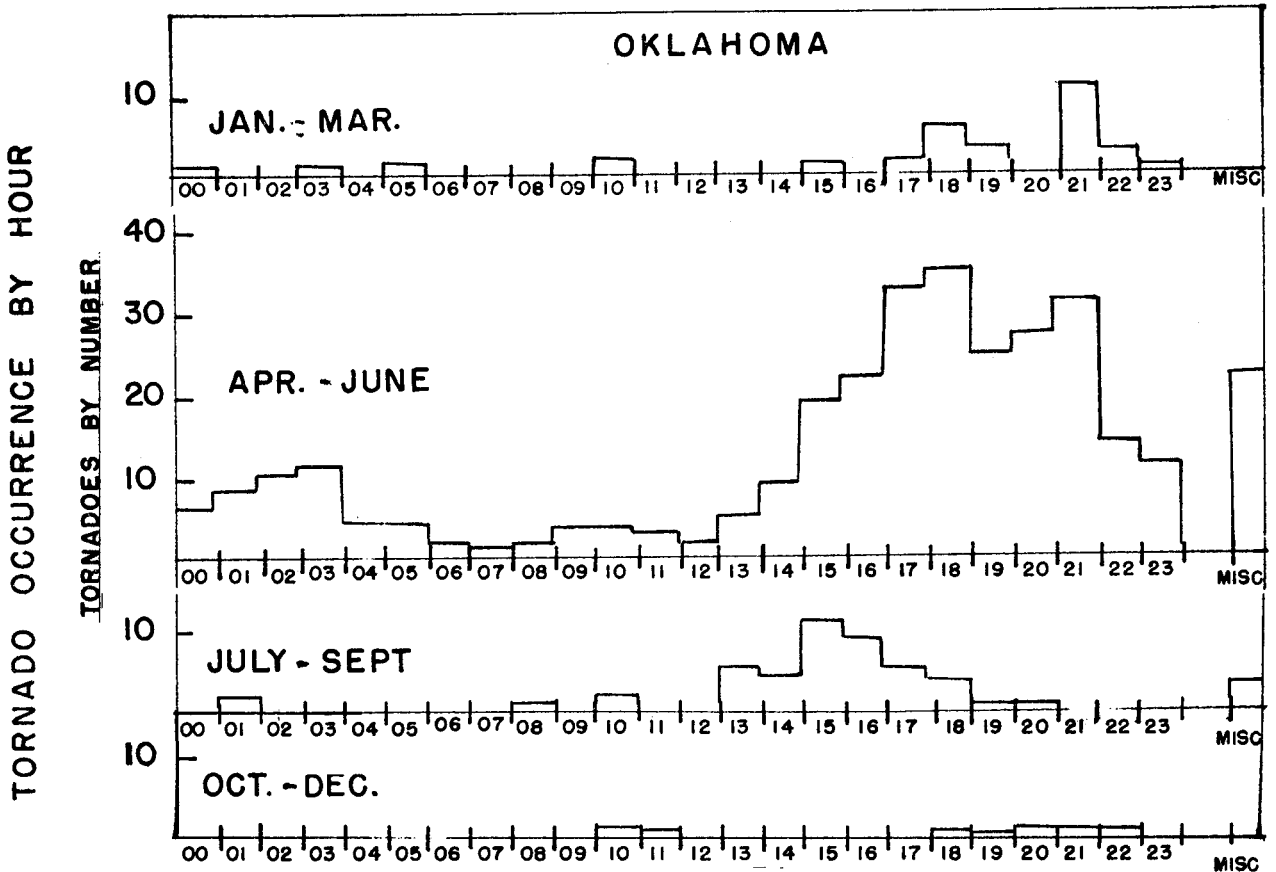


FIGURE 16.—Tornado occurrence by the hour for Oklahoma, 1950-56

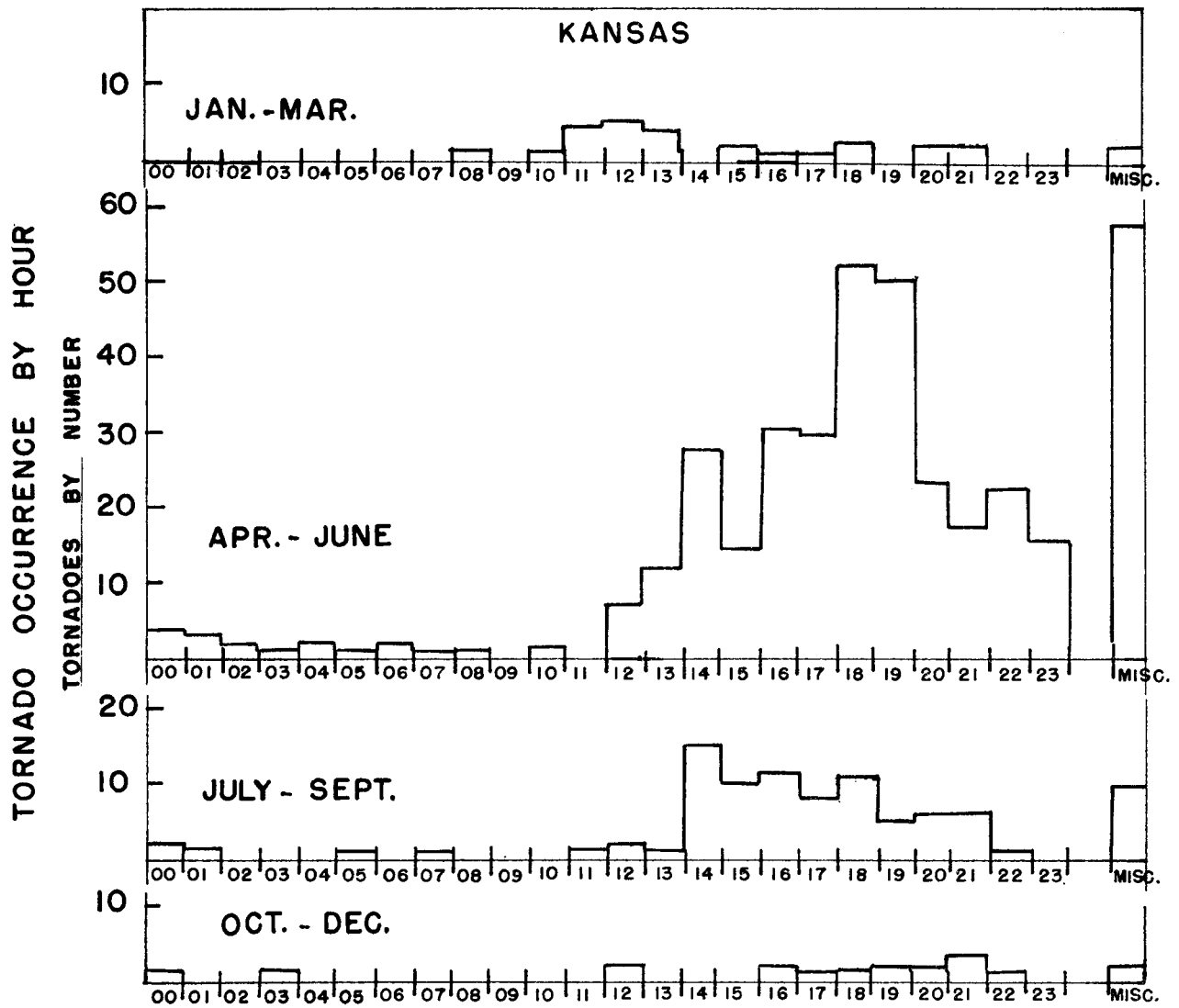


FIGURE 17.—Tornado occurrence by the hour for Kansas, 1950-56.

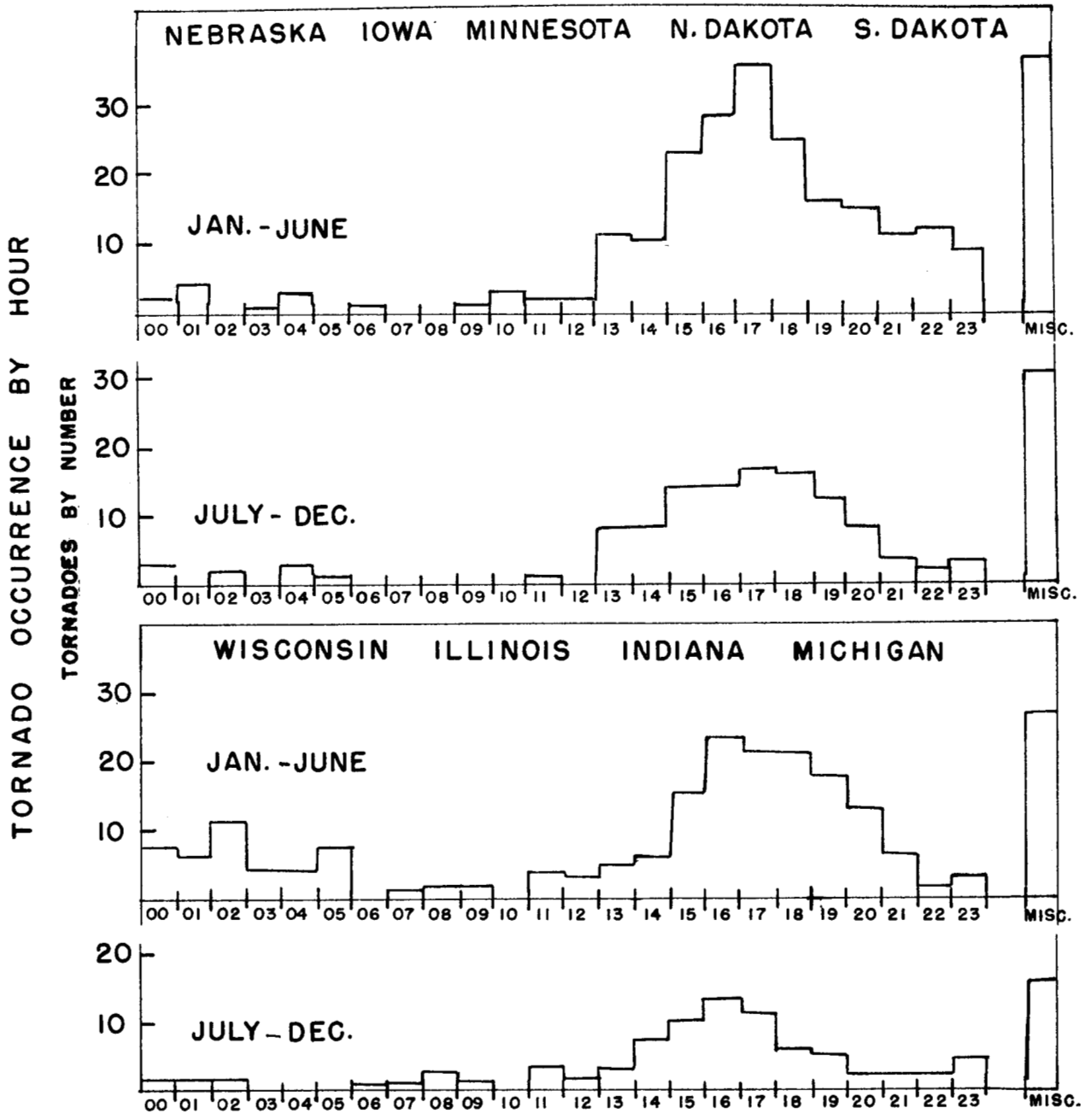


FIGURE 18.—Tornado occurrence by the hour for Nebraska-Iowa-Minnesota-North Dakota-South Dakota and for Wisconsin-Illinois-Indiana-Michigan, 1950-56.

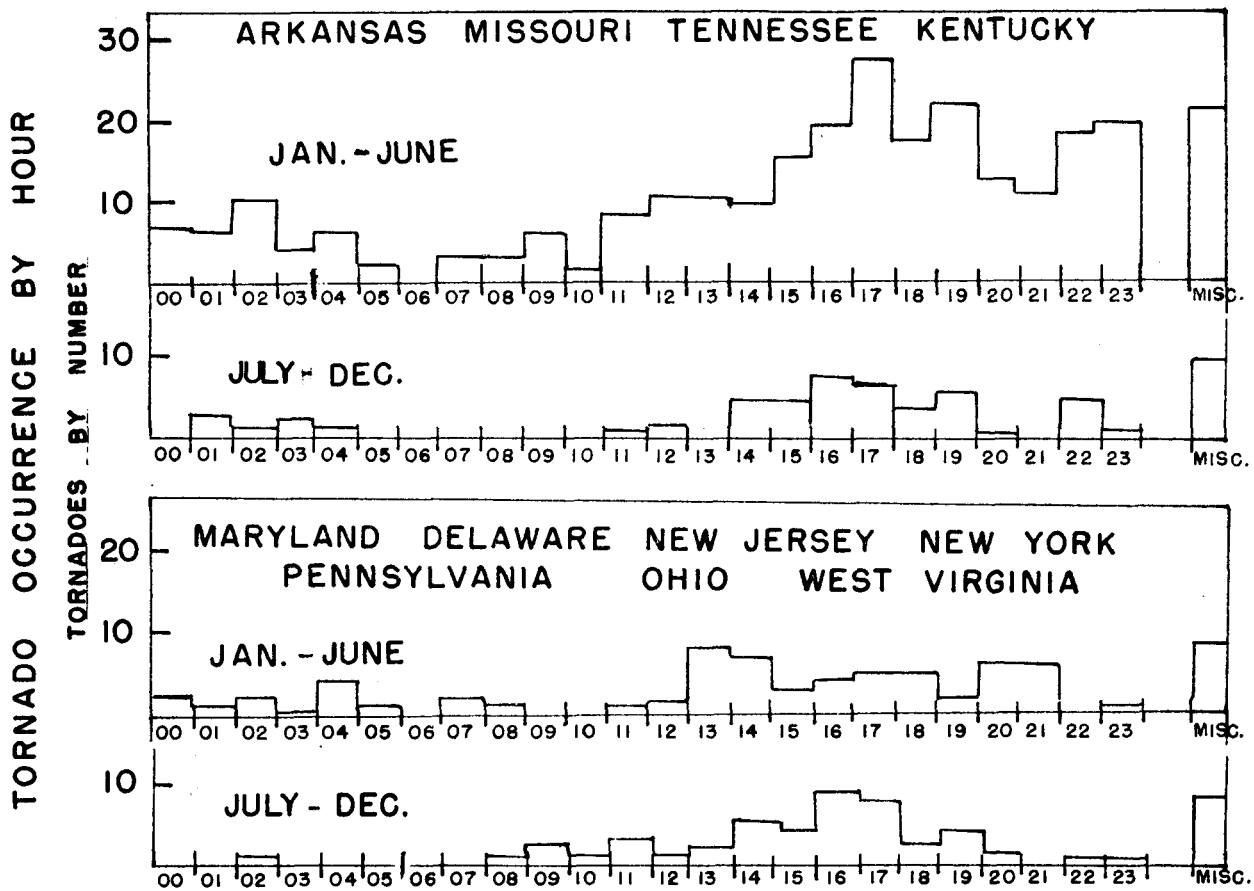


FIGURE 19.—Tornado occurrence by the hour for Arkansas-Missouri-Tennessee-Kentucky and for Maryland-Delaware-New Jersey-New York-Pennsylvania-Ohio-West Virginia, 1950-56.

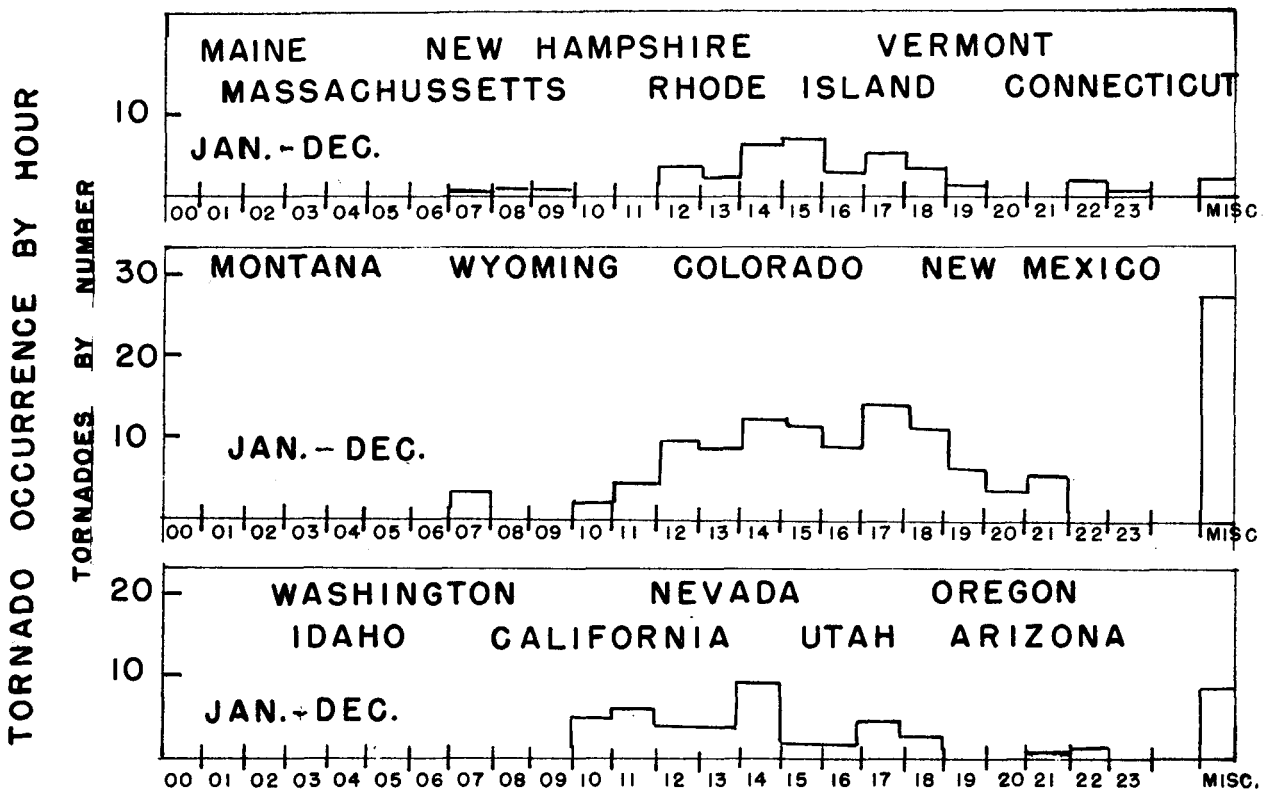


FIGURE 20.—Tornado occurrence by the hour for Maine-New Hampshire-Vermont-Massachusetts-Rhode Island-Connecticut, Montana-Wyoming-COLORADO-New Mexico, and Washington-Nevada-Oregon-Idaho-California-Utah-Arizona, 1950-56.