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PUBLICATION OF SEISMOLOGICAL DATA IN THE REVIEW TO BE DISCONTINUED

Announcement is made that a bill (H. R. 8303), quoted hereunder, authorizing the Coast and Geodetic Survey to make seismological investigations and for other purposes, was introduced in the last Congress, passed by the House of Representatives on June 5, 1924, but failed of passage in the Senate because of the legislative congestion in the closing days of the session:

Be it enacted, etc., That the Coast and Geodetic Survey is hereby authorized to make investigations and reports in seismology, including such investigations as have been heretofore performed by the Weather Bureau.

The transfer as above proposed was fully discussed by the two departments concerned, both of which were agreeable to its enactment.

In view of the necessity of effecting economies in the conduct of the work of the Weather Bureau, it has been decided to discontinue, with the close of the fiscal year ending June 30, 1924, the publication of the table of Seismological Reports. Late June reports appear on pages 375-379.—*Editor.*

THE DISTRIBUTION OF THUNDERSTORMS IN THE UNITED STATES

551.515 (73)

By WILLIAM H. ALEXANDER, Meteorologist

[Weather Bureau, Columbus, Ohio, May 14, 1924]

The following paper is essentially a revision of that published in the MONTHLY WEATHER REVIEW for July, 1915, 43:322-340, bringing down to date especially the statistical portion, together with a complete revision of the 13 charts based on a 20-year instead of a 10-year period. Through the courtesy of certain Weather Bureau officials, some interesting notes on the characters of thunderstorms in various parts of the country also are added. For a statement of the "Methods of thunderstorm recording used by the United States Signal Service and the Weather Bureau," prepared by the Weather Bureau Library, Prof. C. F. Talman in charge, the reader is referred to the original paper in the July, 1915, REVIEW.

For each month have been used to obviate the necessity of using fractional values when the total number fell below 20, as they very frequently do for the northern and extreme western portions of the country. The annual chart, however, presents the average annual number rather than the total number of thunderstorm days. The term isoceraunics used on the chart is explained below.¹

As one would expect, the two sets of charts—the one based on the 10-year period and the one based on the 20-year period—are in very close agreement in all important details; but a close comparison of the charts, month by month, will reveal a number of minor differences. The charts are self-explanatory but perhaps a few general and very brief comments may not be amiss.

During the winter months, December, January and February, the center of thunderstorm activity for the United States is in the vicinity of Vicksburg, Miss. In February however the general thunderstorm area tends to drift southeastward; note the marked secondary over Pensacola, Fla., for example. In March, the center of activity is still over the lower Mississippi Valley with the general storm area spreading rapidly northeast over the Tennessee and Ohio valleys. In April, the center appears to be in the vicinity of Shreveport, La., with the general area spreading not only northeast over a large part of the eastern States, but also north and west.

The interesting thing about the May chart is the definite appearance of the primary center over Tampa, Fla., and a strong secondary over the lower Plains States. Great thunderstorm activity now prevails over the entire eastern half of the country, except in the Canadian bor-

¹ *Terminological note by C. F. Talman.*—In 1879 W. von Bezold and C. Lang applied the name "isobront" to a line drawn on a chart connecting places at which the first thunder in a thunderstorm was heard simultaneously. The word has since become fully established in meteorological literature with a somewhat broadened meaning, being applied generically to thunderstorm isochromes, including those of first thunder, loudest thunder, beginning of rain in a thunderstorm, etc. A chart of isobronts shows the progress of a particular thunderstorm across the country.

To avoid confusion, some different name should be applied to lines of equal thunderstorm frequency, such as appear on Mr. Alexander's charts and on charts of similar character that have been drawn for other countries and for the world at large. It is suggested that the isogram of thunderstorm frequency be called an "isoceraunic line," or, briefly, an "isoceraunic."

"Isobront" and "isoceraunic" are formed from familiar Greek words, the former meaning literally "equal thunder" and the latter "equal thunder and lightning."

The original paper contains a summary of thunderstorm data obtained at the regular Weather Bureau stations prior to 1904; a detailed statement of the data for the 10-year period, 1904-1913, inclusive; twelve monthly charts and one annual chart based on the 10-year period; and some interesting historic notes on the character of storms in general or on individual storms of unusual interest in various parts of the country. It seems unnecessary to reproduce much of the original paper or to present the statistical data for the individual stations in detail, even for the 20-year period; a summary only is sufficient. Table 1 gives, for each of the regular Weather Bureau stations for which data are available, a summary, first, of the total number of days with thunderstorms for each month for the 20-year period 1904-1923 and, second, of the average annual number computed for that period.

Thunderstorm records prior to 1904 were not made with the same uniformity and accuracy as were those subsequent to that year. For that reason it has been considered advisable to begin the record with 1904. Moreover, by so doing the great majority of Weather Bureau stations can be used. Out of the 185 stations included in Table 1, all but 7 have the full 20-year record; those having less than 20 years are indicated by proper footnotes.

Explanation of the charts.—In charting the data the total number of thunderstorm days in the 20-year period