

SEVERE LOCAL STORMS

[Compiled by MARY O. SOUDER from reports submitted by Weather Bureau officials]

[The table herewith contains such data as has been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the United States Meteorological Yearbook]

| Place | Date | Time | Width of path, yards | Loss of life | Value of property destroyed | Character of storm | Remarks |
|---|----------------------------|----------------------------|----------------------|--------------|-----------------------------|--|---|
| Napoleonville, La. Iowa | 12 14-15 | 3 a. m. | | 0 | \$10,000 | Tornado Snow, rain, and sleet. | Property damaged; 1 person injured. The heaviest snow fell in the southwestern portion of the State, with 16 inches at Red Oak and 15 inches at Bedford, while the fall generally exceeded 10 inches over a broad belt extending from the southwestern to the northeastern corner of the State. Many roads were blocked especially in the rural areas and transportation was hampered. East of a line extending from Allamakee County southwestward to Ringgold County, the snow changed to sleet and freezing rain. In Keokuk County the coating of ice on wires and trees was reported to be an inch thick and coatings of more than half an inch were reported from Cedar, Johnson, Washington, and Henry Counties. Service was interrupted because many communication and power lines were broken. |
| Donaldsonville, La., 2 miles south. Iowa | 15 15 | 1:15 p. m. | | 0 | 2,000 | Tornado Snow, rain and ice | Property damaged; 3 persons injured. Snow ranging up to 6.5 inches fell in the northern two-thirds of Iowa, while in the southeastern and extreme eastern parts, heavy damage was caused by an all-day rain that froze as it fell. Damage to telephone and power lines. |
| Kansas, southeastern and south-central portions of the State. Green Bay, Appleton, New London, and Shawano, Wis., and vicinities. Nebraska Washington, western portion of the State. | 15 15-16 16 21-22 | | | | 75,000 | Sleet and freezing rain. Snow and glaze Snow Wind | Damage to telephone and power wires; travel on highways difficult and dangerous for several days. 10 to 14 inches of snow recorded with much lighter falls in the far northwestern portion of the State. Highways were blocked by drifts greatly impeding traffic. Drifting snow blocked many roads and highways. Trees, poles, and wires blown down, temporary buildings destroyed. Boats were blown from their moorings, 1 being completely wrecked. Two persons killed by power line falling across their car. At North Head, Wash., wind attained a velocity of 84 miles an hour at 9:30 p. m., local time. All telegraph, telephone and power lines down due either directly to the wind or to trees falling over the wires. |
| Fort Myers, Fla. Palatka, Fla. | 26 27 | 10:13 p. m. 12:30 a. m. | 50 200 | 0 0 | | Tornado do | House demolished, others damaged; 2 persons injured. Storm moved from south to west. Considerable damage to houses and trees; path a mile long. |
| Bunnell, Fla. Boca Raton, Fla. | 27 27 | 12:50 a. m. 1:30 a. m. | 100 200 | 0 0 | | do do | Storm moved from south-southwest to north-northeast. Four cabins in a tourist camp demolished. Several persons injured; path 10 miles long. Storm moved from west-southwest to east-northeast. Damage mostly to trees with loss to some beach property. |
| De Land, Fla. Fort Lauderdale, Fla. Dothan, Ala. ¹ | 27 27 27 | A. m. do do | | | | do Wind Tornado | Damage to roofs and chimneys. Path narrow and 1½ miles long. Property damaged; loss to crops; 1 person electrocuted. Blowing in from the southeast, the twister ripped off part of the roof from a stable, jumped over Central of Georgia Railway tracks, skimmed past the city power plant, struck a cotton compress building and then plowed into a lumber yard. A negro was injured when his home was wrecked. |

¹ From press reports.

SOLAR RADIATION AND SUNSPOT DATA FOR DECEMBER 1940

SOLAR RADIATION OBSERVATIONS

By HELEN CULLINANE

Measurements of solar radiant energy received at the surface of the earth are made at 9 stations maintained by the Weather Bureau and at 10 cooperating stations maintained by other institutions. The intensity of the total radiation from sun and sky on a horizontal surface is continuously recorded (from sunrise to sunset) at all these stations by self-registering instruments; pyrheliometric measurements of the intensity of direct solar radiation at normal incidence are made at frequent intervals on clear days at two Weather Bureau stations (Madison, Wis.; Lincoln, Nebr.) and at the Blue Hill Observatory of Harvard University. Occasional observations of sky polarization are taken at the Weather Bureau station at Madison and at Blue Hill Observatory.

The geographic coordinates of the stations, and descriptions of the instrumental equipment, station exposures, and methods of observation, together with summaries of the data obtained, up to the end of 1936, will be found in the MONTHLY WEATHER REVIEW, December 1937, pp. 415 to 441; further descriptions of instruments and methods are given in Weather Bureau Circular Q.

Table 1 contains the measurements of the intensity of direct solar radiation at normal incidence, with means and their departures from normal (means based on less than 3 values are in parentheses). At Lincoln the observations are made with the Marvin pyrheliometer; at Madison and Blue Hill they are obtained with a recording thermopile, checked by observations with a Smithsonian silver-disk pyrheliometer at Blue Hill. The table also gives

vapor pressures at 7:30 a. m. and at 1:30 p. m. (75th meridian time).

Table 2 contains the average amounts of radiation received daily on a horizontal surface from both sun and sky during each week, their departures from normal and the accumulated departures since the beginning of the year. The values at most of the stations are obtained from the records of the Eppley pyrheliometer recording on either a microammeter or a potentiometer.

Normal incidence radiation during December was above normal at Blue Hill, Mass., while the sky was unusually overcast at Madison, Wis.

No polarization measurements were made at Madison, Wis., due to overcast skies, or at Blue Hill, due to snow cover.

Total solar and sky radiation was below normal during December at all stations except New York and Twin Falls. Madison, Wis., experienced during the last week the lowest radiation it has had since the station opened in 1911. All stations except Blue Hill, Newport, and Fresno showed an excess in total solar and sky radiation during the entire year, while the greatest deficiency experienced was at Blue Hill.

LATE DATA

Total solar and sky radiation for Ithaca during August: July 30, 469, -1; Aug. 6, 486, +65; Aug. 13, 390, -54; Aug. 20, 484, +43.

Total solar and sky radiation for Chicago during November: Oct. 29, 190, +33; Nov. 5, 117, -18; Nov. 12, 190, +74; Nov. 19, 116, -2; Nov. 26, 106, +13. Total departure through Dec. 2, +6, 107.