

551.506 (73) SECTION VII.—WEATHER AND DATA FOR THE MONTH.

THE WEATHER OF AUGUST, 1917.

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PRESSURE AND WINDS.

The distribution of the mean atmospheric pressure over the United States and Canada, and the prevailing direction of the winds for August, 1917, are geographically shown on Chart VII (XLV—82), while the means at the several stations, with the departures from the normal, are shown in Tables I and III.

At the beginning of the month pressure was relatively high over the northern and central Rocky Mountain States and to the westward, and below the normal in the Lake region, but elsewhere it was generally near the seasonal average. During the first half of the month it was, as a rule, above the average over most districts, but about the middle relatively low pressure overspread most eastern districts. In a few days, however, there was a return to higher readings, which continued over most sections of the country for several days. Pressure during the latter portion of the month was below the average much of the time in the Northern States; in the more central and southern districts it was generally above normal, continuing so at the close in the eastern half of the country and in the far Northwest; elsewhere the pressure remained below the average.

For August as a whole the barometric pressure averaged above the normal over the entire country, except in portions of the Lake region, where it was slightly below the seasonal average. The departures from the normal were generally small, although somewhat pronounced in the far western districts.

The distribution of the HIGHS and LOWS resulted in frequent southerly winds from the Ohio Valley and the Lower Lakes eastward, and also over much of the Great Plains and Western Gulf States. Westerly winds prevailed in the district of the Upper Lakes and upper Mississippi Valley. Elsewhere variable winds prevailed.

TEMPERATURE.

August, 1917, opened with high temperatures in the Lake region, Ohio Valley, and the Middle and North Atlantic States, but with cool weather for the season over the northern plains. From about August 3 to 5 these conditions were reversed, warm weather appearing in the northern Plains States and lower temperatures in the more eastern districts. Temperatures below normal extended, about the 6th, over the South Atlantic and East Gulf States and into the Northwest; but from the 7th to 9th rather high temperatures occurred in parts of California, Nevada, New Mexico, and Texas, while cool weather obtained from Lake Michigan to the Missouri Valley. During the next several days low temperatures prevailed in most middle and northern interior districts and in the Southwest.

About the middle of the month rather high temperatures overspread the upper Missouri Valley and northern Plateau region; while on the 16th and 17th a moderately cool wave prevailed from the middle and upper Mississippi Valley and western Lakes Region and thence eastward. On the 20th and 21st hot weather obtained over most of the spring-wheat area and relatively cool weather in northern New England, the Lakes Region and upper Mississippi Valley. The high temperature in the spring-

wheat area gave way about the 23d to cooler weather, which by the 25th overspread the middle and lower Mississippi Valley and reached the Eastern States on the 27th. During the same time higher temperature spread from the upper Mississippi Valley westward over the Northwest only to give way on the 27th to another cool wave. Frost or freezing temperatures were reported about August 28 from a few places in the Dakotas, northern Michigan and Wisconsin, and the weather was unseasonably cold over the northern and western parts of the great grain-growing area. This cool weather extended southward, and on the 29th at Amarillo, Tex., the minimum temperature was 49°, exceeding the lowest previous record for that place of August during the last 27 years. August closed with abnormally cool weather in the Northern States, but with moderate temperatures in most other districts.

For the month as a whole, the temperature was below the normal along the immediate Pacific coast, and from the Rocky Mountain region eastward, except in the Atlantic Coast States, and in New Mexico, Texas, Louisiana, and the southern half of Mississippi, where it was somewhat above the average (see Chart IV).

Over rather extensive areas in the upper Lakes Region and the Central Plains States the temperature for the month averaged 3 degrees or more below the normal.

PRECIPITATION.

During the first few days of August scattered showers and thunderstorms occurred in various parts of the country, but no widespread rainfall. From the 3d to 5th, much rain occurred in the South Atlantic and East Gulf States, and on the 6th and 7th rather extensive rains prevailed in the middle and western corn States. Notably heavy falls occurred at many stations in the eastern portions of Kansas and Nebraska and in western Iowa. From the 8th to the 11th heavy local precipitation occurred from Georgia to Maine, and also in portions of Oklahoma and the adjoining States. On the 12th light showers occurred in the upper Mississippi Valley and western Lakes Region. About the same time considerable rain fell in southern Colorado, the Texas Panhandle and Arkansas, and on the 15th and 16th widespread rains prevailed in Tennessee, Kentucky, and in districts from the eastern Gulf to southern Pennsylvania, as well as in southern and western Missouri, Kansas, northern Oklahoma, New Mexico, and western Texas. During the 18th to 21st, more or less rain occurred in much of Texas and in several of the southeastern States, and also in Nebraska and adjoining States, as well as in the western Lakes Region. From the 27th to 29th rain in irregular amounts fell from Utah to the Ohio Valley and Lakes Region, and moderate amounts occurred in portions of Texas and Louisiana and at places along the southern Atlantic coast.

The month closed with cloudy or rainy weather over most of the Atlantic and Gulf States, Tennessee, and Kentucky, and from the upper Lakes region westward to the Rocky Mountains. Elsewhere generally fair weather prevailed.

For the month as a whole precipitation was comparatively heavy in parts of the New England States, New York, Pennsylvania, Georgia, Florida, much of the east Gulf section, and likewise in portions of Kansas and Oklahoma. Elsewhere in the East moderate amounts fell, except in a few localities. Throughout the West the monthly totals were generally small, and no rain

fell over considerable areas in southern Texas, central and northern California, and in much of Oregon, Washington, and northern Idaho.

RELATIVE HUMIDITY.

The relative humidity for the month as a whole was above the normal in the northern and eastern portions of the Lakes Region and to the eastward, in the Ohio Valley, and from the central Mississippi Valley westward to the Pacific. Elsewhere the atmosphere was in most localities drier than the average for August, especially in the South Atlantic and west Gulf States and the upper Mississippi Valley and to the westward.

GENERAL SUMMARY.

The weather was favorable for outdoor work over the greater part of the country; harvesting, haying, and thrashing made good progress. On the other hand, except for about a week near the middle of the month, the weather was generally too cool for satisfactory development of crops in many central and northern districts. However, in the East and also in the Rocky Mountains and Great Plains States warmer weather and beneficial rains were favorable for the development of field and garden crops.

The unevenly distributed rain in the South resulted in rather poor progress of cotton in some sections, while in others it was good, and picking progressed rapidly. Corn developed satisfactorily, except that the unseasonably cool weather in some sections retarded its growth. The weather was favorable for potatoes and an excellent outlook was reported almost everywhere, although there was some injury by blight in a few sections. It was also favorable for fruit generally, except that the citrus variety was injured in Louisiana and Florida by dry weather and cranberries in Wisconsin suffered from the cold weather.

Average accumulated departures for August, 1917.

Districts.	Temperature.			Precipitation.			Cloudiness.		Relative humidity.	
	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure for the current month.	Accumulated departure since Jan. 1.	General mean for the current month.	Departure from the normal.	General mean for the current month.	Departure from the normal.
New England.....	69.4	+2.3	-9.2	4.12	+0.30	-0.20	5.1	-0.0	83	+2
Middle Atlantic.....	74.2	+1.4	-3.4	3.21	-1.20	-2.30	4.5	-0.6	75	-3
South Atlantic.....	78.2	+0.4	+5.6	4.08	-2.10	-6.70	5.0	-0.2	79	-3
Florida Peninsula.....	82.1	+0.2	+3.4	6.55	-0.40	-7.90	5.9	+0.5	76	-3
East Gulf.....	78.9	+0.3	+4.3	6.46	-1.60	-3.70	5.3	+0.2	80	0
West Gulf.....	81.7	+0.7	+3.4	2.26	-0.80	-8.70	3.6	-0.3	70	-5
Ohio Valley and Tennessee.....	74.0	-0.5	-11.1	3.11	-0.30	+2.40	4.8	+0.3	73	0
Lower Lakes.....	69.5	-0.1	-17.5	3.05	+0.10	+0.60	5.0	+0.4	72	0
Upper Lakes.....	64.1	-2.2	-23.5	2.00	-1.00	-2.20	5.1	+0.3	76	0
North Dakota.....	65.9	-0.8	-13.1	0.87	-1.40	-7.90	3.3	-0.9	60	-7
Upper Mississippi Valley.....	70.5	-2.4	-18.5	2.47	-0.80	-0.90	4.6	+0.3	70	-1
Missouri Valley.....	71.3	-2.5	-8.3	3.06	-0.20	-3.10	3.9	-0.3	67	0
Northern slope.....	65.1	-1.6	-18.5	0.78	-0.50	-1.30	3.8	-0.1	55	0
Middle slope.....	72.9	-2.3	-5.8	3.01	+0.60	-4.50	4.4	+0.5	65	+4
Southern slope.....	80.2	+1.1	+4.0	2.89	+0.70	-4.00	3.6	-0.2	60	-4
Southern Plateau.....	77.0	-0.3	-9.4	1.23	+0.10	-1.00	3.0	-0.6	54	+10
Middle Plateau.....	72.2	+0.6	-28.1	0.44	-0.30	-1.30	3.0	0.0	38	-1
Northern Plateau.....	72.2	+1.9	-18.0	0.01	-0.40	-1.40	2.0	-0.7	37	-5
North Pacific.....	63.0	+1.1	-11.0	0.29	-0.50	-5.50	3.3	-1.3	74	-2
Middle Pacific.....	65.2	+0.4	-7.5	0.00	0.00	-6.20	4.2	+0.9	62	0
South Pacific.....	70.8	+0.3	-0.7	T.	0.00	-2.30	2.6	0.0	67	+2

WEATHER CONDITIONS OVER THE NORTH ATLANTIC OCEAN DURING AUGUST, 1916.

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The data furnished are for August, 1916. Comparisons and study of the same should be in connection with those appearing in the REVIEW for that month. Chart IX (XLV-84) shows for August, 1916, the average of pressure, temperature, and prevailing direction of the wind at 7 a. m., 75th meridian time (Greenwich mean noon), together with notes on the locations and courses of the more severe storms of the month.

PRESSURE.

The distribution of the average monthly pressure for August, 1916, as shown on Chart IX, was for the most part similar to the normal, especially south of the 40th parallel. The Azores or North Atlantic HIGH was slightly more extensive than usual, although practically normal in position and intensity. The Icelandic Low with a minimum average of 29.7 inches, was central near latitude 57° N., longitude 28° W., which was considerably south of the position usually occupied by this area. The Continental HIGH was not well developed, although an isobar of 30 inches surrounded a large territory between the 20th and 45th parallels, extending as far westward as the 95th meridian. The lowest individual pressure reported during the month, was 28.83 inches and occurred on the 31st in the 5-degree square between latitude 55° to 60°, longitude 20° to 25°. The highest reading in the same square was 30.42 inches on the 4th. This latter reading was equal to the maximum recorded in the western part of the Azores HIGH, where the minimum was 29.7 inches and the average 30.09 inches.

The mean pressure for the three decades of the month differed considerably in some localities, as shown by the following table:

Pressures over the North Atlantic during August, 1916, by 5-degree squares.

Position of 5-degree square.		Decade means.			Extremes.			
		I	II	*III	Highest.		Lowest.	
Latitude.	Longitude.	I	II	*III	Pressure.	Date.	Pressure.	Date.
80-85 N	10-15 W	30.05	29.75	29.70	30.29	5	29.26	13
80-85 N	5-10 E	30.00	29.83	29.66	30.23	7	29.48	3, 27
55-60 N	35-40 W	29.88	29.78	29.59	30.11	4	29.20	22
65-60 N	0-5 E	30.17	29.78	29.69	30.29	7	29.42	26
50-55 N	45-50 W	29.82	29.78	29.80	30.21	5	29.40	13, 14
60-55 N	20-25 W	30.10	29.78	29.54	30.42	4	29.14	24
60-55 N	10-15 W	30.25	29.79	29.64	30.43	3	29.37	25
45-50 N	65-70 W	29.98	29.91	29.83	30.30	10	29.46	14
45-50 N	25-30 W	29.91	30.02	29.65	30.32	3	29.09	31
40-45 N	35-40 W	30.01	30.14	29.94	30.40	4, 17	29.38	9
35-40 N	75-80 W	30.04	30.03	30.01	30.20	29	29.80	24
35-40 N	50-55 W	30.04	30.10	30.07	30.40	4, 5	29.70	24
35-40 N	10-15 W	30.13	30.11	30.01	30.22	7, 18	29.68	28
25-30 N	90-95 W	29.98	30.02	29.96	30.21	12	29.88	25
25-30 N	55-60 W	30.15	30.13	30.10	30.28	11	30.00	14
25-30 N	35-40 W	30.21	30.15	30.08	30.30	5, 11	29.97	31
15-20 N	80-85 W	29.94	29.90	29.86	30.01	11, 12	29.70	16
15-20 N	25-30 W	30.06	29.97	29.97	30.10	3	29.88	16

*Includes the last 11 days of the month.

The mean and extreme pressures presented in the above table are based on the daily pressure values determined by interpolation for each square from the MS daily synoptic charts of the North Atlantic compiled by the Marine Section of the Weather Bureau.