DETAILS OF THE WEATHER OF THE MONTH IN THE UNITED STATES.

GENERAL CONDITIONS.

By A. J. HENRY. 551.506 (73)

The outstanding feature of the month was some abatement of the heat which had prevailed almost continuously during the two months immediately preceding. Droughty conditions of the previous month appeared to have drifted to the eastward being most pronounced in Atlantic coast States, including Florida and the Gulf States, whereas the Ohio and middle Mississippi valleys had generous rains.

As compared with the previous month, pressure rose, especially in the Gulf and Atlantic Coast States, thus augmenting in a measure the high pressure in Southern districts which has featured the weather of some months past.

CYCLONES AND ANTICYCLONES.

By W. P DAY, Observer.

Migratory low-pressureareas charted during the month considerably exceeded the average, but were in no case important as storms.

High-pressure areas were typical. The budding off from the North Pacific HIGH became less frequent and migratory HIGHS began to make their appearance from the regions north of Alberta.

Tables showing the number of HIGHS and LOWS by types follow:

LOWS.	Alberta.	North Pacific.	South Pacific.	Northern Rocky Mountai.	Colorado.	Texas.	East Gulf.	South Atlantic.	Central.	Total.
August, 1921.....	7.0	1.0	.....	.....	2.0	.....	.....	.....	5.0	15.0
Average number, 1892-1912, inclusive.....	4.2	0.6	0.3	0.	1.0	0.2	(1)	0.1	1.0	8.3

[1] Only one occurrence.

HIGHS.	North Pacific.	South Pacific.	Alberta.	Plateau and Rocky Mountain Region.	Hudson Bay.	Total.
August, 1921.....	2.0	.....	3.0	1.0	2.0	8.0
Average number, 1892-1912, inclusive.....	1.8	0.2	3.0	0.9	0.8	6.7

THE WEATHER ELEMENTS.

By P. C. DAY, Climatologist and Chief of Division.

PRESSURE AND WINDS.

August, 1921, like the preceding month, was relatively free from important pressure changes, and both cyclonic and anticyclonic areas were poorly defined and showed the usual uncertain movements common to the summer atmospheric circulation. A number of low areas appeared over the middle and southern Plateau regions and crossed the Rocky Mountainin a northeasterly direction and moved eastward alon the northern border, but usually without material energy until reaching the Canadian Maritime Provinces, where they developed into storms of some importanc The high-pressure areas were somewhat better definedthan the LOWS. The most important moved eastward along the northern border during the first half of the third decade, modifying materially the weather over eastern districts during that period.

Pressure for the month, as a whole, was above normal in practically all portions of the United States and Canada, the only material exception being a small area in the northern Rocky Mountains.

Pressure was highest over the southeastern States, diminishing northward and westward. As a result the air movement over the districts east of the Rocky Mountains was mostly from southerly points. This was the case also over portions of the Rocky Mountain and Plateau districts. Over the Pacific Coast States the winds were mostly from the north or northwest.

High winds were confined usually to local small areas, mostly in connection with thunderstorms, but these were widely scattered and on the whole fewer than is usually expected during the last summer month. Details of the more important wind and other storms appear at the end of this section.

TEMPERATURE.

Moderate conditions as to temperature were marked features of the weather during the month. Periods of severe heat were usually of short duration and changes from day to day were of small proportions.

The warmest periods showed much divergency as to time of occurrence in the different portions of the country, ranging from the first day of the month in portions of the East Gulf States, to the last day or two along the northern border from Montana eastward.

Maximum temperatures of 100° or higher were observed in some portions of all the States except in the Lake region and North Atlantic States, where they were a few degrees less. In the middle and southern Great Plains maximum temperatures of 110° were observed locally, and they were 115° and 118°, respectively, at points in Arizona and southern California.

The dates of lowest temperatures were likewise well distributed during the month, ranging from the 3d in New England to the 28th and 29th in portions of the Gulf States and Plateau region. The most extensive cool period occurred from the 5th to 8th, and covered much of the country from the Great Plains southeastward to the Middle Gulf States. The lowest temperature reported, 19°, occurred in the mountains of Colorado, and temperatures below 32° were reported from many of the higher elevations from the Rocky Mountains westward, and at a few points along the northern border from the upper Lakes to Montana.

For the month as a whole the average temperature was again above normal over large portions of the country, though the departures were relatively small. A marked feature of the monthly mean temperatures was the further continuation of the already remarkable period, with monthly means above normal, which has been a persistent factor in the weather of the north-central part of the country for the past 12 months.

Beginning with September, 1920, and for each month since that time, the average temperature has been above normal over the greater part of the area referred to above, and the amounts of these departures have been so great that the average excess for the entire period at some points is more than 5° per day, an accumulation of heat that has not been closely approached in a period of more than 50 years.

PRECIPITATION.

The earlier portion of the month had very general and substantial rains over the greater part of the country from the Rocky Mountains eastward, although over small areas the amounts were insufficient to relieve the drought conditions that had persisted during much of the preceding month.

During the latter half of the month precipitation was very generally deficient over the eastern half of the country, particularly over the Gulf and Atlantic coast States, where drought conditions had become serious by the end of the month.

In the far West precipitation was unusually frequent and in generous quantity over the southern Rocky Mountain and Plateau regions, particularly in Arizona, where numerous local floods were caused by the heavy run-off. In Colorado the average precipitation for the State was the greatest for August of record, and in Arizona only one preceding August in the past 25 years had a greater average. In other portions of the far West precipitation was light as usual for August.

For the month as a whole precipitation was less than usually received over the Atlantic and Gulf States from New England to Texas, the deficiency being of serious proportions in the South Atlantic States as a whole, and in local areas of the other States. There was a considerable deficiency in Oklahoma, and portions of the Northwest likewise had considerably less rain than is usually received. On the other hand, the Ohio and Mississippi Valley States had frequent and in some cases heavy rains, and the monthly totals were well above the normal amounts, and similar conditions prevailed in Arizona, New Mexico, Colorado, Utah, and portions of the adjoining States.

In all portions of the country there were large variations in the total falls at comparatively near-by points, notably in the South and middle West where amounts ranged locally from less than 1 to more than 10 inches.

RELATIVE HUMIDITY.

In the main the atmospheric moisture as indicated by the relative humidity conformed to the precipitation conditions, the averages being less than normal in the regions of deficient precipitation, and greater where precipitation was in excess. As a rule the departures from the normal were not excessive, although in portions of the Southwest there were large variations both above and below the normal.

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SEVERE LOCAL STORMS.

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A more complete statement will appear in the Annual Report of the Chief of Bureau.]

Place.	Date.	Time.	Width of path.	Loss of life.	Value of property destroyed.	Character of storm.	Remarks.	Authority.
			Yards.					
Brazil, Ind.	2	P. m.				Electrical and rain.	Damage to buildings and electric wires.	Tribune (Terre Haute, Ind.).
Winfield, Kans., and vicinity.	1	P. m.				Hail	Automobile tops, street lamps, skylights, and greenhouses demolished.	Times (Kansas City, Mo.).
Independence, Kans.	4	P. m.				Wind	Severe damage suffered by buildings, crops, and telephone lines.	Do.
Fredonia, Kans.	4	P. m.				Wind and hail	Buildings, crops, and trees damaged; poultry killed.	Wichita Eagle (Wichita, Kans.).
El Dorado, Kans., and north Butler County.	5	P. m.				Wind	Heavy losses to gas and oil companies.	Do.
Port Huron, Mich. (north of).	6				$25,000	Hail		Official U. S. Weather Bureau.
Kansas City, Mo.	6	4.30 a. m.				Wind, rain, and electrical.	Considerable damage; heaviest losses sustained by telephone and electric light companies.	Star (Kansas City, Mo.).
Lawrence, Kans.	6					Rain	5.30 inches of rain; cellars flooded.	Do.
Cleveland, Ohio.	6	P. m.		1		Electrical, wind, and rain.	Streets and cellars flooded; wires down; heavy property losses.	Plain Dealer (Cleveland, Ohio).
Denton, Tex.	7	P. m.			25,000	Electrical	$25,000 damage from fires by lightning.	Dallas Morning News (Dallas, Tex.)
Annapolis, Md.	7					Wind	Air-marine seaplane wrecked.	Washington (D. C.) Herald.
New York City and vicinity.	7	P. m.		2		Thunderstorm	Many persons injured by lightning.	Brooklyn Daily Eagle.
Aberdeen, S. Dak.	9					Wind	General damage done; two persons injured.	The Courier News (Fargo, N. Dak.)
Egeland, N. Dak.	10		5,280			Hail and wind	High winds move barns and granaries and demolish small buildings.	The Fargo Forum (Fargo, N. Dak.)
Charleston, S. C.	10	A. m.			1,200	Small tornado	Damage slight.	Official U. S. Weather Bureau.
Sedalia, Mo.	10	P. m.		1	10,000	Wind and rain	Considerable property damage done.	Star (Kansas City, Mo.).
Topeka, Kans., and vicinity.	10	P. m.				Rain	Aside from flooded basements, little damage was done.	Do.
Southern Wisconsin and northern Illinois.	19	P. m.				Wind and rain	A severe wind and rain storm of wide extent swept over southern Wisconsin and northern Illinois, causing extensive property and public utilities losses; crops and live stock suffered severely and a number of people were killed; the loss is estimated at $1,000,000 or more.	Press (Sheboygan, Wis.); Official U. S. Weather Bureau; Times Journal (Dubuque, Iowa); Evening News (Kenosha, Wis.); Journal (Chicago, Ill.).
Phoenix, Ariz., northwest of.	19	P. m.		1	200,000	do	Buildings destroyed; wires down; streets flooded.	Arizona Republican (Phoenix, Ariz.).
Phoenix, Ariz. (near).	21				240,000	Rain	A heavy rain over the Cave Creek watershed, near Phoenix, resulted in a flood of serious proportions in Phoenix.	Official U. S. Weather Bureau.
Fargo, N. Dak., and vicinity.	25	P. m.				Cloudburst	Considerable damage caused by rain.	Courier News (Fargo, N. Dak.).
Elizabethtown, Tenn.	25						Serious injury to crops over small area; chickens and birds killed.	Official U. S. Weather Bureau.
Denton, Tex.	26					Cloudburst and wind.	Slight damage to buildings.	Dallas Morning News (Dallas, Tex.).
Corsicana, Tex.	26					Rain	Cotton slightly damaged.	Do.
Luling, Tex.	26					Wind and rain	Slight general damage.	Do.
Green Bay, Wis.	26					Thunderstorm	Much damage to electric wires; damage estimated at thousands of dollars.	Official U. S. Weather Bureau.
Port Huron, Mich. (north of).	30	P. m.				do	Trees uprooted.	Do.
Texas.	26					Wind and rain	Heat wave which prevailed throughout the State was broken by wind and rain storms; no severe damage was done.	Dallas Morning News (Dallas, Tex.).