

month as the warmest April of record. In the Rocky Mountain and southern Plateau districts the month was moderately cold, but elsewhere the departures above or below normal were mainly small.

The warmest periods of the month were about the middle over much of the Great Plains and thence eastward to the Ohio Valley and into portions of the Gulf States; in the early part of the last decade over many northern sections from the Great Lakes to the Dakotas and over the Rocky Mountains; and near the end of the decade over the Northeastern States and generally over the Plateau and Pacific Coast States. The highest observed temperature, 107°, was reported from Texas, and temperatures of 90° or higher were reported from most Central and Southern States.

The most important cold period of the month east of the Rocky Mountains was near the beginning; the 1st being particularly cold over the central valleys and upper Lake region, where temperatures were far below freezing, and in some instances, notably in the northern portions of Wisconsin and Michigan, were from 15° to 25° or more below zero. West of the Rocky Mountains the dates of lowest temperatures varied greatly, but were mainly after the middle of the month.

#### PRECIPITATION

The country as a whole had deficient precipitation, although there were important areas in the east Gulf States, and from the upper Ohio Valley and Middle Atlantic States northeastward, with monthly amounts materially above normal; in fact, over the eastern portions of Maryland, Pennsylvania, and New York, in New Jersey, and western New England the month was unusually wet, and similar conditions existed in portions of Georgia and nearby States where locally the precipitation exceeded 10 inches, and was, in some instances, among the greatest of record for April. Precipitation was above normal also in portions of Arkansas, Kansas, and Oklahoma, locally in the far Southwest, and over a considerable area from central Michigan northwestward to eastern Montana.

In portions of the middle Mississippi and lower Missouri Valleys the month's rainfall was much less than normal, and locally in Iowa it was as dry as ever known in April. Likewise in the far West there was everywhere far less than the normal precipitation, save in portions of Arizona and southern California. Over most of the States last named and thence northward there was a marked

deficiency in precipitation. In California April was the seventh month with precipitation, for the State as a whole below normal, and in the northern portions it was locally the driest April of record, and the drought at the end of the month had become the worst ever experienced in the history of the State.

#### SNOWFALL

The storm over the North Atlantic coast on the 1st and 2d brought unusually heavy snows for April from northern Virginia to New England. Indeed over much of this territory the total fall was the greatest ever known so late in spring, and locally in southern New England it was heavier than recorded at any time during the preceding winter. Again on the 7th and 8th snow fell over considerable areas in the Northeastern States, reaching depths of nearly 10 inches in northern New England; this again broke the record for heavy snow so late in the season. On the 11th some heavy snows were reported from north-central Iowa; and on the 16th and 17th considerable snow accompanied the general unsettled conditions that prevailed over the Great Plains and Rocky Mountains on these dates.

In Minnesota heavy, wet snow fell on the 21st, the depths ranging up to 10 inches or more.

In the mountains of California and adjacent States there was little new snow during the month and that on the ground melted rapidly, so that the main highways through the mountains were passable at the earliest date of record. Despite the rapid melting of the remaining snow in the mountains, streams in California were reported at summer stages. In Arizona there was a good run-off, and prospects for water were mainly good in New Mexico, Wyoming, and other portions of the Rocky Mountain system. East of the Rocky Mountains some snow still remained on the ground at the month's end in northern New England.

#### RELATIVE HUMIDITY

The relative amount of moisture in the atmosphere was largely deficient as compared with the normal over most far western districts, and there were important deficiencies in the interior portions of the country. Elsewhere the percentages of humidity were mainly close to normal.

Much cloudy weather prevailed over the Ohio Valley and Great Lakes region and to the eastward, while over the Plateau and adjacent areas there was much sunshine.

#### SEVERE LOCAL HAIL AND WIND STORMS, APRIL, 1924

[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 (yards)	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Justin, Tex. (near) to Edgewood, Tex. (near)	3	3 p. m.	20-100	1	\$41,000	Tornado accompanied by hail.	Serious damage confined to Denton and Dallas Counties over a path 80 miles long; entire length of path 80 miles; 14 injured; loss by hail \$1,500.	Official, U. S. Weather Bureau.
Fort Wayne, Ind.	8					Electrical and hail.	Telephone and light and power lines damaged.	Do.
Parsons and Columbus, Kans.	8-9				\$3,000-5,000	Wind and hail.	Electric-light globes, greenhouses, automobile tops, and garden truck damaged.	Do.
Lavaca County, Tex.	9		4 miles			Hail.	Storm extended from Breslau to Shiloh. Spring crops and fruit destroyed, chickens killed, and windows broken.	Do.
Uvalde, Tex. (near)	10		5 miles			do.	Crops and buildings considerably damaged.	Do.
Comilla, Ga.	14	9 p. m.			3,000	Tornado.	Some property damaged.	Do.
New Orleans, La.	17	8 to 8:30 p. m.	6 miles		107,000	Wind and hail.	A number of small houses damaged or displaced; greenhouses and gardens injured by hail; 50 persons injured; length of path 25 miles.	Do.
Granbury, Tex.	22	6:30 p. m.				High wind.	Church completely demolished, other damage to roofs and poles. Storm was preceded by violent hail which did considerable damage to windows.	Dallas Morning News (Texas).

Severe local hail and wind storms, April, 1924—Continued.

Place	Date	Time	Width of path (yards)	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Mills County, Tex. (eastern part of)	22		4 miles			Heavy hail	Crops destroyed; roof of building damaged; poultry killed.	Official, U. S. Weather Bureau.
Berne, Ind. (near)	22					Tornado	No damage reported	Do.
St. Francisville, La. (near)	23	4:30 p. m.				Heavy hail	Orchards and gardens injured	Do.
Jacksonville, Tex. (tomato belt around)	23		3 miles		50,000-100,000	Hail	Crops destroyed and considerable damage to roofs and window glass.	Do.
Munday, Tex. (near)	24				10,000	Heavy hail	Extensive crop damage.	Do.
Pearl, N. Mex.	24	4:30 p. m.	1/2 mile			do.	Some fruit beaten off and minor injury to gardens.	Do.
San Marcial, N. Mex.	24	2:45 p. m.				do.	Fruit severely damaged.	Do.
Stith, Tex. (near)	24-25		5 miles			do.	Crops damaged or destroyed over wide area; path 10 miles long.	Do.
Slick, Okla. (5 miles SE. of)	25	A. m.		3		Tornado	1 home demolished and several persons injured; strip several feet wide and mile long devastated.	Dallas Morning News (Texas).
Benson, Ariz. (7 miles W. of)	25	10:45 a. m.				Heavy hail	Considerable damage	Official, U. S. Weather Bureau.
Rockville, Ind.	25					Electrical and wind.	Several trees struck and barn burned	Do.
Buckner, Ky.	25	7-8 p. m.	2 to 3 miles			Moderately heavy hail	Crops and buds of fruit trees considerably injured.	Do.
Travis County, Tex. (between Carl and Colton)	26	5 a. m.	50	5	25,000	Tornado	Some property damage; 15 persons injured; path 4 miles long.	Do.
Hondo, Tex. (near)	26					Hail	Fruit knocked off and considerable damage to window glass and roofs.	Do.
Grand Coteau, La. (4 miles NW. of)	28	3 p. m.				Light to heavy hail	A few cotton fields damaged; minor damage by wind to buildings.	Do.
Ford County and northern parts of Clark, Kiowa, and Meade Counties, Kans.	28		10 miles		1,050	do.	Growing crops injured; some damage to windows.	Do.
Many, La.	29	6:30 p. m.	450-900	1	100,000	Tornado	Many buildings destroyed or damaged; several persons injured.	Do.
Crichton, La.	29	P. m.	60 yards			do.	Several persons injured; 4 houses destroyed.	Do.
Texarkana, Ark. (N. of)	29	2:30 p. m.	100		25,000	do.	Everything in path destroyed; 17 persons injured; path 1/2 mile long.	Do.
Covington to Ingalls (near Stillwater), Okla.	29	A. m.		1		do.	A number of buildings and 15 oil derricks destroyed; 2 injured.	Tulsa Tribune (Oklahoma).
Columbia, S. C.	30	11:05-11:55 a. m.	3 to 6 miles	1	60,000	Hail and rain	Damage principally to window panes, skylights, greenhouses, and roofs.	Official, U. S. Weather Bureau.
Antsuga County, Ala.	30	2:45 a. m.			30,000	Tornado	2 persons slightly injured.	Do.
Chambers County, Ala. (between Welsh and Roanoke)	30	4:30 a. m.		1	25,000	do.	6 persons injured	Do.
Butler to Macon Counties, Ala.	30	4:50-6:30 a. m.		8	80,000	do.	30 persons injured; 15 or 20 buildings near Thompson destroyed.	Do.
Lee County, Ala., to Meriwether County, Ga.	30	5-6:15 a. m.		15	60,000	do.	4 deaths in Alabama; 11 in Georgia; greatest loss of life and property in Chibley, Ga.	Do.
Pike and Barbour Counties, Ala.	30	6-7:15 a. m.		1	70,000	do.	Heavy property damage; greatest near Louisville; 27 persons injured in Barbour County alone.	Do.
Lawrenceville, Ga., to Hickory Grove, S. C.	30	6-11 a. m.	100-1,300	10	2,200,000	do.	Heavy property damage; path 185 miles long, 110 of which are in South Carolina; numerous injuries.	Official U. S. Weather Bureau; Piedmont (Greenville, S. C.).
Albany, Ga.	30	7 a. m.			1,000	do.	Damage chiefly to shade trees	Official, U. S. Weather Bureau.
Brookton to Cornelia, Ga.	30	9-9:35 a. m.			51,000	do.	4 injured at Brookton; damage mostly at Cornelia.	Do.
Reynolds, Ga.	30	8:30 a. m.			30,000	do.	30 people injured	Do.
Ficklin, Ga.	30	9:30 a. m.		1	25,000	do.	10 injured; village practically destroyed	Do.
Macon, Ga. (3 miles SW. of)	30	do.	15-300	3	200,000	do.	40 injured; many buildings wrecked or moved off foundations; fruit and forest trees ruined	Do.
Fitzgerald, Ga.	30	10 a. m.			50,000	do.	3 persons injured	Do.
Sylvania, Ga.	30	12:45 p. m.			1,000	do.	Minor property damage	Do.
Butler, Ga.	30				10,000	Light hail and wind.	Damage by wind	Do.
McRae, Ga.	30				5,000	Heavy hail	Orchards injured	Do.
Millen, Ga.	30				10,000	do.	Damage principally to crops; some stones 2 inches in diameter.	Do.
Aiken (near) to Pamplico, S. C.	30	11 a. m.-2:45 p. m.	300-1,400	67	1,000,000	Tornado	Heavy property damage; path 180 miles long	Do.
Pittsboro, N. C. (near)	30	12:30 p. m.	100-300	4	20,000	do.	Path 2 miles long; 5 persons hurt.	Do.
Martin County, N. C.	30	2:30 p. m.	100-300	1	200,000	do.	40 persons injured; 80 buildings damaged or destroyed; 15-mile path.	Do.
Amelia Co., Va.	30	5:30 p. m.	100-300	1	30,000	do.	Path 10 miles long; several persons injured	Do.
Greensville Co., Va.	30	do.	40		1,000	do.	1 building destroyed; very short path	Do.

551.515 (73)  
STORMS AND WEATHER WARNINGS

WASHINGTON FORECAST DISTRICT

A disturbance of slight intensity that was over the Carolinas on the morning of the 1st moved northeastward with rapidly increasing intensity and was centered over Maine as a storm of marked energy 24 hours later. Shifting gales occurred generally from Cape Hatteras northward, several stations reporting maximum wind velocities exceeding 50 miles an hour, the highest being 68 miles an hour from the northeast at Atlantic City, N. J. Storm warnings were issued for the area affected well in advance of the occurrence of high winds.

During the night of the 3d-4th a disturbance developed over the northeastern Gulf of Mexico and was centered near Pensacola, Fla., at 8 a. m. of the 4th. At the same

time pressure was abnormally high over the Carolinas and the Middle Atlantic States, so that strong northeast and east winds seemed probable along the Atlantic coast from Savannah northward to Cape Hatteras. Storm warnings were ordered displayed at 10 a. m., but the disturbance gradually dissipated and no winds of gale force occurred.

On the morning of the 6th pressure was abnormally high over the Canadian Maritime Provinces, and a disturbance was moving eastward over the Lake region, with strong evidences of the development of a secondary over the Middle Atlantic States. Accordingly southeast storm warnings were displayed from Delaware Breakwater to Eastport, Me. The secondary disturbance developed during the 6th and moved rapidly northeastward, with a marked increase in intensity, so that strong