

The month was decidedly dry over the country as a whole. In this it resembled December just preceding, and, like December, there were moderate excesses in Florida and much of Texas. Unlike December, January brought more than normal precipitation to most of southern California and to Washington.

While the Gulf coast section had about as much rain as normal and the Lake region reported but a slight precipitation deficiency, yet most of the great area between the Rocky Mountain and Appalachian Divides had a marked deficiency, especially the middle and lower Ohio Valley, northern Arkansas, the Dakotas, and Minnesota. The middle and southern Plateau and the Middle Atlantic States likewise had considerable shortages.

As a result of the long-continued deficiency of precipitation, the major portions of the Mississippi and some other rivers were reported at the lowest stages ever known in midwinter.

Southwestern Texas, in marked contrast to a great part of the country, received more than three times the normal January rainfall, while in Florida, January, with about 120 per cent of normal, was the third successive month of more than normal rainfall.

SNOWFALL

There have been few Januarys with less snowfall, taking the country as a whole. The southern Middle Atlantic States, Ohio Valley, Minnesota and practically all the Plains had decidedly small amounts, compared with their average January quantities.

From eastern Iowa eastward and northeastward over the Lake region there was not so marked a deficiency; and

New York, save the southeastern part, and almost all of New England had considerably more than normal snowfall. In New York no January since 1925 has brought so much snowfall as the present one, and the New England average amount for this month has been exceeded in January only three times within the last quarter century.

Most of the far West reported a considerable shortage of snowfall, compared with the expected quantity. The supply of stored snow in the higher portions is small, on the whole; it is usually least unsatisfactory near and for a moderate distance to westward of the Continental Divide, between the Canadian boundary and the central portions of Colorado and Utah.

The ground was bare to an extraordinary extent over the northern Plains and westward to the foothills of the Rockies, also in southern Minnesota and from Kansas and Missouri eastward over the Ohio Valley.

SUNSHINE AND RELATIVE HUMIDITY

Much cloudy weather prevailed in the region of the Great Lakes and upper Ohio Valley, southern Florida, the far Northwest and northern Pacific States, while in the western portion of the Great Plains much sunny weather prevailed, western North Dakota receiving about 70 per cent of the possible. Elsewhere about the normal amounts of sunshine were received. The relative humidity was generally above the normal in Texas and portions of the adjacent States, in much of the Great Basin and Plateau region, and portions of the Lake region and northern New England, while elsewhere it was generally near or below the normal. However, the departures from the normal were nowhere large.

SEVERE LOCAL STORMS, JANUARY, 1931

[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
Unlontown, Pa., and vicinity.	5	Noon	3,520		\$100,000	Severe wind	Many buildings unroofed, some completely wrecked; overhead wires torn down; plate glass broken; many minor injuries.	Official, U. S. Weather Bureau.
Caswell County, N. C. (4 miles north of Yanceyville).	5	4 p. m.	200-300		10,000	Tornado	Number of buildings demolished, others unroofed; 2 persons injured; path 10 miles long.	Do. News and Observer (Raleigh N. C.).
Warren County, N. C. (3 miles west of Wise).	5	4.35 p. m.	100-200	6	35,000	Do	Farm buildings, a training school, and 2 churches demolished; poultry killed; trees uprooted or twisted off; path 4 miles long.	Official, U. S. Weather Bureau.
Mecklenburg County, Va. (near Boydton).	5	5 p. m.	100	1	3,500	Do	House and other buildings blown down; path 2 miles long.	Do. Washington Post (D. C.).

RIVERS AND FLOODS

By RICHMOND T. ZOCH

Floods in January, 1931, were local and of very minor importance. They occurred in the Santee, Savannah, and West Pearl Rivers, as shown in the following table.

An interesting occurrence in January, 1931, was the formation of an ice sheet at Saltair, near Salt Lake City, on Great Salt Lake. The sheet was observed on the morning of the 6th; it was about one-fourth inch thick, began at the shore, and extended out about 1,000 feet. This is the first known instance of the formation of ice on the open lake; a possible explanation of the cause of the freezing is given by Herman Harms, Utah State chemist, as follows:

The prolonged cold spell has caused an unusually heavy precipitation of Glauber salts, one of the chief constituents next to sodium chloride. This has decreased the density of the water to such an extent as to permit freezing over the shallow water near the shore. The ordinary freezing point of Great Salt Lake water, which is nearly 23 per cent solid, would be from 20° to 25° below zero. With the density decreased by Glauber salts precipitation, however, the freezing point would be raised about 10°.

The freezing of Bear River Bay, a part of the lake, is said not to be unusual, but is due to an artificial condition. The embankment of the Lucin cut-off has almost completely separated Bear River Bay from the main body of the lake, and the water from Bear River freshens the bay water to an extent sufficient to allow freezing to take place. Also, considerable ice from Jordan River floats into the lake occasionally.

Table of flood stages in January, 1931

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
Santee:	Feet			Feet	
Rimini, S. C.	12	20	22	12.2	22
Ferguson, S. C.	12	10	12	12.1	12
		14	25	12.7	18-19
Savannah: Ellenton, S. C.	13	8	11	14.3	9
		14	23	17.3	16
EAST GULF DRAINAGE					
West Pearl: Pearl River, La.	13	12	24	14.7	18