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

## CYCLONES AND ANTICYCLONES.

By W. P. DAY, Observer.

Lows were numerous and a considerable portion were abnormal in their movement. Three of the Alberta Lows moved far to the south of the normal path. Secondary developments occurred frequently. High pressure areas were not important, as a rule, though a greater number were observed than usual.

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

## LOWS.

	Al- berta.	North Pa- cific.	South Pa- cific.	North- ern Rocky Moun- tain.	Colo- rado.	Texas.	East Gulf.	South At- lantic.	Central.	Total.
February, 1921.....	6.0	3.0	1.0	.....	3.0	2.0	1.0	1.0	.....	17.0
Average number, 1892-1912, inclusive	3.1	2.3	1.0	0.2	1.5	1.5	0.5	0.2	0.7	11.0

## HIGHS.

	North Pacific.	South Pacific.	Al- berta.	Plateau and Rocky Moun- tain Region.	Hudson Bay.	Total.
February, 1921.....	2.0	2.0	4.0	2.0	1.0	11.0
Average number, 1892-1912, inclusive.....	0.8	0.5	4.7	1.2	0.6	7.8

## THE WEATHER ELEMENTS.

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

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## PRESSURE AND WINDS.

The atmospheric pressure during February, 1921, like that of the preceding months of the winter, exhibited few marked variations from day to day, and the gradients from HIGHS to LOWS or otherwise were in most cases of small dimensions. As a result, winds were usually of moderate force, and temperature changes lacked the abruptness usual to the winter season and were confined mainly within narrow limits.

Storm areas were frequently indefinite and usually developed little strength until reaching the more easterly districts. Low-pressure areas, giving precipitation over varying districts and in rather generous amounts, prevailed from the central valleys eastward during the latter part of the first and the early part of the second decade, and again, near the end of the second decade, low pressure over southern and eastern districts caused generous precipitation from the Southern Plains region, eastward and northeastward to the Atlantic coast. During the night of the 22d-23d low pressure developed over the region of the Great Lakes, and at the morning observation of the 23d it appeared as a storm of considerable severity, central slightly to the northeastward of Lake Huron, and precipitation had covered a wide territory from eastern Texas and the lower Mississippi Valley northward. This precipitation area moved eastward to the Atlantic coast during the following 24 hours, but the falls of snow or rain were mostly light. The latter part of the month had no extensive barometric depressions,

but local LOWS brought precipitation to scattered areas, an unusually heavy fall occurring at Del Rio, Tex., where nearly 6 inches fell in a few hours on the night of the 27th-28th.

The most important anticyclone of the month appeared in the far Northwest on the morning of the 16th and moved southeastward into the Missouri and central Mississippi valleys within the following 48 hours, at which time it was strongly reinforced by another apparently moving southward from the British Northwest Territories. The combined high pressures dominated the weather over the northern districts for several days, during which time the coldest weather of the month prevailed over the Dakotas and thence eastward to the Great Lakes.

For the month as a whole, pressure was high toward the south, diminishing northward into the Canadian Provinces westward of the Great Lakes. The negative departures were of moderate magnitude from the Missouri Valley northward into the Canadian Provinces, but in other districts the departures, both negative and positive, were mainly unimportant.

The general depression of the barometric pressure toward the north, as has been the case in the preceding months of the winter, again favored the movement of warm air from the south into far northern regions, the result of which becomes apparent on examining Chart IV, showing the departure of the mean surface temperature of the month from the normal.

Due to the absence of pressure gradients showing marked intensity, high winds occurred at infrequent intervals, and less inconvenience from drifting snow and other evidences of wind activity was experienced than is usual for February.

## TEMPERATURE.

The end of February closed a winter of unusual mildness over the greater part of the country, and in some sections of the Middle West the winter as a whole stands without a rival in the persistence of mild weather, bright, sunshiny days, and the absence of severe storms and other disagreeable features usual to some period of each winter.

The more important cold periods of the month were on the 1st, from the Great Lakes to New England; on the 7th and 8th, over the Great Plains, Rocky Mountains, and Plateau States; over the Pacific Coast States on the 15th to 17th; from the Dakotas to the Lake Superior district on the 19th; and along the middle and south Atlantic coasts and in portions of the Ohio Valley from the 21st to 25th. The lowest temperature reported during the month,  $-40^{\circ}$ , occurred in the mountain districts of Wyoming, but temperatures nearly as low occurred in Minnesota, and they were  $-25^{\circ}$  or lower in New England and several of the western mountain States.

Warm periods were well scattered through the month, the more important being from the 14th to 16th, when maximum temperatures were unusually high over all central and northern districts from the Rocky Mountains eastward, the readings on the 15th particularly being in many cases the highest ever recorded in February, and at a few places they were the highest of record for any winter month. Over the Southern States from Texas eastward the highest temperatures were usually reported on the 6th to 8th, and over the far Southwest about the 24th to 25th, when the temperatures exceeded any previous records for February at points in southern California.