

## NAVAL AIR STATION D. C.

TABLE 3.—Mean free-air temperatures, humidities, and vapor pressures, and resultant winds (m. p. s.) during December, 1925, at Washington, D. C.

Altitude m. s. l. (meters)	Naval Air Station, D. C. (7 meters)			Weather Bureau (34 meters)	
	Temperature	Relative humidity	Vapor pressure	Wind	
				Direction	Velocity
	° C.	Per cent	mb.		m. p. s.
Surface.....	0.5	70	4.54	N. 58° W.	2.8
250.....	0.5	67	4.37	N. 60° W.	6.0
500.....	-0.8	68	4.00	N. 60° W.	9.2
750.....	-2.2	68	3.61	N. 59° W.	12.5
1,000.....	-2.8	68	3.13	N. 77° W.	12.6
1,250.....	-3.5	68	2.88		
1,500.....	-4.1	65	2.78	N. 61° W.	15.1
2,000.....	-5.1	68	2.50	N. 59° W.	18.0
2,500.....	-6.7	66	2.09	N. 89° W.	18.2
3,000.....	-8.9	65	1.58	N. 71° W.	19.0

## THE WEATHER ELEMENTS

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## PRESSURE AND WINDS

While the weather of the month was mainly devoid of spectacular features, nevertheless, important variations from the normal atmospheric circulation greatly influenced the temperature and precipitation conditions.

First in importance was the persistence of an anticyclone of more than average proportions over the Plateau region during the first half, maintained apparently without reinforcement from more northern areas, and devoid largely of the tendency to induce low temperatures usually associated with areas of high pressure.

The fact that temperatures over that region were materially above normal was probably largely due to the absence of any considerable snow cover, a condition which would prevent excessive night radiation from causing subnormal temperatures.

As is usually the case when high barometric pressure prevails over the Plateau and Pacific Coast States, storms moving toward that region from the North Pacific were forced inland over British Columbia or southern Alaska and entered the United States mainly to eastward of the Rocky Mountains. As a result, little snow or rain occurred in California and adjacent areas. East of the Rocky Mountains cyclones were inclined to move eastward along the northern border, particularly during the first half. However, the most important precipitation of the month occurred in connection with storms having their origin in the South or Southwest.

The severe tropical storm moving northward along the Atlantic coast at the first of the month gave heavy rains over the area, and a storm central in Kansas on the morning of the 3d moved eastward to the Mississippi Valley and thence northward to the Great Lakes during the following 48 hours, giving widespread moderate precipitation in the central valleys and most eastern districts. About the middle of the month some heavy rains occurred in the lower Mississippi Valley and Gulf States and again near the end of the second decade there was widespread precipitation over central and eastern districts, though the falls were mainly light except in portions of the East Gulf States. Otherwise there was little important cyclonic activity except along the northern border, but here the storms afforded rather light precipitation, as is frequently the case.

The first important anticyclone of the month, moving into the United States from the Canadian northwest, appeared on the morning of the 21st in the upper Missouri Valley and moved rapidly southward over the Great Plains to Texas and thence eastward over the Gulf States to the Florida Peninsula, giving some of the lowest temperatures of the month in the Southern States. On Christmas day the first indication of the most widespread and important anticyclone and cold wave of the month was noted in the far Canadian northwest, and by the following morning it had entered the United States, carrying the line of zero temperature into central Iowa. During the following 24 hours it developed marked intensity, the barometer rising above 31 inches in portions of the upper Missouri Valley, and the line of zero temperature reached as far south as central Missouri and southern Kentucky. During the following 24 hours the cold advanced into the West Gulf States with freezing temperatures in extreme southern Texas, to the coast line of the Gulf States, and into central Florida. In portions of the Middle Gulf States, temperatures during this period were the lowest ever recorded so early in the winter and much damage resulted to truck and tender vegetables, not only there but in southern Texas and other portions of the Gulf and South Atlantic States. This anticyclone gradually overspread the eastern districts and the coldest weather of the month was registered over the greater part of country during its passage southward and eastward.

The average pressures were distinctly high over the Northwest and correspondingly low over New England and the Canadian Maritime Provinces, the monthly sea-level means ranging from 30.32 inches at Boise, Idaho, to 29.71 at Father Point, Quebec.

From the Great Plains westward to the Pacific, except over portions of central and southern California, the average pressures were above normal and they were likewise above over the adjacent Canadian Provinces. Over the eastern half of the United States, and of Canada as well, the pressure averages were everywhere less than normal and decidedly so in the more eastern districts.

The wind circulation responded to the pressure distribution and was mainly from westerly points over the eastern third of the country, due to the marked depression of the barometer to the eastward. In the west they were controlled mainly by the high pressure over the northern Plateau, blowing from the northwest over the Missouri Valley and Great Plains, and largely from southerly points over the Pacific Coast States, except in portions of California where they were frequently from the northwest. Some high winds prevailed over the Atlantic coast districts during the passage northward of the tropical storm early in the month and again on the 23d, and some high winds occurred in the Lake region on the 5th and 6th. Otherwise high winds were infrequent and notably so on the Pacific coast where December is usually a windy month. At a few points along the north Atlantic coast and over the eastern end of Lake Erie the monthly wind movement was the highest of record for December, due not to excessive high winds on particular dates but to steady blows for long periods.

A list of the more important storms of the month appears at the end of this section.

## TEMPERATURE

During the greater part of the month temperature changes were mainly unimportant except in a few local areas, but it was distinctly cold over the southern por-