(10th). The lowest minima were: 5, Sault Ste. Marie (19th); 9, Marquette (19th); 10, Alpena (19th); 12, Northfield (20th); 14, Duluth (19th); 15, Eastport (20th); 16, Moorhead (19th).

The *limits of minimum temperatures*, 32° and 40°, are shown by lines on Chart No. V.

The *years of highest maximum and lowest minimum temperatures* for April are given in the last four columns of Table I of the REVIEW for 1896. During the current month the maximum temperatures were equal to or above the highest on record at: Red Bluff, 93; Roseburg, 90; Portland, Oreg., 89; Northfield, 82; Fort Canby, 80; Astoria and Point Reyes Light, 78; Lander, 76; Tatoosh Island, 68. The minimum temperatures were not the lowest on record at any regular station of the Weather Bureau.

The *greatest daily range of temperature and the data for computing the extreme and mean monthly ranges* are given for each of the regular Weather Bureau stations in Table I. The largest values of the greatest daily ranges were: Marquette, 53; Williston, 51; San Luis Obispo, 50; Northfield, Winnemucca, and Carson City, 45; Lander, 44.

Among the *extreme monthly ranges* the largest were: Moorhead, 74; Williston and Northfield, 70; Huron, 66; Marquette, 65; Duluth and Pueblo, 64. The smallest values were: Key West, 18; Jupiter, 24; Port Eads, 26; Tatoosh Island, 30; Galveston and Corpus Christi, 31.

*Accumulated monthly departures from normal temperatures* from January 1 to the end of the current month are given in the second column of the following table, and the average departures are given in the third column for comparison with the departures of current conditions of vegetation from the normal condition.

| Districts. | Accumulated departures. | | Districts. | Accumulated departures. | |
|---|---|---|---|---|---|
| | Total. | Average. | | Total. | Average. |
| | ° | ° | | ° | ° |
| New England | + 5.2 | + 1.3 | North Dakota | − 7.0 | − 1.8 |
| Middle Atlantic | + 2.9 | + 0.7 | Northern Slope | − 4.6 | − 1.2 |
| South Atlantic | + 1.0 | + 0.2 | Southern Plateau | − 5.1 | − 1.3 |
| Florida Peninsula | + 2.5 | + 0.6 | Middle Plateau | − 9.3 | − 2.4 |
| East Gulf | + 0.6 | + 0.1 | North Pacific | − 1.4 | − 0.4 |
| West Gulf | + 5.2 | + 1.3 | Middle Pacific | − 4.0 | − 1.0 |
| Ohio Valley and Tenn | + 2.4 | + 0.6 | South Pacific | − 2.9 | − 0.4 |
| Lower Lake | + 5.2 | + 1.3 | | | |
| Upper Lake | + 8.8 | + 2.2 | | | |
| Upper Mississippi Valley | + 2.6 | + 0.6 | | | |
| Missouri Valley | + 0.5 | + 0.1 | | | |
| Middle Slope | + 1.5 | + 0.4 | | | |
| Northern Plateau | + 4.5 | + 1.1 | | | |
| Southern Slope | + 0.0 | + 0.0 | | | |

## PRECIPITATION.

[In inches and hundredths.]

The *distribution of precipitation* for the current month, as determined by reports from about 2,500 stations, is exhibited on Chart III. The numerical details are given in Tables I, II, and III. The total precipitation for the current month exceeded 6 inches in the greater portion of southern Louisiana, southeastern Missouri, central Iowa, southern Illinois, Indiana, Tennessee, and Kentucky, as also in southern Nova Scotia.

The larger values for regular stations were: Port Eads, 11.70; Jupiter, 8.47; Tatoosh Island, 7.61; Cairo, 6.49.

Little or no rain fell in southern California, Nevada, Arizona, New Mexico, and western Texas.

Details as to *excessive precipitation* are given in Tables XI and XII.

The *years of greatest and least precipitation* for April are given in the REVIEW for April, 1890. The precipitation for the current month was the greatest on record at: Port Eads, 11.70; Jupiter, 8.47; Des Moines, 7.37; Vineyard Haven, 5.95; Oklahoma, 5.87; Alpena, 4.59; Concordia, 4.20. It was the least on record at: Los Angeles and San Diego, 0.02; Carson City, 0.03; Point Reyes Light and Port Angeles, 0.48; Cleveland, 1.34.

The *diurnal variation*, as shown by tables of hourly means of the total precipitation, deduced from the self-registering gauges kept at the regular stations of the Weather Bureau, is not now tabulated.

The *average departure* for each district is given in Table I. By dividing each current precipitation by its respective normal the following corresponding percentages are obtained (precipitation is in excess when the percentage of the normal exceeds 100):

Above the normal: New England, 121; Florida Peninsula, 315; east Gulf, 130; Ohio Valley and Tennessee, 112; upper Lake, 126; upper Mississippi Valley, 127; Missouri Valley, 137; middle Slope, 148.

Normal: Southern Plateau, 100.

Below the normal: Middle Atlantic, 77; south Atlantic, 91; west Gulf, 60; lower Lake, 87; North Dakota, 59; northern Slope, 75; southern Slope, 50; middle Plateau, 56; northern Plateau, 76; north Pacific, 61; middle Pacific, 39; south Pacific, 11.

The *current departures* from the normal precipitation are given in Table I, which shows that precipitation was in excess in the east Gulf States, the Tennessee and Ohio valleys, the Mississippi and lower Missouri valleys, the central Lakes, the St. Lawrence Valley, New England, and Nova Scotia. It was deficient in the west Gulf States, the Rocky Mountain Plateau and Pacific Coast regions. The large excesses were: Port Eads, 8.7; Jupiter, 6.0; Des Moines, 4.6. In Canada, Yarmouth, 4.2; Halifax, 2.9; Rockliffe, 2.8; Port Stanley, 2.2. The large deficits were: Kittyhawk and Astoria, 3.1; Cape Henry, 3.0; Norfolk and Fort Canby, 2.6. In Canada, Swift Current, 1.1.

The *total accumulated monthly departures* from January 1 to the end of the current month are given in the second column of the following table: The third column gives the percentage of the current accumulated precipitation relative to its normal value.

| Districts. | Accumulated departures. | Accumulated precipitation. | Districts. | Accumulated departures. | Accumulated precipitation. |
|---|---|---|---|---|---|
| | *Inches.* | *Per ct.* | | *Inches.* | *Per ct.* |
| Florida Peninsula | + 4.40 | 141 | New England | − 1.70 | 86 |
| East Gulf | + 1.00 | 105 | Middle Atlantic | − 2.80 | 80 |
| Ohio Valley and Tenn | + 2.80 | 117 | West Gulf | − 0.90 | 94 |
| Upper Lake | + 0.50 | 105 | Lower Lake | − 0.80 | 98 |
| North Dakota | + 0.80 | 119 | North Pacific | − 0.80 | 97 |
| Upper Mississippi Valley | + 4.10 | 147 | Middle Pacific | − 1.10 | 93 |
| Missouri Valley | + 3.50 | 148 | | | |
| Northern Slope | + 0.40 | 111 | | | |
| Middle Slope | + 1.90 | 136 | | | |
| Abilene (southern Slope) | + 0.50 | 115 | | | |
| Southern Plateau | + 1.50 | 176 | | | |
| Middle Plateau | + 0.90 | 116 | | | |
| Northern Plateau | + 0.20 | 103 | | | |
| South Pacific | + 1.20 | 116 | | | |
| South Atlantic | + 0.00 | 100 | | | |

## MOISTURE.

The *quantity of moisture* in the atmosphere at any time may be expressed by the weight of the vapor coexisting with the air contained in a cubic foot of space, or by the tension or pressure of the vapor, or by the temperature of the dew-point. The mean dew-point for each station of the Weather Bureau, as deduced from observations made at 8 a. m. and 8 p. m., daily, is given in Table I.

The *rate of evaporation* from a special surface of water on muslin at any moment determines the temperature of the wet-bulb thermometer. The mean wet-bulb temperature is now published in Table I; it is always intermediate, and generally about half way between the temperature of the air