

Island, Behring's sea, 29.55 or 750.5; Stykkisholm, 29.60 or 751.8 The highest readings (reduced to sea level,) reported by cooperating observers were 30.77 or 781.5 at Eastport, Maine, on March 1st, Yennisseisk, 30.73 or 780.6 on the 6th; the lowest 28.57 or 725.7 at St. Paul's Island on the 29th; elsewhere the pressure of 31.00 or 787.4 has been noted as occurring at Irkutsk on the 17th. The lowest temperature mean is that of York Factory  $-14^{\circ}$  F. or  $25^{\circ}.6$  C. The winds in general may be said to have been *northwesterly*. In North America they were *variable* except *northwesterly* in the United States eastward of the Mississippi valley; over the North Atlantic ocean, north of parallel  $40^{\circ}$  *northwesterly* except along the European coast where they were *southwesterly*; in Europe *westerly* with a southern tendency northward of parallel  $50^{\circ}$  and a northern tendency to the southward of it; in Algeria *variable*, in Asia *northwesterly* in Hindostan and *northerly* along the western coast; being elsewhere on that continent *variable*. As compared with the similar chart for the preceding month (February, 1879,) the following changes are noted: A general increase of pressure over Europe, (except southern Spain and Portugal,) the Atlantic ocean, north of parallel  $40^{\circ}$  and over the extreme eastern portion of North America. This increase was most marked over the British Isles, France and Germany; the greatest change noted Greenwich  $+0.54$ . Over Asia a general decrease of pressure occurred, amounting generally to 0.10. In but one instance, (Tashkend, 0.27,) was the decrease greater than 0.17 over that continent. Over the United States the pressure remained nearly stationary, but northwesterward of that country the following *decreases* of pressure are noted: York Factory 0.24; St. Paul's Island 0.30 and St. Michaels 0.49. The greatest increase of temperature occurred over the continent of Asia where it probably averaged  $10^{\circ}$  F., the greatest change,  $+26^{\circ}$  F. having occurred at Yennisseisk. A considerable increase of temperature also occurred in Sweden, Norway and in the interior of North America. But few and isolated stations report a slight and unimportant decrease of temperature.

*Chart No. VI.*—Upon this chart are traced the paths of 37 of the principal storm areas of the Northern Hemisphere during the month of *March*, 1879. Of these 9 are located along the eastern coast of Asia, and 5 over the Behring's Sea region. Of those along the Asiatic coast, five, Nos. XIV, XVI, XVII, XXXII, and XXXVII, appear to have come from the interior, while four, Nos. IV, XIII, XXIII and XXIX, apparently moved in a northeasterly course at a short distance off the coast and which were probably of tropical origin. For areas, Nos. IV, XVII, XXIII and XXXII, data, showing the progress of translation, similar to that given for areas XXII and XXVI of February, 1879, might be here produced, but for want of space are omitted. Of the storm areas over the North American continent, the unusually large number of 9 can be traced backwards to the Pacific, while of those leaving the eastern coast eight can be traced to the vicinity of Iceland or the European coast. Of those apparently originating over the Atlantic ocean, one, No. VIII, seems to have been of tropical origin, while Nos. II, VII and XXXI appear to have formed within a short distance of the European coast. Of the areas traversing Europe, four came from the Atlantic, and two, Nos. XIV and XIX, formed over the North Sea. The positions given for area No. II are, of course, somewhat doubtful, but the indications of the passage of this area throughout the whole extent from the Madeiras to the interior of Asia, are pretty well marked. The same may be said of the passage of area No. XVI across northern Asia, and of the path, shown in the small sectional chart in the lower right-hand corner, of the Mauritius cyclone of the 20th and 21st of March, 1879.

## TEMPERATURE OF THE AIR.

The mean temperature of the air for November, 1880, is indicated by isotherms on chart No. II. The table of temperatures on the right-hand side of that chart shows, (as deduced from Signal Service observations of the past nine years,) the mean temperatures for the various districts, and the departures from such means during November, 1880. As will be observed from that table, the mean in every district of the country has been *below the normal*. Such deviations from the normal exceeded  $5^{\circ}$  over the entire country, except California, the Atlantic and East Gulf States and the Lake Ontario region. The following are the most notable departures at various stations: St. Louis, Indianapolis, Indianola, Corsicana, Brownsville and Denison, from  $10^{\circ}.2$  to  $11^{\circ}.0$ ; San Antonio, North Platte, Concho and Laredo, from  $11^{\circ}.5$  to  $12^{\circ}.1$ ; Fort Gibson,  $12^{\circ}.6$ ; Cheyenne,  $13^{\circ}$ ; Rio Grande City and Fort Griffin, Tex.,  $13^{\circ}.1$ ; Fort Davis, Tex., and Dodge City,  $13^{\circ}.7$ , and Denver,  $16^{\circ}.3$ . Except in the Atlantic States and the Lake Ontario region, (where either November 1873 or 1875 was slightly colder,) the present month has been the coldest since the establishment of the Signal Service stations. From detached stations, not included in districts, the following departures from the mean are noted: Mount Washington,  $2^{\circ}.3$  below; Pike's Peak,  $11^{\circ}.2$ ; Key West,  $3^{\circ}.6$  below; Punta Rassa,  $5^{\circ}.4$  above. In connection with the extremely low temperature of the month, and the deficiency of temperature in northern Florida and at Key West, it is particularly noticeable that the mean temperature at Punta Rassa should be the highest of any year since its establishment in 1871, November, 1873, only excepted.

The following extracts from reports of voluntary observers are noted as of interest:—*Illinois*: Morrison, average temperature lower than for many years; month remarkably cold. Riley, mean temperature  $9^{\circ}.3$  below mean of 19 years, and  $2^{\circ}.2$  below the coldest November. *Indiana*: Laconia, coldest November on record, or as compared with the past 17 years. St. Meinrad, 22nd, very cold, highest barometer for years. Vevay, coldest November ever observed at this station.

*Iowa*: Clinton, navigation closed on the Mississippi river same date as in 1872, but earlier than any other date recorded. Muscatine, 16th, Mississippi river closed by ice, earliest date ever recorded at this point. Boonsboro, month unusually cold; 15th, men, and 18th, teams crossed Des Moines river on the ice. Ft. Madison, month unusually cold. Glenwood, very cold. Monticello, Maquoketa river frozen over 20 days earlier than last year. *Kansas*: Lawrence, lowest mean temperature for Nov. for past 13 years. *Maine*: Gardiner, coldest November in 44 years, except in 1873; mean temperature for 44 years, 35.6. *Massachusetts*: Westborough, coldest November in several years; large quantities of apples frozen on the trees. Fall River, month unusually cold; 27th, ice 4 inches thick on Watuppa Lake. Springfield, month very cold. *Michigan*: Thornville, month very cold; 30th, ice 12 inches thick, apple and root crops severely damaged by freezing. Lansing, month very cold. Northport, month unusually cold. *Missouri*: Frankford, month unusually cold. Oregon, mean temperature  $11^{\circ}.4$  below that of the past twenty-six years. St. Louis, *Missouri Weather Service* reports "coldest November ever observed in this city. Previous to November, 1880, the lowest November mean temperatures were reported by Engelmann as follows: 1838,  $34^{\circ}.7$ ; 1872,  $36^{\circ}.1$ ; 1858,  $37^{\circ}.6$ ; 1842,  $37^{\circ}.7$ ; twelve times since 1837 the mean November temperature has fallen below  $40^{\circ}.0$ , while in 1849 the mean rose to  $51^{\circ}.8$ . The average November temperature is  $42^{\circ}.9$ . In 1845, the lowest minimum,  $-0^{\circ}.5$ , was observed by Engelmann. In southwestern Missouri the daily temperature and mean temperature have been lower than ever observed at St. Louis. The coldest temperature in the State is reported from Neosho,  $-16^{\circ}$  on the 18th and  $-4^{\circ}.0$  and  $-6^{\circ}.0$  on 17th and 19th." *New York*: Palermo, coldest November in 27 years, except in 1873, when mean temperature was  $2^{\circ}.0$  lower. North Volney, mean temperature for November for past 10 years  $35^{\circ}.2$ ; November, 1880,  $31^{\circ}.3$  or  $3^{\circ}.9$  lower. Coldest November was in 1873,  $29^{\circ}.8$ , lowest minimum  $-7^{\circ}.0$  in 1875; November, 1880, shows the largest monthly range of temperature,  $69^{\circ}$  ever recorded at this station. Waterburg, mean temperature of November for past 6 years  $32^{\circ}.1$ ; November, 1880,  $30^{\circ}.8$  or  $1^{\circ}.3$  lower. Schroon Lake, month very cold; Schroon Lake frozen over on the 28th. *Nebraska*: Austin, 30th, Middle Loup river frozen over and teams crossing. Clear Creek, very cold month; 16th, Platte river closed with ice; 19th, teams crossing; 30th, heavily loaded wagons still crossing on the ice. *Ohio*: North Lewisburg, mean temperature of November for past 49 years  $39^{\circ}.7$ ; November, 1880,  $29^{\circ}.8$  or  $9^{\circ}.9$  lower; coldest year, 1874,  $29^{\circ}.8$ ; warmest, November, 1849,  $49^{\circ}.1$ . Wooster, month remarkable for its very low mean temperature,  $29^{\circ}.7$ . College Hill, coldest November ever experienced. *Pennsylvania*: Dyberry, coldest November in 25 years, except in 1873, when the mean monthly temperature was  $26^{\circ}.8$  or  $4^{\circ}.0$  lower than 1880. Milton, month very cold. Chambersburg, coldest November ever experienced here, thickest ice (6 inches) ever cut here so early in the season. Wellsboro, coldest November since 1854, ice from 10 to 14 inches in thickness, ground frozen to depth of 12 inches on the average. Catawissa, month very cold, freezing temperatures for 23 days. *Texas*: Austin, mean temperature of November  $10^{\circ}$  lower than for past 25 years. Cleburne, month very cold, 13 days of frost. *Virginia*: Dover Mines, mean temperature of month  $4^{\circ}.8$  lower than in 1879, Wytheville, mean temperature of month  $3^{\circ}.0$  below mean of 16 years, coldest November in 16 years, except in 1872, when the mean was  $6^{\circ}.0$  lower, in 1873,  $2^{\circ}.0$  lower and in 1879,  $8^{\circ}.0$  lower. *West Virginia*: Flemington, month unusually cold. Helvetia, month very cold. *Wisconsin*: Embarrass, coldest November ever observed at this station. Madison, coldest since 1875. Bloomfield, month very cold, 23rd, Geneva Lake frozen over. Ripon, month unusually cold.

*Maximum and Minimum Temperatures.*—In general the maximum temperatures for November, 1880, have ranged from  $60^{\circ}$  to  $80^{\circ}$ . The isotherm of  $70^{\circ}$  runs from Delaware southwestward to northern Texas, thence westward to California, where it turns northward so as to leave the whole of that State to the southwestward. Maximum temperatures under  $60^{\circ}$  were reported from the northerly stations in Maine, the Lake region and the Northwest, the lowest being  $44^{\circ}$  at Duluth and  $49^{\circ}$  at St. Vincent. Temperatures above  $80^{\circ}$  were reported from Florida, southern Texas and Arizona. The highest were as follows:—Yuma,  $86^{\circ}$ ; Edinburg,  $87^{\circ}$ ; Key West,  $89^{\circ}$ ; Rio Grand City and Burkes,  $90^{\circ}$ . These temperatures have been unusually low over the entire country. Except in Florida and at the isolated stations of New Orleans, San Deigo and San Francisco, minimum temperatures below the freezing point have occurred during the month. A careful examination of minimum temperatures for November, in years past, shows that eastward of the 100th meridian, save at a few scattered stations, the lowest November minima, north of latitude  $37^{\circ} 50'$ , occurred in 1875, and south of that parallel, in 1877. In the Middle and Southern Plateau and Rocky Mountain districts, the greater part of the Western Gulf States, the Ohio valley and Tennessee, the temperatures have been lower than ever recorded in any preceding November. The following in comparison with other remarkable minima, are noted:—*Arizona*: Yuma,  $22^{\circ}$ ; in 1850,  $34^{\circ}$ . *Indiana*: Spiceland,  $-14^{\circ}$ ; in 1874,  $-10^{\circ}$ . *Indian Territory*: Ft. Sill,  $-4^{\circ}$ ; in 1873,  $8^{\circ}$ . *Kentucky*: Louisville,  $8^{\circ}$ ; in 1874,  $10^{\circ}$ . *Michigan*: Lansing,  $-3^{\circ}$ ; in 1875,  $3^{\circ}$ . *Missouri*: St. Louis,  $8^{\circ}$ ; in 1835,  $-1^{\circ}$ . *Mississippi*: Vicksburg,  $23^{\circ}$ , in 1877,  $23^{\circ}$ . *Nebraska*: De Soto,  $-5^{\circ}$ ; in 1875,  $-1^{\circ}$ . *Nevada*: Ft. McDermitt,  $6^{\circ}$ ; in 1868,  $5^{\circ}$ . *New Mexico*: Ft. Union,  $-15^{\circ}$ ; in 1855,  $5^{\circ}$ ; Santa Fé,  $-11^{\circ}$ ; in 1850,  $3^{\circ}$ . *Ohio*: Bethel,  $-10^{\circ}$ ; in 1874,  $-2^{\circ}$ ; Westerville,  $-13^{\circ}$ ; in 1874,  $8^{\circ}$ . *Tennessee*: Nashville,  $15^{\circ}$ ; in 1877,  $17^{\circ}$ . *Texas*: San Antonio,  $21^{\circ}$ ; in 1877,  $22^{\circ}$ ; Brownsville,  $30^{\circ}$ ; in 1873,  $31^{\circ}$ . *Utah*: Salt Lake City,  $3^{\circ}$ ; in 1864,  $22^{\circ}$ . *Wyoming*: Ft. Bridger,  $-40^{\circ}$ ; in 1873,  $-27^{\circ}$ . *Wisconsin*: Embarrass,  $-15^{\circ}$ ;

in 1877, —20°. *Colorado*: Denver —14°; in 1877, —18°; Ft. Garland, —30°; in 1873, —35°. These unusual temperatures occurring generally from 8 to 10 days earlier than the very low temperatures of 1873 and 1877, and covering, as they do, the greater part of the entire country, make this month, as regards its thermal conditions, the most extraordinary November on record.

The following are the maximum and minimum temperatures reported in each State and Territory:

*Maximum Temperatures.*—*Alabama*: 76° at Montgomery. *Arizona*: 86° at Yuma. *Arkansas*: 69° at Little Rock. *California*: 89° at \*Princeton and 85° at Los Angeles. *Colorado*: 61° at Denver and 26° at Pike's Peak. *Connecticut*: 68° at \*Mystic and 66° at New Haven and New London. *Dakota*: 66° at \*Morrison and 63° at Bismarck. *Delaware*: 70° at Delaware Breakwater. *District of Columbia*: 70° at Washington. *Florida*: 39° at Jacksonville. *Georgia*: 77° at Savannah and \*Quitman. *Iowa*: 68° at \*Glenwood and 64° at Davenport. *Idaho*: 60° at Boise City. *Illinois*: 70° at \*Louisville and 65° at Chicago. *Indiana*: 68° at \*Logansport and \*Vevay, and 63° at Indianapolis. *Indian Territory*: 69° at Ft. Sill. *Kansas*: 70° at Dodge City. *Kentucky*: 69° at Louisville. *Louisiana*: 78° at \*Lake Charles, and 75° at New Orleans. *Maine*: 64° at \*Orono and 59° at Portland. *Maryland*: 72° at \*Emmitsburg and 69° at Baltimore. *Massachusetts*: 67° at \*Fall River and 64° at Boston. *Michigan*: 67° at \*Lansing and 59° at Detroit. *Minnesota*: 58° at St. Paul. *Mississippi*: 75° at Vicksburg. *Missouri*: 68° at St. Louis. *Montana*: 54° at Helena. *Nebraska*: 72 at \*Austin and 66° at North Platte. *Nevada*: 63° at Winnemucca. *New Hampshire*: 60° at \*Contoocookville and 49° on summit of Mt. Washington. *New Jersey*: 68° at Atlantic City. *New Mexico*: 80° at Socorro. *New York*: 67° at New York City. *North Carolina*: 77° at Wilmington. *Ohio*: 68° at Cincinnati. *Oregon*: 68° at Umatilla. *Pennsylvania*: 70° at Pittsburg. *Rhode Island*: 64° at Newport. *South Carolina*: 76° at \*Aiken and 74° at Charleston. *Tennessee*: 73° at Knoxville. *Texas*: 89° at Rio Grande City and 82° at Jacksboro. *Utah*: 58° at Salt Lake City. *Vermont*: 66° at \*Windsor and 64° at Burlington. *Virginia*: 75° at \*Johnsontown and 72° at Norfolk. *Washington Territory*: 58° at Olympia. *West Virginia*: 72° at Morgantown. *Wisconsin*: 62° at Beloit and 60° at Madison and La Crosse. *Wyoming*: 54° at Cheyenne.

Those marked with a star (\*) are reported by U. S. Army Post Surgeons or Voluntary Observers

*Minimum Temperatures.*—*Alabama*: 22° at \*Green Springs and 26° at Montgomery. *Arizona*: —1° at Prescott. *Arkansas*: —6° at \*Mt. Ida and 10° at Little Rock. *California*: 17° at Campo and 26° at Red Bluff and Visalia. *Colorado*: —30° at \*Ft. Garland, —14° at Denver, Signal Service, and —24° Voluntary observer, and —36° at Pike's Peak. *Connecticut*: 8° at \*Mystic and \*Southington and 13° at New Haven and New London. *Dakota*: —28° at Ft. Stevenson and —16° at Deadwood. *Delaware*: 16° at \*Dover and 23° at Del. Breakwater. *District of Columbia*: 12.5° at Washington. *Florida*: 89° at Key West and 62° at Pensacola. *Georgia*: 24° at \*Gainesville and 25° at Atlanta. *Idaho*: 7° at Boise City. *Iowa*: —12° at \*Cresco and —5° at Dubuque. *Illinois*: —11° at \*Louisville and —3° at Champaign. *Indiana*: —14° at \*Spiceland and \*Logansport and —5° at Indianapolis. *Indian Territory*: —10° at Ft. Gibson. *Kansas*: —10° at \*Yates Centre and —7° at Dodge City. *Kentucky*: 6° at \*Bowling Green and 8° at Louisville. *Louisiana*: 18° at Shreveport. *Maine*: —9° at \*Cornish and 9° at Eastport. *Maryland*: 7° at \*Emmitsburg and 15° at Baltimore. *Massachusetts*: —3° at \*Rowe and 9° at Thatcher's Island. *Michigan*: —10° at \*Marshall and —9° at Escanaba. *Minnesota*: —22° at St. Vincent. *Mississippi*: 23° at Vicksburg. *Missouri*: —16° at \*Neosho and 8° at St. Louis. *Montana*: —17° at Helena. *Nebraska*: —10° at \*Ft. Hartsuff and —7° at North Platte. *Nevada*: —9° at Winnemucca. *New Hampshire*: —16° on summit of Mt. Washington and at \*Grafton. *New Jersey*: 4° at Somerville and 12° at Atlantic City. *New Mexico*: —11° at Santa Fe. *New York*: —10° at \*Schroon Lake and 3° at Buffalo. *North Carolina*: 10° at \*Ellsworth and 18° at Charlotte. *Ohio*: —13° at \*Westerville and —5° at Columbus. *Oregon*: 9° at Umatilla. *Pennsylvania*: —8° at \*Franklin and 4° at Pittsburg. *Rhode Island*: 15° at Newport. *South Carolina*: 23° at \*Aiken and 30° at Charleston. *Tennessee*: 12° at \*Ashwood and 15° at Nashville. *Texas*: —1° at Pilot Point and —5° at Ft. Elliott. *Utah*: 3° at Salt Lake City. *Vermont*: —16° at \*Woodstock and 4° at Burlington. *Virginia*: 9° at Mt. \*Solon and \*Snowville and 13° at Lynchburg. *Washington Territory*: 23° at \*Olympia. *West Virginia*: 2° at \*Flemington and 8° at Morgantown. *Wisconsin*: —26° at \*Neillsville and —10° at La Crosse. *Wyoming*: —40° at Ft. Bridger and —16° at Cheyenne.

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*Ranges of Temperature at Signal Service Stations.*—The monthly ranges will appear from the maxima and minima just given. The greatest daily ranges vary in the Upper Mississippi, Lower Missouri and Ohio valleys, Tennessee, the Lake region, the Atlantic and Eastern Gulf States, (except Florida) from 22° to 30°, except Portland, Me., 19°; Eastport, 21°; Milwaukee and St. Paul, 31°; La Crosse, 32°; Marquette, 35° and Knoxville, 38°. In the Western Gulf States these ranges increase from 24° at New Orleans, 25° at Galveston and 31° at Brownsville on the coast to 37° at Ft. Gibson, 42° at Concho and Uvalde in the interior. On the Pacific coast notable ranges are follows: San Francisco, 20°; San Diego and Umatilla, 25°; Campo, 48°. In the Southern Plateau they vary generally from 39° to 43°, but 52° is noted at El Paso. Other noteworthy ranges are Salt Lake City and Helena, 25°; Cheyenne, 32°; Denver and North Platte, 44°; Bismarck, 45°; Winnemucca, 50° and Ft. Bennett, 52°

*Frosts* were of almost daily occurrence in the Rocky Mountain and Plateau districts (except southern Arizona,) the Northwest and in the Lake region from November 2nd, and in the Atlantic and interior of the Gulf States, the Ohio valley and Tennessee from the 15th and 16th. On the Pacific coast they were frequent in the interior from the 19th. From the 16th killing frosts were frequent and general in the South Atlantic and Gulf States, extending to the entire coasts of Texas, Louisiana, Mississippi, Alabama and northern Florida. In California, frosts occurred at Yuma, Sacramento and Visalia on the 18th.

*Ice*.—The dates on which ice formed in the various districts are indicated in the preceding paragraph, where the days on which freezing temperatures occurred are given.

## PRECIPITATION.

The general distribution of rain-fall (including melted snow,) for November 1880, is shown on Chart No. III, as accurately as possible from about 500 reports. The table on this chart shows for the various districts the *average* precipitation for November, as compared with that of the present month. The belt of greatest rain-fall extended from the Mountain region of North Carolina, southward to eastern Texas. Southern Arizona is the only section of country over which no rain has fallen during the month. The rain-fall in New England and the Middle Atlantic States continues deficient. In the first district the deficiencies since January 1, 1880 amount to 6.51 inches, in the latter to 4.60. A marked excess has been reported from Tennessee, the South Atlantic and Gulf States, amounting in the Western Gulf district to 3.38 inches, the greatest excess of the month. The departures from the average precipitation at certain stations in the last named district were as follows: Corsicana, 2.05 above; Shreveport, 2.89 above; Galveston, 3.30 above and Vicksburg, 9.52 above; the rain-fall at the last station was over three times the normal amount. On the Pacific coast the rain-fall has been generally deficient, being only about one-third of the average. In districts not named the deviations from the normal rain-fall have been less important.

*Special Heavy Rains*.—4th, Vicksburg, 1.15 inches in 3 hours and 25 minutes. 5th, Fredericksburg, Tex., 2.13 in. in less than 8 hours; Galveston, 2.04 in. 5th and 6th, Quitman, Ga., 4.70 in.; Emmittsburg, Md., 2.60 in.; Point Pleasant, La., 3.31 in. 6th, Cincinnati, 1.50 in.; Little Mountain, O., 1.50 in. in 15 hours; 7th, Niles, Mich., 1.40 in. in 7 hours. 9th, Memphis, 1.70 in. in 5 hours; Pt. Pleasant, La., 3.48 in.; Dodge City, 1.05 in. in 6 hours; Shreveport, 2.20 in. in 4 hours. 10th, Atlanta, 2.19 in.; Cedar Keys, Fla., 1.43 in. in 5 hours and 13 minutes; Pensacola, 1.23 in. in 3 hrs., 30 min. 13th, Galveston, 2.25 in., of which 1.91 fell in 8 hrs.; Indianola, 1.13 in. in 8 hrs.; Brownsville, Tex., 2.00 in. in less than 8 hrs.; Pensacola, 2.03 in. in 5 hrs. 20 min. 14th and 15th, Kittyhawk, 3.64 in., of which 2.15 in. fell in 16 hrs. 17th and 18th, Pt. Pleasant, La., 2.01 in. 20th, Block Island, 1.64 in. in 9 hrs. 30 min. 21st, Cedar Keys, Fla., 1.96 in. in 6 hrs. and 30 min. 24th and 25th, Pt. Pleasant, La., 3.01 in.; White Plains, N. Y., 2.20 in.; Vicksburg, 3.22 in., of which 2.97 fell in 16 hrs. 26th and 27th, Green Springs, Ala., 4.73 in. 27th and 28th, Gainesville, Ga., 4.00 in.; Pt. Pleasant, La., 4.07 in.; Vicksburg, 4.03 in., of which 2.89 fell in 16 hrs.; Fayette, Miss., 5.60 in. 28th, Chattanooga, 1.98 in. 28th and 29th, Highlands, N. C., 2.90 in.; Franklin, N. C., 4.40 in. 29th and 30th, Green Springs, Ala., 3.50 in.; Pt. Pleasant, La., 2.61 in. 30th, Chattanooga, 1.93 in. in 8 hrs; Vicksburg, 2.81 in., of which 1.77 fell in 8 hrs.

*The Largest Monthly Rain-falls during November 1880*, are as follows:—Point Pleasant, La., 19.52 inches. Vicksburg, Miss., 14.15. Cape Hatteras, N. C., 12.86. Ellsworth, N. C., 13.50. Fayette, Miss., 10.60. Green Springs, Ala., 10.54. Kittyhawk, N. C., 9.92. Mt. Washington, N. H., 9.37. Quitman, Ga., 8.90. Galveston, Tex., 8.85. Chattanooga, Tenn., 8.82. Highlands, N. C., 8.73. New Ulm, Tex., 8.62. Gainesville, Ga., 8.40. Memphis, 8.39. Atlanta, Ga., 8.21. Cape Henry, Va., 8.11.

*The Smallest Monthly Rain-falls* are:—Arizona, (except 0.13 inch at Forts Apache and Verde,) none. Ft. Yuma, Cal., Silver City, N. M. and Ft. Pembina, Dak., none. Ft. Hall, Idaho, Battle Mountain, Nev., El Paso, Tex. and Suisan, Cal., 0.02. Olivet, D. T., 0.03. Morrilton, D. T., Dunningan, Delano, and Sacramento, Cal. and Kelkon, Utah, 0.05. Petaluma, Cal. and St. Vincent, 0.07. Ravenna, Cal., and Hermosa, Cal., 0.09. Ft. Elliott, Tex., Ft. Wallace, Kan., Reno, Beowawe and Golconda, Nev., Blue Creek, Utah, and Tehama, Willows and Tehachapi, Cal., 0.10. Nora Springs, Iowa, 0.12. La Mesilla, N. M., Reading, Cal., 0.13. Red Bluff and South Vallejo, Cal., 0.14.

*Rainy Days*.—The number of days on which rain or snow has fallen, varies as follows: New England, 9 to 21. Middle Atlantic States, 7 to 18. South Atlantic States, 13 to 21. Eastern Gulf States, 7 to 18. Western Gulf States, 11 to 22. Ohio valley and Tennessee, 13 to 17. Lower Lake region, 17 to 24. Upper Lake region, 12 to 18. Upper Mississippi valley, 9 to 14. Lower Missouri valley, 6 to 15. Valley of the Red River of the North, 9 to 14. Texas, 2 to 17. Rocky Mountains, 0 to 14. Middle Plateau, 1 to 13. California, 1 to 3. Oregon, 4 to 11.

*Cloudy Days*.—The number varies in New England from 3 to 18. Middle Atlantic States, 5 to 15. South Atlantic States, 14 to 20. Eastern Gulf States, 2 to 18. Western Gulf States, 13 to 19. Ohio valley and Tennessee, 10 to 17. Lower Lake region, 13 to 20. Upper Lake region, 10 to 19. Upper Mississippi valley, 9 to 14. Missouri valley, 9 to 12. Valley of the Red River of the North, 6 to 9. Texas, 10 to 19. Rocky Mountains, 3 to 9. Middle Plateau, 3 to 9. California, 1 to 4. Oregon, 9 to 12.