

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

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CENTRAL OFFICE: WASHINGTON, D. C.

VIRGINIA SECTION,

E. A. EVANS, Section Director,

RICHMOND, VA.

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RICHMOND, VA.

No. 10.

OCTOBER CROP CONDITIONS.

The progress of crops throughout the major part of the month was considerably retarded by the dry weather prevailing. Late seeding of turnips came up slowly and unevenly, while that part of the crop early seeded did not make much growth. Other fall-sown crops, as wheat, oats and clover, advanced very slowly. This condition prevailed practically without interruption until the 20th, when rain, general in all portions of the State except the Southwest, occurred, which was very beneficial to vegetation. Pastures, which had previously been bare, greened up and afforded some grazing, while wheat, oats and clover made perceptible growth.

The rain was also helpful in softening the ground for late plowing. In those localities where seeding was late, germination was hastened. The general crop conditions of the State are in close correspondence with the distribution of precipitation, being best in the Tidewater and Southside counties, where the rainfall of the month was beneficial, and worst in the central and southern counties of the Great Valley division and the western counties of the Middle division. The close of the month, however, found crops in the dry section in better condition than at the beginning.

LONG-RECORD TEMPERATURE AND PRECIPITATION DATA FOR RICHMOND, VA.

The City of Richmond is situated on the extreme west-central edge of Henrico county, in the Tidewater section of the State. It is at the "head of tide" in the James river. The surrounding country is rolling, with maximum elevations of about 200 feet above mean sea-level. Previous to the establishment of a regular station of the United States Weather Bureau, temperature observations were taken, so far as available record shows, as follows:

From October, 1850, to March, 1851, inclusive, and from October, 1851, to November, 1853, inclusive. In 1854 record was made for the first three months of the year. It then ceased practically until June, 1872, when it was again resumed, continuing until May, 1873, inclusive. A gap of over six years then occurred. There is nothing to indicate who the observer was during all this period. In January, 1880, observation work was taken up by Mr. William H. Pleasants, who maintained an excellent and unbroken record up to the time of his removal from the city, in February, 1893. Beginning with October 5, 1897, complete observations have been taken by the United States Weather Bureau.

The record of precipitation is much the same as for temperature, except that subsequent to the removal of Mr. Pleasants observations were continued by Mr. A. J. Duesberry until August, 1895, inclusive, beginning again with the inauguration of work by the Weather Bureau.

For temperature, the interval between February, 1893, and October, 1897, has been filled by interpolation based on Bon Air and later Richmond data, and for precipitation the same method has been used, the period covered being from September, 1895, to September, 1897, inclusive. These interpolations in the tables are indicated by the *.

There is no information as to the location or exposure of instruments prior to October 5, 1897, at which time they occupied the roof of the Chamber of Commerce Building about 82 feet above the ground. Beginning June 1, 1900, observations have been taken at the Times Building, where the instruments are about 82 feet above ground. In each of

these locations the exposure of instruments has been in accordance with Weather Bureau regulations and requirements.

Mean Temperatures. (Deg. Fahr.)

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1852	34.8	43.2	48.7	51.9	67.1	72.6	76.8	71.8	66.6	61.1	45.6	45.6	57.2
1853	36.4	42.9	47.0	56.5	66.1	76.2	76.8	77.5	68.9	55.7	51.1	38.6	57.8
1860	.....	43.6	.....	.....	.....	76.0	80.1	78.5	74.9	52.2	40.6	29.4	.....
1872	.....	.....	.....	.....	.....	76.0	80.1	78.5	74.9	52.2	40.6	29.4	.....
1873	34.3	33.3	38.7	53.2	62.1	78.0	81.0	73.0	55.3	52.7	42.2	40.9	.....
1880	45.6	.....	46.7	58.8	58.3	78.0	81.0	73.0	55.3	52.7	42.2	40.9	.....
1881	33.5	39.9	45.2	53.3	68.5	75.7	78.7	78.8	78.8	65.9	42.2	46.2	58.9
1882	38.5	46.8	50.3	55.4	63.1	75.0	78.6	78.6	70.5	63.8	49.9	37.5	58.7
1883	34.4	44.9	43.2	55.6	68.0	77.0	78.7	76.6	68.7	55.9	51.0	41.7	58.0
1884	34.1	48.1	47.5	54.6	69.4	74.3	77.5	76.4	76.1	65.6	48.4	43.1	59.6
1885	40.1	33.5	39.5	57.1	66.4	76.2	80.6	77.6	73.6	58.8	49.5	41.2	57.8
1886	31.1	35.7	42.2	62.5	62.3	72.2	74.0	75.4	71.9	60.5	50.0	32.7	55.9
1887	37.6	49.0	43.2	54.3	74.3	71.7	82.3	76.8	69.6	60.5	49.7	42.0	59.1
1888	32.4	44.7	44.5	55.4	65.7	75.9	75.2	78.0	66.8	55.0	50.6	40.6	57.1
1889	42.4	36.5	46.1	58.0	67.2	72.5	76.7	73.8	67.5	55.7	50.8	51.1	58.2
1890	48.5	49.3	47.5	57.6	67.1	78.1	74.3	73.8	70.3	62.2	54.0	44.2	60.8
1891	44.9	49.3	44.3	63.4	64.8	77.2	75.6	78.5	75.3	59.8	49.2	47.2	60.8
1892	39.2	43.9	44.9	57.7	69.9	78.4	78.4	80.0	69.7	59.0	47.1	38.9	58.9
1893	28.8	45.0	44.7	59.2	64.7	75.2	79.0	75.0	67.7	58.7	46.0	42.0	57.2
1894	40.6	45.0	51.5	56.8	69.4	77.8	79.9	74.1	72.4	61.7	47.6	44.4	60.1
1895	37.2	35.6	44.5	57.5	64.6	78.2	75.1	78.7	76.0	56.5	48.5	42.0	57.9
1896	38.8	45.6	43.1	61.3	72.3	74.3	78.6	79.3	69.9	58.4	58.9	40.8	60.1
1897	37.4	40.8	49.4	57.8	64.5	75.1	78.9	77.5	70.5	60.3	49.1	42.1	59.2
1898	41.4	38.4	52.0	53.8	67.2	74.8	78.9	78.8	73.1	60.6	47.0	40.6	58.9
1899	37.5	33.0	47.5	57.2	67.6	76.8	79.0	78.0	69.9	61.0	50.0	40.2	58.1
1900	39.4	37.6	43.8	57.3	67.0	74.6	81.2	82.9	75.6	64.6	52.1	40.3	59.7
1901	38.8	34.7	49.6	52.8	65.5	74.8	81.0	77.4	70.0	59.1	44.1	38.2	57.2
1902	36.2	34.6	50.0	55.8	67.8	74.3	79.0	75.0	68.6	61.6	54.8	40.1	58.2
1903	38.2	43.0	54.4	57.8	67.8	70.2	79.3	75.8	69.4	58.9	44.8	36.2	58.0
	38.3	41.9	46.6	56.8	66.6	75.3	78.3	77.0	70.7	59.5	48.7	41.0	57.9

Precipitation. (Inches and hundredths.)

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1851	0.43	3.62	6.36	5.46	2.83	2.25	2.45	11.11	0.76	1.71	1.99	1.64	40.61
1852	1.10	1.50	3.41	6.14	0.90	3.42	6.48	8.28	2.11	3.43	5.29	5.48	47.54
1860	.....	0.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1872	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
1873	7.30	12.70	3.10	2.20	7.90	.....	.....	.....	.....	.....	.....	.....	.....
1880	0.68	.....	5.42	1.06	1.35	2.40	3.28	8.98	3.53	2.14	2.93	3.61	.....
1881	2.36	1.84	3.74	3.04	1.15	3.47	1.78	2.42	2.15	3.33	6.14	33.20	.....
1882	5.40	3.40	2.48	1.94	4.11	1.66	2.52	6.50	6.56	2.01	0.23	3.00	39.75
1883	3.18	2.24	2.01	6.45	1.60	2.64	3.62	4.44	6.02	5.12	1.30	1.59	40.21
1884	2.25	4.81	5.53	1.91	1.04	2.89	4.02	1.40	0.15	0.52	1.64	4.65	30.84
1885	3.97	3.00	2.00	3.07	5.19	3.83	3.07	1.69	1.20	3.46	2.86	4.39	37.75
1886	4.45	3.17	3.70	2.57	8.67	6.32	10.64	4.90	3.07	1.45	3.22	2.18	54.34
1887	1.88	4.40	2.52	2.71	3.56	4.15	6.58	8.27	1.19	4.94	2.49	4.04	47.03
1888	3.93	2.39	5.26	2.55	5.07	4.89	1.40	4.19	10.41	3.24	4.37	5.52	53.22
1889	4.77	3.70	3.68	8.80	9.13	7.93	14.01	3.99	5.60	5.23	4.59	0.57	72.09
1890	1.31	3.23	3.47	2.85	4.50	1.52	4.19	3.26	6.20	9.00	0.11	3.91	43.55
1891	4.30	6.89	9.70	2.21	4.45	5.51	5.86	5.86	2.32	2.04	2.02	1.67	52.83
1892	4.13	2.71	3.63	7.07	2.22	3.12	4.18	1.24	3.09	0.46	4.36	1.42	37.63
1893	4.42	4.48	2.64	2.94	5.04	2.49	3.84	5.53	7.25	5.44	3.14	1.99	49.20
1894	3.30	4.68	1.32	3.26	5.32	2.26	5.59	4.23	7.27	4.19	1.97	2.81	46.14
1895	5.09	1.63	4.84	7.10	5.11	1.88	4.29	2.93	0.29	2.10	3.38	2.22	40.93
1896	2.87	4.04	3.91	2.08	3.86	6.01	7.07	2.14	4.47	0.67	3.88	1.40	41.28
1897	1.79	6.07	4.93	2.48	2.11	2.01	3.68	2.61	0.72	6.54	2.07	2.63	38.38
1898	1.05	1.05	3.78	4.83	5.28	2.98	4.15	6.31	2.33	4.59	2.22	3.08	41.65
1899	2.94	4.72	5.56	2.04	2.14	2.41	4.12	5.61	6.21	4.03	1.19	2.33	43.30
1900	2.71	4.42	2.89	3.62	2.20	3.08	3.13	3.66	4.03	2.55	2.87	2.60	37.76
1901	2.80	0.55	3.79	5.29	3.80	2.32	5.06	6.99	3.21	0.79	1.37	6.08	42.05
1902	3.26	4.84	1.89	3.12	3.42	4.81	6.21	3.10	4.91	4.81	4.83	4.12	49.32
1903	3.61	5.02	8.14	4.46	3.36	5.73	5.17	3.21	1.60	3.44	1.40	2.28	47.42
	3.16	3.76	3.94	3.71	3.84	3.46	4.79	4.74	3.74	3.42	2.60	3.24	44.32

Summary.

Month.	Temperature.				Precipitation.			
	Year.	Highest mean.	Year.	Lowest mean.	Year.	Greatest am't.	Year.	Least am't.
January	1890	48.5	1893	28.8	1873	7.30	1851	0.43
February	1890	49.9	1899	33.0	1873	12.70	1860	0.20
March	1903	54.4	1873	38.7	1891	9.70	1894	1.32
April	1891	63.4	1852	51.9	1889	8.89	1880	1.06
May	1887	72.7	1880	58.3	1889	9.13	1852	0.90
June	1892	78.4	1903	70.2	1889	7.93	1890	1.52
July	1887	82.3	1886	74.0	1889	14.01	1888	1.40
August	1900	82.9	1852	71.8	1851	11.11	1892	1.24
September	1881	78.8	1886	55.3	1888	10.41	1884	0.15
October	1881	65.9	1872	52.2	1890	9.00	1892	0.46
November	1806	58.9	1872	40.6	1852	5.29	1890	0.11
December	1889	51.1	1872	29.4	1872	6.70	1889	0.57

Warmest year, 1891, with mean temperature of 60.8 degrees.

Coldest year, 1886, with mean temperature of 55.9 degrees.

Wettest year, 1889, with total precipitation of 72.09 inches.

Driest year, 1884, with total precipitation of 30.84 inches.

*Interpolated.

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Vol. XV.

RICHMOND, VA.

No. 2.

FEBRUARY CROP CONDITIONS.

The periods of cold weather occurring throughout the month were more than ordinarily prolonged and severe, and, but for the ample snow covering obtaining in all sections of the State, must have proved very injurious to all fall sown crops. The precipitation occurring was largely snow and sleet. Early in the month this became hard frozen and subsequently, sleet and freezing rains formed it into a thick crust which furnished a durable and timely protection to vegetation. The reports of correspondents on crop conditions during the month were, on the whole, optimistic, it being the general opinion that no injury had occurred to winter wheat, oats, fall sown clover and grasses, barley, etc.

LONG-RECORD DATA FOR RICHMOND, VA.

Beginning with January, 1871, an excellent record of precipitation for Richmond Va., has been kept by the Richmond, Fredericksburg and Potomac Railroad Company. It was begun under the direction of Maj. E. T. D. Myers, president of the company, and is unbroken to date. Until August, 1875, inclusive, the rain-gage was exposed on the roof of the company's passenger station, on the northwest corner of Broad and Eighth streets. It was about 30 feet above the ground and free from disturbing influences. Beginning with September, 1875, it was removed to the railroad shops in the western city suburbs, where it still is. The first exposure in this location was on the ground in an open space 60 feet southwest of the company's storehouse. There were no buildings or other structures or trees sufficiently nearby to affect the record. Here it remained until December, 1903, inclusive, when its exposure was changed to a point about 50 feet east of the storehouse, where it now is. This position is somewhat faulty, being but 12 feet east of a tree about 25 feet high, which shelters the instrument from rains coming from the southwest and west and partially from the northwest quadrants. The exposures making the record were, first, Mr. W. M. Burke, until about 1887, inclusive(?), and then Mr. J. T. Roth, who is still in charge.

The temperature observations have been taken from the files of the Richmond Dispatch from January, 1880, to the beginning of record by the local office of the U. S. Weather Bureau in November, 1897. Since then the official record has been

used. No information as to who the observer was or the location of the instruments can be gotten, but a close comparison of the data with the Richmond temperature observation available shows them to be quite accurate and reliable.

Mean Temperatures. (Deg. Fahr.)

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1880.	45.6	.....	46.7	58.8	58.3	78.0	81.0	73.0	55.3	52.7	42.2	40.9	.....
1881.	33.5	40.2	45.2	53.3	68.3	75.8	81.0	78.8	60.0	65.0	52.6	46.2	60.2
1882.	38.5	46.8	50.3	43.4	68.0	75.8	78.6	76.6	70.5	63.0	45.9	37.5	58.8
1883.	34.4	44.9	43.2	55.5	68.0	72.2	78.7	76.9	68.7	56.6	51.0	41.7	58.1
1884.	34.1	48.1	47.5	54.6	69.4	74.3	77.5	76.4	76.1	65.6	48.4	45.1	54.9
1885.	40.1	33.5	39.5	57.1	66.4	76.2	80.6	77.6	73.6	58.8	49.5	41.2	57.9
1886.	31.1	35.0	42.2	62.5	62.9	72.2	74.0	75.4	71.0	60.5	50.0	32.7	55.9
1887.	37.6	49.0	43.2	54.3	72.7	71.7	82.3	76.8	69.6	60.5	49.7	42.2	59.1
1888.	32.4	44.7	41.5	55.4	65.7	75.9	75.2	78.0	66.8	55.0	50.6	40.6	57.1
1889.	42.0	36.5	46.1	58.0	67.2	72.5	76.7	73.8	67.5	55.7	50.8	51.1	58.0
1890.	48.5	49.9	47.5	57.6	67.1	78.1	74.3	75.8	70.3	62.2	54.0	44.2	56.1
1891.	44.9	49.3	44.2	63.3	66.5	77.7	76.1	78.5	75.3	64.7	49.5	47.2	61.4
1892.	39.2	43.9	44.9	57.7	69.9	78.4	78.4	80.0	69.7	59.7	47.1	38.9	60.0
1893.	28.8	40.4	46.9	61.4	65.6	74.3	79.5	76.0	68.2	58.7	47.6	40.6	57.3
1894.	36.4	35.9	53.7	57.1	70.1	76.8	81.6	74.7	73.0	61.6	48.8	44.7	59.2
1895.	35.1	31.3	46.9	58.0	63.9	78.8	75.5	79.3	76.4	56.4	51.9	40.4	57.8
1896.	41.2	41.7	45.4	59.1	74.6	73.1	72.8	80.9	70.0	58.2	54.5	39.5	58.4
1897.	36.6	44.5	51.4	58.8	66.5	78.8	79.3	78.0	72.2	60.2	49.1	42.1	59.8
1898.	41.4	38.4	52.0	53.8	67.2	74.8	78.9	78.0	73.1	60.6	47.0	40.2	58.9
1899.	37.5	33.0	47.5	57.2	67.6	76.8	79.0	78.0	69.9	61.0	50.0	40.6	58.1
1900.	39.4	37.6	43.8	57.3	67.0	74.6	81.2	82.9	75.6	64.6	52.1	40.3	59.7
1901.	38.8	34.7	49.6	52.8	65.5	74.8	81.0	77.4	70.0	59.1	44.1	38.2	57.2
1902.	36.2	34.6	50.0	55.8	67.8	74.3	79.0	77.4	68.6	61.6	54.8	40.1	58.2
1903.	38.2	43.0	54.4	57.8	67.8	70.2	79.3	75.8	69.4	58.9	44.8	36.2	58.0
1904.	33.4	34.2	47.5	54.2	67.2	74.4	77.7	75.6	70.9	57.7	46.2	35.8	56.2
Mean	37.8	40.5	47.0	57.0	67.3	75.4	78.4	77.2	70.9	60.0	49.3	41.1	58.2

Precipitation. (Inches and hundredths.)

Year.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Annual.
1871.	.....	2.85	8.64	2.10	4.61	4.30	.....	.....	.....	.....	.....	.....	45.38
1872.	1.82	3.28	4.55	2.22	1.77	2.01	1.63	4.95	2.42	5.14	2.22	2.76	34.77
1873.	4.50	8.92	2.05	2.45	8.98	2.21	3.00	9.22	2.59	4.80	3.45	1.05	53.22
1874.	3.33	1.11	3.16	7.02	2.20	2.90	4.40	2.34	2.90	0.11	1.28	2.76	33.51
1875.	2.63	3.70	5.60	3.11	2.67	3.25	2.60	9.50	1.58	1.39	4.35	1.69	42.07
1876.	0.55	0.59	3.74	1.81	3.04	3.75	2.50	2.75	4.42	1.09	2.50	1.00	27.65
1877.	2.45	0.66	3.17	3.33	2.04	2.29	5.22	1.97	2.35	1.84	3.55	1.41	29.28
1878.	3.14	1.25	2.06	3.47	5.42	2.31	1.66	3.64	0.96	5.08	1.91	4.34	35.24
1879.	4.11	1.49	2.28	3.25	1.70	2.20	3.39	7.33	1.29	1.06	0.70	5.01	33.81
1880.	0.68	1.41	5.42	1.06	1.35	2.40	3.62	8.98	3.53	2.14	2.95	3.61	37.15
1881.	2.30	2.32	3.74	3.04	1.15	5.32	3.28	1.78	2.42	3.15	3.55	6.14	38.19
1882.	5.22	2.70	2.54	1.95	4.11	1.66	2.52	4.44	6.50	2.01	0.11	0.00	36.76
1883.	2.18	2.24	2.01	6.45	1.60	2.64	1.78	1.79	6.03	5.13	1.30	1.48	34.63
1884.	2.25	4.87	5.53	1.94	1.54	2.99	4.02	1.49	0.15	1.04	1.64	4.65	32.11
1885.	3.97	2.09	1.99	1.63	5.17	2.86	3.07	1.69	1.20	3.49	2.86	4.39	34.32
1886.	4.45	3.02	4.79	2.57	8.67	5.82	10.64	4.20	3.07	1.45	3.22	2.18	54.08
1887.	1.88	4.40	2.38	2.63	3.56	4.45	6.58	8.27	1.19	4.94	2.49	4.04	46.81
1888.	3.93	2.39	5.26	2.55	5.70	4.89	1.40	4.19	10.41	3.24	4.37	3.52	51.85
1889.	4.77	3.70	3.68	8.89	9.13	7.93	14.01	3.99	5.60	5.15	4.59	0.57	72.02
1890.	1.53	3.35	3.34	2.79	4.69	2.21	4.58	5.51	5.50	8.51	0.11	4.48	46.60
1891.	4.79	5.68	8.78	1.96	5.18	4.12	4.69	4.80	2.24	2.12	1.88	2.13	47.37
1892.	3.96	3.36	3.19	6.77	2.32	3.47	5.11	3.32	1.15	0.83	4.58	1.64	41.70
1893.	1.18	4.98	2.44	3.82	5.15	2.62	3.24	3.43	9.86	5.72	3.22	2.39	45.04
1894.	3.35	4.51	1.21	3.29	6.74	2.77	4.59	5.12	6.48	4.06	1.68	2.66	46.46
1895.	4.05	1.42	4.23	8.31	4.24	2.39	5.01	2.68	0.42	1.69	3.05	2.40	39.89
1896.	2.40	4.35	3.70	1.69	3.03	5.58	8.02	0.45	6.20	0.62	3.16	0.89	40.09
1897.	1.86	6.40	5.11	2.76	2.48	2.31	4.18	1.83	1.03	7.24	3.19	3.17	41.56
1898.	1.35	1.04	3.95	5.16	6.30	4.36	5.68	5.89	3.48	5.03	2.71	2.81	47.76
1899.	3.96	5.74	5.55	1.75	2.82	3.52	4.41	4.87	6.91	3.69	1.81	2.66	47.69
1900.	3.39	5.25	3.43	4.24	3.07	4.16	3.98	2.90	3.05	3.86	3.20	2.86	43.39
1901.	3.02	0.52	5.19	6.37	6.03	2.48	7.32	10.42	4.27	1.02	1.47	7.14	55.85
1902.	3.14	5.16	2.89	3.57	4.24	6.29	5.74	3.48	5.26	5.45	4.73	5.39	55.44
1903.	4.63	5.42	9.29	6.04	4.38	7.18	5.77	4.49	2.02	3.96	2.03	2.89	58.10
1904.	2.63	4.23	3.81	2.30	1.79	3.66	8.56	3.22	3.74	3.01	3.38	3.43	43.07
Mean	3.03	3.36	4.08	3.60	4.03	3.60	4.70	4.39	3.59	3.29	2.63	3.05	43.29