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GENERAL SUMMARY.

The mean temperature for the year, as a whole, was 55.5°, which equals the annual normal temperature for the State. January, with an excess of 5.9°, showed the greatest departure from the normal, while the greatest deficiency for any month, 3.5°, occurred in March. The highest temperature recorded in the State during the year was 102° at Ivor on June 24, and the lowest, 11° below zero at Dale Enterprise on January 8. The highest monthly mean temperature was 78.2° in July, at Newport News, and the lowest monthly mean was 29.7°, in February, at Mount Weather. A period of abnormally mild weather in January, following the 20th, was the most noteworthy of the year from a temperature standpoint.

The average precipitation, 39.32 inches, was 4.58 inches below the normal. The year was one of a series that has held persistently dry since 1908. The eight years prior thereto were notably wet, averaging 5.61 inches more precipitation for the State, as a whole, than fell during the eight years ending with 1916. February, June, and July were wetter than usual, and the other nine months were drier, the deficiency in March, of 1.61 inches, being the most pronounced. The greatest annual amount was 47.28 inches at Blacksburg, and the least, 28.97 inches, at Cape Henry. The greatest monthly amount was 11.43 inches, at Mount Weather, in June, and the least, 0.51 inch, at Mount Moriah Farm, in January. The greatest rainfall occurring in any 24 consecutive hours was 5.75 inches, at Mouth of Wilson, on July 15.

THE WEATHER BY MONTHS.

JANUARY.—This month will be remembered for the long period of abnormally mild temperature and dry weather that set in on the 20th and continued past the close of the month. During the past 25 years only two other winter months have been warmer than this one, viz, January, 1913, and February, 1909, while during the same period there was less precipitation only in January, 1897 and 1907. Quite changeable weather was experienced the first two decades, and it was during this period that most of the precipitation occurred.

FEBRUARY.—The average temperature during February slightly exceeded the normal, but there were several cold periods and frequent decided temperature changes. The pronounced spell of mild weather that originated about the 20th of January ended suddenly on the 2d and 3d of this month, with a sharp drop in temperature over the entire State. A rapid recovery to warmer followed, but there was a second change to colder on the 9th, with a cold wave in most districts. A quite severe snow and sleet storm occurred on the 13th and 14th, when another cold wave swept the State, the cold being felt more than usual, due to the prevalence of high winds. On the 15th the coldest weather of the month was experienced.

MARCH.—Cold and dry weather prevailed. The deficiency in precipitation, taken in connection with the generally dry weather of the preceding three months, was unfavorable for the growth of winter grains and delayed the preparation of the soil for spring seeding. The rainfall was, however, well distributed. The greatest amounts fell in the Tidewater counties during the first ten days of the month, and in the other sections of the State in the last ten days.

APRIL.—Much the same conditions prevailed during April as in the preceding month, the temperature and rainfall both being below normal; but the departures were not so great as in March. The last killing frost of the spring occurred generally in the latter part of the first decade, or at the beginning of the second, over the western two-thirds of the State, the same being from two to three weeks later than they were in sections near the Virginia coast. Good rains fell on the 25th, 26th, and 27th, and were very beneficial to growing crops.

MAY.—From an agricultural standpoint, May was the best month thus far of the season, notwithstanding the fact that conditions would have been helped by a more favorable distribution of rainfall, which averaged for the State, as a whole, close to the normal. The greater portion of the monthly amount fell during the last decade when showers were frequent. This resulted in making the fields, locally, wet and weedy by the end of the month. The week ending with the 24th was quite cool; otherwise temperatures averaged considerably above the seasonal normal.

JUNE.—Cool weather and an unusual amount of rainfall featured the month. Many stations in Middle Virginia, where the rains were heaviest, reported more than twice their normal June rainfall. The average monthly precipitation has been exceeded but three times since 1892, viz, in 1903, 1907, and 1910. Rain fell with marked persistency, being recorded in localities on every day, with the exception of the first two days and the last day of the month. The month was entirely too cold and wet for all growing crops.

JULY.—Following the prolonged wet period of the preceding month, there was a let-up in rainfall until the 9th, when showers set in again and occurred frequently thereafter till the 29th. The distribution throughout the State was very uneven, being much lighter in the Tidewater districts than elsewhere. Temperature changes were slight, with the mean monthly averaging close to the normal.

AUGUST.—Temperatures during August continued very much the same as in July, averaging approximately normal, and pleasant weather prevailed, as a rule. This month was the only one of the summer with less than its average monthly precipitation, but, generally speaking, this had a beneficial effect on growing crops, which were in need of drier weather. An aurora of marked brilliancy was noted by numerous observers on the 26th in the central and eastern portions of the State. It attracted considerable attention.

SEPTEMBER.—Cool and dry weather, with excessive sunshine, prevailed during the month. Light frosts occurred in some localities in Middle Virginia and the Great Valley on the 20th, but caused no material damage. The greater por-

tion of the month's precipitation fell during three periods, viz, 6th to 8th, the 14th and 15th, and the 29th; otherwise there were only light scattered showers.

OCTOBER.—Temperatures averaged close to the normal for the State, as a whole, being somewhat higher in eastern than in western districts. Precipitation continued deficient, occurring mostly during a 5-day period of unsettled weather that extended from the 16th to the 20th. The heaviest amounts occurred on the 19th, when good soaking rains were general. The first killing frosts were recorded in all portions of the State, except near the coast on the 11th. Important crops were mostly matured by this date, and the damage done was slight.

NOVEMBER.—This month closely resembled the preceding one, in that the temperature averaged nearly normal, with a well marked deficiency in precipitation. The first snow flurries of that season were recorded on the 14th and 15th over most of the State; in localities in the northwestern portion the falls on those dates amounted to as much as 1.0 inch. The prolonged dry spell began to affect stream flow, causing moderate to low stages throughout the month.

DECEMBER.—This was the fifth consecutive month with precipitation below normal, the accumulated deficiency for the last five months of the year amounting to 3.71 inches. Temperatures averaged slightly lower than usual. The coldest weather of the month was experienced from the 15th to the 20th, and it was attended by general snows in all sections, the same exceeding, in some localities, the heavy snowfall of December, 1908, when the State average was 8.4 inches. Frequent gales were recorded along the coast, and local thunderstorms were reported on several dates, being quite general on the 22d.—*G. K. G.*

CLIMATOLOGICAL DATA, 1916.

Month.	Temperature.			Precipitation.			Number of days.			
	Mean.	Highest.	Lowest.	Average.	Greatest 24-hour rain.	Average snow-fall.	Rainy.	Clear.	Partly cloudy.	Cloudy.
January	42.6	76	-11	1.96	1.73	2.7	9	11	7	13
February	37.1	78	-5	3.48	2.00	3.5	9	11	7	11
March	41.6	84	-1	2.35	2.00	2.6	9	13	8	10
April	53.4	92	9	2.52	2.50	1.8	9	12	10	8
May	66.8	96	25	3.81	3.97	T.	9	16	9	6
June	69.0	102	36	6.45	5.30	0.0	13	13	10	7
July	75.3	95	42	5.71	5.75	0.0	11	11	11	9
August	74.3	98	40	3.48	3.35	0.0	9	14	10	7
September	66.2	100	26	2.80	2.60	0.0	8	18	6	6
October	57.5	94	19	2.25	2.62	0.0	5	17	7	7
November	47.2	80	11	1.54	1.65	0.1	6	18	5	7
December	36.8	78	-6	2.93	1.70	7.4	8	14	8	9

COMPARATIVE ANNUAL DATA.

Year.	Mean temperature.	Highest.	Lowest.	Average precipitation.	Average snow-fall.	No. of rainy days.	No. of clear days.	No. of partly cloudy days.	No. of cloudy days.
1892	54.8	106	-8	40.01	95	163	101	102
1893	55.1	104	-26	46.83	23.1	103	156	100	109
1894	57.0	106	-11	35.97	17.0	88	166	104	95
1895	54.6	107	-18	38.09	38.8	94	174	103	88
1896	56.4	105	-10	42.89	12.3	93	163	106	97
1897	56.0	103	-15	40.81	11.8	92	171	99	95
1898	56.5	105	-9	44.80	8.7	108	162	101	102
1899	56.4	106	-29	43.18	36.7	98	176	95	94
1900	57.0	107	-8	39.33	18.6	86	181	91	93
1901	55.3	106	-14	50.17	9.5	100	167	94	104
1902	55.6	108	0	51.42	14.9	95	170	97	98
1903	55.1	105	-13	44.85	8.4	95	172	89	104
1904	58.8	100	-14	36.18	24.9	96	170	101	95
1905	54.8	98	-15	43.58	18.5	111	155	112	98
1906	56.3	102	-2	49.56	15.2	124	143	120	102
1907	54.3	97	-16	44.19	17.4	115	159	115	91
1908	55.4	102	-20	45.21	30.0	110	162	108	96
1909	55.5	102	-5	39.81	12.9	101	171	104	90
1910	54.7	102	-9	41.37	20.3	112	151	116	98
1911	56.8	104	0	41.50	9.2	115	149	110	106
1912	54.5	100	-25	39.19	24.6	103	165	106	95
1913	57.2	102	-3	42.75	4.0	100	178	98	89
1914	55.0	103	-17	37.17	39.8	101	168	100	97
1915	55.8	101	-5	39.12	13.5	97	160	116	89
1916	55.5	102	-11	39.36	18.6	103	165	106	95

KILLING FROSTS, 1916.

Stations.	First in autumn.	Last in spring.	Stations.	Last in spring.	First in autumn.
TIDEWATER VIRGINIA.			MIDDLE VIRGINIA—CON.		
Ashland	Apr. 10	Oct. 11	Lincoln	Apr. 11	Oct. 11
Cape Henry	Mar. 24	Nov. 17	Lynchburg	Apr. 9	Oct. 27
Diamond Springs	Mar. 24	Nov. 16	Mineral		Oct. 11
Doswell	Apr. 16	Oct. 11	Mount Weather	Apr. 7	Oct. 1
Ivor	Apr. 10	Oct. 11	New Canton	Apr. 11	Oct. 11
Mount Moriah Farm		Nov. 16	Quantico	Apr. 11	Oct. 11
Newport News	Mar. 24	Nov. 16	Randolph		Oct. 2
Norfolk	Mar. 20	Nov. 16	Rocky Mount	Apr. 11	Oct. 11
Richmond	Mar. 23	Nov. 2	Washington, D. C.	Apr. 9	Nov. 4
Runnymede	Apr. 11	Oct. 11	THE GREAT VALLEY.		
Wachapreague	Mar. 25	Nov. 16	Blacksburg	Apr. 10	Sept. 20
Warsaw	Apr. 8	Oct. 11	Buchanan	Apr. 10	Sept. 20
West Point	Apr. 11	Nov. 2	Burkes Garden	Apr. 11	Sept. 20
Williamsburg	Apr. 11	Nov. 2	Catawaba Sanatorium	Apr. 9	Oct. 2
MIDDLE VIRGINIA.			Dale Enterprise	Apr. 7	Sept. 19
Arcola		Oct. 18	Elk Knob	Apr. 9	Oct. 22
Callaville	Apr. 11	Oct. 11	Hot Springs	Apr. 9	Sept. 30
Catharpin	Apr. 11		Lexington	Apr. 11	Oct. 11
Charlottesville	Apr. 9	Nov. 15	Mouth of Wilson	Apr. 10	
Clarksville	Apr. 11	Oct. 11	North Holston	Apr. 10	Oct. 11
Columbia	Apr. 11	Oct. 11	Roanoke	Apr. 9	
Culpeper	Apr. 11	Oct. 11	Staunton	Apr. 27	Oct. 11
Danville	Apr. 28	Oct. 11	Winchester	Apr. 9	Oct. 18
Fredericksburg	Apr. 11	Nov. 4	Woodstock	Apr. 27	Oct. 11
Gordonsville	Apr. 11	Oct. 11	Wytheville	Apr. 10	Oct. 1
Leeds Manor	Apr. 9	Nov. 15			

ERRATA.

January, page 4, Ashland, monthly mean temperature should be 42.8. February, page 12, Columbia, monthly mean temperature should be 38.5; Dale Enterprise, monthly mean temperature should be 35.5, and on page 14 mean maximum temperature should be 47.3. November, page 84, Doswell, monthly mean temperature should be 45.8.