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ANNUAL SUMMARY.

Although five of the first seven months of the year had less than the average fall of precipitation, the annual total was not quite two inches below the normal, and the year as a whole was wetter than either of the two preceding ones. In temperature, however, it was more distinctive, in that the annual mean is the highest of any year since 1900, and with one other exception, i. e. 1894, the highest in the past twenty years. The snows of the winter of 1910-11 totaled from 53 inches in the mountains to 5 inches on the sea coast. Much of the summer was intensely hot and, prior to August, many local heat and drought records were broken. Monthly excesses in temperature were recorded in each month from May to December, while the only successive months of more than the average rainfall were the last three of the year.

The mean annual temperature of the State, 56.8° , was 1.6° above normal. Newport News, with an annual mean temperature of 61.3 , was the warmest station, and Burkes Garden, with an annual mean of 49.5° , the coldest. The highest and lowest temperatures were 104° , on June 2d and 11th, and zero, on January 4th, the former occurring at Lincoln and Saxe, and the latter at Burkes Garden.

The last killing frost of the spring occurred in the Appalachian and Blue Ridge portions, on the 6th of May; in Middle Virginia, on the 3d of May, and in Tidewater Virginia, on the 6th of May, while the first killing of the autumn was recorded in these divisions on October 25th, November 3d, and November 3d, respectively.

The annual precipitation was below the normal except at a very few widely separated stations east of the mountains and locally near the western border of the state, where it was slightly in excess. August, with an average of 6.07 inches, and May, with an average of 1.07 inches, were the wettest and the driest months, respectively, of the year. The annual precipitation ranged from a maximum of 57.41 inches at Big Stone Gap, in Wise County, to a minimum of 29.58 inches at Cape Henry, in Princess Anne County. The greatest local monthly rainfall, 11.48 inches, occurred at Mount Weather, Loudoun County, in August, and the least, 0.11 inches, at Randolph. Charlotte County, in June. Snow, in varying amounts, fell in all parts of the State in the first, second, third, and last two months of the year; also locally in April, in the mountain portions. By months, the greatest local monthly snowfalls were: January, 12.5 inches; February, 6.8 inches; March, 11.3 inches; April, 3.0 inches; November, 4.0 inches, and December, 2.3 inches.

There were 149, or 41 per cent, of clear days; 110, or 30 per cent, of partly cloudy days, and 106, or 29 per cent, of cloudy days during the year. The prevailing wind direction for the State was southwest.

THE WEATHER BY MONTHS.

JANUARY.—Although there were no extremes of temperature that were especially noteworthy, the average of the month was very high. This condition was due to high temperatures both during the day and night, but most of the excess was caused by the unusually high readings of the early-afternoon. There was much cloudy and rainy weather, especially in the western portion of the State, where the total amounts of precipitation were nearly twice as great as those in the East, although the latter amounts, in themselves, were generally somewhat above normal. The freshet of the 4-5th, was the first weather event of importance during the year. This flood caused readings slightly above the danger line at Columbia, on the 4th, and reached a flood stage at Richmond on the day following. On the 8-9th, there was a violent wind storm that swept Augusta, Rockingham and Shenandoah counties, blowing down small trees and unroofing houses. The wind reached a velocity of 74 miles per hour at Mount Weather, Loudoun County. The next storm of note occurred on the 17-18th, on which days snow fell to a depth of from three to six inches in the mountains and to over two inches elsewhere in the State. There were moderate thunderstorms on the 3d, 8th, 11th, 27th and 29th.

FEBRUARY.—A decided change in the weather took place on the 20th. Prior to that date there was much cloudiness and many light rains, with generally disagreeable weather, while the last decade of the month was bright and dry. The month was warm; and, notwithstanding the long period of unsettled and showery weather, was deficient in precipitation. Although the winter opened with a cold month, the warm weather in January and February brought the average temperature of the season well above the normal.

MARCH.—While most stations in the State reported temperatures above 70 degrees, and some above 80, about the opening and closing of the second decade, there was an intervening severe cold spell, and the month, as a whole, had an average daily deficiency in temperature of about two degrees. The total fall of rain was also below the normal, although the importance of this deficiency was lessened by the frequency of the falls throughout the month. A severe snow storm prevailed on the 7th and 8th. At Staunton, Augusta County, this storm set in on the morning of the 7th, and by 3:30 p. m., of that day eight and one half inches had fallen. On the Eastern Shore the same storm produced six inches of snow by the afternoon of the following day. The first half of the second decade was changeable with some high temperatures followed by a shift of wind to the west and northwest, with velocities as high as 80 miles per hour, and a fall in temperature that carried the thermometer to within 2 degrees of zero in the mountains, and to 22 degrees on the coast.

APRIL.—The averages of the temperature means and the totals of precipitation of all stations in the State showed a decided deficiency in temperature and a moderate excess in rainfall, as compared with the normal April conditions, although large sections report conditions at variance with this rule. For instance, on the coast, in the lower northern counties, and in the extreme southwest, the temperatures were but slightly deficient, and throughout the northern one-third of the State, along the coast and over the Rivanna Valley, the rainfall was less than normal. No frosts whatever formed along the coast during the month, although on the 10th, 11th, 24th, and 25th, they were general elsewhere. Snow flurries were recorded on the 1st, 3d, 16th and 23d.

MAY.—Notwithstanding the cool wave in the early part of the month during which heavy frosts and unusually low temperatures occurred as far east as Richmond, the month, on account of the protracted period of heat and the unprecedented drought, ranks as one of the most unseasonable ones in the climatic history of Virginia. Light winds and obscured skies contributed to the intensity of these conditions. Several stations

report the month to be the driest May in the past forty years, and, generally, the total amounts of precipitation recorded were less than one inch. The hot spell was most severe in the Middle Section and prevailed during the last half of the month, breaking up on the coast on the 25th, over the upper Tidewater Section on the 26th, and continuing to the close of the month throughout most of the interior. The hottest days were generally considered to be the 18th, 19th and 20th, although the highest temperature recorded, 102 degrees, occurred on the 22nd.

JUNE.—In the southwestern counties there were some high temperatures during the early part of the month, but, generally, the first decade was normal in this respect. It closed with rising temperature, and on the 11th, readings as high as 104 degrees were recorded in Charlotte County. The temperature during the opening days of the third decade were also high, and this hot persisted on the coast until the close of the month. While most of the stations reported a deficiency in precipitation all those in "the Peninsulas", and some in the northern, western and southwestern mountain counties reported good amounts. On the 4th, a severe rain and hail storm visited the upper Shenandoah valley, and on the 11-12th, high winds and thundersqualls on the coast caused damage to small craft and some loss of life.

JULY.—Increasing temperature prevailed at the opening of the month, and from the 2d, until the 13th, or 14th, a large number of stations reported daily maximum temperatures of from 90 to 104 degrees. Again, in the latter part of the month, there were several days with similar temperatures, but, fortunately, throughout both of these heated spells the night temperatures were not correspondingly high, and no prostrations were known to have resulted. In Southwest Virginia, the temperatures were normal. There was a nearly average rainfall at a few tidewater stations, and a small excess over the headwaters of the Holston and the New rivers, but elsewhere there was little rain and, at Richmond, less than half of the smallest preceding total occurred.

AUGUST.—Hot weather again set in on the 8th, and by the 11th, the maximum temperatures ranged from 90 to 102 degrees. This hot wave was most severe in the southwest where, in intensity, it approached the previously established record. During the remainder of the month the heat was moderate. There were many days of rain and some with large amounts, especially the 30th and 31st. Several stations reported totals in excess of 10 inches, although those on the coast and in the Southwest had less than the normal amount.

SEPTEMBER.—Excepting the records for this month in the years 1895, 1900 and 1906, September of this year was the hottest since the records were begun in 1891. On the 3d, and 4th, the temperature reached 90 degrees at many stations, and on the 25th, and 29th, there were readings nearly as high. The month also contained one cool wave, with temperatures as low as 35 degrees, which swept over the State on the 14th, without, however, causing frost. The rainfall was less than half of the normal and droughty conditions were general except locally in the extreme southwest.

OCTOBER.—During the first three weeks of the month more than half of the days at a large number of stations had temperatures of 70 degrees or above, and on the 1st, 4th and 7th, readings of from 85 to 92 degrees were quite general. The first cool spell, with frost, swept over the State on the 13th, and 14th, but the first damaging frost did not occur until the 23d, and 24th, when heavy frosts formed as far east as tidewater. On the 25th, destructive frosts occurred at a few stations in the mountains. There were good rains during the month in the western half of the State, but in the Southeast the drought continued unbroken.

NOVEMBER.—The month opened with falling temperature and, on the 2d, and 3d, many stations reported ice and killing

frost. The first killing frost of the season, however, to reach the coast did not occur until the 13th, when a fall of about 50 degrees in temperature in 24 hours was reported generally. There was a moderate excess in precipitation over the eastern half of the State, and at Norfolk where every preceding month of the year had been deficient in moisture, an excess of 1.40 inches was reported. The month as a whole was cold for the season.

DECEMBER.—Throughout the State the weather was mild, and on the Eastern Shore it was sufficiently open to admit much outdoor work. No snow of consequence fell in December and there were no cold waves. The month had a large amount of cloudiness and was especially remarkable for the number of long periods of settled and abnormal weather that it contained. Illustrative of this characteristic was the almost unbroken period of dry weather which extended well into the second decade, and the succeeding wet spell, which, with the exception of four or five fair days, prevailed until the month closed. The month also contained several successive days of nearly cloudless weather, as well as a period of twelve successive days with temperature above normal.

KILLING FROSTS.

Stations.	Last killing frost in spring.	First killing frost in autumn.	Stations.	Last killing frost in spring.	First killing frost in autumn.
TIDEWATER VIRGINIA			MIDDLE VIRGINIA—Continued.		
Ashland	May 6	Nov. 3	Fredericksburg	May 3	Nov. 3
Cape Henry	Mar. 24	Nov. 13	Lincoln	Apr. 25	Oct. 25
Diamond Springs	Apr. 11	Nov. 14	Lynchburg	Apr. 10	Nov. 3
Doswell	May 3	Oct. 25	Mount Weather	Apr. 24	Nov. 2
Eastville	Apr. 11	Nov. 3	Quantico	May 3	Nov. 3
Hampton	Mar. 25	Nov. 4	Rocky Mount	May 3	Oct. 25
Ivor	Apr. 11	Nov. 3	Saxe	Apr. 28	Nov. 3
Newport News	Apr. 2	Nov. 3	Washington, D. C.	Apr. 10	Nov. 3
Norfolk	Mar. 25	Nov. 14			
Onancock		Nov. 4	THE GREAT VALLEY		
Petersburg	Apr. 11	Nov. 3	Big Stone Gap	May 3	Oct. 23
Richmond	Apr. 2	Nov. 3	Blacksburg	May 3	Oct. 25
Spottsville	Apr. 24	Nov. 4	Burkes Garden	May 6	Oct. 26
Warsaw	Apr. 11	Nov. 3	Catawba	May 3	Nov. 3
Williamsburg	Apr. 25	Nov. 3	Dale Enterprise	May 3	Oct. 23
			Elk Knob	May 3	Nov. 2
			Hot Springs	May 4	Oct. 24
			Ivanhoe	May 6	Oct. 24
			Lebanon	May 6	Oct. 24
			Lexington	May 3	Oct. 25
			Max Meadows	May 3	Oct. 25
			Staunton	May 3	Nov. 3
			Woodstock	Apr. 11	Oct. 25
			Wytheville	Apr. 25	Oct. 25
MIDDLE VIRGINIA					
Arvonnia	Apr. 10	Nov. 3			
Bedford City		Nov. 3			
Callville		Nov. 2			
Charlottesville	Apr. 4	Nov. 3			
Columbia	Apr. 11	Nov. 2			
Covesville	May 3	Nov. 2			
Culpeper	May 3	Oct. 25			

NOTES.

Tables giving the daily temperature extremes and the daily precipitation, and also charts showing the differences between the normals and the monthly averages of temperature and the total monthly amounts of precipitation, at the several stations, have been published regularly during the year in the Monthly Weather Review, separates of which containing the data for Virginia will be furnished on application at the Local Office of the Weather Bureau, Richmond, Va.

ERRATA, ANNUAL SUMMARY, 1910.

Page 5: Spottsville, total precipitation 50.61 should be 50.59; Culpeper, December 22, should be December 9, and total snowfall 31.0, should be 36.0; Saxe, total precipitation 43.06, should be 44.06; Big Stone Gap, highest temperature 88 June 30, should be 89 July 1; Elk Knob, highest temperature 91 May 1, should be 85 June 30; Galax, lowest temperature, January, should be February; Woodstock, lowest temperature 4, should be -4. Page 6: Diamond Springs, October mean temperature 63.8, should be 63.6; Doswell, September mean temperature 72.2, should be 72.4; Eastville annual temperature 57.1, should be 57.8; Blacksburg, February departure -0.2 should be -0.6; Lexington annual temperature and departure 53.5 -0.5, should be 52.6 -1.1; Woodstock, annual temperature and departure 52.1 +0.3, should be 54.2 +0.4; June and August temperature departures for the State, -4.0 and -2.4, should be -3.1 and -2.0. Page 7: Stephens City, August date 4 should be 2. Page 8: Culpeper, December date 9, should be 22; Stephens City, December minimum and date, 5 and 10, should be 1 and 7. Page 9: Richmond, May precipitation 2.62, should be 2.67; Spottsville, December and annual precipitation 3.85 and 50.61 should be 3.79 and 50.59; Williamsburg, December and annual precipitation and departure 1.72 -2.10 and 48.36 +0.79, should be 2.72 -1.10 and 49.36 +1.79; Columbia, November precipitation 1.71, should be 1.17; Quantico, monthly amounts, February to June, November and December, should read 1.76, 0.79, 5.89, 3.54, 4.99, 1.03, and 1.90; Rocky Mount, annual precipitation and departure 42.38, -3.14, should read 43.95, -1.57; Blacksburg, annual precipitation and departure, 43.49, -3.20, should be 43.39, +3.10; Dale Enterprise, annual precipitation and departure 43.76, -2.31, should be 44.36 +3.31; Galax, annual precipitation 40.41, should be 40.66; Wytheville, April precipitation 3.59, should be 3.79. Precipitation Chart: Small area of heavy precipitation on the Southeastern West Virginia border should have been omitted.