CLIMATOLOGICAL DATA

VIRGINIA SECTION

EDWARD A. EVANS, Meteorologist

Vol. XXXIX RICHMOND, Va., YEAR 1929

No. 13

GENERAL SUMMARY

The mild weather of December, 1928, continued through the greater part of January, but a change to colder the latter part of the month carried temperatures to below normal and cold weather was the rule to the latter part of February, giving that month a mean temperature somewhat lower than that of January. A change to warmer the latter part of February brought temperatures above normal again, and mild weather was the rule thereafter through the spring months, with daily averages more than 4° above normal for March and April. On the other hand, the summer months had daily averages about 1° below the normal. Excepting October, temperatures were in excess the remainder of the year, October averages being as far below normal as those of November and December were above. The mean temperature for the year, 56.2°, is somewhat less than 1° above normal.

While precipitation was more frequent in January, the second month of winter, it was similar to that of December preceding in that the amounts from individual storms were scanty, snowfall being unusually light. Beginning with February, however, precipitation was more copious, monthly averages being above normal for most of the State until July, when there was a falling off in the amounts received, averages showing a deficiency till the end of September. While deficiencies were not serious during the warm months over most of the State, there was an area embracing north-central counties where droughty conditions prevailed for a good part of the summer, seriously reducing yields of farm crops. This condition was not relieved until the 1st of October, when heavy rain was general over the State, the average being the largest of record for October. November also furnished an excess in rainfall, but December amounts were deficient. The abundant rainfall of October and the heavy snowfall of November served to increase the flow of streams, resulting in higher stages for winter than is usual.

The absence of general, damaging frosts late in spring and early in the fall resulted in a long growing season and satisfactory crop yields, as a rule, except as noted above with reference to north-central localities.

Notes on severe windstorms, hail, and heavy snow are in the March, May, July, August, and November issues of this publication.—H. A. F.

ERRATA

March.—Page 10, Staunton, mean temperature, 48.3°.

April.—Page 14, Catawba Sanitorium, lowest, 33°; Emory, lowest, 22°.

May.—Page 18, Winchester, date of highest, 30.

June.—Page 22, Runnymede, temperature departure, -2.1°. July.—Page 26, Onley, highest, 95°; Woodstock, precipitation departure, +1.17 inches.

September.—Page 34, Fredericksburg, highest, 97°, date, 7; Washington, D. C., mean temperature, 70.2°; departure, +2.1°; Wytheville, greatest in 24 hours, 1.04 inches.

October.—Page 38, Lexington, temperature departure, -1.9° ; Great Valley, temperature departure, -2.0° .

November.—Page 42, Speers Ferry, precipitation departure, +3.71 inches.

December.—Page 46, Hopewell, dates of highest, 14, 15.

MONTHLY STATE DATA, 1929

• • •	Ter	nperat	ure	Pre	cipita	tion	N	ys		
Month	Мевп	Highest	Lowest	Average	Greatest 24- hour rain	Average snow-fall	Rainy	Clear	Partly cloudy	Cloudy
January February March April May June July August September October November December	36.3 35.5 50.6 68.5 63.7 70.5 74.1 72.4 68.7 55.6 47.9	76 73 93 96 95 99 99 99 98 88 88	-1 0 5 22 28 31 38 37 26 23 -2 -8	2.51 4.05 3.97 4.05 4.77 5.43 3.87 2.65 2.65 2.35 2.11	2.10 2.26 2.93 3.07 3.50 4.04 3.00 2.80 3.55 6.27 2.30 1.25	1.0 7.6 0.4 T. T. 0.0 0.0 0.0 T. 3.1 5.3	10 9 9 9 13 11 10 7 7 7 11 8	12 12 14 15 12 13 15 14 17 9	6 5 7 7 10 10 9 8 6 7 6	13 11 10 8 9 7 6 7 8 8 8 14

COMPARATIVE ANNUAL DATA FOR THE STATE

Year	Mean tempera- ture	Highest	Lowest	Average pre-	Average snow-	No. of rainy	No. of clear days	No of partly cloudy days	No. of cloudy days
1892 1893 1894 1895 1896 1896 1896 1897 1898 1899 1900 1900 1902 1903 1904 1905 1907 1908 1909 1909 1901 1911 1911 1911 1911	54.8 55.1 63.4 66.4 66.6 67.0 65.5 65.3 65.6 65.3	106 104 106 107 105 103 103 105 106 108 109 102 102 102 102 102 103 104 100 103 103 103 104 104 105 106 108 109 109 109 109 109 109 109 109 109 109	-8 -26 -11 -11 -12 -12 -12 -12 -12 -12 -12 -12	40. 01 46. 83 35. 97 42. 89 44. 80 44. 80 43. 18 39. 33 50. 17 51. 42 44. 85 44. 85 44. 85 44. 85 45. 21 39. 81 41. 50 39. 19 42. 75 39. 37. 17 39. 72 39. 36 44. 48 45. 48 46. 49 46. 49 47. 41 48. 48 47. 41 48. 48 48. 48 48 48. 48 48 48. 48 48 48. 48 48 48 48 48 48 48 48 48 48 48 48 48 4	23.1 17.0 38.8 12.8 8.7 18.6 9.5 14.9 9.5 16.2 17.4 9.1 10.2 10.2 10.2 10.2 10.2 10.2 10.2 10	95 103 88 89 94 93 92 108 86 86 95 95 95 95 111 112 115 103 100 101 101 101 101 101 101 101 101	163 156 166 174 163 171 162 176 181 167 170 155 163 163 164 165 168 169 161 168 169 161 168 169 161 161 168 169 161 161 161 161 161 161 161 161 161	101 100 104 103 106 99 101 195 99 101 112 120 116 108 104 106 107 98 99 102 107 99 99 102 107 99 102 107 99 109 109 109 109 109 109 109 109 109	102 109 95 88 88 97 95 102 94 93 104 109 95 90 90 90 90 90 90 90 109 109 100 109 111 111
Normal and extremes	55.7	108	-29	42.39	17.5	102	164	102	99

Climatological Data for the Year 1929

		Temperature, degrees Fahrenheit									Pre	cipitati	ny		Sky		uo u			
Stations	Counties	Elevation, feet	Length of record, years	Annual mean	Highest	Date	Lowest	Dute	Length of record,	Total for the year	Greatest monthly	Month	Least monthly	Month	Total snowfall	Number of rainy days	Number of clear days	Number of partly cloudy days	Number of cloudy days	Prevailing direction of wind
Tidewater Virginia																			Ī	
Cape Henry Christ Church Dahlgren Diamond Springstt Hopewell Langley Field	Princess Anne Prince George	20 87 21 25 40 5	56 6 10 21 13 10	55.9 60.9 60.1 59.2	96 97 97 94 97 98	July 9 July 9* July 29 July 10 July 10* Apr. 7*	17 12 9 14 10 15	Dec. 1 Dec. 1 Jan. 14 Dec. 1 Dec. 1 Nov. 30	56 6 10 21 13 10	46. 38 37. 71 54. 25 45. 26 43. 46	6. 78 6. 71 5. 20 9. 25 8. 57 7. 31	May Feb. Apr. May June Feb.	1. 45 1. 20 1. 68 1. 10 1. 63 1. 40	Apr. Dec. Jan. Apr. Jan. Dec.	0. 4 5. 5 10. 3 4. 5	115 94 117 	135 95 185 131	104 130 111 136	126 140 69 97	SW. SW. SW. SW. SW.
Norfolk Onley Richmond Runnymede(near)‡ Wallaceton Williamsburg		91 40 144 25 160 70	59 11 50 40	60. 4 58. 4 58. 4 58. 3	95 95 97 93 95	July 31 July 10 July 29 Apr. 7*	17 14 12 8	Nov. 30 Jan. 14 Dec. 1 Dec. 1	59 11 50 40 3 36	42. 91 42. 10 41. 21 44. 30 61. 48 43. 73	7. 90 5. 71 6. 99 6. 45 7. 95 7. 03	May May Oct. Oct. Sept.† July	1.06 1.98 1.53 0.90 0.98 1.00	Apr. Dec. Jan. Dec. Apr. Aug.	3.3 12.0 10.0 7.5 5.2 4.0	121 106 128 82 122 107	138 136 156 209	93 130 105 72	134 99 104 84	S. SW. S. SW. SW.
Means and extremes		·		59.1	97	July 9*	8	Dec. 1		45.49	9.25	May	0.90	Dec.	6.3	111	148	110	107	sw.
Middle Virginia Callaville Charlottesville (near) Chatham Clarendon Clarksville	Brunswick Albemarle Pittsylvania Arlington Mecklenburg	250 854 852 200 286	35 38 7	57. 6 57. 0 57. 6	97 98 95	July 29 Sept. 7 June 21*	11 8 10 	Jan. 14* Nov. 30 Feb. 3*	38	52.85 49.40 53.08 40.11 58.90	8.67 7.77 7.47 6.95 8.43	Oct. Oct. Aug. June Aug.	1.72 1.40 2.14 1.44 1.70	Dec. Aug. Jan. Nov. Jan.	6.0	80 113 105 114 101	225 135 198	66 88 ·100	74 142 67	w. s. s. nw.
Columbia	Culpeper	246 450 430 100 500	31 22 29 39 28	56.0 55.6 59.6 57.9 55.3	97 95 96 97 99	July 28 July 29 June 22 Sept. 7 July 28	7 7 11 9 5	Feb. 3* Jan. 14* Nov. 30 Jan. 14* Jan. 14*	29 39	48. 58 39. 24 49. 98 35. 93 42. 97	11.75 8.21 7.58 7.23 5.93	Oct. Oct. Oct. Oct. May	1.84 1.83 1.81 1.79 1.50	Dec. Aug. Jan. Jan. Sept.	14.0 16.2 9.0 12.0 21.5	98 103 127 101 93	157 146 169 145	90 128 110 109	118 91 86 111	s. s. sw. sw.
Lynchburg Mineral (near) Mount Weather ‡‡ New Canton Pedlar: Dam‡‡	Louisa Loudoun	1,726 300	58 14 25 • 35 3	57. 5 54. 6 51. 6 56. 4 53. 8	96 97 90 95 94	July 28 July 9 Sept. 3 July 9 Apr. 7	9 4 -1 7 7	Nov. 30 Jan. 14* Jan. 14 Feb. 3* Jan. 14*	25 35	40. 47 39. 33 50. 93 41. 69	5. 76 10, 50 11, 33 8. 13	Apr. Oct. Oct. Oct.	1, 87 0, 94 1, 28 1, 32	Dec. Sept. Aug. Sept.	16.9 13.0 20.0 17.5	139 96 93 121	152 175 72 159	112 85 121 129	101 105 172 77	w. sw. s. sw.
Powhatan	Prince William Charlotte Franklin	17 344 1, 150 1, 188 375	29 34 7 59	55. 0 56. 6 57. 6 56. 5	97 96 93 97	July 29 July 9 July 9 July 28*	5 8 7 8	Dec. 1 Nov. 30* Nov. 30 Jan. 14	6 29 25 34 7 59	45. 24 30. 13 50. 04 49. 84 63. 39 39. 42	8.80 4.81 5.94 9.23 9.11 7.41	Oct. Apr. July Oct. June June	1.84 0.98 1.32 1.92 2.13 1.29	Sept. Aug. Sept Dec. Jan. July	11. 6 8. 8 18. 0 17. 5 10. 3	119 123 111 107 117 122	124 95 207 136 132	55 137 35 148 108	186 133 123 81 125	sw. nw. sw. sw. nw.
Means and extremes.	1			56. 3	99	July 28	-3	Jan. 14		46. 37	11.75	Oct.	0.94	Sept.	14.4	109	152	101	112	sw.
The Great Valley			:										. •							
Blacksburg Buchanan Burkes Garden Catawba Sanatorium Dale Enterprise Damascus Dante	. Washington	820 3, 250 2, 100 1, 350 1, 900	38 28 34 19 50	52. 4 56. 3 50. 4 54. 5 53. 9	91 96 87 93 96	Sept. 7 July 8* July 19 July 9 Sept. 6 June 22*	$\begin{bmatrix} 0 \\ 8 \\ -8 \\ 2 \\ 2 \\ -2 \end{bmatrix}$	Nov. 30 Nov. 30 Dec. 1 Nov. 30 Nov. 30	38 28 34 19 50 3 12	46. 89 51. 68 41. 98 51. 12 38. 07 48. 44 58. 29	8. 11 10.91 6. 52 10. 12 4. 98 6. 58 9. 80	Oct. Oct. June Oct. May Sept. May	1.58 2.57 0.21 1.48 1.34 1.32 2.10	Sept. Dec. Sept. Aug. Aug. Dec. Dec.	35. 0 23. 2 18. 7 22. 9	126 91 81 99 120 134 157	192 181 157 218 138 116 132	42 42 48 94 128 118 129	131 142 160 53 99 131 104	nw. w. w. s. ne.
Deerfield. Emory Glenlyn Hot Springs Ivanhoe Lexington Mendota	Bath	2, 100 1, 530 2, 195 2, 028 1, 060	37 52	54. 6 51. 0 54. 3	99 86 93	Sept. 6 July 7* July 8*	-5 0	Dec. 1 Feb. 3 ^s Dec. 25	3 3 15 37 23 52 24	45. 94 52. 68 42. 01 48. 68 43. 02 54. 20	6.94 6.86 8.28 8.88 10.08 5.11 7.49	Oct. May Oct. Oct. Oct. Oct. June	0. 18 1. 58 1. 82 1. 16 1. 19 1. 61 1. 59	Sept. Aug. Sept. Jan. Aug. Sept. Aug.	21. 9 29. 5 22. 3 18. 0	154 142 121 122 116 139	126 151 204	126 148 54	113 66 107	
Radford Roanoke Saltville Speers Ferry Staunton Winchester Woodstock Wytheville	Montgomery Roanoke Smyth Scott Augusta Frederick Shenandoah	1, 778 907 1, 789 1, 221 1, 380 717 927	25 6 38 25 38 27	57. 5 55. 2 55. 7 55. 3 53. 4 52. 2	97 95 98 99 98 88	July 29 June 23 July 28 June 18* June 13* July 9	8 2 2 3 4 0	Nov. 30 Nov. 30 Feb. 30 Jan. 14 Jan. 14 Nov. 30	34 25 6 33 38 25 38	35. 54 51. 37 46. 16 53. 39 33. 05 43. 48 40. 41 46. 52	5.68 11.25 7.40 7.98 4.78 8.88 7.33	Oct. June May Oct. Oct. Oct. June	1. 38 1. 74 1. 75 1. 78 1. 22 1. 35 1. 32 1. 53	Aug. Aug. Sept. Aug. Nov. Dec. Aug. Jan.	36. 5 27. 2 24. 0 19. 7 34. 5	. 106 127 161 118 97 106 125	173 168 180 183 214 100 118	130 44 38 89 55 88 109	62 153 147 93 96 177 138	sw. w. sw. sw. nw. w.
Means and extremes .			54. 1	99	June 18*	1	Dec. 1		46.03	1	1	0.18	Sept.	26. 9	124	162	87	116	w.	
State means and ex	tremes			56. 1	99	June 18*	-8	Dec. 1		45.92	11.75	Oct.	0.18	Sept.	16.7	115	155	97	113	sw.

Section and State averages are computed from monthly means.

All other records are used in determining section and division means, but the mean departures from normal temperature and precipitation are based only on records from stations that have 10 or more years of observation.

Reference letters, *, b, *, appearing in the tables indicate number of days missing: for example, b represents two days, etc.

*Also on other dates. †Also October.

‡Post-office addresses of these stations are as follows: Diamond Springs, Norfolk; Runnymede, Elberon: Lincoln, Purcellville; Mount Weather, Bluemont; Pedlar Dam, Pleasant View.

T. Precipitation is less than 0.01 inch rain or snow.

Monthly and Annual Precipitation for the Year 1929, with Departures from the Normal														with	Dep	artur	es fi	om t	he N	orme	ıl					
	Jan	uary	Feb	ruary	Мв	rch	Aı	ril	М	ay	Ju	ne	Ju	ıly	Au	gust	Septe	mber	Oct	ober	Nove	mber	Dece	mber	Anı	nal
Stations	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	Departure	Precipitation	*Departure	Precipitation	Departure	Precipitation	Departure
Tidewater																								·		
Cape Henry Christchurch Dahlgren Diamond Springs Hopewell Langley Field	2. 21 1. 68 3. 62 1. 63 1. 58	+1.15 -1.34 -1.15	6. 71 3. 90 5. 48 3. 48 7. 31	+2. 18 -0. 07 +3.65	5. 89 3. 29 4. 65 4. 58 3. 41	+1.08 +0.23 -0.48	4. 64 5. 20 1. 10 2.37 2. 13	-2.27 -1.12 -1.11	3.95 2.49 9.25 3.30 6.13	-0.23 +5.21 -0.86 +2.49	2. 32 4. 11 4. 60 8. 57 3. 21	+0.52 -0.71 +4.16 -0.85	3, 14 1, 85 5, 00 2, 69 3, 74	-2.41 -0.71 -1.98 -1.16	2, 85 3, 86 2, 50 4, 28 3, 63	-2. 12 -1. 77 -0. 18 -1. 17	1. 98 4. 20 2. 08 2. 41	-1.02 +0.75 -1.64 -0.46	4. 22 4. 61 7. 20 7. 62 5. 61	+2. 23 +2. 29 +4. 51 +4. 77 +2. 79	3. 25 2. 62 2. 26 4. 45 1. 99 2. 90	+0.89 -0.80 +2.26 -0.34 +0.33	2. 19 1. 20 2. 48 2. 20 2. 67 1. 40	-1.25 -0.14 -1.59 -0.60 -1.60	37.71 54.25 45.26 43.46	+ 3.40 +10.09 +1.03 +1.28
	3. 76 3. 18 2. 84	+0.36	5.48 6.48 5.28	+1.44	4.79 4.73 3.14	+0.15 -0.85	3. 25 0. 93 3. 12	-0. 67 -0. 61	5. 14 6. 81 3. 86	+0.92	3. 59 5. 78 4. 84	-1.38 +0.20	3. 11 5. 65 7. 03	+0.84	1.38 5.06 1.00	-3.50 -5.20	1.86 7.95 1.24	-1.57 -2.21	6.45 7.95 6.20	+4.11 $+2.91$ $+3.22$	8.34 4.61 4.35 3.33	+1.13 $+2.04$ $+1.22$	2.70 0.90 2.61 1.85	-0.83	41. 21 44. 30 61. 48 43. 73	-0.81 -4.72 -2.66
Means	2. 42	-0.62	5.34	+1.74	4.06	-0.09	2.76	-0.98	5.44	+1.78	4.43	+0.34	3, 73	-1.62	2.88	-2.32	3. 28	-0.42	5. 95	+3.05	3. 25	+0.85	2.00	-1.24	45.49	+2.79
Callaville Charlottesville Charlottesville Charlottesville Charlottesville Clarksville Columbia	2, 42 3, 00 2, 14 2, 37 1, 70 2, 12	-1. 12 -0. 42 -1. 91 -1. 65	5. 12 4. 23 4. 25 3. 18 7. 41 4. 22	+1.50 +1.29 +4.17 +1.25	4. 60 4. 02 3. 39 2. 35 5. 51 4. 31	+0.15 +0.53 +1.72 +0.72	3.43 5.98 6.61 6.69 4.10 5.15	-0.20 +2.60 +0.79 +1.70	5. 88 3. 15 4. 04 2. 53 4. 75 4. 13	+1.82 -1.30 +0.55 +0.35	6.27 7.56 4.33 6.95 5.25 3.21	+2. 16 +2. 16 +0. 98 -1. 07	3.91 5.77 4.71 1.45 5.39 3.47	-1.96 +1.16 +0.97 -1.00	3. 01 1. 40 7. 47 1. 58 8. 43 8. 21	-1.85 -3.49 +3.78 -1.24	3.63 2.77 3.22 3.86 4.14 2.96	+0.09 -0.92 +1.09 -0.18	8. 67 7. 77 6. 40 5. 62 6. 75 11. 75	+5.85 +4.41 +4.10 +8.80	4. 19 1. 72 3. 76 1. 44 3. 35 2. 21	+2.14 -0.78 -0.96 -0.03	1. 7 2. 02 2. 73 2. 06 2. 12 1. 84	-1.58 -1.22 1.24 -1.50	52. 85 49. 40 53. 08 40. 11 58. 90 48. 58	-7.00 +4.02 +15.96 +6.15
Culpeper Danville. Falls Church Fredericksburg. Lincoln Lynchburg	2. 43 1. 79 3. 48 2. 38	-1.61 $+0.32$ -1.05	2. 79 3. 28 3. 30 2. 75	+0.38 +0.91 -0.40	2.94 3.29 2.96 3.22	-0.32 -0.09 -0.32	6.46 4.93 5.56 5.76	$\begin{array}{c} \\ +1.38 \\ +2.29 \\ +2.81 \end{array}$	2.30 2.76 5.93 3.06	$ \begin{array}{c} -1.26 \\ +2.40 \\ -0.57 \end{array} $	4.85 3.78 3.83 5.00	-0.79 -1.20 $+1.21$	2. 31 1. 46 2. 83 2. 21	-2.90 -0.65 -2.00	1.47 0.98 3.16 3.99	-3.73 -1.13 $+0.21$	3.20 2.39 1.50 2.20	-0.89 -1.19 -1.11	6.37 7.23 4.99 5.21	+4.17 +2.10 +2.06	2. 03 3. 53 2. 82	-0. 25 +1. 39 +0. 49	2.01 1.95 1.87	-1.14 -0.95 -1.39	35. 93 42. 97 40. 47	-6.96 +4.20 -0.06
Mineral Mount Weather New Canton Pedlar Dam Powhatan Quantico	1.99	Л	1 4.10	/	0.01		4.00		0.40		0.14		Z. 20		9. 19		1.04		0.00		0.00	1	4.00		40.24	-0.95 +10.41 +0.21
Randolph	2.8	7 0. 54	4.00 5.10	+0.64	3.90	+0.26 -0.11 -1.21	4.03	+0.60	4.39	-0.01 +0.41 -1.41	8.06	+3.41	2.89	-2.01	2.40	+1.42 -1.78 -2.71	2.30	1. 24	9.23	+5.63	3.85	+0.50 $+1.32$ -0.67	1.92 2.97	+0.09 -1.61 -1.12	49.84 63.39	+4.72
Means	2.30	-1.01	4.02	+1.12	3.82	+0.14	5. 21	+1, 73	3.97	+0.14	5 . 51	+0.59	3.39	-1.23	3.09	-1.54	2.56	-0.71	7.52	+4.70	2.67	+0.32	2.31	0.94	46. 37.	+3.31
Blacksburg	2.45 2.86 3.15 2.47 2.25	3 -0.91 -0.88 -0.50 -0.78 -0.78	5.09 3.69 3.69 3.69 3.69 3.69	$\begin{array}{c} +1.92 \\ +0.96 \\ -0.61 \\ +0.85 \\ -0.37 \end{array}$	2 4.38 5 4.65 3.58 5 5.11 7 3.01	+0.71 +1.83 -1.33 +1.25 -0.07	3. 40 4. 60 3. 17 3. 94 3. 73	+0.37 +2.00 -0.57 +0.98 +0.77	3. 33 5. 27 3. 82 5. 25 4. 98	-0.53 +1.40 -0.46 +1.81 +0.82	6.55 4.09 6.52 6.07 4.80	+2.07 -0.01 +1.45 +1.70 -0.25	4.28 5.68 4.15 3.13 4.49	-0.95 +1.72 -0.42 -1.62 +0.11	1. 94 2. 62 2. 70 1. 48 1. 34	-1. 99 -1. 48 -1. 70 -3. 14 -2. 65	1.58 1.09 0.21 3.24 1.68	-1.61 -2.43 -3.39 -0.25 -1.55	8. 11 10. 91 4. 49 10. 12 4. 36	+5.17 +7.51 +1.35 +6.68 +1.70	3. 48 3. 69 5. 99 5. 13 3. 34	+1.21 +1.60 +3.20 +2.78 +1.22	2. 37 2. 57 1. 20 1. 55 1. 82	-0.69 -0.70 -2.45 -1.70 -0.79	46.89 51.68 41.98 51.12 38.07	+4.77 +11.57 -5.43 +8.54 -1.59
Damascus	1.5° 3.9° 3.4° 2.6° 3.6°	7 6 -0.15 8 -0.26	3. 99 3. 40 1. 2' 4. 19 5. 70	+0.07	4. 55 6. 00 3. 70 4. 65 1 3. 68	+2.25	1.95 3.53 4.36 3.31 2.15	-0.30 -0.42	6. 45 9. 80 6. 86 3. 55	+5. 19	6. 05 5. 11 2. 69 5. 54 7. 33	+0.42 +4.01	5. 86 6. 79 5. 13 4. 47 5. 54	+2.11	2. 68 2. 57 1. 58 3. 53	-1.73 -0.28	6.58 4.51 0.18 2.37 1.82	+1.14 -0.37	3. 77 5. 47 6. 94 3. 75 8. 28	+2.16	3. 67 4. 99 3. 72 4. 67 4. 72	+2.15	1.32 2.10 1.66 2.04 2.69	-2.03 -0.50	48. 44 58. 29 45. 94 52. 68	+11. 28 +15. 98
Hot Springs Ivanhoe Lexington Mendota Radford Roanoke	1. 10 1. 90 3. 10 3. 80 1. 70 3. 0	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	7 3.05 5 4.25 9 2.85 6 4.41 4 4.45 1 3.75	2 + 0.23 5 + 1.73 7 - 0.13 3 + 1.00 2 + 1.60 4 + 1.60	3 3.37 4.33 5.00 5.59 5 3.92 5 4.11	$ \begin{array}{c} -0.38 \\ +0.86 \\ +1.61 \\ +0.87 \\ +0.45 \\ +0.71 \end{array} $	2.87 2.88 4.48 2.97 2.82 3.95	$ \begin{array}{r} -0.41 \\ -0.07 \\ +1.50 \\ -0.83 \\ +0.13 \\ +1.20 \\ \end{array} $	3. 78 5. 60 3. 72 7. 28 2. 93 4. 72	$ \begin{array}{r} -0.08 \\ +2.03 \\ +0.11 \\ +3.41 \\ -0.49 \\ +1.53 \end{array} $	4. 16 8. 53 4. 18 7. 49 4. 73 7. 01	$ \begin{array}{r} -0.50 \\ +4.08 \\ +0.13 \\ +2.59 \\ +0.75 \\ +2.54 \end{array} $	3. 94 3. 16 3. 46 6. 96 2. 98 3. 98	-0. 18 -1. 00 -0. 58 +1. 98 -1. 58 -0. 30	3, 49 1, 19 3, 13 1, 59 3, 1, 38 1, 38	+0.04 -3.05 -0.57 -2.84 -1.96 -1.77	2. 35 0. 99 1. 61 1. 72 0. 79 2. 65	-1.04 -2.09 -1.83 -1.90 -2.04 -0.37	8.88 10.08 5.11 5.48 5.68 11.25	+5.96 +7.03 +2.19 +2.05 +2.63 +8.07	3.30 3.55 3.42 4.81 2.40 2.42	+0.98 +1.68 +0.89 +2.00 +0.38 +0.06	1. 69 2. 17 2. 89 1. 98 1. 71 2. 75	$ \begin{array}{r} -1.33 \\ -0.71 \\ +0.10 \\ -2.25 \\ -1.24 \\ +0.11 \end{array} $	42. 01 48. 68 43. 02 54. 20 35. 54 51. 37	+1.05 +8.93 +3.36 +5.22 -2.89 +12.32
Saltville Speers Ferry Staunton Woodstock Wytheville	3. 1 4. 9 2. 5 2. 1 2. 1 1. 5	$ \begin{array}{c} $	3.76 3.86 1.6 2.2 4.2.85 5.99	$ \begin{array}{c} -0.13 \\ -1.13 \\ +0.36 \\ +0.96 \end{array} $	3.90 5.60 1 2.08 6 2.73 0 2.80 4 8.51	3 +0.46 3 -1.33 3 +0.05 0 -0.10 +0.07	2. 76 3. 18 3. 68 4. 78 5. 45 3. 11	-0. 19 +0. 71 +1. 41 +2. 93 +0. 12	6. 63 7. 98 4. 26 4. 18 3. 79 3. 64	3+4.70 $3+0.58$ $3+0.01$ $3+0.25$ $3+0.02$	7. 40 5. 36 4. 42 4. 61 1. 97 8. 26	+1. 23 -0. 11 +0. 81 -2. 21 +4. 06	3. 56 4. 77 2. 94 4. 37 4. 60 3. 07	+0. 15 -1. 16 +0. 84 +1. 17 -0. 98	2, 36 1, 78 1, 83 1, 43 1, 32 3, 2, 68	-2. 49 -1. 97 -2. 25 -2. 39 -1. 51	1. 75 3.00 2.33 2. 52 2. 14 2. 72	+0.13 -0.98 -0.69 -0.49	3. 83 4. 35 4. 78 8. 88 7. 33 8. 06	+1.99 $+1.81$ $+6.32$ $+4.76$ $+5.22$	4.84 6.17 1.22 4.25 4.01 4.07	+3. 71 -0. 98 +1. 76 +2. 16 +1. 98	2. 25 2. 38 1. 40 1. 35 2. 07 1. 94	-1.94 -1.19 -1.48 -0.24 -0.98	46. 16 53.39 33.05 43.48 40.41 46.52	+8.45 -6.08 +6.53 +6.00 +6.77
Means		İ				+0.45	١.		١			1	i		1		١.	l	1	1	l	1		Ι.	,	1

Nore. - In this publication, annual means are computed from data for all stations; whereas, in monthly reports, means may not include all stations, as in some cases reports are not received in time to be used in the computations.

Monthly and Annual Mean Temperatures for the Year 1929, with Departures from the Normal

	Jan	uary	Feb	ruary	Ма	March		ril	М	ау	Ju	me	Jı	ıl y	Au	gust	Sept	ember	Oct	ober	Nove	ember	Anı	nual		
Stations	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure
Tidewater																										
Cape Henry Christchurch Dahlgren Diamond Springs Hopewell Langley Field	42. 2 40. 2 35. 1 44. 8 40. 8 40. 4	+2:4 +1:4	38.8	-1.1 -1.0	°51.0	+5.8 +6.1	60.6 57.6 61.3	+3.3	65.8	+1.2 +0.6 +0.3	72.9 473.3 71.1 72.8 74.3 72.8	-0.8	75.4	$ \begin{array}{c} -0.3 \\ -0.6 \\ -0.6 \\ +2.0 \\ -2.2 \end{array} $	73.2 75.4 76.0	-0.6	72.2 ² 70.9 69.1 71.7 72.8 71.2	-0 i	58.8 55.4 62.2	$ \begin{array}{c} -2.0 \\ -0.4 \\ -0.6 \end{array} $	51.4 48.0 54.7 52.1	+1.1 +3.3 +3.2	*43.4 38.7 47.0	+0.5 +3.8 +1.8	55. 9 60. 9	+1.5 +1.2 +1.6 +0.3
Norfolk Onley Richmond Runnymede Williamsburg	42. 2 39. 4 38. 8 40. 2 40. 6	+1.4 +0.9 +0.5	38.0 38.2 38.0	$ \begin{array}{r r} -2.1 \\ -1.4 \\ -1.6 \end{array} $	52.0 52.8	+6.4 $+5.6$	59. 2 60. 2	+5.4	65.1 65.8 65.0	+2.8 -0.7	72.7	$+0.3 \\ -1.0$	77.0 74.4	-1.5 -2.8	74.8 75.1 74.6	-0.7 -1.4 -1.1		+0.3 +0.7 +0.6	61.1 58.6 58.0 58.0 58.8	-2.0 -1.6 -0.9	51.5 49.8	+1.5	45. 4 42. 7 41. 4 42. 9 444. 5	+1.6	58.4	+0.9 +1.1 +0.5 +0.4
Means	40.4	+1.2	38. 8	-1.4	53. 3	+6.1	60.6	+4.5	65.8	+0.6	72.8	-0.7	76. 5	-0.9	75. 1	-1.2	71.2	+0.3	59.3	-1.1	51.6	+1.9	43.4	+2.1	59.1	+1.0
Middle Virginia	07.5												1		.		.									
Callaville Charlottesville Chatham Clarksville Columbia	37.5 35.6 38.0 37.6 36.0	-0.4 +1.1		-0.5 -6.5	52. 6 52. 3	+5.0	60.2 61.0 60.0	+4.1	65.1 65.2	-0.6	71.3 71.6 72.0 73.7 70.6	-1.1	74.7 75.4 76.6	+0.2	73.3 73.9 74.6	-1.3 -0.5	70.8 70.8 69.2 69.4 68.8	+1.9 -0.1	56.8 55.7 56.3	-2.4	48.0 49.2	+0.1	40.2 41.4 ⁶ 89.5	+0.3		-0.1 +0.5 -0.1
Culpeper Danville Fredericksburg Lincoln Lynchburg	34, 2 39, 7 38, 2 32, 4 37, 2	+0.8 +1.9 +0.4	39.4 36.8 34.0	-3.0 +0.6 +1.3	53.0 49.8	+3.6 +6.3 +6.7	59.7	+3.6 +4.5 +4.2	64.1 68.4 65.6 63.5 65.3	+1.2 +0.8 -0.2	72.1 72.2	$ \begin{array}{r} -2.5 \\ -0.2 \\ +0.8 \end{array} $	74.6 77.0 76.2 74.8 76.0	-0.5 -2.2 -0.2 -1.2 -1.5	74.8 73.5	0.0	71.4 70.5 70.6	$ \begin{array}{r r} -0.8 \\ +1.5 \\ +2.5 \end{array} $	56. 2 55. 6	-3.0 -1.6 -1.2	50. 2 46. 8	$\begin{vmatrix} +1.6 \\ +3.4 \\ +2.2 \end{vmatrix}$	37.6	+0.6 +3.6 +3.8	55. 6 59. 6 57. 9 55. 3 57. 5	+0.9 -0.2 +1.7 +1.6 -0.1
Mineral	34.7 28.2 37.8 35.0	-1.9	35.6	+1.1	51.8	+2.8 +6.9 +4.6	57. 1 54. 4 59. 2 56. 6	+5.0	64.9	+0.1	69.6	-1.5	71. 2 71. 0 74. 2 69. 4	-3.2 +0.2 -2.0	70.3	-2.8	65. 8 68. 8 65. 0	+1. 1 -2. 5	52, 3	+0.6 -2.4	43.6	+1.8 +1.8	35.1	+2.3 +3.1 +2.4	54. 6 51. 6 56. 4 53. 8	+0.4 +1.2 0.0
Quantico Rocky Mount Stuart Washington, D. C	34.3 37.4 38.3 34.9	-0.3	36. 1 38. 4	-2:0	48. 6 51. 1 53. 6 50. 2	+3.7	60.9	+4.0	64.8		70. 4 *71. 3 71. 0 72. 2		75.0 74.8 73.8 76.9	$ \begin{array}{r} -2.3 \\ -0.2 \\ \hline +0.1 \end{array} $	73.4		68. 4 68. 2 69. 4 70. 2	0.0 -0.8 +2.1			49.0°	+1.0	40.8 41.7 38.6	+1.6 +1.8 +2.0	55. 0 56. 6 57. 6 56. 5	-0.4 +0.1 +1.5
Means	35.9	+0.2	35. 5	-1.3	51.1	+4.8	58.9	+3.6	64.2	-0.1	70.9	-1.3	74.5	-1.1	72.9	-1.2	69.0	+0.5	55.4	-2.0	48.0	+1.7	39. 7	+2.0	56.3	+0.5
Blacksburg Buchanan Burkes Garden Catawba Sanatorium Dale Enterprise	32.9 35.9 32.8 34.6 33.0	+0.8 +1.3 -1.5	35.9 29.6	$ \begin{array}{r r} -4.5 \\ -1.7 \\ -3.3 \end{array} $	50. 7 45. 2 49. 6	+4.7 +2.4 +4.3 +3.8 +5.0	58. 7 53. 6 58. 6	$+2.8 \\ +6.1 \\ +4.0$	64.8 58.4 62.2	+0.4 +1.6 -0.1	67. 9	-1.4 -0.2 -2.2	67.6	+1 1	72.4 65.0 70.8	-1.9 -0.7 -0.7	61.2 65.6	+1.0 -0.7	55.6 49.2	-3.4 -0.3 -1.5	47. 4 42. 0 43. 6	$+1.1 \\ +2.0 \\ -2.4$	40. 4 36. 2 39. 7	+2.0 $+4.0$ $+1.4$		+0.5 -0.4 +1.6 -0.3 +0.5
Dante Emory Hot Springs Lexington Roanoke	36. 2 35. 0 31. 2 32. 6 38. 2	-0.3 -1.4	34.0 30.6 33.5	-1.1 -1.8	48.0 45.6 47.0	+3.3 +3.3 +2.9 +4.8	54. 9 55. 0 55. 9	+4.9 +2.7	60.6 59.8 60.8	+0.1 -1.9	67. 4 65. 2	-1.6	71. 7 71. 2 68. 5 74. 4	+0.5	71.2 66.2 70.5	-2.0 -2.5	69. 7 62. 5 67. 0	0. 0 +0. 5	53.8 56.2 49.6 *53.4 55.5	-2.8	47.9 42.4 46.8	-0.3 +3.3	39. 6 35. 6 38. 8	+1.8 +3.4	54. 6 51. 0 54. 3	-0.2 +0.1 +0.2 +1.5
Saltville Staunton Winchester Woodstock Wytheville	35.6 33.4 33.0 32.0 33.8	-2.0 $+1.8$ -1.1	33.1	$\begin{vmatrix} -1.0 \\ -1.9 \end{vmatrix}$	48.8	+4.8	57. 8 55.3	+4.5	61.0	$\begin{array}{r} +1.3 \\ -2.2 \\ -2.1 \end{array}$	70. 6 70. 8 72. 2 68. 6 66. 4	+0.3 -0.3 -1.5	74. 0 75. 2 76. 2 71. 3 69. 6	+0.2 -3.3	70, 1	-3.0	68. 8 69. 2 71. 5 68. 6 63. 5	+1,1	54. 8 53. 4	-1.3 -2.9	44.6 44.4		37.2 36.4	+4.1 +1.2 +0.2 +0.8	55. 2 55. 7 55. 3 53. 4 52. 2	+1.1 +1.3 -0.6 -0.4
Means	34.0					+4.2	- 1	+4.0			68. 5		72. 2						53. 5	- 1					54. 1	+0.4
State	36. 4	+0.4	35.6	-1.7	50. 7	+4.9	58.6	+4.0	63.7	+0.1	70.6	-1.1	74.2	-0.9	72.5	-1.2	68.9	+0.5	55.7	-1.7	47.9	+1.7	40.0	+2.0	56.2	+0.6

For explanation of reference marks, see page 50.

KILLING FROSTS, 1929

	AILLING FRUSTS, 1929														
Stations	Last in Statio		Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn				
Tidewater Virginia			Middle Virginia			Middle Virginia—Con.			Great Valley—Con.						
Christchurch Dahlgren Diamond Springs Hopewell Langley Field Norfolk Onley	Mar. 18 Mar. 18 Mar. 18 Mar. 11 Mar. 11 Mar. 11 Mar. 11 Mar. 11 Mar. 29	Oct. 26 Nov. 30 Nov. 10 Nov. 10 Nov. 30 Nov. 6 Nov. 22 Nov. 6 Nov. 30	Charlottesville Chatham Clarksville Columbia Culpeper Danville Fredericksburg Lincoln Lynchburg Mineral	Mar. 11 Mar. 18 Mar. 18 Apr. 19 Mar. 18 Mar. 18 Mar. 18 Apr. 2 Mar. 11 Apr. 23 Mar. 11	Nov. 10 Nov. 10 Oct. 18 Nov. 10 Nov. 23 Nov. 10 Nov. 6 Oct. 18 Nov. 10	Powhatan Quantico Rocky Mount Stuart Washington Great Valley Blacksburg Buchanan	Mar. 19 Apr. 23 Apr. 19 Mar. 11 Apr. 23 Mar. 18	Nov. 5 Nov. 10 Nov. 6 Nov. 6 Nov. 10	Dante Emory Hot Springs Lexington Roanoke Saltville Staunton Winchester	Apr. 18 Apr. 19 Apr. 23 Apr. 23 Apr. 23 Mar. 11 Apr. 18 Mar. 29 Mar. 30 Apr. 2	Nov. 6 Oct. 18 Oct. 15 Oct. 9 Nov. 6 Nov. 6 Nov. 10 Nov. 10 Nov. 10 Oct. 9 Nov. 6				

(WB-2-17-30-1,200)