U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU CHARLES F. MARVIN, Chief

CLIMATOLOGICAL DATA

VIRGINIA SECTION

EDWARD A. EVANS, Meteorologist

Vol. XXXVIII RICHMOND, VA., YEAR 1928

No. 13

GENERAL SUMMARY

The mild weather of the last three months of 1927 continued through January and February following, with temperatures well above normal, and while temperatures continued moderate through March and the first week in April, they were below normal most of the time thereafter until about the middle of July, when more seasonable weather set in and continued through the greater part of August. September was cool, on the whole, with frosts in the mountain districts the latter part of the month. The three following months were mild, with temperature averages considerably above normal. As a whole, the year averaged very little warmer than normal. Aside from rather severe frosts about the middle of April, that extended to the coast, no particularly adverse temperature conditions occurred during the year.

The first three months of the year, while mild as to temperature, were also dry, with a rather large deficiency in precipitation. April, however, brought copious rains, and the months thereafter were alternately dry and wet to August, inclusive. In the latter month rains were heavy and excessive, particularly over the eastern slope of the Blue Ridge, with phenomenal downpours recorded at several stations, causing floods in practically all streams flowing eastward, with the highest stages of record for August in some instances. While the excessive rains of August did not extend over Tidewater Virginia, September rainfall was heavy over all sections, the largest excess for that month being over Tidewater section. Considerable damage to farm crops resulted from flood waters during these two months. Following these excessive rains came a prolonged period of dry weather that continued to the close of the year. Although eight months of the year were deficient in rainfall, the excesses of August and September more than offset the deficiencies, the average for the year being slightly above normal. As the early months and the last months were mainly mild and dry, it is not surprising that the year's snowfall was considerably below normal.

The mild weather of the spring and fall months furnished a long growing season and the harvest of staple crops was, in most instances, quite satisfactory.

Notes on frosts, severe storms, and floods may be found in the April, June, August, and September issues of this publication.—H. A. F.

ERRATA

February.—Page 6, Cape Henry, precipitation departure, 0.00; average snowfall, State, 0.6.

March.—Page 10, Cape Henry, temperature departure, +1.4; Runnymede, temperature departure, +1.4.

April.—Page 14, Lynchburg, mean temperature and departure, 53.2, —4.1; Middle Virginia, average snowfall, 0.6; Damascus, snowfall, 7.0; Great Valley, average snowfall, 5.2; State, average snowfall, 2.3.

May.—Page 18, Dante, precipitation departure, +0.11.

June.—Page 22, Lynchburg, temperature departure, -2.8.

July.—Page 26, Christchurch, total precipitation, 6.17.

Washington, D. C., precipitation departures, pages, 2, 18, 22, 26, 30, 34, and 38, -0.74, +0.30, -1.47, -2.54, +10.40, +1.05, -2.17, respectively.

MONTHLY STATE DATA, 1928

	Ten	nperat	ure	Pre	cipitat	ion	Number of days						
Month	Меап	Highest	Lowest	Average	Greatest 24.	Average snow-fall	Rainy	Clear	Partly cloudy	Cloudy			
January February March April May June July August September October November December	45. 6 52. 5 62. 4 70. 2 76. 2 75. 9	79 70 87 87 96 98 100 103 95 92 83 68	-5 7 10 17 29 36 45 42 27 17 11	2.18 2.23 2.73 4.86 2.61 5.09 3.43 8.71 6.84 1.33 1.70	1. 49 1. 47 2.02 3. 51 1. 76 2. 35 2. 54 8. 28 5. 25 1. 59 1. 85	3.7 0.8 3.6 2.3 0.0 0.0 0.0 0.0 0.0 0.3 1.3	7 8 8 11 10 15 8 13 10 5 6	16 12 14 11 13 8 17 11 12 16 12 16	6 7 10 8 10 13 10 11 7 8 10 6	9 10 7 11 8 9 4 9 11 7 8 9			

COMPARATIVE ANNUAL DATA FOR THE STATE

Year	Mean tempera- ture	Bighest	Lowest	Average pre- cipitation	Average snow-fall	No. of rainy days	No. of clear days	No. of partly cloudy days	No. of cloudy days
1892 1893 1894 1895 1896 1897 1897 1898 1899 1900 1900 1901 1902 1908 1908 1909 1910 1911 1912 1913 1914 1915 1916 1917 1918 1918 1919 1919 1919 1919 1919	54. 8 1 0 55. 6 6 6 0 6 6 6 6 6 6 6 6 6 6 6 6 6 6 6	106 104 107 105 103 105 106 108 107 106 108 109 102 102 102 103 101 102 103 103 104 105 108 108 109 109 109 109 109 109 109 109 109 109	-8 -26 -26 -26 -26 -27 -27 -27 -27 -27 -27 -27 -27 -27 -27	40. 01 46. 837 38. 99 40. 810 44. 83 44. 83 39. 33 36. 117 51. 425 36. 188 49. 56 44. 19 45. 211 37. 117 39. 72 39. 37 41. 66 40. 82 44. 94 44. 94 46. 80 47. 41 88. 94 48. 94 49. 94 49. 94 40. 84 41. 94 41. 96 41. 96 41	23.1 17.0 38.8 8.7 11.8 8.7 18.6 9.5 14.9 9.5 11.9 20.3 9.8 11.2 9.2 24.6 24.7 7.4 13.8 12.8 10.3 11.8 11.8 11.8 11.8 12.8 13.8 14.9 15.9 16.0 16.0 16.0 16.0 16.0 16.0 16.0 16.0	95 103 88 89 94 93 92 108 86 6 95 95 111 116 101 115 102 104 105 104 105 104 105 8 112 113 114 115 115 115 115 115 115 115 115 115	163 156 164 163 163 171 162 176 181 167 170 170 155 163 164 165 168 169 161 161 168 168 168 168 168 168 169 161 168 168 169 169 169 169 169 169 169 169 169 169	101 100 104 103 106 99 101 195 91 120 115 120 115 108 104 116 106 106 107 99 99 102 107 99 107 99 107 99 107 99 108 109 109 109 109 109 109 109 109 109 109	102 109 95 88 87 95 95 102 104 98 104 98 104 98 109 96 99 90 90 105 115 115 116 111 111 111
Normal and extremes	55.8 55.7	103	-5 -29	42, 99 42, 39	9.2 17.5	110 102	151 164	102	103 99

Climatological Data for the Year 1928

			·	Tempe	erature	degrees	Fahre	nheit			Pr	ecipitati	on			iny		Sky		ion
Stations	Counties	Elevation, feet	Length of record,	Annusl mean	Highest	Date	Lowest	Date	Length of record,	Total for the year	Greatest monthly	Month	Least monthly	Month	Total snowfall	Number of rai	Number of clear days	Number of partly cloudy days	Number of cloudy days	Prevailing direction
Tidewater Virginia																				
Ashland Cape Henry Christ Church Dahlgren Diamond Springs‡‡	King George	221 20 87 21 25	55 5 9 20	59. 2 58. 8 55. 5 59. 8	97 98 96 95	July 20 July 5* July 20 Aug. 4	-3 17 10 4 14	Jan. 4 Jan. 2 Jan. 2 Jan. 30 Jan. 2	55 6 9 20	45. 74 44. 66 45. 45 58. 86	8.90 7.22 14.97 15.23	Sept. Sept. Aug. Sept.	0. 97 0. 44 0. 69 1. 20	Oct. Oct. Dec. Oct.	1. 3 8. 5 14. 0	123 98 110 92	142 91 180	110 137 140	114 138 46	sw sw sw
Hopewell Langley Field Norfolk Onley Richmond.	Prince George Elizabeth City Norfolk Accomac Henrico	40 5 91 40 144	12 9 58 10 49	59.3 59.9 57.7 57.7	98 96 94 96 97	Aug. 3 Aug. 6 Aug. 7 Aug. 3 Aug. 4	7 14 12 14 8	Jan. 4 Jan. 2* Jan. 2 Jan. 4 Jan. 29		37. 90 44. 57 39. 11 42.89	6. 88 9. 73 9. 79 9. 33 8. 05	Sept. Sept. Sept. Sept. Aug.	0.27 1.24 1.31 0.40	Oct. Oct. Oct. Oct.	1.9 13.0 7.6	115 123 112 118	120 125 119 153	162 105 143 97	136 103 116	SW SW S. S.
Runnymede (near)‡‡ Wallaceton Warsaw (near) Williamsburg Means and extremes	Surry	25 160 70	39 35 35	58. 2 58. 2	96 98 98	Aug. 3 Aug. 3 July 5*	9 3	Jan. 4 Jan. 4	39 2 35 35	45. 78 57. 52 41. 51. 45. 88	10. 44 10. 60 14. 17 9. 52 15. 23	Sept. Sept. Aug. Sept.	1. 10 1. 32 0. 54 0. 27	Oct. Jan. Oct.	7. 0 3. 4 8. 0 6. 8	90 133 111	202	84 122	80	s. sw s. sw
Middle Virginia				30.2	30	July 5		Jan. 4		40.00	10.20	Sept.	0.21	Oct.	0.0	111	142	122	.102	"
Callaville Charlottesville (near) Chatham Clarendon Clarksville	Brunswick	250 854 852 200 286	34 37 6 31	57. 4 56. 6 57. 6	97 97 100	Aug. 3* Aug. 3 July 4* Aug. 4	4 5 4 8	Jan. 4 Jan. 2 Jan. 2 Jan. 2	34 37 6 3 31	50. 82 41. 55 45. 85 40. 66	12. 13 11. 97 8. 82 11. 95 7. 60	Sept. Aug. Sept. Aug. Sept.	0. 72 0. 41 0. 60 0. 73 0. 78	Oct. Oct. Dec. Oct. Oct.	3.5 5.5 6.0 10.0 2.5	77 101 115 79	215 149 201	86 92 85	65 125 80	w. w. w.
Columbia Culpeper Danville Falls Church Fredericksburg (near)	Fluvanna	246 450 430 310 100	30 21 28 	55. 8 55. 1 59. 4 57. 1	98 94 100 95	Aug. 3* July 20 Aug. 3	2 2 7	Jan. 4 Jan. 4 Jan. 2 Jan. 4	30 21 28 20 28	47. 07 43. 75 42. 46 39. 06	13.30 11.74 9.26 11.79 12.08	Aug. Aug. Sept. Aug. Aug.	0. 81 0. 56 0. 75 0. 88 0. 48	Nov. Oct. Nov. Oct. Oct.	7.0 6.0 2.0 14.1 5.9	109 101 97	163 137 176	111 137 100	92 92 90	w. s. sw
Hawfield ‡‡ Lincoln ‡‡ Lynchburg Massinacac†‡ Mayhurst ‡‡		400 500 681 350 500	27 57 13	55. 2 57. 3	96 98 	July 20 Aug. 6 July 21	4 6 9	Jan. 2 Jan. 2 Jan. 4	27 57 7 13	40. 15 41. 94	8. 11 14.87 12.92	June Aug.	0. 94 0. 65	Oct. Oct.	12. 0 5. 9	117	121	147	98	s. w.
Mineral (near)	Louisa Loudoun Buckingham Amherst Powhatan	1, 726 300	18 24 34 2	54. 9 56. 0 53. 7	96 88 95 94	July 20 May 5* Ang. 3 May 5	-3 1 1 4	Jan. 4 Jan. 2 Jan. 4 Jan. 2	13 24 34 2 5	44.40 52.77 40.66 43.13	11. 70 18. 65 10. 54 12. 46	Aug. Aug. Aug. Aug.	0.47 1.49 0.81 0.86 0.13	Oct. Oct. Nov. Nov. Oct.	6.0 27.0 7.5 3.7 5.2	96 106 90 100	152 120	138 62	76 184	s. w. sw
Quantico Randolph Rocky Mount Stuart Vienna Washington, D. C.	Prince William Charlotte Franklin Patrick Fairfax	17 344 1, 150 1, 188 375 112	28 33 6 58	54. 8 56. 2 57. 1 56. 0	93 95 94 97	May 5 July 4 July 4* July 4*	3 3 3	Jan. 4 Jan. 4 Jan. 2 Jan. 30	28 24 33 6 3 58	50. 79 56. 02 41. 66 43. 40	15. 27 9. 15 15. 11 16. 91 9. 69 14. 41	Aug. Sept. Aug. Aug. Aug.	0.23 0.70 0.69 0.95 1.02 0.67	Oct. Nov. Nov. Nov. Oct. Oct.	6.5 3.5 T. 1.5 9.5 11.3	89 109 107 116	139 163 123	154 152 131 120	127 75 72 123	nw sw sw w.
Means and extremes				56.1	103	Aug. 4	-3	Jan. 4		44.24	18. 65	Aug.	0. 13	Oct.	7.0	100	150	116	100	
The Great Valley Blacksburg Bridgewater Buchanan Burkes Garden Cataw ba Sanatorium Dale Enterprise Damascus Dante	Tazewell	2, 170 1, 100 820 3, 250 2, 100 1, 350 1, 900 2, 000	37 33 18 49	52.0 56.4 50.0 54.0 53.4	91 98 90 95 98	July 21 Aug. 5 Aug. 3 Aug. 5 July 20 Aug. 3	-3 4 2 0 -1	Jan. 2 Jan. 29 Jan. 29 Jan. 29 Jan. 29	18 49 2	37, 69 44, 32 38, 91 47, 40 34, 12 40, 88 49, 97	8. 41 4. 25 10. 92 5. 62 13. 12 8. 29 6. 21 6. 91	Aug. Aug. Aug. June Aug. Aug. Aug.	0.94 1.21 0.55 0.75 1.12 1.04 1.37	Nov. Nov. Dec. Nov. Oct. Dec. Dec.	3.0 30.0 5.7 25.0 13.6 30.7	133 76 75 92 115 130 157	177 167 136 223 135 144 119	40 54 60 95 135 121 153	149 145 170 48 96 101 94	W. W. W.
Emory Glenlyn Hot Springs Ivanhoe Lexington Marion Mendota	Washington	2, 100	36 51 7	50. 5 53. 3	86 92 90	May 4* July 19 July 11*	-3 2 -4	Jan. 2 Jan. 4 Jan. 2	2 14 36 22 51	47. 84 42. 96 36. 64 39. 07 36. 27	8. 04 8. 43 8. 62 10. 99 9. 05 6. 81 6. 56	Aug. Aug. Aug. Aug. Aug. Aug. Sept.	1. 31 1. 16 0. 55 0. 72 1. 07	Dec. Feb. Dec. Nov. Nov.	13.6 8.9 16.9 2.3 6.0 	164 121 113 113 99	120 165 218	180 134 42	66 67 106	w.
Radford Roanoke Saltville Speers Ferry Staunton Winchester Woodstock Wytheville	Montgomery Roanoke Smyth Scott Augusta Frederick Shenandoah Wythe	1, 773 907 1, 739 1, 221 1, 380 717 927 2, 304	24 5 37 24 37 26	57. 0 54. 1 53. 8 53. 8 52. 0	99 95 95 100 96 88	Aug. 3* Aug. 9 July 17 July 4* Aug. 4 July 19	5 -2 8 8 3 -4	Jan. 2 Jan. 1 Jan. 2 Jan. 3 Jan. 4 Jan. 2	33 24 5 32 37 24 37 26	83. 61 87. 15 47. 30 49. 39 36. 48 85. 11 34. 19 34. 88	7. 66 9. 73 8. 20 7. 04 9. 71 7. 54 6. 47 5. 65	Aug. Aug. Aug. Sept. Aug. June June June	0. 61 0. 66 1. 70 1. 90 0. 90 0. 60 0. 89 0. 76	Nov. Dec. Dec. Nov. Feb. Nov. Dec. Dec.	9.0 3.2 13.1 7.0 15.7 17.0 17.4	117 100 158 121 93 100 111 149	180 201 175 115 99	135 45 118 91 132	51 120 78 160 135	SW W. SW W. NW.
Means and extremes				53.4	100	July 4*	-5	Jan. 2		40. 16	13. 12	Aug.	0.55	Dec.	12.9	118	158	102	106	w.
State means and ex	tremes			55.8	103	Aug. 4	-5	Jan. 2		42. 99	18. 65	Aug.	0. 13	Oct.	9.2	110	151	112	103	sv

Section and State averages are computed from monthly means. Estimated and incomplete data not considered in 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 ten 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.

11 Post-office addresses of these stations are as follows: Diamond Springs, Norfolk; Runnymede, Elberon: Hawfield, Rapidan: Lincoln, Purcellville; Massinacac, Guinea Mills: Mayhurst. Orange: 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 1928, w	vith Departures from the Normal
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	Jan	uary	Feb	ruary	Mε	rch	Ar	ril	М	ay	Ju	ne	Ju	ıly	Aus	gust	Septe	mber	Octo	ber	Nove	ember	Dece	mber	Ann	lual
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											İ											Ì				
Diamond Springs	2.13 2.25 2.15	-0.32	2.64 1.84 3.40	+0.10	2.99 2.47 2.25	-1.32	6. 14 5. 52 5. 33	+1.96	1.92 1.51 4.09	+0.05	6.82 3.05 7.33	+2.02	6. 17 3. 23 6. 90	+1.19	4. 11 14. 97 2. 58	-1.69	7. 66 15. 23	••••	1.18	-1.49	1.72 1.08 1.80	-0.39	2. 46 0. 69 6. 60	+2.81	45. 45 58. 86	+14.70
Hopewell	1.51	-1.59	2.85	-0.48	2.73	~1.04	4.24	+1.01 $+1.13$	2.14	[-1.67] $[-0.78]$	4.22	+3,62 +1,04	2.75	-1.34	2.05	-3.17 -2.10	9.79	+6.56 +6.76	1.24	-1.80	1.92	-0.24 -0.86	3.85	+0.51 +0.09	39.11	+0.37 -1.97
Runnymede	1.32 2.70 2.26	-0.51 -1.18	3.79 2.95 3.63	-0.45 +0.31	3.31 3.87 2.71	-0.02 -1.28	6. 83 5. 60 4. 68	$+2.33 \\ +0.95$	2.99 1.88 1.76	-1.62 -1.90	6. 13 6. 95 5. 48	+2.77 +0.84	9.47 3.72 2.28	-0.87 -8.91	4.41 14.17 3.58	+9.97 -2.62	10.60 6.72 9.52	+4.01 +6.07	1.65 0.60 0.54	-2.47 -2.44	2.51 1.73	-0.38	3.34	+0.66	57. 52 41. 51	-4.88
Middle Virginia	1	11.22	2	0	3.00	1.20			2.00			,									1,0.			,		
Callaville	2.03	-1.39	2.94	0.00	1.91	-1.58	5.54	+2.16	1.43	-3.02	3.74	-1.66	3.92 3.79	-0.69	11. 97 6. 65	+7.08	5, 26 8, 82	+1.57	0.41	-2.95	0.95	-1.55	1.45	-1.80	41.55	-3.83
Columbia Culpeper Danville Falls Church Fredericksburg	1,10 2,51	-2.34 -0.92	1.53	-0.95	1.94	-0.85	5.57	+2.36 +2.63	2.87 2.10	-1.27	3. 76	-0:24	4.63	+0.91	11.74 8.95	+7.81 $+4.37$	4.62 9.26	+1.52 $+6.09$	0.56	-1.91	1.40	-1.00 -1.43	1.79	-1.30 -2.39	43, 75	+2.13
Lincoln Lynchburg Massinacac Maynurst Mineral	2.08 2.58 2.98 1.80 2.00	-1.08 -0.90 -1.53	2.88 2.40 2.71 3.02 2.77	+0.49 -0.86 +0.21 +0.46	2.75 1.93 3.45 1.99 1.92	-0.30 -1.61 -1.61 -2.19	6.16 4.55 7.23 4.68 4.10	+2.89 +1.60 +1.53 +0.55	2.05 0.66 1.09 2.01 1.70	-1.48 -2.97 -2.35 -1.98	8. 11 2. 98 4. 68 5. 85	$^{+3.08}_{-0.81}$ $^{-0.33}_{+1.65}$	2.96 3.55 5.76 3.91	-0.52 -0.66 +1.05 -1.31	4, 78 14, 87 12, 92 11, 70	+0.49 +8.21 +7.50	4. 25 6. 01 4. 25 7. 71	+1.56 +2.70 +1.02 +5.07	0. 94 0. 65 0. 47	-1.95 -2.50 -1.46	1.96 0.79	-0.18 -1.54 -1.01	1.28 1.02	-1.62 -2.24 -1.59	40. 15 41. 94 44. 40	+1,38 +1,30 +4,12
Mount Weather New Canton Pedlar Dan Powhatau Quantico	2.38 2.57 1.80	1, 24	2, 71 2, 57 1, 82	-0.35	2.83 1.74 2.43	-1.20	5.48 4.12 5.95	+2.31	1.36 1.03 1.09	-2.18	8.46 3.64 5.70	+2.71	3.16 4.65 2.65	-0.74	18. 65 10. 54 12. 46	†	6.60 5.44 6.97	+3.21	0.85 1.12 0.13	-2.10	0, 81		1.48 2.38 1.27	-1.61	52.77 40.66 43.13	+11.29
Randolph Rocky Mount Stuart Vienna Washington, D. C	1.90	И	12.56	4	3.48	1	5.40		3, 47		4.17								1.76		1.0.95	-1.47 -1.84 -0.36	11.20		56.02	
Means	2, 33	-1.19	2.58	-0.38	2.52	-1.12	5. 20	+1.89	2, 23	-1.82	4.64	+0.47	3,47	-0.86	11.53	-7. 19	6.39	-3.20	0.83	-2.15	1.12	-1.16	1.40	-1.82	44. 24	+2.25
Blacksburg Bridgewater Broadway Buchanan Burkes Garden	1.69 0.89 3.08 2.06	0 0 -0. 61 0 -1. 57	2.50 1.21 1.66 1.78	-1.03 -1.90	1.85 2.07 4.61	-0.75 -0.25	4, 12 3, 91 3, 89	+ 1,81 + 0,15	1.95 1.54 3.93	-2.33 -0.35	2.59 5.17 5.62	+1.07 +0.55	3.15 3.93 2.01	-0.03 -2.56	4. 25 10. 92 5. 17	+6.82 +0.77	3.71 8.05 5.56	+4.53 +1,96	0.67 1.44 2.58	-1.96 -0.56	1. 21	-0.88 -1.64	1.34 0.55	-1.93 -3.10	44.32 38.91	+4. 21 -8. 50
Catawba Sanatorium Dale Enterprise Damascus Dante Deerfield Edith	1.92 2.10 2.70	-0.84 -1.41	2. 16 1. 10 1. 95 1. 48	1	l .		!	+0.24 +1.92	1	-1.60 +0.11			1	-2.37 +0.04	8.29 6.21 6.91	+4.30 +2.61	2. 96 6. 09 5. 61	-0.27 +2.24			1	1	1.36 1.04 1.37 2.69	-1.25 -2.76		-5.54 +2.96
Emory Glenlyn Hot Springs Ivanhoe Lexington	2. 2. 2. 9 1. 2. 1. 90	4 1 -0.98 4 -2.19 0 -1.60	1. 38 1. 16 1. 17	3 -1.76 -1.62 -1.05 -1.04	4. 52 4. 38 1. 86 1. 66 1. 98	+0.96 -1.89 -1.81 -1.41	4. 82 4. 18 4. 07 4. 63 3, 80	+1.61 +0.79 +1.68	4. 47 3. 80 3. 12 2. 36	+0.93 -0.74 -1.21	5. 80 3. 58 4. 37 3. 93 3. 20	+0.26 -0.29 -0.52 -0.85	4.05 2.23 4.25 1.47 2.11	-1.80 +0.16 -2.69	8.04 8.43 8.62 10.99	+4.62 +5.17 +6.75	5, 96 6, 57 4, 19 7, 45	+4.38 +0.80 +4.37	3.39 2.27 1.94 1.80 1.39	-0.48 -0.98 -1.25	1.86 2.06 1.26 0.72 1.07	+0.32 -1.06 -1.20	1.31 1.39 0.55 0.73	-1.80 -2.47 -2.15	47.84 42.96 36.64 39.07	+6.26 -4.32 -0.68
Marion																										
Speers Ferry Staunton Winchester Woodstock Wytheville	3.12 1.36 1.36 1.42 1.95	2 -1.02 4 -1.52 5 -1.37 2 -1.12 5 -1.03	2.56 0.90 2.07 1.78 0.89	$ \begin{array}{c} -1.42 \\ -1.82 \\ +0.18 \\ -0.45 \\ -2.20 \end{array} $	5. 08 3. 15 1. 75 2. 38 2. 15	-0.11 -0.26 -0.93 -0.52 -1.29	5.77 3.94 4.17 5.51 3.35	+2.40 +0.97 +0.80 +2.99 +0.36	4.96 2.03 1.89 1.61 3.56	+1, 68 -1, 65 -2, 30 -1, 93 -0, 10	6. 52 5. 40 7. 54 6. 47 5. 65	+2.39 +0.87 +3.74 +2.29 +1.45	2. 29 3. 35 2. 85 2. 50 2. 83	-2.33 -0.74 -0.68 -0.93 -1.17	4. 68 9.71 5. 93 5. 12 5. 44	+0.41 $+5.91$ $+2.25$ $+1.41$ $+1.25$	7.14 4.68 4.06 3.51 5.06	+4, 27 +1, 37 +0, 85 +0, 88 +1, 76	3. 35 0. 90 0. 80 1. 22 2. 82	+0.99 -2.07 -1.76 -1.35 -0.52	1.90 1.50 0.60 1.78 0.92	-0.56 -0.70 -1.89 -0.07	2.07 1.58 2.10 0.89 0.76	-2.25 -1.01 -0.73 -1.42 -2.16	49, 39 38, 48 35, 11 34, 19 34, 88	+4.45 -0.66 -1.84 -0.22 -4.87
Means	2.08	-1.34	1.61	-1.35	2.96	-0.79	4.30	+1.15	3. 21	0.69	4.84	+0.56	2.84	-1.47	7.70	+3,92	6.00	+2.95	2.01	-0.98	1.38	-0.98	1.28	-1.95	40. 16	-0.08

^{*+11.78. **+11.09. †+13.99. ‡+10.86. ||+10.93. \$\}dagger+10.40.

Note.—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 1928, with Departures from the Norma	

	Jan	uary	Feb	ruary	Ma	reh	Aŗ	ril	М	ау	Ju	ne	Jı	ıly	Àυ	gust	Septe	mber	Oct	ober	Nove	ember	Dece	mber	Anı	ıual
Stations	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Temperature	Departure	Tèmperature	Departure	Temperature	Departure
Tidevoater																										
Ashland	35.4	+1.0	37. 0		44. 2 48. 0 47. 6 44. 4 50. 2		*52. 4 56. 0 56. 0 53. 0 57. 0		*61.5 63.0 63.0 61.2 64.0		71.0		77.4		176. 6 1		69. 6 66. 8 64. 6 69. 2		59.4		48.4		43. 2 41. 6 37. 2 44. 4		59. 2 58. 8 55. 5 59. 8	+0.6
Hopewell Langley Field Norfolk Onley Richmond		0.0	42.8 43.6 40.5	+2.3 +0.9 +0.4	49. 2 47. 9 48. 6 46. 0 47. 4	+0.4	56. 0 56. 6	-0.2	67. 0 64. 2 64. 8 62. 6 64. 1	$ \begin{array}{r} -1.1 \\ -1.7 \\ -1.4 \\ +0.3 \\ -2.4 \end{array} $	73. 6 73. 8 72. 2	-1.2 -0.6 -0.2	78.2 79.0 78.0	+3.8 -0.6 +0.3 +0.4 -0.1	78.9 79.4 78.4	+2.0 +2.9	69.8	-3.5 -1.8 -2.6	64.6 61.2		51.6 52.3 51.0	+0.9	41.8	+0.9 +0.7 +1.5 +1.0 +1.2	59. 3 59. 9 67. 7 57. 7	+0.8 +0.4 +0.4 -0.2
Runnymede		+1.5	42.4 42.0		50.0 45.1 g48.4	+1.4 -1.0 -0.5	54.6	-2.3 -0.3 -1.7	62. 2			-0.6 -1.6 $+0.5$	*77. 9 75. 4 *78. 2	+0.4 -0.6 +1.4	77.8 74.8 78.5	+2.1 -0.3 $+3.0$	65.6	-3.7	61.4 59.7 61.8	+2.5 +1.5 +1.8				-1.2 +0.5	58, 2	+0.3
Means	40.0	+1.0	41.5	+1.6	47.5	-0.1	55. 1	-1.0	63. 6	-1.6	72. 7	~0.6	78. 1	+0.5	78:2	+1.7	67. 3	-3.4	61. 9	+1.7	51.3	+1.6	41. 7	+0.6	58. 2	+0.2
Middle Virginia																								1		
Callaville Charlottesville Chatham Clarksville Columbia	38.8 39.6 35.6	+2.8	40. 4 36. 6	+2.3	45.7 48.0 46.6		53. 6 52. 4 53. 3 54. 1 52. 3	-3.7	64. 6 65. 6	-1.5	70.4 72.8 74.4	-2.3	77.3 80.2 79.8		77. 6 78. 4	+1.8	66.2	-4.2	60. 1 60. 3	+1,5	49. 3 48. 5	l	36.6		57. 4 56. 6 57. 6 56. 9 55. 8	-0.3 +0.1 -0.2
Culpeper Danville Fredericksburg Lincoln Lynchburg			10 0	-0.8	45. 2 50. 2 46. 5 42. 9 47. 5	+0.1 -1.0 -0.2 -0.2 +0.2	51.0	-2.2 -3.5 -1.1 -2.6 -4.1	66. 6 63. 6 62. 2	-0.6 -1.2	72.2 70.0	-0.1 -1.4	77.2	± 0.8	74. 8 79. 8 76. 4 175. 6 77. 4	+1.6 +2.0	67.4 65.2	-4.8 -3.8 -3.8	61.9	+0.7	547. 4 51. 1 50. 0 48. 0 49. 8	$+1.6 \\ +3.2$	36. 4 41. 8 39. 6 38. 8 40. 6	+0.7 +0.1 +2.2 +5.0 +1.1	55. 1 59. 4 57. 1 55. 2 57. 3	+0.4 -0.4 +1.0 +1.1 -0.3
Lincoln Lynchburg Mayhurst Mineral Mount Weather New Canton Pedlar Dam	40, 2 139, 0 31, 8 39, 0 36, 3	+4.3 +5.6 +1.7 +2.6	42.0 38.0 32.0 39.2 37.8	+5.8 +4.4 +2.5 +1.9	44.6 38.1	+1.6 -2.0 -1.2 -0.8	59 A	-2.6	B61 4	-0.5 +0.8 -2.5	69. 6 65. 2 70. 2	-1.8	72.4	+1.6 -0.6	78. 0 *75. 1 75. 7 72. 0	+3.4 +2.1 +1.1		-3.0	665 C		47. 4	+0.4 +3.2	35. 8 34. 9 38. 5 39. 3	-0.7 +2.9 +0.7	54. 9 56. 0 53. 7	+0.6
Quantico Rocky Mount. Stuart Washington, D.C.	35.0 38.8 39.6	+0.3 +1.1	37, 2 39, 0 40, 2	+2.2 +0.9	48.0	-2.4 0.0 +1.5	52.5		65.0		70.2 *70.1 70.8 71.0	-2.4 -2.2 -1.2	76. 2 77. 0 176. 8 78. 2	-1.1 +2.0 +1.4	74.9 75.7		63. 8 64. 9	+5.2	58.0 59.8		48. 6 48. 6 49. 2 49. 4		36. 8 39. 0 42. 6 39. 2		54, 8 56, 2 57, 1 56, 0	
Means	37.8	+2.4	38. 7	+2.4	45.9	-0.5	52.6	-2.5	63. 5	-1.1	70.9	~ 1.5	77.2	+1.1	76. 4	+1.9	64. 4	-4.3	59.0	+1.8	48. 4	+2.4	38. 9	+1.1	56. 1	+0.3
Blacksburg Buchanan Burkes Garden Catawba Sanatorium Dale Enterprise	⁴ 37. 8 35. 9 36. 4	+2.7 $+4.4$ $+0.3$	39, 6 34, 0 37, 3	-0.8 + 2.7 - 0.8	47. 0 40. 2 45. 8	$ \begin{array}{r} -0.2 \\ -1.3 \\ -0.7 \\ 0.0 \\ +0.6 \end{array} $	53.6 46.4 50.7	-1.1 -3.9	63.6	-0.8 -1.8 -0.9	65. 8 71. 2 64. 0 67. 4 67. 0	-2.0 -1.2 +0.2 -2.7 -3.3	72. 2 76. 4 68.8 73. 1 73. 4	+1.0 $+2.3$ $+1.1$	73. 7	+2.2	58.6 62.5	-1.6	60.0 52.9 57.8	+3.4 $+1.0$	48. 1 40. 4 47. 0	+1.8 +0.4 +1.0	36. 3 38. 9 33. 6 39. 4 36. 6	+1.4	52.0 56.4 50.0 54.0 53.4	+0.1 -0.3 +0.2 -0.4 0.0
Dante Emory Hot Springs Lexington Marion	33.9 33.4 32.1 35.4 34.0	-0.8 +0.6 +1.4 +0.1	36. 6 34. 2 37. 2	+2.5	44.3 ⁶ 43.1 41.0 43.8 ⁶ 44.2	-1.8 -1.3 -0.3 +0.4	47. 4 49. 8	-3.4	58. 6 58. 0 60. 2	-1.7 -2.5	65.8 64.8 67.6	-2.1 -3.1	72. 0 69. 2	-0.2	73.0 70.4	+2.2 +1.0	60. 8 58. 4 63. 0	-4.1 -3.5	56. 8 53. 7 55. 0	+1.3	44.0 41.8 43.7	-0.9	38. 8 36. 7 35. 4 35. 7	+0.8 +1.6 +0.3	53.4 50.5 53.3	-1.4 -0.4 -0,7
Roanoke Saltville Staunton Winchester Woodstock Wytheville	39. 4 33. 2 36. 6 36. 0	+2.3 +1.2 +4.8	37. 8	+2.6 $+4.7$	43 6	+1.1	53.8 50.4 49.8 52.4 51.6 49.0	-0.9	60.6 60.0 63.2 61.7	-3.6 0.0 -1.4	68. 7 67. 8 67. 6 68. 4	0.0 -2.7 -4.9 -1.7 -3.2	75.1 75.6 78.6 73.4	+1.6 +2.6	77. 2 76. 0 73. 8 75. 2 72. 8 71. 9		63.4 61.7 64.6 61.6	- 1	58.9 56.1 57.6	-0.2 +1.5	44.8 47.0 47.2 45.1	+1.6 +2.3 +0.4	34 8	-0.1 -1.4	57. 0 54. 1 53. 8 53. 8 52. 0	+1.0 -0.8 -0.2 -0.6
	35. 2	+1.8	36.9	+1.7	43, 7	-0.4	50. 3 52. 5	-2. 5	60. 1	-1.5	67.3	-2.4	73.5	+0.8	73.5		61.9	-4.0	56.7	+1.6	45.1	+1.0	37.0 38.9	+1.0	58.4	-0.1 +0.1

For explanation of reference marks, see page 50. KILLING FROSTS, 1928

Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn
Ashland Cape Henry Christchurch Dahlgren Diamond Springs Hopewell Langley Field Norfolk Onley Richmond Runnymede Wallaceton Warsaw Williamsburg	Mar. 21 Mar. 21 Apr. 18 Apr. 18 Mar. 6 Mar. 20 Apr. 18 Mar. 6 Apr. 17 Apr. 3 Apr. 17	Nov. 12 Oct. 30 Nov. 14 Oct. 27 Nov. 25 Nov. 24 Oct. 30 Nov. 12 Oct. 27 Oct. 27 Oct. 28 Oct. 30	Charlottesville Chatham Clarksville Columbia Culpeper Danville Fredericksburg Lincoln Lynchburg Massinaeac Mayhurst Mineral	Apr. 16 Apr. 17 Apr. 17 Apr. 26 Apr. 18 Apr. 18 Apr. 18 Apr. 18 Apr. 18 Apr. 16 Apr. 16 Apr. 16 Apr. 18	Nov. 24 Oct. 27 Oct. 27 Oct. 26 Oct. 30 Nov. 14 Oct. 30 Oct. 27 Oct. 27	Middle Virginia—Con. Pedlar Dam Powhatan Quantico Rocky Mount Stuart Vienna Washington Great Valley Blacksburg Buchanan Burkes Garden Catawba Sanatorium Dale Enterprise	Apr. 18 Apr. 18 Apr. 17 Apr. 17 Apr. 18 Apr. 26 Apr. 18 May 13 Apr. 28	Nov. 5 Oct. 30 Oct. 27 Oct. 27 Oct. 26 Oct. 30 Sept. 26	Hot Springs Lexington Marion Roanoke Saltville Staunton Winchester Woodstock Wytheville	Apr. 29 May 13 May 13 Apr. 26 Apr. 28 Apr. 17 Apr. 28 Apr. 16 Apr. 27 May 14	Sept. 24 Sept. 26 Oct. 25 Oct. 25 Sept. 26. Oct. 27 Sept. 25

(WB-2-21-29-1,175)