## U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

CHARLES F. MARVIN, Chief

In Cooperation with Maryland State Weather Service

# LIMATOLOGICAL DATA

### MARYLAND AND DELAWARE SECTION

JAMES H. SPENCER, Meteorologist and Section Director

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BALTIMORE, MD., YEAR 1924

No. 13

#### GENERAL SUMMARY

Outstanding features during 1924 were: The tremendous property damage caused by wind and flood in March, by flood in May, and by wind and hail in June; the coolest and wettest spring of record; a greatly delayed planting and growing season, and a consequent shortage of crops; and an unusually long dry spell of 45 days from October 1 to November 14, inclusive. (See Summary by Months).

The year was cool, with a mean temperature of  $52.6^{\circ}$ , or  $1.1^{\circ}$ below normal, and was the coolest since 1917. March to July, inclusive, presented a strikingly persistent cool period, and September and October were also cool; for these seven months the mean temperature was 2.2° below normal. January, November, and December were mild. February and August averaged normal. Mean temperatures for the year ranged from 45.6° at

Grantsville to 56.3° at Crisfield.

The year was also wet, with an average precipitation of 46.46 1919; but the precipitation was unequally distributed through the year. The first 6-month period was extremely wet, with an average precipitation of 29.27 inches, or 8.27 inches above normal; this was the greatest amount of record for such a period an average precipitation of 17.19 inches, or 3.67 inches below normal; the marked and persistent deficiency during this period was interrupted by unusually heavy rains on September 29-30. Annual amounts were slightly below 40 inches generally between the Allegheny and Blue Ridge Mountains and in extreme southern Maryland; elsewhere they were between 40 and 50 inches, except slightly above 50 inches in the Allegheny Mountain highlands, in northern north-central Maryland, in the interior of southern Prince Georges County, in extreme northern Newcastle County, and in the east-central portion of the Eastern Shore.

Annual snowfall averaged 30.5 inches, or 2.9 inches above normal. Snowfall was decidedly light in January and December and slightly above normal in November. It was heavy in February, March, and April, with an average of 27.0 inches (within 0.6 inch of the annual normal), or 0.6 inch more than twice the normal for this 3-month period. To the eastward of the on the 24th and caused below-zero temperatures in those divi-Blue Ridge Mountains annual amounts increased from 4 inches at the Maryland-Virginia line on the Eastern Shore to 30 inches along the western boundary of the Coastal Plain, and to above 60 inches in the extreme northern Piedmont Plateau, with a maximum of 65 inches at Emmitsburg; in western Maryland between 2 and 3 inches over the southern third of the section they increased from 36 inches in extreme southeastern Washington County to 80 inches in the extreme northern Allegheny Mountain highlands.

The annual number of days with 0.01 inch or more of precipitation for the section averaged 111, or 5 above normal.

The annual amount of sunshine was about 60 per cent of the possible, or slightly above normal. January and October were exceptionally sunshiny. Sunshine was slightly above normal and heavy rain over the northern half. in March and April and abundant in July, August, and No-vember. It was markedly deficient in May, June, September, in the Allegheny Mountain region and on and after the 19th and December.

The season of safe plant growth, or the interval between the last general killing frost in spring and the first general killing frost in autumn varied for the different portions of the section as follows: 129 days in western Maryland, except 99 to 105 days in the Allegheny Mountain highlands; in north-central Maryland, 129 days in the northern valleys to 183 days in the southern portion; 184 days in southern Maryland; on the Eastern Shore, 192 days in the interior to 203 days along the western and eastern shores; and 203 days in the Chesapeake Bay region.

Wheat, rye, and oats yielded fair to good. The hay crop was large. Early potatoes yielded poor to fair, but late potatoes and sweet potatoes fair to good. The tomato and corn crops were short. The tobacco crop was fair. Pears were abundant; peaches yielded fair to good, but apples only poor to fair.-J. B., jr.

#### SUMMARY BY MONTHS

January was characterized by mostly mild, unusually sunshiny, and much pleasant weather. Monthly sunshine, 15 per cent above normal, was the greatest of record in this month since January, 1899, which was just as sunshiny. Cold waves of the 5-6th, 21st-22d, and 26-28th produced lowest temperatures that ranged from -10° to 13°, from -7° to 11°, and from -5° to 14°, respectively, from the Allegheny Mountain highlands to inches, or 4.60 inches above normal, and was the wettest since the southern boundary on the Eastern Shore. Rainfall was abundant, while snowfall was very light. Monthly precipitation totaled between 2 and 3 inches in southern Maryland, between 3 and 4 inches generally on the Eastern Shore, and between 4 and 5 inches generally in north-central and western Maryland. since 1889. The second half, in marked contrast, was dry, with Monthly snowfall was only a "trace" in southern Maryland and on the Eastern Shore, but ranged from 0.5 inch along the western boundary of the Coastal Plain to 8 inches in the Allegheny Mountain highlands. Snowfall of the 24-25th, 3 to 6 inches, in western Maryland remained on the ground to the close of the month. Wheat, rye, and cover crops were good to excellent, while pastures were fair. During the third decade, however, pastures turned brown in the entire section and winter grains turned brown in the northern half of the section. The cold waves enabled farmers to fill their ice houses and afforded some skating. For several days during the mild periods, following the cold waves, ice floes from the Susquehanna River interfered with shipping in upper Chesapeake Bay.

February was marked by much wintry weather—cold and windy with an abundance of snow. Cold waves overspread the Allegheny Mountain region on the 18th and western Maryland sions. Lowest temperatures ranged from 13° below zero at Grantsville to 20° above zero at Solomons. Monthly mean temperature and monthly sunshine were normal. Monthly precipitation averaged slightly above normal, and ranged from to between 4 and 4.5 inches over the northeastern portion. Monthly snowfall averaged 10.7 inches, or nearly one and onehalf times the normal. Monthly amounts ranged from 3 inches at the Maryland-Virginia line on the Eastern Shore to 27 inches in the Allegheny Mountain highlands. A "northeaster" on the 19-20th caused light snow, light sleet, and heavy rain over the southern half of the section, and heavy snow, light sleet, Wheat and rye (brown in color) were snow-covered on and after the 6th over the remainder of western Maryland and in north-central

ping in Chesapeake Bay.

averaged one and one-half times the normal. Monthly snowfall averaged twice the normal. The Allegheny Mountain region remained snow-covered until the 29th. A "northeaster" on blowing down poles, and caused the worst damage of this char-\$1,000,000. A "northeaster" on the 21st also caused heavy snowfall over north-central and western Maryland, with maximum treme western Maryland. A family of five was drowned at Truck crops and gardens were fair, but backward. Tomato and Harpers Ferry and some towns in Garrett and western Allegany out. In the Allegheny Mountain region peach, pear, plum, and Counties sustained damage; the worst occurred at Cumberland. Total losses from the flood probably exceeded \$4,000,000. Grains and grasses turned green only in the eastern half of the decade. Apple trees bloomed during the first two decades, exsection. Planting of peas, gardens, and early potatoes in southern counties during the second half of the month was interrupted by rains. Fruit trees remained dormant.

April was cool and wet; the coolest since 1911 and the wettest since 1918. Monthly precipitation averaged one and one-half dered by the cool and wet weather. At the close of the month times the normal. Monthly snowfall averaged 5.4 inches, or the planting and growing season was two to three weeks behind four times the normal. A "northeaster" on the 1st caused moderate to heavy snow, 3 to 10 inches, over the northern half of the section, and light snow, heavy sleet, and moderate rain over the southern half. The snowfall over the eastern portion of the section was accompanied by lightning and thunder—a rare phenomenon. Wheat, rye, and grasses showed green during 10-day warm wave followed, however, and conditions improved the first decade over the western portion of the section. They made slow growth over the entire section owing to the persistent cool weather, but improved and were fair to good after the second decade. During the third decade oats were coming up in southern Maryland and on the Eastern Shore. Planting of peas, gardens, early potatoes, and truck continued in southern counties; these operations extended northward during the second decade and westward during the third. In southern counties early potatoes planted in March failed to come up, as a rule, but peas planted at the same time came up during the second decade and did well during the third. Peach, pear, plum, and cherry trees bloomed during the second and third decades, except in the Allegheny Mountain region where they were ready to bloom at the close of the month. During the closing week, which was sunshiny and favorable for drying out the soil for plowing and for general farming activities, apple trees were ready to bloom in southern and central counties, and strawberries were coming into bloom, except in western Maryland. The growing season was about two weeks behind normal throughout the month.

May was markedly cool and unusually wet. The mean temperature was 4° below normal, and but 1.6° above that of the coolest May (1917) of record. The average rainfall was one River and in northern Virginia as a result of this storm. and four-fifths times the normal and the greatest of record in May since 1889. For coolness and wetness combined the spring of 1924 stands without parallel since the record began in 1871. A trees were uprooted, but the damage was not as great as in wet spell from the 8th to the 12th, marked by heavy rains, pro- southern Maryland. On the afternoon of the 25th a violent

These grains turned brown during the first decade duced the second flood of the year along the Potomac River on over the southern half of the section and continued brown to the 12th. This flood was not as damaging along the upper Potothe close of the month. The cold spell of the third decade made made as the flood of March 29, 1924, but it was the most deice on the smaller bodies of water. No ice interfered with ship-structive along the lower Potomac since 1889. Loss, exclusive of damage done to the Chesapeake and Ohio Canal, was esti-March was cold, wet, and windy. Monthly precipitation mated at \$1,000,000. Sunshiny weather during the closing week of April continued throughout the first seven days of May; this was the only prolonged favorable period of the season to date for drying out the soil, for plowing, for planting, and for genthe 10-11th caused heavy snow in north-central and western eral farming operations, and also improved grains, grasses, and Maryland, which attained depths between 10 and 15 inches in crops that were up. The cool and wet weather that followed the northern Piedmont Plateau and in Allegany and Garrett to the close of the month interfered seriously with farming Counties. Northeast gales during the night of the 10-11th activities, retarded plant growth, and caused considerable seed crippled telephone, telegraph, and lighting systems badly by to rot. Except on lowlands, wheat and oats were fair to good and rye was good to excellent. During the third decade rye acter since the "northeaster" of March 4, 1909. Damage was bloomed and wheat had headed and strawberries were ripening widespread. Loss of poles and wires was estimated at nearly in the southern and central counties, and rye had headed and wheat was heading in the northern counties, except in western Maryland. Grasses and pastures were good to excellent after depths of 15 to 20 inches in the northern Piedmont Plateau. the first decade. Less than one-half of the corn crop was Heavy rain during the night of the 28-29th caused streams planted; the early-planted came up during the third decade and in the Allegheny Mountain region, already swollen from melted some was a poor stand and yellow. Early potatoes came up snows and moderate rains, to overflow their banks, and resulted slowly; they were fair to good, but late. In the southern and in the worst flood in history along the Potomac River in excentral counties peas bloomed during the last two decades. Kitzmiller. Most of the towns along the Potomac River west of tobacco plants in beds did well; some tomato plants were set cherry trees bloomed during the month; elsewhere over the section these trees finished blooming generally during the first cept in western Maryland where they bloomed during the last two. Tree-fruit bloom was heavy. Tree fruit set well, except apples, which set fair to good, except poor to fair in the border counties from Baltimore to Garrett where pollination was hinnormal and dry, sunshiny, and warm weather was badly needed.

June was cool and wet, and was featured by severe local storms. During the first half of the month unseasonably cool and wet weather seriously interfered with planting of corn and other farming activities and greatly retarded plant growth. A materially. There was considerable replanting of corn and truck crops. Corn planting was not finished. Wheat was fair to good and rye good to excellent, except on lowlands. Harvesting of these grains was well under way in the southern and central counties during the closing week. Oats grew nicely and were good generally; during the third decade they were heading or had headed, except in western Maryland. Pastures and grasses were good to excellent. Haymaking was general. Early potatoes, truck crops, and gardens were fair to good, but late. Early potatoes bloomed during the second half of the month, except in western Maryland. Picking of peas was in progress to the eastward of the Blue Ridge Mountains. During the third decade tomato plants showed most unfavorable effects of the wet weather. Tree-fruit prospects continued good generally, except poor to fair for apples in the northern counties westward of Harford. strawberry season ended, except in western Maryland. On the afternoon of the 8th a violent windgust passed over the southern half of the section. In southern Maryland property was damaged, some shade and orchard trees were uprooted, poles were blown down, a large number of tobacco barns were demolished, and much of the stored tobacco was ruined by rain; damage estimated at \$650,000. Several people were drowned on the Potomac the southern portion of the Eastern Shore property was damaged, frail buildings were blown down, and some shade and orchard

windgust passed over northeastern Maryland and extreme northern Delaware. Many trees and many frail buildings were blown down and some crop damage resulted from Carroll County eastward. The windgust was most severe when it passed over Wilmington where about 250 buildings were damaged and about 400 trees were uprooted; the damage was estimated at \$1,000,000. On the afternoon of the 13th a heavy hailstorm caused crop damage estimated at \$61,000 and property damage estimated at \$37,000 over an area 8 miles long and varying from 1 to 6 miles wide, between the Severn and Magothy Rivers, in northeastern into bloom during the third decade. Truck crops and gardens Anne Arundel County. Hailstones were 1 to 3 inches in diameter. The planting and growing season continued two to three weeks backward.

July was dry, sunshiny, and pleasant, in marked contrast to the wet conditions that prevailed during the first half of the year. It also was cool, as were the preceding four months. Average monthly rainfall was the least in July since 1909. Monthly sunshine was the greatest in July since 1913. Thunderstorms were not of the damaging type. All crops were in need of rain at the close of the month. Corn planting ended during the first week; a full crop was not planted owing to a wet May and June and the lateness of the season. Corn made good growth and was in fair to good condition. The early- Average rainfall for the month was the next greatest of record tures were good to excellent during the first half of the month, but deteriorated thereafter. Picking of peas ended during the apples began. During the third decade picking of tomatoes, early peaches, and pears began in some southern localities, and buckwheat was blooming in the Allegheny Mountain region. The growing season continued about two weeks backward.

August was mostly dry, cool, sunshiny, and pleasant—typical of early fall. Thunderstorms were not attended by damaging gusts. Persistent coolness of the summer was interrupted by the warm waves of the 5-11th and 26th-31st. Maximum temperatures were close to 100° on the 6th, 7th, 9th, and 31st, except near 90° in the Allegheny Mountain region. Unseasonably cool periods of the 14-16th and 18-19th produced minimum temperatures but slightly above freezing in the Allegheny Mountain region. Monthly rainfall was greatest over the cenfirst decade. General rain on the 12th, however, effectively broke the summer drought and prevented heavy losses. Warm, sunshiny weather that followed the heavy rains of the 25th and ing season continued two to three weeks backward. 26th (except in western Maryland) caused crops and pastures to improve. Corn was fair to good generally. Early corn eared and filled out fairly well; the late corn tasseled during the third Counties harvesting of oats ended during the second week; and

threshing of wheat, rye, and oats during the closing week. the Allegheny Mountain region harvesting of wheat and rve ended during the second week and threshing during the closing week; harvesting of oats was in progress during the third decade. Yield of grain was fair to good. Pastures and grasses were but poor to fair, except mostly good in the Allegheny Mountain region. Digging of early potatoes ended during the closing week; the yield was only poor to fair owing to the dry weather during July. Late potatoes were fair to good and came were fair generally. Tomatoes improved to good during the closing week. Tobacco was fair and bloomed during the first and second decades. Harvesting of tomatoes, apples, peaches, and pears was general. Haymaking ended. The growing season continued about two weeks backward.

September was decidedly cool with a mean temperature 4° below normal. It was the second coolest September of record. There was much cloudiness. The monthly sunshine, 15 per cent below normal, was the least in September since 1913. Rainfall was deficient until the close of the month when a 'southeaster' produced heavy rains on the 29-30th, which Average rainfall for the month was the next greatest of record planted was tasseling and silking during the third decade. in September. Maximum temperatures on the 1st were be-Harvesting of wheat and rye ended during the first half of the tween 90° and 100°, except slightly below 90° in the Allegheny month in the southern and central counties; these grains were Mountain region. Cool weather persisted from the 3d to the harvested during the first two decades in the northern counties, close of the month. The first freezing temperatures and killing except that harvesting of wheat began during the second decade frosts of the season occurred on the 7th in the Allegheny Mounand of rye during the third in the Allegheny Mountain region. tain region and on the 11th over the remainder of western Threshing gave fair to good yields. Harvesting of oats became Maryland; corn, tomatoes, late potatoes, buckwheat, and truck general on the Eastern Shore during the second decade and in crops were damaged somewhat. The maximum rainfall during southern and north-central Maryland during the third. Pas- the storm of the 29-30th was between 5 and 6 inches over an area about 30 miles wide, extending from the District of Columbia and northern Prince Georges County north-northwestward first decade to the eastward of the Blue Ridge Mountains. In to the Pennsylvania line. The rainfall decreased in amount on western Maryland strawberries were picked during the first two both sides of the area mentioned to slightly less than 2 inches decades and peas during the last two. Digging of early potatoes began. Late potatoes were planted. Truck crops and gar-Atlantic coast of Delaware at the extreme east. Streams within dens improved during the first three weeks. Early tomatoes the area of heaviest rainfall of the 29-30th overran their banks were poor to fair on the Eastern Shore and fair to good west of and interrupted traffic on highways during the latter part of the Chesapeake Bay. A fine hay crop was secured. Picking of storm, particularly on the 30th. The cool weather greatly retarded growth of late potatoes and late truck crops and the maturing of corn. tomatoes, tobacco, sweet potatoes, tree fruits, etc. Crops and pastures were fair to good generally, except poor between the Allegheny and Blue Ridge Mountains. Cutting of early corn began during the second decade over the eastern portion and became general during the third. Late corn eared well. Late potatoes were good and were in bloom. Digging of sweet potatoes began during the third decade over the southern half of the section. Harvesting of tomatoes, apples, and pears continued. Harvesting of sugar corn and peaches ended during the third decade. Cutting of tobacco began during the second decade. Watermelons were harvested during the first decade. Tomatoes were of good quality, but a short crop; the season tral portion of the section with amounts between 5 and 7.4 was at its peak around the 20th. In the Allegheny Mountain inches; and was least between the Blue Ridge and Allegheny region harvesting of oats ended during the first decade; during Mountains with amounts between 1 and 2.5 inches. Crops and the second and third decades oats were threshed, and digging of pastures were unfavorably affected by the hot, dry spell of the late potatoes, harvesting of buckwheat, and sowing of wheat and rye were in progress. Sowing of wheat and rye began during the closing week on the northern Piedmont Plateau. The grow-

October was the driest and sunniest such month of record. Clear skies and pleasant weather of the "Indian Summer" type were the rule from the 1st to the 26th, inclusive. Much cloudidecade. On the Eastern Shore and in southern Maryland ness prevailed thereafter. Monthly sunshine was about 80 per threshing of wheat and rye and harvesting of oats ended during cent of the possible. Mean monthly temperatures were 1° to 2° the first week and threshing of oats during the second decade. above normal in western and north-central Maryland; but 1° to In north-central Maryland and in Washington and Allegany 2° below normal in southern Maryland and on the Eastern

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#### Climatological Data for the Year 1924

·				1a		T	Temp	erature	e, degrees	Fahre	nheit	Ī		P	recipita	tion		<u> </u>	ny		Sky		g
Stations	Counties	Elevation, feet	Length of record,	Annual mean	Highest	Date	Lowest	Date	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			
Maryland																							
Aberdeen	Harford	80 45 115 151 424	59 54 4 5	52. 1 54. 2 54. 7 52. 6 52. 8	96 98 100 100 103	Aug. 6 July 30 Aug. 6 Aug. 6 Aug. 31	4 7 7 0 3	Jan. 22 Jan. 22 Jan. 22 Jan. 22 Jan. 22	51 54 4 5	38. 09 48. 37 49. 04 47. 13 40. 50	5. 90 6. 27 6. 66 7. 62 6. 54	Apr. Sept. Mar. Sept. Sept.	0.05 0.34 0.05 0.43 0.40	Oct. Oct. Oct. Oct. Oct.	20. 2 22. 0 31. 8 35. 8 33. 5	90 110 104 107 104	97 180 133 157 125	96 86 103 120 135	173 100 130 89 106	nw. s. sw. nw. w.			
Cambridge	Dorchester	25 85 280 17 530	31 6 24 27	54. 2 53. 6 54. 2 50. 4	96 100 100 97	Aug. 6 Aug. 6 Aug. 6	9 6 0 2	Jan. 22 Jan. 22 Jan. 22 Jan. 22	31 6 24 5 27	50, 30 47, 12 50, 68 44, 83 37, 41	7, 61 6, 58 7, 26 6, 93 5, 22	Sept. May Aug. June May	1.21 0.05 0.62 0.12 0.34	July Oct. Oct. Oct. Oct.	18.3 23.4 19.2 44.0	112 119 124 97 98	199 134 178 190 178	104 80 67 73 107	63 152 121 103 81	sw. sw. nw. nw. nw.			
Clear Spring (a). Clear Spring (b) Coleman ‡ College Park Crisfield	dodo	500 500 80 87 5	22 25 37 6	51. 1 52. 9 56. 3	100 100 102 94	Sept. 1 Aug. 6 Aug. 6 June 20	3 6 1 11	Jan. 22 Jan. 22 Jan. 22 Jan. 22	27 27 27 28 6	42. 24 40. 84 48. 57 46. 43	7. 70 7. 31 5. 68 7. 88 7. 43	May May Sept. Sept. May	0. 52 0. 54 0. 05 0. 42 0. 43	Oct. Oct. Oct. Oct. Oct.	47. 7 47. 8 18. 0 29. 5 4. 0	102 105 98 106 108	196 186 168 196 133	71 83 108 80 128	99 97 90 90 105	nw. nw. nw.			
Cumberland	Allegany Harford Talbot Frederick Harford	623 300 35 720 450	41 34 34 56 55	51. 2 51. 8 54. 7 51. 8 51. 6	99 101 100 96 95	Aug. 6* Aug. 6 Aug. 6* Aug. 31 Aug. 6	- 2 1 9 2 2	Feb. 24 Jan. 22 Jan. 6* Jan. 22 Jan. 22	52 33 34 55 55	89. 82 45. 87 48. 56 50. 79	7. 34 7. 29 6. 29 8. 02 7. 22	May May Sept. May Sept.	0.39 0.06 0.79 0.23 0.10	Oct. Oct. Oct. Oct. Oct.	57. 4 11. 7 64. 8 29. 8	128 114 104 98 119	202 199 210 163 133	68 84 70 88 149	96 83 86 115 84	nw. nw. w. sw. nw.			
Ferry Landing †	Calvert	45 275 681 1, 501 1, 929	8 50 8 6 20	54. 1 53. 5 49. 6 47. 9 48. 4	98 101 99 90 92	Aug. 6 Aug. 6 Aug. 9 Aug. 6 Aug. 5	6 0 - 5 -10	Jan. 22 Jan. 6 Jan. 6* Feb. 24 Jan. 6	8 50 8 6 23	49. 85 42. 12 49. 43	7. 44 6. 58 8. 10 6. 39 8. 68	Aug. May June June May	0.51 0.28 0.20 0.40 0.32	Oct. Oct. Oct. Oct. Oct.	17. 2 40. 2 53. 7 64. 2 62. 6	101 114 91 132 119	115 205 203 132 187	152 56 79 108 100	99 105 84 126 79	nw. nw. w. w. e.			
Grantsville Great Falls‡ Hancock Ilchester‡ Keedysville	Garrett Montgomery Washington Howard Washington	2, 351 200 455 260 400	31 27 13 21	45. 6 52. 8  52. 2	88 101 101 103	Aug. 6 Aug. 6 Aug. 31*	-13 - 5 - 5	Feb. 24 Jan. 22 Feb. 24 Feb. 24	31 35 14 1 21	46. 97 39. 58	7. 36 8. 10 7. 28 6. 51	May May May May	0.15 1.04 0.44 0.15 0.50	Oct. July Oct. Oct. Oct.	80. 2 29. 2 46. 8	124 110 125 103	138 145 198 	100 121 71 90	128 100 97 82	w. nw.			
La Plata Laurel Millington Oakland Princess Anne	Charles. Prince Georges Kent Garrett Somerset	190 320 27 2, 461 17	8 30 27 25 49	52. 6 53. 5 45. 8 53. 9	100 99 100 91 94	Aug. 6* Aug. 6 Aug. 6 Aug. 31 Aug. 6*	0 6 -11 7	Jan. 22 Jan. 22 Jan. 22 Feb. 16 Jan. 22	30 26 25 31	49, 41 48, 82 50, 12 48, 59	6. 64 8. 07 6. 97 7. 44 8. 22	Sept. Sept. Sept. May May	1. 26 0. 28 0. 12 0. 50 0. 33	Oct. Oct. Oct. Oct. Oct.	12.5 32.8 17.5 65.5 4.5	113 116 119 170 99	189 202 199 108 126	89 74 69 153 134	88 90 98 105 106	nw. nw. w. w. sw.			
Public Landing †	Worcester	10 57 25 28 20	9 3 10 19 33	54. 0 53. 9 53. 7  55. 9	97 98 99 - 99 97	Aug. 7 Aug. 6* Aug. 6* Aug. 6 Aug. 7	4 7 8 3 8	Jan. 22 Jan. 22 Jan. 22 Jan. 22 Jan. 22	9 3 10 19 33	44. 27 50. 05 46. 76 48. 61 38. 93	6. 64 7. 18 7. 75 6. 88 5. 34	June Sept. Sept. June Sept.	0.53 0.45 0.16 0.31 0.85	Oct. Oct. Oct. Oct. Oct.	4.0 14.0 19.0 7.5	113 104 110 106 114	178 147 175 160 95	74 126 111 116 87	93 80 90 184	s. nw. s. sw. nw.			
State Sanatorium Takoma Towson Western Port Westminster Woodstock	Frederick Montgomery Baltimore Allegany Carroll Baltimore	1, 460 320 465 1, 000 770 415	16 26 12 31 15 54	50. 2 52. 8 51. 7 51. 6 52. 2	94 97 99 97 97	Aug. 31 Aug. 6 Aug. 31 Aug. 6* Aug. 6*	0 5 - 2 1 2	Jan. 6* Jan. 22 Feb. 24 Jan. 22 Jan. 22	16 26 12 31 15 • 54	47. 07 42. 07 42. 08 50. 25	7. 42 5. 92 8. 46 7. 41 7. 51	May May Sept. Sept.	0. 18 1. 18 T. 0. 33 0. 20 0. 19	Oct. Oct. Oct. Oct. Oct. Oct.	61. 9 32. 5 50. 7 60. 5 40. 5	101 101 121 104 99	192 121  188 172	74 119  89 93	100 126  89 101	nw.			
District of Columbia		120		02.2		Aug. 0		Julii 22			.,,,,	Copt.	3.20		10.0		1,2						
Washington (U.S.W.B.)		112	54	54.1	102	Aug. 6	6	Jan. 22	54	49.02	7. 86	Sept.	0.44	Oct.	20.2	112	121	119	126	nw.			
Delaware Bridgeville Delaware City Dover Milford Millsboro Seaford Wilmington	Kentdo Sussexdo	45 10 34 20 20 40 86	1 38 35 32 32 32 34 31	53. 1 53. 8 54. 2 54. 1	96 98 98 100 100 94	Aug. 6* Aug. 6 Aug. 6 Aug. 6* Aug. 6* Aug. 6*	5 5 4 2 1 4	Jan. 22 Jan. 22 Jan. 22 Jan. 22 Jan. 22 Jan. 22	1 34 35 42 32 34 31	46. 10 52. 47 50. 10 52. 70	7. 90 6. 09 7. 05 6. 60 5. 57 8. 35	June May Apr. Aug. Mar. June	0, 60 T. 0, 19 0, 79 0, 71 0, 84 0, 05	Oct. Oct. Oct. Oct. Oct. Oct. Oct.	14. 5 6. 0 8. 0	102 108 113 110	187 213 188 163 215-	107 90 107 105	72 63 71 98	nw. nw. nw. nw.			
For Maryland and District of Columbia For Delaware			۱ '	52. 4 53. 5	103 100	Aug. 31 Aug. 6*	-13 1	Jan. 22		46. 16 48. 53	6. 60 5. 80	May June	0. 40 0. 39	Oct.	33. 0 12. 5	111 108	165 192	97 92	104 82	nw.			
For entire section				52.6	103	Aug. 31	-13	Feb. 24		46.46	6. 44	Мау	0.40	Oct	30.5	111	165	98	103	nw.			

\*Also on other dates.

1 Post Office addresses of these stations are as follows: Of Bell, Glenndale; of Coleman, Worton; of Fallston, Bagley; of Ferry Landing, Owings; of Great Falls, Bethesda; of Ilchester, Elkridge; of Public Landing, Snow Hill.

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Shore. Cool and mild periods alternated frequently. The first general freezing temperatures and killing frosts of the season to the eastward of the Blue Ridge Mountains occurred during the cool wave of the 21st-24th and killed late potato and tomato vines, beans, and most truck crops. Monthly rainfall averaged about one-eighth of normal. In southern Maryland, however, the rainfall this month was not the least in October, as it aver- during the second decade. Picking of apples and pears, digging aged about one and two-thirds times the rainfall during October,

1920, which was the driest October of record in that division. Cutting of corn, a short crop, was finished, except in southern Maryland and on the Eastern Shore. Digging of late potatoes continued in the Allegheny Mountain region, and began in Allegany and Washington Counties during the second decade, and to the eastward of the Blue Ridge Mountains during the third. Harvesting of tomatoes and cutting of tobacco ended

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Monthly and Annual Precipitation for the Year 1924, with Departures from the Normal

	Jan	uary	Feb	ruary	Ma	rch	A	pril	М	ay	Ju	ıne	Jì	ıly	Au	gust	Sept	ember	Oct	ober	Nov	ember	Dece	ember	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
Maryland						·																, ,				
Aberdeen Annapolis Baltimore (U.S. W. B.) Bell Boyds.	3.80 3.67 4.33 3.64 3.29	+0.26 +1.11	3. 97 3. 81 4. 14 3. 61 3. 57	+0.33 +0.51	3. 13 5. 75 6. 66 4. 85 5. 05	+1.80 +2.78	5.90 5.43 5.89 5.87 4.89	+1. 69 +2. 62	4. 78 5. 97 5. 80 6. 25 6. 23	+1.72 +2.24	5. 34 5. 17 5. 54 4. 16 3. 36	+0.84 +1.70	0.33 2.04 1.99 2.35 0.72	-2.51 -2.83	2. 59 6. 15 5. 22 4. 67 3. 04	+1.42 +1.01	5. 09 6. 27 5. 75 7. 62 6. 54	+2.29 +1.90	0.05 0.34 0.05 0.43 0.40	-3.03 -2.97	1. 43 1. 29 1. 37 1. 55 1. 52	-1.71 -1.55	1. 68 2. 48 2. 30 2. 13 1. 89	-1.18 -0.78	38.09 48.37 49.04 47.13 40.50	+1.99 +5.7
Cambridge Cecilton Cheltenham Chesapeake City. Chewsville.	3.89 3.92	+0.39	4.07 3.35	+0.57	3.79 5.08	+0.89 +1.24 +1.19	5.66 4.91	+0.89	6.58 7.20	+3.99	6. 28 6. 02	+1.46	$\frac{2.60}{1.67}$	-2.98	3.52 7.26	+2.87	5.76 6.67	+3.58	0.05 0.62	-2.34	2.30 1.57	-0.76	2.62 $2.41$	-1.23	47. 12 50. 68	+7.6
Clear Spring (*) Clear Spring (b) Coleman College Park Crisfield	3.73	+0.55	2.19	+0.30	6.44	+0.81 +1.45 -0.19 +2.18	6.36	+2.07	7.43	+3, 13	5.32	-0.05	3.36	-2.94	1.09	+0.72	7.88 5.07	+4.76	0.42	-2.31	2.44	-1.02	3.08	-0.37	48. 57	+7.0
Cumberland Darlington Easton Emmitsburg Fallston	3. 68 5. 00 3. 98 5. 19	+1, 18 +1, 66 +1, 11 +1, 50	2. 66 3. 87 4. 04 3. 99 4. 36	+0.10 +0.54 +0.94 +0.79 +0.64	4. 93 3. 49 5. 49 5. 92 4. 51	+1.84 +0.02 +1.93 +1.79 +0.42	2.86 4.98 5.64 4.66 6.57	+0.13 +1.68 +2.39 +1.27 +3.05	7.34 7.29 5.29 8.02 6.60	+3.89 +3.81 +1.86 +3.93 +2.80	5. 74 6. 80 3. 91 6. 10 5. 78	+1.70 $+2.81$ $+0.03$ $+1.84$ $+1.69$	3. 24 1. 33 2. 54 3. 09 2. 36	+0.02 -3.29 -1.85 -0.97 -2.15	2. 52 2. 92 5. 63 3. 41 3. 98	$     \begin{array}{r}       -1.05 \\       -2.11 \\       +1.40 \\       -0.67 \\       -1.04     \end{array} $	3.83 4.86 6.29 7.26 7.22	+1. 16 +1. 22 +3. 27 +3. 67 +3. 16	0.39 0.06 0.79 0.23 0.10	-2.00 -3.13 -2.47 -3.37 -3.36	1.56 2.22 2.22 2.10 1.54	-0.58 -0.58 -0.39 -1.19	1.07 3.05 2.74 1.85 2.58	-1.46 -0.79 -0.33 -1.38 -1.13	39. 82 45. 87 48. 56 50. 79	+4.9 +1.8 +7.8 +3.8
Ferry Landing Frederick Freeland. Friendsville Frostburg.	4, 10 4, 83 4, 43	+0.90	3. 46 4. 27 3. 02 3. 86	+1. 19	5.33 4.15 5.40 5.57	+1.63	4.32 5.20 2.76 3.63	-0.10	6.08 8.68	+2.82	8, 10 6, 39 8, 04	-1.70 +3.06	1.70 3.51 2.80	-2.96  -1.43	3. 15 5. 88 3. 82	+0.83	5.90 4.87 5.05	+2.77  +1.91	0. 28 0. 20 0. 40 0. 32	-2. 69	1. 60 1. 42 1. 75	-0.85 -0.57	1.95 2.80 1.48	-1.55	49.43	+1.6
Grantsville Great Falls Hancock Ilchester Keedysville	3, 90 4, 69 4, 33 4, 26	+0.24 $+1.62$ $+1.60$ $+1.04$	3.57 3.22 2.66 3.05	+0.42 +0.49 +0.55 +0.40	5, 38 4, 78 5, 24 4, 88	+1.40 +1.49 +1.89 +1.94	2. 79 4. 16  3. 38	-0.82 +1.10 +0.24	7. 36 8. 10 7. 28 6. 51	+3.49 +4.74 +4.42 +3.39	6, 01 3, 36 6, 13 4, 87	+1.75 -0.44 +1.46 	3. 53 1. 04 3. 51 2. 80 2. 33	-0.85 -3.17 -0.53 -1.61	3. 58 5. 65 1. 67 6. 78 1. 23	-0.45 $+1.95$ $-1.62$ $-3.37$	4. 74 7. 24 4. 67 6. 99 4. 78	+2.02 +4.17 +2.23 +1.97	0. 15 1. 06 0. 44 0. 15 0. 50	$     \begin{array}{r}       -2.59 \\       -1.58 \\       -2.19 \\       \hline       -2.43 \\    \end{array} $	1. 66 1. 59 1. 57 1. 58 2. 30	-0.93 -0.60 -0.44 +0.43	2.08 1.52 2.35 1.54	-1.18 -1.23 -1.53	46. 97 39. 58	+8.59
La Plata Laurel Millington Oakland Princess Anne	3. 44 3. 67 4. 55 5. 18 3. 98	+0.28 +1.04 +0.98 +0.89	2. 44 3. 48 4. 48 4. 18 2. 52	+0.45 +1.19 +0.93 -0.94	4. 99 5. 82 5. 88 5. 46	+1.22 +1.78 +2.15 +1.72	6.00 5.45 5.42 4.27 6.96	+1.80 $+1.81$ $+0.24$ $+3.62$	6. 04 6. 17 6. 40 7. 44 8. 22	+2.64 +3.23 +3.00 +5.14	3, 53 4, 54 4, 04 4, 00 5, 45	+0.31 +0.08 -0.62 +1.58	1. 56 1. 68 1. 55 5. 95 0. 98	-3.06 -3.15 +1.24 -3.46	5. 54 7. 12 4. 00 2. 47 3. 54	+2.32 -0.72 -1.79 -1.59	6. 64 8. 07 6. 97 5. 34 5. 54	+4.79 +3.45 +2.32 +2.76	1. 26 0. 28 0. 12 0. 50 0. 33	-2. 65 -3. 02 -2. 78 -3. 01	1. 88 1. 58 2. 23 3. 2. 42 2. 26	-0. 92 -0. 39 -0. 03 -0. 17	1. 83 2. 43 3. 24 2. 49 3. 35	-1.31 -0.75 -1.18 +0.20	49. 41 48. 82 50. 12 48. 59	+5.8 +4.5 +4.4 +6.7
Public Landing	3. 72 3. 61 3. 70	+0.74 +0.15	3.85	+1.13 -0.84	5. 15 5. 34	+1.31 +1.32 +0.47	6. 03 5. 20 5. 71 6. 27 4. 47	+1.94 +2.99 +1.54	5. 05 5. 04 5. 69 6. 50 5. 11	+1.30 +2.94 +2.03	6. 64 5. 02 4. 23 6. 88 8, 15	+1, 13 +2, 90 -0, 17	1. 45 5. 43 1. 31 1. 07 3. 54	+1.05 -2.73 -0.63	3. 49 4. 28 4. 46 5. 36 2. 74	-0. 45 -0. 07 -1. 13	5. 41 7. 18 7. 75 5. 52 5. 34	+4.20 +2.27 +2.73	0.53 0.45 0.16 0.31 0.85	-3. 22 -1. 88	2. 63 2. 04 2. 02 2. 17 3. 1. 81	-0.57 -0.69	$\begin{bmatrix} 2.82 \\ 3.22 \end{bmatrix}$	-0.33 -0.33	46. 76 48. 61	+8.7
State Sanatorium Takoma Towson. Western Port Westminster. Woodstock.	3.30	-0.32	3.05	+0.04	5. 09	+1.96 +1.34 +1.94 +2.34 +1.19	4.94	+1.41	5. 92	+2.70	8.83	-0.68	1.34	-3.33	4. 59	+0.10	5. 25	+1.89	1,18 T.	-1.55	1, 29	-0.80	2, 29	-1.57 $-0.93$	42.07	-0.7
District of Columbia	0.10		0.02	1 0.00	1.00		1,50	11.00		1 0.00	0, 20	1.50			0.01	1.0.	1.01	1 0.52	0.15	2.50	2.00	0.00	2.11			
Washington (U.S. W.B.)	3.21	-0.16	3.05	-0.48	6. 17	+2.32	-5. 39	+2.14	6. 73	+2.90	-3, 89	-0.29	2. 76	-1.89	5.07	+0.67	7.86	+4.27	0.44	-2.65	1.47	-1, 24	2.98	-0.18	49.02	+5.4
Delaware Bridgeville	2. 95 4. 07 3. 93 4. 37 3. 35 4. 93	+0.17 +0.82 +0.49 +1.03 -0.03 +1.58	4. 13 4. 05 4. 34 2. 72 3. 02 4. 38	+1.52 +0.75 +0.75 -0.93 -0.40 +1.01	4. 98 6. 56 5. 41 5. 57 4. 16	+0.75 +2.51 +1.44 +1.86 +0.62	4. 64 4. 80 7. 05 6. 58 4. 32 5. 71	+1.38 +1.30 +3.70 +3.04 +0.78 +2.33	4. 43 6. 09 5. 00 4. 85 5. 10 6. 08	+1.07 +2.30 +1.17 +1.28 +1.26 +2.43	7. 90 3. 66 4. 29 6. 21 4. 40 8. 35	+4. 10 +0. 09 +0. 52 +2. 52 +0. 61 +4. 44	3. 78 3. 78 2. 93 2. 60 2. 05 4. 57	+0.27 -0.81 -1.29 -1.93 -3.09 -0.46	3. 14 4. 53 4. 78 6. 60 4. 57 3. 79	-0.82 -0.07 +0.16 +1.59 +0.24 -1.05	5. 39 5. 59 5. 24 7. 20 4. 91 5. 77	+2.36 +2.42 +1.73 +3.69 +1.91 +2.31	0. 60 T. 0. 19 0. 79 0. 71 0. 89 0. 05	-2. 77 -2. 54 -2. 87 -2. 62 -2. 85 -2. 58 -3. 18	1, 85 1, 95 1, 95 1, 92 2, 24 7, 2, 78 3,	-0. 75 -0. 19 -1. 85 -0. 83 +0. 21	3. 13 2. 48 2. 79 3. 36 2. 35 2. 91	-0. 16 -1. 33 -0. 70 -0. 45 -1. 55	46. 10 52. 47 50. 10 52. 70	+1.9 +7.8 +5.7
For Maryland and District of Columbia		l .	1	1		+1.36 +1.54 +1.37	1		l	1					1				l	1		!	ľ		!	l

(Continued from page 52)

of sweet potatoes, and harvesting of late truck crops continued. Kieffer pears were a large crop. In the Allegheny Mountain region harvesting of buckwheat ended during the first decade. Pastures were fair during the first half of the month, but poor during the second half. Sowing of wheat and rye ended, except below 2 inches generally. An unusually long dry spell, which in southern Maryland and on the Eastern Shore. Winter grains had its inception on October 1, was terminated by moderate came up nicely in western and north-central Maryland during the second decade and were benefited by the rains of the 27-28th, which aided germination elsewhere in the section. Rain was much needed at the close of the month and forest fire dangers were becoming acute.

November was mild, sunshiny, and deficient in precipitation.

Warm, pleasant weather prevailed during the first 14 days. The first cold spell of the season occurred during the 17-19th with minimum temperatures between 10° and 20°, except slightly above 20° in the Chesapeake Bay region. A second cold spell set in on the 29th. Monthly precipitation was slightly precipitation (rain over the southern half of the section and rain, sleet, and snow over the northern half) on the 15th, after a lapse of 45 days. The snowfall on the 15th was light, except moderate (4 to 5 inches) in the northern portions of Carroll and Frederick Counties and in southern Garrett County; it dis-

(Continued on page 54)

	đ An	nual	Mea	n Te	mpe	ratu	res fo	r tb	e <b>Y</b> e	ar 1	924,	with	Dep	artu	res f	rom	the I	Norn	nal							
	Jan	uary	Feb	ruary	Ma	erch	A	pril	M	lay	Jı	ane	J	uly	Av	igust	Sept	ember	Oct	ober	Nov	ember	Dece	mber	An	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
Maryland																										
Aberdeen Annapolis Baltimore (U.S.W.B.) Bell Boyds	31.8 35.4 34.8 34.0 33.4	+1.2	32. 0 34. 2 34. 6 32. 8	-0. 4 -0. 8	42.8 43.0 41.8	-0.3 +0.7	49. 8 51. 2 52. 2 50. 0 50. 2	-2.2 -1.4	57. 9 60. 5 60, 2 59. 6 59. 6	-3.8 -4.2	68. 6 70. 0 71. 2 70. 0 70. 2	-3.3 -1.5	73. 6 74. 1 76. 1 73. 2 74. 0	-1.3	76.0	$\begin{array}{c c} -1.6 \\ +0.5 \end{array}$	65.4	-3.5 -3.1	56. 3 58. 0 59. 4 55. 0 56. 6	$-0.1 \\ +1.2$	44.3	0.0	36. 8 34. 8	+0.1 -0.4	52. 1 54. 2 54. 7 52. 6 52. 8	-1.5 -0.8
Cambridge	36. 9 35. 8 35. 8 31. 4 30. 1	+1.6 +0.8	33.4 33.8 29.8	0.0	42.5 44.1 38.4	-0.2 -2.7	51. 2 51. 4 47. 8	-2.5 -2.9	59.7 60.6	-3.2 -4.2	69.8	+0.1 -1.2	74. 7 74. 6 74. 0 71. 7 72. 5	-1.5 $-2.5$	74. 4 74. 8 71. 9	$+1.3 \\ -0.4$	64.8 64.4 60.8	-3.3 -5.1	54.2	-0.5 -0.8	45.6 46.7 41.5	+1.5 -1.2	37. 8 35. 6 37. 1 32. 3 33. 0	+2.2 +0.2		-2.4 -0.4 -1.7 -0.2
ColemanCollege ParkCrisfieldCumberlandDarlington	$\frac{29.5}{32.0}$	+1.1	33. 0 37. 3 30. 2	-0.8 -2.5	42.4 44.2 39.4	-0.9 -0.1	50.2 53.4 50.4		59.4 63.4 57.8	-5.0	70.4 72.2 69.7 68.4	-0.6	75. 4 73. 6 75. 2 72. 8 73. 4	-i.i	76.0 73.2	+0.1	65. 6 63. 0 67. 6 61. 2 63. 2	-3, 8	58. 2 54. 6 58. 9 55. 4 55. 6	-1.7 +1.1	49.0 42.4	+0.3	$\frac{40.2}{32.6}$	-i.i	56.3 51.2	-1.0 -1.2 -0.8
Easton. Emmitsburg Fallston Ferry Landing. Frederick	37. 0 32. 0 32. 4 36. 2 32. 7	+1.4 +1.5	30.5 33.0	1 +1.6	40.2	-0.6 +0.8	50.2 49.4	-1.5 $-1.2$	58.3 57.4	$ \begin{array}{r r} -3.7 \\ -4.0 \end{array} $	67.2	-1.4 $-2.2$	72.9	-2.3	72.6	_ ^ 6	62.6	-3.8 -3.1 -3.8 -2.9	57. 0 57. 2 56. 2 56. 2 56. 7	$^{+2.2}_{+1.0}$	47.2	+1.0	33. 6 37. 6	-0.1	51. 6 54. 1	-0.3 -0.7 -0.7 -0.3
Freeland. Friendsville Frostburg Grantsville Great Falls			27.7 25.4	-1.4 -0.2	37. 8 36. 2 36. 0 31. 8 42. 0	-2.6 -4.5	46. 6 46. 7 46. 8 45. 0 50. 5	-3.2 -0.9 -2.3	55. 3 55. 6 53. 6 51. 8 60. 0		65 1	-1.8 -0.4 -0.1	69.7		71.0 68.2 69.8 68.0	-0.6 +1.4	58. 6 55. 0	-5.7 -6.1	53. 0 50. 0 55. 2 48. 8 55. 7	$^{+0.3}_{-1.8}$	39.6 37.0	-2.0	32. 6 31. 5 30. 8 28. 7 35. 0	-0.3 $-0.2$	45.6	-2.4 -1.9 -0.9
Hancock	30. 6 31. 9 36. 4 33. 6 35. 3	-0.1 +1.3	31.6 34.8	+0.2	40.4	-2.2 -0.7	51.8 50.0	-2.5	59. 0 60. 8 58. 8 59. 6	-4.5	71.4	-0.8 -0.8	73. 5 75. 4	-1.8 -1.7	75.0 73.4 74.6	+1.1 -0.1 +0.6	63. 4 64. 4 63. 4 64. 4	-3.7 -3.9 -3.6	54. 2 54. 8 57. 4 55. 3 56. 2	-1.6 -0.5	47.1 44.7	+0.5	32. 4 33. 7 37. 6 34. 9 36. 2	+0.8	52. 2 52. 6 53. 5	-1.3 -0.9 -1.0
Oakland Princess Anne Public Landing Ridgely Rock Hall	36.4	+1.8	34.6	+0.9	41.4	-i.i	50. 6 49. 7	-3.8 $-1.7$	60.4 60.2	-2.8 4.2	69.41	-1.3 -0.8	/3.4	-3.4 $-2.0$	66.9 73.1 74.2 74.2 74.6	+1.2 -1.6 -0.1	55. 0 64. 2 65. 0 64. 5 64. 4	-5. 4 -4. 5 -3. 8	49. 3 56. 6 56. 1 56. 2 57. 2	-i.2	47.2	-0.8 +0.5	29. 4 38. 2 39. 2 37. 4 36. 2	-0.6	45. 8 53. 9 54. 0 53. 9 53. 7	-1.3 -2.1 -0.8
Salisbury	37.8 37.6 30.1 *33.0 31.4	+2.2 +0.3 +0.8	28.0	-1.4 +1.8	43. 4 43. 7 37. 2 42. 2 39. 5	$ \begin{array}{r} -0.4 \\ -2.7 \\ -0.3 \end{array} $	48. 4 51. 4	-1.2	59.0	-3.5 -4.8 -4.0 -5.0	69, 4	-1.4	76.2 70.9 73.4	$     \begin{array}{r}       -2.0 \\       -2.5 \\       -1.4     \end{array} $	76.8 71.4 73.2	-0.4	67. 0 61. 6 62. 6	-3.0 $-4.1$	56.6	+0.6	49.3 42.6 44.8	+0.8 $-0.2$ $+0.4$	39. 7 31. 4 34. 4 34. 6	+1.4 $+0.7$ $+0.6$ $+2.1$	55. 9 50. 2 52. 8 51. 7	-0.8 -1.4 -0.6 -0.5
Westminster Woodstock	$\frac{32.2}{33.2}$	$+1.1 \\ +1.3$	30. 8 32. 4			$-2.3 \\ +0.4$	49.2 49.7	-2.9 $-2.6$	57.8 59.4	-5.2 -3.9	68. <b>6</b> 68. 2	$-2.4 \\ -2.7$	72.8 73.9		72.4 71.8	+0.4 -1:0	62. 7 62. 4	-3.1 $-3.4$	56.0 55.5	$^{+1.1}_{+0.6}$	43. 6 44. 2		34. 0 34. 6	$^{+1.0}_{+0.5}$	51. 6 52. 2.	-1.3 $-1.0$
District of Columbia						•						İ						ļ								
Washington (U.S.W.B.)  Delaware	35.0	+1.6	34, 2	-1.1	42.6	0.0	51.9	-1.4	60.0	-3.7	71.3	-1.0	75. 0	-1.8	74. 8	-0.2	64.2	-3.9	57.4	+0.2	46.0	+0.8	36. 4	-0.2	54.1	-0.9
Bridgeville	34. 5 36. 4 37. 4 35. 4 36. 2 33. 5	+1.7 +1.4 +1.8 +0.4 +1.5 +0.7	32, 0 33, 6 34, 8 33, 4 34, 6 31, 2	$ \begin{array}{c} -1.5 \\ -1.3 \\ +0.1 \\ -0.9 \\ +0.5 \\ -0.7 \end{array} $	49 KI	1 9		-2.4	60. 2 59. 4 60. 0	-3.8 -4.2 -3.7 -3.5	7D. U	-3.3 -3.0 -2.3 -0.8 -0.7 -3.4	73.8 73.7 73.8	9 1	-74 O⊫	$ \begin{array}{c} -1.0 \\ -0.6 \\ -1.4 \\ +1.5 \\ -0.5 \\ -1.2 \end{array} $	GE OI	-3.6	56. 7 56. 0 57. 0	-0.6 -2.8 -0.9	46. 0 46. 8 47. 2 47. 0	+0.3 +1.5 -0.1 +0.7	39.2	$ \begin{array}{r} -0.6 \\ +0.2 \\ +0.4 \\ +2.1 \end{array} $	53.8 54.2 54.1	-1.4 -1.2 -1.7 -0.9
For Maryland and District of Columbia	33. 4 35. 6 33. 7	$^{+1.1}_{+1.3}_{+1.1}$	32. 3 33. 3 32. 4	+0.2 -0.5 0.0				-2.2 -2.6	58. 7 59. 5 58. 8	-4.1 -4.1 -4.1	69, 3 69, 3 69, 3	-1.1 -2.3 -1.3	72. 9 73. 7 73. 0	-2.1 -2.9	73.3 74.2	+0.1 -0.6	62.9		55. 9 56. 8 56. 0		46.2	+0.3 +0.2 +0.3	35. 0 36. 9 35. 2	+0.8 +0.5 +0.6	52. 4 53. 5 52. 6	-1.0 -1.4 -1.1

# (Continued from page 53)

appeared on the 16th, except in the Alleghenv Mountain region. Heavy rain was general on the 22d, except moderate in the Allegheny Mountain region. Slight property damage resulted in the central and eastern portions of Washington County from the high wind at night of the 16th. Forest fires were frequent prior humidity were below normal. Monthly snowfall was the least to the 15th. During the first half of the month picking of of record in December, as in 1918. No damaging winds occurred. apples and pears, digging of sweet potatoes and of late potatoes, harvesting of late truck crops, and threshing of soy beans ended from the 4th to the 19th, inclusive. A cold wave overspread over the section, and cutting of corn and sowing of wheat and the section on the 20th, and cold weather continued until the rye ended in southern Maryland and on the Eastern Shore. Late potatoes yielded fair. Corn husking was in progress. Tobacco was curing nicely. The rain of the 15th aided greatly in the germination of late-sown grains and they did well after below zero at Oakland to 15° above zero at Baltimore, Crisfield, the heavy rain of the 22d. Early-sown grains were in but fair

condition during the first half of the month, but were benefited by the rains of the 15th and 22d and improved to good generally. Pastures were poor. Some plowing was done.

December had a mean temperature slightly above normal. Monthly precipitation, monthly sunshine, and monthly relative Mild and rather humid weather, with frequent fogs, prevailed close of the month. In the Allegheny Mountain region temperatures of zero or slightly lower were recorded on the 3d, 23d, 26th, 27th, and 29th. Lowest temperatures ranged from 4°

(Continued on page 55)

#### KILLING FROSTS, 1924

Stations	Last in spring	First in autumn	Stations	Last in spring	First in autumn	Stations	Last in spring	First in
Maryland			Maryland—Continued		·	Maryland—Continued		/
Aberdeen Annapolis Baltimore Bell Boyds Cambridge Cecilion Cheltenham Chesapeake City. Chewsville. Clear Spring. Coleman. College Park Crisfield Cumberland Darlington Easton Emmitsburg. Fallston Ferry Landing	Apr. 3 Apr. 3 May 5 Apr. 21 Apr. 4 Apr. 5 Apr. 5 May 5 May 5 May 5 Mar. 28 May 5 Apr. 3 Apr. 3 Apr. 3 Apr. 3 Apr. 3	Oct. 23 Oct. 23 Oct. 23 Oct. 21 Oct. 21 Oct. 23 Oct. 23 Oct. 23 Oct. 22 Oct. 23 Sept. 11 Oct. 23 Sept. 11 Oct. 23 Sept. 12 Oct. 21 Oct. 22 Oct. 22 Oct. 22 Oct. 22 Oct. 23	Frederick Freeland Friendsville Frostburg Grantsville Great Falls Hancock Ilchester Keedysville La Plata Laurel Millington Oakland Princess Anne Public Landing Ridgely Rock Hall Salisbury Solomons. State Sanatorium	May 5 May 5 May 5 May 81 Apr. 21 Apr. 21 Apr. 21 Apr. 5 May 25 Apr. 4 Apr. 4 Apr. 5 Apr. 4 Apr. 4 Apr. 5	Oct. 22 Sept. 11 Sept. 11 Sept. 11 Sept. 7 Oct. 21 Sept. 11 Oct. 22 Oct. 21 Oct. 22 Oct. 22 Oct. 22 Oct. 22 Oct. 23 Oct. 22 Oct. 23 Oct. 22 Oct. 23 Oct. 22	Takoma Towson Western Port Westminster Woodstock District of Columbia Washington Delaware Bridgeville Delaware City Dover. Millsboro Seaford Wilmington	May 5 Apr. 21 May 5 Apr. 3 Apr. 4 Apr. 3 Apr. 12 Apr. 12	Oct. 2

#### COMPARATIVE DATA FOR MARYLAND AND DELAWARE

	Temperature Precipitation												Temper	rature		Precipitation							
Year	Mean	Departure from the normal	Highest	Lowest	Average	Departure from the normal	Greatest local	Least local	Greatest in 24 hours	Snowfall	Number of days with 0.01 inch or more	Year	Mean	Departure from the normal	Highest	Lowest	Average	Departure from the normal	Greatest local	Least local	Grêatest in 24 hours	Snowfall	Number of days with 0.01 inch or more
1895 1896 1897 1898 1899 29 1900 1901 1902 1903 1904 1905 1906 1907 1908 1909	52. 6 54. 0 53. 6 54. 9 55. 0 52. 6 53. 3 54. 6 52. 2 54. 1 54. 0	-1.1 +0.3 -0.1 +1.2 -0.2 +1.3 -1.1 -0.1 -0.4 -2.5 -0.4 +0.9 +1.5 +0.4 +0.3	102 103 102 109 109 106 106 104 100 102 104 101 99 102 99	-18 -13 -12 -20 -26 -15 -15 -17 -12 -20 -15 -29 -21 -5	34.47 37.11 44.97 42.11 40.84 36.66 45.08 49.20 46.94 36.49 43.84 48.01 48.86 40.01 37.47	-7. 39 -4. 75 +3. 11 +0. 25 -1. 02 +3. 22 +7. 34 +5. 08 -5. 37 +1. 98 +6. 15 +7. 00 -1. 85 -4. 39	42. 07 64. 94 65. 85 65. 77 51. 38 52. 19 70. 87 61. 38 78. 72 50. 26 64. 62. 92 66. 59 52. 50 50. 45	14. 42 30. 18 32. 56 32. 59 28. 69 28. 21 34. 63 33. 75 36. 58 25. 72 31. 88 36. 10 37. 55 31. 63 28. 30	4. 80 4. 50 14. 75 5. 93 5. 35 5. 60 6. 00 6. 00 5. 90 4. 66 5. 00 7. 93 3. 80	29. 9 23. 0 18. 4 21. 6 40. 3 26. 8 18. 7 33. 3 17. 9 41. 8 36. 1 20. 7 34. 6 32. 5 30. 0	94 92 109 98 88 99 105 106 96 106 123 121 101	1910 1911 1912 1913 1914 1915 1916 1917 1918 1919 1920 1921 1922 1923 1924	53. 8 54. 9 53. 3 56. 1 53. 2 51. 3 53. 8 54. 9 53. 8 54. 9 53. 6 55. 0 54. 4 52. 6	+0.1 +1.2 -0.4 +2.4 -0.3 +0.4 -0.5 -2.4 +0.1 +1.2 -0.4 +2.9 +1.3 +0.7 -1.1	99 106 102 102 102 103 101 102 109 105 98 102 100 102	-15 - 50 - 40 - 6 -21 - 6 -11 - 32 - 30 - 19 - 10 - 15 - 15 - 9 - 13	37, 42 43, 61 43, 42 38, 98 35, 97 43, 58 40, 47 40, 65 37, 96 47, 62 44, 95 40, 27 40, 15 40, 27 46, 46	-4. 44 +1.75 +1. 56 -2. 88 -5. 89 +1. 72 -1. 21 -3. 90 +5. 76 +3. 09 -4. 14 -1. 71 -1. 59 +4. 60	52, 45 55, 58 52, 68 48, 96 43, 32 59, 39 49, 72 46, 95 60, 84 56, 12 55, 65 50, 38 52, 70	26. 74 33. 620 25. 41 29. 35 26. 82 26. 14 27. 17 28. 88 30. 69 24. 39 31. 47 37. 41	7. 19 7. 35 6. 07 4. 05 3. 81 5. 11 6. 00 4. 52 4. 50 9. 02 4. 30 5. 60 6. 75 5. 17 4. 53	34. 8 23. 2 32. 2 6. 1 37. 2 28. 5 35. 7 31. 4 11. 9 20. 0 20. 5 34. 8 22. 0 30. 5	109 119 112 108 98 107 112 110 98 114 113 114 111

### CONDENSED SUMMARY CLIMATOLOGICAL DATA, 1924

Months			Temper	ature				Precipita	N	ction						
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Months	Мевп	Departure from the normal	Maximum	Lowest	Average	epartur the nor		Least local	reatest in 2 hours	nowfall	With 0.01 inch or more of precipitation	Clear	Partly cloudy	Cloudy	Prevailing direct
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	February March April May June July August September October November	32. 4 40. 8 50. 1 58. 8 69. 3 73. 0 73. 4 63. 2 56. 0 44. 7	0.0 -1.2 -2.2 -4.1 -1.3 -2.2 0.0 -3.9 -0.4 +0.3	68 77 83 94 99 100 103 101 88 79	-13 11 13 26 33 42 35 30 15	3. 47 5. 02 5. 01 6. 44 5. 27 2. 48 4. 07 6. 02 0. 40 1. 84	+0. 40 +1. 37 +1. 67 +2. 86 +1. 19 -1. 86 -0. 35 +2. 82 -2. 62 -0. 68	4. 48 6. 66 7. 05 8. 68 8. 35 5. 95 7. 44 8. 07 1. 78 2. 79	2. 09 3. 13 2. 76 4. 43 2. 74 0. 29 1. 09 3. 83 T. 1. 29	2. 54 2. 68 2. 54 3. 36 3. 01 3. 05 4. 35 4. 53 1. 78 2. 02	10.7 10.9 5.4 0.0 0.0 0.0 0.0 0.0 0.0 0.0	7 9 10 12 17 14 7 8 12 2 5 8	14 11 14 14 11 12 17 16 11 24 12	8 9 8 7 8 10 9 10 6 4 9	9 9 9 12 8 5 5 13 3 9	nw. nw. nw. nw. sw. sw. sw. sw. nw. nw. nw.

(Continued from page 54)

were in good condition generally, had a good color, and a good and Solomons. Monthly precipitation totaled between 1 and 2 stand; and some plowing was done. During the third decade inches generally over the western half of the section and between 2 and 3.4 inches over the eastern half. Light snow fell on the 1st, 20th, 21st, 25th, and 28th in the Allegheny Mountain refinished. Pastures were poor. Ice in the upper Chesapeake Bay gion; to the eastward there were snow flurries. Snow set in interfered somewhat with the movement of vessels between Baltiover the southern portion of the section in the evening and night more and Philadelphia, via the Chesapeake and Delaware Canal, of the 31st. During the first and second decades winter grains during the 6-day period following Christmas Day.—J. B., jr.

Map Showing Climatological and Display Stations in Maryland and Delaware

