

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU

In Cooperation with Maryland State Weather Service

# CLIMATOLOGICAL DATA

## 15 MARYLAND AND DELAWARE SECTION

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PRICE: 5 CENTS A COPY; 50 CENTS A YEAR

VOL. XL BALTIMORE, MD., SEPTEMBER, 1935 No. 9

### GENERAL SUMMARY

This was the first cool September since 1928. There was a warm spell from the 19th to the 22d. The first decade was mostly cloudy and wet; the second and third decades were dry, mostly clear, and sunshiny. Monthly sunshine was about 5 per cent below normal, except about 5 per cent above normal in western Maryland.

The month was featured by a tornado on the 4th and on the 5th (see Miscellaneous Phenomena), and by an excessive rainstorm of the 4th-6th (see pages 34 and 35).

Over southern Maryland and the southern and central Eastern Shore, which was the area of excessive rainfall, the 24-hour amounts were the greatest of record, the total amount for the 4-6th was the greatest of record for any rainstorm, and the monthly rainfall was the greatest of record for any month.

The rains of the first decade terminated the prolonged dry spell of August. Growing crops, except those damaged by rain and wind, improved to good to excellent; also grasses and pastures. Under the dry weather that followed, growing crops were but mostly good and grasses and pastures were fair to good during the third decade. In south-central and eastern divisions, due to the super-saturated condition of the soil, much corn was blown down by strong northerly winds of the 6th, and tobacco and tomatoes were damaged heavily by the excessive rain.

In the Allegheny Mountain region threshing oats was completed; the late potato crop was poor to fair, due to blight; buckwheat was cut and threshed; and wheat came up to good stand during the last week.

Haying, plowing, and harvesting tomatoes, sugar corn, sweet potatoes, tobacco, truck, gardens, cowpeas and soy beans for hay, tree fruits, grapes, and watermelons were in progress; also digging late potatoes in western Maryland. Most of the early corn was shocked, a good to excellent crop. Late corn filled out well and was maturing. Late potatoes in central and eastern divisions were in full bloom, were making, and were maturing. Wheat, rye, and barley were being sown between the Allegheny Mountains and Chesapeake Bay during the third decade. — J. B., jr.

### TEMPERATURE

The monthly mean for the section, 65.2°, is 2.6° below normal. The highest monthly mean was 70.0° at Crisfield; the lowest, 58.0° at Grantsville. The highest temperature, 92°, occurred at Dundalk on the 21st; the lowest, 28°, at Grantsville and Oakland on the 30th. The greatest local monthly range was 58° at Bell and Hancock; the least, 42°, at Solomons. The greatest daily range was 44° at Friendsville and Sines on the 24th.

### PRECIPITATION

The monthly average for the section, 7.96 inches, is 4.73 inches above normal. The greatest monthly amount was 17.57 inches at Easton; the least, 3.08 inches at Friendsville. The greatest 24-hour amount was 10.30 inches at Cambridge on the 5-6th. The average number of days with 0.01 inch or more, 8, is 1 above normal.

### MISCELLANEOUS PHENOMENA (WITH DATES)

**Tornado.**—4th. About 3:30 p.m., from between Brandywine and Naylor in Prince Georges County northeastward across extreme northwestern Calvert County, extreme southeastern Anne Arundel County, the Chesapeake Bay (as a waterspout), and extreme southwestern Queen Annes County, to Willoughby in Queen Annes County, between 5 p.m. and 6 p.m. Tornado passed through Naylor, Dunkirk, Chaney, Wilson, Jewell, Owings, Friendship, and Fair Haven. Path was from southwest to northeast, varied in width from about 20 yards at start to one-half mile at finish, and was about 40 miles in length. Within the path, homes, barns, stables, and sheds were wrecked; trees were uprooted, were twisted off, and stripped of limbs; poles were blown down; corn fields

were leveled; 3 persons were injured; one horse was killed; another horse was injured. Damage to property estimated at \$125,000; to crops, between \$50,000 and \$100,000.  
**Tornado.**—5th. Extreme northwestern Somerset County; 6 p.m. to 6:30 p.m.; south-west to northeast; from Dames Quarter, over Monie Bay, through Mt. Vernon, across Wicomico River, to Whitehaven; path about 300 feet wide and 10 miles long; several homes damaged, number of barns demolished, some trees uprooted; 3 persons injured; damage to property about \$5,000; to crops, about \$100.  
**Fogs, light.**—1 to 6, 8 to 19, 21, 22, 24 to 29. **Fogs, dense.**—3, 9, 12, 13, 14, 19, 26, 27.  
**Frosts, light.**—Allegheny and Washington Counties and interior of southern Eastern Shore, 24; southern Maryland and Eastern Shore, 30.  
**Frosts, heavy.**—Allegheny Mountain region, 24; north-central Maryland, except light near Chesapeake Bay, 30.  
**Frosts, killing.**—Western Maryland, 30.  
**Halos, Lunar.**—11, 13, 19. **Halos, Solar.**—11, 12.  
**Hail, light.**—Oakland, 21. **Rainbow (double).**—Emmitsburg, 28.  
**Thundergusts, high.**—Southwest, 4, 5. Northwest, 9. **Thunderstorms.**—4, 5, 9, 18, 20, 21.  
**Winds, high.**—Northeast, 6 (eastern portion of section, gale on the coast). Northwest, 29.

### PRESSURE, HUMIDITY, SUNSHINE AND WIND

Stations	Atmospheric pressure reduced to sea level				Wind			Mean relative humidity			Percentage of sunshine	
	Average	Highest	Date	Lowest	Date	Average hourly velocity	Maximum velocity	Direction	Date	8 a. m.		Local n n
Aberdeen, Md. ....	30.06	30.36	24	29.65	29	7.1	36	nw.	9	86	82	78
Annapolis, Md. ....	30.05	30.35	24	29.65	29	6.9	35	nw.	9	82	68	82
Baltimore, Md. ....	30.06	30.36	24	29.67	29	8.7	35	nw.	9	78	59	70
Elkins, W. Va. ....	30.10	30.37	24	29.81	29	4.1	18	w.	9	96	59	85
Harrisburg, Pa. ....	30.05	30.37	24	29.65	29	6.0	24	nw.	9	83	59	67
Norfolk, Va. ....	30.06	30.35	25	29.43	6	8.0	34	nw.	9	82	62	80
Philadelphia, Pa. ....	30.07	30.39	25	29.61	29	10.9	36	se.	9	80	61	70
Pittsburgh, Pa. ....	30.06	30.29	23	29.70	29	8.1	29	nw.	9	85	53	64
Washington, D. C. ....	30.05	30.36	24	29.64	6	5.1	21	nw.	9	83	63	74

### COMPARATIVE DATA FOR MARYLAND AND DELAWARE FOR SEPTEMBER

Year	Temperature				Precipitation				Number of days				
	Mean	Departure	Highest	Lowest	Average	Departure	Greatest	Least	Average snowfall	With .01 in. or more precipita'n	Clear	Partly cly	Cloudy
1895....	70.6	+2.8	101	27	2.04	-1.19	5.90	0.24	T	4	19	9	2
1896....	66.8	+1.2	98	26	4.33	+1.10	8.07	1.13	0.0	6	24	6	3
1897....	66.6	+1.0	100	22	1.88	-1.35	3.37	0.50	0.0	6	21	6	3
1898....	69.5	+1.7	100	28	1.85	-1.88	4.28	0.51	0.0	6	20	6	4
1899....	65.4	-2.4	99	25	4.70	+1.47	9.43	0.77	0.0	7	18	8	4
1900....	72.0	+4.2	103	29	3.40	+0.17	8.23	0.40	0.0	6	16	8	6
1901....	66.5	-1.3	95	29	3.03	-0.20	6.46	1.33	0.0	8	15	8	7
1902....	66.1	-1.7	101	25	6.19	+2.96	12.93	1.38	0.0	10	13	8	6
1903....	66.1	-1.7	98	23	2.10	-1.13	4.15	0.58	0.0	5	18	8	4
1904....	67.1	-0.7	99	27	3.61	+0.38	6.22	1.05	0.0	5	15	9	6
1905....	67.1	-0.7	94	24	2.91	-0.32	6.19	1.37	0.0	6	18	8	4
1906....	70.8	+3.0	98	36	1.28	-1.95	3.74	0.22	0.0	6	14	10	6
1907....	68.4	+0.6	95	30	6.23	+3.00	10.95	2.46	0.0	12	12	11	7
1908....	66.0	-1.8	94	24	2.40	-0.83	5.14	0.48	0.0	3	16	8	6
1909....	65.5	-2.3	92	23	3.30	+0.07	5.71	1.18	0.0	5	14	10	6
1910....	69.5	+1.7	98	32	1.78	-1.45	3.97	0.27	0.0	6	16	9	5
1911....	69.3	+1.5	95	30	2.72	-0.51	6.38	0.92	0.0	7	13	11	6
1912....	69.3	+1.5	102	30	5.77	+2.54	9.85	2.07	0.0	11	13	9	8
1913....	66.8	-1.0	102	22	2.83	-0.40	5.31	1.52	0.0	7	14	9	7
1914....	64.8	-3.0	98	21	0.98	-2.30	3.09	0.40	0.0	4	20	6	4
1915....	69.4	+1.6	99	31	2.06	-1.17	5.19	0.43	0.0	4	18	9	7
1916....	65.3	-2.3	98	26	3.43	+0.20	5.70	1.82	0.0	7	19	7	4
1917....	62.6	-5.2	93	27	2.73	-0.50	4.96	1.31	0.0	7	15	8	7
1918....	63.3	-4.5	88	27	3.76	+0.53	5.66	1.96	0.0	8	16	8	6
1919....	68.1	+0.3	100	31	2.32	-0.91	4.09	0.75	0.0	4	18	7	5
1920....	67.7	-0.1	92	35	3.08	-0.15	5.10	1.14	0.0	6	18	7	5
1921....	72.6	+4.8	99	37	3.33	+0.10	7.63	0.26	0.0	9	15	10	5
1922....	68.6	+0.8	100	27	2.57	-0.66	7.30	0.69	0.0	4	18	8	4
1923....	68.3	+0.5	92	28	3.51	+0.28	7.27	1.22	0.0	9	16	8	6
1924....	63.2	-4.6	101	30	6.02	+2.79	8.07	3.83	0.0	12	11	6	13
1925....	71.6	+3.8	100	35	1.69	-1.54	3.84	0.35	0.0	6	15	10	5
1926....	67.9	+0.1	93	35	5.00	+1.77	7.51	2.11	0.0	11	10	10	10
1927....	67.8	+0.0	99	26	1.43	-1.80	7.79	0.49	0.0	4	18	8	4
1928....	63.3	-4.5	93	28	4.67	+1.44	8.73	2.17	0.0	10	11	9	11
1929....	68.3	+0.5	100	28	3.62	+0.39	7.73	0.68	0.0	8	14	11	5
1930....	73.0	+5.2	102	33	1.47	-1.76	4.34	0.26	0.0	8	15	12	3
1931....	72.2	+4.4	100	30	2.54	-0.69	5.92	0.83	0.0	8	18	8	4
1932....	68.0	+0.2	106	25	2.20	-1.03	4.38	0.20	0.0	6	14	11	5
1933....	70.2	+2.4	94	37	3.21	-0.02	6.65	1.15	0.0	11	11	11	8
1934....	68.7	+0.9	92	36	9.33	+6.10	17.45	3.12	0.0	14	8	11	11
1935....	65.2	-2.6	92	28	7.96	+4.73	17.57	3.08	0.0	8	14	8	8
Period.	67.8	.....	106	21	3.23	.....	17.57	0.20	T.	7	16	8	6

Climatological Data, September, 1935

Table with columns: Stations, Counties, Elevation, Length of record, Temperature (Mean, Departure from normal, Highest, Date, Lowest, Date, Greatest daily range), Precipitation (Total, Departure from normal, Greatest in 24 hours, Total snowfall), Number of days (With precip., Clear, Partly cloudy, Cloudy), Prevailing direction of wind, Observers.

The departures from normal temperature and precipitation are computed only for such stations as have 10 or more years of record, but all complete reports are used in determining section or division means. Data in italics determined from surrounding stations. Precipitation is less than 0.01 inch rain or melted snow. Post addresses of these stations are as follows: Of Belk, Glendale; of Coeman, Worton; of Fallston, Bagley; of Ferry Landing, Owings; of Great Falls, Bethesda; of Picardy, Paw Paw, W. Va.; of Pleasant Hill, Owings Mills; of Sines, Oakland; of Custom House, Gay and Water Sts. Weather Bureau Building, 24th and M Sts. Also on other dates. Prettyboy Dam. Municipal Building. Porter Reservoir.

THE EXCESSIVE RAIN OF SEPTEMBER 4-6th, 1935, IN MARYLAND AND DELAWARE.

The Florida hurricane that developed southeast of the Bahamas August 30, 1935, recurved over the Matabumbe Keys, and, after passing the Florida coast east of Apalachicola, moved northeast over the Carolinas and Virginia, crossing the lower Chesapeake Bay north of the Capes the night of September 5th. It lost most of its wind force in its course over land, so that unusual gales and very high tides did not occur in Maryland and Delaware, though on the coast winds were estimated at fifty to fifty-five miles per hour. Over the North Atlantic, winds of hurricane velocity were again attained. A full description of the hurricane will appear in the National Monthly Weather Review. The disturbance was preceded by low pressure and unsettled,

humid weather in the Atlantic States, with rains beginning as early as September 1st in the Middle Atlantic States. An unusual feature was a local tornado near Farmville, Va., on the 5th, and one on the 4th and another on the 5th in southern Maryland. Excessive rains attended the northwest quadrant of the disturbance, falling on the 4th to 6th in Virginia and Maryland, the estimated damage to crops in Virginia, principally corn, being \$1,650,000, and to highways, \$450,000. In Maryland and Delaware the damage was confined to a southern area comprising about two-thirds of Delaware and one-third of Maryland. The damage was especially heavy in Talbot, Caroline, and Dorchester counties of Maryland, where rain of fifteen to sixteen inches occurred within a period of fifty-two hours. In Dorchester

Daily Precipitation for September, 1935

Stations	Drainage basin	Day of month																															Total		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
<i>Maryland</i>																																			
Aberdeen**	Atlantic	T.	.11	24	1.85	2.53	.62			1.05																									6.45
Annapolis**	do.	.07	.01	29	2.47	3.67	.91		T.	.49																									7.99
Baltimore***	do.	.04	.09	61	1.86	3.45	.37		T.	.90																								7.59	
Bell	do.	T.	T.	20	1.70	4.20	2.15		T.	.50				T.																				8.87	
Boys	do.	T.	*	*	*	6.12	.08		T.	1.04																									7.69
Cambridge (near)	do.	T.	T.	1	1.05	3.80	****		T.	T.	.20																							16.26	
Cecilton	do.																																		
Cheltenham	do.	T.	T.	23	1.40	3.35	2.77		.02	T.	.12				T.																			8.29	
Chesville	do.	do.	T.	.95	64	1.17	.22	.07		.05	.01																							3.85	
Clear Spring	do.																																		
Coleman	do.		*	.45	1.35	3.50	1.85																												7.97
College Park	do.	T.	20	.52	.91	4.10	1.72		T.	T.	.81				T.																			8.49	
Crisfield	do.	T.	T.	.35	.11	3.65	.05	.06	T.	T.	1.05																							6.28	
Cumberland	do.	.81	.42	.65	.94	.15					.20																							3.56	
Darlington	do.	*	*	*	6.44	.70					.22	T.																						7.58	
Dundalk**	do.	T.	.30	.86	2.47	2.36	.47		T.	.87																								7.61	
Easton	do.	T.	.05	1.85	3.26	6.52			T.	T.	.56																							17.57	
Elkton	do.	.12	.21	2.20	2.26	1.30					.42	.11																						6.66	
Emmitsburg	do.																																		
Fallston	do.	.27	.35	1.94	2.23	1.07				1.10	T.				T.																			7.27	
Ferry Landing	do.	T.	.20	.78	6.00	3.89			T.	.85	T.																							11.99	
Frederick	do.	T.	.99	.87	1.50	1.56	.06			.33	.01																							5.50	
Friendsville	Ohio	.70	.75	.65	.30	T.				.30																								3.08	
Frostburg	Atlantic	.85	.83	1.55	.09	T.				.15	.07																							4.22	
Grantsville	Ohio	.70	.63	1.24	.27	T.				.38																								3.72	
Great Falls	Atlantic	*	.75	.48	2.05	2.85			T.	T.	.34				T.																			6.91	
Hancock (Tonoloway)	do.	T.	.75	.55	1.78	.30	.15			.12	.03																							4.29	
Hancock (City)	do.	T.	.55	.65	.25	1.34	.85			T.	.10																							3.63	
Keedysville	do.	.02	.90	.42	.98	.66	.18			.04	.06																							3.51	
La Plata	do.	.08	.09	.74	5.92	2.98			.08	T.	.10																							10.97	
Laurel	do.	.14	.78	1.08	3.76	.74			T.	1.00	.02				.01																			7.76	
Lutherville	do.	T.	*	.65	1.89	2.00	1.00				.10	.28																						6.06	
Maryland Line	do.	.04	.53	.72	1.92	1.60	.03			.15	T.																							5.39	
Mechanicsville	do.																																		
Millington	do.	.01	.20	1.04	4.16	3.19				T.	.46																							9.10	
Oakland	Ohio	.95	1.40	1.35	.50	.07				.72	.11																							6.24	
Parkton	Atlantic	T.	.60	1.03	3.67	1.55	.20			.20	T.																							7.61	
Picardy	do.	T.	.88	.43	1.66	.30	.11			T.	.20																							3.98	
Pleasant Hill	do.	T.	.35	.45	1.60	2.30	.42			.62	T.																							6.14	
Princess Anne	do.	T.	T.	.43	4.80	6.86				.10	.12																							13.33	
Ridgely	do.	T.	.12	.75	7.53	6.28				T.	.52																							15.65	
Rock Hall	do.	T.	*	.33	.84	3.50	2.40			T.	.78																							8.05	
Salisbury	do.	T.	T.	.60	4.00	7.50	.30	T.	T.	.73																								14.83	
Sines**	Ohio	1.12	.84	1.25	.06	T.				.52																								4.32	
Snow Hill	Atlantic	T.	T.	.90	.70	4.20	T.	T.	T.	.70																								7.10	
Solomons	do.	T.	T.	.27	3.72	7.40		.35	T.	T.	.15																							13.37	
State Sanatorium	do.	T.	1.10	.60	1.10	.40	.14			.04	T.																							3.86	
Stevensville	do.	T.	.04	1.0	1.30	3.95	2.15			T.	.03	.75																						8.36	
Takoma	do.	T.	.25	.77	*	* 6.85				T.	.95	T.																						9.10	
Towson	do.	T.	.12	*	1.95	2.10	1.31			*	.34																							6.14	
Western Port	do.	.96	.75	1.65	.25	.10				.50	.08																							5.05	
Westminster	do.	T.	.76	.90	2.00	1.36	.06			.26	T.																							5.42	
Woodstock	do.	.01	.28	.52	1.73	2.82	.42			.89	T.																							7.18	
<i>District of Columbia</i>																																			
Washington***	Atlantic	.06	.16	17	2.03	4.45	.22		T.	.52																								8.08	
<i>Delaware</i>																																			
Bridgeville	Atlantic	T.	.02	.90	4.43	7.27				T.	.57																							14.84	
Delaware City	do.	.05	.25	1.30	2.60	2.05				T.	.45																							6.70	
Dover	do.	T.	.10	.36	4.90	4.81				T.	1.03																							11.37	
Milford	do.	T.	.05	.89	4.60	6.40				T.	.35																							13.31	
Millsboro	do.	T.	T.	1.10	2.10	6.65				T.	.45																							12.45	
Wilmington	do.	.31	.18	1.50	3.33	1.93				T.	.45																							7.73	
Wilmington	do.	.31	.19	1.71	2.00	1.76				T.	.63																							6.60	

Except as otherwise indicated, observations are generally made late in afternoon, near sunset, and precipitation recorded is for the 24 hours ending at time of observation.  
 \*\*\*Regular Weather Bureau station; precipitation is for the 24-hour period, midnight to midnight. \*\*Precipitation is for 24-hour period, midnight to midnight.  
 |||Precipitation measured in the morning; amount then recorded is for the preceding 24 hours. T. Trace, or less than 0.01 inch.  
 \$\$\$Prettyboy Dam \$\$\$Municipal Building. \$\$\$\$Porter Reservoir. \*Precipitation included in following measurement. \*\*\*\*10.30 inches.

and Caroline counties the damage to tomatoes alone is estimated at \$300,000 by a leading canner. At Federalsburg, Caroline County, flood waters caused damage estimated at \$500,000 and many people were made homeless temporarily. Some other estimates of damage are as follows: to the Pennsylvania Railroad, \$155,000; to matured crops in Calvert County, \$25,000; to tobacco, chiefly in Charles County, \$25,000; in the vicinity of Greenwood, Delaware, crops, etc., \$14,100; crops in the vicinity of Salisbury, Maryland, tomatoes 80 per cent, snap beans 20 per cent, sweet potatoes 25 per cent, cut hay 50 per cent, standing hay 20 per cent, field corn 20 per cent, clover crops in some places completely washed out, total cash damage unknown; State roads in Maryland, \$175,000; roads in Delaware, \$150,000; Seaford, Del., vicinity, 7,000 acres corn, 3,000 acres tomatoes, 1,000 acres

soy beans, destroyed or damaged; Caroline County, many mill dams, etc., total loss approximately a million dollars. The entire loss was so general and widespread in the counties affected that it is impracticable to give a close estimate of it. It is probably around \$2,000,000. The rainfall was the greatest of record in any one storm in the following counties; Charles, St. Marys, Prince Georges, Calvert, Dorchester, Wicomico, Somerset, Talbot, Caroline, and Queen Annes in Maryland, and Sussex and Kent in Delaware. Some total amounts of rain in fifty-one to fifty-two hours were as follows, the measurement being made with standard Weather Bureau gages: Easton,

Daily Temperatures for September, 1935

Table with columns for Stations, 1-31, and Mean. Rows list various Maryland and Delaware locations such as Aberdeen, Annapolis, Baltimore, etc., with their respective daily temperature readings.

§§ Instruments are read in morning; maximum temperature then read is charged to preceding day, on which it almost always occurs. Temperatures at Aberdeen, Annapolis, Baltimore, Dundalk, Sines, and Washington are from midnight to midnight; other stations, except Cumberland, are for 24-hour period ending late in afternoon, near sunset.