

CLIMATOLOGICAL DATA FOR MAY, 1913.

DISTRICT NO. 9, COLORADO VALLEY.

FREDERICK H. BRANDENBURG, District Editor.

GENERAL SUMMARY.

May was warmer than the normal, except in Arizona and the western part of New Mexico. The extremes of temperature were not unusual in the northern and central parts of the district, but in Arizona and New Mexico the high temperatures common to May did not occur. The feature of the month was the light precipitation. The amount was about 38 per cent of the normal, and this in view of the fact that May, normally in the Colorado Basin, is the driest month in the year. Low pressure prevailed almost continuously. Several depressions were strong enough to move eastward across the mountains, but the attending precipitation was light and scattered, the passage of the depressions being manifested principally by temperature changes and wind storms. As a result of the prolonged drought, grass on the ranges has become dry unusually early in practically all parts of the district. There was a marked excess of sunshine.

TEMPERATURE.

The mean temperature for the stations reporting was 60°, or 0.3° above the normal. The mean for May, 1912, was 58°. The highest monthly mean was 79.7° at Mohawk Summit, Ariz., and the lowest, 33.2°, at Corona, Colo. The cold and warm periods were more sharply defined than usual for the time of year. The first four days were much colder than the normal; it was during this period that the lowest temperatures of the month occurred. Freezing temperatures occurred in western Wyoming and at practically all the stations in western Colorado, eastern Utah, western New Mexico, and three-fourths of the stations in Arizona. Cold spells, but not so severe, also occurred on the 14th, 15th, 19th, 20th, and in the southern half of the district on the last four days.

Details of temperature are summarized in the following table:

Areas of States in district No. 9.	Temperature.					
	Mean.	Departure from normal.	Highest.	Station.	Lowest.	Station.
Western Wyoming..	48.2	+3.7	85	Green River..	9	Willow Creek Cabin.
Western Colorado...	52.4	+2.5	95	At 2 stations...	12	At 2 stations.
Eastern Utah.....	58.2	+1.9	106	Vernal.....	12	Scotfield.
Western New Mexico.	59.0	-0.2	95	At 2 stations...	15	Luna.
Arizona.....	66.0	-1.5	107	Maricopa.....	15	Flagstaff No. 1.
Southeastern Nevada.	65.7	+6.0	100	Logan.....	22	Caliente.

Temperatures were normal or slightly above from the 5th to 12th in the southern and central parts, but in the northern part of the district the excess was more pronounced. From the 22d to the 27th a marked excess was general, and the highest temperatures of the month occurred during this period. Readings of 90° or higher were common, except in western Wyoming. The highest temperature, 107°, occurred at Maricopa, Ariz., on the 23d, and the lowest, 9°, at Willow Creek Cabin, Wyo., on the 3d.

PRECIPITATION.

The average for the 207 stations reporting was 0.21 inch, 0.35 inch less than the normal. The average for May, 1912, was 0.49 inch. Of the stations with normals, only 7 reported an excess, and that slight. The local character of the precipitation is shown by the fact that rain fell somewhere in the district every day but two, yet an appreciable amount did not occur at 2 stations in western Colorado, 8 in eastern Utah, 5 in western New Mexico, 1 in southeastern Nevada, and 35, or 40 per cent, of the stations in Arizona. The greatest monthly amount was 3.09 inches at Corona, Colo. Monthly snowfalls of 2 inches or more occurred at 3 stations in western Wyoming, 15 in western Colorado, and 2 in eastern Utah. The greatest monthly fall, 14.5 inches, occurred at Willow Creek Cabin, Wyo. The average number of days with 0.01 inch or more precipitation was 5 in western Wyoming, 4 in western Colorado, and 1 each in eastern Utah and western New Mexico, and no day in Arizona and southeastern Nevada. For the district as a whole the average was 1 day.

The average precipitation and departures from the normal on the different watersheds are given in the following table:

Watershed.

Green.		Grand.		San Juan.		Little Colorado.		Gila.		Mimbres.		Colorado proper.	
Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.	Average.	Departure.
0.46	-0.53	0.51	-0.70	0.18	-0.58	0.02	-0.55	0.09	-0.15	0.15	-0.01	0.05	-0.43

MISCELLANEOUS.

The average amount of sunshine, in percentages, with departures from the normal was as follows: Grand Junction, 80, +9; Durango, 86, +8; Phoenix, 93, +2; and Yuma, 98, +3.

The relative humidity reported was: Grand Junction, 34; Durango, 36; Phoenix, 26; and Yuma, 40 per cent.

THE COLORADO RIVER.

For May the volume discharged by the Grand River at Fruita was the average for the last six years; that of the Green River at Elgin, Utah, slightly below the average. In the lower reaches of the trunk stream the discharge was somewhat below the average. As is usual at the time of year, the changes in temperature at high altitudes were reflected in the fluctuations of the streams. In the San Juan and Grand, two of the three streams forming the

Colorado, there was a general rise until the 14th, followed by a steady fall till the 23d. The Green, however, maintained a more steady discharge, and in common with the Grand and San Juan, rose after the 23d. The maximum stage in the San Juan was reached on the 28th, while in the Grand and Green the highest occurred on the 31st. In the lower reaches the maximum stage at Topock, 10.1 feet, occurred on the 20th; at Yuma the highest stage, 20.4 feet, occurred on the 23d. These stages are the lowest for May in five years.

TABLE 1.—Climatological data for May, 1913. District No. 9, Colorado Valley.

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 0.01 inch or more, Number of clear days, Number of partly cloudy days, Number of cloudy days), Sky, Prevailing wind direction, and Observers. The table is divided into sections for Wyoming, Colorado, and Utah.

TABLE 1.—Climatological data for May, 1913. District No. 9—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.			Number of cloudy days.
Arizona—Continued.																				
Kingman.....	Mohave.....	3,326	9	66.0	.....	95	15	34	2†	53	0.00	.....	0.00	0	0	26	0	5	se.	Agent A., T. & S. F. Ry.
Lakeside.....	Navajo.....	6,500	14	52.8	.....	82	23	19	4	46	T.	- 0.54	T.	0	0	23	0	8	sw.	Prof. Joseph Peterson.
Lewis Springs.....	Cochise.....	4,029	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent E. P. & S. W. R. R.
Lowell Observatory.....	Cocconino.....	7,180	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Vesto M. Slipper.
McNeal.....	Cochise.....	4,150	13	.....	.....	.....	.....	.....	.....	.....	0.14	.....	0.07	0	3	23	5	3	sw.	Gladys Taylor.
Maricopa.....	Pinal.....	1,186	36	75.8	- 4.2	107	23	43	2	55	T.	- 0.05	T.	0	0	29	2	0	w.	Agent Southern Pacific Ry.
Marinette.....	Maricopa.....	1,155	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Theo. Katzenstein.
Moccasini.....	Mohave.....	4,500	1	57.5	.....	105	25	24	4	61	0.03	.....	0.03	0	1	20	11	0	w.	J. G. Maxwell.
Mohawk Summit.....	Yuma.....	538	18	79.7	- 2.2	102	26	57	1	37	0.00	- 0.03	0.00	0	0	27	2	2	n.	Agent Southern Pacific Ry.
Naco.....	Cochise.....	4,990	4	.....	.....	.....	.....	.....	.....	.....	0.21	.....	0.16	0	2	30	0	1	sw.	Agent E. P. & S. W. R. R.
Natural Bridge.....	Gila.....	4,579	24	.....	.....	.....	.....	.....	.....	.....	0.00	- 0.52	0.00	0	0	21	9	1	sw.	D. G. Goodfellow.
Nutriso.....	Apache.....	8,000	4	.....	.....	.....	.....	.....	.....	.....	0.14	.....	0.10	1.2	2	7	20	4	sw.	U. S. Forest Service.
Oracle.....	Pinal.....	4,502	20	66.6	- 1.9	91	23	37	2	34	0.11	- 0.25	0.11	0	1	26	4	1	w.	J. W. Lawson.
Osborn.....	Cochise.....	4,676	4	.....	.....	.....	.....	.....	.....	.....	0.35	.....	0.35	0	1	21	10	0	w.	Agent E. P. & S. W. R. R.
Paradise.....	.....do.....	5,436	6	58.9	.....	88	27	30	3	51	0.03	.....	0.03	0	1	18	11	2	sw.	J. C. Hancock.
Parker.....	Yuma.....	345	19	75.4	- 1.0	103	24	40	1†	49	0.00	- 0.14	0.00	0	0	28	3	0	sw.	M. A. Isreal, M. D.
Payson.....	Gila.....	5,550	5	56.8	.....	90	31	26	2	54	T.	.....	T.	0	0	23	4	4	sw.	Mart McDonald.
Phoenix.....	Maricopa.....	1,108	18	73.8	- 1.0	99	26	46	2	39	0.00	- 0.03	0.00	0	0	24	4	3	e.	U. S. Weather Bureau.
Phoenix (1).....	.....do.....	1,092	25	71.8	- 2.0	100	23†	40	3	48	0.00	- 0.06	0.00	0	0	28	1	2	w.	Geo. Acuff.
Phoenix (2).....	.....do.....	1,189	4	74.2	.....	100	23	41	5	52	0.00	.....	0.00	0	0	28	0	3	sw.	Salt. Riv. Val. Nurseries.
Pinal Ranch.....	Pinal.....	4,520	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Irion & Craig.
Pinedale.....	Navajo.....	6,500	1	.....	.....	.....	.....	.....	.....	.....	0.00	.....	0.00	0	0	.....	.....	.....	.....	E. Thomas, jr.
Pinto.....	Apache.....	5,660	7	.....	.....	.....	.....	.....	.....	.....	T.	.....	T.	0	0	24	7	0	sw.	Celia F. Henning.
Prescott.....	Yavapai.....	5,320	47	55.8	- 2.9	85	22†	23	3	45	T.	- 0.51	T.	0	0	29	2	0	.....	Dr. J. W. Flinn.
Prescott Dry Farm.....	.....do.....	5,008	1	62.2	.....	88	23	36	29	39	0.04	.....	0.04	0	1	25	5	1	s.	L. L. Bates.
Quartzsite.....	Yuma.....	800	6	76.4	.....	105	22†	42	3	45	0.00	.....	0.00	0	0	23	7	1	s.	W. E. Scott.
Rice.....	Gila.....	2,540	31	66.34	- 4.0	.....	.....	.....	.....	.....	- 0.26	.....	0.00	0	0	27	4	0	sw.	Arthur Pritchard.
Roosevelt.....	.....do.....	2,175	8	77.0	.....	103	27†	47	3	42	0.00	.....	0.00	0	0	25	6	0	w.	U. S. Reclamation Service.
Sacaton.....	Pinal.....	1,280	6	74.0	.....	103	23†	39	3	49	0.00	.....	0.00	0	0	.....	.....	.....	.....	E. W. Hudson.
St. Johns.....	Apache.....	5,650	9	54.0	.....	90	23	25	4	47	0.00	.....	0.00	0	0	24	4	3	sw.	Alexander Shreeve.
St. Michaels.....	.....do.....	6,950	25	55.0	+ 1.6	84	26	23	4	44	T.	- 0.63	T.	0	0	22	8	1	sw.	Rev. Anselm Weber, O. F. M.
San Simon.....	Cochise.....	3,609	27	66.4	- 9.9	98	27†	30	4	61	T.	- 0.15	T.	0	0	28	3	0	se.	Agent Southern Pacific Ry.
Seligman.....	Yavapai.....	5,219	6	57.0	.....	87	5	22	2	54	0.00	.....	0.00	0	0	22	0	9	sw.	Lib. A., T. & S. F. Ry.
Sentinel.....	Maricopa.....	685	15	77.8	- 1.2	106	22	48	3†	46	0.00	0.00	0.00	0	0	31	0	0	.....	Agent Southern Pacific Ry.
Silverbell.....	Pima.....	2,664	8	.....	.....	104	23	.....	.....	.....	0.30	.....	0.30	0	1	26	0	5	s.	Imperial Copper Co.
Snowflake.....	Navajo.....	5,644	6	55.2	.....	87	23	18	4	56	T.	.....	T.	0	0	18	11	2	sw.	William J. Flake.
Springerville.....	Apache.....	6,862	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	U. S. Forest Service.
Supai.....	Cocconino.....	3,200	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Laura B. Symons.
Tempe.....	Maricopa.....	1,165	9	72.6	.....	102	27	44	2†	53	T.	.....	T.	0	0	24	7	0	nw.	F. H. Simmons.
Thatcher.....	Graham.....	2,800	9	70.4	.....	104	22	34	4	55	0.08	.....	0.05	0	2	23	7	1	w.	J. H. Larson.
Tombstone.....	Cochise.....	4,550	17	70.6	+ 2.7	97	22	40	1	39	0.07	- 0.17	0.07	0	1	24	7	0	sw.	F. N. Walcott.
Truxton.....	Mohave.....	3,997	4	62.4	.....	95	23	30	2	50	T.	.....	T.	0	0	17	7	7	s.	Truxton Cany. Ind. School.
Tuba.....	Cocconino.....	4,500	13	62.8	+ 1.1	90	23	30	3	43	T.	- 0.19	T.	0	0	19	12	0	sw.	Ira Bell.
Tucson.....	Pima.....	2,390	31	71.1	- 2.0	101	23	38	4	49	T.	- 0.13	T.	0	0	15	15	1	sw.	University of Arizona.
Tucson (1).....	.....do.....	2,380	5	67.9	.....	101	23†	32	4†	59*	0.00	.....	0.00	0	0	24	7	0	w.	Rev. James F. Record.
Tucson (2).....	.....do.....	2,526	3	70.4	.....	100	27	38	2	48	T.	.....	T.	0	0	24	5	2	w.	U. S. Coast and Geodetic Sur.
Vall.....	.....do.....	3,421	14	65.0	.....	98	26	32	2	51*	0.60	+ 0.58	0.60	0	1	28	0	3	.....	Agent Southern Pacific Ry.
Walnut Grove.....	Yavapai.....	3,649	20	.....	.....	.....	.....	.....	.....	.....	0.00	- 0.09	0.00	0	0	.....	.....	.....	.....	J. O. Carter.
Wickenburg.....	Maricopa.....	2,072	14	67.0	- 2.7	.....	.....	36	12	52*	0.00	- 0.19	0.00	0	0	31	0	0	s.	Agent S. F., P. & P. Ry.
Wilcox.....	Cochise.....	4,164	31	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Agent Southern Pacific Ry.
Williams.....	Cocconino.....	6,750	13	53.6	- 0.4	83	22†	23	2	45	T.	- 0.90	T.	0	0	28	3	0	.....	E. J. Nordyke.
Winslow.....	Navajo.....	4,855	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Winslow High School.
Yuma.....	Yuma.....	141	32	74.9	- 1.9	100	11	47	2	43	0.00	- 0.03	0.00	0	0	30	1	0	s.	U. S. Weather Bureau.
Yuma (1).....	.....do.....	150	6	70.2	.....	97	23	40	2	47	0.00	.....	0.00	0	0	29	2	0	sw.	C. J. Wood.
Nevada.																				
Caliente.....	Lincoln.....	4,407	3	56.3	.....	87	26	22	3	51	0.05	.....	0.05	0	1	29	1	2	ne.	Salt Lake Route.
Las Vegas.....	Clark.....	2,033	11	71.0	+ 6.0	99	23†	42	8	46	T.	- 0.10	T.	0	0	23	6	2	s.	C. P. Squires.
Logan.....	.....do.....	1,355	6	69.8	.....	100	24†	38	3	50	0.00	.....	0.00	0	0	31	0	0	s.	Orin W. Jarvis.

* a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
 ** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.
 † Also on other dates.
 T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—Daily precipitation for May, 1913. District No. 9—Continued.

Stations.	Watershed.	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>Arizona—Contd.</i>																																				
Natural Bridge	Verde																																		0.00	
Nutriso	L. Colorado			.10																					T.	T.	.04							0.14		
Oracle	San Pedro																																	0.11		
Osborn	do.																																	0.35		
Paradise	Desert																								T.	.03								0.03		
Parker	Colorado																								T.									0.00		
Payson	Gila																								T.									T.		
Phoenix	Salt																																	0.00		
Phoenix (1)	do.																																	0.00		
Phoenix (2)	do.																																	0.00		
Pinal Ranch ||	Gila																																	0.00		
Pinedale	L. Colorado																																	0.00		
Pinto	do.			T.																					T.									T.		
Prescott	Hassayampa																								T.	T.								T.		
Prescott Dry Farm	Verde																										.04							0.04		
Quartzsite	Colorado																																	0.00		
Rice	Gila																																	0.00		
Roosevelt	Salt																																	0.00		
Sacaton	Gila																																		0.00	
St. Johns	Little Colorado																																		0.00	
St. Michaels	do.				T.																				T.	T.	T.	T.	T.					T.		
San Simon	Gila																								T.	T.								T.		
Seligman	Verde																																		0.00	
Sentinel	Gila																																		0.00	
Silverbell	Santa Cruz																											.30							0.30	
Snowflake	Little Colorado																									T.									T.	
Springerville	do.																																			
Supai	Colorado																																		T.	
Tempe	Salt																									T.									0.08	
Thatcher	Gila																								.05									.03		
Tombstone	San Pedro																										.07								0.07	
Truxton	Colorado																										T.								T.	
Tuba	Little Colorado																												T.						T.	
Tucson	Santa Cruz																										T.	T.							T.	
Tucson (1)	do.																																		0.00	
Tucson (2)	do.																																		T.	
Vail	do.																										T.	.60								0.60
Walnut Grove	Hassayampa																																		0.00	
Wickenburg	do.																																		0.00	
Wilcox	Desert																																		0.00	
Williams	Colorado			T.																															T.	
Winslow	Little Colorado																																			
Yuma	Colorado																																		0.00	
Yuma (1)	do.																																		0.00	
<i>Nevada.</i>																																				
Callente	Colorado																																		T.	
Las Vegas	do.																																		.05	
Logan	do.																																		T.	

* Precipitation included in that of the next measurement.
 † Separate dates of falls not recorded.
 †† Precipitation for the 24 hours ending on the morning when it is measured.
 T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 3.—Maximum and minimum temperatures at selected stations for May, 1913. District No. 9, Colorado Valley.

Table with columns for Wyoming (Daniel, Green River), Colorado (Durango, Grand Junction, Gunnison, Meeker, Steamboat Springs), Utah (Emery, Hite, Moab, St. George, Vernal), and New Mexico (Bloomfield, Fort Bayard). Rows show dates from 1 to 31 and monthly means (Mns.).

Table for Arizona with columns for Bisbee, Flagstaff, Fort Apache, Grand Canyon, Parker, Phoenix, Prescott, St. Michaels, Tucson, Yuma, and Logan, Nev. Rows show dates from 1 to 31 and monthly means (Mean).

a, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record. §§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.