

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

EDWARD A. BEALS, District Forecaster.

VOL. XXII. SAN FRANCISCO, MAY, 1918. No. 5.

GENERAL SUMMARY.

Cool and dry weather prevailed in California during May, 1918. For the State as a whole it was the driest May in eight years, while at many individual stations it was the driest May in a much longer period. Cold, northerly winds were of frequent occurrence, and the total wind movement was relatively high. On Mount Tamalpais a wind velocity of 88 miles per hour was recorded on the 4th, and at Point Reyes velocities of 40 miles per hour or higher occurred on 20 days of the month, and the average velocity for the month was 31.2 miles per hour. Cloudiness was somewhat above the normal, and this aided in keeping the maximum temperatures relatively low. Thunderstorms were reported from many stations. A storm of extraordinary violence occurred in the vicinity of Madera and Clovis on the evening of the 7th. At the former place lightning struck a church building which was destroyed in the fire which followed, while at the latter place hail did considerable damage to growing fruit, and accumulated on the ground to a depth of two and one-half inches. Light snow fell in the mountains during the early part of the month. At the close of the month only the tops of the higher mountains were still snow-covered. Streams maintained normal stages, and there were no floods. Though frosts occurred on several mornings the only damage reported was that sustained by vineyards in the San Joaquin Valley.

The first week was moderately warm, the highest temperatures of the month occurring at most stations on the 1st or 2d. Scattered showers fell during the second week, which was cold, cloudy, windy and generally unpleasant. Numerous thunderstorms accompanied by light showers occurred between the 7th and 10th. Fair weather was general during the third week, but the temperature remained somewhat below normal. Unsettled and showery weather prevailed during the last ten days of the month. The rainfall was light, and the lack of sunshine kept the temperature relatively low.

Agriculturally, the weather during May was partly favorable, partly unfavorable. There was further planting of cotton, rice, corn, potatoes, beans, and truck crops. Deficient rainfall caused slow growth of grass on the ranges, unirrigated crops made slow advancement, and growing grain headed prematurely. Deciduous fruit did well, however. Cultivation of the soil in orchards was made possible by the showers, which, though light, were sufficiently heavy to loosen the soil. Hops and sugar beets made satisfactory progress. Normal crops of berries and cherries were harvested, and cantaloupes began to mature in the Imperial Valley. The first cutting of alfalfa was completed, and a good crop was secured. The harvesting of Valencia oranges was begun. This crop is about 25 per cent below the normal in quantity, but the quality is excellent. The bloom on Navel orange trees was the heaviest in years. At the close of the month the condition of citrus fruit was above the average, that of deciduous fruit was about the average, while that of nuts, vegetables, grass and grain was below the average for the past ten years. The cool weather was favorable for field work, and much was accomplished. At the close of the month the agricultural situation was generally satisfactory. While the supply of irrigation water is likely to run short in a few restricted districts, it now appears that there will be an ample supply for the State as a whole. A. H. P.

PRESSURE.

The mean sea level pressure, determined from the records of twelve regular Weather Bureau stations, was 29.97 inches. The highest was 30.28 inches at Eureka on the 11th; the lowest was 29.58 inches at Independence on the 5th; the range for the State was 0.70 inch.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 98 stations, was 59.0°, which is 3.1° below the normal.

The highest monthly mean was 79.2°, at Greenland Ranch; and the lowest was 38.0° at Tamarack.

The highest temperature, 108°, occurred at Greenland Ranch on the 4th; and the lowest, 9°, occurred at Tamarack on the 9th. The range for the State was 99°.

PRECIPITATION.

The average precipitation for the State, as shown by the records of 221 stations, was 0.37 inch, or 0.85 inch below the normal.

The greatest monthly amount was 2.70 inches, at Montgomery Creek. Forty-two stations reported no precipitation.

The greatest amount in 24 hours was 1.53 inches at Yosemite on the 8th.

RELATIVE HUMIDITY, SUNSHINE AND CLOUDINESS.

Stations.	Relative humidity. (Per cent.)			Sunshine.	
	5 a. m.	5 p. m.	Mean.	Actual No. of hours	Per cent of possible.
Eureka.....	90	80	85	292	65
Fresno.....	71	26	49	408	53
Los Angeles.....	63	62	73	313	72
Mount Tamalpais.....	62	54	58	380	86
Red Bluff.....	61	55	43	385	86
Sacramento.....	85	86	60	405	91
San Diego.....	75	71	73	268	62
San Francisco.....	87	70	78	365	83
San Jose.....	88	62	75	344	78
San Luis Obispo.....	88	62	75	356	82

WIND MOVEMENT.—(Miles.)

Stations.	Total mov. for month.	Ave. hr. velocity.	Maximum velocity.	Direction.	Date.	Prev. dir.
Eureka.....	6,653	8.9	33	n.	24	n.
Fresno.....	6,606	8.9	27	nw.	4	nw.
Los Angeles.....	4,434	6.0	20	sw.	27	sw.
Mount Tamalpais.....	14,808	19.9	88	nw.	4	nw.
Point Reyes.....	23,237	31.2	70	nw.	5	nw.
Red Bluff.....	4,522	6.1	31	ne.	27	se.
Sacramento.....	6,555	9.2	28	sw.	7	s.
San Diego.....	5,325	7.2	22	nw.	12	sw.
San Francisco.....	9,246	12.4	32	sw.	28	sw.
San Jose.....	5,275	7.1	25	nw.	4	nw.
San Luis Obispo.....	3,675	4.9	19	sw.	26	w.

COMPARATIVE DATA FOR MAY.

Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.
1897.....	66.9	0.18	1903.....	63.5	0.14	1909.....	60.4	0.23	1915.....	57.6	4.13
1898.....	61.3	1.56	1904.....	64.9	0.22	1910.....	65.5	0.18	1916.....	58.1	0.61
1899.....	59.9	0.73	1905.....	59.6	2.18	1911.....	58.3	0.72	1917.....	57.2	0.75
1900.....	64.0	1.39	1906.....	59.8	3.19	1912.....	60.7	1.92	1918.....	59.0	0.37
1901.....	62.0	1.03	1907.....	61.5	0.57	1913.....	62.3	1.04			
1902.....	60.8	0.84	1908.....	58.0	1.63	1914.....	62.3	0.69			

Explanation of Reference Marks Used in This Publication.

The departures from the normal temperature and precipitation are computed only for such stations as have ten or more years of record, but all complete reports are used in determining section or division means.
 † Also on other dates. T. Precipitation is less than 0.01 inch rain or melted snow.
 a, b, c, etc., indicate respectively, 1, 2, 3, etc., days missing from the record.
 Station at Llano formerly known as Valyermo; station at Lytle Creek formerly known as Rialto (near).

Climatological Data for May, 1918.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.						Precipitation, in inches.				Number of days.			Prevailing direction of wind.	Observers.		
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Snowfall (unmelted).	Precipitation of inch or more.	Clear.			Partly cloudy.	Cloudy.
Alturas	Modoc	4,400	14	51.2	-0.3	83	1	23	14	55	0.67	-0.55	0.22	1.0	7	16	13	2	w.	Prof. C. B. Towle.
Antioch	Contra Costa	46	39	63.6	-2.5	90	2	42	20	42	0.00	-0.50	0.00	0	0	30	1	0	e.	C. G. McDaniel.
Atascadero	San Luis Obispo	837	2	52.8	.....	92	1	26	9	53	0.00	0.00	0	0	25	5	5	s.	Colony Holding Corp.	
Avalon	Los Angeles	30	8	57.8	.....	69	1	43	10	16	0.32	0.22	0	3	23	6	7	n.	T. S. Manning.	
Azusa	do	540	16	63.8	+1.3	93	11	43	10	45	0.11	-0.82	0.11	0	1	7	10	14	n.	C. C. Hillis.
Bakersfield	Kern	4,040	29	64.0	-7.4	91	4	35	9	42	0.00	-0.38	0.00	0	0	26	0	5	w.	Santa Fe Co.
Barstow	San Bernardino	2,105	15	63.7	-4.1	95	3	38	29	41	0.62	+0.58	0.34	0	2	20	7	4	w.	E. L. White.
Berkeley	Alameda	317	31	56.0	-1.5	71	1	40	5	30	T.	-1.17	T.	0	0	30	0	1	sw.	State University.
Butteravia	Santa Barbara	155	5	58.8	.....	88	1	36	28	46	0.00	0.00	0	0	30	0	0	1	sw.	Union Sugar Co.
Blue Canon	Placer	4,635	19	52.6	+0.4	80	17	26	10	46	0.05	-3.86	0.00	0	0	29	1	1	sw.	Southern Pacific Co.
Blythe	Riverside	110	2	72.2	.....	102	3	47	12	50	0.00	0.00	0	0	29	0	0	1	sw.	C. L. Suits.
Bonita	San Diego	110	2	62.0	.....	88	1	42	12	41	0.08	0.08	0	1	22	9	0	0	w.	R. M. Allen.
Branscomb	Mendocino	2,000	18	56.2	+2.8	82	31	31	125	45	0.00	-2.82	0.00	0	0	29	2	0	n.	A. J. Haun.
Burney	Imperial	-105	8	72.0	.....	97	4	52	10	42	0.00	0.00	0	0	30	1	0	0	sw.	M. D. Witter.
Calxico	Shasta	3,300	8	51.4	.....	82	11	25	125	50	2.12	1.10	T.	3	18	5	9	s.	Mrs. M. D. Chambers.	
Camptonville (near)	Yuba	3,500	11	57.0	.....	86	1	32	10	42	0.35	0.30	0	2	20	4	4	w.	H. M. Rouse.	
Cedarville	Modoc	4,675	24	51.6	-0.4	80	1	30	21	40	0.93	-0.28	0.37	0	4	2	27	2	n.	Pacific Gas & Electric Co.
Chico	Butte	189	48	63.8	-4.6	93	30	41	14	43	0.70	-0.41	0.60	0	2	20	9	2	sw.	T. H. Johnstone.
Claremont	Los Angeles	1,200	26	58.8	-2.4	94	2	39	10	47	0.50	-0.35	0.21	0	4	12	16	3	.....	U. S. Bureau Plant Ind.
Cloverdale	Sonoma	340	16	60.2	-1.5	88	11	38	79	46	0.28	-1.11	0.18	0	2	28	2	1	w.	Prof. F. P. Brackett.
Clovis	Placer	2,421	47	57.6	-3.6	86	1	34	10	33	0.87	-1.61	0.60	0	2	25	4	2	s.	John O. Ogle.
Corona	Riverside	615	4	62.8	.....	99	2	40	11	48	0.11	0.07	0	4	19	8	4	uw.	Southern Pacific Co.	
Crescent City	Del Norte	125	4	52.2	+0.2	78	2	36	121	34	0.90	-2.61	0.45	0	4	18	10	3	uw.	T. C. Sias.
Davis	Yolo	51	46	63.2	-4.7	95	11	36	26	51	0.00	-0.72	0.00	0	0	26	5	0	sw.	Thos. E. Peacock.
Downieville	Sierra	3,150	7	54.6	.....	87	1	30	28	51	0.49	0.37	0	3	19	10	2	2	s.	S. H. Beckett.
Durham	Butte	160	23	62.9	-0.9	89	2	39	22	44	0.56	-0.56	0.50	0	2	24	3	4	sw.	J. T. Mason.
El Cajon	San Diego	432	19	62.8	+0.1	96	2	43	11	45	0.06	-0.38	0.06	0	1	29	2	0	s.	R. W. Durham.
Elsinore	Riverside	1,300	2	63.8	.....	99	3	40	11	44	0.30	0.16	0	3	6	4	21	se.	Philip L. Kessler.	
Escondido	San Diego	657	24	63.6	+0.6	96	1	58	11	45	0.58	-0.06	0.25	0	4	4	27	0	w.	W. L. Wilhite.
ETBEKA	Humboldt	64	32	50.6	-1.5	69	2	41	21	23	0.29	-2.25	0.13	0	4	9	15	7	n.	A. R. Moon.
Folsom	Sacramento	252	45	66.4	-0.1	91	1	45	10	41	T.	-1.16	T.	0	0	24	7	0	n.	U. S. Weather Bureau.
Fontana	San Bernardino	1,325	6	60.2	.....	95	1	37	11	42	1.27	1.04	0	6	21	7	3	sw.	G. I. Marvin.	
Fort Bidwell	Modoc	4,375	29	51.7	-3.3	82	3	27	10	41	0.74	-0.64	0.24	1.0	6	13	11	1	sw.	Fontana Land Co.
FRESNO	Fresno	293	31	63.8	-4.6	92	1	44	10	35	0.51	-0.12	0.44	0	2	25	5	3	sw.	C. R. Decious.
Grass Valley	Nevada	2,690	46	57.5	.....	81	2	34	10	32	0.62	-0.78	0.62	0	0	19	0	12	sw.	U. S. Weather Bureau.
Greenland Ranch	do	-178	7	79.2	.....	108	4	48	11	40	T.	0.00	0	0	19	0	12	4	sw.	Mrs. L. M. Wentworth.
Hanford	Kings	249	18	62.7	-4.2	94	3	40	79	40	0.58	-0.11	0.58	0	1	27	0	4	n.	O. A. Denton.
Healdsburg	Sonoma	110	25	59.2	-4.7	89	3	37	49	49	0.00	-1.78	0.00	0	0	22	8	1	nw.	Santa Fe Co.
Hollister	San Benito	284	44	55.6	-6.7	85	1	38	11	43	0.08	-0.46	0.05	0	3	4	26	1	w.	Dr. F. J. Kinley.
INDEPENDENCE	Inyo	3,907	22	60.4	-4.1	85	3	34	9	40	0.18	+0.02	0.16	0	2	20	5	6	nw.	Grangers' Union.
Inskip	Butte	4,975	11	50.8	.....	74	1	30	10	28	0.70	0.32	0	3	10	13	8	1	w.	U. S. Weather Bureau.
Kennett	Shasta	730	6	66.2	.....	93	29	41	27	41	0.17	0.08	0	3	24	6	1	sw.	Pacific Gas & Electric Co.	
King City	Monterey	333	31	56.8	-3.1	97	2	31	118	60	0.00	-0.36	0.00	0	0	29	0	2	n.	C. H. Kremers.
La Porte	Plumas	5,000	24	45.4	-3.0	69	1	28	10	29	0.77	-4.23	0.49	1.0	2	16	9	6	n.	Southern Pacific Co.
Lemon Cove	Tulare	600	23	62.8	-5.0	90	4	39	10	42	0.38	-0.79	0.36	0	2	26	3	2	nw.	C. W. Hendel.
Lick Observatory	Santa Clara	4,209	29	49.6	-1.6	77	1	29	26	25	0.09	-1.52	0.03	0	4	21	8	2	nw.	T. E. Bence.
Lindsay	Tulare	384	4	62.8	.....	95	3	36	10	48	0.17	0.17	0	1	21	6	4	nw.	The Director.	
Lone Pine	Inyo	3,728	13	59.5	-1.7	89	18	32	78	57	0.20	-0.14	0.20	0	1	23	8	0	s.	Basil Prior.
Los Angeles	Los Angeles	293	41	61.2	-1.3	87	2	48	10	31	0.40	-0.08	0.22	0	3	9	16	6	sw.	G. F. Marsh.
McCloud	Siskiyou	3,270	8	51.2	.....	79	1	25	9	47	1.15	0.70	0	3	13	12	6	s.	U. S. Weather Bureau.	
Madeline	Lassen	5,270	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	0	0	28	1	2	s.	McCloud River Lbr. Co.	
Marysville	Yuba	67	47	63.1	-5.7	90	2	40	10	41	0.00	-0.89	0.00	0	0	28	1	2	s.	J. H. Williams.
Mecca	Riverside	-185	12	74.6	-1.3	98	13	52	10	37	0.00	-0.02	0.00	0	0	20	10	1	nw.	Southern Pacific Co.
Merced	Merced	173	44	62.2	-5.1	91	1	42	19	42	T.	-0.57	T.	0	0	28	1	2	nw.	E. A. Palmer.
MOUNT TAMALPAIS	Marin	2,375	19	52.6	-1.1	79	1	36	26	27	0.01	-1.50	0.01	0	1	22	7	2	nw.	Santa Fe Co.
Mount Wilson	Los Angeles	5,704	1	51.0	.....	82	3	28	10	28	0.31	0.17	0.5	3	11	9	10	sw.	U. S. Weather Bureau.	
Napa	Napa	20	41	55.8	-5.0	85	2	32	19	46	0.06	-0.95	0.05	0	2	18	13	0	sw.	Wendell P. Hoge.
Needles	San Bernardino	477	26	75.2	-4.4	103	3	49	129	46	T.	-0.06	T.	0	0	16	9	6	e.	State Hospital.
Nevada City	Nevada	2,850	26	52.4	-3.2	83	1	25	10	47	0.45	-2.02	0.39	0	3	24	6	1	sw.	Santa Fe Co.
Newman	Stanislaus	91	29	61.6	-7.5	93	1	36	49	48	0.00	-0.57	0.00	0	0	9	19	3	nw.	F. S. Waagenheim.
Oakland	Alameda	36	42	55.1	-3.0	74	1	43	14	28	T.	-0.67	0.20	0	1	16	10	5	se.	Chabot Observatory.
Oakland	Glenn	254	36	66.2	-4.2	92	11	43	119	42	0.20	-0.67	0.20	0	1	16	10	5	se.	U. S. Rec. Service.
Oroville (near)	Butte	324	34	63.2	-3.0	92	2	42	10	42	0.47	-1.03	0.23	0	3	23	1	7	sw.	Dr. E. D. Fairchild.
Pasadena	Los Angeles	1,085	23	59.2	-4.4	92	2	38	10	42	1.07	-0.64	0.91	0	4	9	16	6	sw.	R. P. Hamlin.
Paso Robles	San Luis Obispo	800	31	57.0	-5.4	96	12	30	9	54	0.00	-0.58	0.00	0	0	24	6	1	e.	Virginia Bartlett.
Petaluma	Sonoma	4	53.7	.....	.....	81	2	32	9	40	0.00	-0.84	0.00	0	0	25	6	0	w.	John Landis.
Placerville	El Dorado	1,925	29	51.0	-7.0	68	9	33	118											

Daily Temperature for May, 1918.

Table with 32 columns (Stations, 1-31, Mean) and 32 rows of station names (Bakersfield to Stockton) with their respective daily temperature readings for May 1918.

SUPPLEMENTAL PRECIPITATION TABLE.

Table with 12 columns (Stations, Watersheds, Precip. inches) and 32 rows of station names (Abbotts to De Sable) with their respective precipitation data for May 1918.