

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

CALIFORNIA SECTION.  
G. H. WILLSON, District Forecaster.

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SAN FRANCISCO, MAY, 1916.

No. 5.

## GENERAL SUMMARY.

May, 1916, was abnormally cold and dry in California. Taking the State as a whole, the mean temperature was  $4.0^{\circ}$  below the normal, while the average precipitation was but 0.61 inch, or exactly one-half the usual amount. The rainfall, both in the total amount and in the frequency of occurrence, was in marked contrast with that of May, 1915, when the average precipitation for the State was 4.13 inches. A total of 32 stations reported no rainfall whatever, while 13 other stations reported only a trace. The month was also unusually windy, with a frequent occurrence of cold and dry northerly winds of high velocity. At Eureka the wind movement recorded has been exceeded but twice during the month of May in the past 30 years, while at Fresno the total movement was the greatest for any one month in a record of equal length. Killing frosts were common, those on the mornings of the 6th, 7th and 8th having been particularly injurious, while those on the mornings of the 23d and 24th were the latest ever experienced at certain stations. Regardless of the excessive snowfall in the mountains during the past winter, and particularly in January, there have been no wide-spread floods during the spring months. The average stages of rivers remained high, however, and for most streams they were higher than the 10-year averages. The only serious loss resulting from floods was that in the vicinity of Tulare Lake, where additional grain land was submerged during May.

The first week was fine and warm, the highest temperatures of the month occurring at most stations during the first five days. The period from the 6th to the 9th was one of unsettled and showery weather, with wide-spread damaging frosts. From the 10th to the 17th the weather throughout the State was clear and relatively cold, with occasional frosts in the lowlands. On the 18th and 19th scattered showers again fell. Thunderstorms occurred in the mountain regions, while the extreme north portion of the State received a copious rainfall. The following three days, from the 20th to the 22d, inclusive, were clear and cool, with scattered light frosts. Unsettled weather again followed, from the 23d to the 25th, after which the remainder of the month was fair and cool.

From an agricultural point of view the month was unfavorable for plant growth and for the maturing of crops, but it was favorable for outdoor farm work. As May was the fourth consecutive month with deficient precipitation the effects of the prolonged drought are everywhere apparent. The grain and grass crops have naturally suffered most from the lack of moisture. Fruit orchards also have been harmed somewhat, since the soil moisture could not be conserved by means of cultivation, on account of the early cessation of the winter rains. The cool weather has in a measure offset the ill effects of the deficient rainfall, since it has resulted in a slow growth, causing the grain to fill, and the fruit to become plumper. Quality has therefore been enhanced at the cost of quantity. Unusually late frosts did considerable damage to tender vegetation, but the damage was limited to certain restricted districts, and was not uniformly distributed throughout any one valley. While the weather during May was thus unfavorable, generally speaking, crops have progressed fairly well under the adverse conditions, and the outlook is for a yield only slightly below the normal.

A. H. P.

## PRESSURE.

The monthly mean atmospheric pressure for the State, reduced to sea level, was 29.96 inches.

The highest was 30.49 inches at Eureka on the 9th.

The lowest was 29.37 inches at Independence on the 23d.

The range for the State was 1.12 inches.

## TEMPERATURE.

The monthly mean temperature for the State was 58.1 degrees, which is 4.0 degrees below the normal.

The highest monthly mean was 78.9 degrees, at Bagdad; and the lowest was 38.5 degrees, at Fordyce Dam.

The highest temperature, 105 degrees, occurred at Calexico, on the 9th; and the lowest, 8 degrees, occurred at Tamarack, on the 24th.

The range for the State was 97 degrees.

## PRECIPITATION.

The average precipitation for the State was 0.61 inch, or 0.61 inch below the normal.

The greatest monthly amount was 4.88 inches, at Crescent City. 32 stations reported no precipitation.

The greatest amount in 24 hours was 2.30 inches at Crescent City, on the 6th.

## RELATIVE HUMIDITY.—(Per Cent.)

Stations.	5 a.m.	5 p.m.	Mean.
Eureka.....	90	79	84
Fresno.....	63	21	42
Los Angeles.....	82	57	69
Mount Tamalpais.....	57	52	54
Red Bluff.....	60	22	41
Sacramento.....	82	34	58
San Diego.....	82	69	75
San Francisco.....	79	62	71
San Jose.....	80	49	64
San Luis Obispo.....	84	67	76

## SUNSHINE AND CLOUDINESS.

Stations.	Actual hours of sunshine.	Per cent of the possible.
Eureka.....	274	64
Fresno.....	402	92
Los Angeles.....	346	80
Mount Tamalpais.....	391	89
Red Bluff.....	389	87
Sacramento.....	392	88
San Diego.....	314	73
San Francisco.....	342	77
San Jose.....	366	83
San Luis Obispo.....	334	77

## WIND MOVEMENT.—(Miles.)

Stations.	Total movement for month.	Average hourly velocity.	Maximum velocity.	Direction.	Date.
Eureka.....	7,798	10.5	43	n.	12
Fresno.....	7,750	10.4	39	nw.	6
Independence.....	5,412	7.4	36	n.	23
Los Angeles.....	4,409	5.9	26	sw.	23
Mount Tamalpais.....	15,146	20.4	80	dw.	21
Point Reyes.....	24,063	32.3	80	nw.	21
Red Bluff.....	5,582	7.5	31	n.	12
Sacramento.....	7,486	10.1	32	dw.	12
San Diego.....	5,460	7.3	24	w.	19
San Francisco.....	8,346	11.2	34	sw.	5
San Jose.....	3,590	5.2	24	w.	30
San Luis Obispo.....	4,268	5.7	24	w.	26

The prevailing direction of the wind for the State was west.

## Climatological Data for May, 1916.

Stations.	Counties.	Elevation, feet.	Length of record,	Temperature, in degrees Fahr.						Precipitation, in inches.						Number of days.						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 (0.1 inch or more).	Clear.	Partly cloudy.	Cloudy.	Prevailing direction of wind.			
Alturas.....	Modoc.....	4,400	12	48.1	.....	83	3	15	10	57	2.57	+1.47	1.22	4.0	8	14	13	4	w.	Prof. C. B. Towle.		
American Camp.....	Tuolumne.....	2,600	1	56.0	.....	86	4	33	25	45	0.30	0.18	0	0	2	22	4	5	s.	U. S. Forest Service.		
Angiola.....	Tulare.....	208	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Santa Fe Co.	
Antioch.....	Contra Costa.....	46	37	67.6	+1.5	96	1	44	25	42	0.00	-0.50	0.00	0	0	30	1	0	e.	C. G. McDaniel.		
Arrowhead Springs.....	San Bernardino.....	2,000	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	John Jurgens.	
Atascadero.....	San Luis Obispo.....	837	...	55.7	.....	87	3	33	113	50	0.00	0.00	0	0	31	0	0	0	.....	Colony Holding Corp.		
Auberry.....	Fresno.....	2,050	59.2	.....	84	4	30	24	39	0.35	0.34	0	2	27	3	1	nw.	S. J. & E. Ry. Co.				
Anburn.....	Placer.....	1,360	45	62.4	-0.3	83	4	37	24	29	0.64	-0.88	0.43	0	3	24	1	6	e.	Southern Pacific Co.		
Avalon.....	Los Angeles.....	30	6	59.8	.....	74	+1	48	3	24	0.00	0.00	0	0	29	0	0	0	w.	T. S. Manning.		
Azusa.....	do.....	540	14	64.4	+1.9	95	15	37	25	53	0.15	-0.78	0.15	0	1	18	8	5	w.	C. O. Hillis.		
Bagdad.....	San Bernardino.....	784	13	78.9	-1.3	99	5	54	24	31	0.00	-0.18	0.00	0	0	.....	.....	.....	.....	Santa Fe Co.		
Bakersfield.....	Kern.....	404	27	64.6	-6.8	97	5	46	110	49	0.04	-0.34	0.04	0	1	24	0	7	w.	E. L. White.		
Barstow.....	San Bernardino.....	2,105	13	64.8	-3.0	91	3	42	24	35	0.22	+0.18	0.22	0	1	29	0	2	w.	State University.		
Berkeley.....	Alameda.....	317	29	57.4	-0.1	80	1	40	7	32	0.06	-1.11	0.05	0	2	24	3	4	nw.	Union Sugar Co.		
Betteravia.....	Santa Barbara.....	155	3	58.1	.....	86	1	34	31	48	0.00	0.00	0	0	29	1	1	w.	Southern Pacific Co.			
Biggs **.....	Butte.....	98	17	72.2	+6.2	96	27	48	24	51	0.36	-0.70	0.22	0	2	.....	.....	.....	.....	W. A. Chaffant.		
Bishop.....	Inyo.....	4,450	21	58.1	-1.6	87	+3	29	124	45	0.00	-0.22	0.00	0	0	26	4	1	.....	Paul E. Lodge.		
Bishop Creek.....	do.....	8,500	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Victor Hope.		
Blacksburg.....	Humboldt.....	1,700	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Southern Pacific Co.		
Blue Canon.....	Placer.....	4,695	17	50.0	-2.2	78	3	28	24	43	1.35	-2.21	0.70	8.0	4	22	1	8	w.	C. L. Suits.		
Blythe.....	Riverside.....	268	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	R. M. Allen.		
Bonita.....	San Diego.....	110	2	62.6	-1.9	83	1	45	114	38	0.00	0.00	0	0	26	1	4	n.	A. J. Haun.			
Branscomb.....	Mendocino.....	2,000	16	51.5	-1.9	83	1	27	39	39	1.48	-1.34	0.82	T	5	18	9	4	n.	M. D. Witter.		
Brawley.....	Imperial.....	105	6	77.0	.....	102	+8	52	24	48	0.00	0.00	0	0	.....	.....	.....	.....	Geo. Delury, Jr.			
Bridgeport.....	Mono.....	6,500	2	44.8	.....	74	3	16	24	48	0.17	0.09	1.5	2	20	8	3	w.	Mrs. M. D. Chambers.			
Burney.....	Shasta.....	3,300	6	47.2	.....	76	+1	21	10	47	1.80	0.63	T	4	19	6	6	w.	Dr. W. L. Shawk.			
Cahuilla.....	Riverside.....	3,600	5	46.6	.....	81	3	13	21	59	0.13	0.13	0	1	30	0	1	sw.	U. S. Forest Service.			
Calaveras Ranger Sta.....	Calaveras.....	3,400	5	51.7	.....	78	2	29	7	37	0.83	0.47	2.0	3	16	10	5	sw.	F. R. Spencer.			
Calixco.....	Imperial.....	0	11	75.8	+0.9	105	9	50	125	46	0.00	-0.09	0.00	0	0	31	0	0	sw.	F. M. Righter.		
Campbell.....	Santa Clara.....	217	19	55.4	-2.1	83	2	32	7	42	T	-0.56	T	0	0	24	2	5	nw.	Pacific Gas & Electric Co.		
Camptonville (near).....	Yuba.....	3,500	9	56.0	.....	80	4	25	7	46	1.75	1.05	7.0	5	18	8	5	sw.	Great Western Power Co.			
Canon Dam.....	Plumas.....	4,570	2	50.8	.....	84	2	30	24	24	1.08	0.44	0	0	6	21	4	6	n.	S. J. & E. Ry. Co.		
Cascade.....	Fresno.....	4,900	5	51.4	.....	78	10	24	24	43	1.08	0.74	2.0	2	26	0	5	sw.	T. H. Johnstone.			
Cedarville.....	Modoc.....	4,675	22	50.2	-1.8	*82	3	*23	*78	*45	1.49	+0.22	0.50	0.5	6	.....	.....	.....	.....	U. S. Forest Service.		
Center Ranger Station.....	Tuolumne.....	3,850	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	Pacific Gas & Electric Co.		
Centerville.....	Butte.....	490	2	60.0	.....	88	29	36	11	47	1.59	0.50	0	5	21	4	6	s.	U. S. Bureau Plant Ind.			
Chico.....	do.....	189	46	63.6	-4.8	90	+4	39	23	43	1.45	+0.51	0.66	0	6	17	5	se.	O. I. Westerburg.			
China Flat.....	Humboldt.....	600	7	58.2	.....	85	+1	35	12	46	1.02	0.43	0	4	24	4	3	n.	Prof. F. P. Brackett.			
Claremont.....	Los Angeles.....	1,200	24	62.0	+0.8	88	15	37	23	43	0.18	-0.67	0.16	0	2	18	11	2	sw.	John O. Ogle.		
Cloverdale.....	Sonoma.....	340	14	60.7	-1.0	*90	1	35	*35	48	T	-0.88	0.26	0	4	26	1	1	w.	Producers Trans. Co.		
Coalinga.....	Fresno.....	663	4	63.3	.....	96	5	36	8	48	T	0	0	0	2	28	2	1	w.	Southern Pacific Co.		
Colfax.....	Placer.....	2,421	45	54.9	-6.3	80	+3	20	24	38	1.14	-1.24	0.54	0	3	24	0	7	sw.	Colusa Sun.		
Colusa.....	Colusa.....	60	13	56.6	-8.4	79	+1	35	47	36	0.15	-0.50	0.06	0	3	21	8	2	se.	Edw. N. Munns.		
Converse Nursery.....	San Bernardino.....	6,000	2	49.6	.....	73	3	24	24	38	0.64	0.64	1.0	0	1	13	16	2	w.	J. W. Garthwaite.		
Corona.....	Riverside.....	615	2	61.9	.....	87	+4	30	25	41	0.07	0.07	0	1	23	6	2	nw.	Thos. E. Peacock.			
Crescent City.....	Del Norte.....	125	2	52.0	0	79	1	33	10	35	4.88	-1.37	2.30	0	10	16	4	11	sw.	Cuyamaca Water Co.		
Cuyamaca.....	San Diego.....	4,677	17	55.2	+5.1	80	22	28	24	41	0.64	-1.35	0.62	0	2	21	5	5	w.	S. H. Beckett.		
Davis.....	Yolo.....	51	44	62.3	-5.6	88	+4	34	28	48	0.10	-0.62	0.05	0	3	28	3	2	sw.	Pacific Gas & Electric Co.		
Deer Creek.....	Nevada.....	3,700	9	50.4	.....	77	3	28	7	42	2.20	0.85	8.0	4	25	5	1	nw.	Hotel Del Monte.			
Del Monte.....	Monterey.....	25	5	57.0	.....	84	1	36	7	42	0.00	0.00	0	0	21	5	5	nw.	Southern Pacific Co.			
Delta.....	Shasta.....	1,138	31	53.8	-10.5	84	29	30	7	46	1.35	-2.06	0.70	0	5	25	6	6	sw.	Santa Fe Co.		
Denair.....	Stanislaus.....	126	16	59.9	-4.4	87	1	40	2	40	T	-0.59	T	0	0	29	0	2	w.	Pacific Gas & Electric Co.		
De Sabla.....	Butte.....	2,700	12	54.6	.....	80	3	28	7	36	2.76	-0.18	1.03	2.0	6	19	6	6	w.	do.		
Dobbins (near).....	Yuba.....	1,650	12	61.7	-2.4	86	1	38	7	36	1.69	-0.75	0.93	0	5	19	7	5	s.	J. T. Mason.		
Downieville.....	Sierra.....	3,150	5	54.0	.....	85	3	29	110	49	2.40	0.64	1.0	0	6	23	3	3	ne.	Producers Trans. Co.		
Dudley.....	Kings.....	595	4	64.8	.....	95	4	38	24	55	0.03	0.03	0	1	25	3	3	3	nw.	W. H. Dudley.		
Dudleys.....	Mariposa.....	3,000	7	52.2	.....	79	+3	28	25	40	0.51	0.22	1.0	0	6	23	5	3	sw.	Southern Pacific Co.		
Dunsmuir.....	Tiskiyou.....	2,285	27	.....	.....	.....	.....	.....	.....	.....	1.63	-1.24	0.48	0	6	.....	.....	.....	.....	G. R. Durham.		
Durham.....	Butte.....	160	21	61.6	-2.2	89	+5	31	7	48	0.60	-0.53	0.21	0	4	25	3	3	s.	J. J. Lea.		
East Park.....	Colusa.....	2,500	2	60.0	.....	89	5	27	4	41	0.19	0.14	0	0	3	22	9	0	sw.	So. Cal. Edison Co.		
Edison.....	Kern.....	4,520	21	65.4	.....	83	5	49	24	56	0.47	-0.56	0.33	0	3	26	3	2	sw.	H. H. Kessler.		
El Cajon.....	Amador.....	482	17	62.7	0	87	1	41	41	46	0.12	-0.32	0.12	0	1	30	5	5	w.	Pacific Gas & Electric Co.		
Electra.....	Riverside.....	1,200	49	59.6	.....	89	4	35	25	33	18	0.00	0.00	0	0	28	3	0	sw.	S. U. S. Forest Bureau.		
Elsinore.....	Emigrant Gap.....	2,520	42	52.4	-2.2	75	5	35	30	24	2.88	-0.84	0.80	9.0	1	24	0	7	w.	Southern Pacific Co.		
Euclid.....	Placer.....	657	22	62.4	-0.6	84	+2	40	26	42	0.09	-0.55	0.09	0	1	26	5	1	w.	A. R. Moon.		
Folsom.....	Humboldt.....	64	30	50.4	-1.7	63	5	39	12	17	1.48	-1.35	0.66	0	8	14	5	12	n.	U. S. Weather Bureau.		
Fontana.....	Sacramento.....	252	44	65.5	-1.0	90	+2															

## Climatological Data for May, 1916.—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahr.					Precipitation, in inches.			Number of days.			Prevailing direction of wind.	Observers.		
				Mean.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Showfall (un-snowed),	Precipitation, 0.1 inch or more.	Clear.	Partly cloudy.	Cloudy.	
La Porte.....	Plumas.....	5,000	22	43.2	-5.2	71	3	17	7	40	2.24	-2.08	0.72	9.0	5	20	3	n.
Las Plumas.....	Butte.....	506	2	65.8	.....	100	25	39	24	43	1.54	.....	0.76	0	7	22	8	s.
Le Grande.....	Merced.....	255	16	61.6	-2.1	93	5	40	47	42	0.15	-0.51	0.15	0	1	28	0	w.
Lemon Cove.....	Tulare.....	600	21	71.8	+4.0	93	44	43	24	35	0.38	-0.79	0.38	0	1	26	3	nw.
Lick Observatory.....	Santa Clara.....	4,209	27	51.0	-0.2	74	73	28	24	23	0.63	-0.98	0.24	T.	3	21	6	4.
Lindsay.....	Tulare.....	384	7	64.6	.....	98	5	37	10	47	0.24	.....	0.24	0	1	26	3	1.
Livermore.....	Alameda.....	485	45	60.2	-1.2	90	1	32	7	45	0.05	-0.56	0.05	0	1	24	4	w.
Lompoc (near).....	Santa Barbara.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Long Pine.....	Inyo.....	3,728	11	59.0	-2.2	80	78	32	24	44	T.	-0.34	T.	0	0	27	2	2.
Los ANGELES.....	Los Angeles.....	293	39	61.3	-0.8	81	1	47	25	27	0.03	-0.40	0.03	0	1	16	13	2.
Los Gatos.....	Santa Clara.....	601	29	57.9	-1.8	86	1	37	7	39	0.05	-1.02	0.03	0	2	22	4	3.
McCloud.....	Siskiyou.....	3,270	6	48.9	.....	80	3	20	7	44	0.85	.....	0.45	0	3	21	3	w.
Madelaine.....	Lassen.....	5,270	7	47.3	.....	76	3	14	7	44	2.07	.....	0.75	10.0	8	12	8	11.
Magalia.....	Butte.....	2,321	12	55.8	-2.8	76	7	13	30	24	0.04	-0.56	0.80	2.0	6	18	0	13.
Maricopa.....	Kern.....	640	5	71.0	.....	102	5	43	23	50	0.04	.....	0.04	0	1	19	9	3.
Marysville.....	Yuba.....	67	45	62.9	-5.9	88	1	36	7	43	0.44	-0.43	0.23	0	2	21	7	3.
Mecca.....	Riverside.....	-185	10	77.2	.....	103	9	54	42	41	0.00	.....	0.00	0	0	28	3	0.
Merced.....	Merced.....	173	42	62.8	-4.5	90	5	40	47	40	0.02	-0.56	0.02	0	1	26	2	3.
Middlewater.....	Kern.....	803	5	68.7	.....	92	2	40	8	45	0.00	.....	0.00	0	0	29	2	n.
MILL Creek—1.....	Amador.....	2,500	9	52.6	.....	77	3	33	6	32	1.32	.....	0.64	1.0	3	23	4	4.
Milton (near).....	Calaveras.....	660	25	62.8	-0.9	89	2	38	7	39	0.35	-0.88	0.30	0	2	26	5	0.
Mineral.....	Tehama.....	1	45.2	76	4	18	76	4	18	1.54	.....	0.50	7.0	6	11	8	12.	
Mokelumne Hill.....	Calaveras.....	1,550	23	60.5	+1.7	88	7	35	24	52	0.56	-1.01	0.34	0	3	21	2	8.
Montague.....	Siskiyou.....	2,450	28	52.2	-8.2	85	7	23	75	50	0.53	-0.30	0.30	0	4	12	14	5.
MOUNT TAMALPAIS.....	Marin.....	2,375	17	53.8	+0.1	75	1	35	7	23	0.17	-0.75	0.15	0	2	21	7	3.
Napa City.....	Napa.....	20	39	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Needles.....	San Bernardino.....	477	24	73.1	-6.5	98	4	52	16	36	0.15	+0.09	0.15	0	1	28	2	1.
Nellie.....	San Diego.....	5,350	7	55.1	.....	81	3	28	24	31	1.13	.....	1.13	0	1	19	9	3.
Nevada City.....	Nevada.....	2,850	24	52.8	-2.8	84	4	27	57	50	0.98	-1.41	0.59	1.5	5	23	3	5.
Newman.....	Stanislaus.....	91	27	61.6	-7.5	88	2	30	20	52	0.00	-0.57	0.00	0	0	0	0	w.
North Bloomfield.....	Nevada.....	8,214	19	59.0	+3.7	80	3	30	7	36	1.79	-0.76	0.64	0	3	20	2	2.
North Fork.....	Madera.....	3,000	12	54.2	.....	83	5	27	24	45	0.04	-1.74	0.04	0	1	14	15	2.
Oak Grove.....	San Diego.....	2,751	6	50.0	.....	84	3	25	25	49	0.06	.....	0.06	0	1	21	6	4.
Oakland.....	Alameda.....	36	40	56.2	-1.9	79	1	40	7	23	0.06	-0.79	0.06	0	1	14	13	4.
Oceanside.....	San Diego.....	60	6	59.6	.....	70	10	44	25	20	T.	.....	T.	0	0	23	6	2.
Ojai Valley.....	Ventura.....	900	10	59.1	.....	90	10	32	24	50	0.01	.....	0.01	0	1	26	4	1.
Orland.....	Glen.....	254	34	66.0	-4.4	93	3	36	7	44	0.18	-0.75	0.12	0	3	20	9	2.
Orleans.....	Humboldt.....	520	13	58.0	-7.9	87	1	37	10	43	1.46	-0.42	0.43	0	9	22	0	9.
Oroville (near).....	Butte.....	250	32	63.4	-2.7	91	3	34	10	41	1.01	-0.45	0.63	0	4	23	0	8.
Pacific.....	El Dorado.....	3,400	1	59.9	-3.7	82	74	37	25	41	0.10	-0.33	0.10	0	1	16	14	1.
Pasadena.....	Los Angeles.....	827	26	59.9	-3.7	82	74	37	25	41	0.10	-0.33	0.10	0	1	16	14	1.
Paso Robles.....	San Luis Obispo.....	800	29	59.0	-3.4	90	74	32	20	50	0.11	-0.47	0.06	0	3	19	5	nw.
Peachland.....	Sonoma.....	190	20	56.9	-2.4	87	1	51	7	43	0.13	-1.49	0.10	0	3	25	5	1.
Petaluma.....	do.....	2	55.6	.....	86	1	53	7	46	0.15	-0.69	0.15	0	1	26	5	0.	
Placerville.....	El Dorado.....	1,875	27	57.1	-0.9	82	1	32	17	44	0.70	-1.49	0.36	0	4	22	3	3.
Point Loma.....	San Diego.....	302	10	60.6	.....	68	1	50	25	46	0.02	-0.18	0.02	0	1	25	3	3.
POINT REYES.....	Marin.....	490	24	50.1	-1.7	67	1	44	7	18	0.19	-0.91	0.18	0	2	18	5	8.
Pomona.....	San Bernardino.....	857	2	61.8	.....	89	15	36	24	49	0.10	.....	0.10	0	1	15	4	14.
Porterville.....	Los Angeles.....	404	27	66.7	-3.6	91	5	40	10	39	0.31	-0.40	0.31	0	1	23	0	3.
Portola.....	Plumas.....	1	46.5	.....	68	72	19	16	42	0.67	.....	0.64	6.0	0	3	26	5	0.
Quincy.....	do.....	3,400	21	55.0	+1.2	84	3	31	23	42	1.97	-0.29	0.70	9.0	7	19	5	7.
RED BLUFF.....	Tehama.....	307	39	63.6	-2.9	88	3	35	7	35	0.48	-0.85	0.21	0	4	16	12	3.
Redding.....	Shasta.....	552	41	63.6	-3.6	89	11	35	7	45	0.91	-1.33	0.40	0	6	20	11	0.
Redlands.....	San Bernardino.....	1,362	23	62.9	-1.5	88	4	39	25	39	0.39	-0.32	0.37	0	2	22	6	3.
Reedley.....	Fresno.....	347	16	63.2	-4.8	84	74	41	24	49	0.10	-0.26	0.91	0	1	29	5	8.
Rialto (near).....	San Bernardino.....	2,250	10	60.4	.....	84	73	37	25	35	0.90	.....	0.90	0	1	19	9	3.
Riverside.....	Riverside.....	851	34	63.0	-2.2	92	1	35	25	50	0.12	-0.23	0.12	0	1	20	10	1.
Rocklin.....	Placer.....	249	45	65.8	-2.0	90	75	32	10	56	0.50	-0.47	0.50	0	1	23	0	8.
Rohnerville.....	Humboldt.....	75	13	53.8	.....	79	1	35	11	39	1.80	-0.04	0.60	0	5	22	3	6.
Ruth.....	Trinity.....	2,925	2	53.0	.....	87	3	31	17	50	1.07	.....	0.39	T.	6	21	7	3.
SACRAMENTO.....	Sacramento.....	71	39	61.4	-1.5	85	1	37	7	36	0.19	-0.86	0.05	0	3	27	4	0.
St. Helena.....	Napa.....	255	8	61.0	.....	92	1	32	7	50	0.15	.....	0.09	0	2	28	2	1.
Salinas.....	Monterey.....	40	42	55.4	-4.6	74	1	35	7	30	0.06	-0.45	0.06	0	1	25	6	0.
San Bernardino.....	San Bernardino.....	1,054	24	62.8	-0.9	89	74	36	25	47	0.20	-0.40	0.20	0	1	21	9	1.
SAN DIEGO.....	San Diego.....	87	45	60.8	0	72	2	30	26	18	0.01	-0.36	0.01	0	1	19	11	1.
SAN FRANCISCO.....	San Francisco.....	207	45	55.8	+0.3	79	1	46	7	29	0.07	-0.68	0.07	0	1	23	5	3.
San Jacinto.....	Riverside.....	1,550	23	70.6	+7.0	95	74	41	19	44	0.04	-0.43	0.04	0	1	22	8	1.
San Jose.....	Santa Clara.....	95	41	57.2	-3.5	87	1	35	7	38	0.01	-0.56	0.01	0	1	22	8	1.
SAN LUIS OBISPO.....	San Luis Obispo.....	201	21	56.3	-0.4	80	1	39	25	36	0.04	-0.28	0.02	0	2	18	11	2.
Santa Ana River.....	Santa Barbara.....	2,850	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Santa Barbara.....	San Bernardino.....	139	32	60.9	+1.6	88	1	43	30	38	T.	-0.43	T.	0	0	28	1	2.
Santa Clara.....	Santa Clara.....	90	27	56.6	-1.8	87	1	32	7	44	0.02	-0.61	0.02	0	1	26	2	3.
Santa Cruz.....	Santa Cruz.....	20	48	56.4	-3.4	82	71	33	7	46	0.25	-0.78	0.15	0	2	21	9	1.

## Climatological Data for May, 1916.—Continued.

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 0.1 inch or more.					
Ukiah.....	Mendocino .....	620	23	57.8	-1.4	89	3	81	7	48	0.41	-0.85	0.20	0	4	22	6	3	nw.	Dr. George McCowen.
Vacaville.....	Solano .....	175	28	59.8	-4.4	87	+1	33	7	43	0.41	-0.92	0.26	0	2	24	3	4	w.	J. E. Bassford.
Valvermo.....	Los Angeles .....	3,750	58.6	86	+86	13	+32	111	+49	0.00	0.00	0	0	0	0	0	0	0	.....	U.S. Forest Service.
Visalia.....	Tulare .....	334	28	60.0	-6.1	85	27	37	10	41	0.41	-0.17	0.41	0	1	27	1	3	nw.	Santa Fe Co.
Walnut Creek.....	Contra Costa .....	149	2	61.0	-2.0	85	1	40	10	42	0.00	-0.59	0.00	0	0	0	0	0	.....	R. L. Nougaret.
Warner Springs.....	San Diego .....	3,165	8	58.5	-3.6	90	3	34	25	49	0.09	0.09	0	1	26	4	1	.....	J. A. Ream.	
Wasco.....	Kern .....	336	16	64.6	-1.9	95	5	35	25	54	0.01	-0.29	0.01	0	1	29	0	1	.....	Santa Fe Co.
Watsonville.....	Santa Cruz .....	23	20	56.5	-3.6	96	1	32	+7	47	0.02	-0.85	0.02	0	1	12	18	1	w.	Spreckels Sugar Co.
Weaverville.....	Trinity .....	2,162	4	53.6	.....	99	+1	26	7	54	0.30	-1.58	0.18	0	3	20	3	8	.....	U. S. Forest Service.
Weitchpee.....	Humboldt .....	1,700	6	61.6	.....	85	1	27	10	40	2.68	.....	1.17	T.	8	21	1	9	w.	G. S. Garnett.
West Branch.....	Butte .....	3,216	2	52.2	.....	80	+2	27	7	44	3.70	.....	1.78	3.0	5	22	3	6	s.	Pacific Gas & Electric Co.
Wheatland.....	Yuba .....	84	29	62.6	-1.5	86	+1	35	7	38	0.26	-1.02	0.12	0	4	19	2	10	s.	Wm. Lumbard.
Willows.....	Glenn .....	136	37	65.0	-3.5	92	4	36	7	43	0.26	-0.46	0.09	0	5	26	1	4	n.	F. E. Barnhouse.
Yorba Linda.....	Orange .....	405	2	61.8	.....	84	+13	40	24	39	0.08	0.08	0	1	13	18	0	w.	S. J. Walker.	
Yosemite.....	Mariopisa .....	3,945	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	J. R. Kelly.	
Yreka.....	Siskiyou .....	2,625	27	+52.2	.....	+85	2	+24	+7	+48	0.68	.....	0.37	0	4	16	6	9	nw.	U. S. Forest Service.
Means and Extremes.....	.....	.....	.....	58.1	-4.0	105	9	8	24	59	0.61	-0.61	2.30	0.9	3	22	5	4	w.	.....

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.

\*\* 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.

a, b, c, etc., indicate respectively, 1, 2, 3, etc., days missing from the record.

COMPARATIVE DATA FOR MAY.  
MEAN MONTHLY TEMPERATURE FOR THE STATE.

1897.....	.66.9	1907.....	.61.5
1898.....	.61.3	1908.....	.58.0
1899.....	.59.9	1909.....	.60.4
1900.....	.64.0	1910.....	.65.5
1901.....	.62.0	1911.....	.58.3
1902.....	.68.8	1912.....	.60.7
1903.....	.63.5	1913.....	.62.3
1904.....	.64.9	1914.....	.62.3
1905.....	.59.6	1915.....	.57.6
1906.....	.59.8	1916.....	.58.1

## AVERAGE PRECIPITATION FOR THE STATE.

1897.....	0.18	1907.....	0.57
1898.....	1.56	1908.....	1.63
1899.....	0.73	1909.....	0.23
1900.....	1.39	1910.....	0.18
1901.....	1.03	1911.....	0.72
1902.....	0.84	1912.....	1.92
1903.....	0.14	1913.....	1.04
1904.....	0.22	1914.....	0.69
1905.....	2.18	1915.....	4.13
1906.....	3.19	1916.....	0.61

## ERRATA. MARCH, 1916.

Antioch, pages 32 and 35, total precipitation, 0.58, should be 0.81.  
 Big Bar, page 35, total precipitation, 3.76, should be 4.76.  
 Calaveras Ranger Station, page 32, mean temperature, 47.5°, should be 47.6°.  
 Cascada, pages 32 and 35, total precipitation, 6.28, should be 6.38.  
 Cuyamaca, page 32, total snowfall, 0.0, should be 3.5.  
 Huntington Lake, page 32, mean temperature, 33.6°, should be 34.0°.  
 Independence, page 31, wind movement, total for the month, 6,699, should be 6,494; average hourly velocity, 9.0, should be 8.7; maximum velocity, 40, from north, on 23rd, should be 45, from northwest, on 1st; page 32, mean temperature, 51.8°, should be 52.0°.  
 Kentfield, page 32, mean temperature, 51.9°, should be 51.6°.  
 La Jolla, page 32, mean temperature, b48.8°, should be b49.0°.  
 Nellie, page 33, mean temperature, 49.9°, should be 49.8°.  
 North Fork, page 33, lowest temperature, 27°, on 17th, should be 22°, on 24th.  
 Sulphur Banks, page 33, mean temperature, 48.0°, should be 47.7°.  
 Tamarack, page 33, mean temperature, 34.6°, should be 29.6°.  
 Tustin (near), page 33, lowest temperature, 40°, on 14th, should be 34, on 24th.  
 Willows, page 34, highest temperature, 84°, on 12th, should be 87°, on 10th.

## APRIL, 1916.

Brawley, page 46, mean temperature, 70.8°, should be 71.6°.  
 Emigrant Gap, page 46, mean temperature, 50.4° should be 50.2°.  
 Independence, page 46, mean temperature, 57.6°, should be 56.9°.  
 San Luis Obispo, page 47, mean temperature, 58.9°, should be 59.6°.  
 Santa Monica, page 47, lowest temperature, 42°, on 2nd, should be 40°, on 5th.  
 Tejon Rancho, page 47, mean temperature, 62.0°, should be 61.0°.

## DELAYED REPORTS.

Stations.	Month.	Temperature.					Total precipitation
		Mean	Max.	Date	Min.	Date	
Descanso .....	January.	.....	.....	.....	.....	.....	29.42
Mineral .....	February.	37.4	65	18	12	1	4.22
Santa Ana River .....	March.	38.6	68	+9	9	24	3.60
Mineral .....	April.	46.6	72	30	22	12	0.10
Abbotts .....	.....	.....	.....	.....	.....	.....	0.81
Burney .....	.....	.....	.....	.....	.....	.....	0.44
Dunsunuir .....	.....	.....	.....	.....	.....	.....	0.14
Julian .....	.....	.....	.....	.....	.....	.....	0.42
Mineral .....	.....	43.4	67	9	25	+4	1.82
Ozona .....	.....	.....	.....	.....	.....	.....	0.52

## DATES OF MISCELLANEOUS PHENOMENA.

Thunderstorms.—Alturas, 24; Auberry, 19; Big Bar, 31; Bucks, 16, 18, 30, 31; Camptonville (near), 18, 31; Canon Dam, 31; Chester, Chico, 30, 31; Converse Nursery, 19; Deer Creek, 18; De Sabla, 18, 30, 31; Downieville, 18, 25; Dudleys, 23; Durham, 17, 24, 31; Fresno, 18; Gridley, 18, 19, 31; Groveland, 23; Hayfork, 15, 16, 31; Hullville (near), 31; Kennett, 19; Kinsley, 23; La Porte, 15; Lake Eleanor, 18, 19, 23; Las Plumas, 30, 31; Magalia, 18, 30; Mineral, 16, 31; North Fork, 19; Oroville, 31; Red Bluff, 30; Redding, 23, 30, 31; Ruth, 31; Sacramento, 23; Stanwood, 18, 23, 30; Sonora, 23; Stirling City, West Branch, 18, 30, 31; Wheatland, 23, 30.

Earthquakes.—Camp Baldy, Claremont, Los Angeles, Mount Wilson, Pasadena, Pomona, Salinas, Sierra Madre, 2; Los Alamos, 5; Eureka, Lone Pine, Shively, 6; Brawley, 24.

Daily Precipitation for May, 1916.

MAY, 1916.

Daily Precipitation for May, 1916.—Continued.

Daily Precipitation for May, 1916.—Continued.

Except as otherwise indicated observations are generally made late in the afternoon, near sunset, and precipitation recorded is for the 24 hours ending at the time of observation. \*\*\* Regular Weather Bureau station; precipitation is for the 24-hour period, midnight to midnight.

III Precipitation measured in the morning; amount then recorded is for the preceding 24 hours. \* Precipitation included in the next following measurement.  
I. Serafeta dates of fall not recorded. T Trace or less than 0.01 inch.

Note: Stations indicated thus [§] in the above table are located as follows:

Note: Stations indicated thus [S] in the above table are located as follows: Camp Baldy, lat. 34 15 N., long. 117 38 W.; Camp Bonita, lat. 34 14 N., long. 117 45 W.; Camp Iron Forks, lat. 34 18 N., long. 117 44 W.; Camp Rincon, lat. 34 15 N., long. 117 49 W.; Clearwater Power House, lat. 34 35 N., long. 118 27 W.; Dorman's Ranch, lat. 34 14 N., long. 117 10 W.; Littlelands, lat. 34 15 N., long. 117 17 W.; Mount Wilson, lat. 34 14 N., long. 118 5 W.; Nenach, lat. 34 48 N., long. 118 35 W.; Pacianna, lat. 33 22 N., long. 118 21 W.; Rialto (near), Lytle Creek Canon; Santa Anita Forest Station, lat. 34 12 N., long. 118 2 W.; Summit-2, Cajon Pass; Tujunga Canon, lat. 34 18 N., long. 118 11 W.

## Daily Temperature for May, 1916.

Stations.	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	Mean.	
Alturas.....	81	82	83	79	76	68	63	64	58	57	56	57	65	67	74	74	68	63	65	67	64	58	53	47	45	65	72	71	64	63	62	61.5	
Bakersfield.....	24	30	38	33	46	37	16	30	31	25	21	29	19	28	21	41	23	33	34	41	34	31	32	32	33	32	32	34	31	30	30.7		
Barstow.....	92	91	92	94	97	95	83	72	72	67	72	73	74	80	82	81	75	76	54	74	81	85	81	78	72	83	88	85	84	82	81	81.1	
Blocksburg.....	49	42	53	54	56	52	50	44	50	40	45	45	45	40	45	52	49	53	50	52	52	50	46	41	49	47	48	50	52	48	46	48.1	
Calexico.....	84	86	91	90	84	85	81	84	83	82	80	79	74	77	80	81	79	75	72	75	81	80	74	66	71	81	83	84	85	81	80.3		
Chico.....	52	56	58	52	53	50	51	53	54	54	52	53	50	46	50	48	46	48	48	49	52	50	45	43	44	44	46	45	48	49.2			
Colfax.....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Colusa.....	88	96	98	104	103	101	98	104	105	97	97	100	88	89	93	99	94	92	75	91	99	98	92	75	82	89	95	97	90	92	94.1		
Escondido.....	56	54	54	59	57	55	57	58	65	65	65	60	55	58	62	64	51	55	59	59	59	59	55	50	51	59	57	60	50	61	57.6		
Chico.....	88	88	89	90	82	68	66	71	82	79	77	79	82	84	88	85	79	73	83	84	80	65	59	72	86	90	87	78	77	78	79.7		
Colfax.....	47	49	51	51	62	54	42	48	44	46	45	43	44	45	59	46	42	52	50	49	30	42	45	45	48	43	46	47	44	47.4			
Colfax.....	78	79	80	80	72	58	62	66	70	71	70	73	72	74	76	70	71	70	72	67	60	48	61	73	77	67	65	61	63	63.7			
Colfax.....	42	41	50	51	55	49	30	35	36	35	38	44	43	45	44	50	42	41	35	40	46	40	41	20	38	38	45	47	44	35	41.1		
Colfax.....	79	79	78	74	72	69	68	66	65	65	65	70	74	72	73	74	70	73	74	75	70	72	73	72	75	71	72	71	72	71.2			
Colusa.....	50	50	52	55	50	45	35	40	39	39	35	40	42	40	45	45	38	32	40	40	42	42	42	42	35	37	41	44	38	42.0			
Eureka.....	83	84	78	81	74	80	84	84	84	82	77	74	78	79	80	82	78	76	62	72	81	80	77	77	76	77	78	77	72.2				
Eureka.....	41	43	45	47	50	55	44	43	43	43	46	50	54	42	47	49	54	53	52	47	50	52	54	49	41	43	42	54	47	45.5			
Eureka.....	62	56	55	55	63	59	55	58	53	52	53	54	53	55	57	54	55	54	54	55	54	55	55	54	54	55	55	54	55	55.0			
Eureka.....	45	49	49	49	49	44	42	48	43	41	39	42	45	47	48	48	47	46	43	47	47	47	47	47	47	47	46	48	45	45.7			
Fresno.....	88	90	91	93	89	87	76	72	76	70	75	77	79	82	85	79	80	71	72	79	83	79	75	64	72	79	86	88	81	73	74	78.9	
Fresno.....	56	56	54	57	59	51	40	44	49	41	48	47	50	51	50	53	48	54	49	49	52	46	42	43	47	47	47	54	49	47	49.6		
Hanford.....	94	93	100	95	96	80	82	76	74	76	70	80	84	85	82	76	78	76	68	79	84	82	62	62	60	90	93	80	93	81	81.6		
Hollister.....	52	53	55	56	61	50	50	42	40	37	44	43	44	41	40	40	36	45	45	50	55	35	36	40	45	52	42	38	46	44.6			
Hollister.....	83	82	70	75	65	64	69	68	71	72	72	74	77	74	70	64	68	63	65	63	70	62	61	63	64	60	61	63	60	63.8			
Independence.....	44	43	48	48	50	51	33	41	47	38	39	41	39	43	47	47	45	46	40	43	43	42	44	48	36	38	39	44	43	42.4			
Independence.....	41	42	46	46	48	56	42	40	47	40	44	46	40	38	40	46	43	46	43	42	44	42	44	44	44	44	44	44	44	44.5			
Indio.....	92	96	95	100	101	97	101	103	102	102	101	93	87	90	93	96	93	93	78	85	100	91	84	90	95	95	95	90	89	93.5			
Indio.....	59	62	63	69	64	67	69	70	68	71	69	63	61	64	63	64	61	62	71	68	53	53	59	61	66	65	62	59	59	78.6			
La Porte.....	62	70	71	70	64	57	52	54	50	56	65	69	64	67	60	66	62	60	54	61	60	60	59	52	32	44	65	58	53	55	52	58.0	
Lemon Cove.....	30	34	32	30	35	25	17	21	24	23	26	27	29	27	33	31	35	38	26	28	29	23	18	24	27	30	30	42	31	35	28.3		
Lemon Cove.....	87	91	92	93	92	82	77	82	73	81	83	85	84	86	80	82	80	81	82	80	78	74	85	90	89	91	82	84	87	84.7			
Los Angeles.....	69	58	59	62	66	57	49	59	57	58	66	67	69	67	69	65	59	53	51	52	49	52	45	55	58	63	65	63	62	58.9			
Los Angeles.....	81	74	71	74	68	70	73	75	73	76	73	70	76	75	70	70	73	64	64	67	72	73	67	60	66	67	66	65	66	67.0			
Los Angeles.....	54	56	51	49	53	54	54	53	54	56	55	54	54	51	52	52	55	56	51	54	53	52	47	47	49	52	51	51	52	52.5			
Merced.....	88	87	88	89	90	73	74	76	75	76	74	79	81	78	79	77	77	78	73	76	78	75	76	78	81	78	75	76	78.6				
Merced.....	48	50	51	52	56	49	40	44	49	43	44	48	44	43	46	46	45	43	43	47	41	40	45	46	50	52	49	44	47.1				
Mokelumne Hill.....	84	84	83	87	87	83	88	85	86	87	82	79	74	77	72	73	73	72	75	75	76	71	70	73	75	75	73	75	75	75.5			
Mokelumne Hill.....	56	52	57	45	43	46	35	40	42	46	50	50	51	41	43	46	42	46	43	46	42	38	35	40	40	44	40	41	45	45.5			
Needles.....	86	86	93	98	98	98	92	97	98	97	92	90	88	88	82	87	88	89	90	70	78	75	77	77	77	86	88	92	91	94	95	87.5	
North Fork.....	55	56	60	62	63	63	62	63	62	60	59	55	50	55	53	52	53	55	57	57	56	55	57	57	57	59	57	59	58.7				
Oakland.....	77	78	80	82	83	80	72	75	76	78	73	72	70	76	73	72	73	72	76	75	74	75	74	73	75	74	73	72	71.3				
Oakland.....	36	40	43	45	47	35	36	36	42	34	35	31	33	34	34	36	41	45	37	37	38	34	32	34	30	40	43	38	34	37.0			
Orland.....	79	67	66	70	65	60	60	63	62	64	67	69	74	69	59	65	64	66	67	65	68	63	61	68	60	59	61	60	59	64.5			
Orland.....	91	91	93	89	81	74	75	73	76	77	81	82	85	80	81	84	73	75	85	84	81	81	81	81	81	81	81	81	81	81.7			
Orleans.....	55	54	56	54	59	47	46	41	42	43	42	46	46	44	42	40	44	50	48	46	46	46	46	46	46	46	46	46	46	46.0			
Red Bluff.....	87	88	88	88	78	63	66	66	66	66	74	72	74	72	82	86	80	81	81	82	87	87	86	85	84	85	84	85	84	80.1			
Riverside.....	92	87	89	91	77	87	87	87	86	87	79	75	81	75	73	75	72	76	77</td														