U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

EDWARD A. BEALS, District Forecaster.

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GENERAL SUMMARY.

Cold and dry weather prevailed in California during December. For the State as a whole, the mean temperature was about 3° below the normal, while the average precipitation was about two inches, or 48 per cent, below the normal. In the interior valleys the days were warm and the nights were cold. Great daily ranges of temperature occurred, and ranges of 50° to 60° were common. Accelerated nocturnal radiation through the clear, dry air caused frost to form on many mornings in the agricultural portions of the State. The number of days on which frost occurred at certain stations follows: Fresno, 19; Sacramento, 18; Red Bluff, 16; San Jose, 13; San Luis Obispo, 11; San Francisco and Los Angeles, 10 each. Precipitation was deficient throughout the State, and snowfall in the mountains was relatively light. Precipitation was general during two periods, between the 5th and 9th, and from the 19th to 21st. No severe storms occurred. More than the usual amount of sunshine was received, while the wind movement was below normal. Streams maintained low stages, and at the close of the month many of the smaller streams in the elevated regions were frozen. Seasonable weather prevailed during the first week, and the highest temperatures of the month occurred at most stations between the 2d and 5th. The remainder of the month was abnormally cold. Temperatures below zero were general in the mountain and plateau regions during the last ten days of the month. The last day of the year proved to be the coldest day of the year at numerous stations.

The deficient precipitation and the abnormal cold were harmful from an agricultural viewpoint. Winter growing grains and vegetables, which had made a good start during the favorable weather of the preceding months, were in need of additional moisture before the close of December. Grass on the winter ranges became scarce. In northern California all citrus fruit had been harvested before the advent of the cold weather. Frost did considerable damage to unharvested citrus fruit in southern California, however. The trees were uninjured. In spite of the diminished production expected to result from frost damage, it is estimated that the orange crop now being harvested will be more than twice as large as that of last year. The maturing crop of lemons is expected to exceed all previous crops, owing to a heavy set of fruit and increased bearing acreage. The clear and cold weather was well suited for farming operations of all kinds. The fine weather was used to good advantage in the performance of the varied duties which mark the close of one crop-growing season and which precede the beginning of the next.

A. H. P.

PRESSURE.

The mean sea level pressure, determined from the records of twelve regular Weather Bureau stations, was 30.10 inches. The highest was 30.49 inches at Independence on the 2d; the lowest was 29.55 inches at Point Reyes on the 20th; the range for the State was 0.94 inch.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 99 stations, was 43.8°, which is 2.9° below the normal.

The highest monthly mean was 57.2°, at Los Angeles; and the lowest was 23.2°, at Madeline.

The highest temperature, 89°, occurred at El Cajon on the 3d, and at King City on the 4th; and the lowest, −16°, occurred at Madeline on the 31st.

The range for the State was 105°.

PRECIPITATION.

The average precipitation for the State, as shown by the records of 220 stations, was 2.10 inches, or 1.90 inch below the normal.

The greatest monthly amount was 7.12 inches, at Crescent City. Two stations reported no precipitation.

The greatest amount in 24 hours was 2.82 inches at Opid Camp on the 7th.

RELATIVE HUMIDITY, SUNSHINE AND CLOUDINESS.

Stations.	Relative humidity. (Per cent.) 5 a. m.	5 p. m.	Mean.	Sunshine. Actual No. of hours	Per cent of possible.
Eureka	86	80	83	167	58
Fresno	89	66	78	172	57
Independence	56	43	50	233	78
Los Angeles	61	52	56	252	82
Mount Tamalpais	66	67	67	209	70
Red Bluff	79	54	61	176	61
Sacramento	91	74	82	188	64
San Diego	66	60	63	235	76
San Francisco	45	65	55	216	73
San Jose	.....	67	.....	178	59
San Luis Obispo	74	51	62	249	82

WIND MOVEMENT.—(Miles.)

Stations.	Total mov. for month.	Ave. hr. velocity.	Maximum velocity.	Direction.	Date.	Prev. dir.
Eureka	4,470	6.0	33	se.	8	se.
Fresno	3,155	4.2	28	nw.	29	e.
Independence	5,181	7.0	27	nw.	22	nw.
Los Angeles	4,628	6.2	24	nw.	29	ne.
Mount Tamalpais	13,921	18.7	70	se.	8	nw.
Point Reyes	12,831	17.2	85	nw.	20	nw.
Red Bluff	4,401	5.9	31	se.	8	n.
Sacramento	5,072	6.8	34	se.	8	se.
San Diego	3,838	5.2	35	w.	21	e.
San Francisco	4,692	6.3	37	ne.	20	n.
San Jose	3,950	5.3	35	n.	22	se.
San Luis Obispo	2,964	4.0	23	ne.	1	n.

COMPARATIVE DATA FOR DECEMBER.

Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.
1897	44.4	1.75	1903	48.0	1.44	1909	43.3	6.92	1915	45.7	5.56
1898	44.4	1.20	1904	47.2	3.04	1910	47.8	1.87	1916	41.8	5.81
1899	45.8	3.03	1905	45.3	1.55	1911	43.3	2.05	1917	49.8	1.43
1900	47.3	1.68	1906	47.3	8.42	1912	44.7	1.58	1918	43.8	2.10
1901	47.4	1.45	1907	48.3	5.41	1913	44.8	7.04	.....	.....	.....
1902	46.6	2.96	1908	43.2	2.33	1914	41.8	5.00	.....	.....	.....

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

Daily evaporation (inches) and wind movement (miles) for December, 1918.

Stations.	Data.	Day of Month. 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	Monthly.
Chula Vista**1	Evaporation	.097	.143	.146	.117	.118	.056	.099	.028	.079	.114	.012	.074	.092	.105	.089	.085	.087	.088	.078	.084	.052	.086	.076	.100	.110	.081	.091	.129	.100	.102	.081	2.799
	Wind movement	54	60	51	50	69	80	103	47	57	80	72	68	60	65	97	71	133	79	94	233	81	70	63	73	72	62	59	91	184	94	72	2,544
Dodgeland*2	Evaporation	.048	.031	.029	.035	.016	.007	.033	.040	.000	.030	.043	.026	.017	.030	.016	.047	.051	.035	.027	.007	.028	.087	.083	.025	.017	†	†	†	†	.052	.054	0.914
	Wind movement	47	21	18	27	14	48	80	135	135	13	51	32	18	32	14	76	77	62	27	53	94	151	100	24	26	55	20	19	16	121	126	1,732
Oakdale (near)*3	Evaporation	.054	.057	.049	.043	.067	.041	.006	†	†	.031	.025	.005	.033	.031	.004	.014	.010	.002	.013	.000	.089	.086	.006	.037	.008	.055	.028	.032	.020	.....	.....	.....
	Wind movement	83	83	36	53	64	48	120	167	247	60	42	72	61	57	[f]45	89	117	75	175	135	207	186	63	102	42	56	73	39	67	138	109	2,911
Tahoe**4	Evaporation	.....	.050	.055	.055	.120	.070	.055	.045	.....	.065	.050	.085	.135	.085	.085	.110	.....	.....	.....	.090	.030	.....	.....	.....	.....	.195	.130	.175	.235	.140	.150	.....
	Wind movement	78	59	34	73	135	99	81	86	65	112	113	88	66	66	82	53	157	175	62	86	45	162	213	75	147	32	24	67	59	120	55	2,749

* Observation taken at 7 a. m.; ** at 8 a. m. ‡ Included in next following entry.

1 Ele. 9 ft.; 10 miles SE of San Diego. 2 Ele. 125 ft.; 16 miles SW of Chico. 3 Ele. 215 ft.; Woodward Reservoir, 8 miles N of Oakdale. 4 Ele. 6230 feet; float in Lake Tahoe.

Climatological Data for December, 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 .01 inch or more.	Clear.	Partly cloudy.	Cloudy.		
Alturas	Modoc	4,400	14	26.5	−4.5	61	2	−15	31	44	0.75	−0.67	0.22	11.0	9	10	16	5	s.	Prof. C. B. Towle.
Antioch	Contra Costa	46	39	43.7	−4.6	58	2	27	28	26	1.38	−0.95	0.70	0	5	13	13	5	e.	C. G. McDaniel.
Atascadero	San Luis Obispo	837	2	41.3	.....	75	4	10	31	50	1.19	.....	0.70	0	5	23	3	5	n.	Colony Holding Corp.
Avalon	Los Angeles	30	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	The Banning Co.
Azusa	do	540	16	54.2	−0.3	87	3	29	30	39	1.74	−0.33	1.18	0	3	22	4	5	.....	C. C. Hillis.
Bakersfield	Kern	404	29	44.8	−2.7	80	5	25	31	40	0.81	+0.12	0.66	0	4	17	0	14	sw.	Santa Fe Co.
Barstow	San Bernardino	2,105	15	f40.8	−6.0	f65	8	f17	25	f35	0.50	−0.10	0.50	0	2	20	9	2	n.	E. L. White.
Berkeley	Alameda	317	31	48.2	−0.5	68	2	30	31	25	2.35	−1.71	0.95	0	6	20	3	8	n.	State University.
Betteravia	Santa Barbara	155	5	49.4	.....	78	†9	28	†23	48	1.94	.....	1.26	0	3	25	0	6	.....	Union Sugar Co.
Blue Canon	Placer	4,695	19	37.8	−2.4	65	4	18	†11	32	2.46	−6.60	1.00	22.0	5	21	2	8	n.	Southern Pacific Co.
Blythe	Riverside	268	9	50.4	.....	79	5	15	31	46	1.02	.....	1.02	0	1	24	1	6	n.	C. L. Suits.
Bonita	San Diego	110	2	52.5	.....	83	3	28	25	44	1.71	.....	0.51	0	6	21	4	6	e.	R. M. Allen.
Branscomb	Mendocino	2,000	18	45.0	+0.5	74	5	20	†30	43	3.97	−9.01	2.05	0	4	18	8	5	n.	A. J. Haun.
Brawley	Imperial	−105	8	51.0	.....	80	†4	25	26	46	0.70	.....	0.40	0	2	25	2	4	sw.	M. D. Witter
Calaveras Ranger Sta.	Calaveras	3,400	2	c37.6	.....	c68	4	c19	31	c38	2.54	.....	0.97	2.2	4	24	2	5	n.	U. S. Forest Service.
Calexico	Imperial	0	13	50.4	−2.1	82	4	28	31	47	0.35	−0.02	0.30	0	2	21	7	3	nw.	H. M. Rouse.
Camptonville (near)	Yuba	3,500	11	41.6	.....	66	†1	20	31	38	3.49	.....	1.34	1.0	7	17	3	11	n.	Pacific Gas & Electric Co.
Cedarville	Modoc	4,675	24	e28.8	−1.6	e58	5	e−1	†25	e36	0.73	−0.89	0.27	9.0	6	14	11	6	.....	T. H. Johnstone.
Chico	Butte	189	48	43.5	−4.0	65	4	22	31	34	1.82	−2.36	0.86	0	5	19	7	5	n.	U. S. Bureau Plant Ind.
Claremont	Los Angeles	1,200	26	49.7	−2.7	79	4	26	31	41	1.09	−0.79	0.58	0	3	20	5	6	se.	Prof. F. P. Brackett.
Cloverdale	Sonoma	340	16	45.6	−2.4	67	1	23	31	33	2.71	−2.80	0.91	0	6	20	2	9	n.	John O. Ogle.
Colfax	Placer	2,421	47	44.4	−2.2	74	3	24	31	35	2.34	−5.69	1.16	0	4	22	5	4	n.	Southern Pacific Co.
Corona	Riverside	615	4	52.2	.....	82.	3	29	30	35	0.48	.....	0.27	0	6	22	5	4	ne.	T. C. Sias.
Crescent City	Del Norte	125	4	45.0	−2.2	60	23	27	31	25	7.12	−4.58	1.56	0	15	17	3	11	sw.	Thos. E. Peacock.
Davis	Yolo	51	46	42.8	−6.0	63	3	24	26	32	1.69	−1.54	0.48	0	4	23	4	4	n.	S. H. Beckett.
Downieville	Sierra	3,150	7	38.2	.....	64	1	19	25	38	2.68	.....	1.10	0.8	6	14	9	8	n.	J. T. Mason.
Durham	Butte	160	23	46.8	+2.1	68	†15	20	30	38	1.52	−2.29	0.91	0	4	24	3	4	s.	R. W. Durham.
El Cajon	San Diego	482	19	52.6	−1.5	89	3	26	26	52	2.66	−1.38	0.77	0	7	23	4	4	sw.	Philip L. Kessler.
Elsinore	Riverside	1,300	2	50.3	.....	86	4	23	31	48	0.81	.....	0.50	0	4	19	4	8	se.	W. L. Wilhite.
Escondido	San Diego	657	24	51.4	+0.7	88	3	24	31	45	2.00	+0.65	1.10	0	6	23	3	5	n.	A. R. Moon.
EUREKA	Humboldt	64	32	46.3	−1.7	63	13	28	31	23	4.29	−2.96	1.78	0	14	13	7	11	se.	U. S. Weather Bureau.
Folsom	Sacramento	252	45	45.6	−1.4	75	24	24	†30	47	2.54	−1.66	0.73	0	4	19	0	12	e.	G. I. Marvin.
Fontana	San Bernardino	1,325	6	51.5	.....	79	4	28	31	37	1.25	.....	1.21	0	5	26	1	4	n.	Fontana Land Co.
Fort Bidwell	Modoc	4,375	29	24.3	−8.5	54	5	−5	31	41	0.68	−2.37	0.30	15.0	6	11	1	19	sw.	C. R. Decious.
FRESNO	Fresno	293	31	45.0	−1.8	72	4	25	30	30	1.46	−0.07	0.91	0	4	14	6	11	e.	U. S. Weather Bureau.
Grass Valley	Nevada	2,690	46	43.0	.....	70	3	22	31	40	2.70	−5.51	0.65	0	6	22	2	7	ne.	Mrs. L. M. Wentworth.
Greenland Ranch	Inyo	−178	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	O. A. Denton.
Hanford	Kings	249	18	45.6	0	64	†4	22	31	32	1.28	+0.34	0.80	0	3	22	0	9	n.	Santa Fe Co.
Healdsburg	Sonoma	110	25	45.2	−1.8	66	3	23	31	35	2.24	−4.79	0.81	0	7	14	13	4	nw.	Dr. F. J. Kinley.
Hollister	San Benito	284	44	43.3	−6.8	67	3	23	31	35	1.92	−0.05	0.78	0	5	24	0	7	nw.	Grangers' Union.
INDEPENDENCE	Inyo	3,957	22	39.3	−2.3	66	3	18	31	36	1.02	+0.24	1.01	0	3	22	7	2	nw.	U. S. Weather Bureau.
Inskip	Butte	4,975	11	37.0	.....	62	3	16	31	20	4.93	.....	2.00	33.2	6	12	4	9	.....	Pacific Gas & Electric Co.
Kennett	Shasta	730	6	44.6	.....	67	†1	26	30	26	3.81	.....	2.12	0	4	13	7	11	n.	A. J. Reef.
King City	Monterey	333	31	53.2	+4.1	89	4	22	†30	60	1.79	−0.05	0.70	0	4	27	0	4	.....	Southern Pacific Co.
La Porte	Plumas	5,000	24	30.6	−4.9	49	4	13	31	18	3.37	−7.56	1.07	15.5	8	20	4	7	n.	C. W. Hendel.
Lemon Cove	Tulare	600	23	44.5	−3.2	70	5	27	30	31	2.02	+0.38	0.98	0	4	18	4	9	nw.	T. E. Bence.
Lick Observatory	Santa Clara	4,209	29	40.2	−1.7	64	3	20	31	15	2.34	−3.97	0.81	2.0	8	19	7	5	n.	The Director.
Lindsay	Tulare	384	4	43.1	.....	72	5	22	31	37	1.60	.....	0.80	0	4	14	2	15	nw.	Basil Prior.
Lone Pine	Inyo	3,728	13	41.0	−2.8	62	19	8	31	45	0.55	+0.13	0.55	0	1	27	4	0	n.	G. F. Marsh.
LOS ANGELES	Los Angeles	293	41	57.2	+0.7	86	3	37	31	25	1.54	−1.36	1.46	0	3	21	5	5	ne.	U. S. Weather Bureau.
McCloud	Siskiyou	3,270	8	33.0	.....	63	3	3	31	44	1.88	.....	0.91	7.2	4	18	3	10	n.	McCloud River Lbr. Co.
Madeline	Lassen	5,270	9	23.2	.....	52	5	−16	31	46	1.32	.....	0.50	15.0	7	11	6	14	w.	J. H. Williams.
Marysville	Yuba	67	47	42.6	−7.3	61	3	25	29	30	2.25	−1.32	1.04	0	4	17	7	7	n.	Southern Pacific Co.
Mecca	Riverside	−185	12	52.3	−0.4	80	†1	25	26	47	0.55	+0.15	0.45	0	2	17	11	3	se.	E. A. Palmer.
Merced	Merced	173	44	42.6	−5.7	68	3	24	31	36	1.52	−0.07	0.50	0	4	19	2	10	se.	Santa Fe Co.
MOUNT TAMALPAIS	Marin	2,375	19	43.2	−4.4	66	3	28	31	19	2.78	−1.12	1.27	0	9	15	8	8	nw.	U. S. Weather Bureau.
Mount Wilson	Los Angeles	5,704	1	41.2	.....	70	3	16	31	23	2.53	.....	2.05	4.0	5	19	6	6	nw.	Wendell P. Hoge.
Napa	Napa	20	41	39.0	−8.7	55	†2	23	27	25	1.82	−2.33	0.85	0	3	20	7	4	nw.	State Hospital
Needles	San Bernardino	477	26	50.2	−2.6	73	3	28	31	36	1.20	+0.76	0.88	0	4	19	3	9	w.	Santa Fe Co.
Nevada City	Nevada	2,850	26	39.6	−2.8	74	3	13	31	49	2.25	−7.73	0.70	0	6	15	10	6	sw.	B. H. Preston.
Newman	Stanislaus	91	29	40.3	−7.7	64	†2	21	†28	37	2.34	+0.40	1.28	0	3	.....	.....	.....	.....	E. S. Wangenheim.
Oakland	Alameda	36	42	47.5	−1.7	60	†1	34	31	18	2.94	−0.92	1.06	0	7	18	7	6	nw.	Chabot Observatory.
Orland	Glenn	254	36	43.8	−4.1	66	1	26	28	32	2.44	−0.58	1.33	0	6	20	3	8	n.	U. S. Rec. Service.
Oroville (near)	Butte	250	34	43.5	−4.3	66	3	24	†25	34	1.62	−3.14	0.70	0	6	16	5	10	nw.	E. D. Fairchild.
Pasadena	Los Angeles	1,085	28	51.1	−2.9	86	3	26	31	43	1.83	−0.81	1.56	0	4	19	6	6	sw.	R. P. Hamlin.
Paso Robles	San Luis Obispo	800	31	43.8	−1.6	74	4	16	31	44	1.29	−1.36	0.67	0	4	26	2	3	n.	E. J. Nye.
Petaluma	Sonoma	9	4	41.6	.....	66	6	21	27	38	2.32	−2.61	1.12	0	6	15	9	7	w.	John Landis.
Placerville	El Dorado	1,925	29	41.1	−1.3	71	3	17	†30	42	1.80	−5.42	0.68	0	4	22	1	8	w.	O. E. Bailey.
POINT REYES	Marin	490	26	50.6	−0.3	68	3	38	31	17	1.29	−2.11	0.73	0	9	15	8	8	nw.	U. S. Weather Bureau.
Pomona	Los Angeles	857	4	48.2	.....	82	3	24	30	49	1.13	.....	0.52	0	4	18	6	7	e.	J. E. Adamson.
Porterville	Tulare	464	29	43.6	−4.2	70	4	26	31	34	1.50	+0.01	0.77	0	4	18	1	12	e.	Leslie McAuliffe.
Portola	Plumas	4,832	3	31.4	.....	66	†2	−10	10	70	0.70	.....	0.70	7.0	1	29	2	0	sw.	Western Pacific Co.
RED BLUFF	Tehama	307	41	44.2	−2.2	68	1	26	31	29	1.78	−2.71	0.93	0	5	17	7	7	n.	U. S. Weather Bureau.
Redding	Shasta	552	43	45.8	−1.2	70	2	27	†28	37	2.35	−4.14	0.87	0	6	14	9	8	nw.	J. H. Buick.
Redlands	San Bernardino	1,352	25	50.8	−2.1	84	3	27	31	42	2.03	−0.32	1.15	0	5	21	2	8	.....	P. W. Moore.
Riverside	Riverside	851	36	49.9	−3.5	85	3	25	31	50	0.96	−0.61	0.60	0	5	21	6	4	n.	J. H. D. Cox.
Rocklin	Placer	249	47	43.8	.....	64	5	25	29	29	2.07	−1.76	0.62	0	4	21	2	8	n.	Southern Pacific Co.
SACRAMENTO	Sacramento	71	41	43.4	−2.9	62	3	29	28	30	1.70	−1.83	0.78	0	4	18	7	6	se.	U. S. Weather Bureau.
St. Helena	Napa	255	10	44.7	.....	72	3	25	26	41	2.29	.....	1.19	0	3	20	7	4	.....	St. Helena Star.
Salinas	Monterey	40	44	47.6	−2.5	77	3	21	31	39	2.22	−0.14	0.65	0	7	21	2	8	se.	Dr. E. D. Eddy.
San Bernardino	San Bernardino	1,054	26	50.4	−2.0	86	3	25	31	49	1.72	−0.85	1.11	0	6	21	4	6	n.	Dr. A. K. Johnson.
SAN DIEGO	San Diego	87	47	54.8	−0.9	78	3	35	31	28	1.68	−0.14	0.82	0	8	20	7	4	e.	U. S. Weather Bureau.
SAN FRANCISCO	San Francisco	207	47	50.2	−0.7	64	3	38	31	16	2.62	−1.62	1.49	0	7	18	8	5	n.	do
San Jacinto	Riverside	1,550	25	48.4	−1.9	82	†3	21	31	42	1.16	−0.33	0.77	0	5	23	3	5	.....	E. T. Tanner.
SAN JOSE	Santa Clara	95	43	45.4	−4.5	68	4	27	31	33	1.28	−1.77	0.60	0	6	14	6	11	se.	U. S. Weather Bureau.
SAN LUIS OBISPO	San Luis Obispo	201	23	51.0	−1.8	83	3	27	31	41	1.92	−0.42	1.04	0	6	22	6	3	n.	do
Santa Ana	Orange	133	1	50.4	.....	87	4	22	31	52	0.72	.....	0.40	0	4	19	8	4	ne.	Chamber of Commerce.
Santa Barbara	Santa Barbara	130	34	51.7	−4.2	79	3	31	25	36	0.83	−2.50	0.43	0	3	26	4	1	w.	G. W. Russell.
Santa Cruz	Santa Cruz	20	50	47.8	−4.6	76	3	28	31	35	2.40	−2.38	0.75	0	6	21	4	6	n.	W. R. Springer.
Santa Rosa	Sonoma	181	29	44.8	−3.4	73	†1	20	†27	47	2.55	−3.06	1.06	0	7	21	0	10	s.	Southern Pacific Co.
Spreckels	Monterey	48	4	46.2	.....	79	3	21	31	40	1.74	−0.62	0.66	0	6	21	5	5	nw.	Spreckels Sugar Co.
Squirrel Inn	San Bernardino	5,280	8	36.3	.....	61	4	16	31	23	3.62	−1.99	2.75	9.0	5	23	2	6	n.	Mrs. A. D. Frantz.
Stockton	San Joaquin	23	47	42.2	−4.9	59	†2	26	31	26	2.09	−0.69	0.61	0	5	16	5	10	se.	State Hospital.
Summit	Placer	7,017	45	28.9	−1.6	58	3	−3	31	39	4.00	−3.29	1.80	40.0	5	18	1	12	n.	Southern Pacific Co.
Truckee	Nevada	5,819	47	25.0	−3.7	60	4	−12	25	46	0.70	−3.66	0.40	7.0	3	20	5	6	sw.	do
Ukiah	Mendocino	620	25	41.0	−4.1	65	†1	18	31	39	3.54	−3.11	0.90	0	10	14	6	11	nw.	Dr. George McCowen.
Watsonville	Santa Cruz	23	22	48.7	−2.2	78	3	26	30	38	2.34	−1.10	1.05	0	4	21	7	3	s.	Spreckels Sugar Co.
Weaverville	Trinity	2,162	6	37.2	.....	59	2	9	31	37	2.99	−4.28	0.86	3.0	8	19	4	8	.....	U. S. Forest Service.
Willows	Glenn	136	39	40.8	−6.4	65	3	20	26	38	1.63	−1.46	0.96	0	3	23	3	5	n.	J. T. McPherson.
Yosemite	Mariposa	3,960	14	31.8	−1.8	58	1	8	25	35	1.15	−4.63	0.55	4.0	3	16	7	8	sw.	Supt. National Park.
Yreka	Siskiyou	2,625	29	32.4	−2.4	60	4	6	31	38	0.83	−2.23	0.25	1.9	9	14	8	9	se.	U. S. Forest Service.

Daily Precipitation for December, 1918.

Stations.	Watersheds.	Day of Month. 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	Total.
Alturas	Sacramento						.06	.01	.03	.12		.12				.09					.22									.06	.04		0.75
Antioch	San Joaquin						T.	.70	.48		.08										.02	.10											1.38
Atascadero	Coast							.70	.03	.25											.11	.10											1.19
Avalon§	Ocean																																
Azusa ‖‖§	Coast							1.18	.47													.09							T.			1.74
Bakersfield	San Joaquin							.66		.07			.04									.04											0.81
Barstow§	Desert						*	.50																									0.50
Berkeley	Coast						.95	.04	.76	.20		.03								T.	.37	T.											2.35
Betteravia‖‖	....do						1.26	.16													.52												1.94
Blue Canon‖‖	Sacramento							.56	1.00			.50									.20	.20											2.46
Blythe	Colorado							1.02														T.											1.02
Bonita‖‖	Coast						.23	.34	.16										.51			.32	.15										1.71
Branscomb	....do						2.05			.41											.16	1.35											3.97
Brawley‖‖	Imperial Valley						T.	.40														.30											0.70
Calaveras R. S.	San Joaquin							.97	.14	.96											.47												2.54
Calexico‖‖	Imperial Valley						T.	.30											T.			T.	.05										0.35
Camptonville	San Joaquin						.35	.20	1.34	.45		.01									1.01	.13											3.49
Cedarville	Mountain Lakes						.17			.07		T.				.13					.02	.27								T.	.07		0.73
Chico	Sacramento							.86		.55	.03		.21									.17											1.82
Claremont‖‖§	Coast							.58	.45																						.06		1.09
Cloverdale	....do						.86	.01	.91	.18		.20										.55												2.71
Colfax‖‖	Sacramento							.23	.52	1.16																							2.34
Corona	Coast						.02	.27	.01										.12		.05	.01											0.48
Crescent City	....do				T.	1.12	.37		1.03	.80	.16	.29	.14	.45	.16	.25	.04		.10	.38	1.56								.27				7.12
Davis	Sacramento						.42	.42	.48													.37											1.69
Downieville	....do						.16	.40	.46	1.10		.11									.45												2.68
Durham	....do					.10			.91			.20								.31													1.52
El Cajon	Coast							.51	.32	.11		.16							.77		.76								.03				2.66
Elsinore‖‖	....do							.50	.05										.18			.08											0.81
Escondido	....do							.54	.17	T.			.14						.03			1.10	.02										2.00
EUREKA***	....do					1.53	.25		1.01	.08	.04	.01	T.	.04	.12		.04	.02		.16	.86								.07	.06			4.29
Folsom‖‖	Sacramento							.73	.41	.70											*	.70											2.54
Fontana§	Coast						.01	1.21													.01	.01									.01		1.25
Fort Bidwell	Mountain Lakes						T.			.30		.10								.05	.13								.05	.05			0.68
FRESNO***	San Joaquin						.09	.82	.46												.09												1.46
Grass Valley	Sacramento						.26	.52	.65	.60											.60	.07											2.70
Greenland Ranch	Desert																																
Hanford ‖‖	San Joaquin						.80	.28	.20																								1.28
Healdsburg ‖‖	Coast						.08	.75	.04	.81		.13	T.	.07							T.	.36											2.24
Hollister ‖‖	....do							.78	.08	.48											.02	.56											1.92
INDEPENDENCE***	Owens						.29	.72										.01			T.								T.				1.02
Inskip	Sacramento						1.24	.21	2.00	.57		.26									.65												4.93
Kennett	...do						1.23	.12	2.12					T.							.34												3.81
King City	Coast							.70	.50	.15												.44											1.79
La Porte	Sacramento						.29	1.07	.50	.81		.12								.01	.50	.07											3.37
Lemon Cove ‖‖	San Joaquin							.98	.53	.41												.10								T.			2.02
Lick Observatory	Coast						.33	.32	.67	.14									.03		.81	.03							.01				2.34
Lindsay	San Joaquin							.80	.40	.28												.12											1.60
Lone Pine	Owens							.55																									0.55
Los ANGELES***§	Coast						.59	.90													.05												1.54
McCloud	Sacramento						.70		.91	.10											.17												1.88
Madeline	Mountain Lakes					.06	.05	.20		.25	T.									T.	.50	T.							T.	.06	.20		1.32
Marysville	Sacramento						1.04	.08	.28												.85												2.25
Mecca	Desert						.45															.10								T.			0.55
Merced‖‖	San Joaquin							.40	.39	.23												.50											1.52
MT. TAMALPAIS***	Coast					.01	1.26	.04	.66	.02		.06						.02		.06	.65												2.78
Mount Wilson§	....do						.20	2.05	.05	.18											.05	T.											2.53
Napa	....do						.85			.65										.32													1.82
Needles§	Colorado						.01	.88														.28	T.								.03		1.20
Nevada City	Sacramento						.19	.41	.52	.70		T.									.36	.07											2.25
Newman	San Joaquin							1.28		.36											.70												2.34
Oakland	Coast						1.06	.16	.88	.19		.03									.58	.04											2.94
Orland	Sacramento						1.33	.11	.22			.02									.53	.23											2.44
Oroville (near)	....do					.05	.70	.15	.49		.05										.18												1.62
Pasadena§	Coast						.20	1.56			.01																						1.83
Paso Robles‖‖	....do							.67	.08	.24												.30											1.29
Petaluma	....do						1.12		.58	.23		.02									.31	.06											2.32
Placerville	Sacramento							.45	.25	.68											.42												1.80
POINT REYES***	Coast						.73	.03	.29			.08	.01	.02				.05		.03	.05												1.29
Pomona‖‖§	....do							.52	.46	.01												.14											1.13
Porterville‖‖	San Joaquin							.77	.31	.25											.17												1.50
Portola	Sacramento								.70																								0.70
RED BLUFF***	....do					T.	.93	.05	.39			.01									.40								T.				1.78
Redding‖‖	....do						.35	.87	.40	.33											.12	.28											2.35
Redlands§	Coast						T.	1.15	.26											.05		.21									.36		2.03
Riverside	....do						.60	.21											.03		.10									.29			0.96
Rocklin ‖‖	Sacramento							.62	.40	.45											.60												2.07
SACRAMENTO***	....do					T.	.77	.25	.43			T.									.25												1.70
St. Helena‖‖	Coast						1.00			1.19											.10												2.29
Salinas‖‖	....do						.43	.65	.03	.21		T.					T.				.27	.25	.38											2.22
San Bernardino§	....do						.05	1.11	.02													.20								.09	.25		1.72
SAN DIEGO***	....do						T.	.82	.12	T.		.01									.35	.05	.01	.22							T.	.10		1.68
SAN FRANCISCO***	....do						1.49	.03	.65	.12		T.									.05		.01	.27										2.62
San Jacinto	....do							.77	.03											.11		.22									.03		1.16
SAN JOSE***	....do						.16	.25	.35	.12		T.									.04		.46											1.28
SAN LUIS OBISPO***	....do						.48	.56	.53	.02											.10		.23	T.										1.92
Santa Ana§‖‖	....do							.40	.05												.07			.20										0.72
Santa Barbara	....do							.43		.28														.12										0.83
Santa Cruz	....do						.75	.20	.60													.20		.50										2.40
Santa Rosa	....do						.72	.45		1 06		.04	.10	.08								.10												2.55
Spreckels ‖‖	....do							.66	.27	.22												.07		.48										1.74
Squirrel Inn §	....do						.29	2.75	.27											T.				.12								.19		3.62
Stockton ‖‖	San Joaquin							.61	.52	.48												.27		.21										2.09
Summit	Sacramento							.20	.50	1.80												1.10		.40										4.00
Truckee	Mountain Lakes								.10	.40												T.		.20							T.			0.70
Ukiah	Coast						.90	.12	.90	.22		.30	T.	.12	.03						.05	.70		.20										3.54
Watsonville	....do						.70		1.05												.19	.40											2.34
Weaverville	....do						.86	.04	.48	.14			.55								.06	.81		.05						T.				2.99
Willows	Sacramento						.96		.21													.46												1.63
Yosemite	San Joaquin							.55		.30												.30												1.15
Yreka	Klamath						.25	.02	.01	.10		.02	.01			.13					.04	.25								T.	T.			0.83

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.

‖‖ Precipitation measured in the morning; amount then recorded is for the preceding 24 hours. * Precipitation included in the next following measurement. ‡ Separate dates of fall not recorded. T., Trace, or less than 0.01 inch. Stations marked thus § are in Los Angeles or San Bernardino Counties.

Daily Temperature for December, 1918.

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.
Bakersfield	Maximum	64	65	68	71	80	73	68	60	65	61	60	55	50	58	60	48	50	65	49	44	51	40	38	57	32	35	61	44	45	48	51	55.4
	Minimum	34	31	35	35	40	60	45	34	41	32	38	40	30	31	39	42	34	37	29	31	40	26	28	29	26	27	33	29	30	30	25	34 2
Calexico	Maximum	75	75	81	82	80	68	73	70	70	70	65	69	72	73	59	59	59	59	59	48	54	59	59	55	58	57	60	59	59	59	59	64.6
	Minimum	35	38	34	36	37	46	49	41	39	38	35	39	33	34	36	34	37	42	41	33	38	43	29	32	31	30	29	31	30	47	28	36.3
Chico	Maximum	62	59	62	65	57	55	53	51	52	54	48	52	52	57	58	64	60	54	51	45	48	57	57	58	52	59	51	56	52	54	53	55.1
	Minimum	35	28	35	31	36	36	40	38	45	40	26	32	32	40	33	34	28	30	29	32	37	31	39	26	26	25	28	24	26	25	22	31.9
Escondido	Maximum	80	80	88	80	81	62	57	62	64	68	57	63	69	76	71	64	63	64	63	59	58	60	63	61	61	64	76	75	57	54	56	66.3
	Minimum	35	49	50	40	36	44	48	36	44	36	37	38	34	34	34	40	34	40	32	33	42	32	32	32	37	28	31	35	31	30	24	36.4
Eureka	Maximum	59	58	60	56	62	53	53	55	52	53	53	55	63	57	52	52	51	52	56	53	50	55	53	51	57	50	52	52	47	47	46	53.7
	Minimum	36	41	39	42	48	45	41	40	37	36	41	45	50	49	40	36	41	37	44	37	33	33	35	36	34	34	37	40	39	31	28	38.9
Fresno	Maximum	61	63	67	72	64	68	49	57	56	52	44	52	55	55	45	52	50	43	43	47	47	52	53	54	50	54	55	55	51	47	47	53.5
	Minimum	35	40	40	42	52	48	45	42	39	32	35	42	39	36	39	42	37	34	37	37	37	33	33	29	30	30	32	29	33	25	27	36.5
Independence	Maximum	63	62	66	65	60	55	42	44	51	48	49	49	58	58	53	49	38	52	50	47	43	44	51	46	49	55	54	54	48	36	38	50.9
	Minimum	36	30	30	32	31	40	32	28	32	30	28	24	26	30	28	32	22	28	28	20	31	30	24	26	23	29	26	22	21	21	18	27.7
Los Angeles	Maximum	74	80	86	77	75	62	55	62	65	68	64	64	70	75	71	68	62	68	64	57	59	63	61	60	62	64	75	76	61	55	57	66.5
	Minimum	49	56	61	57	55	52	48	46	50	49	47	47	47	54	52	48	48	47	45	45	45	42	40	41	44	51	51	47	41	37	48.0	
Merced	Maximum	61	64	68	51	56	63	50	57	55	50	41	53	51	48	44	49	53	45	41	49	48	51	52	54	53	54	53	49	52	50	45	51.9
	Minimum	32	32	32	37	44	44	46	42	38	32	36	33	33	31	31	39	34	32	32	38	36	31	30	28	28	28	26	26	27	27	24	33.2
Mount Tamalpais	Maximum	60	65	66	60	49	47	44	45	43	44	40	46	47	47	48	49	41	50	48	46	45	47	46	48	47	50	54	52	43	39	36	48.1
	Minimum	52	49	47	47	43	40	39	35	36	34	32	36	40	39	40	38	34	41	42	33	33	37	40	36	35	42	39	37	33	30	28	38.3
Oakland	Maximum	60	60	60	58	58	54	52	52	50	49	50	51	54	53	52	54	50	51	52	52	54	55	52	53	53	52	52	50	52	48	45	52.8
	Minimum	42	48	51	46	49	49	46	47	41	41	39	38	45	42	41	43	39	37	43	47	40	42	41	41	41	37	41	36	41	39	34	42.2
Orland	Maximum	66	58	64	55	49	50	58	49	51	48	51	49	55	56	61	58	53	57	48	45	55	54	58	50	58	48	54	50	52	50	46	53.4
	Minimum	38	32	32	34	39	39	43	42	36	31	33	34	37	32	34	33	34	32	35	35	37	39	39	30	34	27	29	26	32	34	31	34.3
Oroville	Maximum	57	63	66	59	53	54	50	53	55	51	53	49	58	58	60	58	53	53	43	50	57	60	60	55	58	53	53	51	54	51	48	54.7
	Minimum	28	31	33	35	39	45	38	45	35	26	33	32	38	35	35	33	36	29	32	37	34	31	29	28	24	29	27	29	26	26	24	32.3
Paso Robles	Maximum	63	67	69	74	70	65	63	56	59	56	55	46	55	58	61	55	59	52	54	56	57	52	52	54	56	57	57	59	61	55	50	58.2
	Minimum	31	28	28	30	35	36	44	41	39	32	32	35	30	30	30	29	37	29	26	36	35	24	23	24	20	23	21	20	27	22	16	29.5
Point Reyes	Maximum	60	64	68	65	55	54	53	53	52	54	51	56	57	55	55	54	55	54	52	53	55	59	57	56	57	55	56	55	51	50	50	55.5
	Minimum	47	49	51	52	51	49	47	46	43	44	40	46	45	44	42	45	46	46	49	42	46	46	47	46	46	47	45	46	45	43	38	45.8
Pomona	Maximum	74	78	82	78	75	56	56	61	63	65	61	61	68	72	69	67	57	65	63	53	52	61	60	60	59	63	73	74	56	53	55	64.2
	Minimum	34	29	35	36	33	43	47	33	37	31	35	38	31	33	33	33	30	35	30	34	36	29	28	27	26	26	28	29	28	24	25	32.1
Porterville	Maximum	53	63	68	70	68	61	57	53	52	46	43	50	54	55	57	50	48	42	45	43	48	49	52	53	53	54	54	57	56	46	47	53.1
	Minimum	34	35	34	37	38	46	40	40	33	32	40	33	33	34	42	33	33	34	35	35	29	31	29	28	27	27	27	28	30	29	26	34.0
Red Bluff	Maximum	68	58	61	54	48	46	59	49	49	46	51	47	57	57	63	57	57	60	46	40	55	55	62	52	60	50	55	49	53	49	45	53.5
	Minimum	41	33	33	36	39	41	40	44	36	30	35	36	42	34	35	37	35	34	34	35	39	43	34	31	31	31	28	27	30	33	26	34.9
Redlands	Maximum	79	76	84	80	75	57	55	57	61	67	59	62	74	73	67	65	55	62	61	53	54	57	61	58	59	67	72	74	56	50	52	63.9
	Minimum	43	38	42	45	41	48	47	36	41	36	37	41	36	39	40	39	36	38	36	35	40	42	30	38	28	31	32	36	39	30	27	37.6
Sacramento	Maximum	58	60	62	60	50	50	49	53	53	48	48	51	52	50	45	51	51	51	41	54	55	54	51	53	52	52	51	49	51	48	45	51.5
	Minimum	35	33	32	37	44	46	44	43	38	32	35	33	39	32	37	32	37	30	36	39	36	35	31	31	34	31	29	30	32	30	31	35.2
San Bernardino	Maximum	75	78	86	85	78	56	56	63	64	78	64	64	73	74	72	67	54	62	65	53	58	60	58	60	62	71	76	78	58	54	53	66.3
	Minimum	40	36	37	37	35	42	47	35	41	32	34	35	33	35	33	39	30	40	37	30	40	43	29	27	27	30	30	32	29	29	25	34.5
San Diego	Maximum	67	73	78	70	72	64	61	64	64	64	59	63	66	68	66	64	63	63	62	62	56	61	61	59	59	60	68	73	58	57	57	63.9
	Minimum	45	46	50	52	50	54	50	47	51	47	50	49	45	47	48	51	44	44	46	44	47	41	41	43	39	37	40	46	48	40	35	45.7
San Francisco	Maximum	59	63	64	61	59	56	56	55	53	52	49	54	57	56	55	62	53	58	51	56	58	56	54	56	56	55	56	55	53	48	55.9	
	Minimum	45	48	49	48	50	49	48	47	44	43	42	42	47	45	43	47	43	42	43	43	46	46	44	42	43	41	42	40	44	43	38	44.4
San Jose	Maximum	66	65	67	68	63	57	52	57	56	53	52	56	58	48	45	58	50	56	58	55	57	55	55	59	56	57	56	54	53	51	51	56.3
	Minimum	34	34	34	35	45	47	46	42	35	29	32	31	36	35	33	33	34	31	35	44	39	41	30	29	28	28	28	27	37	28	27	34.4
San Luis Obispo	Maximum	74	77	83	76	67	63	57	59	60	63	59	56	64	69	63	58	58	60	62	59	56	59	61	62	63	64	69	66	60	53	53	63.0
	Minimum	50	42	42	40	42	47	46	46	43	43	36	45	48	41	47	42	35	39	36	42	41	37	32	31	28	33	30	31	39	32	27	39.1
Santa Barbara	Maximum	66	76	79	78	67	59	60	60	62	65	64	63	62	68	69	62	66	64	65	62	63	62	60	62	61	60	66	72	61	58	58	64.5
	Minimum	40	41	44	44	44	48	48	44	44	38	39	38	38	41	40	39	40	38	40	38	39	35	35	32	31	32	35	36	37	35	32	38.9
Santa Rosa	Maximum	73	67	73	70	60	64	63	53	54	62	65	64	62	56	59	72	62	63	61	58	52	68	53	56	51	64	58	58	64	61	63	61.6
	Minimum	26	28	27	27	28	27	33	41	35	25	26	26	28	35	32	32	32	28	23	21	32	41	27	25	23	23	20	23	20	28	27	28.0
Stockton	Maximum	56	59	57	59	51	54	54	54	54	48	49	51	53	45	44	50	48	51	42	55	54	50	51	51	52	51	51	49	52	49	44	51.2
	Minimum	35	34	33	33	42	43	44	44	39	32	30	31	33	34	36	32	34	30	32	39	35	30	30	27	28	31	27	28	30	30	26	33.3

SUPPLEMENTAL PRECIPITATION TABLE.

Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.
Abbotts	Coast	1.94	Dillon Ranch§	Coast		Llano§	Coast	0.80	S. Antonio Intake§	Coast	2.36
Aguanga	do	1.32	Dinuba	San Joaquin	2.51	Los Gatos	do	2.50	San Gabriel Intake§	do	2.05
Alder Creek§	do		Dobbins (near)	Sacramento	2.33	Lower Haines Can§	do	2.47	do Power House§	do	
Angiola	San Joaquin	1.51	Dudley	San Joaquin	1.04	Lytle Creek§	do	2.10	San Miguel Island	Ocean	
Antelope Valley	do		East Park	Sacramento	1.77	Magalia	Sacramento		San Pedro §	Coast	
Arroyo Seco§	Coast		Echo Mountain§	Coast	2.25	Maricopa	San Joaquin	0.73	Santa Anita§	do	
Auberry	San Joaquin	2.43	Edison	San Joaquin	1.82	Mariposa	do	2.08	Santa Clara	do	1.70
Auburn	Sacramento		Electra	do	2.14	May Canyon§	Coast		Santa Monica §	do	2.15
Bagdad§	Desert	0.00	Emigrant Gap	Sacramento	1.50	Mesa Grande	do		Seven Oaks§	do	2.81
Barrett Dam	Coast		Fairmont§	Coast	2.75	Middlewater	San Joaquin	0.89	Shively	do	5.60
Beaumont	do	1.77	Fish Canyon§	do	1.73	Mill Creek—1	do	2.69	Sierra Alta Ranch§	do	
Beaumont (near)	do	1.87	Fordyce Dam	Sacramento	2.33	Milton (near)	do	1.99	Sierra Madre§	do	1.71
Big Bar	Sacramento	3.67	Foresters Sanitar.§	Coast	2.45	Mokelumne Hill	do	1.47	Sierraville	Mountain Lakes	0.75
Bishop	Owens		Fort Bragg	do	5.07	Monrovia Canyon§	Coast	1.66	Sisson	Sacramento	1.40
Bishop Creek	do	1.56	Glennville	San Joaquin	1.82	Montague	Klamath	0.98	Sister Elsie Peak§	Coast	2.84
Bridgeport	Mountain Lakes		Gray Mountain§	Desert	0.00	Montgomery Creek	Sacramento	1.65	Springville (near)	San Joaquin	2.35
Cahuilla	Coast		Gridley	Sacramento		Mountain Springs§	Coast		Standish	Mountain Lakes	0.55
Campbell	do	2.19	Haines Canyon§	Coast	3.01	Mouth S. Anton. C.§	do	1.33	Stanwood	Coast	2.79
Camp Baldy§	do		Hansen's Ranch§	do		Nellie	do	3.43	Sterling	Desert	T.
Camp Bonita§	do	2.07	Happy Camp	Klamath	4.26	Niles	do	1.71	Stevenson Creek	San Joaquin	
Campo	do	2.19	Hayfork	Sacramento	2.94	North Bloomfield	Sacramento	2.18	Stirling City	Sacramento	
Camp Rincon§	do		Head Dam	do	2.47	North Fork	San Joaquin	2.74	Storey	San Joaquin	0.93
Canon Dam	Sacramento	1.82	Helen Mine	Coast	4.13	North Lakeport	Coast	2.62	Susanville	Mountain Lakes	
Cascada	San Joaquin	1.78	Hetch Hetchy	San Joaquin	1.85	Oak Grove	do	1.64	Switzer's Camp§	Coast	
Centerville	Sacramento	2.79	Hullville (near)	Coast	4.06	Oceanside	do	1.35	Tamarack	Sacramento	3.24
Chester	do	1.40	Huntington Lake	San Joaquin	1.83	Ojai Valley	do	1.10	Tejon Rancho	San Joaquin	1.81
China Flat	Coast	5.47	Indio	Desert	0.28	O'Melveny Camp§	do	1.70	Tujunga§	Coast	
Churn Creek	Sacramento	2.01	Iron Forks§	Coast		Opid Camp§	do	3.29	Three Rivers	San Joaquin	1.90
Clovis	San Joaquin	1.17	Julian	do	4.01	Orleans	Klamath	5.03	Tustin (near)	Coast	0.64
Clyde Ranch§	Coast		Kennedy Mine	San Joaquin	1.62	Ozena	Coast	1.50	Twin Valley	Sacramento	3.85
Colby Springs§	do		Kentfield	Coast	4.57	Pacoima§	do		Upper Live Oak C.§	Coast	
Coldbrock§	do		La Crescenta§	do		Parkfield	do	1.74	Venice§	do	
Colusa	Sacramento	1.78	La Jolla	do	2.46	Peachland	do	2.38	Visalia	San Joaquin	1.88
Covelo	Coast		Lake Eleanor	San Joaquin	2.24	Point Loma	do	1.80	Walnut Creek	Coast	1.73
Crockett	do	1.71	Lake Spaulding	Sacramento	3.07	Quincy	Sacramento	1.51	Warner Springs	do	2.10
Cuyamaca	do	4.83	Lancaster (near)	Desert		Reedley	San Joaquin	2.60	Wells Meadows	Owens	
Deer Creek	Sacramento	3.78	Las Plumas	Sacramento	2.22	Represa	Sacramento	2.60	West Branch	Sacramento	3.37
Del Monte	Coast	1.69	Le Grand	San Joaquin	0.95	Rohnerville	Coast	5.68	West Point	San Joaquin	2.54
Denair	San Joaquin	2.49	Live Oak Canon§	Coast	1.13	Ruth	do	4.49	Wilson Toll House§	Coast	1.53
De Sabla	Sacramento	3.38	Livermore	do	1.51	San Antonio Can.§	do	2.25	Yorba Linda	do	0.53

SNOWFALL IN THE MOUNTAINS.

On December 1st there was little or no snow on the ground in the Coast Ranges or in the mountains of southern California. However, there was some snow above the 5,000-foot level in the Sierra Nevada, the greatest amount reported being that at Summit, Placer County, altitude 7,017 feet, where the depth was 20 inches. Low temperatures prevented this snow from melting rapidly.

On December 5th a well-defined storm approaching from the northwest gave moderately heavy rainfall along the northern coast of California, and during the following four days precipitation was general throughout the State. In the Coast Ranges and in the mountains of southern California a portion of this precipitation was in the form of snow, but it melted within a few days. Above the 5,000-foot level in the Sierra most of the precipitation accompanying the eastward passage of this storm was in the form of snow. About 25 inches of new snow was added at the 7,000-foot level. Warm sunshine and desiccating winds caused it to disappear rapidly during the following ten days. However, in spite of its rapid disappearance the stages of streams did not show any marked rise during this period.

From the 19th to the 21st light but general precipitation occurred. A few inches of snow fell in the Coast Ranges and in the mountains of the southern portion of the State. In the Sierra the amounts ranged from five inches at the 5,000-foot level to 15 inches at the 7,000-foot level, with somewhat greater amounts beyond that height. A recurrence of warm sunshine and drying winds caused much of this snow to disappear before the end of the month. At the close of the month there was little snow anywhere in California except in the higher portions of the Sierra Nevada, where the amount on the ground was about 25 per cent of the normal for that time of the year. The greatest amount on the ground at any of the 300 stations from which reports were received was 32 inches, at Tamarack, Alpine County, altitude 8,000 feet.

The snowfall during December was relatively light throughout California. The deficiency was least in the plateau region of the extreme northeastern portion of the State, where a few stations received somewhat more than the normal December snowfall. Throughout the Sierra, however, the snowfall was everywhere deficient, and less than 50 per cent of the normal amount was received. The greatest snowfall reported was that of 54 inches, which occurred at Tamarack. There was everywhere a marked deficiency of densely packed snow of the kind which usually forms the source of summer water supply for irrigation and hydroelectric interests. A. H. P.

COMPARATIVE SNOWFALL DATA FOR DECEMBER.

(Amount on the Ground.)

	Fordyce Dam.			Summit.			Tamarack.		
	1st.	15th.	End of mo.	1st.	15th.	End of mo.	1st.	15th.	End of mo.
1906	2	60	60	5	70	46	55	101	125
1907	0	30	72	0	42	87	0	39	74
1908	11	27	21	24	32	21	29	43	32
1909	2	25	43	2	24	45	26	52	65
1900	5	2	0	7	4	4	8	21	24
1911	4	1	44	1	2	56	3	5	45
1912	6	22	30	T.	14	19	3	29	42
1913	35	35	60	31	24	80	35	41	110
1914	8	40	31	12	46	26	10	31	27
1915	9	57	45	6	67	40	3	67	48
1916	15	42	74	14	16	77	7	32	86
1917	4	0	0	6	0	0	16	8	8
1918	17	23	23	20	17	16	17	27	32

T. means trace.

Snowfall Data. [In inches.]

Watershed, County, Station.	Elevation, feet.	Total snowfall.	Compr'd with normal.	Am't on ground 15th.	Am't on ground end mo.
Klamath Watershed.					
Siskiyou County.					
Yreka	2,625	2	.....	0	0
Trinity County.					
Hayfork	2,300	1	.....	T.	T.
Ruth	2,925	14	.....	0	0
Weaverville	2,162	3	.....	0	0
Mountain Lakes.					
Modoc County.					
Alturas	4,400	11	+ 4	1	3
Cedarville	4,675	9	− 2	2	2
Fort Bidwell	4,375	15	.....	4	3
Lassen County.					
Eagle Lake	5,000	8	−10	3	3
Madeline	5,270	15	+ 5	2	5
Nevada County.					
Grass Valley	2,690	0	.....	0	0
Nevada City	2,850	0	− 3	0	0
North Bloomfield	3,214	1	− 6	0	0
Truckee	5,817	7	.....	3	T.
Placer County.					
Gold Run	3,222	0	− 6	0	0
Tahoe	6,230	18	.....	11	12
Inyo County.					
Bishop	4,450	.....	.....	.....	.....
Bishop Creek	8,390	24	− 4	7	8
Lone Pine	3,728	0	.....	0	0
Wells Meadow	5,280	.....	.....	.....	.....
Sacramento Watershed.					
Siskiyou County.					
McCloud	3,270	7	−22	2	T.
Sisson	3,555	14	−10	0	T.
Plumas County.					
Bucks	5,515	23	−34	21	21
Canon Dam	4,570	13	.....	11	10
Chester	4,550	14	−15	7	6
Clover Valley	5,700	16	0	5	5
La Porte	5,000	16	−21	9	8
Portola	4,832	7	.....	2	0
Quincy	3,400	2	− 8	0	0
Butte County.					
De Sabla	2,500	4	− 6	0	0
Inskip	4,975	33	− 8	15	13
West Branch	3,216	2	−19	0	0
Yuba County.					
Camptonville	3,500	1	−12	0	0
Sierra County.					
Downieville	3,150	1	−16	0	0
Sierraville	5,000	8	−10	6	2
Nevada County.					
Deer Creek	3,700	6	−17	1	T.
Fordyce Dam	6,500	25	−28	23	23
Lake Spaulding	4,600	24	−30	7	6
Placer County.					
Blue Canon	4,695	22	− 7	10	2
Emigrant Gap	5,230	15	−24	5	1
Summit	7,017	40	−32	17	16
San Joaquin Watershed.					
Alpine County.					
Tamarack	8,000	54	.....	27	32
Twin Lakes	7,970	.....	.....	.....	.....
Tuolumne County.					
Hetch Hetchy	3,665	6	.....	0	0
Lake Eleanor	4,700	14	−10	T.	T.
Kern County.					
Glennville	3,300	T.	− 7	0	0
Mariposa County.					
Yosemite	3,945	4	−13	0	0
Fresno County.					
Camp Seven	6,980	13	.....	18	16
Cascada	4,900	6	.....	0	0
Hume	5,300	.....	.....	.....	.....
Huntington Lake	6,950	36	.....	15	18
Stevenson Creek	4,250	10	.....	.....	.....
Tulare County.					
Hot Springs	3,300	4	+ 2	0	0
Springville	4,000	8	− 4	0	1
Mountains of Southern California.					
Cuyamaca	4,677	6	+ 4	0	3
Julian	4,222	6	.....	0	T.
Mount Wilson	5,704	4	.....	T.	T.
Nellie	5,350	10	.....	0	T.
Seven Oaks	5,000	8	− 4	0	0
Squirrel Inn	5,280	9	− 2	0	0