

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

EDWARD A. BEALS, District Forecaster.

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GENERAL SUMMARY.

February, 1919, was the wettest month California has experienced in three years. The average precipitation for the State, 7.46 inches, was 3.05 inches, or 69 per cent, above the normal. Rainfall was excessive in the northern portion of the State, moderately heavy in the central portion, and light in the southern portion. More than 26 inches of rain fell at each of two stations, Helen Mine, Lake County, and Inskip, Butte County. At Bagdad, in the Mojave Desert, rain fell for the first time in two years, but the total amount was less than 0.01 inch. No rain fell at Greenland Ranch, in Death Valley. Snowfall was abundant in the mountains. The precipitation was well distributed throughout the month, and in the extreme north portion of the State rain fell on all but two days. About the middle of the month floods in the Sacramento and Feather Rivers in Sutter and Yuba Counties did damage estimated at about \$1,000,000. In the extreme north portion of the State the prolonged rainy weather softened the ground to such an extent that heavy landslides occurred in railroad cuts, delaying transportation for several days. Telegraph and telephone lines also suffered considerable damage.

Though no severely cold periods occurred, the temperature was persistently low, due largely to deficient sunshine. The mean temperature for the State was almost 3° below normal. The wind movement was relatively high. At Point Reyes maximum velocities exceeded 40 miles per hour on 19 days of the month, culminating with 73 miles per hour from the northwest on the 17th. No extensive damage from high winds was reported, however. Additional damage from frost occurred in the citrus fruit region of southern California, where killing frost occurred at one or more places on 13 mornings. In the San Joaquin and Santa Clara Valleys no extensive damage from frost occurred, because overcast skies prevented excessive nocturnal radiation. In the Sacramento Valley there was also little damage from low temperature, Red Bluff having had but one killing frost during the month. Sunshine was everywhere deficient except in extreme southern California, where it was about normal.

The abundant precipitation was very beneficial to agriculture in central and northern California, though southern California suffered from deficient moisture. While cool weather retarded growth, the soil was in excellent condition, and winter growing grains made good progress. Grass showed new growth on the ranges, fresh feed was plentiful, and stock were in good condition. While rice ground was too wet to be worked, the planting of potatoes, sugar beets and cotton was begun. The citrus fruit harvest continued in southern California. Almond, apricot and plum trees blossomed under favorable conditions. The abundant snowfall in the mountains assured an ample supply of water for irrigation and power purposes during the summer. A. H. P.

PRESSURE.

The mean sea level pressure, determined from the records of twelve regular Weather Bureau stations, was 30.07 inches. The highest was 30.40 inches at Red Bluff on the 18th; the lowest was 29.35 inches at Independence on the 1st; the range for the State was 1.05 inches.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 99 stations, was 45.7° , which is 2.8° below the normal.

The highest monthly mean was 57.4° , at Indio; and the lowest was 23.7° , at Summit. The highest temperature, 83° , occurred at San Jacinto on the 11th; and the lowest, -9° , occurred at Portola on the 24th.

The range for the State was 92° .

PRECIPITATION.

The average precipitation for the State, as shown by the records of 246 stations, was 7.46 inches, or 3.05 inches above the normal.

The greatest monthly amount was 26.58 inches, at Helen Mine. The least monthly amount was 0.00, at Greenland Ranch.

The greatest amount in 24 hours was 6.00 inches at Georgetown on the 11th.

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.....	92	86	89	88	29
Fresno.....	84	56	70	154	51
Independence.....	64	42	53	203	67
Los Angeles.....	77	63	70	212	69
Mount Tamalpais.....	90	89	90	119	39
Red Bluff.....	86	73	80	87	30
Sacramento.....	89	72	80	122	39
San Diego.....	85	72	78	193	63
San Francisco.....	82	70	76	180	59
San Jose.....	69	69	69	124	41
San Luis Obispo.....	85	70	78	158	52

WIND MOVEMENT.—(Miles.)

Stations.	Total mow. for month.	Ave. hr. velocity.	Maximum velocity.	Direction.	Date.	Prev. dir.
Eureka.....	5,939	8.8	35	sw.	9	se.
Fresno.....	4,220	6.3	29	s.	10	nw.
Independence.....	4,438	6.6	40	se.	10	nw.
Los Angeles.....	4,691	7.0	29	nw.	27	sw.
Mount Tamalpais.....	14,307	21.3	66	s.	10	nw.
Point Reyes.....	17,305	25.8	73	nw.	17	nw.
Red Bluff.....	5,126	7.6	33	se.	26	se.
Sacramento.....	6,930	9.4	42	se.	26	se.
San Diego.....	4,678	7.0	34	s.	11	w.
San Francisco.....	5,700	8.5	41	sw.	26	nw.
San Jose.....	5,047	7.5	35	se.	10	se.
San Luis Obispo.....	2,882	4.3	24	se.	10	nw.

COMPARATIVE DATA FOR FEBRUARY.

Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.	Year.	Mean temp.	Ave. precip.
1897.....	48.0	5.85	1903.....	49.7	1.76	1909.....	46.6	8.00	1915.....	46.6	10.08
1898.....	49.4	2.95	1904.....	54.5	7.91	1910.....	46.0	2.43	1916.....	49.8	3.94
1899.....	48.5	0.45	1905.....	50.8	4.24	1911.....	43.7	3.33	1917.....	45.7	6.25
1900.....	49.9	0.94	1906.....	52.0	4.88	1912.....	49.7	0.75	1918.....	46.9	6.18
1901.....	47.7	6.03	1907.....	53.3	4.14	1913.....	46.7	2.07	1919.....	45.7	7.46
1902.....	59.3	8.14	1908.....	46.8	3.99	1914.....	48.4	5.49	.....	.....	.....

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 February, 1919.

Stations.	Data.	Day of Month.																													Monthly.		
		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	
Chula Vista**1.....	Evaporation.....	.076	.056	.110	.102	.065	.114	.091	.095	.087	.184	.130	.182	.101	.092	.116	.117	.152	.119	.184	.184	.138	.121	.170	.139	.162	.158	.165	.103	.....	3.363	
	Wind movement.....	187	73	75	71	58	72	60	74	63	137	272	85	74	76	73	71	250	101	122	190	102	134	151	82	80	168	90	91	.....	3.082	
Dodgeland**2.....	Evaporation.....	.082	.088	.034	.040	.061	.036	.036	.000	.116	.107	.047	.050	.060	.025	.060	.056	.083	.130	.059	.045	.040	.054	.106	.080	.092	.070	.098	.....	1.742		
	Wind movement.....	.75	.41	.21	.14	.119	.126	.153	.104	.156	.127	.116	.25	.67	.40	.54	.73	.44	.90	.102	.46	.16	.59	.63	.81	.46	.164	.85	.78	.....	2,185	
Oakdale (near)**3.....	Evaporation.....	.060	.048	.057	.071	.103	.046	.047	.033	.000	.000	.025	.103	.098	.078	.046	.166	.151	.070	.069	.081	.098	.088	.056	.082	.000	.000	.000	.....	1.676		
	Wind movement.....	.84	.92	.72	.56	.72	.88	.140	.59	.174	.355	.416	.126	.72	.58	.130	.72	.170	.43	.275	.84	.73	.211	.72	.108	.56	.161	.186	.73	.....	3,708	
Tahoe**4.....	Evaporation.....	.030	.020	.080	.035	
	Wind movement.....	.56	.57	.76	.72	.73	.51	.65	.66	.161

* 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 February, 1919.

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.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Snowfall (un-melted).	Precipitation over 1 inch or more.	Clear.	Partly cloudy.	Cloudy.			
Alturas.....	Modoc.....	4,400	15	30.6	-2.8	51	7	0	23	38	3.47	+2.40	0.97	28.8	21	1	8	19	s.	Prof. C. B. Towle.
Antioch.....	Contra Costa.....	46	40	50.0	-0.8	64	8	34	25	4.35	+3.35	2.05	0	10	0	18	10	n.	C. G. McDaniel.	
Atascadero.....	San Luis Obispo.....	837	3	44.1	.....	68	7	21	3	40	4.14	.....	1.06	0	10	8	11	9	nw.	Colony Holding Corp.
Azusa.....	Los Angeles.....	30	17	52.9	-0.8	74	16	35	21	31	2.52	-0.73	0.96	0	9	8	11	9	sw.	C. C. Hillis.
Bakersfield.....	Kern.....	404	30	44.6	-7.7	68	6	29	8	30	0.99	+0.22	0.29	0	7	13	4	11	s.	Santa Fe Co.
Barstow.....	San Bernardino.....	2,105	16	47.4	-4.3	68	10	30	11	32	0.50	+0.01	0.38	0	2	21	0	7	w.	E. L. White.
Berkeley.....	Alameda.....	317	32	49.8	-0.2	64	9	36	1	23	10.85	+6.21	2.70	0	18	8	7	13	s.	State University.
Betteravia.....	Santa Barbara.....	155	6	45.4	.....	70	18	30	14	38	3.08	.....	0.96	0	10	23	0	5	.....	Union Sugar Co.
Blue Canon.....	Placer.....	4,626	20	36.4	-2.5	48	19	28	12	18	20.89	+9.60	3.86	110.0	18	4	4	20	se.	Southern Pacific Co.
Blythe.....	Riverside.....	268	10	53.0	.....	78	110	27	27	46	0.03	.....	0.03	0	1	20	5	3	n.	C. J. Suits.
Bonita.....	San Diego.....	110	3	51.8	.....	71	16	32	25	35	2.44	.....	0.86	0	11	7	18	3	w.	R. M. Allen.
Branscomb.....	Mendocino.....	2,006	19	42.0	-2.7	65	2	25	1	35	17.68	+0.13	3.60	4.2	19	6	18	n.	A. J. Haan.	
Brawley.....	Imperial.....	-105	9	54.6	.....	78	19	31	125	45	0.38	.....	0.28	0	2	21	3	4	sw.	M. D. Witter.
Calexico.....	Imperial.....	0	14	56.0	-1.8	82	9	32	25	46	0.40	-0.40	0.40	0	1	15	12	1	nw.	H. M. Rouse.
Camptonville (near).....	Yuba.....	3,500	12	38.3	.....	52	8	25	24	21	14	.....	3.82	44.5	21	4	1	23	sw.	Pacific Gas & Electric Co.
Chico.....	Butte.....	189	49	47.7	-2.6	63	110	29	4	30	7.36	+3.63	1.25	0	16	9	14	3	.....	U. S. Bureau Plant Ind.
Claremont.....	Los Angeles.....	1,200	27	49.4	-2.7	73	16	32	13	35	1.92	-0.82	0.73	0	10	16	6	6	.....	Prof. F. P. Brackett.
Cloverdale.....	Sonoma.....	340	17	45.8	-1.2	64	18	31	11	29	11.45	+3.47	2.24	0	19	9	1	18	n.	John O. Ogle.
Colfax.....	Placer.....	2,421	48	41.2	-4.7	58	15	27	24	24	17.75	+10.26	4.51	16.0	19	3	8	17	se.	Southern Pacific Co.
Corona.....	Riverside.....	615	5	49.6	.....	72	16	31	26	34	1.68	.....	0.70	0	10	11	11	6	nw.	T. C. Sias.
Crescent City.....	Del Norte.....	125	5	45.8	-1.7	63	8	30	1	26	17.32	+3.03	3.01	0	26	1	25	nw.	Thos. E. Peacock.	
Davis.....	Yolo.....	51	47	47.9	-3.7	62	9	29	3	28	7.12	+4.37	2.13	0	13	7	15	6	se.	S. H. Beckett.
Downieville.....	Sierra.....	3,150	8	38.7	.....	54	18	20	24	34	21.61	.....	4.15	29.0	21	4	2	22	s.	J. T. Mason.
Durham.....	Butte.....	160	24	47.8	-2.0	62	110	30	4	34	6.93	+2.89	1.30	0	15	5	3	20	s.	R. W. Durham.
El Cajon.....	San Diego.....	482	20	51.4	-2.8	74	10	30	25	40	2.88	+0.21	0.91	0	11	9	15	4	sw.	Eugene P. Kessler.
Elsinore.....	Riverside.....	1,300	3	49.2	.....	73	9	30	121	35	2.35	.....	0.95	0	7	11	12	5	se.	W. L. Wilbrite.
Escondido.....	San Diego.....	657	25	47.0	.....	64	14	27	24	21	1.14	.....	0	24	4	4	20	se.	H. L. Harlow.	
EUREKA.....	Humboldt.....	64	33	47.0	+0.2	62	7	32	1	20	8.18	+1.15	1.56	0	24	4	4	20	se.	U. S. Weather Bureau.
Folsom.....	Modoc.....	252	46	50.5	-6.3	70	8	32	3	30	8.72	+4.90	2.70	0	18	9	7	12	s.	G. I. Marvin.
Fontana.....	San Bernardino.....	1,326	7	48.5	.....	70	18	30	21	33	3.19	.....	1.15	0	9	15	6	7	sw.	Fontana Land Co.
Fort Bidwell.....	Modoc.....	4,375	30	31.6	-0.3	50	8	8	19	28	4.01	+1.58	4.78	35.0	18	0	4	24	sw.	C. R. Decious.
FRESNO.....	Fresno.....	293	42	49.5	+0.3	70	8	93	3	25	1.36	.....	0.03	0.41	0	9	14	9	nw.	U. S. Weather Bureau.
Grass Valley.....	Nevada.....	2,690	49	39.6	.....	54	8	22	122	24	19.75	+11.87	3.69	19.5	21	3	6	19	sw.	Mrs. L. M. Wentworth.
Greenland Ranch.....	Inyo.....	-178	8	51.0	.....	77	10	29	13	44	0.00	.....	0.00	0	0	17	10	11	.....	O. A. Denton.
Hanford.....	Kings.....	249	19	48.2	-2.3	68	2	28	21	34	0.95	-0.45	0.30	0	7	13	0	15	n.	Santa Fe Co.
Headsburg.....	Sonoma.....	110	26	48.0	-1.7	67	18	31	3	29	11.73	+4.39	1.93	0	15	4	5	19	se.	Dr. F. J. Kinley.
Hollister.....	San Benito.....	284	45	48.0	-3.9	64	10	28	3	28	3.68	+1.67	1.08	0	18	4	6	18	w.	Grangers' Union.
INDEPENDENCE.....	Inyo.....	3,957	23	40.8	-2.9	65	9	21	25	30	1.13	+0.35	0.63	0	6	10	9	9	nw.	U. S. Weather Bureau.
Indio.....	Riverside.....	2,047	20	41.1	-1.3	78	9	30	12	41	0.11	-0.33	0	1	14	9	5	5	nw.	U. S. Bureau Plant Ind.
Inskip.....	Butte.....	4,975	12	32.0	.....	44	24	22	33	22	26.35	.....	3.90	100.0	23	3	8	17	sw.	Pacific Gas & Electric Co.
Kennett.....	Shasta.....	730	7	44.4	.....	61	24	29	13	32	16.75	.....	2.80	2.0	20	5	8	18	sw.	A. J. Reef.
King City.....	Monterey.....	333	32	52.0	-0.4	82	8	20	14	62	0.20	+1.05	0.90	0	6	10	8	10	.....	Southern Pacific Co.
La Porte.....	Plumas.....	5,000	25	27.3	-7.7	49	8	10	14	25	18.44	+5.91	3.85	82.8	22	4	1	23	s.	C. W. Hendel.
Lemon Cove.....	Tulare.....	600	24	47.4	-5.6	68	9	33	15	25	3.47	+0.54	0.70	0	11	16	4	8	nw.	T. E. Beuce.
Lick Observatory.....	Santa Clara.....	4,203	30	35.4	-5.0	54	8	17	4	36	4.37	+4.36	2.87	5.5	19	4	8	16	n.	The Director.
Lindsay.....	Tulare.....	384	5	47.7	.....	71	8	27	3	32	2.11	.....	0.61	0	9	5	12	11	nw.	Basil Prior.
Lone Pine.....	Inyo.....	3,724	14	46.4	+2.5	70	9	15	25	45	0.10	-0.94	0.10	1.0	1	1	1	1	s.	G. F. Marsh.
Los ANGELES.....	Los Angeles.....	293	42	52.7	-1.4	73	16	41	1	24	1.02	-1.89	0.35	0	7	11	8	9	sw.	U. S. Weather Bureau.
McCloud.....	Siskiyou.....	3,270	9	33.7	.....	50	9	8	28	33	11.31	.....	1.95	51.0	19	3	4	21	s.	McCloud River Lbr. Co.
Madeline.....	Lassen.....	5,270	10	25.0	.....	48	9	-8	21	40	3.39	.....	4.36	40.0	17	1	3	24	nw.	J. H. Williams.
Marysville.....	Yuba.....	67	48	47.9	-3.4	50	15	29	3	27	7.47	+4.40	1.90	0	14	5	6	17	s.	Southern Pacific Co.
Mecca.....	Riverside.....	-185	13	54.5	-2.0	78	16	29	21	40	0.17	-0.20	0.17	0	1	12	15	1	se.	E. A. Palmer.
Merced.....	Merced.....	175	45	47.4	-3.6	71	8	27	30	41	2.11	+0.61	0.64	0	15	5	10	13	se.	Santa Fe Co.
MOUNT TAMALPAIS.....	Marin.....	2,375	20	41.3	-4.3	52	7	32	23	34	10.09	+4.37	2.27	0	22	4	9	15	nw.	U. S. Weather Bureau.
Mount Wilson.....	Marin.....	5,703	26	36.9	.....	59	7	20	25	30	4.05	.....	2.45	11.0	11	11	8	9	nw.	Wendell P. Hoge.
Napa.....	Los Angeles.....	20	42	40.2	-10.4	47	5	28	1	14	11.46	+7.48	3.00	1	15	12	5	11	sw.	State Hospital
Needles.....	San Bernardino.....	477	27	53.5	-4.1	73	9	33	26	37	0.37	+0.18	0.22	0	4	13	3	12	e.	Santa Fe Co.
Nevada City.....	Nevada.....	2,850	27	38.3	-4.8	60	15	17	27	32	1.62	-0.09	0.53	0	7	17	8	17	se.	E. S. Waagenheim.
Newman.....	Stanislaus.....	91	30	48.3	-3.3	71	7	27	12	32	1.62	-0.09	0.53	0	7	11	13	13	nw.	Chabot Observatory.
Oakland.....	Alameda.....	36	48	48.7	-1.6	58	18	37	24	36	2.90	.....	0	18	4	11	13	sw.	U. S. Rec. Service.	
Orland.....	Glenn.....	256	37	46.6	-4.6	65	9	29	3	26	3.93	+1.04	1.00	0	16	6	4	18	s.	Thomas Cole.
Oroville (near).....	Butte.....	250	35	48.2	-2.4	62	9	29	3	28	9.12	+4.90	2.17	0	17	3	1	24	se.	R. P. Hamlin.
Pasadena.....	Los Angeles.....	1,085	29	49.0	-3.4	72	16	32	23	34	2.55	+0.72	1.36	0	11	10	7	sw.	E. J. Nye.	
Paso Robles.....	San Luis Obispo.....	800	32	47.4	-0.9	71	9	26	19	33	3.61	+0.68	1.56	0	13	10	6	12	n.	John Landis.
Petaluma.....	Sonoma.....	9	5	45.6	.....	62	18	26	11	25	7.60	+3.92	1.89	0	15	8				

Daily Precipitation for February, 1919.

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 .....	.02	.02	.10	.05	.08	.04	.02	.35	.39	.97	.02	.08	.18	.04	.20	.10	.26	.10	.29	.05	.20	.01	.20	.01	.20	.01	.20	.01	.20	.01	3.47			
Antioch.....	San Joaquin .....	.02	.04	.10	.05	.35	.20	.05	.01	.05	.01	.02	.22	.05	.18	.10	.10	.26	.10	.29	.05	.65	.10	.53	.10	.53	.10	.53	.10	.53	.10	5.35			
Atascadero.....	Coast.....	.15	.04	.10	.05	.52	.30	.98	.01	.04	.96	.03	.01	.29	.20	.05	.04	.10	.12	.22	.05	.06	.46	.10	.52	.02	.52	.02	.52	.02	.52	.02	4.14			
Azusa ***.....	do.....	.35	.24	T.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.99
Bakersfield ***.....	San Joaquin .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.50
Barstow.....	Desert.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.50
Berkeley.....	Coast.....	.	.	.08	.74	.03	.99	.01	.140	.27	.70	.137	.	.13	.24	.	.13	.	.04	.06	.29	.31	.	.20	.07	.22	.	.20	.07	.22	.	.20	.07	.22	10.85	
Betteravia.....	do.....	.22	.03	.	.06	.	.72	.96	.03	.	.10	.	.10	.	.40	.30	.	.70	.	.150	.80	.	1.20	1.60	.	.20	.	.20	.	.20	.	.20	.	.20	3.08	
Blue Canon ***.....	Sacramento20	T.	.	10	.50	.55	1.15	3.15	15.2	2.23	3.86	2.30	T.	T.	T.	.	40	.30	.	70	.	1.50	.80	.	1.20	1.60	.	.20	.	.20	.	.20	.	.20	20.89
Blythe ***.....	Colorado	0.09		
Bonita.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.09
Branscomb.....	Imperial Valley .....	.	.	T.	.25	.45	.52	3.60	1.16	3.30	2.05	1.80	.54	1.00	.95	.86	1.0	.	.45	.15	.25	.15	T.	.	.	.	.	.	.	.	.	.	2.44
Calexico ***.....	Imperial Valley .....	.	.	T.	.28	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17.68
Camptonville.....	San Joaquin .....	.04	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.88
Chico.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.40
Claremont ***.....	Coast.....	.25	.06	.01	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7.36	
Cloverdale.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.92
Colfax ***.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11.45
Corona.....	Coast.....	.45	.07	.08	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17.75
Crescent City.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.68
Davis.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.40
Downieville.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.14
Durham.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7.12
El Cajon.....	Coast.....	.60	.07	.27	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	6.93
Elsinore ***.....	do.....	.87	.20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.88
Escondido.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.35
EUREKA ***.....	do.....	.	.	T.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.00
Folsom ***.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5.18
Fontana.....	Coast.....	.64	.02	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7.22
Fort Bidwell.....	Mountain Lakes .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.92
FRESNO***.....	San Joaquin .....	.05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4.01
Grass Valley.....	Sacramento .....	.06	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.36
Greenland Ranch.....	Desert.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.00
Hanford ***.....	San Joaquin .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.00
Hearldsburg ***.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11.73
Hollister ***.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.68
INDEPENDENCE***.....	Owens.....	.19	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.13
Indio.....	Coachella Val. ....	.13	T.	T.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.13
Inskip.....	Sacramento .....	.09	.20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	23.35
Kennett.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	16.75
King City.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.12
La Porte.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.09
Lemon Cvce ***.....	San Joaquin .....	.18	.15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	18.44
Lick Observatory.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.47
Lindsay.....	San Joaquin .....	.30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9.28
Lone Pine.....	Owens.....	.10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.11
LOS ANGELES***.....	Coast.....	.16	.05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.04
McCloud.....	Mountain Lakes	T.	.06	T.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.13
Madeleine.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.99
Marysville ***.....	Sacramento	T.	.20	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	7.47
Mecca.....	Coachella Val. ....	.17	T.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.76
MT. TAMALPAIS***.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.76
Mount Wilson.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	10.09
Naples.....	do.....	.60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4.05
Needles.....	Colorado .....	.22	.04	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11.46
Nevada City.....	Sacramento .....	.03	.05	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	0.61
Newman.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	17.08
Oakland.....	Coast.....	.01	.03	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.62
Orland.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	3.93
Oroville (near).....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9.12
Pasadena.....	Coast.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	9.12
Paso Robles ***.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5.68
Placerville.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	11.62
POINT REYES***.....	Coast.....	.02	.06	T.	.29	.20	.22	.05	.03	.54	.84	.34	.03	.21	.18	.	.02	.01	.40	.04	.38	.08	.27	.05	.25	.06	.20	.	.05	.	.05	15.86				
Pomona ***.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	4.77
Porterville ***.....	San Joaquin .....	.12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	2.49
Portola.....	Sacramento .....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	1.96
RED BLUFF***.....	do.....	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	5.68
Redlands.....	Coast.....	.07	.25	.42	.18	.10	.40	.15	.13	T.	.06	.33	.11	.05	.05</																					

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. † Separate dates of fall not recorded. ‡ trace, or less than 0.01 inch.

Daily Temperature for February 1918

SUPPLEMENTAL PRECIPITATION TABLE.

Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.	Stations.	Watersheds.	Precip., inches.
Abbotts.....	Coast.....	5.56	Dobbins (near).....	Sacramento.....	14.59	Livermore.....	Coast.....	.....	Reedley.....	San Joaquin.....	2.02
Aguanga.....	do.....	2.55	Dodgeland.....	do.....	4.65	Llano.....	do.....	0.80	Represa.....	Sacramento.....	9.79
Angiola.....	San Joaquin.....	1.02	Dudley.....	San Joaquin.....	0.75	Lompoc.....	do.....	3.06	Rio Vista.....	do.....	6.79
Antelope Valley.....	do.....		Dudleys.....	do.....	10.98	Lordsburg.....	do.....		Rosamond.....	Desert.....	14.17
Arrowhead Springs.....	Coast.....	1.36	East Park.....	Sacramento.....	3.52	Los Alamos.....	do.....	2.75	San Miguel Island.....	Coast.....	1.79
Auburn.....	Sacramento.....	14.60	Edison.....	San Joaquin.....	2.79	Los Gatos.....	do.....	12.00	San Pedro.....	Ocean.....	0.81
Avalon.....	Ocean.....		Electra.....	do.....	10.98	Lytle Creek.....	do.....	3.91	Santa Ana River.....	Coast.....	3.82
Basgad.....	Desert.....	T.....	Emigrant Gap.....	Sacramento.....	20.55	Maricopa.....	San Joaquin.....	0.70	Santa Clara.....	do.....	5.62
Barrett Dam.....	Coast.....	6.10	Fairmont.....	Coast.....	1.42	Mariposa.....	do.....	8.69	Santa Maria.....	do.....	2.36
Beaumont.....	do.....	3.86	Firbaugh.....	San Joaquin.....	1.23	Melones.....	do.....	7.22	Santa Monica.....	do.....	1.72
Beaumont (near).....	do.....	3.92	Fordyce Dam.....	Sacramento.....	20.32	Merced Falls.....	do.....	5.01	Seven Oaks.....	do.....	4.10
Bellota.....	San Joaquin.....	6.35	Fort Bragg.....	Coast.....	10.78	Mesa Grande.....	Coast.....	6.10	Shively.....	do.....	15.24
Big Bar.....	Sacramento.....	10.25	Fort Ross.....	do.....	15.71	Middlewater.....	San Joaquin.....	0.65	Sierra Madre.....	do.....	2.73
Big Sur.....	Coast.....		Friant.....	San Joaquin.....	2.08	Mill Creek-1.....	do.....	15.42	Sierra Madre.....	do.....	
Bishop.....	Owens.....	11.14	Georgetown.....	Sacramento.....	22.58	Mill Creek-2.....	Coast.....	4.08	Sierraville.....	Mountain Lakes.....	9.30
Bishop Creek.....	do.....	4.02	Glenville.....	San Joaquin.....	6.70	Milo.....	San Joaquin.....	4.37	Sonora.....	San Joaquin.....	8.63
Cahuilla.....	Coast.....		Goffs.....	Desert.....	0.87	Milton (near).....	do.....	7.17	Springville (near).....	do.....	8.63
Calaveras R. S.....	San Joaquin.....	14.39	Gold Run.....	Sacramento.....	13.25	Mokelumne Hill.....	do.....	8.89	Standish.....	Mountain Lakes.....	4.02
Campbell.....	Coast.....	6.60	Gray Mountain.....	Desert.....	0.90	Monroeville.....	Sacramento.....	4.41	Stanwood.....	Coast.....	15.18
Campo.....	do.....	4.04	Happy Camp.....	Klamath.....	11.52	Montague.....	Sacramento.....	3.75	Stevenson Creek.....	San Joaquin.....	6.75
Canon Dam.....	Sacramento.....	12.74	Hayfork.....	Coast.....	8.08	Montgomery Creek.....	do.....	17.00	Story.....	do.....	2.55
Cascade.....	San Joaquin.....	8.35	Hedad Dam.....	Sacramento.....	19.27	Nellie.....	Coast.....	9.79	Tahoe.....	Mountain Lakes.....	14.20
Cedarville.....	Mountain Lakes.....	2.66	Helen Mine.....	Coast.....	26.58	Nicolaus.....	Sacramento.....	6.58	Tamarack.....	Sacramento.....	10.80
Centerville.....	Sacramento.....	13.49	Hetch Hetchy.....	San Joaquin.....	9.92	Niles.....	Coast.....	6.48	Tejon Rancho.....	San Joaquin.....	3.01
Chestet.....	do.....	7.57	Hulvville (near).....	Coast.....	19.08	North Bloomfield.....	Sacramento.....	15.33	Three Rivers.....	do.....	6.28
China Flat.....	Coast.....	12.42	Huntington Lake.....	San Joaquin.....	8.32	North Fork.....	San Joaquin.....	10.80	Truckee.....	Mountain Lakes.....	13.90
Chula Vista.....	do.....	1.72	Idria.....	do.....	3.81	North Lakeport.....	Coast.....	8.27	Tustin (near).....	Coast.....	2.78
Churn Creek.....	Sacramento.....	9.00	Indio.....	Desert.....	0.13	Oakdale (near).....	San Joaquin.....	3.16	Twin Lakes.....	Mountain Lakes.....	15.31
Clovis.....	San Joaquin.....		Jolon.....	Coast.....	2.60	Oak Grove.....	Coast.....	1.74	Twin Valley.....	Sacramento.....	
Coalinga.....	do.....	1.06	Julian.....	do.....	7.09	Oceanside.....	do.....	2.45	Upper Mattole.....	Coast.....	
Colgate.....	Sacramento.....	14.17	Kennedy Mine.....	San Joaquin.....	11.13	Ojai Valley.....	do.....	12.84	San Joaquin.....	Coast.....	
Colusa.....	do.....	3.79	Kentfield.....	Coast.....	20.81	Orleans.....	Klamath.....	2.47	Visalia.....	Coast.....	1.86
Covelo.....	Coast.....		Kernville.....	San Joaquin.....	2.18	Ozona.....	Coast.....	2.62	Walnut Creek.....	Coast.....	10.09
Crockett.....	do.....	7.05	Knights Landing.....	Sacramento.....	5.32	Parkfield.....	do.....	3.26	Warner Springs.....	do.....	3.12
Cuyamaca.....	do.....	7.32	La Jolla.....	Coast.....	5.76	Pattiway.....	San Joaquin.....	3.16	Wasco.....	San Joaquin.....	1.50
Deer Creek.....	Sacramento.....	22.96	Lake Eleanor.....	San Joaquin.....	.....	Peachland.....	Coast.....	1.12	Wasioja.....	Coast.....	2.91
Del Monte.....	Coast.....	2.63	Lake Spaulding.....	Sacramento.....	24.36	Piedra.....	San Joaquin.....	4.25	West Branch.....	Sacramento.....	23.64
Denair.....	San Joaquin.....	2.32	Las Plumas.....	do.....	15.77	Point Loma.....	Coast.....	1.73	West Point.....	San Joaquin.....	12.14
De Sabla.....	Sacramento.....	21.44	Lathrop.....	San Joaquin.....	2.84	Priest Valley.....	do.....	4.64	Wrights.....	Coast.....	18.58
Denuba.....	San Joaquin.....	2.51	Le Grand.....	do.....	2.55	Quincy.....	Sacramento.....	13.72	Yorba Linda.....	do.....	1.96

SNOWFALL IN THE MOUNTAINS.

Up to the close of January, snowfall was deficient in the mountains of California. Densely packed snow of the kind which usually forms the principal source of summer water supply for irrigation and for hydroelectric power was everywhere deficient. On January 31st, however, there began a series of storms which continued throughout February, and which brought sufficient snow to alleviate danger of a water shortage during the coming summer.

Precipitation was abundant throughout central and northern California during February, and heavy snow fell in the mountains. Without exception, more than the usual amount of snow fell at all mountain stations from which reports were received, and in many instances the snowfall was more than twice the February normal. The greatest amount reported was 158 inches, at Emigrant Gap, Placer County, altitude 5,230 feet. At this station 68 inches fell in 48 hours, on the 26th-27th.

Moderately heavy snow fell in the higher portions of the Coast Range, most of it occurring during the last ten days of the month. Except on the higher peaks, however, but little remained at the close of the month. In the mountains of southern California the snowfall was also heavy, but most of it came during the first half of the month, and little remained at its close. Throughout the Sierra Nevada Mountains the snowfall was abundant, and it was well distributed throughout the month. On February 28th the amount on the ground was greater than that on a similar date in either of the two preceding years, and it was slightly above normal for that date. The greatest amount on the ground at any of the stations from which reports were received, was 145 inches, at Summit, Placer County, altitude 7,017 feet.

Below the 5,000-foot level in the Sierra Nevada Mountains, the snow was soft and melting slowly at the close of February. Above that level, however, it was hard and well packed. Persistent low temperatures and overcast skies during the greater part of the month prevented rapid melting. It appears, therefore, that if normal weather prevails during the spring months there will be ample water available for irrigation and power purposes during the coming summer.

A. H. P.

COMPARATIVE SNOWFALL DATA FOR FEBRUARY.

(Amount on the Ground.)

	FORDYCE DAM.			SUMMIT.			TAMARACK.		
	1st.	15th.	End of mo.	1st.	15th.	End of mo.	1st.	15th.	End of mo.
1907.....	86	67	81	137	96	88	182	122	97
1908.....	75	81	90	88	115	74	104	108	120
1909.....	105	157	138	172	224	213	190	234	256
1910.....	69	72	74	76	70	72	114	110	101
1911.....	128	138	120	228	240	215	320	407	434
1912.....	59	52	44	38	27	23	54	45	42
1913.....	77	69	80	85	55	55	116	100	115
1914.....	107	98	130	192	150	180	274	253	272
1915.....	90	120	135	106	154	180	132	174	185
1916.....	158	150	154	207	164	145	192	165	168
1917.....	72	65	116	80	56	128	64	58	154
1918.....	9	27	68	2	50	74	20	74	80
1919.....	46	96	122	47	102	145	.....	.....	.....

T. means trace.

Snowfall Data. [In inches.]									
WATERSHED, COUNTY, STATION.	Eleva- tion, feet.	Total snow- fall.	Compr'd with normal.	Am't on ground 15th.	Am't on ground end mo.				
Klamath Watershed.									
Siskiyou County. Yreka	2,625	9	.....	0	0				
Trinity County. Hayfork	2,300	12	.....	0	0				
Ruth	2,925	24	.....	0	2				
Weaverville	2,162	8	.....	0	1				
Mountain Lakes.									
Modoc County. Alturas	4,400	29	+24	5	7				
Cedarville	4,675	26	+16	6	5				
Fort Bidwell	4,375	35	.....	10	12				
Lassen County. Eagle Lake	5,000	56	+41	11	30				
Madeline	5,270	40	+29	10	19				
Nevada County. Grass Valley	2,690	20	.....	0	2				
Nevada City	2,850	20	+13	0	T.				
North Bloomfield	3,214	26	+15	0	4				
Truckee	5,817	139	.....	24	36				
Placer County. Gold Run	3,222	29	+19	0	10				
Tahoe	6,230	101	.....	56	82				
Inyo County. Bishop	4,450	.....	.....	.....	.....
Bishop Creek	8,390	58	+20	24	36				
Lone Pine	3,728	1	.....	0	0				
Wells Meadow	5,280	.....	.....	.....	.....
Sacramento Watershed.									
Siskiyou County. McCloud	3,270	51	+38	5	20				
Sisson	3,555	50	+30	0	14				
Plumas County. Bucks	5,515	55	+ 4	73	87				
Canon Dam	4,570	80	.....	39	62				
Chester	4,550	62	+36	32	49				
Clover Valley	5,700	58	+ 4	20	42				
La Porte	5,000	83	+32	37	72				
Portola	4,832	50	.....	9	32				
Quincy	3,400	32	+19	3	7				
Butte County. De Sabla	2,500	28	+20	0	9				
Inskip	4,975	106	+56	36	76				
West Branch	3,216	36	+16	0	20				
Yuba County. Camptonville	3,500	45	+28	0	22				
Sierra County. Downieville	3,150	29	+21	0	10				
Sterryville	5,000	51	+31	2	18				
Nevada County. Deer Creek	3,700	68	+40	3	39				
Fordyce Dam	6,500	155	+79	96	122				
Lake Spaulding	4,600	135	+89	39	106				
Placer County. Blue Canon	4,695	110	+64	29	65				
Emigrant Gap	5,230	158	+98	35	98				
Summit	7,017	133	+57	102	145				
San Joaquin Watershed.									
Alpine County. Tamarack	8,000	.....	.....	.....	.....
Twin Lakes	7,970	.....	.....	.....	.....
Tuolumne County. Hetch Hetchy	3,665	50	.....	6	15				
Lake Eleanor	4,700	.....	.....	.....	.....
Kern County. Glennville	3,300	8	+ 1	0	0				
Mariposa County. Yosemite	3,945	86	+15	4	15				
Fresno County. Camp Seven	6,980	62	.....	39	58				
Cascade	4,900	34	.....	2	6				
Hume	5,300	60	.....	12	26				
Huntington Lake	6,950	94	.....	43	66				
Stevenson Creek	4,250	28	.....	0	1				
Tulare County. Hot Springs	3,300	.....	.....	2	8				
Springville	4,000	36	+16	2	8				
Mountains of Southern California.									
Cuyamaca	4,677	28	+17	2	1				
Julian	4,222	26	.....	1	T.				
Mount Wilson	5,704	11	.....	2	T.				
Nellie	5,350	26	.....	4	T.				
Seven Oaks	5,000	43	+30	4	0				
Squirrel Inn	5,280	2	+14	0	0				