

U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

CALIFORNIA SECTION.

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GENERAL SUMMARY.

October was abnormally cold in California, except along the coast, where temperatures were slightly above normal. The nights were cold, and frosts occurred frequently. Precipitation was heavier than is usual during October, the excess being marked along the northern coast, where the total amount exceeded 10 inches. The autumn rains started earlier than usual, and snowfall in the Sierra Nevada Mountains was abundant. However, most of the snow melted rapidly, and at the close of the month only the higher peaks remained snow-covered. As the rains came in well distributed showers the moisture was largely absorbed by the soil which had become extremely dry as a result of the long-continued drought. Stages of streams showed only moderate rises. Depleted water supplies were replenished and reservoirs were partially refilled by the timely rains. The restrictions in the use of electric power which had long been in effect because of the shortage of hydroelectricity resulting from the long drought were all removed during October. There were no severe general storms, but destructive lightning accompanied a local thunderstorm at Pomona on the 30th. Sunshine was deficient in the northern and central portions of the State. The wind movement was normal.

The weather was generally favorable from an agricultural viewpoint. Generous showers relieved the drought, revived pastures and ranges, reinvigorated orchards, and made fall plowing possible by softening the soil. Seeding of winter growing grains was started. It was good harvest weather for corn, sugar beets, potatoes, almonds, apples, prunes, and olives. Beans were also gathered, but the crop proved to be small. Showers and cool weather delayed the maturing of rice, and its harvest was therefore later than usual. Cotton picking proceeded without interruption, and a good crop was gathered. The yield of walnuts was disappointing. The raisin and grape harvests were largely completed; the raisin crop was found to be smaller than that of last year; overcast skies and occasional showers delayed the sun-curing of this crop. Frost terminated the growing season of tomatoes and garden vegetables, and nipped the foliage of beans, cotton, corn and grain sorghums, with slight damage in some instances, but more generally they were helpful in checking further growth and in bringing about more rapid maturity. The new crop of citrus fruits made good progress toward maturity, and the outlook is favorable for large crops. At the close of the month the agricultural situation for the State as a whole was excellent.

A. H. P.

PRESSURE.

The mean sea-level pressure, determined from the records of 12 regular Weather Bureau stations, was 30.00 inches. The highest was 30.51 inches at Eureka on the 13th; the lowest was 29.59 inches at Independence on the 18th; the range for the State was 0.75 inch.

TEMPERATURE.

The monthly mean temperature for the State, as shown by the records of 97 stations, was 57.0°, which is 4.1° below the normal. The highest monthly mean was 69.7°, at Indio; and the lowest was 37.4°, at Summit.

The highest temperature, 115°, occurred at Blythe on the 7th; and the lowest, 9°, occurred at Portola on the 31st. The range for the State was 106°.

PRECIPITATION.

The average precipitation for the State, as shown by the records of 245 stations, was 2.52 inches, or 1.07 inches above the normal.

The greatest monthly amount was 14.24 inches, at Crescent City. No rain fell at Llano.

The greatest amount in 24 hours was 4.00 inches at Squirrel Inn on the 18th.

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.....	89	78	84	180	52
Fresno.....	75	39	57	305	88
Independence.....	47	27	37	240	83
Los Angeles.....	71	59	65	256	73
Mount Tamalpais.....	72	66	69	247	71
Red Bluff.....	77	45	61	232	73
Sacramento.....	82	44	63	282	81
San Diego.....	78	68	73	288	82
San Francisco.....	81	62	72	280	81
San Jose.....	77	49	63	264	76
San Luis Obispo.....	76	60	68	280	80

WIND MOVEMENT.—(Miles.)

Stations.	Total mov. for month.	Ave. hr. velocity.	Maximum velocity.	Direction.	Date.	Prev dir.
Eureka.....	5,019	6.7	34	n.	29	se.
Fresno.....	3,940	5.3	25	n.w.	12	n.w.
Independence.....	4,590	5.2	30	w.	12	n.w.
Los Angeles.....	4,184	5.6	24	sw.	13	sw.
Mount Tamalpais.....	14,821	19.9	68	n.e.	29	n.w.
Point Bluff.....	16,360	22.0	64	n.w.	12	n.w.
Red Bluff.....	4,748	6.1	34	n.w.	29	n.
Sacramento.....	5,181	7.0	35	n.w.	30	n.w.
San Diego.....	4,674	6.3	24	se.	29	w.
San Francisco.....	6,772	9.1	38	n.	29	w.
San Jose.....	4,620	6.2	30	w.	29	n.w.
San Luis Obispo.....	3,064	4.1	18	w.	12	n.w.

COMPARATIVE DATA FOR OCTOBER.

Year	Mean temp.	Ave. precip.	Year	Mean temp.	Ave. precip.	Year	Mean temp.	Ave. precip.	Year	Mean temp.	Ave. precip.
1897....	58.5	1.79	1903....	64.0	0.49	1909....	60.2	1.66	1915....	62.3	0.14
1898....	61.0	0.59	1904....	61.6	2.74	1910....	61.9	0.83	1916....	55.0	1.91
1899....	58.1	3.50	1905....	60.7	0.12	1911....	59.1	0.5*	1917....	54.4	0.01
1900....	58.3	2.34	1906....	63.4	0.09	1912....	57.1	0.36	1918....	62.9	1.02
1901....	63.2	1.50	1907....	62.0	1.56	1913....	61.9	0.08	1919....	57.6	0.63
1902....	60.7	1.78	1908....	58.3	1.37	1914....	60.2	1.60	1920....	57.0	2.52

Daily evaporation (inches) and wind movement (miles) for October.

Stations.	Data.	Day of Month.																															Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Chula Vista**	Evaporation.....	188	182	190	109	149	160	174	173	170	197	143	197	194	143	147	151	160	194	166	178	126	145	181	191	221	106	092	089	205	121	137	4,970
	Wind movement.....	88	87	93	51	84	109	99	92	105	115	100	148	114	58	70	89	91	184	176	100	42	70	86	92	40	55	52	73	178	111	118	2,970
Dodgeland*	Evaporation.....	203	023	128	194	261	231	249	082	142	004	000	018	082	126	084	095	036	166	097	054	013	042	020	154	116	052	088	007	190	323	206	3,581
	Wind movement.....	58	9	11	8	29	24	10	34	7	9	10	28	46	27	20	8	22	31	68	31	9	19	7	23	42	6	5	61	33	124	98	917
Oakdale (near)*	Evaporation.....	175	294	272	261	244	250	097	163	162	000	123	172	117	210	073	179	148	020	100	071	093	090	130	105	086	106	138	099	175	143	260	4,560
	Wind movement.....	135	150	105	85	105	130	110	50	80	180	65	80	155	145	55	85	85	140	130	70	75	55	70	80	45	45	55	65	80	160	170	3,040
Tahoe**	Evaporation.....	050	060	010	050	130	090	000	100	000	050	150	005	130	100	110	150	160	000	000	000	160	080	070	140	080	080	050	110	130	180	210	2,580
	Wind movement.....	55	55	86	98	75	67	86	81	57	47	106	128	67	55	41	25	9	58	102	77	117	69	75	62	30	44	56	101	107	140	137	2,333

* Observations taken at 7 a. m.; ** at 8 a. m. † Included in the next following entry.

Climatological Data for October, 1920.

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 (melted).	Precipitation, 0.1 inch or more.	Clear.			Partly cloudy.	Cloudy.
Antioch	Contra Costa	46	41	61.4	-2.0	89	11	40	19	45	1.11		3	0	31	0	se.	C. G. McDaniel.		
Atascadero	San Luis Obispo	837	4	50.4		75	14	27	21	45	1.04		40	0	20	6	sw.	Colony Holding Corp.		
Bakersfield	Kern	404	31	60.4	-5.1	87	4	4	21	43	.63		40	0	3	10	9	sw.	Santa Fe Co.	
Bartstow	San Bernardino	2,105	17	58.8	-5.2	82	2	30	21	42	1.10		10	0	1	27	1	sw.	E. L. White.	
Berkley	Alameda	317	33	59.4	+0.1	81	23	43	7	32	1.84		95	0	7	15	0	sw.	State University.	
Blue Canyon	Placer	4,695	21	48.7	-1.3	78	29	29	16	46	7.71		2.20	8.0	1	15	0	sw.	Southern Pacific Co.	
Blythe	Riverside	268	11	69.2		115	2	39	21	68	.39		.39	0	1	25	0	sw.	Palo Verde Water Co.	
Bonita	San Diego	110	4	60.8		82	13	38	20	39	.42		.37	0	1	25	0	sw.	R. M. Allen.	
Branscom	Mendocino	2,000	20	51.3	-1.9	82	23	30	116	41	7.53		3.05	0	10	15	8	sw.	A. J. Haun.	
Brawley	Imperial	-105	10	68.2		96	6	41	21	44	.12		.12	0	1			sw.	M. D. Witter.	
Calexico	Imperial	0	15	65.8	-6.5	102	3	41	21	45	1.06		.10	0	6	22	5	sw.	H. M. Rouse.	
Chico	Butte	189	50	58.4	-6.0	87	33	33	112	43	1.99		.77	0	3	18	9	sw.	U. S. Bureau Plant Ind.	
Chula Vista	San Diego	9	2	58.6		73	25	42	120	24	.39		.33	0	4			sw.	Western Salt Works.	
Claremont	Los Angeles	1,200	28	61.0		84	17	36	21	43	2.60		1.33	0	1	26	3	sw.	Prof. F. P. Brackett.	
Cloverdale	Sonoma	340	18	58.2	-3.4	84	13	35	35	31	3.66		+1.20	0	10	16	7	sw.	John O. Ogle.	
Colfax	Placer	2,421	49	53.4	-6.1	78	13	34	13	33	5.93		+3.55	2.08	7	19	5	sw.	Southern Pacific Co.	
Colusa	Colusa	69	17	57.4	-4.2	83	4	38	116	35	1.33		+7.1	0	6	20	3	sw.	E. A. Honchins.	
Corona	Riverside	615	6	63.2		91	1	37	120	40	1.30		.81	0	3	15	7	sw.	Edwin T. Brink.	
Crescent City	Del Norte	125	6	55.1	+1.7	78	24	35	720	27	14.24		+9.05	3.90	12	12	2	sw.	Thos. E. Peacock.	
Davis	Butte	125	2	58.6	-6.3	88	3	35	16	44	1.46		.62	0	5	28	2	sw.	Prof. S. H. Beckett.	
Dodgeville	Butte	160	25	57.7		84	4	36	20	40	1.28		.71	0	7	12	7	sw.	Dege and Co.	
Durham	Butte	160	25	57.7		84	4	36	20	40	1.28		.71	0	7	12	7	sw.	R. W. Durham.	
El Cajon	San Diego	482	21	61.2	-4.3	87	6	36	14	48	.74		.54	0	4	26	4	sw.	Engene P. Kessler.	
Elsinore	Riverside	1,300	4	62.8		99	1	36	120	47	.97		.42	0	4	15	13	sw.	W. L. Wilhite.	
Escudido	San Diego	742	26	60.2	-1.9	84	16	31	21	46	.82		.43	0	3	19	6	sw.	H. L. Harlow.	
ESPERANZA	Humboldt	64	34	54.5	+1.4	72	3	38	31	21	4.11		+1.46	1.16	16	12	5	sw.	U. S. Weather Bureau.	
Folsom	Sacramento	252	47	59.6	-4.0	82	4	36	20	34	3.28		+2.02	.97	0	7	24	0	sw.	Mrs. G. I. Marvin.
Fontana	San Bernardino	1,325	8	59.2		88	27	36	20	41	2.52		1.23	0	4	25	3	sw.	Fontana Land Co.	
Fort Bidwell	Modoc	4,375	31	45.0	-5.6	78	4	23	15	43	1.23		+2.27	1.0	9	5	18	8	sw.	C. R. Decious.
FRESNO	Fresno	293	33	60.0	-4.7	87	4	39	20	32	8.4		+1.12	0	6	24	5	sw.	U. S. Weather Bureau.	
Grass Valley	Nevada	2,690	48	53.2		76	13	32	113	30	7.18		+4.38	1.73	0	9	20	4	sw.	Mrs. L. M. Wentworth.
Greenland Ranch	Inyo	-178	9	68.6		96	5	45	122	46	.20		.20	0	1	19	0	sw.	O. A. Denton.	
Hanford	Kings	249	20	52.4	-11.3	72	5	32	31	30	.85		+5.7	3.0	5	21	0	sw.	Santa Fe Co.	
Healdsburg	Sonoma	110	27	57.9	-3.5	82	3	34	31	44	3.58		+1.31	0	8	17	6	sw.	Dr. F. J. Kinley.	
Hollister	San Benito	284	46	57.2	-3.4	89	3	36	31	33	1.44		.49	0	8	22	4	sw.	Grangers' Union.	
INDEPENDENCE	Inyo	3,957	24	51.0	-5.3	83	6	28	19	39	1.1		-2.2	0	1	23	1	sw.	U. S. Weather Bureau.	
Indio	Riverside	-20	42	69.7	-5.7	88	6	42	122	44	.06		-.05	0	2	21	9	sw.	U. S. Bureau Plant Ind.	
Inskip	Butte	4,975	13	45.0		66	11	28	113	24	6.70		1.90	9.2	10	12	5	sw.	Pacific Gas & Electric Co.	
Kennett	Shasta	730	8	57.7		88	3	36	112	41	3.79		1.26	0	6	20	2	sw.	Nammoth Copper Mine.	
La Porte	Plumas	5,000	26	38.3	-10.4	67	3	21	13	34	6.58		+1.67	1.92	12.5	9	14	8	sw.	Wm. Schuld.
Lemmon Cove	Tulare	600	25	60.8	-6.6	90	4	40	13	41	.68		-.07	.23	0	6	22	4	sw.	T. E. Pence.
Lick Observatory	Santa Clara	4,209	31	47.6	-7.4	71	13	30	13	19	3.33		+1.65	1.09	0	10	20	7	sw.	Lick Observatory.
Lindsay	Tulare	384	6	58.3		90	4	33	31	42	.51		.29	0	4	21	6	sw.	Basil Prior.	
Lone Pine	Inyo	3,728	15															sw.	G. F. Marsh.	
LOS ANGELES	Los Angeles	293	43	63.2	-1.4	84	25	47	20	26	.76		-.01	.44	0	2	16	12	sw.	U. S. Weather Bureau.
McCloud	Siskiyou	3,270	10	48.2		73	4	28	20	37	3.49		1.20	0	7	14	4	sw.	McCloud River Lbr. Co.	
Marysville	Yuba	67	49	58.6	-6.7	85	13	38	31	37	1.21		.50	0	4	17	10	sw.	Southern Pacific Co.	
Mesa	Riverside	-184	14	69.0	-3.3	85	16	43	21	39	1.11		.22	0	1	24	6	sw.	Cooperative Date Garden.	
Merced	Merced	173	46	58.3	-6.5	85	4	35	20	37	1.45		+9.6	.49	0	7	23	3	sw.	Santa Fe Co.
MOUNT TAMALPAIS	Marin	2,375	21	52.8	-5.9	73	3	38	19	19	2.09		+1.7	.64	0	8	16	3	sw.	U. S. Weather Bureau.
Mount Wilson	Los Angeles	5,704	3	51.6		77	1	27	20	25	2.25		1.53	1.0	4	19	7	sw.	Solar Observatory.	
Napa	Napa	20	43	59.6	-9.4	85	3	37	20	40	1.91		+7.2	.90	0	7	17	11	sw.	State Hospital.
Needles	San Bernardino	477	28	66.6	-5.1	94	1	40	26	44	.39		.33	0	2	18	4	sw.	Santa Fe Co.	
Nevada City	Nevada	2,850	28	50.9	-4.8	81	4	26	13	43	5.87		+3.39	1.65	0	9	17	10	sw.	B. H. Preston.
Newman	Stanislaus	91	31	56.8	-8.0	85	8	33	120	43	.85		.22	.29	0	5			sw.	E. S. Wengenheim.
Oakdale (near)	Stanislaus	215	2	58.0	-4.7	85	5	34	31	40	3.50		+2.67	1.01	0	7	22	4	sw.	S. San Joaquin Irr. Dist.
Oakland	Alameda	322	44	57.8	-0.6	76	23	45	20	26	1.87		+3.2	.95	0	8	15	8	sw.	Chabot Observatory.
Ojai	Ventura	900	14	59.6	-4.7	89	25	32	21	49	.42		-.21	.30	0	2	24	6	sw.	W. H. Duigan.
Orland	Glenn	254	38	58.5	-1.6	84	12	39	20	35	1.04		+0.6	.41	0	7	18	9	sw.	U. S. Rec. Service.
Oroville (near)	Butte	250	36	59.4	-6.0	87	14	37	31	44	2.37		+9.4	.59	0	9	14	11	sw.	N. R. Heberlein.
Pasadena	Los Angeles	805	39	60.2	-6.2	85	25	36	20	33	1.02		.64	0	7	14	10	sw.	Mrs. A. Z. Campbell.	
Paso Robles	San Luis Obispo	800	33	57.5	-1.9	88	3	32	120	46	.68		-.23	.20	0	9	19	7	sw.	John Landis.
Petaluma	Sonoma	9	6	59.1		85	23	38	20	41	2.59		+1.35	1.13	0	6	19	9	sw.	John Landis.
Placerville	El Dorado	1,925	31	59.9	-5.4	80	3	29	20	41	5.89		+3.60	1.89	T.	6	11	4	sw.	O. E. Hailey.
POINT REYES	Marin	490	28	55.1	-0.4	72	24	46	19	19	2.03		.73	0	9	13	10	sw.	U. S. Weather Bureau.	
Pomona	Los Angeles	857	6	58.8		83	17	33	20	48	2.11		1.25	0	3	10	19	2	sw.	J. E. Adamson.
Porterville	Tulare	464	31	58.7	-6.2	89	4	35	17	39	.65		+1.13	.28	0	4	22	4	sw.	Santa Fe Co.
Portola	Plumas	4,832	5	43.2		82	3	3	31	64	1.27		.50	12.0	4	25	6	sw.	Western Pacific Co.	
RED BLUFF	Tehama	307	43	58.8	-5.0	84	3	38	16	32	1.69		+1.1	.77	0	7	21	4	sw.	U. S. Weather Bureau.

