Climatological Data for January, 1910.

DISTRICT No. 11, CALIFORNIA.

Prof. ALEXANDER G. MCADIE, District Editor.

GENERAL SUMMARY.

The month was colder than any January since 1890. Indeed, with a single exception, it was the coldest January since records have been kept, or in other words, since 1872. The rainfall was neither heavy nor light and was unusually well distributed, both geographically and with respect to time. At the beginning of the month damage was done in southern counties by moderately heavy rain, following a storm on the last day of the year. Elsewhere we give in detail a report of the losses sustained by transportation companies during this period. In the case of the San Pedro, Los Angeles and Salt Lake Railroad it was reported that the loss would amount to about $7,000,000.

There were many severe frosts during the first decade and much damage was done to oranges and lemons.

As intimated above, the current January can not well be classified as belonging to the dry type, such for example, January, 1898; nor yet to the wet type of month, as exemplified by January, 1896. The difference between these types is apparent in the entirely different distribution of sea-level pressure, the trend of the surface isotherms, and the resultant surface winds. In the dry type, we find a more or less permanent high extending from the Rocky Mountain section to the Pacific coast and overlying the whole region between the Canadian boundary on the north and the Mexican line on the south. North winds, frequent and heavy frosts, warm afternoons and cold nights, comparatively little cloudiness, and much tule fog in the valleys and along the water courses, mark the dry type of midwinter month. The wet type, as might be anticipated, occurs when the high area is displaced eastward, covering the Missouri and the Mississippi valleys, and in a less well-defined form the Lake region, with an area of low pressure over the north Pacific slope. Under such conditions southerly winds prevail, there are frequent and heavy rains, the mornings are warmer and the afternoons not so warm, there is less fog, and frosts are not so frequent. During the present January there was no predominating circulation. There were many individual disturbances and no well-marked settled periods. For a few days at a time characteristic circulations would prevail, but there was no permanency, and as a result the forecaster had to anticipate what may be described as seesawing and unsettled weather. A good illustration of this is found on January 5 and 6. What the prime cause of such fluctuations may be we are not yet prepared to say, but it is interesting to note, even if it should be only a coincidence, that unusual activity in storm development and movement in the lower air occurred on the Pacific slope at the same time that similar conditions prevailed on the Atlantic seaboard, as shown by the daily maps of January 5 and 7.

Taking the month as a whole it may be said that there were few features of special importance to the meteorologist. From an agricultural standpoint, with the exception of the losses to citrus fruits due to the severe frosts of the first decade, the month was extremely favorable, neither forcing growth nor unduly checking it. At the present time the outlook is favorable for good crops.

TEMPERATURE.

The highest monthly temperature, 56.7°, was reported from Soledad; and the lowest, 18.3°, from Tamarack. The difference in elevation between the two stations is 7,812 feet. The highest daily temperature reported was 89°, at San Jacinto on the 30th; and the lowest, −30°, at Alturas, on the 3d. The absolute range for the State was 119°.

PRECIPITATION.

The greatest monthly precipitation was 17.17 inches at Monumental, and none occurred at Bagdad and Mojave. The greatest 24-hour rainfall was 6.72 inches at Summit. The prevailing wind direction was south. The following table gives the State means for a period of 7 years:

	1904	1905	1906	1907	1908	1909	1910
Temperature in degrees F.....	45.8	48.3	47.5	43.9	46.7	47.8	41.9
Precipitation in inches.....	1.38	4.37	7.86	7.46	4.63	16.17	4.86

For the State as a whole, there was a deficiency of 3.1° in temperature, and 0.32 inch in precipitation.

RAILROAD LOSSES DUE TO WEATHER.

In the history of railroading on the Pacific slope there have been some notable instances of complete tie-ups and general demoralization of service, due to extreme weather conditions. Chiefly the damage is caused by floods, due to continued rain or rapid rise in rivers. Interruption due to heavy snowfall or to washouts caused by high rivers, swollen by melted snow, must be expected during the winter months, and in such cases traffic can generally be resumed with the falling of the waters below the level of the roadbed. But of late, interferences of a much larger order have occurred, due to abnormally heavy rain over a wide territory. Nearly all of the transcontinental systems having terminals in California have suffered losses ranging from one to several million dollars, due directly to these widespread rains. During the months of August and September, 1904, the Santa Fe system suffered losses aggregating $3,000,000. In this case the rain areas were extensions of the subtropical rain belt and the individual disturbances well-marked storms of the Sonora type swinging northward into the United States from the Mexican States.

The Southern Pacific system during the month of January, 1909, suffered losses exceeding $1,000,000, caused by a period of excessive rain due to storms of an entirely different type. In this case the different disturbances swept through California from the north, and the damage was greatest in the central and northern counties.

During January, 1910, following some heavy rains at the close of December, the southern counties of California suffered from floods. The San Pedro, Los Angeles and Salt Lake Railroad, more familiarly known as the Clarke System, experienced as a direct result of these southwestern storms what may be considered as perhaps the greatest single loss sustained by any railroad company at any time. The road runs from Los Angeles to Salt Lake City, traversing southern Nevada and the desert section of California. Nearly a hundred miles of road were washed away and the system demoralized to such an extent that traffic will be suspended for a period of six months or longer. Indeed it may be necessary to entirely abandon certain sections of the present roadway. Several hundred employees of the company in various cities were laid off for an indefinite period, it may be for a year or longer.

The total losses may exceed $7,000,000, if, in addition to the direct losses of the road itself, the demoralization of mining companies dependent upon the road for supplies is considered.

It may not be without interest to study the progressive movement of the rain area which caused this great loss, with a view of ascertaining if there were any marked features of which advantage could have been taken in forecasting and giving warning. So far as California is concerned such warnings are practicable and, indeed, were available for railroad men during this and other occasions. On December 30 and 31 the pressure was high over the Great Basin, surface temperatures moderate,

and the winds mostly from the north. Heavy rain fell in California, but there was no especially well-marked depression. On January 1 the depression was well marked. In 24 hours there had been a fall of nearly half an inch in pressure and the rain area covered most of California, all of Nevada, all of Arizona, and most of Utah. The significant feature of the pressure distribution, however, in my judgment, was the appearance of a marked high over Montana. This appears to have blocked the eastern passage of the low and for a period of 72 hours stormy conditions prevailed with heavy rain turning to snow in the district under consideration. There was an aftermath, so far as California is concerned, in the period of heavy frosts culminating on January 6. On this date during the morning hours more than half of the State experienced temperatures below freezing.

The following special dispatch to the San Francisco Chronicle from Los Angeles, Cal., gives an approximate value of the losses sustained by the citrus fruit growers of the southern counties, due to the heavy frosts of the first decade of January, 1910:

This year's orange crop has been damaged approximately $1,000,000, according to estimates made by reliable growers. Some believe that this amount will also cover the damage to nursery stock and to the coming year's crop, while others figure that the total may be several millions.

As compared with the $35,000,000 valuation of the present crop, this is not a discouragingly large item. Several of the leading growers make the surprising statement that the cold weather brought them more benefit than harm. The frosty weather came just in time to check the growth and hold the oranges to normal size. * * * Deciduous fruit men believe their profits by reason of the cold will be more than the citrus fruit growers' losses.

PRECIPITATION, RUN-OFF, AND EVAPORATION IN THE OWENS VALLEY.

By CHARLES H. LEE, Assistant Engineer, Los Angeles Aqueduct.

The region known as the Great Basin, or District No. 10 of the Weather Bureau, is unique among the great North American drainage areas on account of there being no surface outlet to the ocean for its streams. Generally speaking its climate is arid, the annual precipitation being less than 10 inches over a large part of its area, but in the high mountain ranges forming its eastern and western borders the snowfall is very heavy. The chief rivers of the Great Basin rise in these ranges, receiving their supply directly from melting snow, and flow out into the valleys where they either entirely disappear by evaporation and seepage, or feed saline lakes whose surface fluctuations register the differences of inflow and evaporation. Topographically the region is characterized by narrow isolated mountain ranges with a general north and south trend, between which are broad valleys which have been built up by the accumulation of unconsolidated material from the adjacent mountains. Many of these débris-filled basins are so surrounded and underlaid by the solid rock that they are practically water tight, and where there is a large water supply available the void spaces between the particles of sand and gravel form immense underground storage reservoirs. The region, therefore, affords exceptional opportunity for the study of the phenomenon of the occurrence of water within a catchment area and losses by evaporation.

It is from one of these valleys receiving the drainage from the most productive of the Great Basin catchment areas, the east slope of the Sierra Nevada, that the City of Los Angeles is at present preparing to obtain its future supply of water. In connection with this project and under the direction of Mr. William Mulholland, Chief Engineer of the Los Angeles Aqueduct, the writer has had an opportunity during the last two years of making a rather complete field study of the Owens Valley as regards precipitation, run-off, and evaporation. There has now been enough data collected to make complete computations and some of the ideas and conclusions which have been developed are herewith presented.

The Owens Valley (fig. 1) has a length from north to south of about 100 miles and a width from crest to crest of the adjacent mountain ranges of from 20 to 25 miles. The Owens River rises at its northern extremity and flows southward through the valley, finally discharging its waters into Owens Lake, a saline body of water typical of the Great Basin. The position of the river channel is not in the center of the valley, but is close to the base of the Inyo Mountains which border the valley on the east. Lying to the west of the river, at an average elevation of 3,900 feet above sea level, is a plain varying in width from 2 to 5 miles and extending, with but one prominent break, from a few miles north of the town of Bishop almost to Lone Pine. The plain is bounded on the west by the toe of the immense accummulation of alluvial débris which has been piled up at the base of the Sierra Nevada by the many streams debouching from its canyons. In general appearance this plain is very different from the desert slopes to the east and west, for it supports a growth of wild grasses over a large portion of its area, and where it is not washed by surface water is more or less crusted with alkali. An examination of the soil shows it to be damp, and in some places quite moist, a few inches below the surface, and test borings encounter water at a depth of from 2 to 8 feet, depending on the time of the year and the local conditions. Two years' observations in a great number of test wells distributed all over the area have shown that the surface of this ground water has periodic fluctuations. About September 20 of each year it is at its lowest level and its highest level is reached about March 20. Its rate of rise and fall is quite uniform unless interfered with by seepage from local surface water and the average amount of fluctuation is 3 feet. It has been found that the wild grasses will not grow nor the alkali appear where the average depth to water exceeds 8 or 9 feet. The significance of this area will be shown later on.

As already stated, between this grassy plain and the steep eastern face of the Sierra Nevada there is a broad desert slope of alluvial material from 4 to 7 miles in width reaching an elevation of from 6,000 to 7,000 feet at its upper edge. From here rises one of the grandest mountain faces on the continent, reaching elevations of from 13,000 to 14,000 feet in a horizontal distance of 3 or 4 miles. Into this granite slope the glaciers and swift-flowing streams of past ages have cut deep canyons, narrow at the mouth and broad in their upper portions, which form the catchment basins of the 40 tributary streams entering the channel of Owens River at more or less regular intervals throughout its length. The bottoms of many of these canyons are choked by glacial deposits and accumulations of slide material which temporarily absorb the melting snows, and thus have a marked regulating effect upon the stream flow. With this general view of the topography and geology of the Owens Valley region, the subjects of precipitation and run-off will be considered.

There are three types of storms yielding precipitation in this region, namely, the great Pacific coast storms which sweep down from the northwest and swing eastward into the Rocky Mountain region, the Sonora storms from the southwest, and afternoon thunderstorms occurring during July and August, which are local in the high mountains. The first of these yields practically all of the water which is effective in replenishing the streams or increasing the underground supply. A topographic factor controlling the distribution of precipitation from these general storms over a large part of California, and particularly the Owens Valley, is the Sierra Nevada. On the western slope there is a consistent increase of precipitation from the Great Valley to about the 4,000- or 5,000-foot level, and from here a slight decrease until the topographic summit is reached. On the eastern slpoe there is a rapid decrease toward the floor of the Great Basin.

In Owens Valley this inequality of precipitation is strikingly apparent, for the snow-clad mountains tower directly above the desert valley, and all storms which cause rain at San Fran-

TABLE 1.—*Climatological data for January, 1910. District No. 11, California.*

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Sky.				Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
Oregon.																				
Klamath Agency	Klamath	4,169	2	20.6	.....	39	30	−21	5	39	1.40	.....	0.45	14.0	4	13	7	11	s.	H. J. Wilson.
Klamath Falls	....do	4,250	15	24.2	− 6.2	47	23	− 3	3†	30	1.66	− 0.99	0.35	14.4	12	1	10	20	nw.	W. H. Heileman.
Lakeview	Lake	4,800	7	26.3	− 3.2	50	20†	− 4	11	44	1.26	− 1.42	0.25	5.5	9	7	6	18	s.	Geo. L. Wharton, jr.
Merrill	Klamath	4,070	4	25.0	.....	50	23	− 4	5	31	0.88	.....	0.50	4.6	5	5	11	15	.....	D. H. Ward.
Yonna	....do	.....	3	24.8	.....	47	28	− 7	5†	42	0.97	.....	0.12	7.3	16	3	25	3	s.	Jacob Rueck.
California.																				
Alameda	Alameda	.....	1	47.0	.....	62	17	27	3	28	4.10	.....	0.50	0.0	13	13	3	15	s.	Chas. E. Sears.
Alturas	Modoc	4,460	6	22.0	.....	51	23†	−30	3	45	1.27	.....	0.34	11.0	13	8	11	12	s.	Prof. C. B. Towle.
Anderson (near)	Shasta	550	1	40.9	.....	66	30	24	3	27	3.78	.....	0.56	2.8	19	9	3	19	n.	C. S. Richardson.
Angiola	Tulare	208	10	32.4	−12.4	45	20†	20	27†	21	0.66	− 0.43	0.33	0.0	2	19	2	10	nw.	Santa Fe Co.
Antioch	Contra Costa	46	31	47.4	+ 0.9	68	27†	30	3	....	1.70	− 0.09	0.60	0.0	6	10	12	9	nw.	Southern Pacific Co.
Aptos	Santa Cruz	102	25	46.5	− 2.0	63	22	27	3	....	5.06	+ 0.31	1.18	0.0	12	9	10	12	nw.	Do.
Arrowhead Springs	San Bernardino	2,000	1	52.0	.....	81	13	31	4	42	4.13	.....	2.46	1.5	4	18	7	6	ne.	G. I. Royce.
Auburn	Placer	1,360	39	42.1	− 3.5	67	3	22	5	37	8.89	+ 3.01	1.80	4.0	10	11	2	18	.....	Southern Pacific Co.
Avalon	Los Angeles	.....	.....	51.3	.....	73	21	39	6	21	1.12	.....	0.61	0.0	6	14	10	7	w.	W. N. Vilas.
Azusa	....do	540	8	50.6	.....	84	22	27	6	43	1.92	.....	1.63	0.0	5	23	3	5	.....	A. P. Griffith.
Bagdad	San Bernardino	784	7	51.3	.....	78	13†	27	6	44	0.00	.....	0.00	0.0	0	.....	.....	.....	.....	Santa Fe Co.
Bakersfield	Kern	404	21	47.4	− 0.7	76	23	30	4	32	1.15	+ 0.04	0.73	0.0	4	12	12	7	.....	Do.
Barstow	San Bernardino	2,105	7	41.8	.....	70	30	19	5	40	1.02	.....	0.50	0.0	3	29	0	2	w.	E. L. White.
Berkeley	Alameda	317	23	44.2	− 6.4	55	22	30	3	15	3.38	− 1.90	0.98	0.0	13	8	13	10	s.	State University
Biggs	Butte	98	11	49.1	+ 4.5	65	31	20	3	....	2.36	− 1.87	0.95	0.0	6	15	8	8	s.	Southern Pacific Co.
Bishop	Inyo	4,450	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	W. A. Chalfant.
Blocksburg	Humboldt	1,700	4	38.8	.....	60	21†	18	4	26	9.55	.....	1.42	12.0	18	2	6	23	se.	Victor Hope.
Blue Canyon	Placer	4,695	11	34.2	− 5.5	59	31	8	4	23	12.75	+ 2.60	2.20	110.0	13	11	2	18	s.	Southern Pacific Co.
Blythe	Riverside	.....	1	47.0	.....	77	31	24	6†	44	0.77	.....	0.72	0.0	2	.....	.....	.....	.....	H. V. Blenkiron.
Branscomb	Mendocino	2,000	10	36.5	− 8.5	63	30	18	3	32	12.74	− 2.17	2.03	14.5	19	7	6	18	se.	A. J. Haun.
Brawley	Imperial	− 105	1	50.5	.....	79	31	24	6	44	0.15	.....	0.09	0.0	2	14	10	7	nw.	U. S. Weather Bureau.
Brush Creek	Butte	2,140	6	36.0	.....	55	30	14	4†	24	8.48	.....	2.37	22.0	15	11	3	17	s.	Cal. Gas & Electric Co.
Calexico	Imperial	0	5	51.4	.....	76	22†	24	6	38	T.	.....	T.	0.0	0	14	13	4	nw.	J. E. Peck.
Caliente	Kern	1,290	34	.....	.....	.....	.....	.....	.....	.....	1.40	− 0.09	1.00	0.0	3	.....	.....	.....	.....	Southern Pacific Co.
Calistoga	Napa	363	38	43.8	− 4.3	70	26†	20	1†	....	.....	− 0.55	2.04	0.0	8	9	0	22	s.	Do.
Campbell	Santa Clara	217	13	44.0	− 3.5	59	23	25	3	27	2.30	− 0.40	0.52	0.0	10	8	8	15	se.	F. M. Righter.
Camptonville (near)	Yuba	3,500	3	39.2	.....	66	30	14	4†	40	15.47	.....	3.03	59.0	13	13	2	16	.....	S. B. Johnson.
Cedarville	Modoc	4,675	16	23.0	− 8.5	50	31	−15	3	37	1.23	− 0.18	0.31	18.5	8	16	14	1	w.	T. H. Johnstone.
Chico	Butte	189	40	43.1	− 3.8	63	30	18	15	30	3.77	− 0.69	0.76	0.0	13	10	1	20	s.	Butte County R. R. Co.
China Flat	Humboldt	600	1	41.5	.....	59	30	18	4†	21	7.11	.....	1.10	0.5	15	4	11	16	.....	O. I. Westerburg.
Chino	San Bernardino	714	18	48.7	− 1.7	72	23	29	8†	....	4.92	+ 1.11	2.36	0.0	4	22	0	9	se.	Southern Pacific Co.
Cisco	Placer	5,939	39	32.1	+ 1.4	48	20†	8	4†	....	15.60	+ 6.40	3.00	144.0	13	14	0	17	.....	Do.
Claremont	Los Angeles	1,200	18	50.0	+ 0.3	84	22	28	5†	39	2.93	− 0.51	1.23	0.0	9	22	4	5	n.	F. P. Brackett.
Cloverdale	Sonoma	340	8	43.1	.....	67	30	20	1	32	7.48	.....	1.42	0.0	17	11	7	13	n.	Lloyd Browne.
Colfax	Placer	2,421	39	36.0	− 8.4	65	31	20	3†	31	9.96	+ 1.21	2.50	18.8	13	13	2	16	se.	Southern Pacific Co.
Colusa	Colusa	60	7	42.2	− 3.2	68	30	27	5	29	2.60	− 0.02	0.70	0.0	7	.....	.....	.....	.....	W. K. De Jarnatt.
Corning	Tehama	277	24	44.5	− 0.7	54	25	29	4	....	2.26	− 2.25	0.70	0.0	6	12	3	16	n.	Southern Pacific Co.
Cuyamaca (1)	San Diego	4,677	11	38.0	+ 1.0	68	22	11	12	31	6.33	+ 0.14	2.65	21.0	6	9	14	8	e.	L. L. Macquarie.
Daunt	Tulare	4,000	3	41.4	.....	70	22	13	4†	40	5.10	.....	1.80	49.0	7	10	10	11	.....	D. L. Wishon.
Davisville	Yolo	51	38	40.5	− 7.1	61	30	16	15	29	1.75	− 1.76	0.50	0.0	11	3	10	18	s.	S. H. Beckett.
Deer Creek	Nevada	3,700	3	32.6	.....	58	30	5	4	32	10.13	.....	3.00	65.0	13	10	3	18	.....	Cal. Gas & Electric Co.
Delta	Shasta	1,138	25	42.3	+ 0.5	70	30	19	4	35	12.06	+ 2.97	1.95	7.0	16	7	0	24	n.	Southern Pacific Co.
Denair	Stanislaus	126	10	43.6	− 1.9	67	31	26	3	32	1.56	− 0.41	0.95	0.0	11	13	4	14	se.	Santa Fe Co.
Dobbins	Yuba	1,650	6	43.6	.....	66	30	26	3†	28	7.16	.....	1.44	0.0	18	6	13	12	.....	Cal. Gas & Electric Co.
Dudleys	Mariposa	3,000	1	36.0	.....	61	21†	2	4	36	6.05	.....	1.05	20.0	12	12	2	17	s.	W. H. Dudley.
Dunnigan	Yolo	65	33	43.4	− 2.9	60	23	30	18†	....	3.58	− 0.78	1.13	0.0	8	14	4	13	s.	Southern Pacific Co.
Dunsmuir	Siskiyou	2,285	21	34.4	− 4.5	53	30	16	5	....	9.00	− 0.76	2.56	46.0	16	8	0	23	s.	Do.
Durham	Butte	160	15	42.0	− 3.2	64	30	19	5	32	3.97	− 0.26	1.07	0.0	8	8	11	12	n.	R. W. Durham
El Cajon	San Diego	482	11	50.2	− 3.6	78	21	26	6	42	2.72	+ 0.57	1.05	0.0	7	23	5	3	sw.	H. H. Kessler.
Electra	Amador	725	6	45.3	.....	65	30	27	5	29	5.67	.....	1.32	3.5	9	11	9	11	.....	Cal. Gas & Electric Co.
Elsinore	Riverside	1,234	15	46.7	− 3.6	80	22	20	6	47	3.74	+ 1.25	1.89	0.0	7	19	3	9	n.	W. H. Bohannon.
Emigrant Gap	Placer	5,230	36	32.2	− 2.7	58	19†	8	2	38	14.80	+ 4.55	3.00	138.0	10	12	2	17	sw.	Southern Pacific Co.
Escondido	San Diego	657	16	50.9	+ 1.3	84	22	26	6	41	4.03	+ 0.80	1.64	0.0	6	8	21	2	w.	A. R. Moon.
Eureka	Humboldt	64	24	44.6	− 2.3	65	22	28	4	26	7.26	− 0.33	1.85	0.0	25	4	9	18	se.	U. S. Weather Bureau.
Farmington	San Joaquin	111	31	42.1	− 3.6	59	29	22	5	....	3.24	+ 0.30	1.43	0.0	9	10	4	17	nw.	Southern Pacific Co.
Folsom	Sacramento	252	38	43.8	− 3.4	63	30	24	5	26	4.11	− 0.41	1.64	0.5	10	13	1	17	n.	F. O. Hutton.
Fordyce Dam	Nevada	6,500	15	26.8	.....	44	22	−10	4	36	10.35	− 1.36	1.85	109.0	16	11	6	14	sw.	E. E. Roening.
Fouts Springs	Colusa	1,650	6	41.4	.....	62	29	26	25	32	6.57	.....	1.54	3.2	14	.....	.....	.....	.....	H. S. Green.
Fresno	Fresno	293	23	44.4	− 1.0	69	31	25	5	28	1.22	− 0.10	0.26	0.6	7	4	10	17	nw.	U. S. Weather Bureau.
Fruto	Glenn	624	21	40.4	− 6.7	61	31	26	3†	....	2.92	− 1.57	0.80	T.	7	13	0	18	s.	Southern Pacific Co.
Galt	Sacramento	49	32	44.4	− 2.9	72	27	26	5	....	3.61	+ 0.14	1.70	0.0	8	5	0	26	sw.	Do.
Georgetown	El Dorado	2,650	37	39.1	− 7.3	62	31	14	4	28	10.70	+ 0.47	2.29	19.5	15	9	2	20	e.	H. D. Jerrett.
Gilroy	Santa Clara	193	36	45.4	− 1.1	60	26†	26	5	....	5.79	+ 1.26	1.25	0.0	13	15	0	16	s.	Southern Pacific Co.
Gold Run	Placer	3,222	11	37.7	− 7.1	63	31	12	4	23	7.55	− 0.36	1.85	34.0	10	13	1	17	se.	Do.
Gonzales	Monterey	127	11	50.1	+ 2.0	78	19	26	5	....	2.87	+ 0.33	1.38	0.0	9	14	0	17	s.	Do.
Grass Valley	Nevada	2,690	38	38.4	.....	62	30	12	4	30	7.64	− 2.43	2.24	30.5	12	9	3	19	s.	F. R. Hull.
Greenville	Plumas	3,600	16	29.8	− 3.4	55	23	−10	5	42	8.50	+ 0.43	2.48	70.0	10	9	3	19	sw.	C. H. Higbie.
Groveland	Tuolumne	2,828	1	38.1	.....	63	23†	9	4	31	7.94	.....	1.74	15.0	10	9	11	11	.....	H. S. Richardson.
Guinda	Yolo	350	12	38.9	− 6.9	56	30	23	18	....	4.46	− 1.20	1.70	0.0	7	10	8	13	.....	Southern Pacific Co.
Hanford	Kings	249	10	45.1	+ 1.0	65	5	27	5	38	2.40	+ 0.69	0.60	0.0	5	20	0	11	.....	Santa Fe Co.
Healdsburg	Sonoma	110	17	42.4	− 2.2	62	28	20	5	27	6.51	− 5.33	1.31	0.0	16	6	7	18	n.	John Favour.
Hearst	Mendocino	1,800	....	33.4	.....	40	9†	23	25	9	10.62	.....	1.50	19.0	14	5	5	21	nw.	H. D. Ellmaker.
Heber	Imperial	− 20	4	51.1	.....	80	22†	21	6	45	0.27	.....	0.27	0.0	1	22	4	5	w.	E. T. Chumard.
Hollister	San Benito	284	36	45.4	− 3.4	66	23	24	5	28	3.94	+ 1.46	1.58	1.5	10	12	9	10	n.	J. N. Thompson.
Hornbrook	Siskiyou	2,154	22	32.0	− 3.0	42	21	17	5	....	0.85	− 1.19	0.50	3.5	3	19	7	5	n.	Southern Pacific Co.
Hot Springs	Tulare	3,300	3	36.8	.....	68	24	17	5	36	3.15	.....	1.00	4.5	6	17	7	7	n.	U. S. Forest Service.
Hullville (near)	Lake	2,250	3	35.9	.....	61	30	10	5	34	8.58	.....	1.67	12.0	18	2	11	18	se.	John Duggan.
Idyllwild	Riverside	5,250	9	39.6	.....	70	23	11	5	35	5.20	.....	2.10	20.5	4	17	6	8	sw.	Earl Powers.
Independence	Inyo	3,907	14	35.6	− 4.9	60	23	10	5	34	0.25	− 0.97	0.23	2.3	2	19	9	3	.....	U. S. Weather Bureau.
Indio	Riverside	− 20	32	52.0	− 0.9	82	29	23	6	44	0.47	− 0.40	0.27	0.0	2	15	11	5	nw.	F. N. Johnson.
Inskip	Butte	4,975	3	30.7	.....	52	29	10	4	28	14.33	.....	3.97	88.0	13	7	4	20	.....	Cal. Gas & Electric Co.
Ione	Amador	287	32	43.5	− 3.1	63	1	23	5	....	4.43	+ 1.55	2.00	1.0	7	15	0	16	sw.	Southern Pacific Co.
Iowa Hill	Placer	2,825	29	39.4	− 4.0	66	30	16	4	28	8.77	+ 0.25	2.31	27.0	13	11	0	20	sw.	C. F. Macy.
Jamestown	Tuolumne	1,471	7	41.0	.....	64	31	14	4	29	6.40	.....	1.50	17.0	11	14	8	9	.....	Sierra Ry. of California.
King City	Monterey	333	23	42.0	− 6.4	72	2	18	5	48	2.67	+ 0.62	1.83	0.0	8	21	0	10	s.	Southern Pacific Co.
La Porte	Plumas	5,000	16	30.0	− 3.4	54	30	4	4	33	15.67	+ 0.86	3.42	79.3	18	9	4	18	n.	C. W. Hendel.
Le Grand	Merced	255	10	43.2	− 2.7	60	31	25	6	25	2.10	+ 0.54	0.70	5.0	5	18	0	13	.....	Santa Fe Co.
Lemon Cove	Tulare	600	15	46.2	− 2.0	77	24	25	4†	39	2.78	+ 0.10	0.93	0.0	5	10	4	17	n.	G. W. Sandidge.
Lick Observatory	Santa Clara	4,209	21	35.6	− 4.1	59	30	19	3	19	7.29	+ 2.56	2.00	22.5	16	9	9	13	s.	The Director.
Livermore	Alameda	485	39	44.8	− 4.5	63	13†	26	3	31	2.50	− 0.31	0.79	0.0	13	10	5	16	ne.	E. G. Still.
Lodi	San Joaquin	45	28	42.8	− 3.4	59	22	22	5	25	2.35	− 1.36	0.76	0.0	9	9	8	14	se.	Ezra Fiske.

TABLE 1.—*Climatological data for January, 1910. District No. 11*—Continued

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit. Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Precipitation, in inches. Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.	Number of rainy days, .01 inch or more.	Sky. Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	Prevailing wind direction	Observers.
California—Cont'd.																				
Lone Pine	Inyo	2,728	5	36.2	.....	60	29†	14	4†	40	T.	.....	T.	0.0	0	15	13	3	s.	G. F. Marsh.
Long Valley	Lassen	4,400	1	22.7	.....	47	23	− 5	5	32	2.20	.....	0.55	18.5	7	7	0	24	sw.	A. G. Evans.
Los Angeles	Los Angeles	293	33	53.7	+ 0.6	81	22	33	5	30	1.53	− 1.40	0.72	0.0	6	13	11	7	ne.	U. S. Weather Bureau.
Los Banos	Merced	121	23	45.2	− 1.3	64	30	27	5	....	3.22	+ 1.70	2.35	0.0	4	10	0	21	s.	Southern Pacific Co.
Los Gatos	Santa Clara	600	23	45.1	− 2.5	64	23†	29	3	24	6.94	+ 0.37	1.60	0.0	13	10	4	17	s.	F. H. McCullagh.
Lytle Creek	San Bernardino	2,900	1	44.3[c]	.....	76	22	21	4	29	8.19	.....	5.50	10.0	4	11	10	10	.....	W. E. Anderson.
Macdoel	Siskiyou	4,358	3	23.7	.....	46	30	−13	3	34	2.42	.....	1.03	12.0	8	9	9	13	s.	Butte Valley L'd Co.
Madeline	Lassen	5,270	1	21.6	.....	47	22	−25	5	47	2.05	.....	0.60	20.5	12	7	11	13	nw.	J. H. Williams.
Magalia	Butte	2,321	6	38.0	.....	60	28	12	3†	35	13.31	.....	3.98	13.5	14	11	5	15	s.	Butte County R. R. Co.
Mammoth Tank	Imperial	257	32	52.4	− 1.5	80	21	28	7	38	0.52	+ 0.35	0.50	0.0	2	16	13	2	w.	Southern Pacific Co.
Marysville	Yuba	67	39	47.7	− 0.7	73	12	19	5	33	4.20	+ 1.07	1.27	0.0	7	18	0	13	s.	Do.
Mecca	Riverside	− 185	4	50.0	.....	79	21	20	6	44	0.25	.....	0.15	0.0	2	23	6	2	se.	A. Lunsted.
Menlo Park	San Mateo	64	32	46.5	− 0.8	58	13†	28	6	....	3.37	+ 0.33	0.90	0.0	8	10	0	21	s.	Southern Pacific Co.
Merced	Merced	173	36	48.6	+ 1.6	66	24†	28	4†	30	2.77	+ 0.67	1.00	0.0	7	17	0	14	nw.	Santa Fe Co.
Mill Creek (1)	Amador	.....	3	36.0	.....	56	31	15	4	24	9.10	.....	2.33	32.0	11	11	3	17	n.	Cal. Gas & Electric Co.
Milton (near)	Calaveras	660	19	43.6	− 3.4	61	31	26	4†	19	1.90	− 2.29	0.56	1.0	8	7	12	12	se.	J. H. Southwick.
Modesto	Stanislaus	90	38	42.9	− 3.7	55	13†	28	5	....	2.25	+ 0.41	0.90	0.0	6	19	0	12	.....	Southern Pacific Co.
Mojave	Kern	2,751	33	43.2	− 2.1	69	27	19	17†	42	0.00	− 0.90	0.00	0.0	0	27	0	4	.....	Do.
Mokelumne Hill	Calaveras	1,550	17	42.4	+ 0.6	65	31	24	3†	23	4.96	+ 0.29	1.35	11.5	10	11	2	18	.....	C. E. Prindle.
Mono Ranch	Ventura	3,210	4	38.4	.....	66	22	15	4	32	6.10	.....	3.95	7.5	6	18	8	5	sw.	H. Lathrop.
Montague	Siskiyou	2,450	22	30.0	− 6.1	53	24	9	5†	29	0.88	− 0.52	0.27	5.5	6	4	1	26	s.	G. H. Chambers.
Monterey	Monterey	15	45	46.4	− 3.8	66	21	26	3†	....	5.14	+ 2.32	1.23	0.0	9	11	11	9	se.	Southern Pacific Co.
Monterio	Kern	4,500	11	40.0	− 9.7	60	30†	24	19	26	2.10	− 0.52	1.00	0.0	4	21	2	8	nw.	John C. Knecht.
Monumental	Del Norte	.....	5	32.7	.....	48	29†	16	5	22	17.17	.....	2.00	64.0	22	7	1	23	.....	G. F. Morgan.
Mount Tamalpais	Marin	2,375	11	39.7	− 6.2	62	30	27	2	23	2.96	− 2.26	0.82	2.1	16	10	2	19	se.	U. S. Weather Bureau.
Napa City	Napa	20	33	42.7	− 2.7	61	28	23	4	28	3.64	− 1.49	0.90	0.0	10	8	10	13	s.	Thomas Hull.
Napa (S. H.)	....do	60	32	43.8	− 1.6	58	28†	28	3	22	3.19	− 1.66	0.74	0.0	11	11	9	11	sw.	W. H. Martin.
Needles	San Bernardino	477	18	51.3	− 1.1	83	25	27	6†	43	0.88	+ 0.27	0.65	0.0	3	26	1	4	w.	Santa Fe Co.
Nellie	San Diego	5,350	1	36.6	.....	66	22	9	5	34	7.76	.....	4.05	16.5	7	17	0	14	ne.	C. J. Bailey.
Nevada City	Nevada	2,580	18	37.2	− 3.6	67	30	8	4†	39	6.70	− 4.08	1.79	37.0	16	10	3	18	s.	S. W. Marsh.
Newcastle	Placer	970	17	43.5	− 2.9	62	30†	24	5	26	4.62	− 1.22	1.31	3.0	11	8	9	14	nw.	George D. Kellog.
Newhall	Los Angeles	1,200	33	44.6	− 3.3	80	22	20	19	....	1.30	− 1.24	1.20	1.0	2	21	0	9	se.	Southern Pacific Co.
Newman	Stanislaus	91	21	46.2	− 1.8	63	30	28	5	29	1.99	− 0.01	1.22	0.0	8	12	0	19	s.	E. S. Wangenheim.
Nimshew	Butte	2,500	6	36.8	.....	61	30	12	5	31	10.30	.....	2.15	25.8	16	10	1	20	.....	Cal. Gas & Electric Co.
North Bloomfield	Nevada	3,200	13	.....	.....	.....	.....	.....	.....	.....	10.00	+ 1.42	4.70	33.0	6	.....	.....	.....	.....	W. G. Shand.
North Fork	Madera	3,000	6	37.4	.....	65	21	14	3†	32	6.68	.....	1.95	14.0	7	12	10	9	s.	G. H. Shinn.
Oakdale	Stanislaus	156	16	43.4	− 2.3	57	16†	26	3†	....	2.95	− 0.22	1.28	0.0	11	11	7	13	nw.	Southern Pacific Co.
Oakland	Alameda	36	34	45.5	− 2.1	56	22†	30	3	17	3.16	− 2.00	0.68	0.0	12	9	12	10	sw.	Chabot Observatory.
Oceanside	San Diego	.....	.....	51.0	.....	72	22	34	5	24	1.62	.....	1.01	0.0	6	13	11	7	w.	H. D. Brodie.
Ojai Valley	Ventura	900	4	49.4	.....	84	22	24	5	44	2.13	.....	0.65	0.0	8	19	11	1	sw.	W. H. Duncan.
Orland	Glenn	254	28	41.3	− 6.3	62	30	26	3	24	2.47	− 0.80	0.43	0.0	12	8	9	14	n.	W. W. Patch.
Orleans	Humboldt	520	7	43.1	.....	63	30	21	5	31	7.06	.....	0.93	1.5	18	10	4	17	.....	Fred T. Hale.
Oroville (near)	Butte	250	26	43.1	− 5.0	59	30	25	3†	20	3.64	− 1.29	1.03	0.0	13	8	1	22	s.	E. D. Fairchild.
Palermo	....do	213	19	42.5	− 3.0	63	30	23	3	28	4.10	− 1.06	1.00	0.0	9	8	15	8	s.	Miss Hettie Boalt.
Palm Springs	Riverside	584	21	49.8	− 5.5	80	29†	28	6	....	1.90	+ 1.16	1.00	0.0	2	18	9	4	w.	Southern Pacific Co.
Pasadena	Los Angeles	827	20	50.4	− 2.3	83	22	27	5	39	2.96	− 1.17	1.69	0.0	5	23	5	3	sw.	E. R. Sorver.
Paso Robles	San Luis Obispo	800	23	44.8	+ 0.2	72	31	21	5	40	3.81	+ 0.89	2.02	T.	6	6	4	21	nw.	Dr. F. W. Sawyer.
Peachland	Sonoma	190	14	42.5[a]	− 5.5	62	28	21	5	30	6.40	− 3.47	1.46	0.0	17	13	3	15	se.	E. H. Parnell.
Penstock Camp	Tuolumne	3,750	3	38.2	.....	60	20†	18	3†	26	5.69	.....	1.37	51.9	10	7	17	7	se.	Tuolumne W. P. Co.
Placerville	El Dorado	1,875	21	39.4	− 1.7	62	22	17	5	28	6.79	− 1.29	1.42	9.0	10	14	3	14	sw.	A. Baring-Gould.
Point Lobos	San Francisco	250	17	46.0	− 2.4	58	23	32	3	14	3.04	− 1.40	0.62	0.0	14	10	9	12	ne.	John Hyslop.
Point Reyes	Marin	490	18	46.6	− 2.8	65	23	35	2	15	2.66	− 3.00	0.58	0.0	19	8	10	13	nw.	U. S. Weather Bureau.
Porterville	Tulare	464	21	44.6	− 3.5	74	31	26	5	36	2.37	+ 0.93	1.09	T.	9	7	17	7	.....	Harry E. Cowie.
Quincy	Plumas	3,400	15	25.8	− 8.8	50	22	−10	4†	30	6.11	− 1.89	2.00	63.0	9	12	4	15	sw.	D. N. Rogers.
Red Bluff	Tehama	307	33	41.9	− 3.5	60	30	26	4	21	2.99	− 1.68	0.59	0.4	17	5	7	19	nw.	U. S. Weather Bureau.
Redding	Shasta	552	35	42.1	− 3.1	62	29	26	4	22	4.46	− 2.83	0.77	1.2	18	7	5	19	n.	L. F. Bassett.
Redlands	San Bernardino	1,352	17	48.8	− 2.0	82	22	25	6	40	1.99	− 0.60	1.47	0.0	4	15	8	8	w.	Paul W. Moore.
Reedley	Fresno	347	10	45.4	− 0.7	70	31	27	4†	34	1.13	− 0.11	1.02	T.	2	12	0	19	n.	Santa Fe Co.
Rialto (near)	San Bernardino	2,250	4	49.8	.....	78	22	28	5	24	8.18	.....	4.80	6.5	6	15	6	10	se.	So. California Edison Co.
Riverside	Riverside	851	28	50.0	− 1.1	80	30	27	9	40	1.70	− 0.12	0.75	0.0	5	18	12	1	n.	C. W. Barton.
Rocklin	Placer	249	39	43.6	− 3.0	62	30	24	5	26	4.08	− 0.15	1.51	T.	9	15	4	12	ne.	Southern Pacific Co.
Rohnerville	Humboldt	75	7	44.4	.....	63	22	24	4	22	7.41	.....	1.00	0.0	13	4	8	19	se.	Dr. R. Callahan.
Sacramento (1)	Sacramento	71	33	43.2	− 2.4	59	30	28	5	20	1.48	− 2.34	1.04	0.0	12	8	9	14	se.	U. S. Weather Bureau.
Sacramento (2)	....do	35	57	43.4	− 3.0	57	30	26	5	21	2.51	− 1.31	0.50	0.0	12	10	7	14	n.	S. H. Gerrish.
St. Helena	Napa	255	2	42.4	.....	62	27	22	3	29	7.03	.....	2.55	0.0	11	13	0	18	s.	B. F. Kettlewell.
Salinas	Monterey	40	36	47.4	− 0.8	68	30	27	5	29	3.69	+ 0.80	1.60	0.0	10	21	7	3	w.	Miss E. Ruth Abbott.
San Bernardino	San Bernardino	1,054	18	49.4	− 1.9	85	22	23	6	48	2.43	− 0.81	1.33	0.0	4	14	13	4	sw.	Dr. A. K. Johnson.
San Diego	San Diego	93	39	52.2	− 1.8	76	22	34	6	30	2.00	− 0.02	0.72	0.0	6	19	6	6	ne.	U. S. Weather Bureau.
San Francisco	San Francisco	207	39	46.4	− 3.1	59	23	36	3	16	3.24	− 1.51	0.83	0.0	13	7	8	16	nw.	Do.
San Jacinto	Riverside	1,550	17	50.7	+ 1.5	89	30	24	6†	55	2.99	+ 0.14	1.69	0.0	6	18	7	6	w.	E. T. Tanner.
San Jose	Santa Clara	95	35	44.8	− 3.5	60	23	26	3	27	2.31	− 0.43	0.50	0.0	12	7	9	15	se.	U. S. Weather Bureau.
San Leandro	Alameda	48	15	44.8	− 8.3	60	13†	27	3†	21	3.71	− 0.76	0.97	0.0	14	9	10	12	w.	E. B. Sanford.
San Luis Obispo	San Luis Obispo	201	15	49.1	− 1.9	76	22	29	6	31	3.48	− 1.16	0.94	0.0	9	10	4	17	n.	U. S. Weather Bureau.
San Mateo	San Mateo	22	36	48.0	+ 0.1	58	16†	30	5	....	4.57	+ 0.30	1.23	0.0	13	7	10	14	n.	Southern Pacific Co.
San Miguel	San Luis Obispo	616	23	46.1	− 0.5	65	21†	25	5	....	2.15	+ 0.29	0.91	0.0	6	6	15	10	.....	Do.
San Miguel Island	Santa Barbara	500	.....	50.0	.....	70	22	37	5†	20	1.75	.....	0.55	0.0	7	17	7	7	sw.	Capt. W. G. Waters.
Sanger	Fresno	371	21	40.7	− 7.0	53	30	31	30	....	1.05	− 1.05	0.70	1.0	4	5	9	17	.....	Southern Pacific Co.
Santa Barbara	Santa Barbara	130	26	50.4	− 2.8	78	22	31	5†	34	2.91	− 0.77	0.73	0.0	8	21	6	4	w.	George W. Russell.
Santa Clara	Santa Clara	90	21	45.6	− 2.0	61	12†	25	3	31	3.08	+ 0.29	0.55	0.0	14	10	4	17	nw.	Santa Clara College.
Santa Cruz	Santa Cruz	20	37	46.2	− 4.9	70	30	27	5	36	5.15	+ 0.11	1.50	0.0	9	11	7	13	n.	W. R. Springer.
Santa Magarita	San Luis Obispo	996	21	49.2	+ 5.8	65	31	27	7	....	7.45	+ 2.31	3.50	0.0	8	21	0	10	nw.	Southern Pacific Co.
Santa Maria	Santa Barbara	220	22	48.9	− 2.7	76	30	30	5†	36	3.47	+ 0.99	1.10	0.0	8	.....	.....	.....	.....	L. E. Blochman.
Santa Monica	Los Angeles	110	25	49.4	− 4.8	78	22	32	4	36	1.70	− 1.15	1.00	0.0	4	18	7	6	w.	N. D. Ingham.
Santa Rosa	Sonoma	181	21	42.8	− 5.2	62	28	20	4	30	4.94	− 1.71	1.22	0.0	19	9	3	19	sw.	M. L. McDonald, jr.
Selma	Fresno	311	23	41.4	− 3.6	65	31	26	5	....	2.00	+ 0.43	1.11	0.0	5	5	21	5	se.	Southern Pacific Co.
Shasta	Shasta	1,049	14	38.8	− 7.9	70	1	17	3	46	6.99	− 4.00	0.91	1.4	20	4	4	23	s.	Dr. T. J. Edgecomb.
Sierra Madre	Los Angeles	1,400	13	50.6	− 2.4	76	22	31	4	28	3.73	− 0.48	2.28	0.0	5	15	7	9	s.	Miss A. E. Carter.
Sierraville	Sierra	5,000	.....	21.1	.....	55	23	−17	5	46	5.27	.....	2.15	52.0	7	12	3	16	se.	C. D. Johnson.
Sisson	Siskiyou	3,555	21	28.2	− 5.8	48	20†	4	4	35	7.40	+ 1.05	1.40	64.0	14	7	3	21	s	Southern Pacific Co.
Soledad	Monterey	188	36	56.7	+ 9.6	77	18	40	10	....	1.15	− 0.75	0.35	0.0	7	9	5	17	s.	Do.
S. E. Farallon	San Francisco	30	7	48.2	.....	56	23	39	2	11	2.64	.....	0.89	0.0	15	6	13	12	w.	U. S. Weather Bureau.
Sonora	Tuolumne	1,825	22	41.8	.....	66	21	17	4	25	6.28	+ 0.49	1.48	16.0	9	15	7	9	nw.	Charles P. Jones.
Stirling City	Butte	3,525	6	31.8	.....	55	21	5	4	31	8.50	.....	3.00	49.0	9	6	10	15	se.	Butte County R. R. Co.
Stockton (S. H.)	San Joaquin	23	39	42.4	− 4.1	58	30	25	5	22	2.04	− 0.95	0.72	0.0	9	10	9	12	se.	State Hospital.
Storey	Madera	296	10	40.2	− 4.7	68	31	19	5†	32	0.67	− 1.04	0.55	1.0	3	18	0	13	n.	Santa Fe Co.
Suisun	Solano	20	30	43.8	− 3.4	62	30	29	3†	....	2.99	− 0.97	0.77	0.0	11	16	0	15	sw.	Southern Pacific Co.
Summerdale	Mariposa	5,270	14	35.9	− 1.2	64	28	8	4	34	10.62	+ 0.10	2.90	52.0	9	11	5	15	s.	J. H. Lowry.

TABLE 1.—*Climatological data for January, 1910. District No. 11*—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, yrs.	Temperature, in degrees Fahrenheit.							Precipitation, in inches.				Number of rainy days, .01 inch or more.	Sky.			Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall unmelted.		Number of clear days.	Number of partly cloudy days.	Number of cloudy days.		
California—Cont'd.																				
Summit	Placer	7,017	37	23.2	− 4.8	40	28	2	5	22	8.60	+ 0.38	2.10	86.0	8	10	0	21	sw.	Southern Pacific Co.
Susanville	Lassen	4,175	21	23.4	− 7.7	46	23†	− 9	5	25	3.66	− 0.55	0.90	46.0	9	7	10	14	sw.	James Branham.
Tamarack	Alpine	8,000	4	18.3	.....	49	22	−29	5	64	8.63	.....	2.08	97.0	14	12	6	13	sw.	William Bennett.
Tehachapi	Kern	3,964	33	37.1	− 1.1	64	23	22	17	....	T.	− 1.39	T.	0.0	0	15	6	10	.....	Southern Pacific Co.
Tehama	Tehama	220	39	42.5	− 4.5	54	20†	30	3†	....	2.00	− 1.58	.....	0.0	....	13	5	13	.....	Do.
Three Rivers	Tulare	870	....	44.3	.....	74	31	26	12	38	3.50	.....	1.31	T.	8	13	11	7	sw.	E. D. Barton.
Towle	Placer	3,704	24	37.2	− 3.4	74	30	10	5	46	7.46	− 2.27	2.00	61.0	9	12	0	19	.....	Southern Pacific Co.
Tracy	San Joaquin	64	30	42.8	− 4.1	55	23†	26	3†	....	1.90	+ 0.26	1.18	0.0	8	8	4	19	sw.	Do.
Ukiah	Mendocino	620	17	41.4	− 3.7	64	30	18	5	33	7.81	+ 0.29	1.50	0.0	18	16	0	15	nw.	Dr. George McGowen.
Upland	San Bernardino	1,750	13	46.8	− 3.5	79	22	26	5	37	2.83	− 1.21	2.09	0.0	5	19	4	8	w.	A. P. Harwood.
Upper Lake	Lake	1,350	25	39.0	− 5.8	63	29	18	5	30	5.61	− 0.25	1.18	1.0	14	11	2	18	se.	C. M. Hammond.
Vacaville	Solano	175	22	43.6	− 2.8	64	28	25	3	30	3.33	− 2.54	0.82	0.0	10	11	12	8	n.	G. O. Coburn.
Valley Springs	Calveras	673	21	45.2	− 1.0	61	30	28	4†	....	5.84	+ 2.06	1.95	0.0	13	7	10	14	s.	Southern Pacific Co.
Visalia	Tulare	334	22	42.9	− 1.7	60	28†	28	12	29	1.16	− 0.78	0.75	1.0	5	18	2	11	s.	Santa Fe Co.
Warner Springs	San Diego	3,165	2	46.4	.....	78	21	19	5	45	2.90	.....	1.12	6.5	7	....	....	....	.....	Mrs. E. F. Sanford.
Wasco	Kern	336	10	37.2	− 7.7	61	13	20	7†	40	1.79	+ 0.91	1.50	0.0	2	17	1	13	.....	Santa Fe Co.
Watsonville	Santa Cruz	23	14	48.2	− 4.2	70	27	27	5	36	3.71	− 0.74	0.83	0.0	11	4	19	8	sw.	Spreckels Sugar Co.
Westley	Stanislaus	90	21	42.5	− 5.9	56	31	27	5†	...	1.57	− 0.41	1.10	0.0	5	10	2	19	.....	Southern Pacific Co.
Wheatland	Yuba	84	23	42.3	− 2.3	57	30	24	5	21	3.14	+ 0.86	0.69	0.0	12	12	8	11	n.	Wm. Lumbard.
Willows	Glenn	136	31	42.9	− 2.3	58	28†	25	4	22	3.10	− 0.19	0.71	0.0	11	9	5	17	n.	M. T. Harrington, jr.
Yosemite	Mariposa	3,945	6	29.0	.....	52	31	0	5	31	8.17	.....	2.39	43.0	11	13	9	9	n.	C. W. Tucker.

[a], [b], [c], etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.
* Precipitation included in that of the next measurement.
** Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.
† Also on other dates.
‡ Separate dates of falls not recorded.
§ Data are from standard instruments not supplied by the U. S. Weather Bureau.
§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.
‖ Estimated by observer.
‖‖ Precipitation for the 24 hours ending on the morning when it is measured.
T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1910. District No. 11, California.*

Stations.	River basins.	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.
Oregon.																																	
Klamath Agency	Klamath							.45							.40			.20								.35							1.40
Klamath Falls	...do							.21	.06	.04					.35			T.		.09		.05	.08	.09	.31		.22		.06			.10	1.66
Lakeview	Pitt				.20			.01	.03	.25	.25		.20			.02												.20	.10				1.26
Long Valley	...do																																
Merrill	Interior Drainage							.05		.03					.28									.02	.50								0.88
Yonna	...do	.05					.04	.12	.03	T.					.10	.01			.10			.05	.03	.10	.07	.06	.04	.03	.05			.09	0.97
California.																																	
Aguanga	Coast	3.02	1.25	.08													.14																4.49
Alameda	...do		.20					.20		.50		.10		.40	.40	.50	.10				.10		.10	1.00			.40						.10	4.10
Alturas	Sacramento	.34	.03							.02	.02				.09	.08				.01			.10	.04	.30	.04	.16					.04	1.27
Anderson	...do	.01	.17					.02		.21	.22	.04	.07	.33	.26	.38	.05	T.			.05		.36	.10	.56	.43	.06	.44	T.			.02	3.78
Angles Camp	San Joaquin	.80								.33				.54	.22	1.00	.18								1.13	.21							4.41
Angiola	...do														.33	.33																	0.66
Antioch	...do									.20				.42		.31						.12		.60	.05								1.70
Aptos	Coast	1.00	.14							.16	.18				1.18	.45	.74	.06			T.		.14		.71	.06	.24						5.06
Arrowhead Springs	...do	2.46	1.16									.43														.08							4.13
Auburn	Sacramento	1.80	.90								1.15				.70	1.12	.60	.32							1.60	.50	.20	T.					8.89
Avalon	Ocean	.31	.61	.01								.14				.03	T.								T.	.02							1.12
Azusa	Coast																																
Bagdad	Desert																																0.00
Bakersfield	San Joaquin	.73	.18														.14										.10						1.15
Barstow	Desert	.50	.22									.30																					1.02
Bear River	San Joaquin																																
Bear Valley (1)	Sacramento	.55						.15		.63				1.70	2.10	1.35	.85					.36	.34	2.05	.85	.78							11.71
Bear Valley (2)	San Joaquin	.58	.60	.30														.65							.39							.38	2.90
Bear Valley Dam	Coast	6.00	3.75									.52			.20																		10.47
Ben Lomond	...do	T.							.15					1.50	1.00		.62						1.05	1.40	.25	.90						T.	6.87
Berkeley	...do									.15				.64	.01	.66	.36	.01			.01	.04	.05	.02	.98	.28	.20					.03	3.38
Big Bar	Sacramento																																
Biggs	...do								.20						.95	.28	.43						.25		.25								2.36
Bishop	Owens																																
Bishop Creek	...do																																
Blocksburg	Coast	T.					.10	.54	.05	.25		.08	.10	.88	.67	.87	.30		T.	.23	1.00	.50	.16	.42	.68	.50						.22	9.55
Blue Canyon	Sacramento	2.20	.60							.30	.40				1.40	1.20	1.20	1.00					.50	1.00	.85	1.80	.30						12.75
Blythe	Desert																																
Boulder Creek	Coast	1.40		.05						.32	.05				1.42	1.12	.52							.35	2.52		.63	.02					8.40
Bowmans Dam	Sacramento	1.84	.25				T.	.08	T.	T.	.63	T.	.03	T.	1.18	1.22	1.16	.54						.45	.38	2.68	.47	.55	T.				11.46
Branscomb	Coast	.20	.38				.18	.37		.42	.14	.64		1.48	.70	1.70	.45			.35	T.	.58	.45	1.63	2.03	.70	.09					.25	12.74
Brawley	Desert	.09	.06													T.	T.																0.15
Brush Creek	Sacramento	.05						.13	T.	.70	.03	T.		.05	.43	1.18	.40					.05	.20	.35	2.37	.08	1.37					.09	8.48
Burney	...do	.50	.40						T.	.30		T.		.10	.60	.50	.40					T.	.25	.15	.30		.10					.20	3.80
Butte Creek House	...do																																
Butte Valley	...do	.44	.21					.04		.12					1.50	1.30	.31			.03			.14	.12	2.10	.41	.35					.09	7.16
Calexico	Desert	T.																															T.
Caliente	San Joaquin				.20												1.00									.20							1.40
Calistoga	Coast												.48		1.52		.80	.72				.70	.50		2.04	.40							7.16
Campbell	...do	.08								.10				.25	.80	.20	.20				.03	.07	.05	.52									2.30
Campo	...do	1.26	2.07	.88												.15	.57																4.93
Camptonville (near)	Sacramento	1.10						.21		1.52	.35				2.43	2.00	1.29					.98	.23	.04	3.03	.65	1.64						15.47
Cedarville	Mountain Lakes	.21						.03		.16					.05							T.			.31	.12	.10					.25	1.23
Chester	Sacramento																																
Chico	...do	.30						.03		.53				.13	.24	.32	.45					.15	.04	.25	.76	.04	.53						3.77
Chico (near)	...do							T.		.62				.41	.33	T.	.33		T.			.20		1.11		.72	T.					.19	3.91
China Flat	Coast						.13	.26		.20		T.		1.10	.68	.90			.26	.29	T.	.65	.36	.85	.43	.65		.24				.11	7.11
Chino	...do	2.00	2.36									.48												.08									4.92
Cisco	Sacramento	3.00	.40							.20	.20				1.40	2.50	2.00	1.80					2.00	.50	1.50	.80	.30						15.60
Claremont	Coast	1.23	1.08	.15							.01	.27				.02	.03	.12							.02								2.93
Clear Lake	Klamath																																
Cloverdale	Coast						.04	.11		.39	T.	.05	.16	.90	.44	1.16	.58			.03		.10	.18	1.06	1.42	.16	.65					.15	7.48
Colfax	Sacramento	2.00	.50							.25	.05				1.00	2.50	.06	.50	.05			T.		.15	1.80	.80	.30						9.96
Colgate	...do	2.06	.04							.25	.62	.02			1.36	1.10	.34	.47				.02	.04	.12	1.08	.47	.60	.08					8.67
Colusa	...do									.41					.26	.29	.70					.18	.07	.69									2.60
Corning	...do									.45				.48							.20	.07		.70		.36							2.26
Corona	Coast	2.05	.71								.32																						3.08
Crockers	San Joaquin																																13.36
Guyamaca	Coast	2.65	1.17	.36								.14				1.02	1.05																6.33
Daunt	San Joaquin	1.07	1.80	.40								T.			T.	.30	.50								.50	.53							5.10
Davisville	Sacramento	.50								.02	.01			.02	.36	.30	.03					.01	.01	.16	.33								1.75
Deer Creek	...do	.90	.13					.07		.53		T.		T.	1.70	1.85	.75	.06				T.	.13	.21	3.00	.20	.57						10.13
Delta	...do	.54						.15		.17	.25	.22	1.05	1.50	.50	1.27	.05					.75	.38	1.78	1.95	.85						.65	12.06
Denair	San Joaquin	.23	.95							.25						.01	.04	.01	.02			.01	.02	.01	.01								1.56
Descanso	Coast	1.39	2.14	1.15	.35												.66	.37															6.06
Dinuba	San Joaquin	.33													.18	.26	.32	.25								.15						.13	1.62
Dobbins	Sacramento	.91							.03	.83	.01	.01	.01	.01	1.44	.80	.56	.02				.01	.09	.27	1.11	.20	.84	.01					7.16
Dorris	Klamath																																
Downieville	Sacramento	1.14	.32						.07	1.23					1.94	2.20	.63	.23					.26	.30	2.55	.11	.54						11.52
Dudleys	San Joaquin	1.00	.26							.41				T.	.92	1.05	.85	.18				T.	.04	.07	.98	.28	.01						6.05
Dunnigan	Sacramento	.60								.32					.50	.35	.56					.10	.02		1.13								3.58
Dunsmuir	...do		.15				T.		.08	.15	.18	.10	.15		1.50	.60	.20			.05		.35	.66	.67	2.56	.10	1.50						9.00
Durham	...do									.56			T.	.17	.85		1.07					.16			.12	.90						.44	3.97
Dyerville	Coast							.24				.51		1.94	1.00	1.70	.02					1.10		1.90	1.60	1.55						.55	12.11
Edgewood	Klamath	.15	.08											.80	.70		.30				.18		.32	1.02		.60						.54	4.69
Edison	San Joaquin	.67	.31	.01	.02												.18								.04								1.23
El Cajon	Coast	1.05	.63	.33								.03				.34	.30									.04							2.72
Electra	San Joaquin	.96	.38							.36	T.				.68	1.32	.94					T.	.11	.13	.79	T.							5.67
Elsinore	Coast	1.89	1.49	.11							.16		.03		T.	.03	.03																3.74
Emigrant Gap	Sacramento	3.00								.60				.70	2.60	1.80	1.70							1.00	1.70	1.20	.50						14.80
Escondido	Coast	1.64	1.18	.21								.30				.20	.50																4.03
Eureka	...do	.05	T.				.07	.25	.07	.10	.17	.02		1.17	.99	.24			.28	.07	.67	.11	.32	1.60	.49	.49	T.	.01	.06	.03		.60	7.26
Fairmont	...do	3.30	.85								T.				T.									T.	.32								4.47
Farmington	San Joaquin	1.43	.41									.26			.24	.22	.45	.07					.09		.07								3.24
Felton	Coast	1.31	.35					.12		.17					1.14	.98	.42	.08					.21	.08	1.25	.23	1.08	.05					7.47
Firebaugh	San Joaquin	1.95	.11							.03	.04				.02		.27	.05								.14							.61
Folsom	Sacramento	1.64								.34	.25					.36	.18	.04					.36		.70	.20	.04						4.11
Fordyce Dam	...do	1.72	.45					.08	T.	.42	.11	.11		.10	1.50	1.44	1.28					.15	.35	.28	1.85	.35	.16						10.35
Fort Bragg	Coast						.70	.10	.24	.19	.05	.16	.26	1.60	.72	.35	.10						.45	1.84	.15	1.20						.32	8.43
Fort Ross	...do		.10	.08			.06			.48	.15	.32		.47	.28	.82	.40	T.			T.	.03	.09	1.09	1.22	.42	.30					.21	6.52
Fouts Springs	Sacramento									.02	.36		.10	.88	.33	1.10	.32					.24	.09	1.00	1.54	.08	.43					.08	6.57
Fredalba	Coast	5.00	1.40									.02			.24	.19	.27							.22									7.34
Fresno	San Joaquin	.66	.26							T.		.01			.07	.18	.01					T.		T.	.03								1.22
Fruto	Sacramento	T.									.37		.07		.43			.85				.30	.10		.80		T.						2.92
Galt	San Joaquin	1.70	.15							.20					.30	.35							.25		.55	.11							3.61
Georgetown	...do	2.29	.32						.01	.36	.38	.03			1.11	1.62	.95	.25					.25		2.18	.40	.50	.05					10.70
Gilroy	Coast	1.25	.40							.10	.12				.62	.90	.58	.18			.07	.10	.04	1.10		.33							5.79

TABLE 2.—*Daily precipitation for January, 1910. District No. 11*—Continued.

Stations	River basins.	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	
California—Cont'd.																																			
Gilta	Coast																																		
Glendora	...do																																		
Glen Ranch	...do	a	1.20	.10								.39				.02																			14.10
Glennville	San Joaquin																																		
Glenwood	Coast	.31	.10				T.		.28	T.			T.	1.60	1.22	.58	.09				T.	.23	T.	2.22		.32								6.95
Gold Run	Sacramento	1.00	.30							.10	.20				.50	1.85	.80	.50					T.		1.70	.60	T.							7.55
Gonzales	Coast	1.38	.21							.02					.33	.05	.27	.10							.38	.13								2.87
Grass Valley	Sacramento	.89	.11					.06		.63	.03	T.			1.31	1.15	.55						.01		2.24	.02	.64							7.64
Greenville	...do	.74	.20							.22	.20	T.			2.48	1.64	.34							.31	2.02	.35	T.							8.50
Gridley	...do	.54								.54					.43	.25	.57					.22	.05	.05	.92		.24							3.81
Groveland	San Joaquin	1.21	.18							.36		T.			1.10	1.55	1.04	.16			T.	T.		.21	1.74	.39								7.94
Guinda	Sacramento	T.	T.							.63					.85	.55	.29					.33			1.70		.11							4.46
Hanford	San Joaquin																																		2.40
Head Dam	Sacramento	2.00								.91	.06			1.50	1.00	.75	.93	.02					.25	.20	.70	.03	1.05							9.40
Healdsburg	Coast	.01						.01		.30		.04	.15	1.00	.35	.70	.38					.08	.24	1.04	1.31	.16	.61					.13		6.51
Hearst	...do																																		
Heber	Desert	.27	T.																																0.27
Helen Mine	Coast										.55	.25			2.00	1.70		.80				.90		2.05	2.82	.25								11.33
Hesperia	Desert	3.03	.60					.20	.10			.10																						4.03
Holcomb	Coast	3.58	.92	.01								.15																						4.66
Hollister	...do	1.58	.41							.07					.37	.12	.44					.25	.08		.41	.21								3.94
Hornbrook	...do								.30	.05										T.	.50											T.		0.85
Hot Springs	San Joaquin	1.00				.93											.53	.22								.34	.13							3.15
Hullville	Coast						.04	.15		.32	.04	.14	.08	.85	.68	1.17	.25			.12		.53	.61	.94	1.67	.28	.55					.16		8.58
Idyllwild	...do	2.10	1.15									.05					1.90																	5.20
Independence	Owens	.02	.23																						T.									0.25
Indio	Desert	.27	.26																															0.47
Inskip	Sacramento	1.82	.21				T.	T.		.78		T.		.48	2.22	1.61	.46		T.			.25	.37	.23	3.97	.68	1.25					T.		14.33
Ione	San Joaquin	2.00									.48				.52	.15		.56							.45	.27								4.43
Iowa Hill	Sacramento	1.50	.40							.17	.37				1.10	1.57	.62	.15				.05	.09		2.31	.05	.39							8.77
Isabella	San Joaquin		.85														.03							T.	.20									1.08
Jacksonville	...do	1.56	.66							.32	.14				.36	.02	1.28	.40					.10		.60	.56	.04							6.04
Jamestown	...do	1.10	.50							.25					.60	1.25	.75						.10	.20	1.50	.10	.05							6.40
Jenny Lind	...do	1.70	.42								.14				.35		.90						.14			.10	.05							3.80
Johnsville	Mountain Lakes																																		
Jolon	Coast	1.28	.08	.07											.44	.18	.20								.65									2.90
Julian	...do	2.30	1.10	1.65	.80								.05				1.20																	7.10
Kennedy Mine	San Joaquin																																	5.33
Kennett	Sacramento		.20						.20		.60	.82	.80	.76	1.62	.80	.20			.50		.52	.34	.20	1.62	.22	1.20							10.60
Kentfield	Coast		.06					.18		.12				.81	.44	.71	.61					.07	.09	.79	.47	.27	1.29							6.91
Kernville	San Joaquin																																	
King City	Coast	1.83	.06												.16	.05	.18								.23	.11	.05							2.67
Knights Landing	Sacramento	.92								.16	.12				.56	.50	.18	.14				.10	.02	.08	.64	.04	.02							3.48
Knob	...do																																	
La Grange	San Joaquin	.73	.55							.12					.13	.52	.13						.04	.08	.39									2.69
Lake Eleanor	...do	2.40	.30							.21		.04			.90	1.12	1.36						.08	.03	1.25	.48	.04							8.21
Lakeside	Coast	.50	1.18													.37																		2.05
La Porte	Sacramento	1.05	.28				T.	.26	3.00	.78	.02	.15			2.27	1.68	.58	.01		.03		.02	.51	.17	3.42	.64	.80							15.67
Lathrop	San Joaquin	1.34								.14					.08	.23	.16	.04				.04	.10		.08	.06								2.27
Laurel	Coast	1.70								.15	.45				2.10	1.80	.60	.05					.20		2.55	.15								9.75
Laytonville	...do						.42	.08	.44			.63		1.94	1.63	.28	.32		.26		.25	.77	.46	2.12	.58	1.24						1.27	11.69
Le Grand	San Joaquin	.70								.50						.50	.15							.25										2.10
Lemon Cove	...do	91	.15												T.	.43	.93								.36									2.78
Letter Box	Sacramento																																	
Lick Observatory	Coast		.41					.21		.23	T.				.55		2.84					.04	.25		.50	2.00	.12					.14	7.29
Livermore	...do	.14						.03		.08				.10	.50	.26	.26					.06	.02	.17	.79	.02	.07							2.50
Lodi	San Joaquin	.76								.20					.27	.26	.21					.04	.07	.12	.42									2.35
Lone Pine	Owens	T.																																T.
Long Camp	San Joaquin									.39					1.27	1.82	.92						.27	1.00	1.24		.20							7.11
Long Valley	Mountain Lakes	.40								.07					.55	.17	.55						T.	T.	.28	.18								2.20
Lordsburg	Coast	3.00	.72									.25																						3.97
Los Alamos	...do	1.47	.33								T.	.06				.19	1.05							.18	.30									3.58
Los Angeles	...do	.72	.61								T.	.05			T.	.08	.06								.01									1.53
Los Banos	San Joaquin	2.35							.44							.33									.10									3.22
Los Burros Mine	Coast	.30								.55	.15				1.75	.70	1.07					.04		1.73	.19	.05								6.53
Los Gatos	...do	.02	T.					.03		.20				.54	1.15	1.37	.67					.02	.18	1.05	1.60	.04	.07							6.94
Los Vaqueros	...do	.75	.10													.76	.20	.30							.50	.47								3.08
Lowe Observatory	...do	.70															.70																	1.40
Lytle Creek	...do	5.50	1.00									1.39				.30																		8.19
McCloud	Sacramento																																	
Macdoel	Klamath						T.																											T.
Madeline	Mountain Lakes	.50	T.				T.	.05					.12	.10	.30	.05	T.	.02	T.		T.	T.	.14	.60		.05		T.	T.			.12	2.05
Magalia	Sacramento	.20						.12	.31	.54				2.48	1.86	.44	.40				.16	.18	.24	3.98	.68	.76	T.					.96	13.31
Mammoth Tank	Desert	.50	.02																															0.52
Mariposa	San Joaquin	2.10	.86								.13			.79	.33	1.32	.10								.17	.60								6.40
Marysville	Sacramento	.64									.47				.12	1.13		.50							1.27		.07							4.20
Mecca	Desert	.10	.15																															0.25
Melones	San Joaquin	1.68	.88							.20	.14	.06			.52	.08	.92	.46				.04	.06	T.	.42	.64	.08							6.18
Menlo Park	Coast	.14						.03							.53	.34	.82						.10		.90		.51							3.37
Merced	San Joaquin	.98	1.00							.10					.10		.38	.15							.06									2.77
Merced Falls	...do	.24	.01						.08	.11				.18		.64	.13					T.	.01	.05	.23							.09	1.77
Mesa Grande	Coast	1.66	1.61	1.45								.20				.15	1.18								.05									6.30
Mill Creek (1)	San Joaquin	1.22	.65							.44	.10				1.24	2.33	.84					T.		.06	1.72	.33	.17							9.10
Mill Creek (2)	Coast	1.95										.25			.05	.04																		2.29
Mills College	...do	.09								.18				.48	.26	.55	.20					.02		.37	.76	.04	.36							3.31
Milo	San Joaquin	1.76	.52													.42	.72						.90											4.32
Milton (near)	...do	.10								.26					.27	.56	.33					T.	.08		.25									1.90
Modesto	...do			.90							.20					.30		.50					.20				.15							2.25
Mojave	Desert																																	0.00
Mokelumne Hill	San Joaquin	.52	.42							.36				.55		1.35	.57					T.	.24	.30	.41	.06							.28	4.96
Mono Ranch	Coast	3.95	.85									T.			.09	.60	.45								.16									6.10
Montague	Klamath							.10						.19	.27							.10				.09							.13	0.88
Monterey	Coast	1.00	.70												1.26	.36	.68	.03					.16		.81	.14								5.14
Monterio	San Joaquin	1.00		.75													.25							.10										2.10
Montgomery Creek	Sacramento	.49								.63	.52	.41	.33		.44	1.21	.73					.54	.66	.46	1.03	.23	.80						.71	9.19
Monumental	Coast							1.80	.12	.14	.44			1.54	.65	.12	.06	.08	2.00		1.73	1.33	.64	2.00	1.10	1.47	.10	.83	.10	.06	.46	.40	17.17
Morena Dam	...do																																	
Mount Tamalpais	...do	T.	.11				.02	.02		.16		.02		.52	.02	.30	.35				T.	.02	.08	.24	.82	.15	.08						.05	2.96
Mount St. Helena	...do									.30			.01		1.33			.40							2.88							.75	5.67
Napa City	...do							.06		.12		T.	.90	.49	.40				T.	.08	T.	.42	.74	.13	.30									3.64
Napa (S. H.)	...do	.22									.08				.71	.31	.41	.09				.07	.09		.74	.33	.14							3.19
Needles	Desert	.65	.17	.06																														.88
Nellie	Coast	4.05	1.71	.68								.70	.20		.07	.35																		7.76
Nevada City	Sacramento	.89	.19					.02		.30	.11	.01			1.18	1.21	.40	.01				T.	.03	.16	1.79	.02	.37	.01						6.70

a Signifies 12.39 inches.

TABLE 2.—*Daily precipitation for January, 1910. District No. 11*—Continued.

Stations.	River basins.	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.
California—Cont'd.																																	
Newcastle	do	.94	.05							.52	.02				.51	.60	.27						.15	.03	1.31		.22						4.62
Newhall	Coast	.10	1.20																														1.30
Newman	San Joaquin	1.22	.28							.07	.02				T.	.10	.20					T.	.04		.06								1.99
Nimshew	Sacramento	.98	.35				T.	.07		.68		.09		.15	1.40	1.04	.54					.14	.27	.70	2.15	.07	1.50					.17	10.30
North Bloomfield	do										1.00				.30	4.70	1.00						2.50	.50									10.00
North Fork	San Joaquin	1.95	.12	T.		T.				T.					.75	1.05	1.62	.02						1.17									6.68
North Lakeport	Coast						.10			.40		.08	.04	.65	.75	.57	.10				.04	.40	.17	1.68	.24	.40							.07	5.69
Oakdale	San Joaquin	1.28	.41						.27	.10					.17		.20	.04					.05		.07	.25	.02						2.95
Oak Grove	Coast																																
Oakland	do									.14		T.	.01	.48	.24	.62	.34				T.	.05	.03	.25	.68	.05	.27					T.	3.16
Oakville	do						.26								1.30	1.00	.61					.09	.11		2.62	.38	.22	.08					6.68
Oceanside	do	1.01	.11	T.							.12	.01		T.		.35	.02								T.								1.62
Ojai Valley	do	.65	.55								.08	T.			.27	.11	.37							.03	.07								2.13
Orland	Sacramento	.04							.22	T.		.01		.37	.25	.24	.35				.26	.04	.25	.43	T.	.03							2.47
Orleans	Klamath						.43	.05	.10		.06			.80	.70	.03			.73		.66	.93	.21	.80	.65	.57	.62	.10			.07	.15	7.06
Oroville	Sacramento								.20	.33				.50	.35	.20	.25				.06	.05	.07	1.03	.03	.38						.19	3.64
Ozena	Coast	1.00	1.27								.15					.10																	2.52
Palermo	Sacramento	1.00									.60				.40	.30	.50				.10		.10		.90	.20						T.	4.10
Palm Springs	Desert	1.00	.90																														1.90
Parkfield	Coast	.21		.44											.39	.40	.49								.47								2.40
Pasadena	do	1.69	1.08										.10				.04									.05							2.96
Paso Robles	do	2.02	.40												.25	.40	.40									.60							3.81
Peachland	do						.03	.14		.37	.05	.04		1.03	.39	.55	.42				.02	.02	.13	.78	1.46	.27	.62					.08	6.40
Penstock Camp	San Joaquin	.50	.55						.15						.65	1.37	.84					.20	.10	.80		.80							5.69
Peyton	Sacramento								.16					.82	.59	.19	.09				.16	.04		1.18	.06	.08							3.37
Phoenix Dam	San Joaquin	.95	.30							.24					.75	1.31	.70	.03							1.40	.01							5.69
Pilot Creek	Sacramento	1.78	.46							.56		T.			1.56	2.10	1.11						.10	T.	2.00	T.	.08						9.75
Pine Crest	Coast																																
Pittville	Sacramento	.30						T.	T.						.20			1.30												1.50			3.30
Placerville	do	1.42								.52					1.12	1.02	.76	.35					.10		1.05	.34	.11						6.79
Point Lobos	Coast	T.	.02	T.			T.	.01		.18	.03	T.		.26	.35	.62	.26				T.	.04	.06	.25	.62	.06	.28					T.	3.04
Point Loma	do	.99	.94	.38	.08							.04	.05			.13	.20	.10														.01	2.92
Point Reyes	do	.01	.03				.10	.12	.01	.10	.02	.10	.01	.26	.08	.11	.49				T.	.01	.08	.37	.58	.15						.03	2.66
Pollasky	San Joaquin	2.18	.36											.10	.12		.33	.24							.30								3.63
Porterville	do	1.09	.13									.20			.07	.12	.46							.01	.10							.19	2.37
Priest Valley	Coast																																
Quincy	Sacramento	1.00	.50							.20		T.			2.00	1.25	.20								.72	.15	.09						6.11
Red Bluff	do	.30	.02					.01		.29	.03	T.	.03	.44	.02	.40	.17				.15	.18	.06	.48	.23	.16	.02						2.99
Redding	do	.03	.17					T		.25	.13	.06	.12	.46	.49	.33	.10		T.	.04	T.	.35	.05	.72	.21	.16	.77	T.				.02	4.46
Redlands	Coast	1.47	.50	.01												T.	T.									.01							1.99
Reedley	San Joaquin	T.															1.02								.11								1.13
Represa	Sacramento	1.76								.38	.23					.47	.27					.18	.21		1.06							.32	4.88
Rialto (near)	Coast	2.00	1.25								T.	4.80			T.	.05	.04								.04								8.18
Rio Vista	Sacramento	1.38	.01							.16	.02				.54	.48	.22					.04	.06	.01	.36	.14	.10						3.52
Riverside	Coast	.75	.65									.21				.02										.07							1.70
Rocklin	Sacramento	1.51								.45				.43		.31	.15							.17	.76	.23	.07						4.08
Rohnerville	Coast							.36		.10		.21		1.00	1.00	.77			T.	.30		.12	T.	1.00	.70	.66	.20	T.				.49	7.41
Round Valley	Owens																																
Sacramento (1)	Sacramento	.14					T.			.29		T.		.17	.09	.17	.05				T.	.02	.03	.17	.29	T.	.03					.03	1.48
Sacramento (2)	do	.45					T.			.23				.34	.17	.34	.07					.01	.03	.21	.50		.02					.04	2.51
Saint Helena	Coast							.20		.28	.03				1.27	.87	.61					.63	.10		2.55	.10	.39						7.03
Salinas	do	1.60	.23									.10			.50	.19	.41	.04					.09		.29	.24							3.69
San Bernardino	do	1.33	.86									.19						T.								.05							2.43
San Diego	do	.70	.49	.41								.05				.21	.14																2.00
San Francisco	do	.02	T.				T.	T.		.14	.02	T.		.74	.12	.62	.18				T.	.05	.04	.37	.61	.04	.26					.03	3.24
San Jacinto	do	1.60	.69									.10	.30				.25									.05							2.99
San Jose	do	.02						T.		.10		T.		.34	.36	.30	.40				.04	.02	.11	.19	.42		.01						2.31
San Leandro	do	.25	.01				T.	T.		.12		T.		.35	.12	.46	.21					.12	.18	.35	.97	.65	.38			T.			3.71
San Luis Obispo	do	.64	.02	T.							T.	.02		.05	.62	.94	.14				T.		T.	.31	.74								3.48
San Mateo	do	.52	.11					.05		.15					.70	.55	.21	.21					.09	.01	1.23	.25	.40						4.57
San Miguel	do	.91	.30												.20		.25								.25	.24							2.15
San Miguel Island	Ocean																																
Sanger	San Joaquin	.70													.06	.19									.10								1.05
Santa Ana River	Coast																																
Santa Barbara	do	.73	.61									.05			.02	.54	.42								.15	.39							2.91
Santa Clara	do	.32	.04					.02		.15				.04	.50	.55	.44					.07	.08	.26	.54	.05	.02						3.08
Santa Cruz	do	.15						.05		.40				.70	.95	.50								.85		1.50	.05						5.15
Santa Margarita	do	3.50	.30												.45	.58	1.25	.05							.58	.74							7.45
Santa Maria	do	.50	.43									.12			.30	.60	1.10						.16	.26									3.47
Santa Monica	do		1.00	.53							.09						.08								T.								1.70
Santa Rosa	do						.03	.16	.01	.34	.09	.02	.06	.46	.30	.60	.49	.01				.07	.05	.53	1.22	.14	.33					.03	4.94
Sausalito	do	.15												.57			1.04								1.03		.32						3.11
Selma	San Joaquin	1.11	.34												.05	.37										.13							2.00
Seven Oaks	Coast	5.40	1.50									.38																					7.28
Shasta	Sacramento	.22	.08	T.		.19	.04	T.	.12	.26			.38	.10	.69	.17			.54	.26	.12	.38	.74	.91	.16	.11	.83	.64					6.99
Shingle Springs	San Joaquin	.90	1.11								.50				.75	.60	.60								2.75	.40							6.60
Sierra Madre	Coast	2.28										.16				T.	.10								.08								3.73
Sierraville	Mountain Lakes	.20													1.05	1.40	.85						.02		1.75								5.27
Sisquoc Ranch	Coast										.20	.13				1.05		.77															2.15
Sisson	Sacramento	.40							.20	.05	.05	.30	.20	1.30	2.10						.55	.10	.30	.35	1.40	.10							7.40
Soledad	Coast		.10											.35	.10			.05	.08						.12	.35							1.15
Sonora	San Joaquin	.95	.06								.69				.70	1.30	.78					T.	.11	.21	1.48								6.28
S. E. Farallon	Ocean		T.				.03	.05		.22		.35		.40	.03	.19	.16				T.	.02	.06	.61	.30	.16	.03		T.			.03	2.64
Spreckels	Coast	1.75	.52	.10				.03				.05			.50	.17	.49	.13					.11	.38	.38	.55							6.16
Squirrel Inn	do	5.08	1.90									.76				T.	.38									.33							8.45
Stirling City	Sacramento	1.50										.50			.90	.40	.60					.45			3.00	.25	.90						8.50
Stockton (S. H.)	San Joaquin	.72								.14					.17	.30	.26					.04	.09		.27		.05						2.04
Story	do	.10														.55									.02								0.67
Suisun	Sacramento	.05		.44						.03				.01	.75	.46	.02					.28			.77	.13	.05						2.99
Summerdale	San Joaquin	2.90	.28							.09					1.20	1.71	2.24								.10	1.90	.20						10.62
Summit (1)	Sacramento	.90	.80							.30					1.00	1.50	2.10								1.70	.30							8.60
Summit (2)	Coast	6.72	.76																														7.48
Surrey	do	1.35	1.10								.01	.11	.09	.24											.16								3.06
Susanville	Mountain Lakes	.55	.06							.20					.65	.85	.20							.10	.90	.15							3.66
Tamarack	Sacramento	1.08	.35					.38	.25	.17		.16			.80	1.40	.87					.10	.25	.24	2.08	.50							8.63
Tehachapi	San Joaquin																																‡T.
Tehama	Sacramento																																‡2.00
Three Rivers	San Joaquin	1.31	.21	T.											.04	.28	1.03	.05							.33	.25							3.50
Towle	Sacramento	.80	.40							.40						.80	.60	2.00						.40	1.96		.10						7.46
Tracy	San Joaquin	1.18	.04								.08				.05	.12	.16						.18	.09									1.90
Tulare	do	.17	.09												.04	.20	.40								.02								0.92
Tustin (near)	Coast	1.69	.85	.02								.12						.09															2.77
Ukiah	do						.10	.12		.32	.10	.22	.05	1.00	.70	1.13	.33				.05	.20	.30	.92	1.50	.20	.45					.12	7.81
Upland	do	2.00	.22									.40					.07								.05								2.83

TABLE 2—*Daily precipitation for January, 1910. District No. 11*—Continued.

Stations.	River basins.	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	
California—Cont'd.																																	
Upper Lake	...do	T.						.12	T.	.30	.05	.04	T.	.67	.23	.79	.32					.15	.22	1.03	1.18	.16	.35					T.	5.61
Upper Matole	...do	.05	.20				.01	.24	.03	.04	.14	.72	.02	.02	2.80	2.00	.27	.04		.35	.07	.67	1.67	.75	3.30	.35	1.75					.36	15.75
Vacaville	Sacramento						T.		.20					.82	.52	.24	.02				.16		.09	.75	.10	.43						T.	3.33
Valley Springs	San Joaquin	1.95	.40							.27	.05				.57	.65	.93	.19					.12	.01	.49	.18	.03						5.84
Ventura	Coast																																
Visalia	San Joaquin																																
Warner Springs	Coast	.48	1.12	.10								.06			.06	.42	.66																2.90
Wasco	San Joaquin	1.50															.29																1.79
Watsonville	Coast	.56								.09				.83	.67	.48	.10					.15	.02	.61	.16	.04							3.71
Weaverville	Sacramento																																
Weitchpec	Klamath		.02				.35	.74		.21	.05			.76	.16	.91		.03	.38	.51		1.05	.90	.61	1.36	.99	.26	.06	.22			.26	9.83
West Branch	Sacramento	1.37	.25				.02	.09	T.	.39	.02			.02	1.62	1.44	.44	.02				.16	.22	.20	3.04	.24	1.14	.22					10.91
Westley	San Joaquin	1.10	.10								.15				.12								.10										1.57
West Point	...do	.95	.46								.31				.82	.72	1.58	.42					T.		.62	.75	T.						6.63
West Saticoy	Coast	.51													T.	.25	T.																0.76
Wheatland	Sacramento	.69								.58	.03			.17	.30	.32	.17					.04	.07	.23	.43	T.	.11						3.14
Willows	...do		T.							.31	.01		.01	.41		.40	.71					.36	.16	.44	.27	T.	.02					T.	3.10
Woodleaf	...do																																
Yosemite	San Joaquin	2.39	.10							.11				.88	1.31	1.71						.06	.07	.10	.94	.50							8.17
Yuciapi	Coast																																

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1910. District No. 11, California.*

Date.	Lakeview, Oreg.		California.																									
			Alturas.		Barstow.		Branscomb.		Brawley.		Colusa.		Eureka.		Fresno.		Independence.		Los Angeles.		Mount Tamalpais.		Nevada City.		Porterville.		Red Bluff.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1...	44	7	28	18	60	36	38	24	73	47	46	36	44	33	45	33	48	32	57	44	38	30	36	28	46	38	43	33
2...	42	8	22	−20	50	33	41	20	55	37	44	37	44	30	44	34	32	25	51	39	33	27	41	25	45	33	40	33
3...	40	6	11	−30	43	25	42	18	55	34	43	28	44	29	44	30	34	18	52	38	39	28	42	11	41	32	44	28
4...	40	6	25	−17	48	25	46	19	55	34	39	29	44	28	41	31	34	22	54	35	35	28	36	8	45	28	43	26
5...	20	9	16	−28	40	19	47	19	47	29	43	27	47	29	46	25	39	10	53	33	37	29	45	8	47	26	44	27
6...	25	2	34	−11	42	21	39	31	52	24	43	30	52	38	49	32	37	11	58	37	41	33	45	22	52	28	42	32
7...	34	10	31	16	46	23	45	36	54	25	40	36	49	41	53	33	40	18	60	41	43	35	40	32	55	28	40	35
8...	32	16	31	8	51	26	39	29	58	25	45	32	46	38	53	34	41	20	64	45	38	33	43	27	54	31	44	34
9...	30	18	34	19	50	25	43	31	56	26	44	38	46	40	50	37	40	22	57	41	44	35	36	31	55	34	39	37
10...	28	14	35	12	57	24	46	30	62	29	46	38	49	41	48	30	40	21	57	46	43	34	46	23	54	31	45	36
11...	40	− 4	33	−10	53	32	40	31	61	36	48	34	50	40	46	33	42	25	60	45	37	34	46	29	45	34	45	35
12...	42	9	35	18	51	27	43	33	64	33	47	38	54	46	54	29	43	20	64	43	40	36	50	23	55	29	44	37
13...	40	10	39	7	48	28	42	32	61	36	50	42	53	34	58	35	47	20	62	46	42	36	51	28	61	35	46	36
14...	37	12	35	13	59	30	37	30	61	40	52	39	46	37	57	46	52	32	60	44	41	36	37	31	59	44	50	39
15...	46	25	39	22	58	32	38	32	62	47	52	41	47	40	60	47	57	38	56	51	42	35	37	31	64	45	49	38
16...	32	10	30	−11	56	31	42	30	67	48	47	32	48	38	57	40	46	35	55	46	38	32	35	31	54	46	47	36
17...	29	3	26	−18	57	39	48	24	67	45	48	29	50	33	51	30	44	24	63	41	38	32	48	20	50	31	50	37
18...	27	9	37	3	52	22	45	25	64	33	48	29	48	41	48	29	42	16	67	40	45	34	52	19	45	30	44	33
19...	45	4	46	22	52	21	51	33	62	26	50	31	48	39	44	35	50	19	62	39	45	36	56	24	47	34	51	35
20...	50	27	40	− 2	52	23	51	30	70	31	50	31	62	36	50	32	45	25	72	48	48	35	58	22	49	29	45	34
21...	48	22	45	31	60	32	51	40	76	38	48	41	62	54	57	40	56	27	78	59	56	45	56	33	61	37	47	41
22...	44	20	46	34	65	32	52	48	78	41	52	46	65	52	58	44	57	30	81	59	57	45	63	40	60	38	51	47
23...	50	10	51	34	70	38	53	41	77	43	52	42	57	45	63	44	60	26	70	53	54	39	60	41	72	43	51	45
24...	45	19	44	25	60	34	43	31	76	52	51	42	49	39	53	42	55	31	60	47	43	32	35	31	61	42	49	39
25...	46	18	33	1	52	29	45	30	64	41	50	36	45	38	54	33	44	23	59	40	42	32	37	30	54	31	44	34
26...	49	17	38	10	55	25	48	27	69	32	50	42	53	40	58	36	50	20	63	45	43	38	43	29	57	31	50	39
27...	46	14	46	12	60	26	54	29	72	34	56	35	51	44	57	40	55	24	76	46	50	36	59	27	59	31	57	39
28...	44	12	48	28	60	28	58	32	73	33	52	35	52	46	56	34	57	26	74	54	50	44	61	29	59	33	58	42
29...	49	14	51	12	70	30	57	31	77	33	52	35	47	45	59	44	59	36	72	47	55	43	65	28	61	38	59	40
30...	44	20	49	15	65	30	63	31	77	38	68	39	51	40	64	38	58	27	70	43	62	45	67	28	65	34	60	39
31...	45	30	51	23	67	30	49	31	79	36	55	41	51	38	69	41	57	25	61	48	54	31	60	30	74	38	47	42
Mns	39.8	12.8	36.4	22.0	55.1	28.6	43.4	29.6	65.3	35.7	48.7	35.8	50.1	39.1	53.1	35.8	45.3	23.8	62.8	44.6	44.3	35.1	47.9	26.4	55.0	34.3	47.4	36.4

Date.	California.																											
	Redlands.		Sacramento.		San Diego.		San Francisco.		San Jose.		San Luis Obispo.		Santa Barbara.		Santa Rosa.		Sisson.		Stockton.		Summit.		Susanville.		Yosemite.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	57	43	46	36	60	47	48	39	48	35	48	37	54	47	50	27	45	15	47	37	21	12	36	21	40	24
2	44	35	39	33	53	42	42	37	47	30	51	38	55	41	46	25	22	6	38	34	20	15	25	7	31	18
3	48	32	46	30	51	40	48	36	48	26	47	37	55	32	50	21	27	20	42	28	21	7	14	− 5	31	7
4	50	32	43	31	54	38	46	37	47	26	47	36	53	33	50	20	28	4	43	27	16	4	21	3	17	1
5	50	27	44	28	51	36	45	37	46	27	52	35	52	31	47	21	22	9	42	25	24	2	15	− 9	18	0
6	54	25	44	34	56	34	44	38	50	30	55	29	57	33	48	30	20	8	47	26	26	18	25	4	37	10
7	60	28	50	40	56	37	49	42	52	41	61	32	58	35	49	38	30	23	51	34	26	15	38	17	37	20
8	62	30	43	36	59	40	46	41	49	40	59	40	60	37	48	34	38	24	45	34	26	14	37	17	34	20
9	58	34	45	40	56	42	52	42	55	37	56	38	60	38	51	39	35	26	51	35	26	14	33	21	35	25
10	55	35	44	38	58	42	48	42	53	38	56	32	60	40	51	34	34	22	44	37	30	18	28	12	35	15
11	56	39	44	39	58	45	49	41	56	36	58	37	59	39	48	31	36	28	44	37	28	19	34	19	41	22
12	61	33	50	36	58	39	50	42	60	33	61	32	60	39	52	39	36	29	48	32	22	21	28	22	35	13
13	56	32	55	35	62	45	53	44	57	41	62	37	61	38	53	37	34	25	56	34	28	19	27	17	34	18
14	57	35	52	40	59	46	54	45	53	42	54	46	55	47	54	39	32	28	53	36	26	17	39	20	40	29
15	59	37	53	43	58	51	53	43	55	45	57	49	55	49	51	40	33	24	54	44	21	14	36	27	36	27
16	55	47	45	39	58	51	51	41	53	39	55	41	58	49	52	37	30	7	50	42	21	15	32	13	37	28
17	63	35	47	33	57	44	49	40	50	34	54	40	59	38	54	30	35	8	48	32	31	21	19	0	35	11
18	64	30	50	32	60	41	50	39	53	28	59	36	65	36	52	27	38	19	48	30	28	14	21	− 4	40	9
19	62	28	54	35	59	42	54	40	55	32	61	39	65	31	58	30	45	10	50	31	34	18	31	7	35	14
20	71	35	46	36	75	45	49	44	48	33	59	37	66	40	52	32	48	28	50	33	32	18	28	6	38	20
21	73	33	48	42	75	54	53	45	54	45	72	51	70	48	50	42	45	33	47	37	34	22	31	9	47	20
22	82	48	54	46	76	57	55	48	55	48	76	57	78	50	53	46	42	34	54	40	38	29	41	25	46	30
23	75	50	51	47	68	53	59	49	60	46	64	48	62	49	54	47	42	31	53	45	31	22	46	32	47	32
24	58	35	49	40	61	50	50	42	52	38	52	38	57	40	51	38	31	17	50	44	32	20	42	28	43	27
25	58	35	48	35	56	43	50	41	52	35	53	32	58	35	48	28	36	18	50	38	24	17	40	14	47	14
26	65	33	51	43	58	40	53	45	57	42	60	37	60	36	56	36	36	20	54	40	34	22	43	27	46	22
27	71	36	55	38	67	44	56	43	58	35	62	49	66	35	60	31	38	30	54	36	38	24	41	19	47	21
28	75	38	55	40	68	50	59	43	60	33	68	40	70	40	62	32	37	29	56	34	40	28	38	19	48	22
29	74	39	56	39	61	45	57	45	49	41	56	52	76	43	59	32	42	23	55	36	32	20	37	14	49	23
30	76	41	59	39	57	47	56	42	58	41	74	43	61	44	59	35	48	23	58	36	38	27	33	18	50	25
31	73	43	53	40	58	44	51	44	54	38	55	37	68	42	56	36	40	21	53	35	36	24	46	14	52	22
Means	62.0	35.6	49.0	37.5	60.1	44.3	50.9	41.8	53.0	36.6	58.5	39.7	61.1	39.8	52.4	33.3	35.6	20.7	49.5	35.2	28.8	17.7	32.7	14.0	39.0	19.0