Climatological Data for December, 1909.

DISTRICT No. 12, COLUMBIA VALLEY.

EDWARD A. BEALS, District Editor.

GENERAL CLIMATOLOGICAL CONDITIONS.

The month in nearly all portions of the Columbia Valley was the coldest December in the last 25 years; steady low temperatures prevailed without any warm or any extremely cold days. The precipitation was deficient, although there was a greater fall of snow than usual, the deficiency being caused by the absence of rain which, in the valleys and on the plateaus, generally falls more abundantly than it did this year. The snow stayed on the ground continuously in places where ordinarily it soon melts, and in localities where snow seldom falls the ground froze to a depth of an inch or more.

The steady cold weather and the deficiency of precipitation were caused by areas of high pressure obstructing the passage of low pressure areas along their usual tracks. On the 2d an extensive high pressure area made its appearance over Alberta, and it was not until the morning of the 9th that its center had reached the Dakotas. During this period a low pressure area off the north Pacific coast was prevented from moving inland, and northeasterly winds prevailed. These were cold winds, and as they drained into the valleys the warm air was displaced and cold weather set in that lasted throughout the month. From the 13th until near the end of the month the weather was controlled by high pressure areas generally central over British Columbia or the northern Rocky Mountain States, and no low pressure areas came near enough to materially influence the weather until the 25th, when a small disturbance caused general precipitation, and on the 29th, when a large disturbance crossed British Columbia and moved eastward in the direction of the Great Lakes. Most of the precipitation occurred during the first half of the month, when the low pressure area was off the north Pacific coast and the high pressure area was over Alberta, and that which fell afterwards, except near the end of the month, was local and generally light.

There were many valleys were the snow covering was insufficient to fully protect fall wheat, but it is believed this crop suffered little injury, as it is only when the ground alternately freezes and thaws that the roots of the plants are upheaved and later are killed by being exposed to the drying effect of the air. In the Willamette Valley and in portions of the Coast and Puget Sound drainage areas, it is customary to leave cabbages, turnips, beets, and carrots in the ground until they are marketed, and the loss to these crops by freezing was considerable. The weather during November was so stormy that a large portion of the crop of potatoes had not been dug when the cold weather set in, and this crop also suffered a heavy loss on account of the freezing weather.

The losses to stock were not great, although much suffering occurred. Range cattle and sheep had, for the most part, been rounded up and placed in their winter corrals before the cold weather set in. In Idaho, some sheep were lost through the winter feeding grounds becoming covered with snow and the impossibility of getting corn shipped in and delivered in time to prevent the weaklings from succumbing to the combined effects of cold and hunger. Also in Montana, a few bands of range sheep were caught out in the open at the beginning of the cold spell which began with high winds and driving snow, and some were lost before their herders were able to get them to sheltered places.

The low temperature, while not seriously impeding traffic, proved very damaging to produce in transit, especially during the early part of the cold spell in consequence of there not being enough refrigerator cars on the local lines to meet the demand for them. Stocks in the hands of the country merchants became exhausted, and on this account the wholesalers took extra risks in their shipments. Later the railroads were able to furnish more refrigerator cars, and, although the weather was even colder, the markets were kept better supplied and fewer goods were damaged in transit.

Building operations were delayed by the cold weather, and in many cases were suspended altogether. Very little concrete work could be done, and railroad construction, which it was expected could be pushed forward rapidly, was greatly hindered; one engineer, supervising the work of over 2,000 men, estimated that only about 60 per cent as much work was done as would have been the case had ordinary weather prevailed.

The flood last month in the Skagit River culminated near its mouth during the first few days of December, at which time the river reached the highest stage in its history. On the first day of the month the dikes in the lowlands gave away under the wash and pressure of the great volume of water, and the flats were flooded with 2 to 6 feet of water. The damage to oats in the sack and to baled hay, together with the loss of stock, is estimated to amount to not less than a half millon of dollars. On the 13th the dikes burst the second time, and the lowlands in the Skagit Valley were again flooded, thus adding to the disaster. During the first 3 or 4 days of the month, the lowlands at the mouth of the Chehalis and Willapa rivers were inundated by the combined effects of freshets and unusually high tides, and a further loss occurred in those localities, which in the Willapa Valley is estimated to be not less than $100,000, and in the Chehalis Valley a smaller amount.

TEMPERATURE.

The mean temperature as obtained from 219 stations, was 26.6°, and it was below normal in all sections. The departures ranged between 2° and 9°, being the greatest in the lowlands and least at high elevations, thus showing that the cold weather was due to air drainage or radiation, and that the layer of cooled air was a mile or more in depth. In the Columbia Valley, from the International Boundary to the gorge in the Cascade Mountains, the departures ranged between 5° and 8°, being greatest in the middle portion of the valley and least in the north above the mouth of the Spokane River. In the valleys west of the Cascade Mountains, the departures everywhere were about 5°, and in the Snake River Valley in Idaho they ranged between 5° and 9°. The warmest section was near the mouth of the Rogue River in Oregon, where mean temperaatures of 40° or more occurred. It was coldest, as usual, at the headwaters of the Snake River, where mean temperatures between 8° and 12° were recorded. At the headwaters of the branches in Montana, the mean temperatures ranged between 16° and 19°, while elsewhere they varied according to elevation, being generally highest near the coast and lowest in the highlands. The lowest temperatures occurred generally during the third decade, and the highest during the first half of the month. The highest mean temperature was 46.2° at Gold Beach, Oreg., near the mouth of the Rogue River, at an elevation of 40 feet, and the lowest mean temperature was 8° at Camas, Idaho, near the headwaters of the Snake River, at an elevation of 4,815 feet. The highest temperature was 69° at Gold Beach, Oreg., on the 17th, and the lowest was −30° at Alta, Wyo., also on the 17th.

PRECIPITATION.

The average precipitation, as obtained from 303 stations, was 3.22 inches, which is below the normal. There was a marked deficiency at all lowland stations, and the only places

where excesses occurred were at high elevations in the mountains of Oregon, Idaho, and Montana. The portion falling as snow was greater than usual, but owing to the absence of high winds the snow drifted but little, and it lay loosely on the ground at the end of the month. The ground beneath the snow was frozen and moist in most localities, but the depth of frozen soil was not great. Precipitation was heaviest along the west slope of the Coast Range, and ranged between 18.88 and 2.28 inches, being least near the immediate coast and greatest near the summit of the mountains. Between the Coast and the Cascade Mountains, the average was about 4 inches, and to the east of the Cascade Mountains the amounts varied between 1 inch and 4 inches, being least in the valleys and greatest in the mountains. The period with heaviest precipitation was from the 1st to the 12th, inclusive. Precipitation was general on the 25th, and again on the 30th and 31st. Between these dates scarcely any rain or snow fell west of the Cascade Mountains, and that falling to the east of this range was light and local in character. The greatest monthly amount was 18.88 inches at Happy Home, a station in Coos County, Oreg., in the Umpqua Valley. The least monthly amount was a trace at Plains, a station in Sanders County, Mont., in the Columbia Valley. The greatest 24-hour fall was 5.00 inches at Quiniault on the 11th. Quiniault is a station on the west slope of the Olympic Mountains in Washington.

RIVER CONDITIONS.

The stages in the Columbia River and its principal tributaries averaged slightly higher than usual. In the main stream, the highest water was on the 1st and the lowest at the end of the month, while in most of the tributaries the highest water occurred about the 13th and the lowest near the end of the month. On the Columbia River, at Vancouver, Wash., the stages ranged between 13.0 feet and 3.4 feet, and at Wenatchee, Wash., the range was between 11.8 feet and 6.9 feet. On the Snake River, at Lewiston, Idaho, the highest water was 5.7 feet on the 1st, and the lowest was 1.8 feet on the 26th. At Salem, Oreg., on the Willamette River, the highest stage was 14.5 feet on the 14th, and the lowest was 3.1 feet on the 30th. The only floods of the month were in the Puget Sound Basin and in the Chehalis and Willapa rivers, where the high water caused by the rains in November did not subside until about the 5th. Information regarding these floods can only be given in general terms as no gaging stations are maintained along their courses. The flood in the Skagit River was the most damaging, owing to the dikes giving way and the waters flooding a rich farming country, while the floods in the Willapa and Chehalis rivers principally affected the logging industry through the breaking of the booms, which permitted the logs to escape.

MISCELLANEOUS PHENOMENA.

The prevailing winds were easterly and the highest velocity was 86 miles from the east on the 6th at Tatoosh Island, Wash. The sunshine was deficient east of the Cascade Mountains, and there were more than the usual number of bright days to the west of this range of mountains.

IDAHO GEOGRAPHIC SOCIETY.

Idaho contains, perhaps, as much unexplored country as any State in the Union. No accurate map of the State has ever been made, and there are not sufficient data available from which to make one. The geographic nomenclature is almost hopelessly confusing and is in many cases totally inappropriate. Recognizing this condition, and being possessed of a desire to assist in remedying it, some engineers, Weather Bureau officials, and others took up with the governor of the State some time ago the matter of organizing a State geographic society. Governor Brady gave the matter his approval, and issued a call for a meeting for the purpose of organizing such a society. Pursuant to this call, a meeting was held in the Senate Chamber of the Capitol at Boise on December 13. This meeting was addressed by the Governor, together with other State, federal, and city officials, and prominent educators, and a permanent organization was effected. The purpose of the society, as set forth in the constitution, is the gathering, preservation, and diffusion of geographic knowledge of the State of Idaho, and the intention is to cooperate with all agencies working toward this end.

SNOW CONDITIONS IN THE MOUNTAINS OF THE UPPER COLUMBIA BASINS IN MONTANA AT THE CLOSE OF DECEMBER, 1909.

Kootenai Basin.—The snowfall was below the average in the Cabinet Mountains, and about normal in the Purcell range. The late fall rains left the ground well saturated and it became solidly frozen in most sections before the winter snows set in. The flow of water during the month was below the average.

Flathead Basin.—There was about the normal snowfall in the northern portion of the main range. The depth at the close of December was about 3 feet at the 4,000-foot level; the snow was not drifted to any extent and the ground was frozen. The stream flow was about normal.

Bitter Root Basin.—The snowfall was nearly normal on the east slope of the Bitter Root Mountains and the depth at the 5,000 level was 3 feet or more. The ground was moist and frozen. The stage of water was higher than usual during the month.

Missoula Basin.—The snowfall was deficient over the greater portion of this basin. The deficiency was more pronounced in the Bitter Root Mountains than in the Kootenai, Cabinet, or the Main ranges. But little drifting took place and the snow lies loosely on the ground in most places. In many localities the ground under the snow is not frozen. The stage of water in many of the small streams was higher than usual.

OPERATIONS AT THE UMATILLA PROJECT DELAYED BY COLD WEATHER.

Field operations had to be, to a large extent, suspended in December. The intense cold prevented any work in laying reinforced concrete pipe which has been in progress for the past few months. It has also interfered with excavating a large drainage ditch, the ground being in many places frozen hard. The most serious effect of the continued frost was, however, the accumulation of ice in the storage feed canal leading from the Umatilla River to the Cold Springs Reservoir. This canal is used during the winter and spring months to fill the Cold Springs Reservoir with a supply to be drawn upon during the dry months. It is important that service on this feed canal be uninterrupted, as the season during which water can be diverted from the river consists of only a few weeks, so that even a week's interruption is a serious matter. We had been running a constant flow through this feed canal of about 240 cubic feet of water per second, when the accumulations of floating ice got so heavy that ice jams were formed at various points, damming up the canal so that breaks were imminent. The situation was only saved by releasing large quantities of water through wasteways and shutting off the supply. At the present time a greatly reduced quantity is being flowed through the canal, with the result that storage of water in the Cold Springs Reservoir is a great deal less than it would otherwise have been. It is to be earnestly hoped that the severe weather in eastern Oregon will terminate, otherwise serious results may follow. This situation is worthy of especial comment, as ordinarily the winters in this locality are exceptionally mild, freezing weather being seldom encountered save for short intervals. During the 4 years I have known this part of the country nothing of the kind has been experienced, not so much for severity as for duration.

WATER POWER DEVELOPMENT.

During the past year plans have been completed for 2 hydraulic power plants on the South Fork of the Lewis River,

Wash., for the Dole Lumber Company. These plants will be of 300 and 700-horsepower each, or a total capacity of 1,000-horsepower; the 300-horsepower plant was constructed last year on Rock Creek, a tributary of the South Fork of Lewis River, 2½ miles below the 700-horsepower plant, which will be constructed on Big Tree Creek in the early spring. These plants are primarily for furnishing power to the mills of the Dole Lumber Company, but later will supply current for lighting the town of Yacolt, about 3 miles north. These plants will cost about $20,000 for the hydraulic installation, being very economical sites for the generation of power.

There has also been designed a 3,000-horsepower plant on the East Fork of the Lewis River for other parties; the intake to be below the mouth of Big Tree Creek, the power-house to be situated near Lucia, a station on the Yacolt branch of the Northern Pacific Railroad. This power will be transmitted to Vancouver, Wash., but it is indefinite when construction will begin on this work. On the North Fork of the Lewis River surveys and plans have been made for a 12,000-horsepower plant. On January 3, 1909, the city of Tacoma voted to sell bonds and construct a hydroelectric power-plant on the Upper Nisqually River, Wash. Construction on a 20,000-horsepower plant will begin the coming spring.

NEWS ITEM.

Mr. George W. Boschke, Chief Engineer of the Oregon Railroad and Navigation Company, reports that the severe weather during December retarded their work to a considerable extent, especially on bridge foundation work and the like, where concrete is used. He does not favor putting in concrete, especially thin slabs, in cold weather.

On the new Deschutes line the weather was very cold, and while a force of from 2,400 to 2,600 men was maintained, they worked to considerable disadvantage. In fact he thinks on all the work in progress they did not make more than 60 per cent of the progress that should have been made if the weather had been more moderate.

THE WEST UMATILLA RIVER WATER-USERS' ASSOCIATION.

By JOHN W. CAMPBELL, Secretary.

Settlers owning approximately 10,000 acres of land west of Butter Creek near its mouth and west of the Umatilla River have organized a water-users association under the caption of "The West Umatilla River Water-Users' Association." Lands controlled by the members of this association lie under the system of the Western Land and Irrigation Company, which diverts water to feed its 20 miles of canals 1 mile above the diversion site of the Government near Echo, Oreg.

The object of the association is to cooperate with the ditch company in developing the country under its system and bring in settlers, as well as to regulate the use of water among the various users along the Umatilla River and its own canals, so as to avoid friction or litigation. It is probable that measuring gates will be installed this spring, but if a late season should prevent they will be put in after the irrigation season next fall.

The Western Land and Irrigation Company has contracted to furnish water to its patrons during March, April, or May or during flood-water season. The land covered by its canals is very smooth and ideal for alfalfa growing, and this bids to become the leading crop of this district. Already the section at the mouth of Butter Creek under this system is a heavy producer of alfalfa.

TABLE 1.—*Climatological data for December, 1909. District No. 12, Columbia Valley.*

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.		
Montana.																				
Anaconda	Deer Lodge	5,300	8	17.8[c]		46[b]	12	−16[b]	4		0.56			6.3	10	11	7	13		C. D. Demond.
Bison Mountain	Powell	7,240																		C. H. Anderson.
Columbia Falls	Flathead	3,100	13	19.1[a]	− 6.5	44[a]	13	−11[a]	22	38[a]	2.62	+ 0.66	1.72	19.0	7	7[a]	4[a]	19[a]	sw.	Mrs. I. M. Kennedy.
Como§	Ravalli		2	20.6		43	30	− 3	6	22	0.30		0.13		4	11	5	15		Hiram Platt.
Darby	...do	3,825									1.00									W. A. Kerlee.
Dayton	Flathead	2,800																		Charles M. Lawson.
East Anaconda§	Deer Lodge	5,500	4	17.7		45	12	−12	4†	33	0.64		0.20	5.6	8	11	7	13	w.	C. D. Demond.
Fortine	Flathead	2,975	4	16.0		37	31	−11	6	23	1.22		0.38	16.0	12	7	1	23	n.	Mike Petery.
Hamilton	Ravalli	3,575	7	24.6		51	30†	− 8	6	31	0.33		0.17	2.0	4	8	13	10	n.	J. B. Currie.
Hat Creek	Powell	6,000									0.91		0.50	17.9	6	4	12	15	w.	M. K. Landreth.
Jocko	Missoula	3,100	1																	George W. Robbins.
Kalispell	Flathead	2,965	11	19.2	− 4.7	41	13	− 2	21	28	1.01	+ 0.84	0.34	9.1	11	6	4	21	nw.	U. S. Weather Bureau.
Lost Creek	Deer Lodge	5,200																		Frank Henault.
Missoula	Missoula	3,225	26	21.9	− 2.6	47	31	1	23	24	0.11	− 1.32	0.03	1.6	5					U. S. Weather Bureau.
Ophir	Powell	3,800									0.70		0.25	9.0	5	8	10	13	w.	E. S. Wilton.
Ovando	...do	4,207	11																	S. B. Muchmore.
Philipsburg	Granite	5,275	6	18.4		45	30	−12	7†	31	0.39		0.20	4.3	4	12	8	11	n.	Prof. G. T. Bramble.
Pipestone Pass	Jefferson	7,000									0.83		0.39	9.0	6	12	13	6	nw.	Mrs. Th. Kiermeyer.
Plains	Sanders	2,475	11	22.8	− 5.4	42	12†	2	7	25	T.	− 0.67	T.	T.	0	18	0	13	sw.	M. H. Pierce.
Pleasant Valley	Flathead	3,500	3	17.0		48	11	−16	23	39	0.53			8.0	5	17	2	12		A. D. Stillman.
Polson	...do	2,920	2	22.5		43	13	5	6†	21	0.37		0.22	4.0	3					F. P. Brown.
St. Ignatius	Missoula	2,700	1	22.0[a]		49[a]	20	− 2[a]	7†	46[a]	0.53		0.14	6.2	8	6[a]	7[a]	17[a]		U. S. Reclamation Service
St. Regis	...do	2,650	2	23.4		42	16	0	23	29	0.57		0.30	3.3	3	5	26	0	ne.	R. D. Lee.
Saltese	...do	3,600	5								2.36		0.76	21.0	6	16[a]	0[a]	14[a]	w.	E. K. Tarbox.
Snowshoe	Flathead	4,500	3	15.6		41	29	− 6	6	27	4.26		1.38	35.2	14	9	4	18	w.	J. S. Riter.
Troy	...do	1,880	15	27.0	− 1.6	60	3	− 8	22	49	1.47	− 1.04	0.60	9.0	4	10	9	12	nw.	W. E. Milnor.
Upper Lake McDonald	...do	3,200	3	20.5[d]		39[d]	13	− 6[d]	23	32[d]	2.75		0.65		10	3[d]	9[d]	15[d]	s.	F. F. Liebig.
Woodville	Jefferson	6,376									0.39		0.11	5.4	7	11	13	7	sw.	Anna Kinman.
Wyoming.																				
Afton	Uinta	6,200	6	10.4		38	9	−28	18	40	0.85		0.20	8.5	11	19	12	0		A. V. Call.
Alta	...do			11.2		35	1†	−30	17	48	1.42		0.35		10	7	7	17	n.	Mrs. Lucy Brown.
Bedford	...do	5,900	10	8.7[d]	−10.2	35[d]	1†	−25[d]	18	46[d]	1.17[d]		0.37[d]	11.7[d]	5[d]	8[d]	5[d]	14[d]	w.	C. G. Heiner.
Snake River	Yellowstone Park	7,000	3																	U. S. Army.
Nevada.																				
San Jacinto	Elko		5	15.8		45	7	− 6	22	37	0.40		0.22	1.0	2	5	5	21	sw.	Moses Jones.
Idaho.																				
Albion	Cassia		9	20.8		44	12	−13	4	39	0.86		0.20	13.5	12	2	12	17	w.	G. A. Asline.
Almo	...do										0.75		0.19	10.0	9	16	9	6		Wm. L. Eames.
Bear Valley	Boise																			Francis Wallis.
Blackfoot	Bingham	4,503	13	15.0	− 8.4	40	1	−12	18	31	1.96	+ 1.05	0.70	8.0	9	2	16	13	ne.	E. A. Dowd.
Blanche	Lincoln																			Solon A. Bray.
Bogus Creek	Boise	4,200																		F. P. Ingraham.
Boise	Ada	2,770	24	27.4	− 4.8	49	9	12	6	31	1.53	− 0.19	0.65	6.9	10	2	8	21	nw.	U. S. Weather Bureau.
Bonanza	Custer	6,600																		Mrs. Emma Walter.
Bonners Ferry	Bonner	1,850	3	22.9		39	11†	− 2	22	28	1.93		0.62	19.0	8	7	5	19	sw.	W. H. Heideman.
Boulder Mine	Boise	4,800									4.62		1.71	45.5	11	16	9	6		Patrick Moriarty.
Buhl	Lincoln	3,800	4	23.2[b]		42[b]	8	− 6[b]	21	21[b]									w.	Dr. D. P. Albee.
Burke	Shoshone	4,082	3	20.0		36	29	0	23	24	2.70		0.85	23.0	9	12	4	15	nw.	W. A. Hall.
Caldwell	Canyon	2,372	5	26.1		42	1	6	24	24	1.38		0.37	10.0	8	3	12	16	e.	W. J. Boone.
Camas	Fremont	4,815		8.0[a]		35[a]	31	−28[a]	17	51[a]	0.48		0.12	12.0	11	13	0	17	n.	Ednah Faulkner.
Cambridge	Washington	2,651	14	19.0	− 7.0	45	1	−11	21	32	3.67	+ 0.15	0.85	28.0	7				nw.	C. H. Shepherd.
Chesterfield	Bannock	5,424	13																	Chas. L. West.
Clawson	Fremont										0.58		0.50	11.5	5	16	6	9		E. J. Hopkins.
Cœur d'Alene	Kootenai	2,157	17																	Jas. T. Scott.
Culdesac	Nez Perce	1,520		30.6		47	1	14	6†	21	0.19		0.07	7.0	4	8	6	17		R. R. Richmond.
Dent	...do	1,350	4	27.6		42	10	9	22	19	1.57		0.39	4.0	11	7	8	16		Emil Schuessler.
Driggs	Fremont	6,097	3	8.0		38	31	−30	17	46	0.96		0.34	14.7	10	8	7	16	s.	Walter H. Durrant.
Edie	...do			11.0		40	11	−12	4	36	0.42		0.20	9.0	3	18	3	10	n.	Geo. B. Edie.
Emmett	Canyon	2,350	3	24.8		45	8†	8	21†	22	1.82		0.65	9.0	8	11	3	17	se.	E. L. Marvin.
Forney	Lemhi		13	16.2	− 5.2	48	13	−17	21	47	0.78	− 1.03	0.43	12.0	2	21	0	10	sw.	E. P. Treloar.
Garnet	Elmore	2,575	10	30.0		47	9	15	20	22	0.80		0.32	2.0	5	5	7	19	e.	Mrs. Ines H. Davis.
Gilbert§	Nez Perce	3,030																		J. B. Loomis.
Glenns Ferry	Elmore	2,569	2	27.2		49	1	7	20	25	1.66		0.59	5.3	8	3	9	19		I. E. Perkins.
Grand Forks	Shoshone	3,000		22.0[d]		38	2	3	4	24	2.63		1.20	20.0	8	11	4	16	e.	H. F. Kottkey.
Grandview	Owyhee			28.2		49	9	7	24	29						9	4	18	se.	N. G. Massey.
Guffey	...do	2,381		28.4		45	9	11	28	22	1.28		0.90	1.0	5	19	0	12	w.	F. N. Perry.
Hailey	Blaine	5,347	7	14.2		37	1	− 7	19†	32	2.46		0.95	22.5	6	10	13	8	sw.	U. S. Forest Service.
Henry	Bannock																			N. W. Irsfeld.
Hotspring	Owyhee	2,752	4	28.3		48	9	10	24	20	0.65		0.50	2.0	3	4	7	20		J. M. Waterhouse.
Idaho City	Boise	4,000	11								3.25		1.73	34.5	6					Mrs. Emma Hammer.
Idaho Falls	Bingham	4,742	14	16.0	− 5.8	37	1†	−11	18	38	1.17	− 0.12	0.30	18.0	8	6	6	19	ne.	Dr. T. M. Bridges.
Indian Valley	Washington	2,999									5.29		0.90	35.0	10	17	1	13	n.	W. E. Henke.
Irwin	Bingham	6,500		10.2		39	9	−36	17	47				9.0	5	11	15	5		Miss Martha A. Beam.
Kellogg	Shoshone	2,330	5	20.3		41	30	6	22	28	1.65		0.37	5.3	8	9	2	20	sw.	W. McM. Huff.
Kooskia	Idaho	1,261		28.4		42	25	9	22	27	1.43		0.35	3.8	10	9	5	17	sw.	U. S. Forest Service.
Lake	Fremont	6,700	17	11.8	− 5.5	40	30	−16	24	32	1.20	− 0.85	0.60	12.0	6				nw.	J. Sherwood.
Lakeview	Bonner	2,250	12	25.2	− 6.2	41	16	7	6†	20	1.10	− 2.11	0.45	12.0	7	5	0	26	nw.	E. D. Faust.
Landore	Washington	5,300	6	18.5		37	13	− 2	4	24	3.10		1.07		15	12	6	13		Mrs. Emma L. Brown.
Lardo	Boise	5,050	5																	E. W. York.
Lewiston	Nez Perce	757	15	32.4	− 5.1	55	12	16	22	20	0.63	− 0.89	0.26	2.4	10	2	5	24	e.	U. S. Weather Bureau.
Little Camas	Elmore	5,000									4.41		2.00	49.4	12	10	5	16	w.	Solon McCoy.
Lost River	Blaine	5,700	15																	B. B. Harger.
Lowry	Owyhee		2																	W. D. Winter.
Mackay	Custer	5,897	2	13.0		35	1	−11	25	43	0.56		0.23	2.0	3	21	0	10	nw.	U. S. Forest Service.
Meadows	Washington	3,950	7	18.3		42	1	−15	21	27	2.62		0.72	36.5	12	6	11	14		Chas. A. Hackney.
Milner	Twin Falls	4,097	6	19.5		43	9	0	21†	25	0.11		0.03	0.6	5	19	6	6	e.	R. A. Hanson.
Moscow	Latah	2,748	17	26.6	− 5.1	44	12	10	4†	21	1.47	− 1.16	0.52	10.0	10	10	1	20	e.	University of Idaho.
Mountainhome	Elmore	3,150	4	23.6		44	1	3	27	25	1.84		0.93	7.5	6	7	13	11	nw.	Mrs. Ellen Marion.
Murtaugh	Twin Falls		3	21.1		46	9†	− 2	18	39	0.85		0.33	11.5	8	8	11	12	e.	J. E. Steinour.
Nez Perce§	Nez Perce	3,182		26.2		43	10†	0	6	26	0.75		0.22	7.5	4	13	0	18		P. W. Mitchell.
Oakley	Casia	4,191	17	23.2[a]	− 6.3	41[a]	9	2[a]	21†	35[a]	0.45[a]	− 0.07	0.10[a]	2.5[a]	7[a]	2	17	12	s.	John Adams.
Orofino	Nez Perce	1,027	5	29.2		50	1	10	22	22	1.54		0.50	4.2	11	7	14	10		Geo. Alteneder.
Payette	Canyon	2,159	16	23.4	− 7.6	44	1	− 2	28	31	1.52	+ 0.07	0.30	7.2	8	7	3	21	n.	E. F. Allen.
Pebble	Bannock	5,277		13.4		38	31	−16	17	39	2.78		0.75	22.8	9	15	8	8	s.	Arthur P. Say.
Pierson	Custer	7,000									2.44		1.04	20.0	4	23	0	8	n.	David P. Clarke.
Pleasant Valley	Ada	3,000	2	25.2		37	1†	5	24	26			0.55	6.7	7	6	2	23	se.	C. E. Friedrich.
Pocatello	Bannock	4,483	11	19.3	− 9.1	40	31	− 4	3	34	0.89	+ 0.03	0.69	8.6	11	1	11	19	se.	U. S. Weather Bureau.

TABLE 1.—*Climatological data for December, 1909. District No. 12*—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 part'ly cloudy days.	Number of cloudy days.	Prevailing wind direction.	Observers.
Idaho—Cont'd.																				
Pocatello Nursery	Bannock	5,396	3																	Peter F. Wrensted.
Poplar	Bingham			15.4		52	13	−20	17	50	1.76		0.32	24.5	11	6	11	14	sw.	Stuart Lee.
Poplars§	Canyon	2,425	10								1.13	− 0.23	0.70	1.0						N. S. Dils.
Porthill	Bonner	1,665	17	22.2	− 6.4	40	31	− 1	22†	19	1.55	− 1.18	0.57	24.0	7	11	2	18		H. A. French.
Pyle Creek	Boise	3,100									4.21		1.55	32.3	8	11	6	14	ne.	Walter L. Cole.
Rupert	Lincoln	4,204	3	20.2		46	1	− 3	26	31	1.22		0.28	16.0	9	6	8	17	e.	Will Parry.
St. Maries	Kootenai	2,263	13																	J. S. Turnbull.
Salem	Fremont	5,000	5																	Geo. H. A. Harris.
Salmon	Lemhi	4,040	4	13.4		39	1†	−19	21	33	0.85		0.27	12.0	7	12	6	13	n.	E. K. Abbott.
Salmon River Dam	Twin Falls		2	23.2		41	9	4	24	34	0.59		0.26	5.5	6	7	12	12	s.	Arch M. Gilbert.
Sheep Hill	Boise	5,000									5.88		2.65	48.2	7					Clifford M. Gardner.
Shoshone	Owyhee	6,200	3	19.6		39	31	0	11	26	2.30		0.90	17.0	8	2	17	12	e.	O. A. Petitt.
Silver City	Lincoln	3,968									3.44		0.85	26.5	16	9	2	20	s.	A. O. Treeman.
Soldier	Blaine	5,140	13	12.2	− 5.5	45	3	−26	16	52	3.55	+ 1.69	1.00	28.3	8	1	23	7		W. W. Leek.
Standrod	Cassia		5	19.8		41	31	− 1	24	27	0.74		0.24	10.1	9	17	2	12	w.	T. B. Jones.
Sugar	Fremont		2	12.2		36	1†	−20	17	41	2.16		0.50	24.1	16	5	9	17	sw.	Geo. F. Webb.
Sunnyside	Elmore			23.0		45	1	− 3	23	35	1.66		0.86	8.5	8				se.	E. A. Wilmot.
Tilden	Bingham	4,420		13.5		39	1	−16	4†	36				21.5		14	7	10	sw.	Mrs. W. A. Edwards.
Twin Falls	Twin Falls	3,825	4	21.6		45	9	1	24	28	1.63		0.28	13.3	15	0	24	7	s.	Clyde C. Anderson.
Vernon	Fremont		12	12.0	− 3.8	36	31	−19	18	32	2.03	+ 0.28	0.45	27.8	14	7	10	14	e.	A. M. Slatery.
Wallace	Shoshone	2,728	2	24.4		41	30	6	23	20	2.51		0.71		13				e.	U. S. Weather Bureau.
Warfield	Blaine	6,386																		Wm. H. Warfield.
Wendell	Lincoln	3,400		22.6		41	31	2	26	26	0.67		0.87	8.7		10	5	16	w.	Chas. L. Dingler.
Washington.																				
Aberdeen	Chehalis	162	18	35.2	− 5.9	52	12	18	22	24	8.68	− 5.45	3.07	5.0	13	2	22	7	e.	C. Weatherwax.
Anacortes	Skagit	60	15																	Douglass Allmond.
Baker	do	200	3	33.6		46	13	17	4	22	6.90		2.19	8.5	11	12	1	18		Robt. M. White.
Bellingham	Whatcom	60	14	36.8[a]	− 5.5	56[a]	27	18	4†	36[a]	2.02	− 2.22	1.45	T.	4	14	6	11		Sanford B. Mayhew.
Blaine	do	53	12	33.2	− 3.6	50	12	18	4†	18	4.48	− 1.38	1.75	2.5	11	7	7	17	ne.	G. A. Ruring.
Bremerton	Kitsap										4.78	− 3.00			12					U. S. Navy Yard.
Cedar River	King		2								4.30		1.42	2.5	12	4	10	17		Geo. Landsburg.
Centralia	Lewis	212	16	34.2	− 6.6	52	12	16	22	25	5.63	− 2.43	1.09	6.0	11	7	12	12	s.	I. S. Turner.
Cheney	Spokane	2,351	10																	G. A. Fellows.
Chopaka	Okanogan	1,200	1																	Mrs. J. S. Myers.
Clealum	Kittitas	1,930	10	20.5	−10.3	45	12	− 4	22†	30	2.39	− 2.08		28.0	9	13	4	14	ne.	J. A. Balmer.
Clearbrook	Whatcom	140	6	31.7		49	12	13	28	23	3.95		2.94	3.0	6	10	9	12	ne.	Geo. Gibbs.
Clearwater	Jefferson	135	13																	Alfred Ritchie.
Colfax	Whitman	2,300	20																	W. H. James.
Colville	Stevens	1,635	9	22.3	− 4.4	40	12	− 6	23	29	1.91	− 0.05	0.76	13.5	7	13	1	17	nw.	W. L. Sax.
Conconully	Okanogan	2,300	9	18.4	− 8.7	40	13	− 6	23	25	1.80	− 0.55	0.46	16.7	7	11	3	17		Wm. Baines.
Coupeville	Island	150	13																	W. T. Howard.
Crescent	Lincoln	2,250	9	23.0	− 6.7	39	12	0	22	26	1.70	− 0.65	0.51	7.0	6	8	3	20	n.	Otto Wollweber.
Davenport	do	2,450		21.6		39	12	3	22	21	0.81		0.50	4.0	7	7	2	22	ne.	W. H. Reed.
Dayton	Columbia	1,700	23	27.8	− 6.5	52	12	6	4†	35	1.75	− 1.44	0.57	5.5	8	2	6	23		W. W. Hendron.
Detroit	Mason	31	1	36.5		50	12	20	4	18	7.57		2.58	13.0	10	7	8	16	ne.	Walter O. Eckert.
Dixie	Walla Walla	5,000									4.83		0.80	31.8	12	8	3	20	sw.	T. Z. Andrews.
Duckabush	Jefferson	380	1	31.0[f]		50[f]	1†	15[f]	22	30[f]	9.91		2.62	24.0	9[e]	9[e]	3[e]	14[e]	n.	Emery J. Finch.
East Sound	San Juan	500	14	35.4[m]	− 5.8	51	12	19[m]	31	24[m]						12[g]	7[g]	5[g]	n.	Benj. E. Harrison.
Ellensburg	Kittitas	1,571	21	19.3	− 8.9	44	13	− 7	22	31	1.08	− 0.55	0.36	12.1	5	15	2	14		R. Lee Barnes.
Ephrata	Grant	1,265	6	24.6[h]		45[h]	12	7[h]	22	25[h]						10[h]	0[h]	13[h]	n.	D. Chaffee.
Forks	Clallam	480		37.7[h]		51[h]	11	27[h]	22	11[h]						16[h]	3[h]	4[h]	ne.	C. W. Palmer.
Fort Simcoe	Yakima	1,427	15	26.4	− 6.0	54	13	10	23	30	2.12	− 0.31	0.60	20.0	8	5	6	20		Dr. G. A. Landes.
Goat Lake	Snohomish	2,900									8.70		2.75	26.0	9					C. M. Mackintosh.
Gold Creek	Yakima	2,600									1.95			19.5	8	19	4	8		John W. Anderson.
Goldendale	Klickitat	1,600	3	24.6		44	11	4	21†	31	3.35		1.05	20.0	10	8	5	18	e.	Klickitat Abstract Co.
Granite Falls	Snohomish	397	6								4.16	− 3.59	1.56		12	4	6	21	se.	C. H. Cleaver.
Hatton	Adams	1,100	4	25.3		46	13	− 8	4	29	0.90		0.34	4.7	6	6	5	20	nw.	Dr. A. V. Marion.
Huntsville	Columbia	1,400	1								1.98		0.47	6.0	9	4	5	22		Dr. B. Hill.
Irene Mount	Okanogan	3,015									0.64		0.43	8.0	5	16	3	12	n.	Mrs. E. W. Wheeler.
Kennewick	Benton	367	14	27.4	− 9.2	50	12	3	3†	31	0.93	− 0.17	0.40	7.0	5					L. W. Soth.
Kettle Falls	Stevens	1,365		24.4		43	1	− 1	23	22	1.58		0.65		7	10	3	18		Dr. A. E. Baldwin.
Kiona	Benton	430	4	28.6		52	12	2	6	25	1.31		0.46	4.5	5	3	6	22		Dr. F. S. Hedger.
Kosmos	Lewis	775	3	30.2		56	9	14	23	25	5.20		1.20	7.5	14	0	22	9	n.	Hon. J. A. Ulsh.
La Center	Clarke	250	12	31.1	− 8.9	53	11†	14	23	22	4.41	− 4.17	1.43	5.0	11	12	5	14	sw.	Joseph Brothers.
La Crosse	Whitman	1,400		28.0		48	13	− 1	4	25	2.22		0.65	12.0	12	9	1	21	nw.	M. E. Schreck.
Lake Clealum	Kittitas	2,171									3.75		0.82	37.1	11	8	5	18		U. S. Reclamation Service
Lake Kachess	do	2,235		21.0		41	12†	2	22†	26	6.91		1.85	47.0	12	6	14	11	e.	Do.
Lake Keechelus	do	2,479	1								7.30		1.80	55.0	10					Do.
Lakeside	Chelan	1,116	18	23.0	− 7.0	39	2	6	24	18	1.61	− 0.59	0.55	16.0	8	4	9	18	e.	W. H. Van Meter.
Laurel	Klickitat	1,900									5.05		1.07	7.5	12	8	9	14	w.	L. S. Strout.
Lester	King	1,614	5	30.0		49	27	7	3	29	3.70		1.65	20.5	8	14	2	15	e.	W. W. Clabaugh.
Lone Tree	Chealis	9		38.2		50	11†	28	4†	15	7.19		2.68	0.5	13	12	5	14	e.	U. S. A. Engineers Corps
Longmire Spring	Pierce	2,800		32.3		45	15†	17	3†	15	5.10		1.65	22.2	10	12	0	19	n.	U. S. Forest Service.
Lost Creek	Okanogan	3,125									1.10		0.51	11.0	6	19	0	12	ne.	P. H. Leese.
Lucerne	Chelan	1,100	2																	Barbara Schearer.
Lyle (Pine Hill)	Klickitat	600	16																	Thomas J. Whitcomb.
McCumber's Ranch	Yakima	2,182									2.71		1.00	27.1	6	10	5	16	e.	Mrs. Mary McCumber.
Mottinger	Benton	307	9	30.8	− 6.8	57	13†	12	6	30	0.93	− 0.41	0.28	3.2	6	9	2	20	e.	G. H. Mottinger.
Mount Pleasant	Skamania	650	9	35.1	− 4.9	56	12	22	4†	22	3.76	− 4.55	1.45	T.	8	17	4	10	e.	F. M. Grout.
Moxie	Yakima	1,000	17	23.4	− 8.1	48	1†	− 5	22	35	0.85	− 0.24	0.34	8.5	7	6	7	18		H. B. Scudder.
North Head	Pacific	211	7	39.5	− 4.8	56	16	26	5	20	5.24	− 2.24	2.23	1.2	13	12	3	16	e.	U. S. Weather Bureau.
Northport	Stevens	1,950	10	25.0[f]	− 4.1	44[k]	31	− 3	6†,	22[k]	1.14	− 0.91	0.42	11.4	7	14	5	12		A. L. Hager.
North Yakima	Yakima	1,076		24.6		48	12	5	22	21	0.93		0.39	8.5	6	8	6	17	nw.	Albert Bender.
Nutland	Klickitat			28.6		49	12	14	27	26	1.56		0.40		7					J. R. Shepard.
Odessa	Lincoln	1,540	6	25.6		45	13	9	6†	22	0.79		0.30	9.0	5	9	2	20	sw.	Wm. U. Neeley.
Olga	San Juan	50	19	36.7	− 5.0	54	12	22	3†	15	2.47	− 2.11	1.20	2.0	5	11	10	10	nw.	Cecil S. Willis.
Olympia	Thurston	200	31	34.6	− 6.5	52	12	16	22	25	6.30	− 3.38	2.08	7.5	13	5	8	18	ne.	M. O'Conner.
Omak	Okanogan			21.7		45	1	−10	22	30	1.42		0.50	14.2	9	4	7	20	n.	Wm. G. Tait.
Oroville	do	922		24.8		42	1	2	23	25	0.55		0.25	5.5	4	5	9	17	s.	A. M. Dufield.
Peola	Garfield	5,000									1.30		0.54	7.0		5	10	16	sw.	Samuel Gruell, sr.
Pomeroy	do	1,500	17	29.2	− 6.5	62	30	10	6	43	1.55	− 0.83	0.50	7.0	8	7	0	24	w.	Peter McClung.
Port Crescent	Challam	259	14	35.4	− 2.9	52	16	22	4	20	4.83	− 2.05	2.25	0.5	13	4	12	15	se.	U. S. Weather Bureau.
Port Townsend	Jefferson	80	19	37.2	− 4.3	51	12	25	3†	12	1.93	− 0.85	0.43	2.5	9	10	2	19	ne.	Frank Plummer.
Pullman	Whitman.	2,550	17	26.4	− 5.9	44	12†	9	4	26	1.83	− 1.18		11.2		7	6	18	sw.	State Agricultural Col.
Quinisault	Chehalis	300	2	34.0		50	12	21	21	20	15.08		5.00	3.2	15	13	10	8	sw.	A. V. Higley.
Republic	Ferry	2,628	9	17.6	− 9.4	44	13	−11	23	26	1.06	− 0.87	0.56	11.5	7	11	3	17	nw.	Geo. B. Stocking.
Rex Creek	Chelan	1,135	2																	James W. Nicol.

TABLE 1.—*Climatological data for December, 1909. District No. 12*—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.
Washington—Cont'd.																				
Ritzville	Adams	1,825	10								1.33	− 0.19	0.34		12					Agent, No. Pac. Ry.
Rock Lake	Whitman	1,750	3	26.3		49	1	10	6†	27	1.22		0.72	3.7	4	11	3	17	ne.	P. M. Ramsey.
Rosalia	do	2,425	17	27.0	− 4.6	41	2†	10	4†	24	2.10	− 0.38	0.70	3.4	11	4	5	22	sw.	Hans Mumm.
Russell's Ranch	Yakima	2,870																		John Russell.
Seattle (1)	King	123	18	36.4	− 4.8	52	12	25	23	16	2.69	− 3.35	1.37	2.1	12	5	5	21	n.	U. S. Weather Bureau.
Seattle (2)	do			35.1		51	12	22	4	17	3.25		1.20	5.1	11	6	6	19	s.	Univ. of Washington.
Sedro-Wooley	Skagit	38	12	33.4[b]	− 7.6	52	29	18[c]	3†	24[c]	4.75	− 0.97	2.00	4.0	11	10	8	13		H. L. Devin.
Sixprong	Klickitat	1,240	2	27.1		47	12	12	6	20	0.82		0.31	8.5	11	3	2	26	ne.	C. E. Comstock.
Skagit Power Dam	Whatcom			32.2		45	16	15	4	15	7.41		2.90	8.0	11	16	0	15		Skagit Power Co.
Snohomish	Snohomish	50	15	33.4	− 7.3	52	12	16	4	21	3.19	− 3.06	0.75	4.0	14	7	5	19	se.	Irving B. Vestal.
Snoqualmie Falls	King	667	10	33.2	− 7.4	51	12	20	21	18	4.68	− 3.31	1.96		16	18	3	10		O. N. Wiswell.
Snyder's Ranch	Okanogan	2,200									2.25		0.61	32.0	9	14	14	3	nw.	George M. Snyder.
South Bend	Pacific	16	14																	John L. Stevens.
Spokane	Spokane	1,943	28	25.7	− 5.1	45	12	6	22	26	1.56	− 1.06	0.64	6.6	9	3	4	24	n.	U. S. Weather Bureau.
Stehekin	Chelan	1,100	2																	M. E. Field.
Stokes Ranch	Okanogan	2,670									2.30		0.63	33.0	7	15	8	8	se.	Amos Stokes.
Sullivan Lake	Stevens	2,700																		Mrs. Jennie D. McAbee.
Sumner	Pierce	77	1	34.0		55	12	17	6†	23	3.54		0.79	2.1	10	9	3	19	se.	H. E. Thompson.
Sunnyside	Yakima	740	14	27.0	− 6.0	55	12	9	6†	30	0.81	− 0.08	0.40	6.1	5	7	5	19	w.	U. S. Reclamation Service
Tacoma	Pierce	213	23	35.3	− 5.0	56	11	19	23	19	4.95	− 2.38	1.72	10.3	12	7	3	21	sw.	U. S. Weather Bureau.
Tatoosh Island	Clallam	86	24	39.8	− 4.1	50	11	31	3	12	6.77	− 7.82	3.05	3.2	12	5	11	15	e.	Do.
Tieton	Yakima	2,000		20.4		48	12	− 2	23	23	3.46		0.95	38.0	10	16	6	9	e.	U. S. Reclamation Service
Touchet	Walla Walla	556	2	27.8		56	12	− 6	6	35	1.44		0.40	7.6	6	8	3	20	sw.	D. W. Dorrance.
Touchet Ridge	Columbia	2,500									4.07		1.02	27.5	8	21	1	9	ne.	R. H. King.
Trinidad	Douglas	900	5	23.3		46	1	5	22	20	1.00		0.50	10.0	4	10	5	16	e.	J. C. Wheeler.
Twisp	Okanogan	1,619	6																	Wm. G. Hughes.
Tyee	Chelan	2,000									3.40			32.5		8	8	15	w.	Elias McCrea.
Vancouver	Clarke	100	34	34.8	− 3.6	57	12	15	6	22	4.52	− 2.27	1.27	7.5	12	11	5	15	nw.	A. A. Quarnberg.
Vashon Island	King	110	20	36.4	− 4.6	51	12	22	4	16	4.29	− 3.27	1.53	T.	11	8	5	18	n.	Miss Gertrude McClintock
Wahluke	Grant	410	5	27.6		49	12	5	6	30	0.30		0.20	3.0	2	7	9	15		F. C. Koppen.
Wallace	Okanogan	4,000									1.43		0.60	14.4	4	4	14	13	s.	Geo. A. Wallace.
Walla Walla	Walla Walla	1,000	25	28.0	− 8.0	55	12	8	4	32	2.07	− 0.03	0.52	11.0	13	1	5	25	s.	U. S. Weather Bureau.
Waterville	Douglas	2,624	19	17.0[b]	− 9.0	43[b]	12	− 8[a]	22	26[b]	2.15	+ 0.11	0.60	22.5	9	13[a]	3[a]	14[a]		O. R. Hopewell.
Wenatchee (near)	Chelan	1,169	10	21.2	− 7.5	49	12	4	23	24	1.61	− 0.81	0.43	21.2	9	9	7	15	w.	George Pitcher.
West Branch	Spokane	2,600																		Martin A. Murray.
Wilbur	Lincoln	2,203	10	31.2	− 7.3	40	12	− 2	22	24	1.20	− 1.06	0.65	6.0	4	9	1	21	se.	Rollin J. Reeves.
Yale	Cowlitz	375	2	35.6		53	15	20	20	23	6.57		2.30	6.5	13	6	3	22	e.	L. F. Williams.
Zindel	Asotin	715	7	26.2		47	1	11	23	22	0.53		0.30	4.5	4	11	11	9	n.	M. W. Zindel.
Oregon.																				
Albany	Linn	214	33	35.4	− 5.6	52	16	16	6	26	4.96	− 2.54	1.10	11.0	13	10	4	17	s.	F. M. French.
Ashland	Jackson	1,940	25	37.6	− 1.9	57	16†	19	23	30	1.98	− 1.32	0.53	3.8	13	15	1	15	se.	F. H. Carter.
Astoria	Clatsop	11	47																	C. W. Lamar.
Baker City	Baker	3,466	20	19.2	− 9.0	39	9	− 6	21	25	1.64	+ 0.35	0.40	23.3	12	8	7	16	se.	U. S. Weather Bureau.
Bay City	Tillamook	14	13	40.3	− 4.8	62	15	21	22	33	9.64	− 6.64	1.58	0.5	15	15	2	14	se.	J. O. Bozarth.
Birch Creek	Wheeler	2,900		27.7[a]		51[a]	12	8[a]	6	24[a]	2.05[a]		0.80[a]	8.5[a]	5[a]	5[a]	13[a]	12[a]	sw.	F. S. Matteson.
Black Butte	Lane	1,200	8	34.0		48	1†	12	21†	24	6.15		1.40	3.0	11	10	9	12	e.	James A. Putman.
Blalock	Gilliam	237	10	29.8	− 8.2	50	12	0	3	36	1.34	− 0.14	0.68	15.0	4	4	2	25	e.	Geo. W. Long.
Buckhorn Farm	Josephine	1,300	10	35.4	− 4.1	54	12†	16	21	32	11.87	+ 0.68	2.93	14.5	12	10	4	17	n.	E. F. Meisser.
Cascade Locks	Hood River	100	18	31.4	− 7.5	49	12	20	7†	15	4.25	− 9.38	1.18	11.0	14	14	2	15	e.	Val W. Tomkins.
Casadero	Clackamas	514		38.2		56	12†	15	6	25	5.09		1.10	2.0	14	13	1	17	se.	A. Drill.
Condon	Gilliam	2,884	1																	C. H. Williams.
Corvallis	Benton	600	7																	Oregon Agric. College.
Dayville	Grant	1,500	14	28.8	− 8.6	53	12	4	6	31	1.09	− 0.29	0.42	4.6	7	10	6	15	nw.	Dr. J. Campbell-Martin
Doraville	Columbia	600	7	32.4		48	12	18	22	17	5.95		1.56	14.9	16	6	5	20	se.	Jos. Hackenberg.
Drain	Douglas	300	6	37.0		56	12	12	22	29	4.68		1.02	3.5	12	4	7	20	nw.	Ira Wimberly.
Echo	Umatilla	625	5	28.0		54	12	0	6	23	1.20		0.30	8.5	6	4	2	25	w.	R. B. Stanfield.
Ella	Morrow	830	10	27.8		60	1	5	6	28	1.31	+ 0.24	0.50	16.0	7	6	0	25	ne.	C. F. Troedson.
Eugene	Lane	449	18	34.6	− 7.4	59	13	18	22†	23	3.60	− 3.01	0.78	6.8	13	9	7	15	s.	A. W. Jackson.
Fairview	Coos	142	11	41.4	− 4.5	58	8†	18	22	32	8.34	− 2.71	1.35	T.	14	14	1	16	n.	Wm. Bettys.
Fall City	Polk	355	11																	Chas. F. Vick.
Forest Grove	Washington	220	19	33.6	− 5.8	54	12	17	30	21	5.08	− 3.25	1.42	9.0	12	7	10	14	ne.	Pacific University.
Gardiner	Douglas	72	19	40.2[e]	− 5.4	60[e]	9	27[e]	21	19[e]	8.42	− 4.47	1.40	0.0	15	11[e]	5[e]	10[e]		Hon. J. S. Gray.
Glendale	do	1,441	5	38.0		57	13	18	22	21	2.90		0.60	8.5	9	12	6	13	nw.	B. J. Simpson.
Glenora	Tillamook	575	17	32.0	− 7.0	47	15	15	18	25	12.68	−10.58	2.40	5.0	15	17	1	13	sw.	Mrs. Jennie Recher.
Gold Beach	Curry	40	6	46.2		69	17	21	22	36	10.76		2.09		14	17	1	13	nw.	C. Dewey.
Granite	Grant	4,680	4	18.0		44	16	13	4	42	2.28		0.56	27.0	7	3	14	14	nw.	L. M. Ford.
Grants Pass	Josephine	956	20	35.0	− 5.1	56	12	17	21	27	5.01	− 0.56	1.21	3.0	20	10	2	19	sw.	John B. Paddock.
Grass Valley	Sherman	2,381	7	22.6		47	12	2	6	32	1.14		1.06	12.5	2	6	6	19	ne.	Agent, O. Ry. & N. Co.
Greenleaf	Lane	250	9	34.6	− 7.6	53	15	18	22	22	11.40	− 2.33	1.57	9.0	16	14	3	14	ne.	Wm. Wheeler.
Headworks	Clackamas	719	10	33.2		48	12	21†	4	19	6.64	− 3.77	1.43	15.4	15	14	4	13	e.	Portland Water Works.
Heppner	Morrow	1,950	20																	Geo. Whiteis.
Hermiston	Umatilla	450	4	27.8		52	12	− 4	6	29	0.93		0.25	8.0	8	7	3	21		C. W. Kellogg.
Hood River	Hood River	243	18	26.3	− 9.6	45	12	8	21	20	1.86	− 5.56	1.00	24.5	6	10	15	6	e.	H. L. Hasbrouck.
Huntington	Baker	2,110	7	27.4		46	12†	7	21	25	1.79		0.50	15.2	1	0	6	25	se.	J. M. Day.
Jacksonville	Jackson	1,640	20	34.9	− 3.0	49	31	18	23	21	3.58	− 1.15	0.86	6.0	11	13	1	17		E. Britt.
La Grande	Union	2,784	21	25.4	− 7.1	44	13	3	6†	23	1.16	− 0.95	0.30	10.5	7	9	5	17	se.	W. A. Worstell.
McKenzie Bridge	Lane	1,400	7	32.0		54	16	11	23	33	6.27		1.03		14	14	1	16	e.	Geo. Frissell.
McMinnville	Yamhill	180	21	35.9	− 4.8	55	12	18	23	24	6.27	− 1.54	1.38	15.5	13	18	3	10	n.	C. J. McKee.
Madras	Crook	2,150		16.2		42	15	−25	6	32	2.40		0.40	21.0	11					D. P. Rea.
Marshfield	Coos	12	7	42.0		59	15	23	23	24									sw.	Dr. E. Mingus.
Mikkalo	Gilliam	1,600	5	26.3		60	1	3	6	31	2.30		0.88	14.6	6	7	1	23	e.	J. T. Chandler.
Miramonte Farm	Clackamas	195	19	35.2	− 5.3	54	12	17	23	19	4.31	− 2.06	0.99	5.5	13	14	5	12	n.	G. M. Muecke.
Monroe	Benton	350	12	35.2	− 6.4	56	12	17	23	22	6.51	− 1.64	1.95	18.0	12	8	7	16	n.	John H. Starr.
Mount Angel	Marion	485	23	35.8	− 5.9	55	30	20	22†	27	5.63	− 1.82	1.04	0.3	13	18	2	11	sw.	Dr. U. F. Fisher.
Mountain Park	Hood River	1,550	4	27.0		45	13	13	21	19	6.31		1.35	33.5	15	4	4	23	e.	Raymond Markley
Newport	Lincoln	69	19	41.4	− 5.3	60	30	20	6	23	4.42	− 6.42	1.10	6.0	11	14	8	9	e.	Wm. Matthews.
Pendleton	Umatilla	1,272	19	28.4	− 8.2	53	30	2	6	34	1.91	+ 0.39	0.70	7.5	9	1	4	26		H. F. Johnson.
Pilot Rock	do	1,872		28.1		56	12	4	6	38	0.98[a]		0.31[a]	7.5[a]	9[a]	9[a]	14[a]	7[a]	nw.	John P. McManus.
Pompeii	Clackamas	3,580	14	27.4	− 5.7	54	29	9	6†	24	8.30	− 3.54	1.98	40.0	14	11	4	16	e.	O. C. Yocum.
Portland	Multnomah	57	40	35.6	− 5.9	58	12	24	4	20	4.47	− 2.74	1.29	10.3	11	11	5	15	e.	U. S. Weather Bureau
Port Orford	Curry	300	4	46.0		66	16	31	2†	27	10.05		2.30	0.0	14	13	8	10	nw.	Willis T. White.
Prineville	Crook	3,000	12																	C. I. Winnek.
Prospect	Jackson	2,750	4	32.8		56	16	10	20	34	3.96		1.30	28.0	12	11	10	10	w.	E. F. Graham.
Range	Grant		4	−17.0		40	8†	− 9	6	44	1.20		0.60	12.0	5	16	5	10		Craig Thom.
Riverside	Malheur	3,000	12					−10	6		1.58		0.40	15.0	8	12	13	6	n.	Mrs. Leah Fairman.
Roseburg	Douglas	523	32	36.8	− 5.1	58	12	19	22	19	3.68	− 2.41	1.06	0.3	16	1	10	20	s.	U. S. Weather Bureau.
Salem	Marion	120	18	36.4	− 5.8	55	12	21	6†	20	4.80	− 1.22	0.60	13.0	14	13	0	18	n.	M. P. Baldwin.

TABLE 1.—*Climatological data for December, 1909. District No. 12*—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.		
Oregon—Cont'd.																				
Siskiyou	Jackson	4,115	1	31.3	.....	50	16†	15	3	20	4.64	.....	1.45	30.1	14	12	3	16	sw.	Louise F. Bates.
Stafford	Clackamas	400	13	35.3	− 5.8	55	12	18	6†	26	5.48	− 1.92	1.09	6.0	14	.....	.....	.....	ne.	J. P. Gage.
The Dalles	Wasco	112	34	28.8	− 7.2	45	1†	10	6	18	3.09	− 0.19	0.99	29.5	11	6	1	24	e.	S. L. Brooks.
Toledo	Lincoln	50	19	41.6	− 3.0	60	1†	21	24	30	8.00	− 2.50	1.30	10.0	12	18	4	9	e.	C. B. Crosno.
Umatilla	Umatilla	340	19	29.6	− 4.5	52	1	11	6	24	1.14	+ 0.05	0.44	0.5	7	7	1	23	e.	Mrs. H. T. Duncan.
Vale	Malheur	2,450	17	23.0	− 6.7	47	1	− 5	6	35	1.45	− 0.25	0.37	13.0	9	7	3	21	ne.	H. P. Osburn.
Wallace Orchard	Polk	170	....	35.2	.....	58	12	17	6†	21	4.81	.....	0.66	16.0	13	10	11	10	.....	Chas. A. Park.
Wallowa	Wallowa	2,935	6	18.0	.....	42	13	−10	21†	30	1.42	.....	0.33	14.0	10	5	4	22	sw.	L. J. Coverstone.
Warmspring	Crook	1,600	7	24.0	.....	54	1	− 8	6	35	1.93	.....	0.65	23.5	5	13	10	8	nw.	Claude C. Covey.
Weston	Umatilla	1,800	19	26.1	− 8.4	48	30	3	3†	29	2.83	− 0.15	0.55	12.5	10	0	5	26	ne.	M. A. Baker.
Williams	Josephine	1,368	17	36.2	− 3.7	56	12	15	22	32	4.92	− 0.86	2.22	1.7	11	10	1	20	sw.	J. M. John.

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

TABLE 2.—*Daily precipitation for December, 1909. District No. 12, Columbia Valley.*

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	
Montana.																																	
Anaconda	Missoula	*	.13	.10		*	.08	T.		T.		T.	T.	T.			.05	T.	*	.05							T.				*	.15	0.56
Bison Mountain	...do																																
Columbia Falls	Flathead								.20	.40	.30		.72													.60	.30		.10				2.62
Como	Bitter Root					.03	T.	.01					.13																			.13	0.30
Darby	...do													.55					T.												T.	.45	1.00
Dayton	Flathead																																
East Anaconda	Missoula	.20	.07			.05		T.		T.			T.	T.			.07		.01	.02	T.						T.				.06	.16	0.64
Fortine	Flathead							T.	.15	.38	.07	T.	.10	.03		.01	T.		T.	T.	T.			T.	.07	.15	.06	.07			.07	.06	1.22
Hamilton	Bitter Root					.17		.04					.01																		.11		0.33
Hat Creek	Missoula	T.	.01							*	.05					*	.18	.08	*	.09												.50	0.91
Jocko	Flathead																																
Kalispell	...do							.04	.12	.28		.02	.12					.06					.02	T.	.01	.30	.02	T.			.02	T.	1.01
Lost Creek	Missoula																																
Missoula	...do	T.				T.		T.	.02	.03	T.		.02	T.			.01	T.		T.				T.		T.	T.					.03	0.11
Ophir	...do									.18			T.				.12	.28	T.	.07								T.				.25	0.70
Ovando	...do																																
Philipsburg	...do	T.		T.		.05	T.	T.		T.	.20						T.	.08		T.	T.											.06	0.39
Pipestone Pass	...do		.39							.12	.11				.09				T.	.11												.01	0.83
Plains	Columbia								T.	T.			T.													T.					T.		T.
Pleasant Valley	Kootenai							*	.32			.16														.02					.03		0.53
Polson	Flathead										.22														.10						.05		0.37
St. Ignatius	...do	T.	T.	T.				.03	T.	.07	.14		T.				.02	.14	T.	.03		T.				.08	T.					.02	0.53
St. Regis	Missoula								T.	.26			.30																		T.	.01	0.57
Saltese	...do							.26	.15	.36			.47	.36																	.76		2.36
Snowshoe	Kootenai	.05	.09	.01				.08	.32	.82	.07	.08	1.38	.11												.16	.01				.34	.74	4.26
Troy	...do		T.							.35			.60														.20				.32		1.47
Upper Lake McDonald	Flathead								.34	.27	.28		.65				.12	.52	T.	T.				.22	.09			.24	.02				2.75
Woodville	Missoula		.03								.11			.03				.03	.10	.04												.05	0.39
Wyoming.																																	
Afton	Snake				.05	.10	.05	.05	.05	.05	.10	.05	.05	.20	.10																		0.85
Alta	...do		.35	.07	.09		.01			.05	.24			.32	.04		.05															.20	1.42
Bedford	...do		T.						.09	.35	.37			.29	.07																		1.17
Snake River	...do																																
Nevada.																																	
San Jacinto	Snake	.18	T.	T.		T.	T.																									.22	0.40
Idaho.																																	
Albion	Snake	T.	.06	.08	.01	.12	.01	.05	.08	.07	T.		.16	.01		.01	T.	T.	T.	T.				T.								.20	0.86
Almo	...do	.10	.07			.10		.10	.05	.10	.02		.02																			.19	0.75
Blackfoot	...do	.07	.15		T.	.30	T.	.05	T.	.32	T.	T.	.27			T.		T.	T.				T.	.08	T.			.02	T.			.70	1.96
Blanche	...do																																
Bogus Creek	Payette																																
Boise	Boise	T.	T.		T.	.06	.01	.13	.12	.62		T.	.27	T.		T.	T.	T.	T.	T.			.06	.05	T.	T.			T.		.12	.09	1.53
Bonanza	Salmon																																
Bonners Ferry	Columbia		T.				.07	T.	.29	.12	.14	.62														.07	T.	T.			.32	.30	1.93
Boulder Mine	Boise		.09	.15		.77	.41	.07	.37	1.71	.10	.63											.17								.15		4.62
Buhl	Snake																																
Burke	Columbia		.09						T.	.52	.12	.06	.66				.24									.12	.04				T.	.85	2.70
Caldwell	Boise					.02		.20	.35	.37			.21										.04	.08							.11		1.38
Calls Ranch																																	
Camas	Lost River Region		.12	T.	.01	.03	.06	.01	.05	.02	.01			.02	.05	T.					T.	T.	T.		T.			T.	T.			.10	0.48
Cambridge	Snake					.80		.02	.60	.80		T.	.85									T.	T.	T.	T.						.05	.55	3.67
Chesterfield	...do																																
Clawson	...do		.03			.01				.02			.50																			.02	0.58
Coeur d' Alene	Columbia																																
Culdesac	Clearwater		.04	.07		.04																									.04		0.19
Dent	...do		.24					.09	.03	.34	.02	.39	.23	.12												.06	.04				.01		1.57
Driggs	Snake	.02	.10	T.	T.	.09		.04	.01	.06	.07		.13	.10	T.		T.							T.								.34	0.96
Edle	Lost River Region		T.			T.		.12	T.	.10		T.	T.				T.															.20	0.42
Emmett	Payette					T.		.19	.21	.65	.15		.15	.22									T.	.11								.14	1.82
Forney	Salmon												.43																			.35	0.78
Gilbert	Clearwater																																
Glenns Ferry	Snake		.04			.05		.69	.28	.59			.50											.04							.07		1.66
Grand Forks	Columbia								.04	.12	.12		1.20	.40													.09				.19	.47	2.63
Grandview	Snake																																
Grimes Pass	Boise		.05		.44	.14	.26	.20	.97	.84		.15	.54																				3.59
Guffey	Snake		T.			T.		.01	.90	.11			.21	.05						T.			T.	T.							T.	T.	1.28
Hailey	Wood-Malad			T.		.20	T.		.22	.95	T.		.10	T.								T.	T.								.11	.88	2.46
Henry	Snake																																
Hotspring	...do	T.				T.		.03		.50			.12							T.			T.								T.		0.65
Idaho City	Boise					.36		.10	.20	1.73			.60																			.26	3.25
Idaho Falls	Snake		.25			.30			.29		.06					.04								.19		.02			.02				1.17
Indian Valley	...do					.90	.25	.90	.10	.30		.40	.90											.65	.08						.81		5.29
Irwin	...do																																
Kellogg	Columbia		.10					T.	.04	.26	.20	T.	.31	.37										T.			.17				.20		1.65
Kooskia	Clearwater		.20			T.		.01	.10	.30		.05	.35	.03	.07												.02					.30	1.43
Lake	Snake	.10							.10	.10		.10		T.		.20	.60																1.20
Lakeview	Columbia		.05						.10	.25	.05		.45													.15					.05		1.10
Landore	Snake		.03	.06		.22	.06	.04	.17	1.07		.07	.43	.24									.05	.01	T.	.04					.09	.52	3.10
Lardo	Payette																																
Lewiston	Clearwater		.16	T.		.03	.03	.04	.06	.23		.03	T.						.01							.01	T.				T.	.03	0.63
Little Camas	Boise			.03		.72		.40	.20	2.00	T.		.46	.07			T.	.01					.07	.07							.28	.10	4.41
Lost River	Lost River Region																																
Lowry	Owyhee																																
Mackay	Lost River Region							T.	T.			.16		.17																		.23	0.56
Meadows	Salmon					.09	.05	.15	.17	.35	.21	.14	.72	.03					T.	T.			.03	.04								.64	2.62
Milner	Snake	T.	.02	.02		.03	.02						.02				T.														T.	T.	0.11
Moscow	Columbia	T.	.22	T.		.10	.05	.06	.04	.32		.05	.52	T.				T.						T.		.05	T.					.06	1.47
Mountainhome	Snake					.01		.11	.26	.93			.39											T.							T.	.14	1.84
Murtaugh	...do	.07	.02	.04	T.		.07	.08	.18	.06	T.			.33																			0.85
Nez Perce	Clearwater	.18					.19	.16					.22																				0.75
Oakley	Snake	.05		.10							.10		.03	.02			.05															.10	0.45
Orofino	Clearwater		.15			.04		.03	.08	.50	.02	.12	.25	.14												T.	.07					.14	1.54
Payette	Payette					.08		.29	.26	.30		T.	.38	T.						T.			.01	.02							T.	.18	1.52
Pebble	Snake	T.	.21		T.	.30		.10		.55	.14		.40	.29										.04	T.							.75	2.78
Pierson	Salmon		.40					.60	.40						T.																	1.04	2.44
Pleasant Valley	Boise																																
Pocatello	Snake	.08	.19	T.	T.	.05	.01	T.	T.	.20			.02	.09		T.	T.	T.	T.	.01	T.			T.	.01			T.	T.	T.	.02	.21	0.89
Pocatello Nursery	...do																																
Poplar	...do		.31	T.	T.	.12	.14	.11	T.	.19	.10		T.	.05	T.	.11	.16	T.				T.					.15					.32	1.76
Poplars	Boise					*	*	*	*	.70			.22								*	*	*	.08							.13		1.13
Porthill	Columbia								.15	.25		.08	.57													.08		.02			.40		1.55
Pyle Creek	Payette		T.			.63	.07	.36	.64	1.55		T.	.73										T.		T.						.43	.10	4.21
Rupert	Snake	T.	.08	T.	T.	.15	.07	.06	.15	.28	T.		.24	T.			.03	T.	T.	T.				T.	T.					T.		.16	1.22
St. Maries	Columbia																																

TABLE 2.—*Daily precipitation for December, 1909. District No. 12*—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	
Idaho—Cont'd.																																			
Salem	Snake																																		
Salmon	Salmon					T.	.04	.08	.04	T.	T.	.02	.21	.19			T.			T.								T.				.27	0.85
Salmon River Dam	Snake	T.		.11		T.	.08	.02	T.	T.			.26				T.	T.			.02			T.							T.	.10	0.59
Sheep Hill	Boise						.73	.60	.45		2.65			.58											.14							.73	5.88
Silver City	Owyhee		.02		.13	.46	T.	.32	.85	.61	.01	T.	.26	.13						T.	.05	.05	.06	.01	T.	T.				.08	.18	.22	3.44
Soldier	Wood-Malad			.15		1.00		.15	.20	1.00			.30																		.50	.25	3.55
Standrod	Snake	T.	.24	.05		T.	.01	.07	T.		.03		.14	.07						T.	.02	T.										.11	0.74
Sugar	...do	.05	.06		.10		.15	.10	.10	.10		.10	.20		T.	.05	T.	.20					.15	.10	T.			.10			.50	.10	2.16
Sunnyside	...do	T.			T.		.10	.10	.86	.03	T.		.27							T.	T.	.10	.10									.10	1.66
Tilden	...do																																		
Twin Falls	...do	.03	.05	.07	.05	.05	.24	.11	.22	.28			.22	.04				.04						.04							.09	.10	1.63
Vernon	...do	T.			T.	.10	.30	.05	.08	.20	.05	T.	.28	.05		T.			.01				T.	.10	.08			.10	.18			.45	2.03
Wallace	Columbia	T.	.08			T.		.04	.06	.47	.03	.07	.71	.26			T.	T.	T.					.02	T.	.05	.05				.20	.47	2.51
Warfield	Wood-Malad																																		
Wendell	Snake																																		
Washington.																																			
Aberdeen	Coast	.61			.05		.40	.61	.30	.90	.51	3.07	1.05												.05	.46					.56	.11	8.68
Anacortes	Puget Sound																																		
Baker	...do		.05					.10	.62	.71	.56	1.01	2.19	.58												.30					.38	.40	6.90
Bellingham	...do	T.	.04								.30	1.45	.23													T.					T.	T.	2.02
Blaine	...do	.16	.10					.03	.24	.37	.06	1.75	1.53	.07												.05					.12		4.48
Bremerton	...do	.08	.07					.21	.18	.46	.21	.66	*	2.02	.02													.44				.43	4.78
Cedar River	...do	.12	.18					.02	.08	.04	.12	1.32	1.42	.09											.05	.02					.84		4.30
Centralia	Coast	.48	T.		.08		.20	.40	.53	.12	.82	1.09	.73												T.	.55					.63		5.63
Cheney	Spokane																																		
Chopaka	Okanogan																																		
Clealum	Yakima	.11						.33	.30		.11	*	1.20	.03												.11					.20		2.39
Clearbrook	Puget Sound	.17						.10	.26			.18	2.94	.30																			3.95
Clearwater	Coast																																		
Colfax	Palouse																																		
Colville	Volumbia			T.				.15	.20	.76		.15	.40													.10					.15		1.91
Conconully	Okanogan				.10	T.	T.	.42	.15	.46	.21	.35	.11												T.				T.				1.80
Coupeville	Puget Sound																																		
Crescent	Spokane			.23					.26	.13	.44	.51																			.13		1.70
Davenport	Columbia				.02			.01	.04	.50		.06	.15											.03		T.							0.81
Dayton	...do		.25		T.	T.		.09	.10	.26		.18	.19														.11				.57		1.75
Detroit	Puget Sound	.11	.21					.84	.49	.08	.40	1.71	2.58													.46					.69		7.57
Dixie	Columbia		.70			.30	.40	.14	.35	.54	.25	.10	.70	.40										T.	T.		.15					.80	4.83
Duckabush	Puget Sound				T.	T.	.05	*	2.08	1.54	.32	2.23	2.62													.03				1.04			9.91
East Sound	...do																																		
Ellensburg	Yakima		.08					.17	.36			.26												T.	T.	.21					T.		1.08
Ephrata	Columbia																																		
Forks	Coast																																		
Fort Simcoe	Yakima		.12		.20	.15		.40	.20			.80														.15						.30	2.12
Goat Lake	Puget Sound	.80	.40						.10	.20	.60		2.30	2.75																	.32	1.23	8.70
Gold Creek	Yakima	.05			.10		*	*	.75			.30														.15					.60		1.95
Goldendale	Columbia	.05	.15		.10	.20	.50	.70			1.05													.30		.20	.10				T.		3.35
Granite Falls	Puget Sound	.25	.05					T.	.15	.24	.04	.50	1.56	.41	T.											.36	.01				.56	.03	4.16
Hatton	Columbia	.34						.15		.33		.04				T.	T.						T.	T.		.03					.01		0.90
Huntsville	...do		.26			.15		.44		.12		.14	.30													.05					.05	.47	1.98
Irene Mountain	...do							.03	.05	.43		.06														.07							0.64
Kennewick	...do		.30						.40			.10				T.			T.					T.				.10				.03	0.93
Kettle Falls	...do							.05	.65			.10	.51													.06				.18	.03		1.58
Kiona	Yakima		.07		T.			T.	.40	.46		.18																				.20	1.31
Kosmos	Columbia	.30	.12		.10		.10	.30	.31	.28	.30	1.20	.90	.07												.20					.94	.08	5.20
La Center	...do	.17			.18		.18	.03	.83	.15	.01	1.43	.58												.02						.83	T.	4.41
La Crosse	Palouse		.65			.20	T.	.05	.12	.33		.10	.27				.07	T.	T.				T.	.01	.01	.01		T.	T.	T.	T.	.40	2.22
Lake Clealum	Yakima	.25	.18				T.	.24	.33	.14	.16	.62	.46	.34												.21					.82	T.	3.75
Lake Kachess	...do	.30	.20					.50	.60	.30	.40	.80	1.85	.66												.20					1.00	.10	6.91
Lake Keechelus	...do	.70	.30					.50	.40	.40	.90	.70	1.80																	60	1.00		7.30
Lakeside	Columbia		.01					.12	.31	.34		.55	.04											T.	T.	.06					.18		1.61
Laurel	...do	.07			.05	.05	.09	.57	.82	.44	.09	1.07	.80													.30					.70		5.05
Lester	Puget Sound	.15	.55							.15	.20	.40	1.65	.25												T.					.35		3.70
Lone Tree	Coast	.21	.12		.10			.40	.50	.64	.12	2.68	1.87												.06	.30					.14	.05	7.19
Longmires Springs	Puget Sound	.53	.24	T.			.20	.35		T.	.60	.35	.80	.18											.30						1.65		5.10
Lost Creek	Columbia							.12	.18	.51		.09																			.10	.10	1.10
Lucerne	...do																																		
Lyle, (Pine Hill)	...do																																		
McCumbers Ranch	...do						.10	.20	1.00	.30		.90														.21							2.71
Mottingers	...do		.09			.12		.05	.28			.20														T.					.19		0.93
Mount Pleasant	...do	.25	.05	.01	T.				T.		.90	1.45	.30													T.					.60	.20	3.76
Moxee	Yakima							T.	.34	.16		.04													.13	.13			.02			.03	0.85
North Head	Coast	.17	.02		.06		.15	.37	.85	.30	.28	2.20	.35													.26					.20	.13	5.24
Northport	Columbia	T.							.10	.42		.02	.22												.10	.21		.07			T.		1.14
North Yakima	Yakima	T.	T.		T.	T.	T.	.03	.39	.15		.24				T.		T.						T.	T.	.06					.06		0.93
Nutland	Columbia					.17		.23	.30			.40														.27					.07	.12	1.56
Odessa	...do					T.		.10	.20	.09		.30				T.							T.		T.	.10	T.		T.	T.	T.		0.79
Olga	Puget Sound	.10	.20						.10			.87	1.20																			T.	2.47
Olympia	...do	.15	.02			.04		.45	.30	.30	.65	1.14	2.08	.10												.28					.77	.02	6.30
Omak	Okanogan							.15	.05	.50	.10	.10	.30											.07	.10	.05		T.			T.		1.42
Oroville	...do							.05	.25	.05		.20																					0.55
Peola	Snake		.16		T.	.06		T.	.05	.11		.12	.54		*	*	*	.13													.01	.12	1.30
Pomeroy	...do		.30			.10		.10	.50	.25		.10	T.														.10				.10		1.55
Port Crescent	Coast	.02	.04			T.	.01	.08	.15	.81	.62	1.97	.42													.21	.02	T.			.28	.20	4.83
Port Townsend	Puget Sound	.10	.14					.23	.38	.15		.19	.43	.18												.13					T.		1.93
Pullman	Palouse		*	*			.85	T.	.28		T.		.67			.02		T.	.01														1.83
Quinlault	Coast	.65						.63	1.30	1.04	1.00	5.00	4.00	.03			.02	.01								.55	.02			.02	.60	.21	15.08
Republic	Columbia							.09	.10	.56		.09	.05											T.		.09					.08		1.06
Rex Creek	...do																																		
Ritzville	...do		.02			.02	.28	.31	.08	.01		.34				.02							.02	.14	.06						.03		1.33
Rock Lake	Palouse		T.			T.		.02	.05	.72		.43																					1.22
Rosalia	...do		.70	.02				T.	.26	.39		.13	.26											.03	.04	.04					.05	.18	2.10
Russells Ranch	Yakima																																		
Seattle (1)	Puget Sound	.09	T.				.01	.04	.19	.01	.01	1.08	.36	.01											.10	.18					.61		2.69
Seattle (2)	...do	.06	.17					.02	.03	.25	.05	.35	1.20													.34					.70	.08	3.25
Sedro-Woolley	...do	.30							.20		.04	1.22	2.00	.48	.03	.01										.12					.14	.21	4.75
Sixprong	Columbia			T.	T.	.02		.10	.31	.04		.08	.02				.01							.01		.13	T.				.05	.05	0.82
Skagit Power Dam	Puget Sound	.55	.12					.05	.08	.41	.22	1.34	2.70	.10																	1.17	.47	7.41
Snohomish	...do	.06	.02					.10	.16	.16	.04	.17	.75	.47	.01											.36	.05				.75	.09	3.19
Snoqualmie	...do	.36	.12						.07	.23	.37	.39	1.06	.05		.01	.01	.01	.01							.02	.01				1.04	.02	4.68
Snyders Ranch	Columbia	T.	.10		T.	.11	.05	.19	.40	.24		.61	.40													T.		T.			.15		2.25
South Bend	Coast																																		
Spokane	Spokane	T.		.06		T.		.14	.23	.46	T.	.21	.17					T.	T.					T.		.06			T.	T.	.19	.04	1.56
Stehekin	Columbia																																		

TABLE 2.—*Daily precipitation for December, 1909. District No. 12*—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.
Washington—Cont'd.																																	
Stokes Ranch	...do				.06			.20	.30	.33		.53	.63																		.25		2.30
Sullivan Lake	Pend Oreille																																
Sumner	Puget Sound	.17	.32					.03	.18	.14	.27	.79	.69													.29					.66		3.54
Sunnyside	Yakima	.05	T.		T.			.18	.40			.07												T.		.11							0.81
Tacoma	Puget Sound	.54	.62				.07	.06	.31	.13	.09	1.29	.87												.07	.22					.68	T.	4.95
Tatoosh Island	Coast	.03				T.	T.	.78	.57	.36	.34	3.05	.36											.15	.48	.20					.30	.15	6.77
Tieton	Yakima		.02		.04	.95		.61	.84		T.	.54	.01							T.					.02	.04					.39		3.46
Touchet	Columbia	.28				.28		.20		.40		.09	T.				T.						T.	T.	T.	T.	T.				T.	.19	1.44
Touchet Ridge	...do	.80	.60			.20			.25	.30	.25	.75																			1.02		4.07
Trinidad	...do					T.	.50	.20				.20													T.	.10					T.		1.00
Twisp	...do																																
Tyee	...do						*	*	*	.87		*	1.71													.08				*	*	.74	3.40
Vancouver	...do	.16			.08	.16	.02	.44	.72	.32	T.	1.27	.53													.16					.64	.02	4.52
Vashon Island	Puget Sound	.08	.11	T.				.04	.24	.07	.12	1.10	1.53	T.												.36	.01				.63	T.	4.29
Wahluke	Columbia					.20	.10																										0.30
Wallace	Okanogan							.60	T.	.35		.43								.05								T.					1.43
Walla Walla	Columbia	.09	.43		.03	.21	.19	T.	.14	.19	T.	.20	.12							.01			T.	.01	T.	T.	T.				.17	.28	2.07
Waterville	...do				T.	.05		.60	.35	.30		.55												.05	.05	.10					.10		2.15
Wenatchee (near)	...do				T.	.25	T.	.27	.43	.20		.23	.03											T.	.01	.10					.09		1.61
West Branch	Spokane																																
Wilbur	Columbia			.05				T.	.65	.40			T.											.10						T.	T.		1.20
Yale	...do	.55	.20	.05	.17			.15	.15	.80	.60	2.30	1.05												T.	.20				.10	.25		6.57
Zindel	Snake													.03	T.	.15	.30															.05	0.53
Oregon.																																	
Albee	John Day																																
Albany	Willamette		.10			1.10		.30	.40	.88	.06	.54	.60	.02												.24					.12	.40	4.96
Ashland	Rogue	.01	.03	T.	.21	.12	.01	.25	.06	.29	.04	.07	.10	T.												T.					.26	.53	1.98
Astoria	Columbia																																
Baker City	Snake	T.	T.		.13	.07	.30	.07	.17	.02		.13	.40						T.	.02	T.	T.	.01		T.	T.					.01	.31	1.64
Bay City	Coast.	.62	.34	.02	.12		.01	.35	.75	1.15	.62	1.58	.98	1.10												.46					1.10	.44	9.64
Bear Creek	Deschutes				.33		.10		.29			.31														.24						.08	1.35
Beaver Creek	...do																																
Bellfountain	Willamette	.13	.10		1.00	.69	.34	.49	.80	.66	.15	.46	.49	.02												.57					.72	.08	6.70
Bend	Deschutes																																
Big Basin	John Day		T.		.20	.20			.50			.20	.30						T.														1.40
Birch Creek	...do	T.	T.	T.	.25	T.		.80	.29	.21		.50	T.												T.						T.		2.05
Black Butte	Willamette			.05	.90	1.00	.25	.25	1.40			.25	.30	.10	T.															.40	1.25		6.15
Blalock	Columbia									.68		.35														.20	T.					.11	1.34
Blue Mount Sawmill	Umatilla		1.13	1.32		.24	.05	.34	.13	.35	.07	.50	.56	.40												.07					.04	.50	4.30
Buckhorn Farm	Rogue River																																
Butte Falls	...do	.01	.05	T.	.03	.76	.04	.45	.03	.48	.06	.71	.30	.02												1.52					.69	.17	5.32
Cableville	Snake																																
California Gulch	Umatilla		.48	.20		.20	.10		.65			.30																				.48	2.41
Canyon City	John Day		.06			.11	.10		.20	.32		.25	.10	.03						T.			T.		T.	.02					.12	.07	1.38
Cascade Locks	Columbia	.58	.09		T.	.10	.07	.05	.05	.10	.06	1.18	.71	.03											T.	.10					.72	.41	4.25
Cascadia	Willamette	.14	.21		.18	.25	.16	.32	.28	.52		1.02	.39	.20												.26					.62	.78	5.33
Casadero	...do	.19	.06		.09	.05	.02	.40	.20	.41		1.10	1.01	.05												.06					.81	.64	5.09
Columbia Mine	Snake		.45		.10	1.20		.70	.80	.62		.55	.65	.05								.10			.10	.10					T.	.60	6.09
Condon	John Day																																
Coquille River L. H.	Coast		.15		.71	.09	.60	.20	1.07	.70	.20	.05	.90												.12						.82	.51	6.13
Cornucopia	Snake			.02		.59	.05	.58	.95	1.04		.39	1.02	.03									.03	T.	T.	.08					.15	.38	5.31
Corvallis	Willamette																																
Cracker Creek	Snake		.30		.10	1.00	T.	.50	.70	.50		.60	.50							T.		T.	T.		.20						T.	.40	5.00
Crescent	Deschutes																																
Dayville	John Day	T.	T.		T.	.08		.06	.42	.25		.14	.02								T.										T.	.12	1.09
Doraville	Columbia	.12	.03		.11	.19	.02	.35	.43	.37	.44	1.56	.85	.08											.05	.15	T.				.97	.23	5.95
Drain	Umpqua	.10	.04		.60	.26		.42	1.02	.08	.47		.45													.37					.62	.25	4.68
Duncan	Umatilla		.25	.30	.45	.50	.50	.40	.38		.50			1.20																			4.48
Echo	...do		.17			.30			.26	.08		.18												T.								.21	1.20
Elkhorn Ranch	Coast	.06	.51		.90	.71	.35	1.33	.79	1.65	.32	.79	1.43	.12												.82	.02				1.92	.60	12.32
Ella	Columbia		.05				.50	.20	.30	.10		.10															.10						1.31
Embody	Deschutes				.30	.60		.10																									1.00
Eugene	Willamette		.11			.27		.64	.24	.78	.01	.39	.35	.01												.05	.07				.10	.58	3.60
Eugene (River sta'n)	...do		.14			.54		.40	.24	.74	.06	.34	.48	.06												.24	.04				.04	.50	3.82
Fairview (1)	Coast	.28	.34	T.	.98	.38	.52	.46	.93	1.35	.23	.66	.80													.21				1.03	.17		8.34
Fairview (2)	Snake		.30		.10	.60		.90	.60			1.20	.40										.10	T.		T.						.20	4.40
Falls City	Willamette																																
Fir Glen	Coast	.15	.26		.56	.75	.22	.49	.36	1.25	.27	.67	.72	.04												.19					1.17	.40	7.50
Florence	...do	.16	.16		1.06	.20	.18	.77	1.45	.48	.16	.82	.97	.04												.27					.82	.30	7.84
Forest Grove	Willamette	.08		.30	.10	.20	.05			1.30	.30	1.42	.92												.15	.15						.11	5.08
Galice	Rogue	.02	.05		.80	.23	.98	.75	1.05	1.20	.29	.14	.62													1.04					.95	.17	8.29
Gardiner	Umpqua	.06	.44		.90	.29	.23	.94	1.40	.92	.30	.48	1.05	.15						.04											1.02	.20	8.42
Glendale	...do		.10		.10	T.	.20	.40	.60	.30	.20	.40	.60	T.											T.		T.				T.		2.90
Glenora	Coast	.50	1.72	.31	.28	.79	.37	1.31	1.52	.81	.60	.39	.60												.40						2.40	.70	12.68
Gold Beach	Rogue	.02	.24		1.10	.57	.68	.70	1.08	1.30	.10		1.30	.18												.64					2.09	.76	10.76
Granite	John Day		.20	T.	T.	.05	T.		.35	.22		.60	.10							T.		T.			T.						T.	.56	2.28
Grants Pass	Rogue	.01	.01		.88	.04	.12	1.03	.38	1.21	.21	.08	.22	.02	.01	T.	.01	.01							T.	.20	.01		.01		.28	.27	5.01
Grass Valley	John Day								1.06			.08																					1.14
Greenleaf	Coast	.19	.24		.72	.63	.41	1.25	.63	1.41	.46	1.47	1.57	.04												.91	.01				1.00	.46	11.40
Happy Home	Umpqua	1.10	2.04	.48	.92	.84	.21	1.94	2.14	1.75	2.49	.92	.14		.98	.54										.84	.55				1.00		18.88
Haseldell	Willamette	.05	T.		.40		.15	.22	.60	.10	.38	.52	.18												.18	T.					1.14		3.92
Headworks	...do	.32	.44		.19	.15	.15	.70	.28	.24	.03	1.43	.66	.08											T.	.38					1.03	.56	6.64
Heppner	Columbia																																
Hermiston	Umatilla		.04			.25		.20	.10	.10		.19	.02		T.	T.									T.	.03							0.93
Hilgard	Grande Ronde			.30	.15				.10		.65	T.																			.20		1.30
Hood River	Columbia					.25	.01				T.		1.00												.05	.15					.40		1.86
Howardville Station	Grande Ronde		.03			.31		.41	.40	.12		.68	.46	.03						.03				T.	.02						.02	.18	2.69
Huntington	Snake					.20		.50	.30	.04			.40									.25									.10		1.79
Ibex Mine	John Day	T.	.70	T.	T.	.55	.03	.75	.30	.98	T.	.60	.55	.03						T.	.10	.20	.20	T.	T.	.09					.03	.37	5.48
Ironside	Snake																																
Jacksonville	Rogue				.50	.40	.20	.38	.13	.86	.05	.09	.17																		.28	.52	3.58
Joseph	Grande Ronde	.10	.10	.20		.30	.60	.20	.10	.20	.10		.20	.08																			2.18
Kamela	...do			.30	.20	.05	.10	.05	.05		.05	1.10	.40																				2.30
Keeps Mill	Deschutes																																
La Grande	Grande Ronde	T.				.05	.12	.30		.03		.24	.27																			.15	1.16
Lilyglen	Rogue	.15	.16	T.	.12	.37	.13	.44	.16	.44	.03	.19	.20	T.												.04					.34	.77	3.54
Long Creek	John Day							.30	.25	.50	.20		.30																				1.55
Madras	Deschutes			.20	.20	.20			.40	.40	.40											.10			.10	.10					.10	.20	2.40
Maury	...do		.04		.42		.62	.28	.21	T.		.02	.15	T.												.01							1.75
McKinzie Bridge	Willamette	.06	.38			.53		.57	.35	.57	.05	1.03	.80	.11												.23	.03				.81	.75	6.27
McKay	Umatilla																																
McMinnville	Willamette	.04	T.		.50	.19	.23	.49	1.03	.42	.13	1.38	.72												T.	.16					.90	.08	6.27
Meacham	Umatilla		.91	.48					.20	.11		.49																					2.19
Mikkalo	John Day		T.		.05	.88		.18				.80														.21						.18	2.30

TABLE 2.—*Daily precipitation for December, 1909. District No. 12*—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.
Oregon—Cont'd.																																	
Miramonte Farm	Willamette	.03	T.		.20	.20	.15	.63	.40	.40	.02	.99	.55	T.												.19					.54	.01	4.31
Monroe	do	.07	.10		1.10	.40	.30		1.95	.80		.50	.20													.10					1.00	.09	6.51
Mountain Home	Columbia	.30	.22		.08	.15	.14	.52	.48	.18	.23	1.72	1.08	.11												.21					1.12	.28	6.82
Mount Angel	Willamette				.44	.01	.11	1.04	.40	.70		.90	.68	.07												.01	.26				.66	.35	5.63
Mount Hood	Columbia	.15			.55	.11	.70	.09	.62		T.	1.66	.24												.09	.25					.53		4.99
Mountain Park	do	.12	.11		.20	.15	.15	.95	.45	.12	.20	1.35	1.10												.09	.30					.87	.15	6.31
Mountain Ranch	Rogue																																
Musick	Umpqua	.19	.65	.08	.38	.75	.44	.19	1.10	.60	.18	.40	.80	.14												.72						1.14	7.76
Newport	Coast	.18	.15					.57	.50		.30	.47	1.10	.14												.14					.70	.17	4.42
Nigger Flat	Malheur																																
Ochoco	Deschutes	T.		.15	.18	.12	.18	.10	T.	.35	.20	.30													T.	.10						.52	2.20
Ochoco Creek	do		.10		.10	.15	.24		.22	.15		.37	.60												T.	.18						.45	2.56
Owyhee	Owyhee							.12	.30	.34			.22												.08						.15		1.21
Pendleton	Umatilla		.17			.20		.10	.05	.30		.70	.03				T.			T.			T.								.03	.33	1.91
Persist	Rogue		.21		.40	.84	.13	.27	.24	.88	.08	.83	.22	.04												.52					.38	.37	5.41
Pilot Rock	Umatilla		.07			.09		.04	.11	.23		.31	.04				.04			.05	T.			T.	T.								0.98
Pompeii	Willamette	.37	.75		.20	.10	.12	.31	.48	T.	.60	1.27	1.98	.27						T.					T.	.36					.62	.80	8.30
Portland	do	.09	T.		.31	.05	.23	.40	.78	.12	T.	1.05	.50												T.	.02					.92		4.47
Port Orford	Coast	.10	.20		1.10	.20	1.10	.40	2.30			.70	1.00	.25												.40	.10				2.00	.20	10.05
Post	Deschutes		.04		.11		.15		.17	.18		.05	.04													.07						.10	0.91
Power House	Walla Walla	T.	.57			.27		.06	.18	.32		.23	.03	.15		.05	T.			T.			T.								T.	.30	2.16
Prineville	Deschutes																																
Prospect	Rogue	T.	.17	.15	.32	.05	.10	T.	.05	.20	.82	.35														.40					.05	1.30	3.96
Range	John Day		.10	T.	.20		.20	T.	T.		.60									T.												.10	1.20
Ray Creek	Columbia		.10			.25		.13	.24	.20																					.30		1.22
Reston	Umpqua	.06	.21	.01	.47	.71	.25	.47	.23	1.10	.28	.75	.37	.03						.03						.18					1.02	.30	6.47
Richland	Snake					.50		.45		.31		.20	.15																				1.61
Riverdale Ranch	Deschutes																																
Riverside	Malheur					.40	.20	.40	.20	.08		.20										.05	.05										1.58
Rock Creek	Willamette	.12	.26	T.	.72	1.04	.63	.82	.86	1.53		1.11	1.26													.62					1.11		10.08
Roseburg	Umpqua	.06	.09		.62	.04	.19	.10	.62	.20	.02	.32	.27	.02						.01					.01	.05				T.	1.06		3.68
Rosland	Deschutes		.15		.44	T.	.70	T.	.33			.25	.45							.16	.24		T.			.13					.28	T.	3.13
Salem	Willamette	.10			.60	.48	.40	.58	.38	.46	.04	.48	.34	.01												.34					.43	.16	4.80
Seneca	Interior		T.		.05	.12	T.	.22	.27	.21		.30	.18							T.						.14					.06		1.55
Siskiyou	Rogue	.02	.05	T.	.29	.62	.32	1.45	.12	.46	.02	.10	.17	T.											T.	.13					.33	.56	4.64
Sisters	Deschutes		.09					1.55	.49			.04	.24	.05									.20			.09					.55	.05	3.35
Skyland	Willamette																																
Sparta	Snake	T.	T.		.40	.30	.20	.60	.70	T.	.30	.50	1.10										T.	T.							.20	.30	4.60
Stafford	Willamette	.09	.04		.10	.30	.20	1.67	.38	.45	.02	1.09	.93	T.												.13					.62	.06	5.48
Starkey	Grande Ronde		.30						.20			.50																				.01	1.01
Summit	Willamette	.20	.22		.45	.20	.11	.23	.86	1.01	.25	1.30	1.28	.05												.23					.78	.07	7.23
Summit Prairie	Deschutes		.06		.32	.23	.29	.10	.59			.64	.23							.04				.01		.29							2.80
Susanville	John Day		.19	T.	T.	.14		.14	.11	.20		.08	.20										.02	.04	.03	.03					T.	.20	1.38
Telocaset	Snake																																
The Dalles	Columbia	.06			.05	.35		.99	.53	.05		.53	.22							.01						.20					.10		3.09
Tin Roof Cabin	Umatilla		.90			.20	.20		.99			.40	.05							.15												.20	3.09
Toledo	Coast	.30	.20		.30		.20	1.10	1.10	1.00	.40	.70	1.30																		1.10	.30	8.00
Trask	do	.36					.85	.93		1.32	1.60	1.40	3.33													.36					2.50	.28	12.93
Umatilla	Columbia		.01		.21	T.	.09	T.	.44			.20								T.						.09					.10		1.14
Unity	Snake		T.			.35		.40	.40	.18		.50	.40							.10			T.		.20							.30	2.83
Vale	Malheur					.02		.17	.30	.33		.04	.37					.04		T.			.03									.15	1.45
Van	do					1.00		.20		.35		.17														.18							1.90
Wallace Orchard	Willamette	.14			.66	.34	.34	.31	.56	.40	.06	.49	.53													.33					.50	.15	4.81
Wallowa	Grande Ronde			T.	.02	.21		.21	.19	.08		.33	.24	.05						T.					T.	.03						.06	1.42
Walloupa	do		.09		T.	.23	.01	.24	.24	.20		.23	.48	.05																		.15	1.82
Wamic	Deschutes				.10	.74				.40	.15													.30									1.69
Warmsprings	do					.50	.65	.25	.35																	.18					T.		1.93
Wasco	Columbia	.10	.08			.40	.45	.15	.40			.30	.05													.20					.07		2.20
Welches	Umatilla																																
Wenaha Springs	do																																
Weston	Walla Walla	T.	.55			.50	.21	.10	.15	.25		.10	.55	.02																		.40	2.83
Willamina	Willamette																																
Williams	Rogue	T.	T.		.10	.20	.14	2.22	.14	.65	.26	.03	.24																		.24	.70	4.92

TABLE 3.—*Maximum and minimum temperatures at selected stations for December, 1909. District No. 12, Columbia Valley.*

Date.	Montana.						Idaho.																					
	Kalispell.		Missoula.		Afton, Wyo.		Boise.		Bonners Ferry.		Hotspring.		Lewiston.		Mackay.		Meadows.		Pocatello.		Salmon.		Shoshone.		Vernon.		Wallace.	
	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...	34	19	34	25	36	10	40	30	38	26	47	30	46	29	35	13	42	22	38	28	39	19	38	25	35	17	35	25
2...	27	16	29	17	24	− 2	34	26	35	20	40	27	35	31	26	11	31	17	34	16	32	21	35	23	32	10	32	22
3...	20	10	20	12	16	− 7	32	21	34	22	34	22	31	23	15	9	18	12	16	− 4	26	11	27	15	17	−10	24	16
4...	22	6	17	6	12	4	31	18	32	1	34	16	30	20	18	− 4	22	9	19	− 2	17	0	22	13	8	− 8	18	9
5...	15	5	12	9	20	3	35	24	24	9	37	23	31	26	16	2	29	19	29	19	22	5	26	15	21	1	19	16
6...	12	0	11	2	22	3	33	12	20	3	30	21	28	21	25	6	22	6	25	12	24	0	25	12	19	7	19	11
7...	13	1	14	5	23	4	38	28	27	9	35	23	38	27	24	2	28	13	32	20	31	5	27	12	23	1	20	12
8...	21	12	21	12	37	17	49	30	28	22	38	31	39	27	31	9	35	25	39	23	31	19	36	25	31	21	33	19
9...	31	13	31	19	38	30	49	32	32	20	48	31	40	31	25	15	37	32	40	30	39	24	36	31	35	27	34	29
10...	37	22	38	25	37	14	49	29	35	27	47	30	38	30	23	13	33	16	30	24	37	23	33	17	35	13	36	28
11...	33	27	32	18	24	4	35	25	39	29	39	26	45	29	25	3	29	9	28	10	27	5	25	0	20	7	37	25
12...	40	29	38	28	24	4	39	31	36	26	.....	.....	55	39	25	11	33	25	35	25	31	22	28	17	24	13	39	32
13...	41	30	38	34	32	12	32	26	39	28	45	30	47	33	34	11	32	26	35	23	33	13	29	19	26	20	36	33
13...	33	29	36	28	30	7	36	24	38	28	37	24	46	33	25	19	29	9	29	22	30	2	29	16	23	19	36	32
15...	32	27	33	25	16	−15	28	25	33	27	32	26	40	36	22	− 4	24	10	23	18	23	− 7	23	12	19	10	34	31
16...	35	22	35	25	23	−11	27	22	34	26	30	21	38	34	29	− 2	28	5	23	8	24	4	19	13	15	0	35	30
17...	26	23	30	23	10	−22	26	22	29	20	30	24	35	32	15	− 3	27	15	13	0	28	0	19	10	6	−17	32	28
18...	26	20	29	26	12	−28	27	23	32	18	28	22	34	31	20	− 5	22	14	16	2	23	− 4	17	12	13	−19	29	26
19...	25	9	32	22	13	−12	29	21	33	8	29	19	38	26	15	− 5	21	16	18	4	30	2	19	10	13	− 4	28	11
20...	22	4	28	16	10	−17	29	19	29	5	29	15	38	21	18	− 9	21	− 6	19	0	15	−14	22	10	18	−14	24	12
21...	18	− 2	23	6	11	−15	26	16	28	0	29	13	33	20	20	− 4	7	−15	22	3	11	−19	20	10	16	− 6	22	11
22...	16	2	21	2	14	−10	28	19	24	− 2	30	13	27	16	20	− 3	16	− 4	24	5	13	−18	22	2	20	− 4	21	7
23...	15	2	20	1	20	− 4	24	15	24	0	29	16	29	24	18	− 8	15	− 1	20	5	10	−17	20	4	20	1	18	6
24...	16	2	24	2	12	−11	25	15	33	6	28	10	34	24	28	− 9	21	0	21	2	11	−19	18	2	15	− 6	22	11
25...	16	2	21	9	24	−14	30	21	19	2	36	20	36	30	32	−11	29	16	26	2	21	− 7	27	13	21	− 7	30	19
26...	18	7	35	17	22	8	28	17	23	15	35	15	34	30	30	− 3	31	21	29	8	30	7	27	1	22	8	28	26
27...	22	8	37	14	26	12	31	14	24	17	33	16	34	25	28	0	22	4	27	15	29	1	23	12	19	− 2	27	18
28...	24	15	23	7	27	7	26	14	25	17	29	15	34	23	26	− 2	21	− 5	24	7	22	−11	24	14	20	0	29	11
29...	21	15	32	9	15	−18	29	17	30	20	30	24	43	23	22	− 3	23	6	28	1	20	− 9	23	5	19	−10	28	14
30...	38	10	35	11	23	−12	45	14	35	15	32	14	39	32	25	− 2	19	3	36	2	19	−10	29	8	21	− 6	41	21
31...	38	14	47	26	34	12	47	26	35	19	50	30	41	28	32	13	31	18	40	33	33	6	39	27	36	21	36	24
Mns	25.4	12.9	28.3	15.5	22.2	−1.5	33.1	21.8	30.2	15.6	35.0[a]	21.6[a]	37.3	27.5	24.1	1.9	25.7	10.9	27.0	11.6	25.2	1.7	26.0	13.1	21.4	2.7	29.1	19.8

Date.	Washington.																											
	Aberdeen.		Blaine.		Colville.		Kosmos.		Lakeside.		North Head.		North Yakima.		Odessa.		Port Crescent.		Seattle.		Sixprong.		Spokane.		Tacoma.		Tatoosh Island.	
	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...	41	33	43	36	39	25	34	33	36	32	44	38	45	25	40	26	41	32	41	35	45	29	38	28	40	33	43	38
2...	35	30	39	29	35	21	33	31	39	28	43	32	44	28	35	26	35	28	39	31	40	30	33	27	38	32	39	34
3...	36	25	30	24	35	18	36	19	29	11	43	30	35	20	31	15	33	22	32	27	35	24	27	16	33	24	34	31
4...	31	26	32	18	30	12	28	19	24	18	31	28	25	15	30	12	32	22	33	26	31	15	24	11	32	22	36	32
5...	36	26	36	20	24	11	34	24	28	22	40	26	28	23	24	13	34	27	36	30	27	19	23	17	33	29	36	32
6...	34	28	32	20	23	4	31	18	25	17	33	30	25	15	29	9	34	22	36	29	24	12	22	11	35	26	37	31
7...	41	28	36	27	22	10	33	25	33	20	44	30	28	20	23	13	42	30	40	32	24	20	22	17	40	32	44	32
8...	39	34	39	32	27	20	36	18	24	19	47	37	28	11	30	18	42	33	43	36	27	20	30	22	40	32	47	37
9...	41	33	47	35	30	23	56	31	35	23	45	42	31	22	40	24	45	32	48	39	39	20	33	22	47	37	47	38
10...	46	35	45	40	35	28	36	32	33	22	47	42	32	17	42	20	46	35	45	39	40	20	37	19	46	39	47	40
11...	50	38	46	36	35	31	38	32	31	26	49	41	35	17	40	21	45	36	50	40	36	24	38	19	56	37	50	40
12...	52	37	50	41	40	33	42	37	38	28	50	42	48	31	43	23	50	42	52	44	47	31	45	38	54	44	49	43
13...	41	31	46	41	38	32	43	35	34	22	46	34	44	23	45	25	46	31	45	41	46	34	38	33	46	40	45	40
14...	43	30	43	35	35	31	38	28	31	20	54	37	37	18	33	27	41	30	42	37	40	30	34	30	42	35	44	40
15...	45	29	38	32	36	30	48	27	28	20	52	36	26	17	33	28	43	34	39	35	32	28	33	28	38	35	46	40
16...	45	35	37	31	31	27	33	24	31	23	56	36	26	20	35	25	52	32	38	35	28	24	35	28	38	33	47	42
17...	44	32	35	28	34	27	33	23	28	24	52	36	28	24	36	27	40	32	36	32	29	25	31	27	36	30	46	38
18...	37	30	36	29	31	26	33	21	26	23	37	35	28	23	35	24	38	34	36	33	28	25	29	26	35	29	42	37
19...	43	30	38	30	32	20	31	27	28	21	45	31	34	25	33	21	44	29	41	31	33	26	34	24	41	31	45	39
20...	46	26	39	24	31	2	30	19	24	16	48	32	38	18	29	20	39	27	42	30	36	26	32	19	41	29	44	40
21...	41	21	37	21	22	− 2	30	21	22	13	44	30	31	12	27	14	40	26	43	27	27	16	28	12	43	26	41	36
22...	40	18	36	18	18	− 5	30	15	18	10	42	28	24	5	23	9	38	22	38	26	26	19	20	6	39	23	41	36
23...	34	20	32	20	12	− 6	30	14	15	9	36	31	22	8	24	12	37	27	35	25	25	19	22	14	34	19	39	33
24...	38	27	38	26	14	− 5	38	16	20	6	39	34	24	14	24	13	39	28	41	28	25	15	23	13	40	22	38	33
25...	37	32	35	30	24	7	38	32	28	16	40	35	32	22	31	18	37	33	37	33	27	20	25	22	37	33	40	35
26...	45	32	39	28	23	3	42	31	25	16	46	34	30	9	30	16	39	34	40	32	30	20	26	22	40	29	42	38
27...	37	32	34	20	23	11	33	20	24	17	47	34	24	6	30	15	38	32	35	31	26	14	27	22	35	29	40	37
28...	39	30	32	24	24	19	31	18	23	17	48	34	23	20	25	20	40	31	34	29	26	20	27	24	33	30	41	37
29...	40	28	31	23	24	20	32	20	23	18	52	36	23	18	30	17	41	31	42	28	24	19	28	18	40	27	48	38
30...	49	32	45	31	24	10	37	28	22	16	49	39	28	18	33	18	42	33	46	36	30	19	42	16	46	34	47	39
31...	38	28	38	24	34	17	37	27	25	16	40	31	35	16	34	23	42	30	40	33	38	26	36	22	40	32	42	34
Mns	40.8	29.5	38.2	28.2	28.5	16.1	35.6	24.7	27.1	19.0	44.8	34.2	31.0	18.1	32.2	19.1	40.5	30.2	40.2	32.6	32.0	22.2	30.4	21.0	39.9	30.7	42.8	36.8

TABLE 3.—*Maximum and minimum temperatures at selected stations for December, 1909. District No. 12*—Continued.

Date.	Walla Walla, Wash.		Oregon.																					
			Ashland.		Baker City.		Eugene.		Gold Beach.		Hermiston.		Marshfield.		Portland.		Prineville.		Roseburg.		The Dalles.		Vale.	
	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	45	33	44	36	36	25	51	35	57	37	51	29	51	35	44	37	.....	22	44	33	45	28	47	21
2	34	19	37	30	30	21	46	33	48	35	39	29	47	34	41	33	.....	24	42	30	45	31	39	25
3	24	13	34	23	24	16	41	27	48	31	28	20	44	29	34	27	.....	13	35	26	39	25	35	20
4	17	8	35	23	23	11	38	26	58	29	26	13	43	30	30	24	.....	11	39	28	39	24	30	12
5	26	15	36	28	27	15	37	26	49	38	29	13	44	39	31	27	.....	4	40	31	31	22	33	25
6	19	9	37	22	23	0	34	24	50	31	25	−4	41	31	32	25	.....	−8	43	29	27	10	30	−5
7	24	14	45	32	30	22	41	24	56	46	31	16	50	36	33	28	.....	9	47	40	30	22	31	20
8	27	21	54	33	37	22	42	33	58	44	31	16	57	42	36	32	.....	6	56	40	28	22	38	27
9	42	26	54	34	39	19	55	32	59	39	43	24	45	40	46	34	.....	30	46	34	31	17	45	36
10	42	37	38	31	29	12	44	37	58	38	42	14	51	35	48	41	.....	16	48	33	35	18	36	15
11	53	37	46	34	29	14	51	37	55	46	36	15	55	42	57	39	.....	16	53	38	38	24	37	14
12	55	43	50	36	33	28	56	44	58	49	52	37	54	52	58	42	.....	36	58	45	41	30	35	26
13	48	36	42	34	38	14	59	38	55	44	48	30	51	42	42	37	.....	21	47	39	44	32	35	22
14	37	28	55	30	32	12	42	34	64	35	37	23	55	36	49	33	.....	13	41	38	35	22	44	11
5	29	28	49	30	22	4	41	29	65	37	32	28	59	35	45	33	.....	11	39	33	35	23	31	5
16	28	27	57	28	24	8	40	27	67	43	32	25	57	36	46	32	.....	13	36	34	34	30	32	10
17	30	28	54	32	26	18	41	27	69	38	32	22	58	38	40	30	.....	11	36	33	33	29	26	20
18	29	28	46	28	20	13	42	26	66	30	32	27	47	28	38	26	.....	10	40	30	33	28	27	18
19	29	27	44	29	22	13	30	25	49	34	34	23	45	39	41	31	.....	19	38	31	33	29	27	20
20	29	24	42	30	23	−2	35	22	51	30	33	20	49	29	44	30	.....	11	41	26	37	16	28	8
21	25	21	41	30	13	−6	42	21	52	26	31	16	45	27	37	29	.....	12	36	22	29	11	23	−2
22	25	21	39	25	21	0	38	18	48	21	29	24	46	24	36	26	.....	0	36	19	31	17	27	13
23	23	19	37	19	13	−5	29	18	47	25	27	22	43	23	34	25	.....	−1	32	23	29	21	25	10
24	24	20	46	28	24	9	31	18	55	36	34	27	49	30	34	29	.....	17	38	30	30	25	24	2
25	27	22	46	38	27	19	32	29	54	44	30	23	46	40	35	30	.....	20	39	35	32	25	31	12
26	29	25	53	30	27	8	33	30	58	34	35	26	53	33	40	32	.....	7	36	32	33	20	36	14
27	25	23	48	29	27	5	33	29	57	31	30	18	54	32	37	27	.....	7	35	32	31	19	29	1
28	25	24	57	27	21	0	32	26	53	31	32	25	55	29	33	26	.....	7	34	32	31	23	24	−4
29	26	23	51	30	27	7	30	26	64	32	29	23	56	29	42	28	.....	5	45	30	30	26	28	21
30	53	21	51	35	30	11	47	27	60	45	32	21	52	33	50	30	.....	22	53	34	33	23	24	2
31	39	31	44	30	37	23	51	32	59	35	42	29	46	32	39	32	.....	20	41	29	41	26	35	19
Mean	31.9	24.2	45.5	29.8	26.9	11.5	40.8	28.4	56.4	35.9	34.3	21.4	49.9	34.2	40.4	30.8	.....	13.0	41.7	31.9	34.3	23.2	32.0	14.1