

U. S. DEPARTMENT OF AGRICULTURE.

ANNUAL SUMMARY 1897.

OREGON SECTION

OF THE

CLIMATE AND CROP SERVICE

OF THE

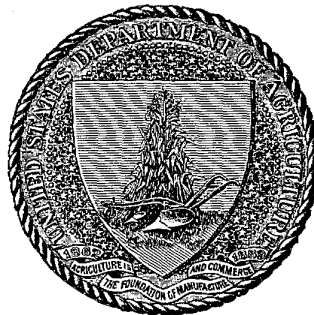
WEATHER BUREAU.

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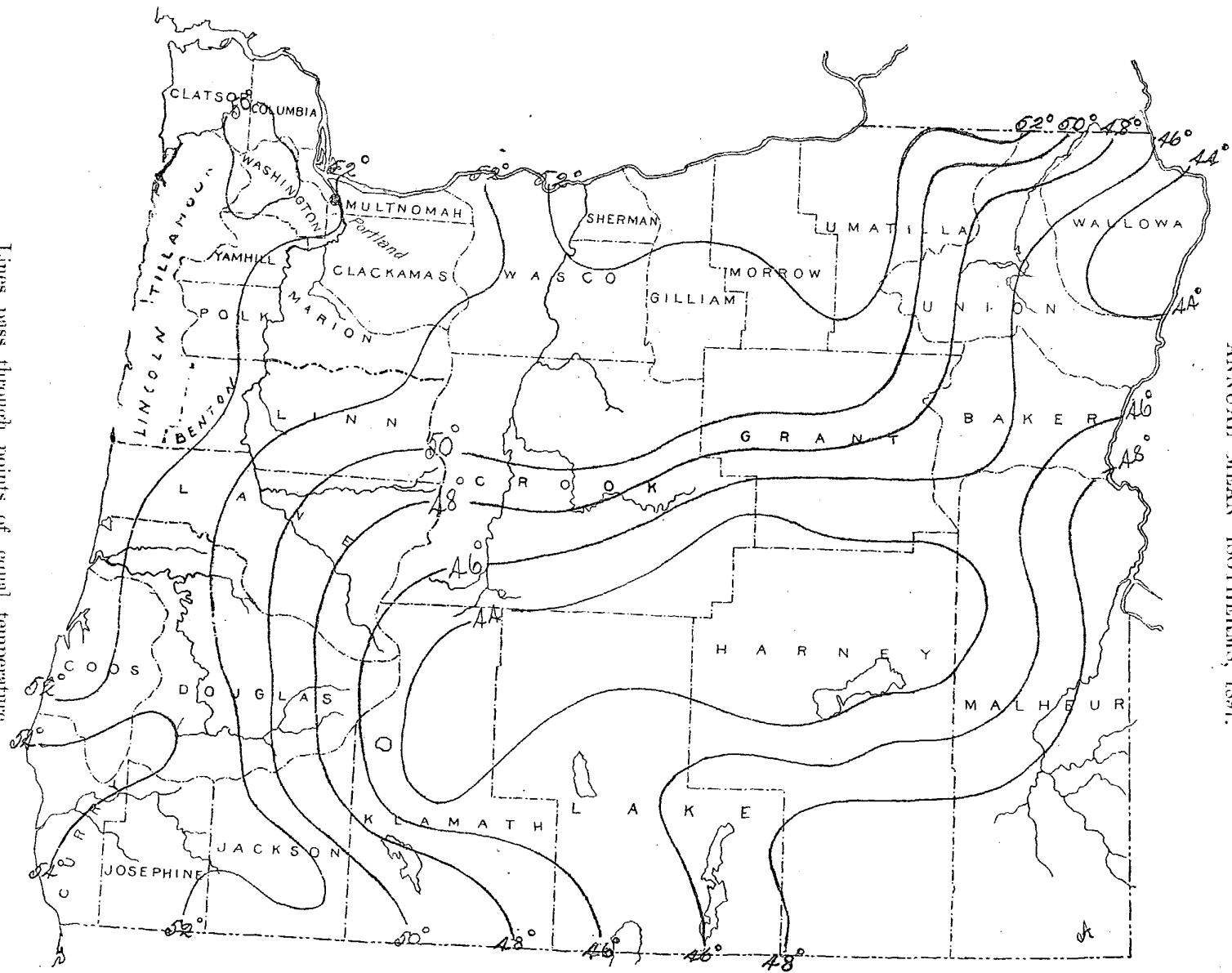
UNDER DIRECTION OF
WILLIS L. MOORE
CHIEF OF WEATHER BUREAU

BY

B. S. PAGUE,
SECTION DIRECTOR,
PORTLAND, OREGON.



Lines pass through points of equal temperature.



ANNUAL MEAN ISOTHERMS, 1897.

U. S. DEPARTMENT OF AGRICULTURE,

CLIMATE AND CROP SERVICE

OF THE

WEATHER BUREAU.

Central Office,
WASHINGTON, D. C. }{ WILLIS L. MOORE,
Chief.

OREGON SECTION,

B. S. PAGUE, Section Director,
PORTLAND, OREG.THE WEATHER
DURING 1897.

There were two especially marked features of the weather during the year. March was the coldest month on record; farming operations were suspended and no fruit blooms during the month. The other was May, which was the warmest May on record. November was somewhat marked owing to its excessive rainfall, great number of rainy days and absence of sunshine. The State is peculiarly favored in many ways, and in none more so than in the weather. As will be seen by reference to the chart of rainfall on page 11, the rains are copious along the coast and especially so in the mountain counties; to the east of the Coast Range of mountains where lie the great valleys, the Willamette, Umpqua and Rogue River, it will be seen that the rainfall for the year was not excessive, but rather that it does not equal in amount to that which usually falls throughout the States of Minnesota, Iowa, Missouri, thence eastward to the Atlantic Ocean; continuing eastward it will be seen that over the greater portion of the State to the east of the Cascades the total for the year has been 20 inches or less. Considering this statement of facts, it must be admitted that Oregon is not that rainy place that it is said to be.

On page 2, will be found the isotherms or lines of equal temperature. An examination of them will show that, as is usual, the coldest portion of the State was over the high Plateau Region in the southeastern quadrant and the warmest was west of the Cascades. The warm belt, i. e., mean annual temperature of 50°, or more includes all of the Columbia River Valley and all west of the Cascades. These two charts graphically illustrate the main weather conditions of Oregon during the year. A brief resume of the weather for each month will no doubt be found of interest and of value.

JANUARY.—Mild temperatures and a deficient rainfall were the characteristics of the month. The mean temperature for the State was 36°; the highest temperature was 72° and the lowest 14° below zero. The lowest in the farming and fruit districts was 19°. Temperatures above 56° prevailed from the 20th to 23d, due to a chinook which then occurred. Average rainfall for the State was 3.36 inches; along the coast about 10 inches fell, east of the Coast Range from 1 to 6 inches fell, and east of the Cascades less than 2 inches fell. Snow to a depth of from 1 to 4 inches fell west of the Cascades, which melted as it fell, and from 3 to 20 inches fell east of them.

FEBRUARY.—The temperature and precipitation were both slightly above the normal. The mean of the State was 40°. The highest temperature during the month was 71°, the lowest 11° below zero, which occurred over the Plateau Region. Over the farming section the lowest was from 23° to 30°. The average precipitation was 6.87 inches; along the coast 14 inches fell, between the Coast and Cascade ranges 5 inches, and east of the Cascades less than 3 inches. West of the Cascades from a trace to 4 inches of snow fell, to the east of them from 3 to 14 inches.

MARCH.—The month was the coldest on record and the precipitation was in excess of the average. The rains and

frosts were frequent and the snowfall over and east of the Cascades was heavy. As a rule, fruit trees are in bloom the early part of the month, but this year the bloom was marked by its absence. The mean temperature for the State, 38°, is 5° below the March normal. The highest temperature was 66° and the lowest 7° below zero. Over the farming sections the lowest was from 10° to 30°. The precipitation averaged 6.36 inches. Along the coast nearly 15 inches fell, in the interior valleys from 4 to 7 inches and east of the Cascades from 2 to 4 inches. The snowfall was a marked feature of the month, except at a few coast stations, every station reports snow fall. West of the Cascades from 3 to 6 inches and east of them from 1 to 4 feet fell, the larger amount being in the mountains.

APRIL.—The month was warm and dry; the changeable weather of March continued to April 10, when spring opened. The mean temperature was 52° which is 14° higher than in March. The Columbia River Valley was the warmest portion of the State and the Plateau Region the coldest. The highest temperature was 100°, the lowest 13°. Over the farming sections the lowest was 27°. The temperature below freezing occurred during the first decade. The precipitation averaged 1.84 inches, being considerably below the normal. Snow fell over the Plateau Region in amount from a trace to 6 inches.

MAY.—The month was the warmest May on record and, except in 1890, had less rainfall than any preceding May. The mean temperature averaged 59°. The highest temperature recorded during the month was 106° and the lowest was 21°. In the farming districts the lowest was 34°. Temperatures of 100° or more were reported from 3 stations and this is the first instance on record that 100° or more occurred in May, in so far as the records show. The precipitation averaged 1.29 inches, which amount is below the normal. From 1 to 2 inches fell over the coast counties and the Willamette Valley. Over Southern Oregon and in the Columbia River Valley less than an inch fell. Over the Plateau Region about 1 inch fell.

JUNE.—The month was slightly warmer than usual, showers were numerous and quite copious. The mean temperature averaged 60°. The highest reported was 94° and the lowest 19°. Over the agricultural sections the lowest was 31°. The precipitation averaged 2.15 inches and was well distributed, over one inch being reported from every station, except from Pendleton and Hood River.

JULY.—The month had a deficient temperature, a slight excess in rainfall and a total absence of hot northerly winds. The mean temperature averaged 64°. The highest temperature reported was 107° and the lowest 28° at Silver Lake. Over the agricultural sections the lowest was 43°. The precipitation averaged 0.58 of an inch, which fell principally from the 1st to 8th, and it was well distributed throughout the State.

AUGUST.—The month was the warmest since the August of 1889. The month was warm, dry and smoky to the 29th, when cool, cloudy and rainy weather set in. The mean temperature averaged 69°. The highest temperature reported during the month was 109° and the lowest 30°. In the farming sections the lowest was 41°. The precipitation averaged for the State 0.46 of an inch which is slightly above the August normal.

SEPTEMBER.—The rainy, cool weather of the latter part of August extended into September ceasing on the 9th and rain again from the 26th. The rain the fore part of the month was unusual. The number of rainy days is the largest on record for September. The temperature averaged 57°. The highest temperature reported is 96°, the lowest 20°. In the farming sections the lowest was 33°. The precipitation averaged 1.87 inches. The rains were well distributed throughout the State.

OCTOBER.—The month was pleasant with normal weather conditions, except deficient rainfall. The temperature averaged 52°; the highest reported was 94°, the lowest 9°; over the

farming sections, the lowest was 23°. Precipitation averaged 1.92 inches; less than 1 inch fell east of the Cascades.

NOVEMBER.—The month was cool, rainy, and there was a deficiency in the amount of sunshine. The mean temperature averaged 43°. The highest temperature reported was 82° and the lowest 2°. Over the agricultural sections the lowest was 22°. The precipitation averaged 9.30 inches and it was practically continuous throughout the month. Along the coast from 10 to 32 inches fell, in the interior valleys from 3 to 20 inches and east of the Cascades from 2 to 10 inches fell. Snow west of the Cascades fell to a depth of from a trace to 8 inches, east of the Cascades from a trace to 18 inches.

DECEMBER.—Normal temperature and an excess of rain were the features of this month. The mean temperature averaged 39°. The highest temperature reported was 81°, the lowest 4° below zero. The lowest in the farming sections was 7° above zero. The precipitation averaged for the State 8.02 inches. From the 1st to 4th and 18th to 23d few showers occurred, on other dates rain was general. Less than 0.3 of an inch of snow fell west of the Cascades, while to the east of them from 0.02 of an inch to 14 inches fell and 40 and more inches fell in the mountains.

OREGON CROPS OF 1897. Wheat is the staple crop in Oregon, and yields from 15 to 50 bushels per acre, according to the location and climatic conditions. Oats, barley, rye, clover, timothy and alfalfa hay are grown in large quantities. Corn is grown over a limited area and, on account of cool nights, the crop is small. All root crops and vegetables of all kinds, from potatoes and cabbages to cauliflower, celery, and asparagus, are prolific. Berries of all kinds are more prolific in Oregon than in any other State. The acreage of orchards is increasing constantly. Apples, peaches, prunes, cherries and pears, are grown in very large quantities for export. Oregon is among the foremost hopgrowing States. Sugar beets and flax for fibre can be successfully grown over a very large portion of the State. Cranberries grow well. Tobacco and cotton have been grown in extremely small amounts. The wonderfully nutritious bunch grass renders a large portion of Oregon suitable for raising horses, sheep and cattle. The following review of crop conditions for 1897 will be of interest:

JANUARY.—Plowing and seeding were prosecuted during the greater portion of the month. A larger acreage was prepared than for the past several years. The warmth about the middle of the month caused fruit buds to swell and new wood on roses to grow, but the cool period the latter part of the month checked all growth. There was no freezing-out of grain. The month was favorable to agriculture.

FEBRUARY.—Owing to the frequency of the rains, but little plowing and seeding could be done. Frequently fruit trees are in bloom in February, but none came into bloom this year. Little or no feeding of stock was necessary. The ranges were generally free from snow.

MARCH.—The weather was unfavorable to agricultural operations during the entire month. Fruit buds were ready to open at the close of the month. Snow was heavy on the ranges and feeding for several weeks was necessary.

APRIL.—Unfavorable weather continued to the 8th when warm, dry weather with plenty of sunshine set in. February and March were unfavorable for plowing and seeding, and with the commencement of favorable weather on April 8th plowing and seeding were unusually active. Many worked by moonlight to put their grain in and by the close of the month such work was nearly completed. Fruit trees came rapidly into bloom and by the 19th bloom was general.

The following dates, in years named, are approximate for fruit bloom over Oregon, except, of course, over the Plateau Region, which is, as a rule, two weeks later:

1889, March 22.	1892, April 2.	1895, March 25.
1890, April 2.	1893, April 19.	1896, March 23.
1891, March 28.	1894, March 29.	1897, April 19.

Apples and quinces are, of course, later than above dates. Lambing commenced on the 2d and continued throughout the month; the season was most successful and a large increase resulted. Sheep shearing began on the 15th. An unusually fine clip was secured; the mild winter allowing of a long and strong staple. Stock is in fine condition. The miners have plenty of water.

MAY.—The month was exceedingly favorable to the growth of all crops, except grain sown after the 5th; there was not enough rain to cause the grain to sprout. Seeding was completed by the 15th and the largest acreage of spring grain ever put in, in Oregon, is the record. The dry weather was unfavorable to the hay crop, and much anxiety resulted. Apples were in full bloom by the 10th. Hops made rapid growth. Asparagus, onions, radishes and other spring vegetables plentiful on the 3d. Strawberries ripe from the 10th. Gooseberries and currants in market on the 15th. First cutting of alfalfa on the 20th.

JUNE.—Dry weather prevailed to the 11th when showers set in which continued throughout the month reviving the hay crop. The rains prevent haying. Cherries were ripe on the 15th. The cool, cloudy and rainy weather insures the grain crop. Prospects flattering for all crops.

JULY.—Showers ceased on the 7th; they were of great benefit. Clover was over ripe when haying began on the 10th. Flax for fibre 30 to 36 inches high on the 10th. Early peaches and early apples ripe on 12th. Hops growing rapidly. Haying was completed by the 20th. Fall-sown wheat harvest began on the 10th. Corn silking out, hops in bloom, and watermelons ripe on 20th. Excellent harvesting weather.

AUGUST.—Harvesting of grain continued throughout the month. Rains began on the 29th, which threatened injury to the grain but did none. By the 10th pears, peaches, apples and plums were very plentiful, and trainload lots were shipped east. The second crop of alfalfa was cut by the 15th. Threshing commenced on the 20th with excellent results. Prune drying commenced on the 23d. Garden produce never so prolific. By the close of the month fall-sown wheat was out of the way and work on the spring-sown commenced.

SEPTEMBER.—The rains continued to the 8th. Weather favorable from the 8th to 26th except for showers on the 13th. The rains delayed harvesting and materially injured the hops. Hop picking began in all sections on the 1st. Grapes were ripe on the 13th. The third crop of alfalfa was cut by the 15th. Harvesting and threshing were rushed after the 10th, and by the close of the month were completed and much of the grain stored away.

OCTOBER.—The weather being favorable, plowing and seeding were active. Fall-sown wheat acreage greater than ever before. Wine and cider making pushed. For yield, percentage of saccharine matter and purity, beets surpassed all expectations. Beets gathered latter part of month. The gathering, storage and shipment of apples progressed satisfactorily. Rains have started the pasturages, which look fine.

NOVEMBER.—Plowing and seeding were active between rains. Grass was growing finely and stock fattening.

DECEMBER.—Farming operations were but little interrupted during the month, except on the lowland, where work was practically suspended. On the higher lands, plowing for seeding and for summer fallowing was actively pushed. The acreage of orchards is being steadily increased. Fall-sown grain has rooted and stood well; the temperature has been favorable and no freezing-out has occurred. The ranges have for the most part been free from snow, hence cattle and sheep are wintering well.

Climatological Data for the Year 1897.

Stations.	Counties.	Elevation, feet.	Temperature (degrees Fahrenheit).						Precipitation (inches).						Sky.				Prevailing direction of wind.		
			Length of record, years.	Annual mean.	Highest.	Date.	Lowest.	Date.	Length of record, years.	Total for the year.	Greatest monthly.	Month.	Least monthly.	Month.	Total snowfall.	Number rainy days.	Number clear days.	Number partly cloudy days.		Number cloudy days.	
COAST DISTRICT.																					
Astoria	Clatsop	50	37	51.9	84	Aug. 3	24	Mar. 12	37	85.06	16.05	Dec.	0.87	Aug.	5.6	187				n.	
Bandon	Coos	55	25	51.6	89	Oct. 5	28	Feb. 17	25	51.05	15.98	Nov.	0.14	Aug.	0.5	97				sw.	
Bay City	Tillamook	225	1	51.5	84	Sept. 17	20	Mar. 12	1	114.32	37.42	Dec.	2.10	Aug.	0.0						
Coguille River L. H.	Coos		0						0		9.90	Nov.	0.24	Aug.							
Fairview	Coos		0		90	Sept. 17			0		15.21	Nov.									
Fort Canby Wash.	Pacific	179	33	50.4	85	Aug. 3	26	Jan. 26	33	75.15	14.99	Nov.	1.04	Aug.	0.0	210	80	85	200	n.	
Gardiner	Douglas	72	9	52.1	84	Apr. 25	31	Jan. 13	9	78.20	18.84	Nov.	0.82	July	0.0	156					
Glenora	Tillamook		6	50.5	100	Aug. 6	15	Mar. 13	6	163.53	42.21	Dec.	1.67	Aug.	71.7	178	127	33	205	sw.	
Langlois	Curry	250	7	55.2	94	Oct. 5	30	Nov. 26	7	94.43	20.90	Nov.	0.45	Aug.	0.0	126	97	238	20	nw.	
Nehalem	Tillamook	60	0						0	596.90	29.33	Nov.	1.53	Aug.	13.3	191	111	100	154	sw.	
Newport	Lincoln		9	50.9	87	Sept. 18	17	Jan. 26	10	69.28	17.76	Nov.	1.01	July	0.0	187	107	28	230	sw.	
Tillamook Rock.	Tillamook	146	8						8	144.08	9.39	Nov.	0.65	Aug.	0.0						
Toledo	Lincoln	30	9		89	Oct. 5	21	Jan. 13	9	21.68		Nov.			1.0						
Crescent City Cal.	Del Norte				87	Oct. 5			0		10.66	Dec.			0.0						
WILLAMETTE VALLEY.																					
Albany	Linn	224	21	53.6	93	May 28	23	Jan. 26	21	50.19	12.07	Nov.	0.48	Aug.	7.3	144	153	41	171	n.	
Corvallis	Benton	319	9	52.6	98	Aug. 14	22	Jan. 26	9	43.61	11.66	Nov.	0.09	July	4.1	157	100	117	148	sw.	
Detroit	Marion	1,542	3						3												
Eugene	Lane	435	8		91	May 28	24	Jan. 26	8	38.55	7.45	Nov.			6.3						
Falls City	Polk		1		83	Sept. 17			1	73.93	21.96	Dec.	0.60	Aug.	6.7	184	120	75	170	s.	
Forest Grove	Washington	229	9		98	May 28	2	Mar. 16	9	159.42	14.61	Dec.									
Government Camp	Multnomah	3,580	1	41.8	95	Aug. 19	1		1	103.80	18.76	Nov.	1.20	Aug.	28.9	178	112	99	154	sw.	
Hubbard	Marion	270	8						8												
Irvington (nr Portland)	Multnomah	75	10		96	Aug. 14	22	Jan. 22	10	39.85	10.86	Nov.	0.19	Aug.				191	98		
McMinnville	Yamhill	180	10	52.1	104	Aug. 18	22	Jan. 26	10	55.07	15.38	Nov.	0.40	Aug.	17.0	136	130	91	144	sw.	
Miramonte Farm	Clackamas	195	9	51.6	99	Aug. 19	21	Jan. 26	9	45.50	11.44	Nov.	0.48	Aug.	12.0	172	129	112	124	sw.	
Monroe	Benton		0						0		16.61	Nov.									
Mt. Angel	Marion	140	12	53.2	98	Aug. 14	22	Jan. 27	12	49.85	12.88	Nov.	0.24	July	10.7	170	99	105	161	sw.	
Newberg	Yamhill	400	7				22	Jan. 26	7	52.97	13.87	Nov.									
Portland	Multnomah	153	30	53.1	95	Aug. 14	22	Jan. 26	30	43.01	11.65	Nov.	0.26	Aug.	10.0	164	94	146	125	nw.	
Salem	Marion	120	9	54.0	95	Aug. 3	24	Jan. 27	9	46.53	11.67	Nov.	0.28	Aug.	4.0	146	120	76	169		
Stafford	Clackamas		1	52.0	102	Aug. 20	18	Mar. 12	1	58.78	14.62	Nov.	0.65	Aug.	21.5	185					
Vernonia	Columbia	1,238	9	51.5	103	Aug. 18	11	Mar. 12	9	61.31	14.18	Nov.	0.76	July	38.7	133	141	74	150	nw.	
SOUTHERN OREGON.																					
Ashland	Jackson	1,940	14	52.1	105	Aug. 18	21	Feb. 21	14	17.72	3.96	Feb.	0.00	Aug.	18.2	106	131	86	148	nw.	
Grant's Pass	Josephine	964	9	53.5	106	Aug. 19	24	Feb. 23	9	29.04	6.13	Dec.	0.00	July	5.6	103	159	61	145	sw.	
Jacksonville	Jackson	1,640	9	52.2	102	Aug. 18	21	Jan. 15	9	22.86	5.59	Feb.	0.00	July	10.0	102	178	53	134		
Roseburg	Douglas	523	21	53.4	98	Aug. 20	28	Feb. 23	21	34.83	6.33	Nov.	0.19	Aug.	5.0	146	117	115	133	nw.	
Williams	Josephine		6	51.6	101	Aug. 19	21	Feb. 20	6	29.35	6.14	Dec.	0.00	July		109	146	94	125		
COLUMBIA RIVER VAL.																					
Arlington	Gilliam	855	7	53.9	106	Aug. 20	0	Jan. 26	7	8.40	2.79	Dec.	T.	July	7.1	49	196	114	55	w.	
Cascade Locks	Wasco	125	7	52.7	102	Aug. 18	24	Mar. 12	7	88.67	19.26	Dec.	0.62	July	25.8	155	107	90	168	w.	
Heppner	Morrow	1,950	8		108	Aug. 20			8		3.36	Nov.	0.08	Oct.							
Hood River (near)	Wasco	920	7	50.4	99	Aug. 19	8	Jan. 26	7	46.87	12.54	Dec.	0.18	July	61.5	145	54	106	205	w.	
Pendleton	Umatilla	1,070	9	52.0	109	Aug. 19	9	Jan. 26	9	18.48	4.24	Nov.	0.25	Oct.	38.5	84	149	94	122	sw.	
The Dalles	Wasco	116	24	53.7	108	Aug. 19	9	Jan. 26	24	16.60	4.03	Dec.	0.08	Aug.	23.2	90	158	46	161	w.	
Umatilla	Umatilla	340	0						10		2.64	Nov.	0.01	Aug.							
Walla Walla Wash.	Walla Walla	1,018	36	53.1	105	July 11	0	Jan. 26	36	21.67	5.15	Nov.	0.23	Oct.	29.6	122	143	139	83	s.	
Weston	Umatilla	1,800	8	49.8	101	Aug. 7	7	Jan. 25	8	25.21	5.16	Nov.	0.53	Oct.	49.3	93	175	76	114	sw.	
PLATEAU DISTRICT.																					
Baker City	Baker	3,470	9	45.7	98	Aug. 23	4	Jan. 26	9	14.68	2.08	Mar.	0.24	July	52.1	127	108	106	151	s.	
Benlah	Malheur	4,400	8				0	Dec. 22	8		2.28	Dec.									
Burns	Harney		8	52.1	99	Aug. 23	11	Feb. 20	8	* 9.95	2.50	Sept.	T.	May						42.0	
Canyon City	Grant		5		98	July 11	7	Nov. 25	5	10.41	2.64	Nov.	0.00	May							
Dayville	Grant		3	50.5	100	July 11	5	Jan. 26	3	15.44	2.63	Nov.	T.	July	14.0	75	156	139	70	w.	
Pife	Crook	3,375	6	43.8	98	Aug. 18	2	Feb. 17	6	18.46	3.90	Apr.	0.00	July	46.0	42					
Port Klamath	Klamath	4,275	25	43.6	93	Aug. 20	7	Mar. 21	25	*24.34	5.81	Feb.	0.03	July							
Happy Valley	Harney	4,200	8		92	July 11	3	Feb. 21	8	13.93	2.53	Feb.	0.09	Aug.	36.5	96	163	55	147	sw.	
Joseph	Wallowa	4,400	9	42.5	93	Aug. 7	14	Jan. 26	9	15.21	2.68	June	0.46	May	70.9	83	244	47	74	s.	
Klamath Falls	Klamath		0																		
La Grande	Union	2,784	11						11												
Lakeview	Lake	5,060	15	45.7	97	Aug. 18	1	Mar. 11	15	16.72	3.13	Mar.	0.10	July	71.0	86	115	156	94	s.	
Lone Rock	Gilliam	2,000	8		96	July 11			8												
Long Creek	Grant		1						1												
Lorella	Klamath		2						2												
New Bridge	Union	1,900	6		101	Aug. 7	9	Mar. 11	6		1.42	Dec.	0.00	Aug.							
P. Ranch	Harney		1	50.6	98	Aug. 16	9	Mar. 12	1	\$ 4.99	1.72	Dec.	0.00	July							
Prineville	Crook	3,000	1	50.1	98	Aug. 17	6	Feb. 17	1	11.64	2.53	June	0.00	July	13.7	53	179	105	81	sw.	
Riverside	Malheur		1		104	Aug. 23			1		1.61	Dec.	0.10	Aug.							
Silver Lake	Lake	4,300	9	53.1	101	Aug. 18	2	Feb. 17	9	8.50	2.65	June	0.00	Aug.	15.7	44					
Sparta	Union	4,125	7	44.7	96	Aug. 18	7	Jan. 15	7	29.07	6.70	Feb.	0.04	July	214.7	101	162	114	89	w.	
Vale	Malheur	4,400	7	48.8	102	July 11	2	Jan. 26	7	12.33	1.99	May	T.	Aug.	25.2	87	132	169	64	ne.	
MISCELLANEOUS.																					
Helena	Mont.	4,108	17	44.1	96	Aug. 11	24	Jan. 25	17	16.16	3.66	June	0.52	T.	Aug.	63.6	114	145	101	119	sw.
Idaho Falls	Idaho	4,742	5	43.3	96	July 12	17	Jan. 26	5	15.77	3.84	Mar.	T.	Aug.	90.9	116	152	76	137	s.	
Port Angeles	Wash.	29	14	47.4	81	Aug. 19	19	Jan. 26	13	28.12	9.85	Dec.	0.28	Aug.	5.0	140	93	127	145	w.	
Seattle	Wash.	119	7	51.5	90	May 28	20	Mar. 12	7	41.53	11.80	Dec.	0.24	Aug.	11.2	157	96	117	152	se.	
Spokane	Wash.	1,943	17	48.2	100	Aug. 20	3	Jan. 26	17	23.80	5.85	Nov.	0.27	Oct.	38.8	134	118	69	178	sw.	
Tatoosh Island	Wash.	86	17	48.1	68	Aug. 16	25	Mar. 12	17	95.21	17.77										

Stations.

* Mean for ten months.
† Mean for eleven months.

Monthly Mean Temperatures for the Year 1897, with Dates.

Stations.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.	Maximum.	Date.
COAST DISTRICT.																								
Astoria.....	54	6	56	26	56	25	78	15	80	12	75	26	74	10	84	3	78	17	74	5	46	18	56	13
Bandon.....	56	20	56	25	55	1	79	25	66	30	70	22	70	1	70	10	73	17	89	5	62	18	59	30
Bay City.....	63	31	58	26	55	1	79	15			78	24	79	19	78	13	84	17	80	5	62	18	55	6
Coquille River L. H.....															88	5	90	17	87	5			59	7
Fairview.....															85	3	81	17	80	5	54	18	52	5
Fort Canby..... Wash.	56	8	58	26	51	1	80	15	85	12	71	20	69	13	85	3	81	17	80	5	54	18	52	5
Gardiner.....	62	1	60	25	57	27	84	25	79	11	75	5	75	19	76	14	83	17	81	5	63	17	60	26
Glenora.....	55	22	61	25	60	3	90	25	99	28	87	6	92	19	100	6	85	24	83	6	62	1	57	29
Langlois.....	61	8	67	25	64	3	86	25	86	11	79	6	83	20	83	13	87	16	94	5	68	27	70	31
Nehalem.....																								
Newport.....	57	17	62	27	56	3	79	16	83	13	70	30	73	1	68	7	87	18	85	5	61	1	57	27
Tillamook Rock.....																								
Toledo.....	59	8	56	3													86	22	89	5	70	1	62	24
Crescent City..... Cal.															69	12	80	17	87	5	64	10	67	30
WILLAMETTE VALLEY.																								
Albany.....	59	20	59	26	60	24	82	15	93	28	86	30	86	19	93	6	85	17	81	5	66	18	58	11
Corvallis.....	58	21	62	26	57	2	84	15	95	28	87	6	89	19	98	14	87	18	83	5	65	18	58	7
Detroit.....																								
Eugene.....	59	20	59	26	57	25	80	16	91	28	85	5									69	18		
Falls City.....																	83	17	79	6	61	11	55	27
Forest Grove.....	57	20	63	26	58	2	93	17	98	28	85	24					89	26	86	6	63	18	58	5
Government Camp.....	59	22	48	26	49	3	74	16	81	28	75	6	86	10	95	19	85	25	72	4	56	18	48	3
Hubbard.....	56	20																						
Irrington (near Portland).....	58	20	55	4	57	25	89	16	94	28	85	6	93	10	96	14	90	16	70	4	62	18	60	27
McMinnville.....	56	20	63	26	54	2	88	17			89	5	93	10	104	18	88	18	85	6	61	11	58	5
Miramonte Farm.....	57	21	63	26	55	24	88	17	95	28	84	5	86	10	99	19	84	17	82	5	66	18	50	27
Monroe.....																	84	17	82	5	64	18	58	27
Mt. Angel.....	58	21	62	25	59	2	94	15	97	28	93	6	90	10	98	14	88	18	86	5	67	18	59	27
Newberg.....	59	20	65	27	52	2	89	17	98	28	89	6									63	18	59	31
Portland.....	57	20	58	26	56	25	89	17	93	28	83	5	92	10	95	14	89	18	81	5	66	18	59	27
Salem.....	58	20					84	17	93	28	83	5	87	10	95	3	83	18	81	5	65	18	58	5
Stafford.....	58	21	65	25	59	24	89	18	96	28	88	5	89	11	102	20	85	18	82	5	65	19	58	28
Vernonia.....	55	20	61	25	56	23	100	25	106	12	88	6	97	10	103	18	93	18	89	9	62	11	54	27
SOUTHERN OREGON.																								
Ashland.....	60	23	68	25	58	25	89	25	95	28	93	7	96	11	105	18	93	17	88	5	74	18	66	31
Grant's Pass.....	61	20	71	26	62	15	92	25	97	28	94	6	97	10	106	19	96	25	89	5	71	18	58	7
Jacksonville.....	51	31	63	26	62	31	85	25	92	28	92	30	94	11	102	18	90	25	83	5	71	18	72	7
Roseburg.....	62	20	63	26	58	23	90	15	92	12	88	25	89	10	98	20	92	18	84	5	70	18	63	27
Williams.....	59	20	66	26	61	24	87	25	91	28	91	6	93	10	101	19	90	24	82	5	67	18	59	13
COLUMBIA RIVER VAL.																								
Arlington.....	62	22	57	15	63	26	85	17	95	28	90	6	102	11	106	20	90	20	82	5	76	18	56	7
Cascade Locks.....	55	20	54	25	56	3	86	17	92	28	88	30	94	10	102	18	84	19	80	5	68	18	57	27
Heppner.....															100	11	108	20	93	10	73	18	60	28
Hood River (near).....	56	20	50	26	57	25	85	17	89	28	85	6	91	10	99	19	86	20	77	5	69	18	52	29
Pendleton.....	67	22	60	26	65	25	90	17	103	29	94	6	107	11	109	19	94	25	82	5	76	18	62	13
The Dalles.....	65	21	63	10	62	25	88	17	95	28	90	6	98	10	108	19	89	20	82	5	72	18	56	28
Umatilla.....																								
Walla Walla..... Wash.	61	22	57	27	65	25	86	18	100	29	91	6	105	11	104	7	91	21	79	11	75	18	62	27
Weston.....	60	21	53	27	59	25	82	17	97	29	89	6	99	11	101	7	90	21	76	11	70	18	58	27
PLATEAU DISTRICT.																								
Baker City.....	45	21	47	11	54	25	80	17	86	29	84	12	93	11	98	23	86	19	77	6	64	19	45	28
Beulah.....																								
Burns.....	50	22	49	25	50	24	79	26	88	29	87	7	92	11	99	23	83	22	78	12	71	1	46	28
Canyon City.....																								
Dayville.....	64	22	63	27	66	25	92	17	95	29	91	6	100	11	100	18	88	19	80	7	78	18	81	28
Fife.....	52	23	51	28	55	20	85	17	87	29	83	6	92	12	98	18	85	26	74	10	65	1	52	28
Fort Klamath.....	42	20	51	27	49	24	75	25	84	28	83	6	87	28	93	20	81	19	78	1	73	1	46	28
Happy Valley.....	54	22	55	25	57	25	84	17			86	7	92	11			84	21	78	1	73	1	53	27
Joseph.....	49	20	45	4	53	25	75	17	85	29	83	12	89	11	93	7	79	20	72	6	63	18	52	27
Klamath Falls.....																								
La Grande.....																								
Lakeview.....	50	22	50	25	47	31	77	17	88	28	88	29	91	11	97	18	80	18	74	5	65	1	49	27
Lone Rock.....																	89	25					59	26
Long Creek.....																								
Lorella.....																								
New Bridge.....					61	25					93	6	100	11	101	7	87	21	81	4	70	17	48	8
P. Ranch.....					55	24	84	16	87	13	87	7	95	11	98	16	85	20	81	6	70	1	55	30
Prineville.....					63	25	91	18	96	20	88	6	93	12	98	17	86	25	83	30	82	2	66	2
Riverside.....											94	12	101	11	104	23	92	20	79	9	72	1	53	5
Silver Lake.....	49	1	53	28	58	25	85	18	89	29	91	7	92	10	101	18	86	20	88	12	72	1	50	29
Sparta.....	47	8	45	4	47	26	75	25	84	13			92	10	96	18	84	18	76	6	61	19	52	1
Vale.....	46	22	53	11	63	25	86	26	95	20	93	12	102	11	100	17	85	20	80	11	71	19	48	1
MISCELLANEOUS.																								
Helena..... Mont.	49	21	44	15	56	25	77	26	83	14	89	12	95	27	96	11	81	19	75	6	69	19	55	28
Idaho Falls..... Idaho.	41	21	38	7	48	25	73	26	89															

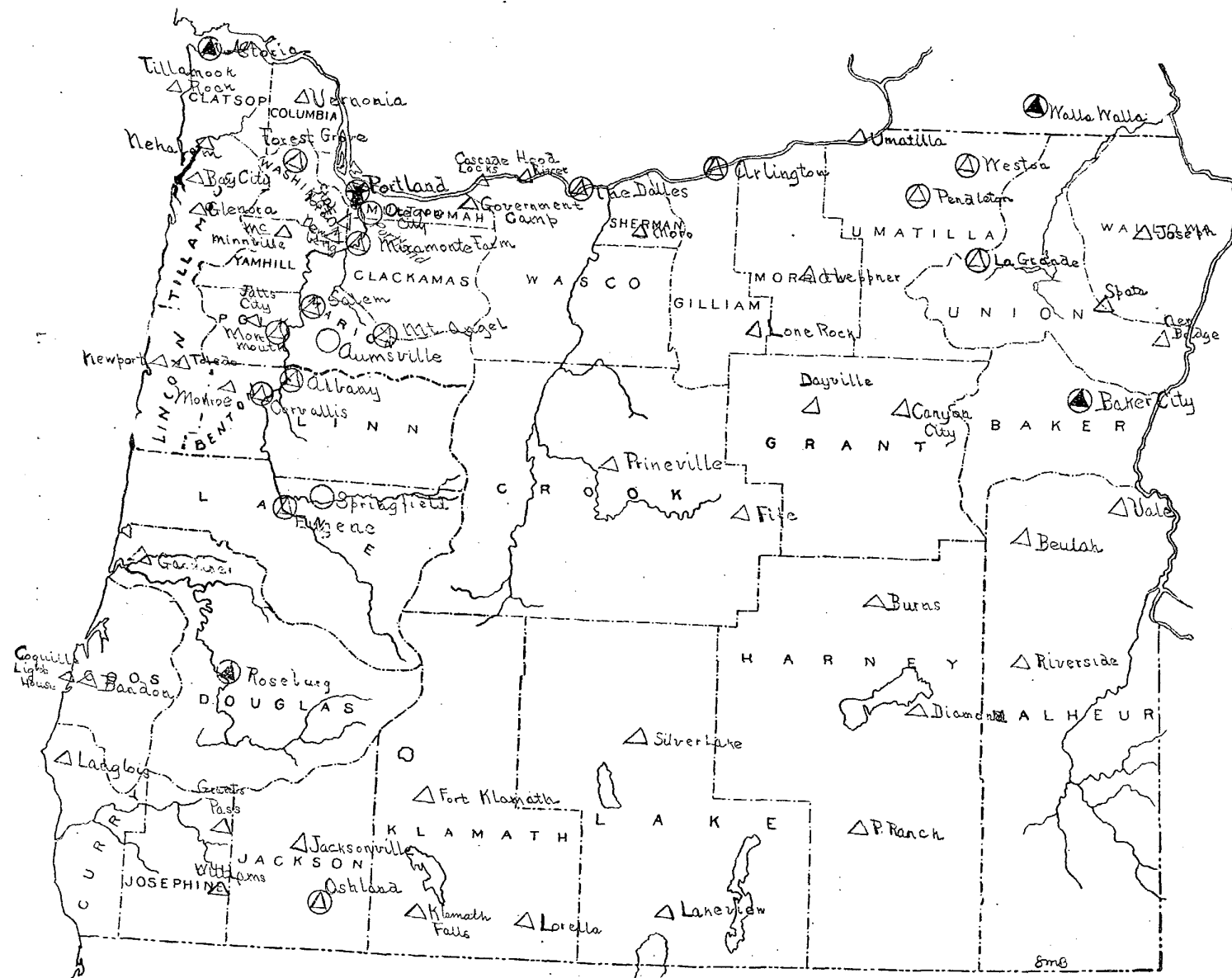
Stations.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.	Minimum.	Date.
COAST DISTRICT.																								
Astoria	25	26	32	13	24	12	37	23	40	2	49	17	47	29	49	1	45	15	40	15	34	20	33	19
Bandon	30	10	28	17	33	1	33	1	39	8	46	4	45	31	49	6	38	28	32	14	32	20	30	22
Bay City	25	26	26	21	20	12	39	2			40	9	40	29	42	18	36	28	34	15	32	20	30	18
Coquille River L. H.																								
Fairview																								
Fort Canby Wash.	26	26	32	13	26	12	40	2	43	2	47	18	49	28	49	4	47	28	43	14	34	19	33	18
Gardiner	31	13	31	17	32	12	37	11	39	2	43	1	47	27	49	31	44	15	38	15	34	26	31	19
Glenora	21	26	27	17	15	12	29	26	29	2	38	3	38	18	38	1	34	16	30	7	29	22	25	3
Langlois	31	15	31	17	31	21	37	1	39	2	43	9	45	8	46	2	44	9	35	14	30	26	31	19
Nehalem																								
Newport	17	26	31	13	28	12	35	23	38	2	41	9	42	25	42	2	42	28	37	1	27	20	30	19
Tillamook Rock																								
Toledo	21	13	25	19													31	23	27	14	25	30	27	23
Crescent City Cal.																42	1	40	11	34	18	26	31	18
WILLAMETTE VALLEY.																								
Albany	23	26	30	17	25	12	36	5	37	2	41	2	46	17	48	9	42	28	32	15	28	26	29	19
Corvallis	22	26	29	17	26	12	33	27	36	2	37	10	42	21	46	25	40	28	27	17				19
Detroit																								
Eugene	24	26	30	20	28	12	34	11	36	2	49	9												
Falls City																								
Forest Grove	19	26	26	20	2	16	32	1	34	1	37	9					30	28	27	14	28	2	23	22
Government Camp	2	26	3	17	1	2	18	5	23	2	27	9	30	18	30	1	27	15	23	15	12	20	8	19
Hubbard	25	9																						
Irvining (near Portland)	22	26	28	13	23	12	35	7	40	26	33	10	49	27	50	25	34	15	30	27	28	20	27	19
McMinnville	22	26	27	21	22	12	30	27			33	8	40	21	42	1	33	28	27	15	27	3	24	19
Miramonte Farm	21	26	26	17	21	12	29	27	31	1	34	9	41	18	43	1	3							


Storm Signal Display Stations.

Stations.	Observers.	Stations.	Observers.	Stations.	Displaymen.	Stations.	Displaymen.
Albany Ore.	F. M. French.	Salem Ore.	C. T. Roberts.	Astoria Ore.	U. S. Weather Bureau.	Port Gamble, Wash.	D. L. Jackson.
Cascade Locks. "	U. S. Engineer Corps.	Spokane Wash.	U. S. Weather Bureau.	Fairhaven Wash.	J. D. Cavenaugh.	Port Ludlow. "	Louis Poole.
Eugene "	Mrs. R. E. Eastland.	The Dalles Ore.	S. L. Brooks.	Hadlock "	E. P. Blake.	Port Townsend. "	E. Biondi.
Lewiston Idaho.	John Wilkinson.	Umatilla "	Thompson West.	New Whatcom "	C. W. Henderson.	Seattle "	U. S. Weather Bureau.
Northport Wash.	P. F. Hughes.	Weiser Idaho.	J. W. Lepish.	Port Angeles "	U. S. Weather Bureau.	Tacoma "	U. S. Weather Bureau.
Oregon City Ore.	Paper Company.	Wenatchee. Wash.	E. L. Thompson.				
Grigia Wash.	O. R. A. N. Co.						


Monthly and Annual Precipitation for the Year 1897, with Departures from the Normal.

	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.		Annual.	
Stations.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.	Precipitation.	Departure.
COAST DISTRICT.																										
Astoria	9.84	-2.09	12.89	+4.53	11.88	+2.85	3.14	-2.22	2.38	-1.16	4.49	+1.50	1.66	+0.38	0.87	-0.56	3.43	+0.12	3.07	-2.24	15.36	+4.90	16.05	+3.69	85.06	+9.70
Bandon	1.35	+10.28	5.54	-3.56	11.88	+5.44	0.86	-4.58	0.42	-2.96	0.96	-0.96	0.32	-1.60	0.14	-0.34	2.83	+0.47	4.02	-1.40	15.98	+9.29	5.45	-6.15	17.55	+4.40
Bay City 2	6.31	14.69			19.18		3.87		6.83		3.69		2.10		5.41		6.00		28.00		37.42		37.42		130.90	+130.90
Cocouille River L. H. 6.									1.55				0.24		1.46		3.67		1.46		6.73		23.55		23.55	+23.55
Fairview													0.68		4.14		4.93		15.21		9.80				9.80	+9.80
Fort Canby Wash.	9.58	-0.91	10.24	+2.14	9.15	+1.77	2.88	-2.60	1.85	-1.10	3.98	+1.50	1.21	-0.43	1.04	-0.06	3.63	+0.26	2.49	-2.73	14.99	+5.21	14.11	+3.84	75.15	+7.60
Gardiner	4.58	-6.61	14.77	+4.62	14.23	+5.67	2.70	+4.35	1.52	-2.09	2.18	-0.25	0.82	-0.71	0.91	-0.31	2.53	-0.78	3.15	-4.33	18.84	+11.65	11.97	-2.22	78.20	+0.48
Glenora	12.89	-3.24	20.90	+6.89	22.77	+7.05	4.56	+11.67	2.45	-2.01	4.06	0.00	1.84	-0.22	1.67	-1.11	3.88	-4.32	6.39	+4.55	20.92	+2.69	42.21	+21.50	121.50	+34.97
Langlois	5.20	-9.25	16.51	+6.25	10.18	+4.07	3.23	-8.54	1.85	-9.92	3.58	+1.33	0.77	+0.42	0.45	-0.32	3.37	-0.44	8.18	+0.97	20.90	+4.27	11.23	-2.81	64.43	+7.13
Nehalem 3	10.43	-17.97			18.29		4.73		2.19				1.63		3.70		5.18		29.33		21.74				21.74	+21.74
Newport	4.99	-4.65	14.16	+8.48	10.12	+3.90	2.09	-3.95	2.29	-3.75	1.70	-2.65	1.01	+0.54	1.02	+0.78	2.14	-0.60	2.20	-2.56	17.76	+7.68	9.80	-2.21	69.28	+1.66
Tillamook Rock 2	5.49	+0.28	8.13	-2.97	7.83	+1.81	2.52	-4.39	1.87	-0.87	3.74	+0.34			0.65	-0.34	3.13	-0.66	1.36		9.37				9.37	+9.37
Toledo	5.13	-6.43	17.40	+5.63													4.03	+1.31	3.10	-3.16	21.68	+11.54	15.21	+5.21	14.08	+4.08
Crescent City Cal.															0.29		2.54		4.68		10.45		10.66			+10.66
WILLAMETTE VALLEY.																										
Albany	3.19	-4.71	6.30	+0.47	7.97	+3.52	2.06	-1.33	1.07	-1.25	2.73	+1.17	0.97	+0.48	0.48	+0.24	1.98	+0.15	2.45	-1.27	12.07	+7.37	8.92	+0.65	50.19	+4.65
Corvallis	2.84	-4.09	6.98	+1.15	5.71	+0.96	1.73	-1.82	1.09	-0.77	2.09	-0.75	0.09	-0.10	0.38	+0.21	1.57	+0.17	2.38	-0.74	11.66	+6.85	7.09	+0.51	43.61	+4.08
Detroit																										
Eugene 3	4.34	-0.57	4.31	0.00	6.75	+4.50	1.27	-1.54	1.50	-0.10	4.14	+2.87			0.72		0.60		2.93		20.54		21.96		43.95	+43.95
Falls City 2	6.47		12.67		11.26		3.23		1.74		1.73		0.72		0.60		2.93		2.62	-0.16	7.45	+4.14	6.17	+0.12	38.55	+38.55
Forest Grove 2	4.10	-1.39	7.98	+2.17	8.45	+3.51	2.04	-1.04	0.52	-0.51	1.79	+0.85			3.50	+1.69	2.69	-1.49	13.74	+6.90	11.33	+0.61	8.65	+0.42	146.3	+146.3
Government Camp	6.30		17.49		16.37		5.50		2.88		5.91		4.14		1.20		3.80		4.36		18.76		17.09			
Hubbard	1.42	-4.61															1.35		2.86		16.61		8.75		39.85	+39.85
Irrington (nr Portland)	3.90		5.27		3.09		1.82		0.86		1.39		0.49		0.19		2.62		1.22		10.86		7.76		39.85	+39.85
McMinnville	3.82	-3.19	7.35	+2.10	7.26	+2.60	2.00	-1.89	1.03	-0.37	1.55	-0.93	0.42	+0.06	0.40	-0.24	2.31	-0.60	2.22	-1.71	15.38	+9.81	11.33	+4.55	55.07	+11.14
Miramonte Farm	3.21	-5.09	6.17	+1.77	6.20	-1.94	2.03	-3.27	1.07	-1.43	1.68	+0.01	0.83	+0.49	0.48	-0.40	2.04	+0.23	1.82	-3.90	11.14	+4.28	8.23	-2.15	45.50	-1.23
Monroe																	1.35		2.86		16.61		8.75		39.85	+39.85
Mt. Angel	2.88	-4.36	6.84	+2.80	7.44	+2.31	2.41	-1.84	1.48	-0.90	2.83	+0.20	0.24	-0.61	0.57	+0.19	2.91	+0.92	2.34	-2.17	12.88	+6.64	7.03	-0.98	49.87	+10.85
Newberg 1	3.84	-2.50	7.81	+3.79	6.76	+0.98	2.21	-1.80	1.11	-0.39	1.97	-0.22	T	-0.36	0.87	-1.42	2.38	-2.37	13.87	+6.68	12.15		42.97		42.97	+42.97
Portland	3.25	-3.88	5.57	-0.55	4.00	-1.54	1.76	-1.54	0.90	-1.49	1.35	-0.50	0.65	+0.07	0.26	-0.29	2.79	+1.04	1.99	-2.07	11.65	+5.87	8.84	+1.06	43.01	+1.84
Salem	2.79	-3.12	5.73	+1.86	6.11	+0.25	3.47	+1.83	1.78	-0.78	1.77	-0.21	0.64	+0.45	0.28	+0.23	2.45	-0.46	2.08	-5.41	11.67	+4.27	7.76	-2.63	46.53	+2.59
Stafford	4.05		7.12		8.31		3.42		1.27		3.00		0.95		0.65		1.86		2.35		14.62		12.18		28.23	+28.23
Vernonia	3.48	-6.40	7.77	-0.39	8.06	+1.82	2.13	-3.99	1.22	-0.12	3.52	+0.87	0.76	+0.21	0.78	+0.31	2.37	-0.44	2.92	-2.07	14.18	+4.89	14.12	+3.52	61.31	+0.79
SOUTHERN OREGON.																										
Ashland	0.75	-2.36	3.96	+1.71	2.35	+0.53	0.99	-0.87	0.84	-0.81	2.01	+0.85	T	-0.61	0.00	-0.18	0.66	+0.04	0.55	-0.89	2.48	+1.04	3.13	-0.38	17.72	+2.45
Grant's Pass	1.90	-5.35	5.88	-0.29	4.31	+0.28	0.67	-1.42	0.74	-1.51	2.26	+0.84	0.00	-0.06	T	-0.14	0.72	-0.25	1.92	-0.15	4.51	+0.36	6.13	-0.74	29.04	+5.50
Jacksonville	1.03	-1.96	5.59	+1.72	2.59	+0.15	1.02	-1.24	0.57	-1.53	1.46	-0.28	0.00	-0.18	0.16	+0.01	0.72	-0.23	1.29	-0.11	3.62	+0.28	4.81	-0.28	22.86	+1.57
Roseburg	1.66	-4.61	6.04	+0.95	6.92	+3.38	1.11	-1.46	0.89	-1.14	1.38	-0.01	0.23	-0.24	0.19	-0.04	1.60	+0.63	2.66	-0.11	6.33	+2.51	5.82	-0.44	34.83	+0.35
Williams	1.46	-5.29	5.92	-0.65	4.53	-0.31	0.87	-1.48	0.91	-0.86	1.64	+1.57	0.00	-0.11	0.28	+0.28	1.02	+0.30	1.31	-0.90	5.27	+1.98	6.14	-0.62	29.35	+4.44
COLUMBIA RIVER VAL.																										
Arlington	1.21	-0.45	1.13	+0.30	0.42	-0.85	0.26	-0.49	0.30	-0.58	0.51	-0.04	T	-0.20	T	-0.08	0.38	+0.01	0.01	-1.35	1.39	+0.06	2.79	+1.06	8.40	+0.06
Cascade Locks	6.20	-8.10	14.37	+4.16	11.47	+3.22	4.04	-2.71	1.33	-2.10	2.75	0.00	0.62	-0.36	1.43	+0.80	4.01	+0.33	3.95	-3.54	19.24	+9.98	19.26	+5.39	88.67	+8.97
Heppner													0.38	-0.05	0.20	-0.09	1.24	-0.23	0.08	-1.06	3.36	+2.32	1.73	-0.34	6.99	+6.99
Hood River (near)	2.81	-0.16	7.45	+6.29	6.78	+3.06	1.84	-0.37	0.81	-0.37	0.95	-0.22	0.18	-0.09	0.30	+0.22	1.29	-0.38	1.44	-1.90	10.64	+6.75	12.54	+3.98	46.87	+9.11
Pendleton	1.88	-0.10	2.47	+1.37	2.03	+0.31	0.95	-0.06	1.21	-0.14	0.57	-0.18	0.68	+0.09	0.50	+0.46	1.54	+1.00	0.25	-0.77	4.24	+3.31	2.16	-0.55	18.48	+4.68
The Dalles	1.14	-1.60	2.98	+0.86	1.94	+0.51	0.23	-0.51	0.27	-0.37	1.07	+0.49	0.24	+0.09	0.08	-0.06	0.54	+0.06	0.24	-1.26	3.84	+4.09	4.09	-0.82	16.61	+1.29
Umatilla													0.45	+0.13	0.01	-0.33	0.52	-0.26	0.04		2.64	+1.71	1.64	+0.15	6.21	+6.21
Walla Walla Wash.	1.85	-0.26	2.61	+0.67	2.38	+0.87	1.75	+0.46	1.05	-1.04	1.51	+0.20	0.84	+0.57	0.42	+0.12	1.44	+0.54	0.23	-1.39	5.15	+3.34	2.44	-0.27	21.67	+4.07
Weston	2.85	-2.87	3.13	-0.78	3.63	-0.61	1.87	-0.22	1.20	-0.85	1.34	-0.43	0.76	-0.61	0.58	+0.41	1.70	-0.03	0.53	-1.91	5.16	+2.20	3.46	+1.03	25.21	+3.29
PLATEAU DISTRICT.																										
Baker City	0.74	-0.90	1.82	+0.09	2.08	+0.28	0.64	-0.57	1.55	-0.35	1.93	+0.39	0.24	-0.37	0.90	+0.72	1.11	+0.46	0.33	-0.78	1.80	+0.68	1.54	-0.27	14.68	+0.29
Beulah																										
Burns 1	1.10	-0.02	1.10	+0.37	0.60	-0.18	1.10	+0.75	T	-0.96			0.75	+0.75	0.25	+0.25	2.50	+1.98	0.25	-0.27	1.09	+0.34	0.28	+0.28		
Canyon City 4													2.11	+1.11	0.75	-0.12	0.93	+0.85	1.39	-0.49	0.49	-1.11				




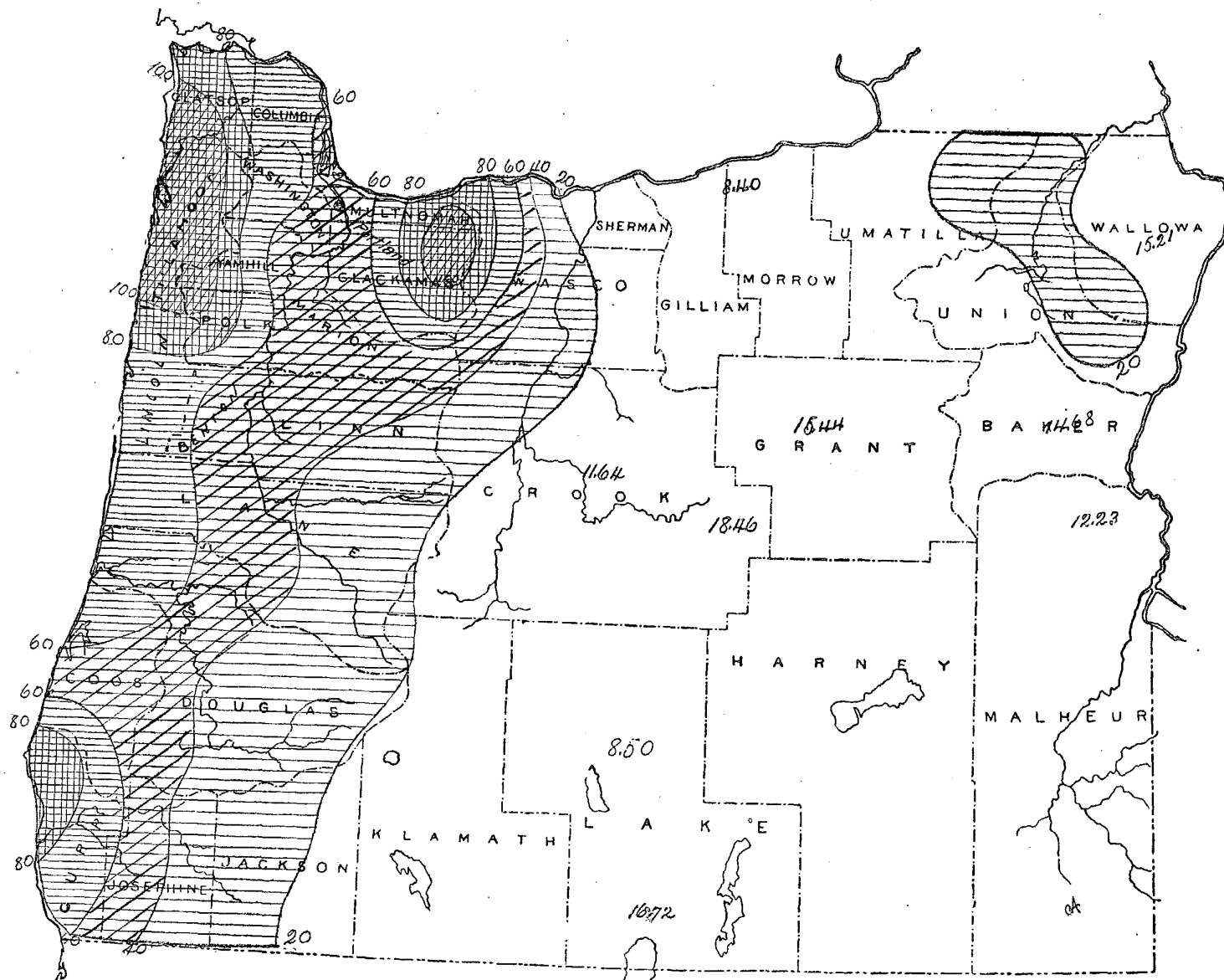
 Central Office,

 Weather Bureau Stations.

 Voluntary Observation and Forecast
Display Stations.

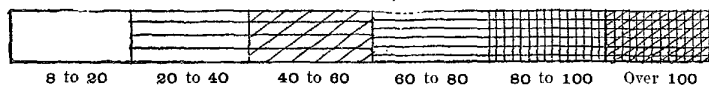
○ Forecast Display Stations.

 Voluntary Observation Stations.



TOTAL PRECIPITATION, 1897.

SCALE OF SHADES, IN INCHES:



Daily Forecast and Frost Display Stations.

Stations.	Displaymen.	Stations.	Displaymen.	Stations.	Displaymen.	Stations.	Displaymen.
Albany Ore.	F. M. French.	Fairhaven... Wash.	J. D. Cavenaugh.	Mt. Vernon... Wash.	J. H. Miller.	Rosalie... Wash.	H. A. Potter.
Arlington "	R. E. Smith.	Ft. Steilacoom. "	Wm. Seeman.	Nampa... Idaho.	E. G. Nettleton.	Roseburg... Ore.	U. S. Weather Bureau.
Ashland "	F. H. Carter.	Forest Grove. Ore.	W. N. Ferris.	Oakesdale... Wash.	R. L. Nottingham.	Salem... Ore.	Secretary of State.
Aumsville "	H. Klas.	Garfield... Wash.	R. C. Bellus.	Olympia... "	J. C. Percival.	Seattle... Wash.	U. S. Weather Bureau.
Aurora... "	G. Muecke.	Goldendale... "	W. J. White.	Oregon City... Ore.	W. R. Logus.	Spokane... "	U. S. Weather Bureau.
Baker City... Ida.	U. S. Weather Bureau.	Hailey... Idaho.	Prof. H. H. Barton.	Pendleton... "	Prof. H. L. Talkington.	Springfield... Ore.	Washburn & Sons.
Blackford... Wash.	H. W. Curtis.	Idaho Falls... "	U. S. Weather Bureau.	Pomeroy... Wash.	F. W. D. Mays.	Stayton... "	W. H. Cooper.
Centralia... Wash.	C. Crosby.	La Grande... Ore.	J. H. Robbins.	Portland... Ore.	U. S. Weather Bureau.	Tacoma... Wash.	U. S. Weather Bureau.
Chehalis... "	W. C. Marion.	Latah... Wash.	Charles James.	Port Gamble Wash.	D. L. Jackson.	The Dalles... Ore.	Athletic Club.
Coeur d'Alene. Ida.	A. G. Warner.	Monmouth... Ore.	Normal School.	Pt. Ludlow... "	Louis Poole.	Turkey... "	G. F. Robertson.
Colfax... Wash.	F. M. English.	Montpelier. Idaho.	Dr. E. P. Guyon.	Pt. Townsend... "	Capt. E. Biondi.	Walla Walla Wash.	U. S. Weather Bureau.
Corvallis... Ore.	State Agri. College.	Moscow... "	City Clerk.	Pullman... "	State Expt'm't Sta.	Weiser... Idaho.	J. F. Smith.
Dayton... Wash.	A. P. Cahill.	Mt. Angel... Ore.	Dr. Urban Fisher.	Rathdrum... Ida.	Dr. D. F. Hollister.	Weston... Ore.	M. A. Baker.
Eugene... Ore.	J. H. Day.						

Voluntary Observers.

Stations.	Observers.	Stations.	Observers.	Stations.	Observers.	Stations.	Observers.
Astoria.....	U. S. Weather Bureau.	Falls City.....	Frank Butler.	Lakeview.....	A. Y. Beach.	Prineville.....	George Summers.
Albany.....	C. G. Burkhardt.	Fife.....	Mrs. E. S. Merritt.	Langlois.....	S. T. Malehorn.	Riverside.....	J. D. Fairman.
Arlington.....	R. E. Smith.	Forest Grove.....	Pacific University.	Lone Rock.....	R. M. Johnson.	Roseburg.....	U. S. Weather Bureau.
Ashland.....	F. H. Carter.	Fort Canby, Wash.	U. S. Weather Bureau.	Lorella.....	J. F. Wisner.	Salem.....	C. T. Roberts.
Bandon.....	George Bennett.	Fort Klamath.....	B. L. Cunningham.	McMinnville.....	Wyatt Harris.	Silver Lake.....	G. B. Wardwell.
Baker City.....	U. S. Weather Bureau.	Gardiner.....	J. S. Gray.	Miramonte Farm..	G. Muecke.	Sparta.....	J. A. Wright.
Bay City.....	Capt. J. J. Dawson.	Glenora.....	Mrs. Jennie A. Reeher.	Monroe.....	Jno. H. Starr.	Stafford.....	J. P. Gage.
Beulah.....	Henry A. Smith.	Government Camp.	O. C. Yocum.	Mono.....	Wm. Henrichs.	The Dalles.....	S. L. Brooks.
Burns.....	W. C. Byrd.	Grant's Pass.....	J. B. Paddock.	Mt. Angel.....	Dr. Urban Fisher.	Tillamook Rock..	U. S. L. H. Keeper.
Canyon City.....	Mark Rulison.	Happy Valley.....	J. H. Neal.	Nehalem.....	J. M. Alley.	Toledo.....	Dr. H. W. Vincent.
Cascade Locks..	W. E. Morris.	Heppner.....	A. Smith.	Newberg.....	Prof. Edwin Morrison.	Umatilla.....	Thompson West.
Corvallis.....	Oregon Agri. College.	Hood River.....	Dr. P. G. Barrett.	New Bridge.....	Frank Craig.	Vale.....	Finley McDonald.
Coquille River L. H.	U. S. L. H. Keeper.	Irrington.....	Dr. George Wigg.	Newport.....	J. E. Matthews.	Vernonia.....	L. W. Van Dyke.
Crescent City... Cal.	D. S. Sartwell.	Jacksonville.....	E. Britt.	Neyatona... Idaho.	Dr. F. B. Delano.	Walla Walla Wash.	U. S. Weather Bureau.
Dayville.....	J. Campbell Martin.	Joseph.....	J. D. McCully.	Pendleton.....	William Hilton.	Weston.....	Miss M. M. Baker.
Eugene.....	University of Oregon.	Klamath Falls.....	W. E. Bowdoin.	P. Ranch.....	F. S. Reider.	Williams.....	W. C. Stites.
Fairview.....	Wm. Bettys.	La Grande.....	J. H. Robbins.	Portland.....	U. S. Weather Bureau.		

Crop Correspondents.

Correspondents.	Stations.	Correspondents.	Stations.	Correspondents.	Stations.	Correspondents.	Stations.
Ainsworth, J. W.	Wasco.	Dillard, John.	Vistillas.	Kirchheimer, P. H.	Antelope.	Revenne, J. H.	Sandy.
Alley, J. M.	Nehalem.	Dimmick, G. W.	Kellogg.	Kliensmith, Henry.	Clarkes.	Reynolds, N.	Grant's Pass.
Ashby, G. H.	North Powder.	Dittler, John A.	Sublimity.	Kirkpatrick, Jas.	Weston.	Riddle, Geo. W.	Riddle.
Baker, Miss M. M.	Weston.	Dodd, C. J.	Springfield.	Kloetger, Jacob.	Stayton.	Robinson, F. M.	Beaverton.
Ballard & Roth.	Milwaukie.	Dosch, Henry E.	Hillsdale.	Koger, S. W.	Cove.	Rowell, F. E.	Scholl's.
Balsinger, A. W.	Ione.	Dungan, F. H.	Mohalla.	Krogstad, O. O.	Toledo.	Ruble, David.	Waldport.
Banks, J. C.	Glen.	Eckersley, O.	Cove.	Kruse, J. L.	Stafford.	Rusk, Chas.	Milwaukie.
Bard, S. W.	Aumsville.	Edwards, F. E.	Corvallis.	Land, T. C.	Rural.	Saunders, U. G.	New Bridge.
Barrett, Dr. P. G.	Hood River.	Egli, John.	Dundee.	Leadwood, W. P.	Cottage Grove.	Schmitt, Henry.	Athens.
Bateman, S. S.	Gales Creek.	Elgin, J. H.	Rosedale.	Loggan, R. O.	Philomath.	Schubel, G. A.	Schubel.
Beach, A. Y.	Lakeview.	Ely, Geo. D.	Douglas.	Long, Chas.	Silverton.	Seelye, S. W.	Scholl's.
Beach, E. R.	Lexington.	Ely, Edmonds.	Merrill.	Macpherson, A. C.	Sumpter.	Shanks, F.	Woodburn.
Beatty, F. J.	Chemawa.	Erickson, Fred.	Mulino.	McBrade, J. A.	Shedds.	Shattuck, C. L.	Hillsboro.
Belsaw, W. D.	Bedland.	Esteb, Sam'l.	Gooseberry.	McConnell, Katie.	Shedde.	Shedd, C. J.	Shedds.
Belknap, W. C.	Monroe.	Farley, D. B.	Monroe.	McCully, J. D.	Joseph.	Shook, J. S.	Dairy.
Benham, J. D.	Fairview.	Fanno, A. R.	Progress.	McGuinness, W. C.	Baker City.	Shorb, J. D.	Gales Creek.
Bennett, Geo.	Bandon.	Fanno, A. J.	Raleigh.	McDonald, Finley.	Vale.	Simmons, G.	Howell.
Bettys, Wm.	Fairview.	Fisher, Rev. Dr. U.	Mt. Angel.	McDonald, L. W.	Milton.	Simmons, J. D.	Monitor.
Bishop, C. J.	Tidewater.	Fitch, C. W.	Cornelius.	McKee, D. A.	McKee.	Sizemore, J. A.	Juntura.
Boles, W. H.	Philomath.	Fletcher, J. T.	Gales Creek.	McLane, C. E.	Suver.	Smear, W. W.	Heppner.
Bonaly, F. Louis.	Mt. Angel.	Fligg, G. W.	Endersby.	McLean, G. N.	Camp Creek.	Smith, Arthur.	Heppner.
Bond, Sam'l L.	Irving.	Forbes, S. W.	Brownstown.	McLeod, Alex.	Kingsley.	Smith, F. W.	Fife.
Bradford, I. N.	North Powder.	Fowler, Thos.	Ophir.	McMahan, O. A.	Thurston.	Smith, M. G.	Aurora.
Bratton, J. C.	Springfield.	Eugene.	Kingsley.	Malehorn, S. T.	Langlois.	Smith, R. E.	Arlington.
Brigg, John.	Albany.	Fraby, Chas.	Mt. Hood.	Martin, J. Campbell.	Dayville.	Smith, R. M.	Monmouth.
Brigham, A. J.	Dufur.	Fredenburg, O.	Logan.	Markham, Bernard.	Dufur.	Speake, W. N.	Huntington.
Britt, B.	Jacksonville.	Funk, Louis.	Stafford.	Mastie, W. A.	Merlin.	Spicer, Frank N.	Antelope.
Brooks, S. L.	The Dalles.	Gage, John P.	Clark's.	Mast, Webb.	Lee.	Starr, John H.	Monroe.
Buchanan, J. C. Jr.	Cornelius.	Gard, Roscoe.	Bedfield.	Mathews, John E.	Newport.	Starr, Miles T.	Monroe.
Buchanan, O. L.	Wren.	Gardner, C. M.	Greenville.	Maude, Estelle.	Monroe.	Stearns, J. O.	Klamath Falls.
Busick, Arthur.	Union.	Garrigus, J.	Dille.	Menefes, W. R.	Dufur.	Steiner, J.	Wolf Creek.
Butler, Frank.	Falls City.	Gaylord, E. S.	Roseburg.	Merrill, N. S.	Aurora.	Stephenson, Wm.	Laurel.
Butler, Ormer.	Nausene.	Gibson, Thos.	Gardiner.	Mencke, G.	Price.	Stewart, F. A.	Ophir.
Buxton, H. T.	Buxton.	Gray, J. S.	Rainier.	Millhorn, T. H.	Highland.	Stewart, W. D.	Mabel.
Byrd, W. C.	Burns.	Haines, J. A.	Eckley.	Milligan, B. L.	Juntura.	Stites, W. C.	Williams.
Calkins, C. I.	Sherwood.	Hall, E.	Prairie City.	Mills, Ira T.	Manning.	Stitt, W. P.	Seal Rock.
Carter, F. H.	Ashland.	Halstead, H.	Lost Valley.	Mills, Seth A.	Newberg.	Swan, G. G.	Dora.
Carter, F. M.	Elk City.	Harbinson Bros.	Hood River.	Milly, H.	Wilsonville.	Taylor, J. A.	John Day.
Case, W. F.	Liberal.	Harlan, J. R.	Harlan.	Moore, T. B.	Express.	Tilden, Mrs. M. M.	Thatcher.
Cate, J. A.	Telocaset.	Harrington, Miss M.	Highland.	Mosher, D. H.	Redland.	Thierson, H. M.	Milwaukie.
Churchill, J. L.	Coles Valley.	Harris, Capt. W.	McMinnville.	Moulton, Geo. T.	Coquille.	Thompson, M. D.	Scottsburg.
Churchill, J. S.	Springfield.	Hathaway, E. F.	Dryden.	Myrick, J.	Conner Creek.	Tobin, W. H.	New Bridge.
Clark, P. F.	Zena.	Haworth, J. L.	Springbrook.	Naylor, Edwd. D.	Forest Grove.	Todd, A. B.	Dilley.
Clark, O. D.	Seal Rock.	Hayes, T. F.	Woodburn.	Neal, J. H.	Diamond.	Tooze, C. T.	Wilsonville.
Clarke, Wm. J.	Gervais.	Heisler, M.	Dufur.	Newell, W. K.	Dilley.	Trullinger, I. V.	Union Mills.
Colman, R. R.	Summerville.	Henry, John.	Beaverton.	Newhouse, C. E.	Springbrook.	Underwood, P. P.	Boyd.
Colt, J. H.	Lone Rock.	Hervey, J. C.	Lee.	Newman, F.	Walla Walla, Wash.	Vidito, Willis.	Alsea.
Colwell, W. H.	Wapenita.	Hillegas, M. J.	Springfield.	Norris, Geo. W.	Fairview.	Vincent, Dr. H. W.	Toledo.
Conner, H. T.	Isabel.	Hilton, Wm.	Pendleton.	Ockerman, N. P.	Reedville.	Volmer, Gustav.	Helix.
Cook, John R.	Peoria.	Hirrichs, P. D.	Hood River.	Oliver, C. E.	Alicel.	Waddle, A. M.	Amity.
Coon, M. S.	Eddyville.	Hirrichs, P. D.	Meadow Brook.	Oliver, C. T.	Merrill.	Wade, M. A.	Gervais.
Cooper, E. H.	Carus.	Homes, F. C.	Ashland.	Oregon Agri. College.	Corvallis.	Walker, Albert.	Ely.
Cooper, Thos. H.	Corvallis.	Howell, S. A.	Beaverton.	Paddock, J. B.	Grant's Pass.	Walker, S. T.	Forest Grove.
Couch, F. C.	Ashland.	Hoxie, J. M.	Wilderville.	Pate, Thos.	Athens.	Ward, Frasier.	Wardtown.
Cornelius, T. R.	Cornelius.	Hoyser, Geo. M.	Cruston.	Parker, J. B.	Independence.	Watson, A. Lyon.	Springbrook.
Cox, R. B.	St. Helens.	Isaac, S. T.	Helix.	Patton, T. B.	MacLeay.	Weeks, Geo. W.	Howell.
Cox, W. B.	Cranston.	Jack, Calvin.	Farmington.	Parrott, John.	Dundee.	Wheeler, J. W.	Newberg.
Craig, Frank.	Richland.	Johnson, F.	Roseburg.	Parsons, W. B.	Ella.	White, F. M.	Gales Creek.
Crawford, Fred A.	Dayton.	Johnson, J. C.	Scappoose.	Patrick, J. W.	Westfall.	Whitten, J. D.	Kingsley.
Cummings, Wm. L.	Shaw.	Jones, C. E.	Eight Mile.	Payne, S. J.	Lexington.	Wilson, Frank F.	Logan.
Cunningham, B. L.	Fort Klamath.	Jones, R. O.	Amity.	Peck, C. N.	Grave.	Wilson, Simpson.	Trail.
Cunningham, Bruce.	Liberty.	Jory, John W.	Salem.	Porter, A. A.	Aumsville.	Wise, G. W.	Warner Lake.
Curtis, W. K.	Forest Grove.	Keller, E. J.	Ione.	Pound, F. S.	Buena Vista.	Wisner, J. F.	Lorella.
Custar, A. D.	Murphy.	Kennedy, Jas. K.	Walla Walla, Wash.	Powell, J. S. S.	Illabee.	Woodruff, E. T.	Cleveland.
Daly, J. H.	Macksburg.	Kerr, Chas. A.	St. Paul.	Price, E. H.	Middleton.	Wooley, J. A.	Ione.
Davis, E. W.	Union.	Key, J. W.	Walterville.	Reasoner, D. B.	Glenora.	Wright, E. A.	Meadowbrook.
Davis, L.	Kingsley.	Kimberland, G. H.	Mt. Vernon.	Recher, Mrs. J. A.	Springbrook.	Wright, H. A.	Klamath Falls.
Davis, Geo. E.	Lorella.	King, J. R.	Weston.	Rees, J. H.	Ione.	Wright, Reuben.	Liberal.
Dilley, E. J.	Wren.	King, W. T.	Ione.	Reitman, Pau.	Ione.	York, F. M.	Carlton.