

The Farm, Ranch and Range in Oregon


By WALLIS NASH



LEWIS & CLARK CENTENNIAL EXPOSITION

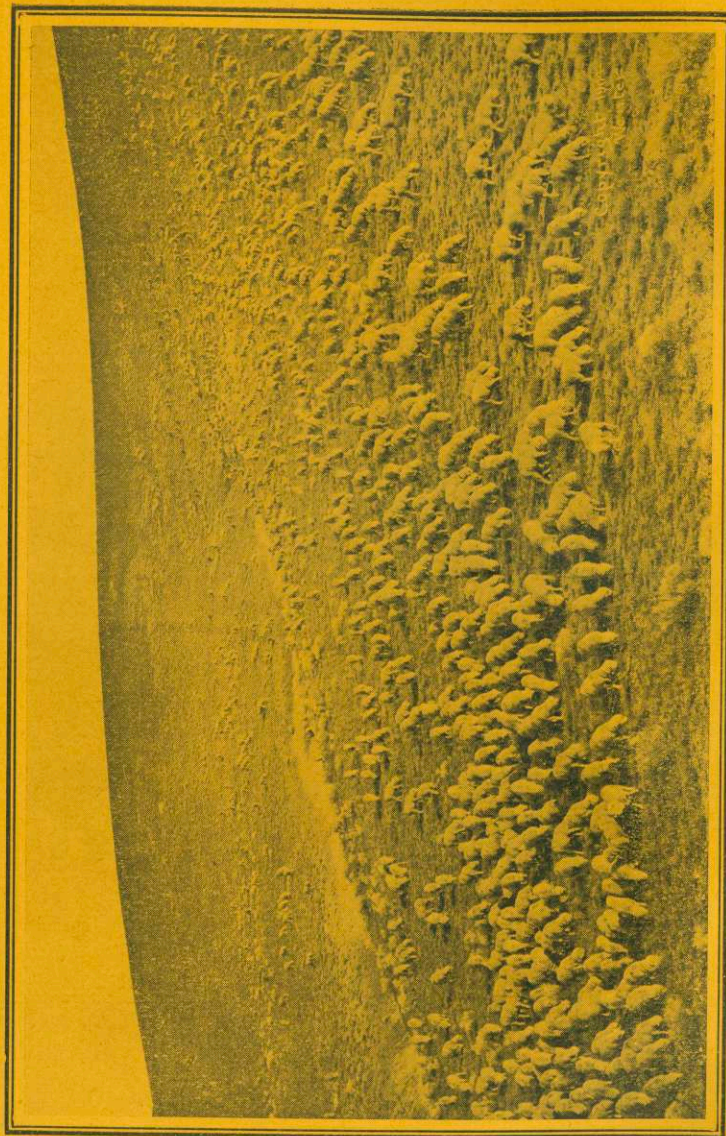
Celebrating the 100th Anniversary of the Exploration of the Oregon Country by Captains Meriwether Lewis and William Clark, under the direction of President Jefferson, in 1804-1806

PORTLAND, OREGON
1905



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1904



Eastern Oregon—"The pastures are clothed with flocks."

LEWIS AND CLARK

Centennial Exposition Commission

FOR THE

STATE OF OREGON

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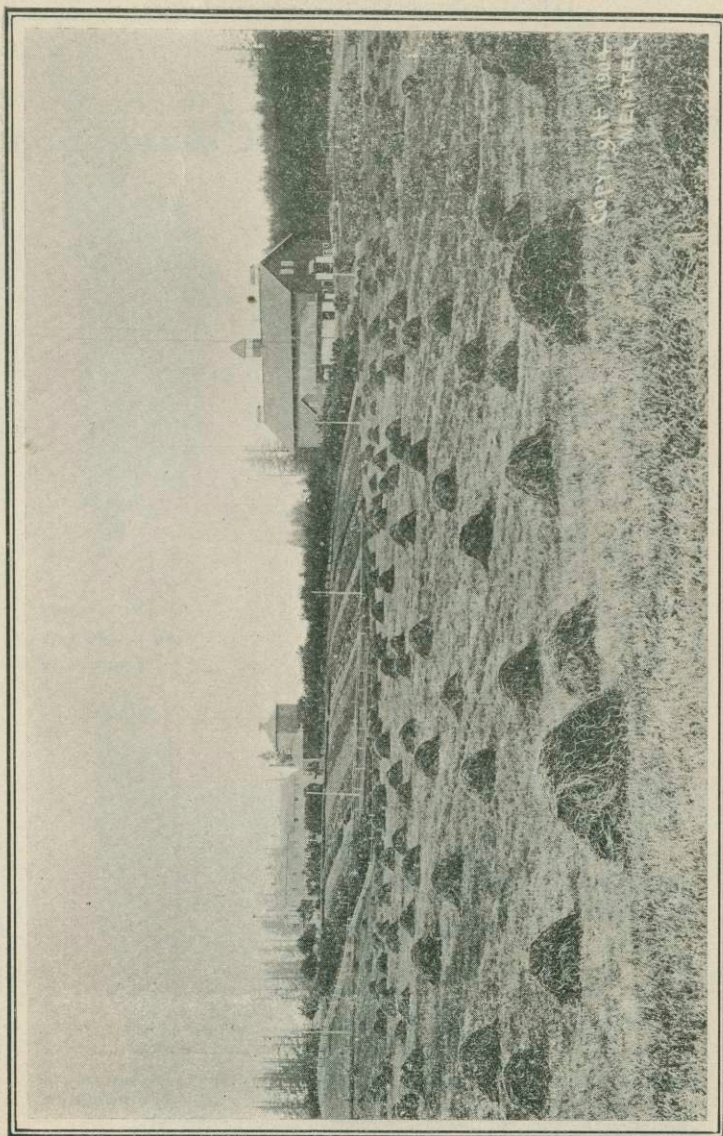
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NOTE.—Any further information desired in reference to Oregon can be had by addressing any officer of this Commission. If such information is not at hand, your inquiry will be referred to the proper party.

JEFFERSON MYERS, President.



"So Shall the Barns be Filled With Plenty."

OREGON IN 1904.

FARM, RANCH, AND RANGE! Magical words as the mind looks out over three great States of the Pacific Northwest. A vision of snow-clad sentinels, of forest-covered mountains, stored with mineral wealth, of broad and fertile valleys, of cattle on a thousand hills, of busy cities, of many a mill and factory, of great ships lying at the ports where the rails end at the ocean wharf, of steel roads and crowded trains, of wide rivers on which bustling steamboats ply, of farms where contented and prosperous people have made their homes, of orchards now bending with their autumn burden, of wheat fields golden with a nation's food, of school-houses and churches, the full tale of a young but vigorous civilization.

Then look backwards but a short hundred years—three generations—and see the way-worn and travel-stained explorers beaching their canoes at the mouth of the great river, and with their scanty band of followers hewing the logs of the little fort, the emblem of their claim for the American people of these wide lands.

Other States may put in evidence at the great fair the decorated structures of the twentieth century. Oregon fitly reproduces there the old Fort Clatsop of 1805, whence sprung the conditions of to-day.

The tale we have to tell is of the progress from that beginning—a progress still but begun, not to be ended until thousands of prospering citizens have joined the hundreds who have already found their way to the Pacific Northwest.

Plain words are best on the natural conditions of to-day. The fruits of the mysterious changes wrought in the surface of the land by the dim centuries of the past, show us six great districts in Oregon, varying in soil, in climate, in adaptation to "farm, ranch, and range."

THE FIRST DISTRICT.

The first we reach, entering Oregon from the East, is North-eastern Oregon. The Snake and Columbia rivers are the boundaries. In these river valleys are found tracts of land suitable for fruit and for small farms. Many orchards are prospering there now. The bottom lands of the smaller rivers, joining the Snake and Columbia, are taken up by fertile farms, where all the cereals, and most of the forage plants flourish. The rainfall is light and irrigation used wherever practicable.

A few miles back from the great rivers the large wheat farms and stock ranches begin, and stretch for many miles southward over the rolling plateaus. The Blue Mountains, covering a large area in Umatilla, Morrow, Wheeler, and Grant counties, contain untold mineral wealth. The mining population affords a ready local market for the farmer's and stock raiser's products. The construction of railroads southward into this district, through several of the river valleys lying south of the Columbia, has brought immense areas of farming land into reach of transportation. Land of this character, in partially improved farms, in this district is worth from \$15 to \$20 an acre, and will undoubtedly rise to a much higher price in the near future.

THE SECOND DISTRICT.

From this plateau country, lying at elevations of from 2,000 to 2,700 feet above sea level, the land sinks towards the irrigable district of Central Oregon. Settlement is progressing very rapidly here. It has been demonstrated past doubt that land heretofore supposed to be fit only for the range of cattle and sheep will grow, and is now producing without irrigation, wheat and other cereals with great success. Secondly, under the provisions of the Carey Act the State of Oregon has claimed many thousand acres for irrigation by companies which have led, and are leading, abundant water upon the lower levels of these lands from rivers fed by the never-failing streams issuing in many places from the eastern flanks of the Cascade Mountains. These companies sell out irrigated lands to actual settlers at prices set by the companies, under the supervision of the State, averaging from \$10 to \$15 an acre, with a perpetual water rent of \$1 per acre to provide for the maintenance by the companies of the canals and ditches. The soil of these lands holds a large proportion of volcanic constituents, and when these are dissolved by the water and made available for plant life, the crops of alfalfa and other forage plants, of cereals and of leguminous plants are enormous. Orchards are being set out, homes built, roads made, and in real verity the desert so treated "blossoms as the rose."

The only drawback to a still more rapid settlement is the distance at present from railroad transportation of these lands. But it is not believed that the conditions of to-day will long continue. More than one railroad through this region has been surveyed, and more than one shows construction already begun.

The northwestern part of this district contains the far-famed fruit region of Hood River. The description of its orchards and strawberry farms is not within the limits of this sketch. A similar booklet on

the orchard wealth of Oregon by Mr. Henry Dosch, a most competent authority, has been issued and is readily obtainable.

THE THIRD DISTRICT.

The third district is the Willamette Valley, extending over eight counties, from Portland, in Multnomah County, to Eugene, in Lane County. A valley about 135 miles from north to south, with a varying width of from 25 to 40 miles, and covering above 4,000,000 acres. Irrigation is not needed, as the rainfall varies from nearly 49 inches annually at Portland to about 40 inches at Eugene. But the three months, June, July, and August, received only 2.32 inches of rainfall on an average of years at a point midway in the Willamette Valley. The weather summaries for 1901 and 1902 are given in the appendix for three points—north, middle, and south of the valley—from the records of the United States Weather Bureau. So the boast of the old valley farmer seems to be justified that it is "finest climate in the world, sir."

Rainy? Certainly, and no one, once acclimated, would have it otherwise. But the rain, on an average experience of many years, comes when it is wanted, and stops in ample time for the ingathering of the bountiful crops.

The enduring fertility of the Willamette Valley is the natural outcome of the geologic conditions to which its natural features are due. Originally part of the ocean bed, the gradual upheaval of the Cascade Range on the east, of the Coast Range on the west, created a vast salt water inlet or fiord, to which Puget Sound is a northern parallel. Basaltic rocks form a large part of the walls on either side. The salt water drained off and evaporated through the Columbia gorge, to be followed by a fresh water lake for many centuries. A new outbreak of the rocky dam at the north, where the Oregon City Falls of the Willamette are now seen, let the mass of water off, leaving heavy layers of alluvial soil. The weathering of the basaltic walls contributed still more to the stored fertility.

This valley was the earliest settled portion of the State. Some of the farms are owned to-day by the third generation from the original claimants.

Only in the river bottoms and the neighboring lands is the surface of these counties level. But a mile or two away the gently rolling character appears. Nearer to the Cascades the plain is dotted at wide intervals with "buttes"—the last islands of the great lost lake which showed their heads above its waters. The side river courses through the valley, as well as the course of the Willamette itself, are marked

by dark belts of fir timber and of soft wood trees, bass, cottonwood, willow, white poplar of great height and thickness. This wood used to be called worthless, but now the steamboats tow great rafts to the paper mills of Oregon City, and much is utilized in several of the industries of the city. Very few of the valley farms have been entirely cleared of wood. There are yet many hundred acres of grub oak land, where oak timber of considerable size and of great value is interspersed. In many cases the value of this wood, large and small, more than repays the cost of clearing.

In the Willamette Valley farms great changes in farming methods are in progress. Twenty-five years ago wheat was king, and successive crops of that staple formed the regular farming routine. The first change was by way of summer-fallowing one-half of the land. The next change was the introduction of a variety of crops, which accompanied a large increase in the live stock kept. Some five or six years ago, largely through the initiative of Mr. C. H. Markham of the Southern Pacific Railroad, dairying was introduced as a leading industry of the farm. Meetings of leading farmers were held at his invitation, the earnest support of the experiment station director and professors at Corvallis was enlisted, demonstrations were arranged, and in a very short time it was generally asserted, and it is believed that it is now proved, that Western Oregon is one of the best, if not the best, dairying country on the continent. A more detailed account of the farming of to-day is given in a subsequent part of this treatise.

Similar extension of the sheep and goat industry on Willamette Valley farms is now apparent. So that the profits of the farm of to-day have undergone a most gratifying increase over those resulting from earlier methods. Much remains to be done. The newcomers' attention is emphatically called to the opportunities in this direction. Well bred stock of every variety is now obtainable at moderate expense. The former notion that a man's success in farming was measured by the number of half-tilled acres standing in his name has gone for good. He is now invited to equip and develop thoroughly his farm, and to limit the acreage to that to which his means permit him to apply the modern methods.

It is difficult to suggest reasons for choosing a residence in any one of the counties of the Willamette Valley above another. The geological conditions above mentioned apply to all. Perhaps the dairying interest is most fully developed in Washington County and the bordering region of Yamhill County. To this the establishment of creameries and the very recent condensed milk factories at Hillsboro and Forest Grove undoubtedly contributes. These enterprises are on an

important scale, it being asserted that the products of 15,000 cows will be utilized there.

The Willamette Valley is amply supplied with railroad transportation by the four lines of the Southern Pacific. Stern-wheel steamboats are operated on the Willamette River for three-fourths of the year. The construction of electric roads has been begun. Rural delivery routes cover the valley. Both through and local telephone systems are being extended. Good schools and many churches are well supported. A rural population of about 100,000 people, and an urban population of the same number testify to the attractions of a residence in this favored region. And yet there is room for many thousands more.

THE FOURTH DISTRICT.

The fourth district is the coast region. It commences in fact on the Columbia River where the Willamette joins it twelve miles below Portland, and extends over the whole Western Coast of the State to the California line.

Let us except, however, the region immediately at the mouth of the great river; climatic conditions here are marked by mildness and moisture—the rainiest part of Oregon and one of the best dairy regions, where green grass grows for twelve months in the year.

The coast region is shared between timber and stock and dairying; fruit, also, of all varieties flourishes to perfection. Full of surprises, hilly and broken in surface, these counties shelter many a cosy valley with its group of settlers' homes. Its prevailing drawback is distance from railroads and large towns, for there are now but two railroads in Oregon which connect the interior with the coast. One of these, the Astoria & Columbia River, follows the great river from Portland to its mouth at Astoria, and is extended for some miles down the coast. The second, the Corvallis & Eastern, reaches westward from Corvallis in the Willamette Valley, 97 miles from Portland, to the coast at Yaquina, and eastwards for 50 miles into the splendid forests of the Cascades.

But the dairying interest has grown to great dimensions. Creameries and cheese factories have been established at nearly every inlet and estuary down the coast. The latest development is the new condensed milk factory on Coos Bay, established by conservative and experienced men with large capital. They have proved by their works their faith in the solid foundation of the dairy interest in the tide land meadows, and rich pastures surrounding the various inlets and tidal rivers constituting Coos Bay.

Life on the ranches of the tide lands and uplands of the coast is

the easiest and most natural to be imagined. A few acres of clearing on which the house, barn, and orchard are found, fruits free from all pests, berries of fullest flavor, vegetables of unusual size and beauty, clovers and all grasses, potatoes and root crops for the cultivated lands, and tide lands yielding rich, lush grass all the year round. A few cattle, a bunch of sheep and Angora goats provide the funds which, once a year, pay for the groceries and clothes of the family, and taxes, which are about the only demands recognized as pressing. Clams abound on the tide flats, salmon and salmon trout in their season, flounders, sea-perch, and kelp fish, and an occasional sturgeon in the bay, help out the family dinner. The deer are close by in the hills. The game laws mean little on the coast. Generally a salmon cannery on the nearest bay will give two months work and a hundred dollars pay in the fall of the year for the males of the family—an easy life indeed. Many so find it. Farms and ranches are cheap. Climate is the healthiest. The timber industry extends over every county. Many mills are at work the year round, and well paid labor there helps out the family finance.

THE FIFTH DISTRICT.

Shut off from the Willamette Valley by a range of hills which stretch across from the Cascade to the Coast Range, the Umpqua and the Rogue River valleys form what is generally called Southern Oregon. An Italian climate, and a soil second to none in kindliness and productiveness. Valuable minerals are found in each of the ranges, and many thriving mining camps have been developed. The soil is impregnated with gold far and near in Josephine County. The timber industry is most valuable throughout these counties, and the mills offer employment to all neighboring labor. In the Umpqua Valley, where Roseburg is the principal town, many hops and much fruit are grown. Stock ranches are large, and an excellent grade of stock is raised. Dairying prospers there also. The soil of the valleys is the usual alluvial loam; of the uplands the red loam, impregnated with iron. The uplands are well, but not too thickly wooded. On the lower rolling uplands much good oak and other hard-wood trees abound. The district is well settled and people are prosperous. Land is not high priced.

The Rogue River Valley in size is next in Oregon to the Willamette, and to Harney Valley in Eastern Oregon. As one emerges from the Siskiyou Mountains on the train journey northward from California to Oregon the whole wide expanse of this great tract lies in view. A fine scene indeed. Towns and villages are surrounded by

farms and orchards and well-tilled fields. Well watered by the Rogue River and its many tributary streams, the green of the smiling landscape rests the eye. The fruit of the Rogue River Valley disputes the palm with Hood River in the north. Happy the State which embraces both! But not fruit alone. It is true that when land so utilized will in eight years' time grow tenfold in selling value—when every ten acres, aye, every five acres, in orchard will support a family in comfort—there is every inducement to enlarge the orchard at the expense of the farm. Yet many of us prefer the pursuits of the farmer and stock raiser to those of the orchardist. Such an one need not fear to select Southern Oregon for his future home, sure there, if anywhere, that his purchase will grow in value in the coming years.

The tables at the end of this little book will show the temperature and rainfall here on which are based the claims of the Southern Oregon people that they have the finest climate in the world.

THE SIXTH DISTRICT.

Southeastern Oregon is divided into two main sections:

(1) The semiarid rolling hills and plateaus south of the Des Chutes, Crooked River, Harney and Malheur valleys. Inaccessible from railroads, with a very scattered population, chiefly interested in stock, this whole region is awaiting development. There are no considerable towns. It is known that there are great mineral resources, which will be actively taken in hand as soon as transportation facilities are provided.

(2) The lake region, along and parallel with the California line. This is an ideal stock country. The graded Durhams of this district are some of the best stock that reach the California markets, for nearly all of the output is driven south for 75 to 100 miles to one of the Southern Pacific stations in Northern California. The cattle spend the summer generally on the mountains and the winter on the low-lying valleys surrounding the ranches, or on the level lands bordering the lakes, which are the great features of this district. All eyes are turned to the railroad which is working northward from California into Oregon. With its advent will come the cutting up of the great ranches and the influx of the farmer and settler on 160 acres of land.

HOW FAR WILL CAPITAL GO IN BUYING LAND IN OREGON?—The answers to be given are based on terms and conditions prevalent in 1904. It is to be remembered that lands in Oregon are rising in value all round. Any wide variation in price of lands in the same district should be accounted for by variation in the qualities and conditions on which value depends. What are the points that a buyer

should appraise in determining to buy or to refuse? (1) Comparative fertility of soil, judged by the grade of the products of the farm. (2) Nearness to markets and to centers of life, large and small. (3) Cost and methods of transportation of the products for sale. (4) Cost and condition of structures on the farm, house, barns, sheds, granaries, silos. (5) Area of cultivated and uncultivated land. (6) Fencing. (7) Water supply. (8) Access to outrange for stock. (9) Cost of clearing and of completing other improvements. (10) Climate.

It is a good plan to note these points in one's pocketbook, with a scale of points for excellence in each. Then as inspection of a farm proceeds, jot down if it be more or less than equal to the common standard. Having completed the inspection, sum up the points of the farm and you have a fairly sure gauge of value on merits, and also a basis of comparison with others.

In the wheat belt of Northeastern Oregon a comparison of various lists of lands for sale in the spring of 1904 shows that prices of farms of from 160 to 320 acres, all cultivable and fenced, and with fair house, and lying within one day's hauling distance from railroad depot, range from \$15 to \$20 per acre for medium land yielding from 20 to 30 bushels of wheat to the acre. Choice land, well located and furnished with young family orchard, good house, well or creek, and more or less creek bottom land demand up to \$50 per acre. In such cases all, or nearly all, of the land should be fenced and be plow land. Nearly all this district, however, is under the summer-fallowing system. Therefore only one-half of the land is producing the staple, wheat, in any one year. In estimating the value of such farms the cost of raising the crop must be first taken into account. One very good authority gives the cost of wheat raising in this district on the 160 to 320 acre farm at from 35 cents to 40 cents per bushel, allowance being made for reasonable interest on the purchase price, and for taxes. The yield varies from 25 to 45 bushels per acre. In exceptional cases even a greater return is obtained.

Money is readily advanced at standard rates to the extent of from one-third to one-half of the purchase price.

Many men have got their start in this district by renting farms. The rental usually varies from one-third of the crop on the poorer land to a larger per cent when the land yields large returns. The farmers of 320 acres often get on with one heavy and one light team of horses. The best machinery is the cheapest.

When dealing with the great stock ranches of Middle and Eastern Oregon a different mode of valuation comes into play. The ranch itself is just the heart of a wide undertaking, so placed as to control the accessible water supply. It is not complete without several hun-

dred acres of alfalfa land, irrigated, and yielding three crops a year. Whether sheep or cattle are the basis of the industry, they are not kept the year round at or within call of the house ranch. But not too distant outrange is the requirement, the home ranch and its neighborhood being reserved for winter feeding. But incoming settlers have for some years been crowding the great ranches deeper into the wilderness. The wire fence around one 160 acre homestead has joined the next. For such ranches nowadays from \$15 to \$25 an acre is asked.

In the Willamette Valley there is not a wide average range of prices between the eight counties, for well-improved farms within three miles distance from a large town and railroad depot, but the prices of individual farms in any county are wide apart. There are many small farms in each county ranging from 24 to 65 acres, with a similar average of 132 to 482 acres for the larger farms.

In the farms under 160 acres in all the eight counties the per cent of cultivated land to total area is 59½, so showing that the buyer has abundant room to increase the production of his average farm. Similarly, on the larger farms the average area of cultivated land is but 43.70 per cent.

The average prices of lands are obtained by taking those asked in a large number of lists and averaging them for each county. With the influx of settlers these prices of 1904 will surely rise—there is no probability of any circumstances that will bring about a reduction.

Small farms are those under 160 acres; large farms those of 160 acres and over.

Washington County	Small, \$ 53 82.	Large, \$38 62 per acre.
Yamhill County*	Small, 119 66.	Large, 21 50 per acre.
Marion County	Small, 46 11.	Large, 35 76 per acre.
Polk County		Large, 22 70 per acre.
Linn County	Small, \$ 52 15.	Large, 23 28 per acre.
Benton County	Small, 33 10.	Large, 21 00 per acre.
Lane County	Small, 32 88.	Large, 26 44 per acre.

In the coast region at very wide range of prices prevails. A Tillamook Bay, dairy lands are said to be valued at from \$50 to \$70 per acre, and hardly to be obtained. Similar lands at the other bays along the coast vary from \$20 to \$35 per acre. But for the average coast district ranch it may perhaps be said that prices are about one-half of those given for the valley counties. There is no such standard of value or method of ascertaining averages as have been applied to the valley counties. Whether the comparative conditions prevailing on the east and the west side of the Coast Range justify so wide a varia-

* NOTE.—A large proportion of orchards and hop yards raise this average.

tion in price is a doubtful matter. Probably the tastes and ideals of life of the newcomer will determine his choice.

Many of our Scandinavian citizens have found homes in the coast counties. Their modes of life and industries are well adapted to this region. There is ample room and abundant opportunity for many more.

The prices asked for small farms in the Southern Oregon district are affected by the large proportion of fruit and orchard land. It has proved impossible to obtain data to state average prices of small tracts for general farming. Perhaps a reasonable estimate is from \$75 to \$100 per acre. The large stock farms are priced at a much lower rate. Of one very large list the average size is 550 acres and the average price \$12.18.

WHAT SHOULD A NEWCOMER DO WITH VARIOUS SUMS OF CAPITAL IN STARTING LIFE ON THE FARM IN OREGON?

Capital, \$1,000. Is he justified in buying land? Yes, if the heads of the family are able and willing to assume the ownership of a partly opened and cultivated tract. Such a buyer must get some way back from town and railroad. He need not, and he should not, settle too far from school. A farm of from 40 to 80 acres, with a small house and barn, and a cleared and fenced field or two, and often enough fruit trees to make a small orchard, can still be chosen for from \$10 to \$15 an acre, say \$800. Our buyer can pay down \$400, and have two years to pay the balance at 6 per cent interest. He has \$600 left. By careful purchases he can get a good enough wagon and small team for \$175; eighty sheep for \$240; one cow for \$30; one sow for \$10; two dozen chickens for \$6; plow, harrow, and harness for \$50. He will have \$89 left to buy his stove, absolutely needed furnishings, and a start in flour and groceries until he has butter, eggs, and vegetables to begin trading with. The first labor he puts in should be on a good garden. The produce of half an acre will go a very long way toward keeping the family. As to the kind of stock to buy and its price more information is given later on. One solid resolve he must make is never to go into town or trading point without something to sell or to trade, and never to leave more money in the town than he takes out of it, except for such necessary purposes as the partners (if the family constitutes a partnership, as it should,) agreed on beforehand. Where he should make his start, and what line of work he is to follow, depends on which district he settles in. On this I consider it is far better to make up his mind before he arrives in Oregon. So much for the \$1,000 man.

Take now the \$2,000 capitalist. How shall he spend it? He may either confine himself to a small general purpose farm near town and railroad, or settle in the fruit regions on five or ten acres of orchard

land, or else he can get a larger acreage in the foothills of the counties described, or in the coast district.

In the first case he can buy for \$2,500 a farm of 80 acres, 50 in cultivation, fair house, barn, and orchard, and well watered, within three miles of a good town. Paying half, or \$1,250, down he has \$750 left. He can expend this as follows: Wagon and team, \$175; twenty-five sheep, \$75; twenty-five goats, \$100; five cows, \$150; one sow, \$10; two dozen chickens, \$6; plow, harrow, harness, etc., \$50.

He has a balance of \$184 left to buy stove, necessary furnishings and stock of provisions, and if he has a balance left over he can increase the size of his orchard and add to the cultivated land on his farm.

Let the \$2,000 settler buy a partly improved farm, to be chiefly used for the stock industry at a moderate distance from town and railroad.

Extracting the first nine of such farms as we find them described in the printed list of an entirely respectable agent in one of the Willamette Valley counties west of the river, and averaging their size, cultivated area, and distance from town and railroad, with the prices asked, the following results appear: The average size is 172 acres, cultivated land 27 acres, distance from town or depot three and one-half miles, price \$1,470. In most cases there is available outrange for the stock.

Our purchaser then pays half the purchase money, or \$735, and takes two years for the balance at six per cent. He has \$1,265 margin. How shall he expend this?

Suppose he buys five cows at \$35	\$ 175 00
Five two-years-old at \$20	100 00
Five yearlings at \$12	60 00
Fifty sheep at \$3	150 00
Fifty goats at \$4	200 00
Team of horses	200 00
Two sows	20 00
Two dozen chickens	6 00
	\$ 911 00
He must have a wagon	\$70 00
Harness	25 00
Plow	10 50
Harrow	14 00
Rake	30 00
Tools	25 00
	174 50
	\$1,085 50

This leaves him a margin of \$180 for furnishing and for food. He must hire his hay crop cut by one of the neighbors until he can afford to buy a machine of his own.

The profits from a farm thus equipped are discussed later on.

With the increase of capital to \$5,000, wider opportunities are open. Every one of the six districts mentioned is open to the choice of the newcomer.

If he takes to the wheat farms of Northeastern Oregon and the Columbia Basin, he can buy 320 acres of land at \$20, and pay half down, or	\$3,200 00
His outfit of two teams (heavy and light), wagon, buckboard, harness, plows, harrows, drill, harvester, tools, etc., will cost him just about	951 50
He should have two cows	\$60 00
Three sows	30 00
Chickens	6 00
	96 00
	\$4,247 50

Leaving him a margin of \$752.50 for furnishing, living, and current expenses until the next crop comes in.

On the 320-acre wheat farm the yield on the one-half in crop each year should not fall below an average of 4,000 bushels.

But if the newcomer with \$5,000 desires a general purpose farm, either in the Willamette Valley, or south of it, in the choicest part of Douglas County, the area of selection is very large. Stock will be his chief investment after buying his farm. Further information on this head is given later on.

In choosing his farm the same principles should govern, namely, that the value of the land *to him* will be determined by the profits he can make off it, not by its selling value. Therefore let him prefer a smaller farm thoroughly stocked, and provided with good implements and labor-saving tools and appliances to a much larger area poorly and cheaply equipped.

To the larger capitalist, commanding, say, \$10,000, still more opportunities are available. Besides the wheat farm, the fruit farm, and the general purpose farm, stock raising and ranching on a larger scale are very attractive to the lover of fine or blooded cattle, horses, sheep, or goats.

For these industries tracts in Western Oregon are offered of from 1,000 to 2,500 acres at prices varying from \$6 to \$15 per acre. Within those prices a buyer can expect a good house, good barns, a family orchard, living water on all the principal subdivisions of the property. Enough timber for all improvements and current purposes, and often some to sell to the nearest mill. A varying but considerable acreage in cultivation, and a larger area in clover and tame grasses. Such prices prevail at distances of not less than 120 miles from Portland, and from three to ten miles from a railroad depot. Nearer to Port-

land such places are harder to find and the prices will rise to from \$15 to \$25 per acre.

Farm mortgages are sought after by investors as excellent security. The State Land Board has a large fund from which loans of this class are made at 6 per cent, up to one-third of the appraised value of the property.

Farm labor is in demand at from \$25 to \$30 per month, with board, the year round on the dairy farm. Experienced milkers get \$30 a month and board. Ordinary farm laborers get about \$25 a month and board from October to April, and \$30 a month and board from April to October. Hop pickers' pay for several years has been at the rate of 40 cents per box. Fruit pickers get from \$1.50 to \$2 a day. Strawberry pickers in Hood River received in the season of 1904, 1½ cents a box and ¼ a cent for packing, making 48 cents a crate for picking and packing.

The following prices of lumber prevail in the Willamette Valley and in Southern Oregon, in the summer of 1904. The local mills in the coast counties charge about the same, not more. These prices are f. o. b. at the mills.

For common rough lumber, per 1,000 feet	\$ 7 50
Sized rough lumber, per 1,000 feet	8 00
For second-class flooring, flat grain	17 00
For second-class flooring, vertical grain	22 00
Rustic for outside coating	18 00
For shingles, cedar No. 1, per 1,000	2 00

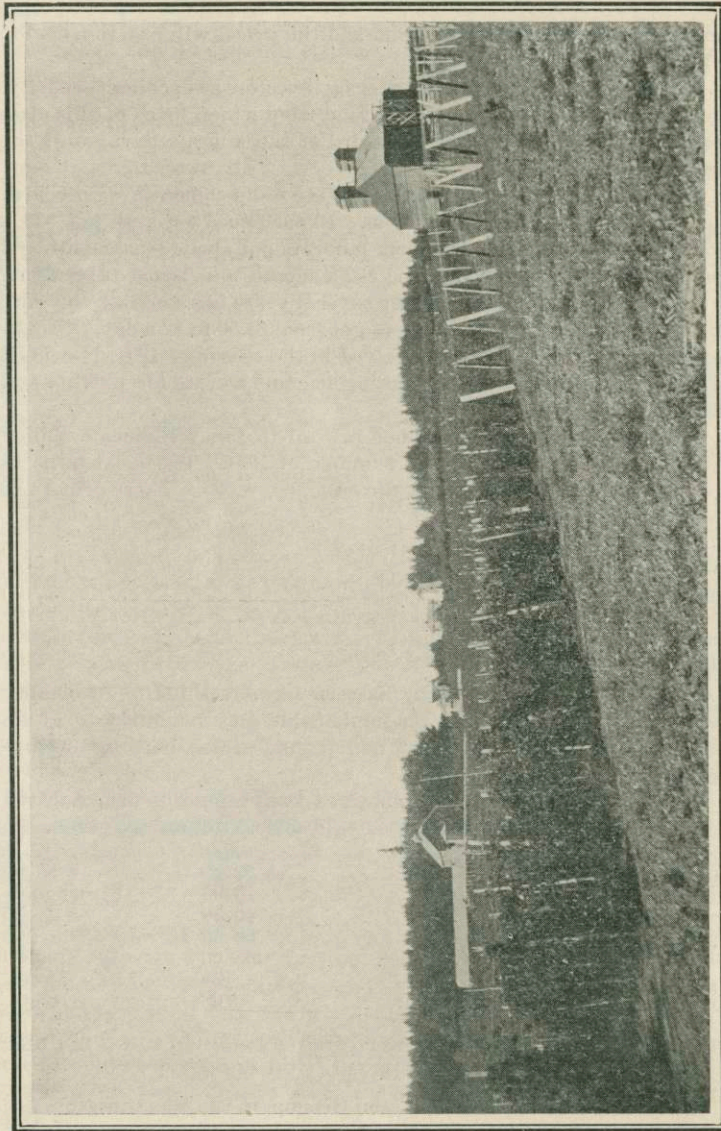
Questions are often asked by Eastern farmers thinking of coming to Oregon as to prices of farm implements and machines, to guide them as to selling off their outfit and buying afresh here or of shipping their own outfit out West.

Lists of prices having been obtained from reputable firms located in Western and Eastern Oregon, certain selected items are given.

	Western Oregon.	Eastern Oregon.
Farm wagons, 3-inch	\$ 82 25	\$ 85 00
Steel plows, 14 inch	15 00	\$1 per inch
Rolling harrows, 8 feet	40 50	\$ 45 00
McCormick No. 4 mowers	50 00	Mowers \$60 to \$65
Binders	145 00	\$150 00
Barbed wire, per pound	04	3½ cts.
Logging chains about per pound	08	8 cts.

THE NEXT AND MOST IMPORTANT QUESTION IS: "HAVING BOUGHT THE FARM WHAT SHALL I DO WITH IT?"

In our first district, Northeastern Oregon, in the wheat region, not much option is left to the buyer. The acreage and productiveness of the plowed land will have been measured by the price paid. His ex-



"A Land of Wheat and Barley and Vines."

pectation of wheat return will vary from 25 bushels per acre on \$15 land to 45 bushels per acre on \$50 land. The prices will be governed also by nearness to town, railroad, and school, as well as by the possibility of diversified products from the lower lying or irrigable portions of the farm.

But only one-half of the wheat land will be in crop in any one year. The other half is summer-fallowed. The 160-acre farmer will therefore have the crop from 80 acres; in other words, from 25 bushel land he will have 2,000 bushels to market. If he receives 63 cents a bushel, and if the cost of raising the crop, with interest on his purchase money of \$2,400, at six per cent, be taken at 35 cents per bushel, a margin is left of 28 cents per bushel, or \$560. He has, besides buying his farm, had to buy horses, and implements, and outfit, and has so invested not less than \$750. His total investment, therefore, of \$3,150 as a minimum, shows a return of 17 $\frac{3}{4}$ per cent for wheat growing only. This in a normal year. The wheat farmer has for many months in the year a very easy time.

But the other side of the picture is that this profit comes from only half the land. To make a success the other half must be utilized. In the first place no one of the smaller sources of income must be neglected. Hogs must be kept, and the chicken yard may be as profitable in Eastern Oregon as in Western. But the real issue is in growing and utilizing diversified crops. Field peas and other leguminous plants do well on these lands. Corn also can be, and is being, successfully grown. The year before last 30,000 bushels from not exceeding 1,000 acres of land were reported from Athena in this region.

These open rolling hills and undulating valleys where neither mountains nor high hills, forests nor wood lands obstruct the eye's free range from the ground one treads on to the clear horizon—where the air is clear, the sun undimmed by cloud—appeal to him who hails from the wide prairies of the Middle West. Neither cyclone, tornado, nor blizzard is to be feared. Variations that in Oregon we call extreme would be gentle vicissitudes in the middle of the continent. Of course with the amount of capital invested in such lands the proportionate profits rise.

The eight counties of the Willamette Valley are the home of general farming. Many small tracts are, it is true, devoted to the orchard or the hop yard, and these industries can be extended on to hundreds of acres now bare of them. But by far the larger area is held in farms of from 80 to 640 acres where general farming is the object.

A great change or evolution in farming methods is, and for several years has been, in progress. Part is due to the teaching and experimental work of the State Agricultural College at Corvallis. But the

breaking up of the old 640 acre donation land claims and the pressure of the necessity of getting better returns from the land which followed the hard times of 1893 were the main agents.

The methods, cost, development, and advantages now to be described are derived from the actual experiences of a group of the modern farmers who have detailed their experiences and opinions in response to practical questions put to them. These men represent various districts and conditions, but they agree in three main propositions, as follows: (1) The most successful farmer is he who so balances his possessions in land with his working capital as to make the fullest and most constant use of the land which is his fixed capital: in other words "own no more land than you can fully utilize." (2) Use upon the land as much as possible of the raw material of its products. To send off it, that is, the finished material. (3) Obtain and use improvements even if comparatively costly, whether in new crops, better appliances, better buildings, but chiefly in the use of well bred, even pure bred stock.

Supposing, then, that the newcomer has a farm of 160 acres in the Willamette Valley proper, or in the foothills edging the same, and has reserved funds enough to fully equip the same, the question was submitted—

1. To what uses should the land be put to get the best returns, with, say, 100 acres in cultivation, and 60 acres in timber, brush, and rough pasture?

The best reply is perhaps this, "With a view to secure 'best returns' and maintain the productive capacity of the farm I would plan to keep all the live stock the farm would carry, and make live stock and their products, as quickly as possible, the only class of products sold from the farm." Another adds: "On the brush land I would put goats or sheep, and would slash the brush and burn it later on."

2. What kinds of live stock and what proportions of each should a newcomer obtain to put such a 160-acre farm into most productive-ness at the earliest date?

The answers vary, of course. They agree in advising from 8 to 20 milk cows, from 15 to 25 sheep, and a similar number of goats for the brush land and wild pasture. All agree on three brood sows, and not less than three dozen chickens. One adds "three good horses." This I feel sure is the smallest number our farmer should obtain. This amount of stock, be it remembered, is to start with. One answer says "If the owner desires to intensify his farming, and does not fear the hiring of the necessary labor, his farm will easily carry 50 cows."

3. The third question was: What has been your experience in the use of forage crops during the last five years? Which succeed best

and yield the best returns? The replies come to this: Forage crops must be relied on for successful livestock husbandry. All agree to recommend vetches, red clover, and corn both for ensilage and winter feeding. Most say that rape yields a wonderful amount of nutritious food, good for hogs, sheep, and young stock of all kinds, and, if fed cautiously, for milk cows also. Thousand-headed kale and field peas are strongly recommended.

A note may be inserted here that the vetch is sown broadcast, four pounds to the acre, between May 1st and July 1st. One correspondent states that he has sown 78 pounds of field peas and 66 pounds of white oats to the acre with success, but adds the caution to drill in the peas to secure the seed from the birds. Red clover in Western Oregon takes from 8 to 10 pounds to the acre, and is best sown between the first and the tenth of March. As to using the rape the advice is to pasture off reasonably close when it has made its first growth. Then turn off the stock and let it leaf out again, and, if the ground is not too wet, repeat this until the following spring, when the plant is either plowed up or let run to seed.

A question as to the advisability of a silo brings out a majority of opinions in its favor. As to its size, one recommends a silo 16 feet in diameter and 30 feet high. Another, two round stave silos 10 feet in diameter by 20 to 24 feet high. A third 10 to 12 feet in diameter, and from 24 to 36 feet high.

The farm is supposed to have 100 acres in cultivation. To what crops and in what proportions this should be apportioned, is a question which has brought out various replies. All, however, are based on the principles before stated, and all tending to provide for the largest return from live stock on the farm. A well recommended division follows: 5 acres for buildings, yard, family garden and orchard. This includes some small fruits and vegetables in excess of family needs. A ready market for the surplus is found in every neighboring town; 5 acres near the house to be sown down in permanent tame grasses for a pasture lot; 5 acres in field peas for hogs; 5 acres in rape; 3 acres in vetches for early forage; 15 acres in field peas and oats, part for mid-summer forage, the rest to be harvested when ripe, grain to be chopped for cow feed, straw to be used for cows, horses, and sheep in winter; 7 acres of corn for ensilage and for late forage; 10 acres of wheat for bread, chicken feed, hog feed, and seed; 10 acres of oats for horses, cow feed, and for seed; 15 acres of barley for fattening hogs; 20 acres in clover.

The clover will average about three and a half tons to the acre. On wet land alsike clover is found better than red clover. A second crop can usually be relied on, which is either left and used for pasture or for seed.

As to hired labor. The replies nearly all agree on one hired man at from \$25 to \$27 a month and board if cows less than 20 in number are kept, and two if 30 cows are to be cared for. In addition one extra man at \$1.50 per day will be needed in harvest. As to whether such labor can be readily obtained, and is to be depended on, the replies differ. The majority answer in the affirmative. All agree on the scale of prices.

Now comes a critical question. What monthly return can be relied on per cow through an average year, in case of milk separated on the farm and cream sold to the creamery, or of milk sold to the condensed milk factory. The answers show a satisfactory agreement. They are that the sum received from the creamery averages from \$6 to \$8 per month per cow the year round. One answer says that the separated milk is worth on the farm \$7.50 to \$8 per month for hog, calf, and chicken feed. One notes that his figures are based on returns from an average, not an A No. 1 herd. Another gives his returns at \$8 per cow for ten months in the year. On the lower figures the checks from the creamery total to \$1,440 on twenty cows. There will be heifer calves to be raised, and ten of them in a year will be worth \$140. The steer calves will have been sent to the butcher and return \$80 for the ten. Hogs will show a return of not less than \$10 a head if kept to twelve months old, and there should be not less than twenty to go to the butcher from the three sows, or \$200. These are for butcher's prices, but farm-raised and cured breakfast bacon has been worth not less than 15 cents, and hams 17 cents a pound for several years past.

The above items show a return of \$1,860. Sheep, goats, and chickens remain to be accounted for. Wool from 25 sheep will be worth \$25, and mohair from 25 goats \$37, together \$62 more. The farmer's wife should bring in \$100 from the chicken yard. Many of them do. Extra fruit and vegetables sold will give some pocket money.

In the farm balance sheet the farmer can also credit himself with the increase on the livestock. This ought to be 20 lambs and 17 kids, to use conservative figures; and one colt at least in the pasture should add to the total. Labor and taxes will represent the chief deductions to be made. And under such plans the farm will be on the up grade of fertility. Its value will be a rising quantity from year to year.

Great interest is being taken now over Western Oregon in wide-spread experiments for growing alfalfa on irrigated land. Success seems to depend on two main points. The land must be either naturally or artificially subdrained so that the roots may not strike a water soaked stratum within two feet of the surface. And the land must be thoroughly prepared to receive the seed. It is hard to overstate the importance of this work to the individual and to the community.

There is hardly a district in Oregon to which the suggestions above given will not apply with more or less force. Diversified crops leading to diversified products are all essential.

The coast land farms of 160 acres will generally show but a small area, from 10 to 30 acres of cultivated land, but a much larger proportion of meadow and pasture. These conditions point naturally to a much fuller use of sheep and goats, while the abundant outrange assists all forms of the stock industry. The forage plants grow luxuriantly throughout all these districts. The use of anything outside of grass and a little clover, is, however, only now beginning to spread. There is a great future opening for all these counties as the modern methods are taken up.

THE LIVESTOCK INDUSTRY.

We leave the great stock ranches aside. Their conditions do not differ from similar enterprises in Idaho, Montana, and Eastern Washington. But in Oregon there are many ranches ranging from 640 to 2,000 acres where stock raising for the butcher is the main industry. Of cattle there kept the Shorthorn or Durham seems to be preferred for general purposes and for early maturity, the Hereford for heavy beef cattle. A good many Polled Angus are also kept. With a view to this industry the buyer must be sure that outrange is accessible. Of both the Cascade and Coast ranges it may be said that their lower hills and benches are well grown up in grass in the recesses and coves of the hills. The ranch cattle put on fat there all through the summer and fall, and are generally ready for the butcher in late fall or early winter. From such ranches the local buyers for the Portland and Puget Sound markets obtain their supplies, going the rounds on horseback, buying a few here and a few there, and having them driven to the nearest depot, until the 22 or 24 needed for a carload are there collected. The prices for steers of this character, 3-year-olds, for several years prior to 1904 varied from 3½ to 4½ cents per pound on foot, gross. For cows and heifers about ¾ to 1½ cents per pound less. This year prices will be lower certainly. The cattle in the coast counties are often sold to the butcher late in December, having put on flesh after the grass started to grow again with the fall rains. The more provident of the cattle men in Western Oregon now secure silage, roots, clover hay, and chopped grain on which to winter their cattle, and sell at top prices between February and April of the following year.

For young thoroughbreds, (registered), the following prices may be given: For males, \$50 to \$150, and females \$40 to \$110. For young

unregistered thoroughbreds, for males, \$50 to \$75; for females, \$30 to \$40 are asked.

SHEEP.

On the sheep ranches of Eastern and Southeastern Oregon the Merino varieties are universally used. Many fortunes have been and are being made. Men starting as hands on monthly pay of \$40 and found faithful, have been trusted with bands of sheep on shares. So in a few years they have got together bands of their own numbered by the thousand.

In Western Oregon there are few sheep ranches properly so called. Most sheep are kept in flocks of from 50 to 300 head by men who know the value of this stock, but are engaged in other industries on the farm.

To the question of the best breeds to be kept, and why, various and widely differing replies have been returned, by common consent the Merinos are excluded, and the decision is to be made between the long-wooled Cotswolds, Lincolns, and Leicesters, and the close-wooled Shropshire and Oxford Downs. One good authority who has run a flock of from one to two thousand sheep for a good many years and has made a study of the different breeds, writes: "The best are the Cotswolds, or any other of the long-wooled or medium-wooled sheep, because the heavy mutton and the early lambs are the most profitable part of the home demand. These breeds come to maturity earlier, and the grasses and also the climatic conditions of our valley are the most favorable to them."

But another equally experienced man writes in reply to the same question: "Cotswolds are best to keep in small bunches on rich land, but Shropshires for the foothills, are, I think, the most money-making sheep for the mixed-land farmer."

My own experience in a coast region ranch for 10 or 12 years was that for mutton purposes the Shropshire could not be beaten, but the brushy ranges and the heavy rains of the fall months were more injurious to the close fleeces, and there was a considerable loss of wool. If I started another flock in that district it would be of Cotswolds.

The 160-acre farmer is recommended by all my correspondents to keep from 25 to 50 sheep, graduating his number to the acres of rough pasture he has and to the number of cattle on the farm. Some of the best yields of fall-sown wheat that I have seen have been from land on which the growing crop was grazed down close by the farmer's sheep in the early spring until the field looked absolutely bare.

Shearers can always be had at from 6 to 7 cents a head. Several shearing machines were last year brought into the valley, decreasing the cost under this head.

Mutton sheep and lambs for the city markets are always in demand.

Spring lambs have been sold this year at from 5 to 10 cents a pound, live weight. Two ways of selling the wool are in common use. One to sell individually and locally, the other to combine with the neighbors and pool the wool. The former is, I think, more profitable, if the flock in question is of extra grade, the latter, if the wool is just ordinary. The sheep share with the goats the functions of weed and brush eradicators.

Western Oregon is, I believe, the best country in the world for the mutton and wool sheep for several reasons. The climate and seasons encourage an abundant increase. If less than a cent per cent increase results there is something wrong with the flock or its management. The same conditions enable the farmer to leave his flock exposed, with, at least, a rough shelter or straw stack for shelter in case of need. The grasses and forage plants stay so long in growth and leaf that artificial feeding is reduced to the lowest point. These sheep are remarkable for early maturity and attain great weight. The markets for mutton are close at hand, and the extension of the woollen manufactures in the State encourages the demand for home-grown wool.

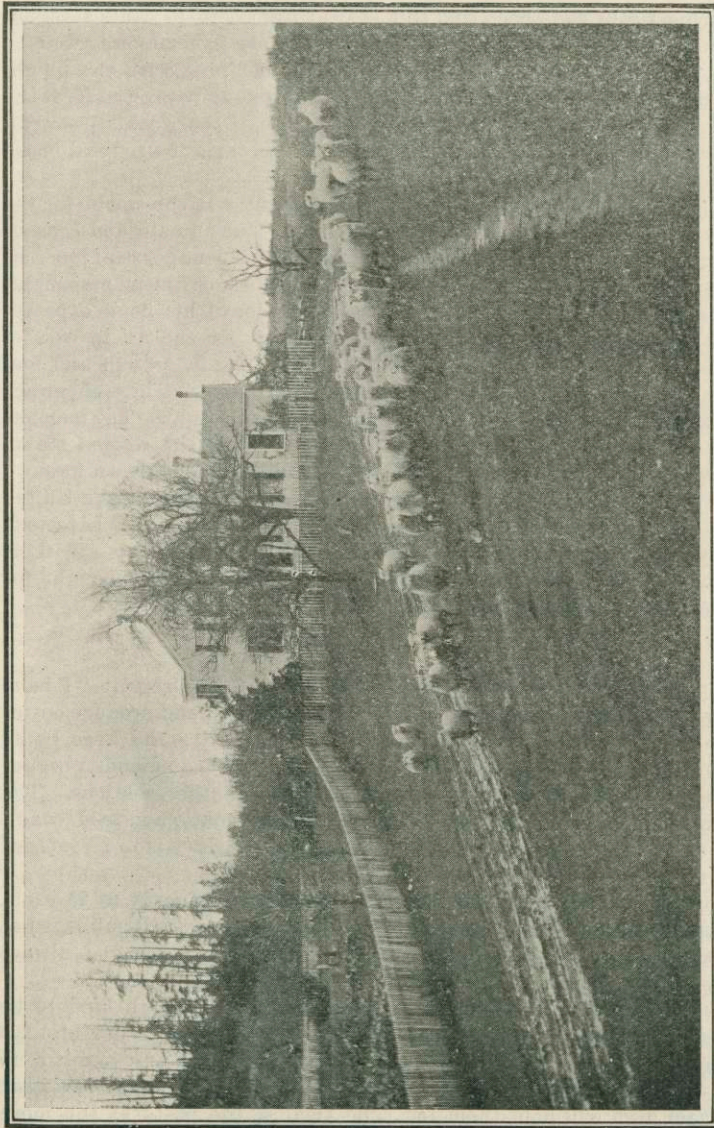
The testimonies from some of the leading sheep men of the United States at the recent convention in Portland of the National Livestock Association to the superior excellence of the Oregon sheep and their products were unanimous and hearty. Good ewes can be bought for from \$2.50 to \$3.50 a head.

ANGORA GOATS.

Mr. Bates, of Ohio, says of the Angora goats of Oregon: "I have never seen better, and they were of greater weight and produce better mohair than those of any part of the United States, the fibre being longer and of good quality. Having great luster it commands a higher price in the market than is paid for mohair in other sections. The growers of Angoras do not realize that their climatic and feed conditions are so favorable to Angoras, in fact the industry is in its infancy in the Willamette Valley."

Good average grade nannies can be bought at from \$4 to \$6 each. Bucks at from \$15 up to \$100. The "American Angora," published at Kansas City, and the "Pacific Homestead" at Salem, Oregon, always carry the advertisements of a number of breeders.

The owner of a 160-acre farm, with 60 acres of rough land to be cleared off can safely use from 25 to 50 goats. The owner of 1,200 acres, of which half is rough land, can properly put any number up to 500 head on his 600 acres. Any perpendicular fence not less than 3½ feet high will hold them in. The smaller the pastures the more goats can be kept. Goats and sheep, or goats and cattle can run



East and West! Home's Best.

together on the same range. A mixed band of goats will average $3\frac{1}{2}$ to 4 pounds of mohair per head. Prices have ranged from 30 to 40 cents a pound for the past four years. The increase from well cared for goats should not be less than 100 per cent. The kids should be kept in a small enclosure for the first two or three weeks of their life, to which their mothers can return for the night. After that they can go with their mothers.

HOGS IN OREGON.

"Always money in hogs," was the terse answer I got to a question as to the industry here. And I believe it from observation, reading, and experience. The hog is everywhere in Oregon, from the great wheat fields of Eastern Oregon, to the little homesteads of the coast counties. The growth of clovers and other forage plants, and the widespreading of the dairy industry contribute to its value. It is a surprise to some of our Eastern friends to see hogs grow to a 250 pound weight at 12 months old running on our clover fields with one good feed a day of separated milk from the dairy, and one month's mill or grain feed before killing. One of the finest droves of Berkshires, 140 in number, was kept and fattened on a Polk County farm on 12 acres of artichokes, which grow here to perfection. The market value of the hog is steady, and buyers are very readily found. Into the vexed question of breeds there is not space to enter. All do well.

THE DAIRY.

Prosperity, the restoration and growth of fertility, and the increase of value follow close on the adoption of the dairying industry. Will the conditions of the business to-day justify its extension?

In Oregon, and especially in some of the valleys of Eastern Oregon, in the irrigated land of Central Oregon, and in nearly all of Western Oregon is found a typical dairy country. Climate, soil, natural vegetation, the easy adoption of foreign food plants, the abundant water supply, all show what nature has done to suggest this industry. The reasonable cost of transportation to market, the provision of the various means for working up the products of the dairy, demonstrate that no Oregon farmer can justly complain that he has not a fair show to obtain all the returns he can properly expect.

Of all the districts of Oregon, probably the coast region is the easiest to carry on the industry with the least money expenditure. But it must be seen, too, that the greater distance and more costly transportation do not overbalance these advantages.

As to marketing the products, there is in sight no danger at all of overproduction. And there is active competition in the chief accessi-

ble markets to secure still larger supplies of the dairyman's products. The capital needed to establish a creamery is not beyond the power of the farmers in any district to contribute. Examples are not wanting.

The recent establishment of the condensed milk factories at Forest Grove and Hillsboro, in Washington County, and the still more recent starting of the Coos Bay condensery have opened a market on a still larger scale than any creamery can offer.

Cheese has been and is still imported into Oregon in large quantities, though several cheese factories are in successful operation. By consent of those farmers whose experiences have been dealt with before, the average return of the dairy cow to her owner from her products sold to the creamery ranges between \$6 and \$8 a month the year round. The price of the two-pound roll of creamery butter in Portland and other western cities has been in winter from 70 to 75 cents, and in summer does not fall below 60 cents. The creameries were paying the farmers from 15 to 20 cents per pound in the summer, and 25 to 28 cents in winter for butter fat, and the Washington County condenseries were paying \$1.50 per 100 pounds weight of milk.

There is not space here for detailed information. In buying the farm attention has of course been given to dairying possibilities. This is assumed. Plenty of grass, plenty of clover, plenty of good water. These can and ought to be provided everywhere. Without them dairying is more or less forced and unnatural, although the forage plants we have noticed, silage and roots take their place.

Given, then, the food, the next question is the cow. Beware of making a good stock cow into a poor dairy cow. Go frankly into dairying and put stock possibilities out of sight. This is a solid general rule. The exception is being demonstrated at the Idaho State Experiment Station, where Prof. H. T. French has introduced the breed of milk Shorthorns, and is showing wonderful results. But so far the cost of these animals is impossible to the average Oregon dairy farmer.

The grade Jersey is our stand-by. Such cows to-day can be had for from \$35 to \$50. Neither the Ayrshire, Holstein, nor Devon must be forgotten. Good examples of each can be had in Oregon.

The food and the cow being provided, next comes the man. The man you want is an expert, and you ought not to expect to get his services at the cost of ordinary farm labor. You will not get the man you want for less than \$30 a month and his board, and he is worth it. With but a few cows the newcomer and his family can do the work. From 5 to 7 cows will justify a hand separator, costing \$50. The grade is called "The Baby." About 15 cows can be well cared for by one man. For 30 cows a No. 4 separator, costing \$125, will be needed.

There are several machines which do good work, and all are supplied on easy terms.

Separating the milk on the farm rather than sending it to the creamery has the great advantage that the calves get the separated milk fresh from the machine, and at or about the temperature which suits them. For myself I have grave doubts if the extra price paid for the milk by the condenseries makes up for the loss of the separated milk on the farm and its indirect fertilizing value. But it is suggested that the purchase of extra foods from the surplus price of the whole milk even matters up.

Before leaving the subject of the dairy I ought to say that while a majority of my correspondents consider the silo a very desirable aid, almost a necessity, other experts whose opinions are most valuable, find it entirely practical to keep their dairy cows in full milk through the dry season and through the winter with the help of the forage plants, clover, rape, kale above referred to, and roots to assist the winter feed.

IRRIGATION.

The scope that Oregon offers for irrigation enterprises and the purchase and settlement on irrigated lands makes this a subject of the first importance at this time.

The region bordering the Snake and Columbia rivers, with the side valleys of the lesser streams is raised immensely in value by the various small undertakings. In several instances neighboring land-owners have combined to secure irrigation water under facilities offered by the irrigation act of 1891, amended in the session of 1901. But interest is fixed mainly in the great east and west tract of Central Oregon, lying between the eastern foot of the Cascade Mountains, with the new town of Bend as its central point, and Ontario, on the Snake River, on the eastern boundary of Oregon.

The State of Oregon has adopted the "Carey Act," and under its provisions several very important contracts have been made by the State with companies which undertake to bring water from the Des Chutes River, or the creeks which fall into it, on to large areas of irrigable lands. The canals are built under the supervision of the State engineers, and the rates of purchase by settlers from the companies are settled by the State's officers in view of the estimated cost of the work. The settler, then, on 160 acres or less, buys the land at the estimated cost of bringing the water onto it, but in addition pays \$1 per acre in perpetuity to the irrigation company, thereby securing the maintenance of the canals and head gates. The water has to be brought by the company on to each 40-acre tract to be irrigated, the settler con-

structs the lateral ditches. Some valuable and detailed information was given in the Oregonian of July 18, 1904, relative to the cost of clearing and reclaiming, and sowing down into alfalfa. Sagebrush and scattering juniper trees are the chief vegetation on this land in its normal condition. Most of the juniper trees will be let stand for the present, but trimmed up to allow plowing. The following estimated costs of reclaiming the land are generally accepted in the district, and are considered to be quite conservative in amount. The tract supposed to be handled is 80 acres. The estimates are:

Removing sagebrush	\$ 240 00
Plowing	120 00
Making laterals	200 00
Fencing	150 00
Alfalfa seed	240 00
Seeding to alfalfa	100 00
Total on 80 acres	\$1,050 00

Or a little over \$13 per acre. Average price to the irrigation companies \$10 per acre, although on some of the best tracts the price rises to \$15. Total average cost, therefore, is \$23 per acre, exclusive of buildings. Nearly 300,000 acres are included in contracts already made, and water is ready for the reclamation of about 50,000 acres now.

The United States Government has carefully investigated the irrigation possibilities of this vast region, and in the Malheur Valley, lying east from the Des Chutes projects, a proposition is pending by which if the land owners agree to repay the cost of the work, estimated at about \$30 per acre, the government undertakes the construction. Oregon is one of the States affected by the National irrigation law approved June 17, 1902, under which money derived in Oregon from the sale of public lands is to be devoted to public irrigation works within the State; such lands to be entered under the homestead laws in tracts of from 40 to 160 acres by the actual settler, who shall reclaim at least one-half of his land for agriculture, and repay to the United States the cost of irrigation in annual installments in not over ten years. Such sums to be returned into the irrigation fund.

The official figures for 1902 are the last available. They show the number of irrigators at 4,636; the area irrigated 388,310 acres; value of crops from irrigated lands \$2,926,606. Hay and forage crops stood for \$2,033,729; vegetables \$280,337; cereals \$438,812, and fruit \$152,642.

The one event which will bring this immense area into the scope of immediate settlement is the construction of even one railroad into it. The Columbia Southern Railroad will reach it from the north. The surveys of the Corvallis & Eastern Railroad run from east to west through its entire length. The former of these roads is heralded

for immediate construction. The completion of the latter road through it is still a problem of the future.

The feature which attracts so many buyers is that the clearing, reclamation, and putting in crop of the land is so quickly done. One year desert, the next year the plowed field.

Settlement is already so far advanced that roads, and saw mills, and stores, and mail routes have already been or are being provided.

To all these arid lands irrigation is the prime, the absolute necessity. No one who has not witnessed the marvelous transformation can credit it. Houses built, land fenced, the rich green of alfalfa, clover, and the cereals replacing the dull gray of sage brush and burned up grasses, orchards becoming, as by magic, a feature in the landscape.

TRANSPORTATION.

The most direct line of railroad communication between Oregon and the East is by way of the Oregon Railroad & Navigation Company's road along the south bank of the Columbia (the northern edge of the State), from Portland 187 miles to Umatilla; thence striking southeast, through the Blue Mountains and Northeastern Oregon, and by the eastern boundary of the State and up the Snake River Valley by way of the Oregon Short Line to Granger, and on to Omaha by the route of the Union Pacific. This is essentially a main line. The Northern Pacific runs north from Portland along the Columbia, and crosses at Goble into Washington. The Great Northern line East is reached by the Oregon Railroad & Navigation Company's road. The Canadian Pacific by way of the Northern Pacific road to New Whatcom on Puget Sound. The Southern Pacific main line from Portland to San Francisco runs through the heart of the Willamette Valley, then through the Umpqua and Rogue River valleys to Ashland, a distance of 341 miles, and thence through the Siskiyou Mountains into California. Their West Side Line follows the west side of the Willamette Valley from Portland to Corvallis, 97 miles. The Woodburn and Springfield branch leaves the main line at Woodburn, 36 miles from Portland; thence southward along the east side of the Willamette Valley to Natron, among the lumber mills, for 93 miles. The Portland and Willamette Valley line to Sheridan and Airlie strikes southwest from Portland, a distance of 57 miles to Sheridan and 79 miles to Airlie. The passenger rates are three cents a mile.

A good testimony to the Willamette Valley is that three lines find their entire support, and a fourth a main part of its support, from their passenger and freight traffic.

In addition to this, there is regular steamboat communication between Portland and Corvallis for about nine months in the year by the

Willamette River, and a large business is done at many landings in wheat, flour, hops, fruit, and other farm products, as well as in the carrying of passengers.

A railroad independent of the Harriman system is the Astoria & Columbia River from Portland over the Northern Pacific tracks to Goble; thence along the south bank of the Columbia to its mouth, at Astoria. It follows the coast line further from Astoria to the summer resort at Seaside, some 15 miles south, and, at present, there stops. A considerable business is done in lumber and salmon as staples, and good passenger traffic, especially in summer, to the various holiday places by the ocean.

Another independent line is the Corvallis & Eastern. It runs from Albany westward to the Pacific Ocean at Yaquina, 83 miles, and eastward to the temporary terminus at Idanha, a distance of about 50 miles, in the heart of the magnificent timber region of the Santiam. The surveys of this road from that point strike east through and over the Cascade Mountains by an easy pass, and then to the east boundary of the State through the irrigable districts of Middle Oregon.

The Columbia Southern is a new road which starts southwards from Biggs, a station on the O. R. & N. line, 108 miles east from Portland. So far as Shaniko, a distance of 70 miles, each section has paid its way, it is generally understood, as fast as it was opened. For 91 miles further south, to Bend on the Des Chutes, the extension has been surveyed and located. An immense traffic in wool, and a large tonnage in grain has been developed.

ELECTRIC RAILROADS.

Electric railroads in Oregon are in their infancy. The largest now in operation is the Oregon Water Power line from Portland east and south through a large part of Clackamas County, to a point on the Clackamas River, offering an immense water power. The mileage is 38 miles from Portland to Casadero. The district is fertile, full of resources, and the development of passenger and freight traffic very satisfactory.

Another electric road is laid out from Portland to Forest Grove, about 20 miles, and construction is promised at an early date.

There is no more favorable field for the electric road than in Oregon, and especially Western Oregon. Water power is running by in almost every river bed and creek bottom. The main arteries of communication already exist, for which the electric lines will supply feeders and develop traffic.

PUBLIC EDUCATION.

Though the wide districts have been divided once and yet again, though the special school tax for the new house has borne hardly on a

scattered population with scarce money, yet the burden has always been bravely lifted, and the neat white painted schoolhouse, belfry on top, looks boldly out. All honor to those who have made it possible to read list after list of farms for sale in every county in the State, and see at the end of each description, "Schoolhouse within one mile." Three miles is a rare distance, and over that one can hardly be found.

Good, also, it is to glance over the list of alumni of university and college and see the "school teacher" occupation so often taken to for at least the first year or two. Bearing in mind how young Oregon is, the hard figures of the report of the Superintendent of Public Instruction to the last legislature become milestones on the way of progress of the State.

Number of school districts in 1873, 642; in 1902, 2,121. Total amount of school funds in 1873, \$184,010; in 1902, \$2,383,074. Whole amount paid teachers per annum in 1873, \$154,944; in 1902, \$1,317,749. The number of young people between 4 and 20 years of age in 1873, 38,670; in 1902, 138,446. Number of pupils enrolled in the schools in 1874, 20,680; in 1902, 100,659. So the percentage of pupils has grown from 53.47 in 1874 to 73.42 in 1902. The number of months of school teaching ranges from 10.33 in Multnomah to five in Wallowa. There are but three counties with an average of less than six months school teaching in the year. And the value of school property has risen from \$322,240 in 1873, to \$3,561,737 in 1902.

THE HIGHER EDUCATION.

Institutions abound both under State and private control. Of the former class the State University at Eugene reports a corps of 23 professors, and an attendance of 373 students. The State Agricultural College at Corvallis reports a faculty of 30, and 488 students. The four normal schools, at Monmouth, Drain, Weston, and Ashland together, report 41 professors, and 583 students. The other universities, colleges, and academies aggregate in their reports 239 professors and instructors, and 4,023 students. The State institutions, without exception, and the great majority of those under private control, show vivid life and most satisfactory progress. Lack of space forbids more detailed accounts.

FRATERNITIES.

To the farmer the Grange is undoubtedly the most important. There are in Oregon 100 subordinate Granges and about 5,200 members. The Grange is doing excellent work in the association of the members and their families for fraternal intercourse and mutual im-

provement, not only in agricultural methods and production, but in whatever beautifies and raises the standard of home life.

The fraternal societies have a very strong hold in Oregon. The beneficiary societies show as follows:

The A. O. U. W., about.....11,000 members.
 The Maccabees, about.....6,000 members.
 The Woodmen of the World, about.....14,000 members.
 The United Artisans, about.....10,000 members.
 The Lions, about.....4,000 members.
 The Foresters, on their beneficiary side have made some progress.

The other strong societies, not embodying the insurance principle, seem to be the Freemasons, the Odd Fellows, the Knights of Pythias, the Elks, the Foresters. The sick relief varies from \$5 to \$7 per week.

CHURCHES.

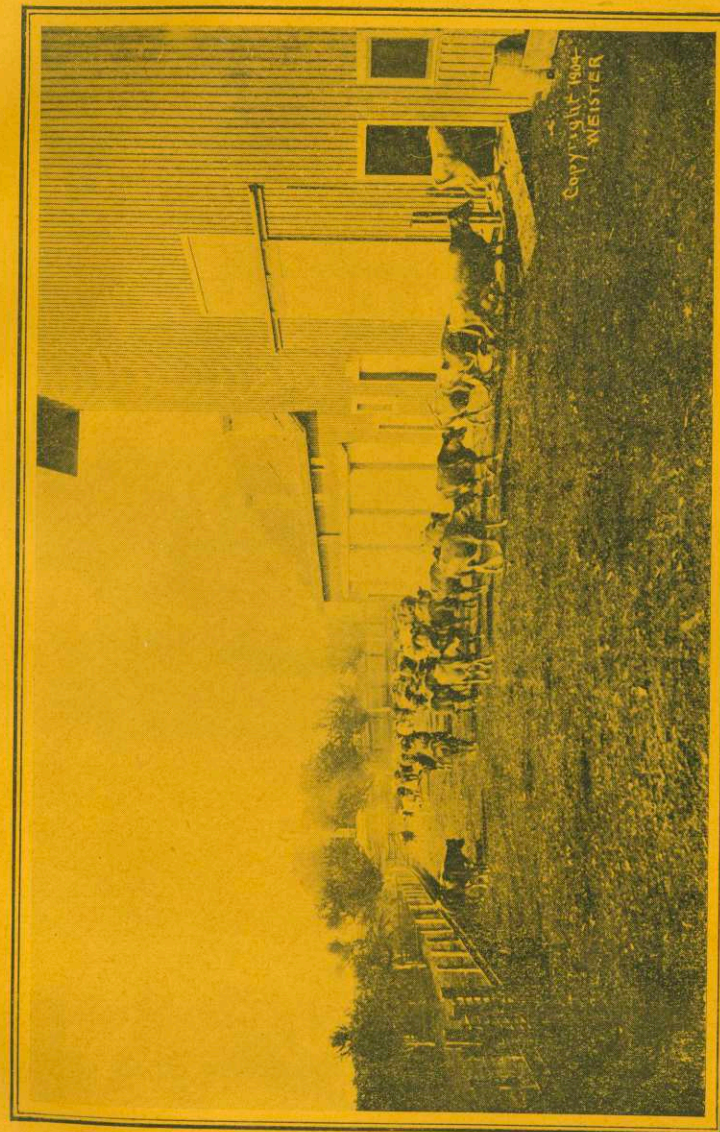
All varieties of religious belief, Christian, Jewish, and a few Asiatic, find homes in Oregon. The great constituent parts of the Christian church are active, one and all. The cities abound in churches of every denomination. The country towns are too much disposed to increase the number of the churches at the expense of individual strength and efficiency.

APPENDIX.

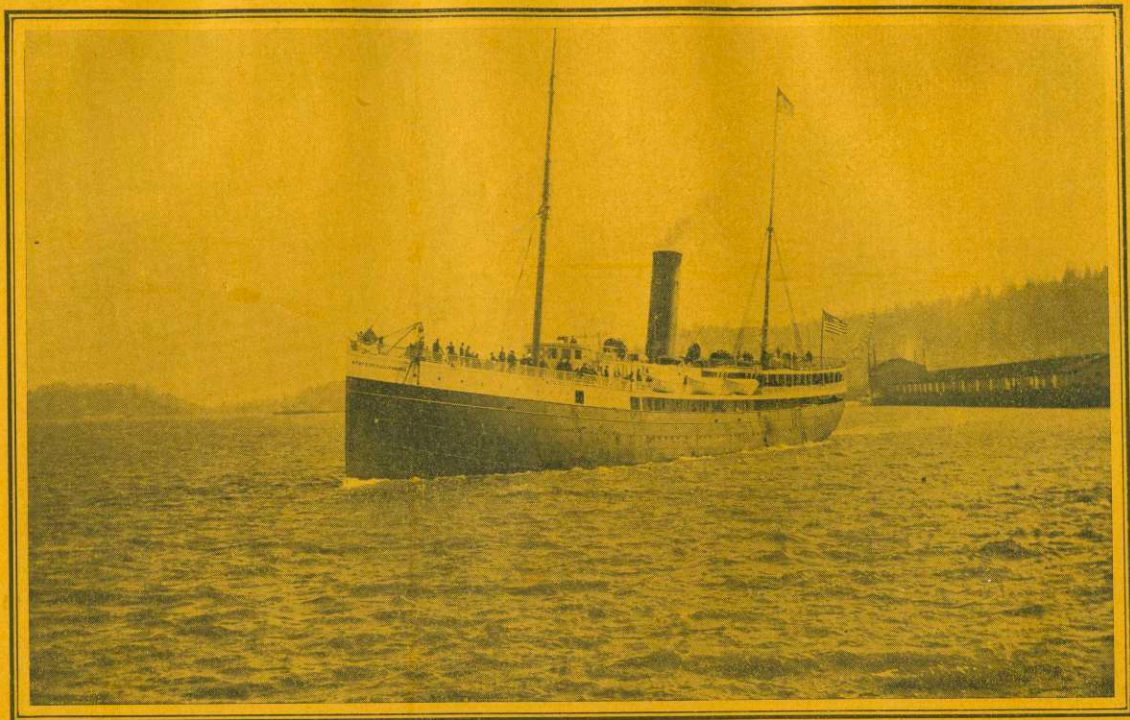
Condensed statement of average temperature, and of extremes of average precipitation at the places named below, calculated for 1900, 1901, 1902.

	Average temp.	Extreme heat.	Extreme cold.	Average precip.	Eleva- tion.
<i>Plateau District, Eastern Oregon—</i>	<i>Degrees.</i>	<i>Degrees.</i>	<i>Degrees.</i>	<i>Inches.</i>	<i>Feet.</i>
Baker City, Baker County.....	46.56	94.75	2.66	12.43	3,470
Joseph, Wallowa County.....	42.73	92	11.66	14.52	4,400
Prineville, Crook County.....	50.45	100.66	4	8.10	3,000
<i>Columbia River Valley—</i>					
Weston, Umatilla County.....	48.75	100.66	0.25	25.51	1,800
Pendleton, Umatilla County.....	54.05	106.3	1	16.43	1,074
The Dalles, Wasco County.....	53.16	101.50	6	15.62	112
<i>Portland and Willamette Valley—</i>					
Portland, Multnomah County.....	53.50	95.3	18.3	40.49	54
Corvallis, Benton County.....	52.13	98	18.3	44.62	319
Eugene, Lane County.....	52.05	96.50	19	45.75	435
<i>Coast District—</i>					
Astoria, Clatsop County.....	51.2	84	24	83.10	50
Newport, Lincoln County.....	51.23	84.6	23	77.27	69
Gardner, Douglas County.....	52.7	88.6	26.3	84.85	72
<i>Southern Oregon—</i>					
Roseburg, Douglas County.....	53.33	98.33	22	34.88	523
Grants Pass, Josephine County.....	53	105	17.66	32.97	964
Ashland, Jackson County.....	52.2	103	14.66	20.63	1,910

N. B.—Occasionally figures for one year are omitted in the returns. Then two years only are calculated.



"The Milky Mothers of the Herd."



The Columbia River and Ocean Meet.