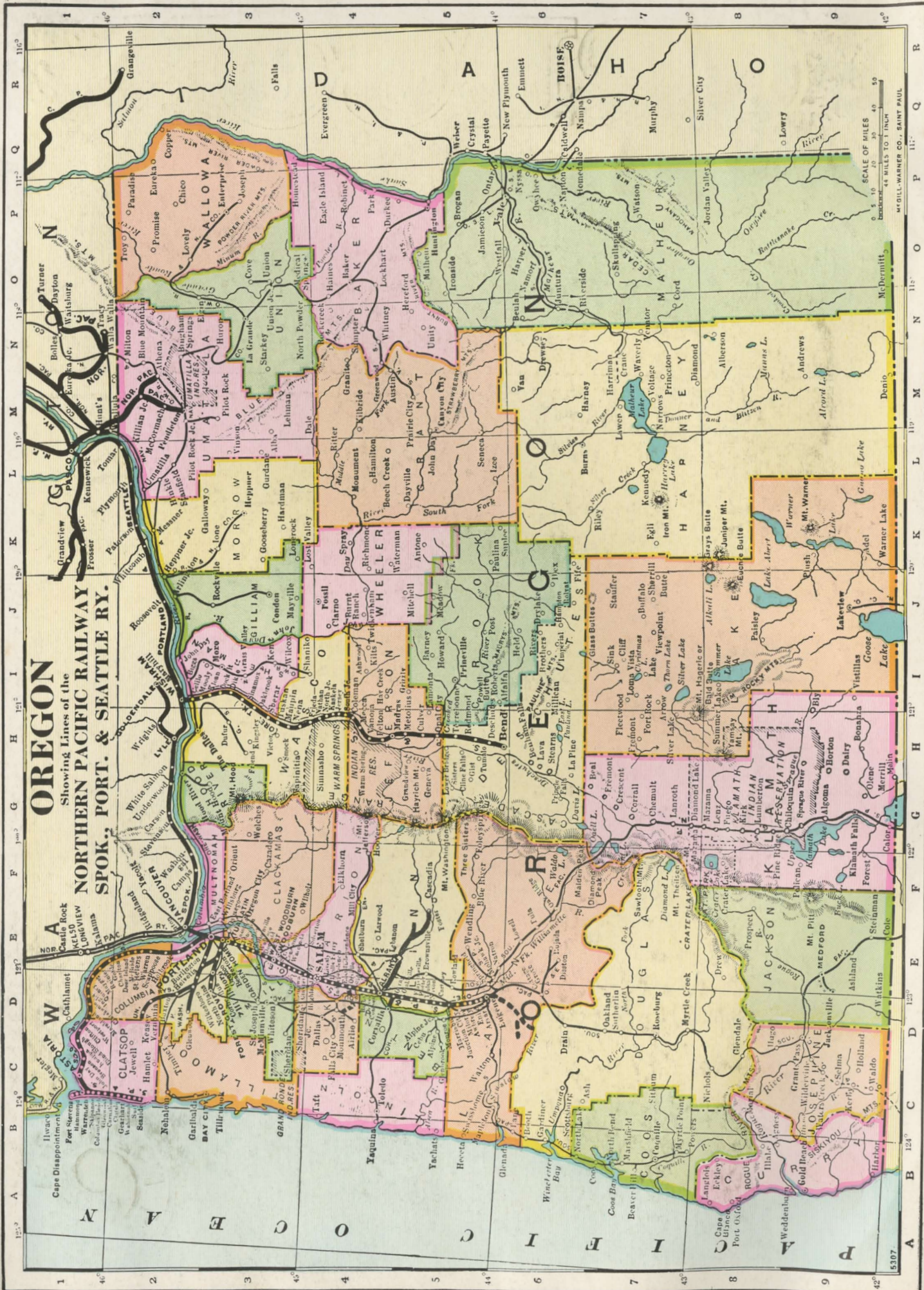


OREGON



OREGON

Showing Lines of the
NORTHERN PACIFIC RAILWAY
SPOK., PORT. & SEATTLE RY.



SCALE OF MILES
0 5 10 20 30 40 50
McEILL-WARNER CO., SAINT PAUL



Oregon's cool summers, mild winters, long growing seasons, variety of soil and surface and ample water supplies promote an abundant growth of a large number of valuable crops and insure year in and year out economical production in all phases of the livestock industry.

Oregon

OREGON farms are operated amid pleasant surroundings, in quiet valleys near the mountains or near the sea. Oregon is a state that combines productive soil; a crop and livestock diversity; a long growing season; short, mild winters and cool summers. It abounds in facilities for enjoying the great outdoors.

Either the seashore, against which the mighty Pacific Ocean ceaselessly pounds, or mountain playgrounds, including year around snow-capped peaks, can be reached within a few hours' travel from the most remote farm in the state.

Farming is an occupation which brings one close to nature and in Oregon this fact is magnified because the state abounds in natural wonders. In thousands of miles of streams and hundreds of lakes, trout as well as salmon and other game fish are plentiful. In all the coastal streams, steelhead trout, said to be the gamest of all game fish, are found.

Deer are plentiful in the evergreen forests which cover the greater portion of the state's area, principally Douglas fir west of the Cascades and the yellow pine east of the Cascades. In the lake areas and in the bays and inlets along the coast and along many of the rivers, ducks and geese are abundant. Chinese pheasants, among the most beautiful of all game fowl, are found on nearly every farm.

But aside from these natural advantages of scenic grandeur and recreational facilities available to all,

Oregon agriculture offers opportunity for profit equal to that found anywhere. Crop failures are practically unknown. There are many eggs "in the income basket," due to the wide diversity of production, thus protecting, in a substantial manner, the farm income from serious cycles of depression.

A mild, equable climate is one of Oregon's greatest natural resources. There are no cyclones, tornadoes or violent electric storms to destroy crops, livestock and endanger lives. Rainfall comes principally in the fall and winter months with frequent showers during the spring, leaving two or three months in the summer with ideal harvest conditions. The growing seasons are long. The mild climate promotes labor efficiency.

This book discusses in detail the sections of Oregon in which the Northern Pacific Railway and the Spokane, Portland and Seattle Railway are directly interested.

The Northern Pacific is a joint owner of the Spokane, Portland and Seattle Railway, the Oregon Electric Railway, United Railways, Gales Creek & Wilson River Railway, Oregon Trunk Railway.

For the purpose of a more thorough discussion, the state will be divided into districts, for while a few things are common to the whole state, there are many features of some districts that are not common to others.



The Cascade Mountains divide Oregon; the west, timbered slopes, green valleys, well watered with numerous rivers and streams; the east, pine forests, irrigated valleys, cattle and sheep ranges and wheat farms.

Eastern and Western Oregon Differ in Climate, Vegetation, Topography

Oregon is divided by the Cascade Range of mountains which extends entirely through the state from north to south dividing it into two entirely different regions as to climate and natural vegetation. That portion of the state which extends from the summit of the Cascade Range westward to the Pacific Ocean is generally known as Western Oregon. This section of the state is particularly well watered with numerous rivers and streams and has an annual precipitation of around 40 inches or more. Summer temperature averages about 65 degrees while the winter temperature averages 40.8 degrees. It is in this area where the bulk of the state's timber resources are found with its magnificent Douglas Fir forests.

In contrast Eastern Oregon has entirely different vegetation; forests of Pine which gradually merge with Juniper and beyond this are the great plains, wheat farms, cattle and sheep ranges and irrigated valleys where the rainfall is substantially less than in Western Oregon.

Location

Bounded on the west by the Pacific Ocean, on the north by the State of Washington, on the east by Idaho and on the south by California and Nevada, Oregon is about 275 miles from north to south and 375 miles from east to west.

Industries Grow From Natural Resources

Oregon's industries are built largely around its natural resources and its agricultural production. Including 600 sawmills, there are about 5,000 manufacturing plants.

Oregon has long been recognized for its lumber production in the raw state and is growing steadily in the manufacturing of the finished article. The state has one-fifth of

Area and Population

Oregon's total area is 96,699 square miles or 61,188,480 acres. Of this total area, 27.3 per cent or 16,649,711 acres are in farms. The 1930 census shows that there are 55,259 farms in the state, an increase of 10.1 per cent over the number shown by the 1920 census.

Opportunity for development is indicated by the fact that in this vast area larger than the States of New York and Pennsylvania combined, there is a population of less than 1,000,000 people. It is estimated that there are 23,000,000 acres of agricultural lands in the state and of this area only slightly more than 16,000,000 are now in farms.

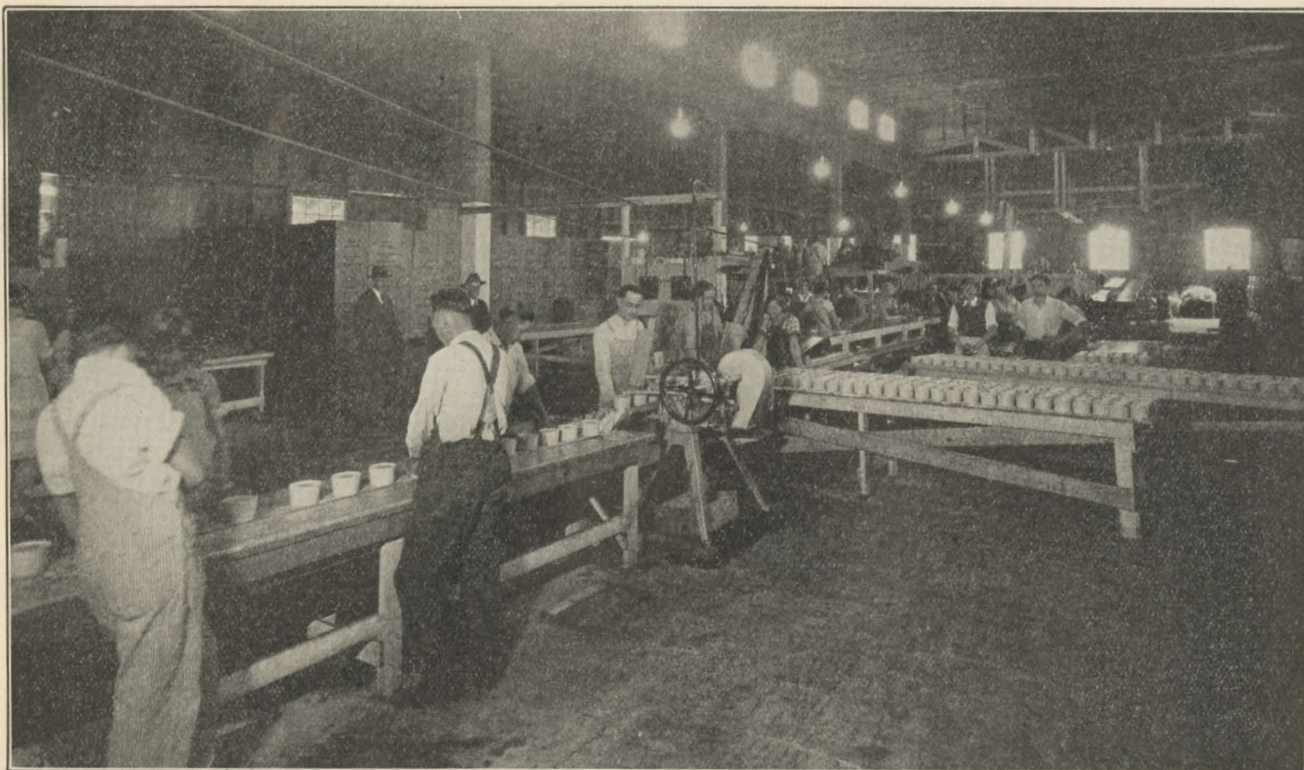
Population Increasing

The farm population increased during the 10-year period from 1920 to 1930 and the state's total population also showed a substantial increase. The 1920 census gave the population of the state as 783,389, while the 1930 census showed it to be 953,786 or an increase of 21.75 per cent.

Portland, Oregon's principal city, increased 16.8 per cent in population between 1920 and 1930. It now has 301,815 people. Likewise, Salem, the state's beautiful capital city, situated on the banks of the Willamette River, increased 48 per cent in population, from 17,679 in 1920 to 26,266 in 1930. This rapid increase in population is due largely to Oregon's pleasant climate and attractive home-making advantages.

the standing timber in the United States and produces annually lumber worth \$100,000,000, supporting a payroll of 45,000 people. Furniture factories are rapidly transferring their operations to Oregon and those already established are constantly enlarging and extending their operations.

Pulp and paper mills are likewise expanding and being



Interior of processing plant, packing fruit for freezing, a method that is creating a demand for increased supplies of berries. Oregon industries, centered in the cities and larger towns, annually produce products valued at nearly \$300,000,000 and give employment to thousands of workers who in turn draw upon the farms of the state for their food supplies. Oregon's resources foretell a further development industrially for the future.

established in more localities; and by-products such as insulating board, plaster and wall boards, paper bags, handle factories, sash and door and numerous wood-working factories, including ready-made houses, are important branches of the industry.

Salmon fishing has long been one of Oregon's best known industries. Columbia River salmon is marketed world-wide, and the Royal Chinook is especially recognized as the finest of salmon. Astoria is the center for this industry. The state maintains a department for the propagation of salmon in order that this important industry may be strengthened and maintained. The United States government also co-operates in this work.

The manufacture of woolen goods is one of the most important industries. Blankets, outdoor and sports garments, bathing suits, as well as all kinds of clothing, are made by Oregon's seven large woolen mills. There are also knit-wear mills and the only worsted mill in the west.

Oregon produces high quality fiber flax for the manufacture of linen, and twines of all kinds, especially for fish nets.

For a long time Oregon has enjoyed a world-wide trade in canned milk and now this is being supplemented by the manufacture of powdered milk which has a wide use, not only as a human food, but for poultry feeds and the manufacture of many articles in commerce. Oregon's quality cheese also reaches extensive markets and there is an increasing demand in California for Oregon's high score butter.

The meat packing industry, while centered largely at Portland, is extended throughout the Willamette Valley, and recently the canning of chicken has made tremendous strides.

The canning industry as applied to tree fruits, berries and vegetables not only affords a market for a wide diversity of agricultural products, but it affords employment for many families during certain periods of the year. The manufacture of cucumber pickles and sauerkraut is also an important allied canning industry.

There are many articles manufactured in Oregon that are nationally advertised. Among them are woolen blankets and clothing, bathing suits and furnace stokers.

As Oregon has one-sixth of the potential hydro-electric power of the United States most of which is as yet undeveloped, the manufacturing industry is looking more and more in this direction in its search for cheaper power. Some large users of power secure their power for less than one-half cent per kilowatt hour. The water power of Oregon, together with that of other northwestern states, amounts to 40 per cent of the potential water power of the nation.

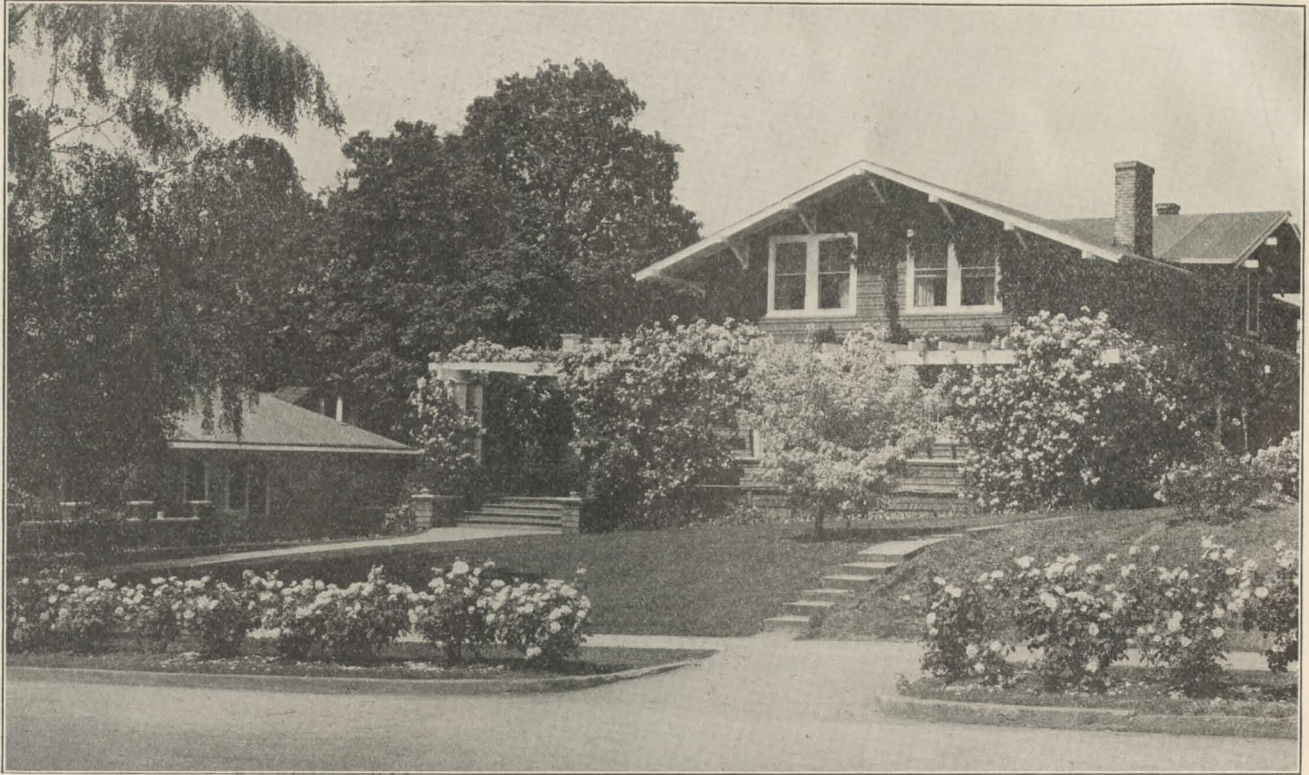
In a recent survey completed for the Portland Chamber of Commerce by Day and Zimmerman, industrial experts, attention is directed to Oregon's strategic advantages as to railway, water and highway facilities, its equable climate, cheap power and extensive natural resources making it an advantageous point for the location of industries. Among the industrial opportunities mentioned are further development of wood manufacturing plants, pulp and paper mills, fruit and vegetable canneries, condensed and dried milk plants and woolen mills.

Especially do they call attention to the possibilities for the manufacture of chemical from phosphate rock, the manufacture of leather goods and the fact that there are no open hearth furnaces or roller mills in the Pacific Northwest although 15,000 tons of plates and shapes are used annually in Portland and that sufficient scrap is available to operate a furnace of 50,000 tons annual capacity.

Industrial activity of Oregon's mills, factories and shipping facilities includes the following yearly values:

Lumbering	\$100,000,000
Warehousing and shipping of grain	50,000,000
Dairy manufacturing	30,000,000
Machinery, foundry and metal products	30,000,000
Furniture	20,000,000
Woolen products	20,000,000
Fruit, vegetables, fresh, canned and processed	21,500,000
Fisheries	7,500,000
Mining and minerals	7,000,000
Flour and cereals	4,000,000

\$290,000,000



The rose garden, hedge and trellis are notable features of hundreds of houses, small and large, of western Oregon. Many varieties of roses thrive, several that bloom from early spring until late fall or early winter.

Description of Climate

By Edward L. Wells, U. S. Weather Bureau

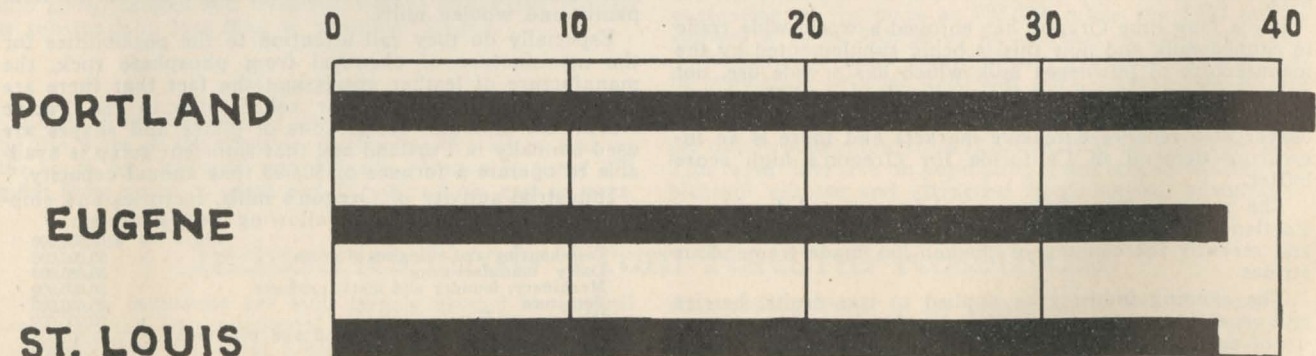
One sometimes hears the expression "A typical Oregon day," but in reality there is no such day, for, within the bounds of Oregon are found an infinite variety of climatic types. The difference between the warmest and coldest parts of the state is greater than the difference in temperature between New England and Florida. Some of the wettest areas in the United States are on the west slope of the coast range, while in the central and eastern counties are localities that have a low rainfall.

The normal annual temperature in Oregon varies from 40 degrees or lower near the summits of the higher mountain ranges to about 54 degrees along the Columbia River in Umatilla county.

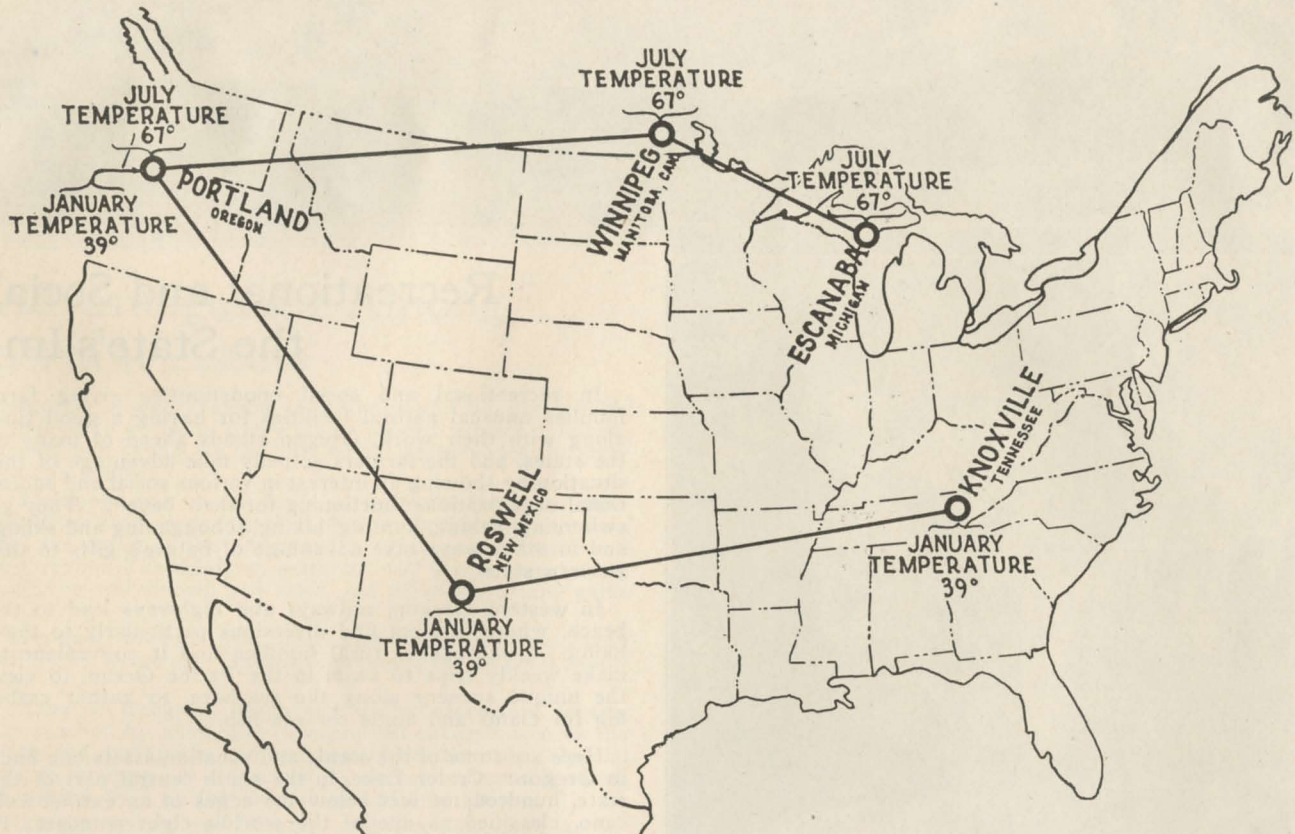
Along the coast there is little range in temperature from

summer to winter and from day to night. At Astoria, for example, the range between the normal temperature for January and that for July is 21 degrees and the average difference between the warmest hour of the day and the coolest hour of the night is 13 degrees. In the central portion of the state at Bend there is a difference of 34 degrees between the normal temperature for July and that for January, and the average difference in temperature between the warmest hour of the day and the coldest hour of the night is 31 degrees.

However, over the greater part of the state the range between summer and winter temperatures is considerably less than is found east of the Rocky Mountains; for example the seasonal range at Omaha, Neb., is 43 degrees



The average annual precipitation in the Willamette Valley at Portland and Eugene, Oregon, is slightly more than at such points in the middle west as St. Louis, Missouri. Above diagram shows average annual precipitation in inches.



The average temperature at Portland in January compares with the average January temperature at points in the southern states such as Roswell, New Mexico, and Knoxville, Tennessee.

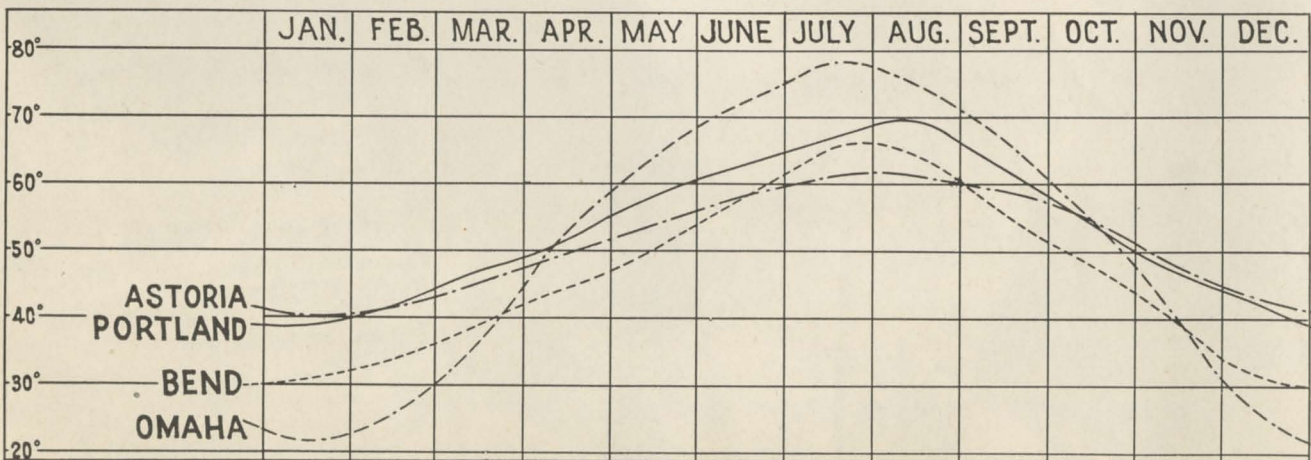
as compared with 34 degrees at Bend and 21 at Astoria.

The normal temperature for July at Portland is 66.7 degrees, which is about like that at Winnipeg, Man., or Escanaba, Mich., while the normal temperature for January is 39.4, which compares closely with that at Roswell, N. M., or Knoxville, Tenn.

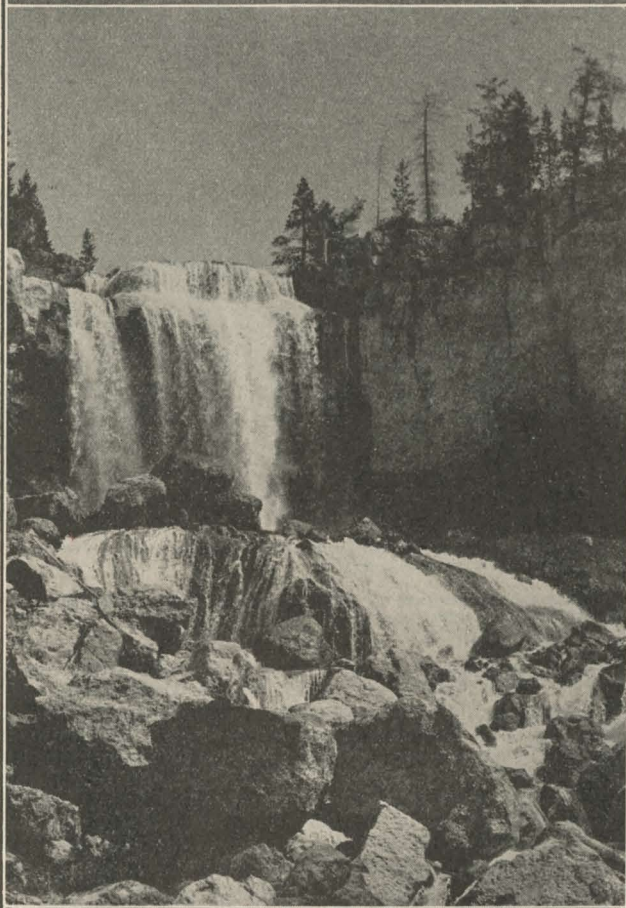
While there is sufficient fluctuation in temperature from day to day to avoid monotony, extreme and sudden changes do not often occur. At Portland the average variability in temperature from one day to the next is 3.2 degrees. Moist weather is attended by breezes from the ocean, and is, therefore, never extremely hot. In winter the air is normally moist but there are exceptions when drying winds come from the interior.

The greater portion of Oregon is exempt from heavy rainfall. Wet regions are found on the western slopes of the principal mountain ranges; the Willamette Valley has about the same annual precipitation as central and southern Indiana; in southern, central and eastern Oregon there are large sections where the rainfall is supplemented by irrigation. Over practically the entire state the heaviest rainfall is in winter. West of the Cascade Mountains the winters are mild enough to permit much growth of winter vegetables and pasture during the wet season.

Thunderstorms occur frequently in the mountains of Oregon, but outside the mountain areas they are rare. Cyclones are entirely unknown. Hailstorms are infrequent and seldom do serious damage.



The average monthly temperature in Oregon results in a mild winter climate and cool summer climate, is seldom subject to extremes of heat or cold and is conducive to the greatest comfort. The above chart is based on records of the United States Weather Bureau over a period of many years.



Recreational and Social the State's Im-

In recreational and social opportunities giving farm families unusual natural facilities for having a good time along with their work, Oregon stands ahead of many of the states, and the farmers actually take advantage of this situation by showing an interest in various social and educational organizations functioning for their benefit. They go swimming, fishing, hunting, hiking, tobogganing and skiing, and in other ways take advantage of nature's gifts to this western state.

In western Oregon, railways and highways lead to the beach, where farmers find diversions particularly to their liking. Hundreds of rural families find it convenient to make weekly trips to swim in the Pacific Ocean, to view the unique scenery along the seashore, to gather crabs, dig for clams and angle for sea fish.

Here are some of the scenic and vacation assets one finds in Oregon: Crater Lake, in the south central part of the state, hundreds of feet below the edges of an extinct volcano, classified as one of the world's eight wonders; 16 national forests affording wonderful outing opportunities; 84 named mountain peaks of which a score or more are snow capped the year 'round; 21 established mineral springs whose waters are curative; 500 lakes, nearly all stocked with game fish, and hundreds of streams as well supplied; Deschutes Canyon in central Oregon known for its formation and beauty and the Deschutes River famous for trout fishing.

The Columbia River Highway, from Pendleton to the sea, is one of America's unusual roadways, carved from granite mountain sides much of the way. In one stretch of 10 miles there are 11 waterfalls, the smallest of them 100 feet high and the greatest 625 feet. From this highway can be seen Mt. Hood, towering 11,025 feet. It is the





Advantages are Among portant Assets

mountain climbers' shrine in America and hundreds come annually to scale its rocky, snow-capped surface. Tobogganing and skiing are the rule on its white slopes throughout the winter.

The sportsman's activities in catching the famous Columbia River salmon, the steel head trout in the coast streams and the smelt in the Sandy river have become traditional in Oregon. The rainbow, cutthroat and brook trout, along with the well-known red sides, are other important game fish.

Big game includes deer, bears and mountain lions. Every fall ducks, geese and Chinese pheasants provide good shooting.

Many of Oregon's beach and winter recreation centers are reached by train, and low-fare rail excursions over the week-end during the summer season are the rule. Special rail excursions are organized as occasion demands—such as fishing trips up the Deschutes and other rivers.

Oregon people are friendly, and the newcomer so inclined readily can assume a place in the community life about him. Local farm clubs and organizations, many of them meeting in their own halls at community centers, supply not only social opportunities but are a medium for self-improvement along farming and home-making lines.

The Oregon State Grange was organized 58 years ago and there are several thousand members of the 272 local granges now active in the state. The farmers' union and the farm bureau are serving rural families in some parts of the state. County agricultural extension agents in a number of counties are responsible for many activities designed for educational and social reasons. The church and the school, as in other states, are important mediums which bring farm people into a close relationship with one another.





Judging the Jersey class of Boys' and Girls' Club calves at the Oregon State Fair. Another large exhibition of 4-H Club livestock takes place at the Pacific International Livestock Show later in the year.

Oregon Promotes the Welfare of Its Farm Boys and Girls

Four-H club work began in Oregon in 1913 and has developed steadily up to the present time, with an enrollment for the year 1932 of 15,000 boys and girls, organized in 1,200 standard clubs with adult local leaders for each club.

Club work is conducted in every county in the state through extension workers, club leaders and local school superintendents. Local exhibits made in the various communities by the club members are entered at the county fairs or county club fairs; the best of these exhibits then go to the state fair which is considered the climax for club work. Here the winner in each 4-H club project or division of a project is given, as the first prize, a trip to the 4-H club summer school which is held at the Oregon state college for two weeks each year.

At the 4-H club summer school held on the college

campus are assembled 600 or more boys and girls from all parts of the state who receive instructions pertaining to different 4-H club projects, from members of the extension staff and the resident staff of the college.

Then at the state fair each year, is held the state club camp for some 600 club members from all parts of the state, assembled as the guests of the state fair board. These members are housed at the 4-H club building erected by the state.

The climax of club work in the northwest comes at Camp Plummer, at the Pacific International Livestock Exposition where the outstanding 4-H club boys and girls in livestock, crops, demonstration work and livestock judging teams and all other projects meet from the northwestern states.

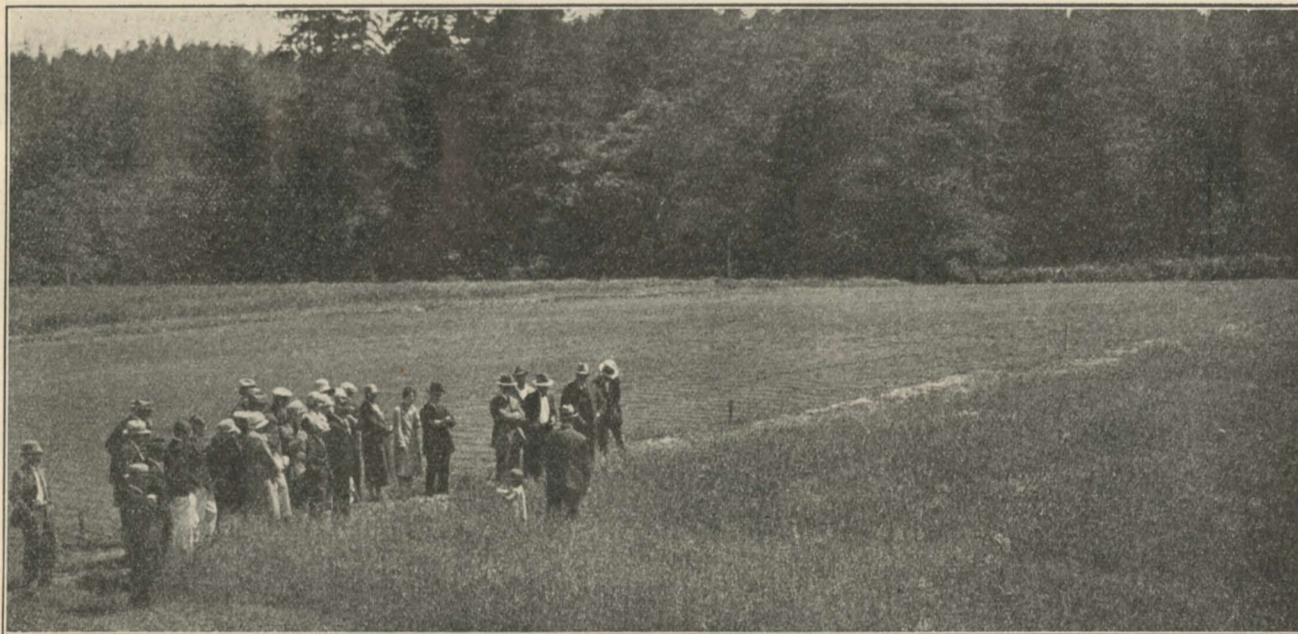
The value of work being done in Oregon is demonstrated by the honors that have come to the state in 1928, 1929 and 1930. Oregon has each year had the Moses trophy winners. These winners came in competition with the outstanding club members of the United States at the National Club Congress at Chicago, and the standard of their work and their activities as junior leaders counted in the placing of this award.

Hundreds of farm boys and adult farmers are taking advantage of vocational agricultural education as it is taught in rural high schools of Oregon. In addition to the educational value of this training, \$110,187.28 labor income was received last year by the boys from their farm projects and many improved farm practices were adopted as a result of the instruction given to adult farmers by attending evening schools.

Farm boys in Oregon who are regularly enrolled in vocational agriculture have an organization known as the "Oregon Association of Future Farmers of America" which is affiliated with a national organization. The past year Oregon was selected among leading states for achievement in future farmer work.



Alex Cruickshank's prize ton litter. He won the Moses trophy at Chicago for proficiency in 4-H Club work.



Farmers of the coast region visiting the John Jacob Astor Experiment Station near Astoria, one of several branch stations in various sections to promote development along most valuable lines.

Reliable Information Distributed to Farmers

In the old days of land settlement the buyer not only had to beware but after he made his purchase of a farm his chances for success depended mostly on a trial and error method coupled with possible observation of successful neighbors.

Today the new settlers in Oregon need take no such chances. The change has been brought about through the accumulation of a large fund of available information about every section of the state's agriculture by the Oregon State College Experiment Station.

The Oregon Experiment Station early recognized the futility of trying to recommend farming practices for the entire state based on findings at the central experiment station at Corvallis. There is a chain of branch experiment stations established in the various sections which have served as guiding beacons in their particular localities.

These stations cover not only irrigated and non-irrigated farm crops in all their phases of production, but also cover the various kinds of stock-raising and have just recently taken up the sinking of wells for irrigation and the raising of turkeys.

Far to the northwestern corner of the state is a station named after John Jacob Astor which has literally transformed the agriculture of the coast region. Its findings have made possible economical dairying through production of legumes, other forage crops and especially root crops.

The central station at Corvallis serves the extensive valley of the Willamette with crop, horticultural, nut, berry and livestock experiments and carries on laboratory work for the entire state.

Of immense value to the newcomer in the state is the series of detailed soil surveys now completed for practically every major farming region of the state. These were made by the United States department of agriculture in co-operation with the state experiment station. These soil surveys give the actual classification of soils found.

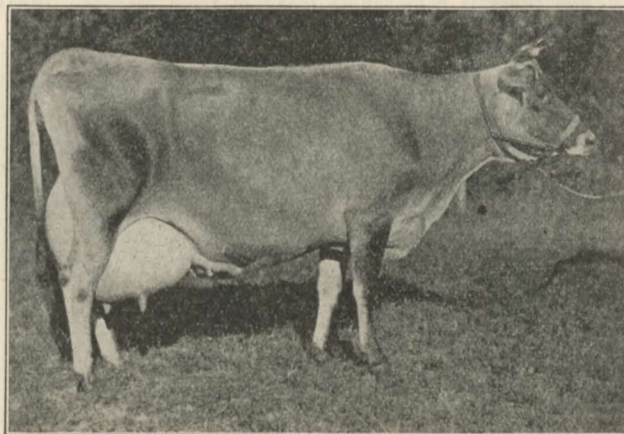
To make this fund of experimental knowledge easily available to farmers of the state, an extension service is conducted by the state college which maintains county agricultural agents in all but seven counties of the state, two of these seven having branch experiment stations.

A direct contact between the findings of the experiment station and the county agents and farmers is a staff of extension specialists available at all times.

Pacific Coast Show Develops Livestock Industry

The Pacific International Livestock Exposition at Portland is one of the large regional livestock shows. These shows are important in developing the livestock industry. The Portland show is 22 years old and for the past 14 years has been under a roof of its own—the roof now covering 11 acres. Space for the different departments is built around the arena, which is used for the judging events and the horse show. The arena covers an area 100 x 234 feet and reserved seat sections are provided for 7,000 persons.

Attendance at the Pacific International annually runs between 110,000 to 125,000 persons from the Pacific Northwest country who attend because of their interest in the agricultural and industrial features and not because of carnivals or sideshows, which have no part in the exposition. The Portland show is a general purpose event catering to beef and dairy cattle, heavy draft horses, night horse show animals, swine, sheep, foxes, poultry, rabbits and pet stock, land products, dairy products and boys' and girls' activities. About 5,000 animals are annually exhibited.



Goldens Chief Lady May, owned in Oregon, has two world's records for Jerseys on 305-day tests—19,922 pounds of milk and 893.89 pounds of butterfat.



Three thousand turkeys on a farm near Prineville. Central Oregon's early and dry spring climate is very favorable for turkeys. Many settlers raise large flocks. This picture gives a clear idea of the landscape in the Crooked River Country of central Oregon.

Quality Products—Premium Prices

The quality which is imparted through natural causes to her produce season after season, year in and year out, always will give Oregon a tremendous advantage.

Probably there is no better illustration of this than the story back of the North Pacific Coast's successful shipments of fresh eggs by rail to the Atlantic seaboard consuming centers. In competition with all other large producing sections, very satisfactory prices are obtained. The basis for the success of these shipments is the climate.

The remarkably mild and equable climate is conducive to production of exceptionally fine quality eggs during the cool summer months and an unusual volume of fresh eggs in the mild fall and winter when in most other important producing areas they are scarce. To produce quality eggs, it is of prime importance that laying fowls be healthy. In Oregon there is remarkable freedom from disease. Birds

are active, vigorous and healthy the year round. Green feeds are grown practically the entire year.

Somewhat similarly the climate influences the quality and volume of dairy products in a favorable way. Little need be said in this connection to show that a quality brand of butter is made with less effort where there is no extremely hot weather to start the deterioration in cream.

Prunes are another case in point. Oregon is a major producer of a tart-sweet prune containing a high sugar content yet having a tart flavor most pleasing to the taste. Probably no finer tribute could be paid the Oregon prune than the fact that it appeals especially to the foreign people residing in New York City because it satisfies their appetite for the fine fruits they have known in their native lands along the Mediterranean.

Sunny days and cool, crisp air put just the right flavor into Oregon pears, apples, berries, and cherries, and impart the proper color to these fruits. No finer pear for canning is grown in this country than the Oregon Bartlett, and the winter pears bring a high figure on the eastern markets.

The conditions of soil, long days of sunshine, cool nights and the proper duration of growing season in the irrigated Oregon valleys of the higher altitudes have been responsible for something superior in the way of clover seed and both table and seed potatoes. Certain districts in California buy seed potatoes in Oregon. In 1929 Deschutes county furnished the world champion sample of alsike clover seed at the International Hay and Grain Show.

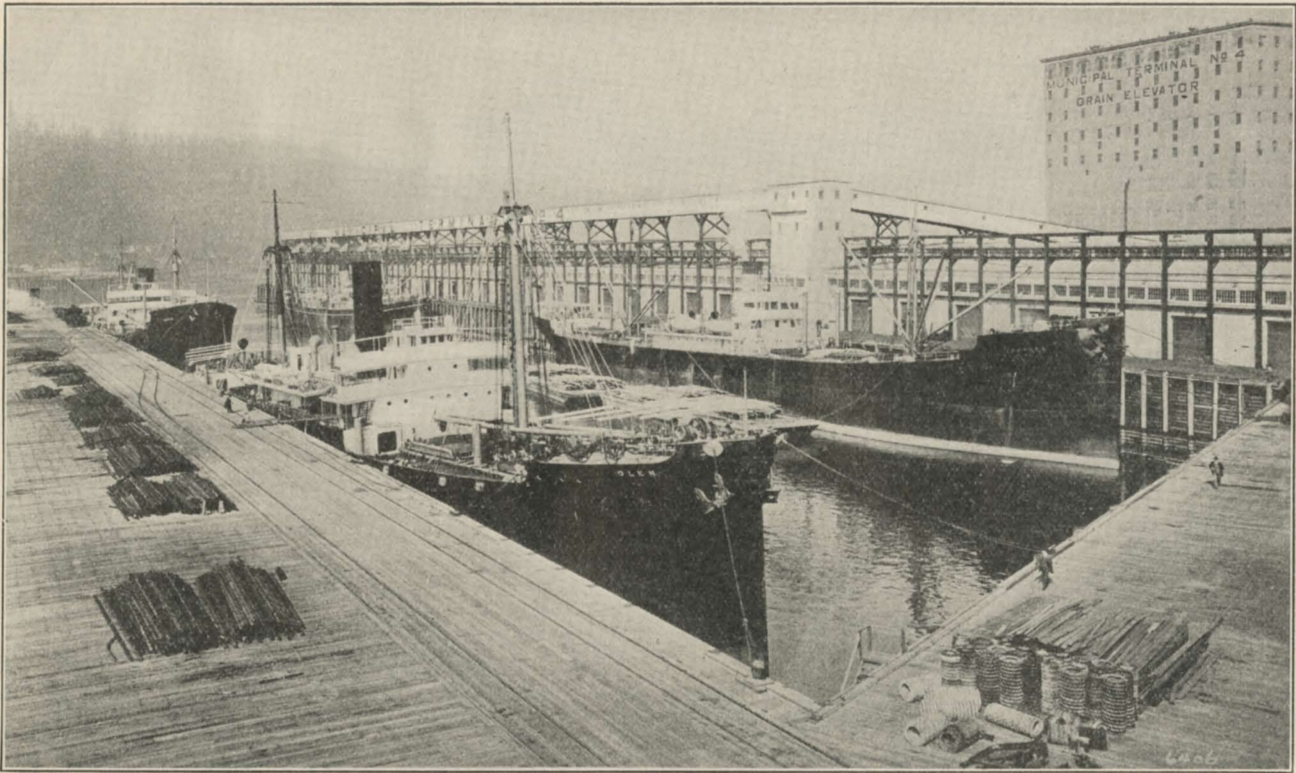
The seeds from rye grass, vetch and Austrian winter field peas from the Willamette Valley find a marked demand in the eastern and southern states.

There is something about Oregon celery that makes it win prizes at the horticultural shows. It has a distinctive crispness and holds this quality well in shipment. Cauliflower also finds favor in national markets.

Quality largely explains why Oregon turkeys on the eastern markets outsell those from a number of the other important turkey states.



Much of Oregon's celery sells at a premium due to its flavor and texture. The seed usually is planted in hotbeds about February 10 and transferred to permanent beds April 20 to May 10.



Four vessels loading for foreign ports at one of five units of the Portland Municipal Terminal and grain elevator of 2,000,000 bushels capacity. Products of farms, orchards and industries have access to world markets.

Oregon Ports Serve World Commerce

Oregon naturally holds an important place in world commerce through its ideal ports on the Pacific Ocean and the Columbia and Willamette Rivers. Numerous products of Oregon farms reach their ultimate consumers by way of the excellent rail facilities to the ports and then on the various steamship lines to foreign and domestic markets in transpacific, coastal and inter-coastal commerce. Total annual water-borne commerce for the state reached several million tons in the past year.

Situated on the banks of the Willamette a few miles above its confluence with the Columbia, the Port of Portland is the largest in the state. The thirteenth port in the United States in total tonnage, it is the world's greatest lumber shipping port; it is second only to Duluth in the amount of wheat handled; it is the first port on the Pacific Coast in point of wool shipments. In one year the total cargo, including local tonnage, reached 9,066,908 tons.

With 130 world ports served by regular general cargo ships from Portland there are 57 general cargo lines, seven oil tanker lines and three exclusive lumber carriers serving the city. Eleven passenger water lines to Europe provide a sailing every other day and there also is passenger service to China, the Philippines, the Dutch East Indies, the Malay States and South Africa. Practically all lines supply refrigerator boat service carrying Oregon fresh and dried fruits, vegetables, canned goods and dairy products to world markets. There are 4 municipal terminals and 34 private docks along the 27 miles of shore line. The channel at Portland has a minimum depth of 30 feet.

Among the other important Oregon ports are St. Helens, a shipper particularly of timber products, and Astoria, known especially for its salmon, flour and lumber trade. The volume at the latter port in 1930 reached 316,693 tons.

Complete Highway System

Oregon has developed a state highway system of main arterial roads running both north-south and east-west, which serve not only to connect the principal cities but to

connect Oregon with the adjoining states.

This state system has developed to the extent that money is becoming increasingly available for the building of more state market roads. It is also making it possible for the counties to use more and more money in pushing their highways into the most sparsely settled communities.

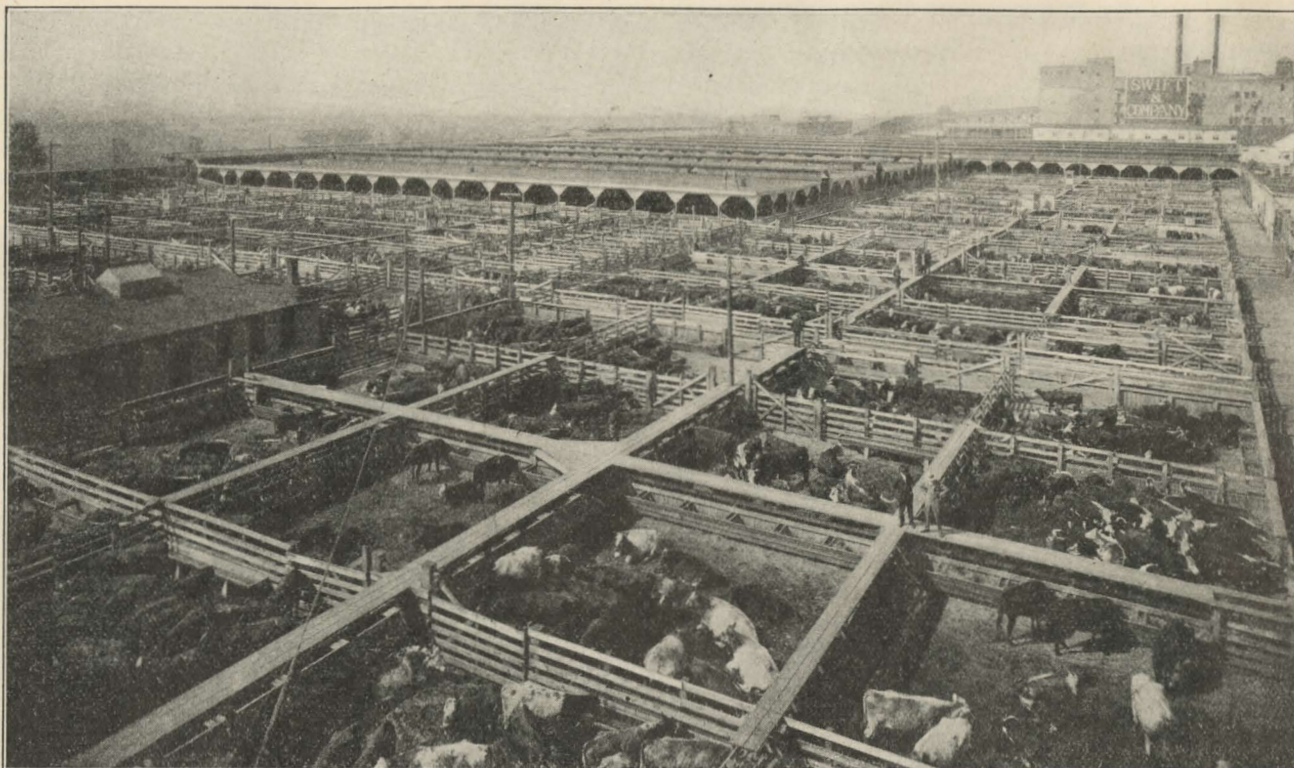
A tax on gasoline has made possible the building of this highway system. However, this tax is refunded on gasoline used on the farms.

Several highways serve the Coast region, the Willamette Valley, central and eastern Oregon, while the east-west highways serve the Columbia River territory and cross the Cascades to central Oregon from Salem, Albany, Eugene, Medford and Ashland.

There are nine highways west of the Cascade Mountains which lead to the ocean, making an easy one-day trip to the seashore for those living in western Oregon. Round trips to the beaches in a day are the rule.



Large volume of quality small fruits is packed carefully by trained workers. The products receive wide distribution.



Portland Union Stockyards give Oregon farms and ranges a nearby market for livestock with access to large coast cities, inland and export trade.

Products Reach Domestic and World Markets

Oregon farmers are particularly favored in the matter of proximity to markets, and it is notable that these markets lead into both domestic and world trade. Portland, with 390,000 population within its limits and in thickly populated settlements immediately adjacent, places an important demand upon the farms. Further than this, Seattle, Spokane and Tacoma have a combined metropolitan population of more than 750,000 people. These potential buyers of farm products are within easy reach of Oregon farms. In the other direction, California presents an attractive market for certain products. For example, much of Oregon's butter goes into that state.

The Pacific Northwest contains 3,394,307 people. Northern and Southern California have a combined population of 5,672,009. The census shows that while the population of the United States increased 33.4 per cent between 1910 and 1930, that of the 11 western states generally considered as a group increased 74.1 per cent.

By reason of economy in hydro-electric power, proximity of raw materials, equable climate and unexcelled transportation facilities, Day and Zimmerman, industrial experts, who recently made a survey, show that Oregon may well expect to develop far beyond its present volume in industrial lines. All of these things indicate in some measure the growing home market served by the Oregon farmer.

The foreign market supplied through Oregon ports takes a generous quantity of farm products, chief of which are wheat, flour, fresh and dried prunes and apples, canned fruits and vegetables, animal products and dairy products, including powdered and evaporated milk. The North Pacific coast ports are closer than any others to the Orient and have an advantage in this increasingly important market. Leading authorities in world trade declare that the Pacific empire, comprising all those lands bordering on the Pacific Ocean and having two-thirds of the world's population, is gaining in commercial importance, and that the Orient's demand for American goods is increasing.

The Portland Union stockyards at North Portland in the past year received 5,436 carloads of livestock, comprised of 119,075 head of cattle, 10,336 calves, 243,513 hogs, 177,302 head of sheep and 764 horses and mules.

More than 225,000 head of stock are transformed into finished meat products at the North Portland plant of Swift & Company annually, and \$6,000,000 are paid to producers. There also are meat packing plants at Albany, Salem and Eugene.

Oregon farmers have an exceptional opportunity to supply regional needs for pork. Between 200,000 and 300,000 hogs come into the Pacific Northwest annually from middlewestern states to be processed and packed. Somewhat the same thing is happening on the California hog market. The advantage for the western pork producer is obvious.

Independent companies, both large and small, many having nation-wide facilities for distribution of products which they advertise nationally, buy and handle a large share of Oregon's agricultural products. For example, some of the leading brands of canned tart-sweet prunes and Bartlett pears on the market today are grown and packed in Oregon.

There are also a number of growers' and producers' marketing organizations selling either to some of the companies just mentioned or through their own complete marketing machinery. Livestock, dairy, fruit and vegetable producers maintain associations in various parts of the state.

The Pacific Cooperative Poultry Producers, with plants at Portland and Eugene, handle a majority of Oregon eggs and market principally in the east through the Pacific Egg Producers, having headquarters in New York City. The Pacific Cooperative Wool Growers' Association at Portland, having 4,000 members, handles 10,000,000 pounds of wool. The North Pacific Cooperative Walnut Exchange, having six local units, handles English walnuts and filberts. The North Pacific Cooperative Prune Exchange has nine units.

Crop Production

Field Crops	Acreage	Yield	Production
Winter Wheat	837,000	24.0	20,088,000 bus.
Spring Wheat	190,000	17.0	3,230,000 "
Oats	304,000	36.0	10,944,000 "
Barley	105,000	35.0	3,675,000 "
Rye	8,000	15.0	120,000 "
Corn (grain basis)	82,000	36.0	2,952,000 "
Potatoes	52,000	120.0	6,240,000 "
Hay, tame	905,000	2.26	2,041,000 tons
Hay, wild	235,000	1.2	282,000 "
Hops	17,000	1000.0	17,000,000 lbs.
Clover seed	23,000	3.3	75,900 bus.
Flax (mostly fiber)	4,500	2.0	9,000 tons
Peppermint	2,500	20.0	50,000 lbs.
Miscellaneous seed	22,500		
Miscellaneous forage	12,500		
Total field	2,800,000		

Fruit Crops	Acreage	Yield	Production
Apples	40,000	174.0	6,950,000 bus.
Cherries	10,000	1.1	10,875 tons
Peaches	2,500	117.0	292,000 bus.
Pears	18,500	146.0	2,700,000 "
Prunes, fresh	8,000	2.5	20,000 tons
Prunes, dried	47,000	2,000 "
Blackberries (mostly wild)	5,000 "
Loganberries	5,000	1.75	8,750 "
Raspberries	2,000	1.5	3,000 "
Strawberries	10,000	1.5	15,000 "
Cranberries	150	120.0	18,000 bxs.
Miscellaneous fruit	2,500		
All nuts	6,000		1,700 tons
Nursery stock (fruit, shrubs, bulbs, etc.)	3,000		
Total fruit	154,650		

Truck Crops	Acreage	Yield	Production
Cabbage	950	8.5	8,100 tons
Cauliflower (and broc)... ..	1,360	215.0	292,000 crts.
Celery	410	300.0	123,000 "
Lettuce	100	70.0	7,000 "
Onions	950	370.0	350,000 bus.

Why Oregon is Famous

1. Annual salmon pack of 500,000 cases valued at \$7,500,000.
2. Eighty-five per cent of the farms are operated by their owners.
3. Seventy-seven per cent of the nation's canned loganberries and 58 per cent of the nation's canned strawberries.
4. Eleven of the 27 world records for production by Jerseys were made in Oregon.
5. Oregon butter in 1929 won three first prizes at the Pacific International Livestock Exposition in competition with entries from leading butter states.
6. The first hen to lay 300 eggs in a year and the first one to produce 1,000 eggs in a lifetime—both were Oregon products.
7. Jess Hanson's entry of ten hens from the Willamette Valley won the Storrs International Egg Laying Contest in 1925 and again in 1929.
8. Produces 63.6 per cent of the nation's crop of hops.
9. Grows practically all of the United States commercial filbert crop.
10. Oregon English walnuts bring from one to two cents a pound premium.
11. Produces 50 per cent of the country's canned prunes and more tart sweet prunes than any other state.
12. The only state in the Union growing fiber flax successfully in a commercial way.
13. The world championship on alsike clover seed at the International Hay and Grain Show in 1929.
14. Grass green the year round and roses bloom until Christmas.



Vetch grown for forage produces three to four tons per acre. It is seeded alone or mixed with oats or wheat. It is the most commonly used forage for dairy cattle and other stock. The seed crop is also valuable and in considerable demand.



Memorial Union Building, Oregon State Agricultural College, made possible through contributions by students, alumni, faculty and friends of the college as a monument to college men whose lives were lost in the World War and Spanish-American War.

Public Schools and Colleges

The opportunities for higher education in the state of Oregon are excellent. The state supports six institutions of higher learning including the State University at Eugene, the Agricultural College at Corvallis, medical school and three Normal schools.

The tuition at these institutions is small, the state bearing most of the expense. Oregon's provision for the education of its citizens may be estimated from the fact that the contributions of the state toward this purpose for the current biennium total approximately \$5,000,000.

This state system of higher education provides opportunities in practically all fields. Prospective students interested in law, business administration, engineering, home economics, pharmacy, medicine, education, agriculture, mining, art, literature, and many other fields will find well equipped departments or schools manned by competent faculties, available in the various divisions of the state system of higher education.

The student familiar with eastern conditions will find at least two unusual situations in his attendance upon these institutions. The first has been mentioned, namely, low tuition rates due to the fact that the state bears most of the expense of operation and maintenance. The second is the ease with which the student can make his own way. There are opportunities for the individual who is unable to pay for all of his personal expenses, such as room and board, to supplement his funds. Statistics show, indeed, that by far the larger number of students attending these state institutions follow this procedure.

Oregon provides the best educational opportunities possible for its youth. In every community are found grade schools and high schools standardized under state supervision.

The Oregon State Agricultural College ranks with the best in the land serving not only the youth with many courses in agriculture, commerce, various phases of engineering and forestry but also maintains seven experiment stations to serve as many regions in the state as well as county agricultural agents in twenty-nine counties.

The University of Oregon offers all university courses and has an enviable reputation for curriculum and scholarship standing. There are three state normal schools serving respective regions of the state; one in southern Oregon, one in the Willamette valley and one in eastern Oregon.

The public school system is undergoing rapid changes, due principally to the improved highways. Consolidations are the order of the day, both in grade and high schools. Many districts are consolidating and building the new types of buildings in the country districts making available for all, the best teachers, equipment and modern health, recreational and sports conveniences.

High school districts are being consolidated with locations mostly in the cities or thickly populated centers. The operation of buses by the school district hauling the children to and from school make these consolidations possible. Oregon has a law providing free textbooks. There are over 1,200 rural schools throughout the state and 275 standard high schools.



A group of farm boys and girls, 4-H Club members, at the Oregon Agricultural College for conference and instruction. Members of the Oregon State Bankers Association annually make it possible for a similar group to visit the Agricultural College for instruction and entertainment.



Portland is the financial and industrial capital of Oregon. A city of 301,815 population, according to the 1930 census, it has experienced a growth of nearly 50,000 in the past 10 years and is Oregon's largest city. Situated on the Willamette River a few miles above its confluence with the Columbia, the city is served in all directions by transcontinental railways and is an important gateway for coastwise, inter-coastal and transpacific shipping. Immense quantities of raw materials, cheap water power, mild climate, educational facilities and pleasant home surroundings combine with these factors to give the city a strategic position industrially. Manufacture of lumber and wood products, agricultural commodities, woolen goods, machinery and many others are important. Portland is the center of numerous scenic places offering play and rest to the vacationist. It is known popularly as the "City of Roses" because of the preponderance of flowers of this type grown by its homeowners, the long season in which these flowers bloom, and the annual rose festival.

Oregon Cities—Fine Homes, Varied Industries

Headed by Portland which is described above, Oregon cities during the last 10 years have shown substantial growth. They are busy centers of industry which is based principally on agriculture and lumber and are known as attractive home centers surrounded by educational and social advantages and near some scenic or recreational playground. A few of the larger cities are described here.

Salem is the capital of the state and lies in Marion county in the heart of the Willamette Valley of western Oregon and has a population of 26,266. It is known for its pleasant homes and in addition to being the location of state buildings and institutions, it is the site of Willamette University. Salem is an important point in the fiber flax industry and is surrounded by growers of numerous kinds of tree fruits, small fruits, vegetables and nuts. There are paper mills, meat packing plants, sawmills, wood working plants, canneries, iron works, cold storage houses and others.

Served by the Oregon Electric Railway, as is also Salem, Eugene is another leading city in the Willamette Valley and has a population of 18,901. The site of the State University, Eugene also is the center of large lumbering interests and fruit, nut, vegetable, poultry and dairy enterprises. There are canning, lumbering, fruit preserving, fruit packing and small manufacturing plants in this clean, modern city in Lane county.

Astoria, in Clatsop county, near the mouth of the Columbia River, is the city that made a remarkable recovery after a disastrous fire a number of years ago and is not only a beautiful city whose history goes back to the earliest fur traders and the Astor family, but also is the chief center of the fishing and salmon industry of the state. In addition it benefits through the tourist, lumbering, ship building, iron works, furniture, dairy, poultry and ocean

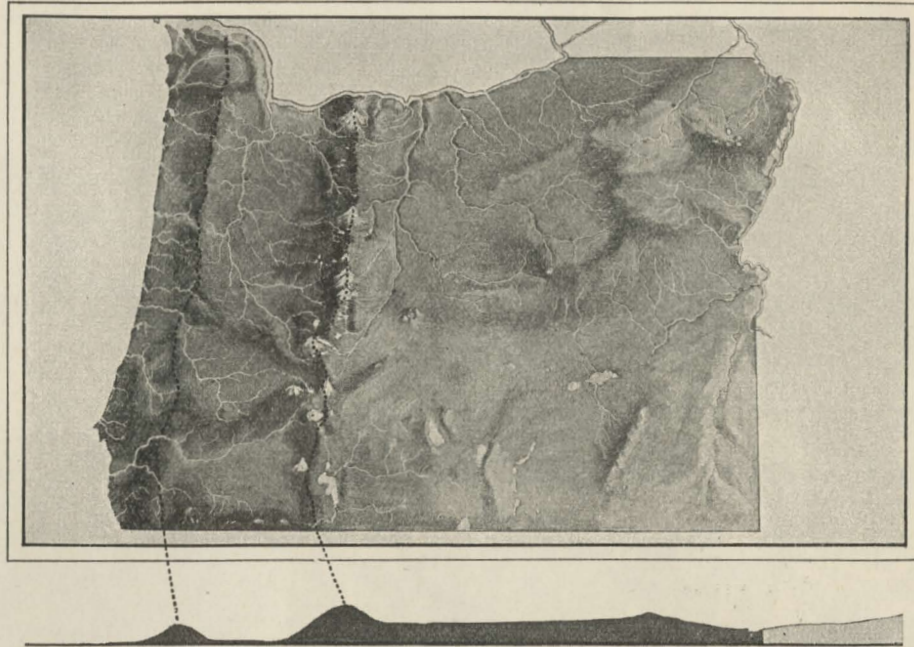
shipping trades. The population is 10,349. The Spokane, Portland and Seattle Railway serves Astoria.

Bend, with 8,848 population, and Klamath Falls, with 16,093, are central Oregon cities in Deschutes and Klamath counties, respectively. Lumbering, box shooks, manufacturing and handling of agricultural products are the main industries. They are adjacent to productive irrigated lands.

Corvallis, home of the Oregon Agricultural College, is a city of 7,585 population on the Oregon Electric Railway in the Willamette Valley, Benton county. Albany, having 5,325 inhabitants, in Linn county, is another Willamette Valley point. Both are in rich agricultural regions, as is Hillsboro, in Washington county, a city with 3,039 people.

Pendleton, of round-up fame, has 6,621 residents, and is situated in Umatilla county, a big livestock and wheat country. There are woolen mills, flour mills and other industries. St. Helens in the northwestern part of the state along the lower Columbia River in Columbia county, is a city of 3,994 inhabitants whose interests largely lie in agricultural pursuits, ocean and river shipping and lumber and lumber products.

Supplemental irrigation now is being found practical and profitable in sections of western Oregon, particularly for maintenance of clover pasture and growth of berries and vegetables during that period of the summer in which rainfall naturally occurs in lower volume. The irrigating generally is done out of small streams independently by farmers who employ pumping outfits or natural setup making gravity flow useful. There are a few improvement districts in which a limited number of farmers group together to operate a water system jointly. Western Oregon irrigation is carried on at nominal cost and increases production many times over the expense.



The Cascade Mountains divide Oregon agriculturally as distinctly as they do climatically. Irrigated valleys, wheat farms, range cattle and sheep characterize eastern Oregon; diversified farms, dairying, fruit growing, poultry raising and specialty crops predominate west of the Cascade range.



Ocean-going log raft.



Flax Pulling.



Sheep on Range.



Seining Salmon.



A Dairy Herd.



Wheat Harvesting—Eastern Oregon.

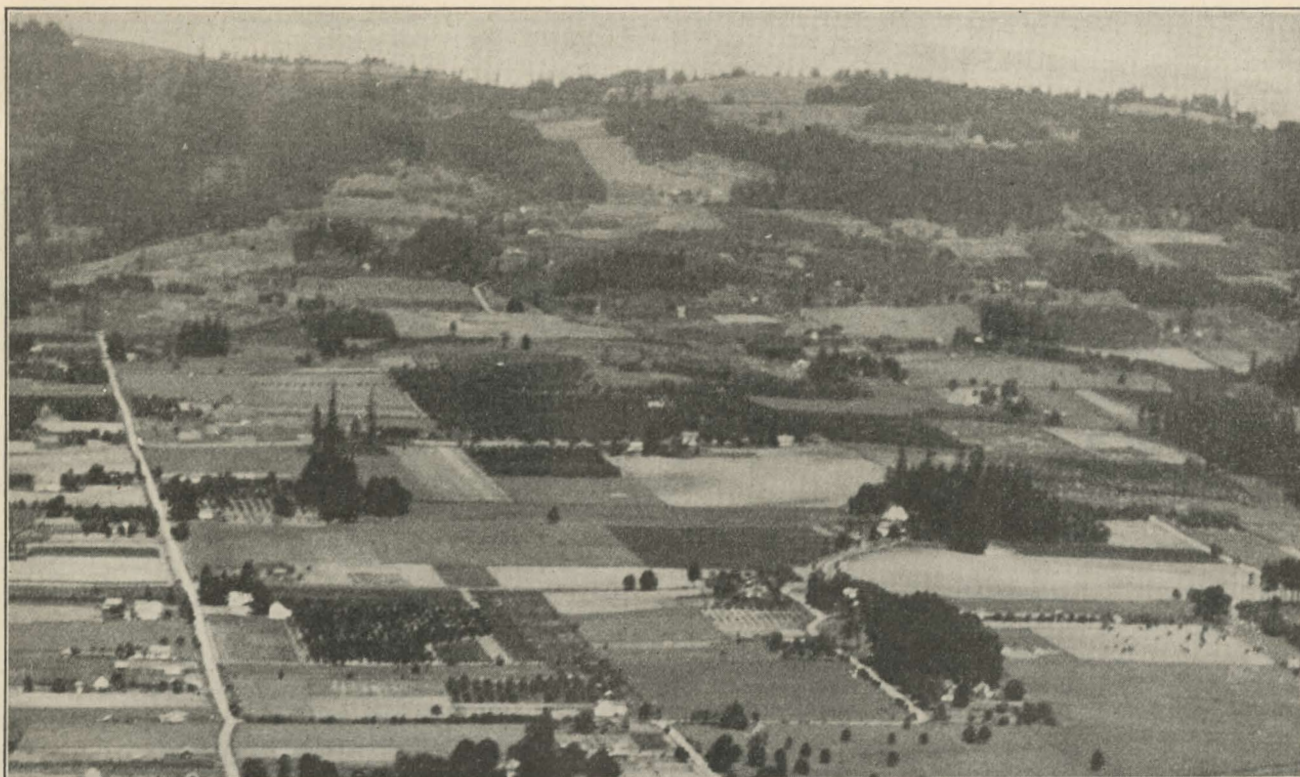
Oregon has three climates—three great areas which differ widely in natural resources—in agricultural and industrial development.

Lower Columbia and along the coast (Figs. 1, 4) ample moisture; vast timber stands; great lumber mills, and many wood using industries; dairying, vegetable growing and fishing.

In the Willamette, Umpqua, and Rogue River Valleys (Figs. 2, 5) less rain; more sunshine, long growing seasons;

many kinds of fruit, vegetables and grain. Canneries, woolen mills, lumber, pulp and paper, furniture, and machinery manufacture.

Eastern Oregon (Figs. 3, 6). Less rain than in the Willamette Valley, but crops grown with and without irrigation. Produces annually 20,000,000 bushels wheat, 19,000,000 lbs. wool, together with great quantities of other farm crops and live stock. Central Oregon irrigation projects produce large yields of alfalfa, clover and potatoes.



A scene typical of the development tributary to many of the towns in western Oregon—small tracts, modest homes, developed in poultry, berries and tree fruits. Throughout the rolling lands that border the valleys, farmers combine general crops, livestock and one or more kinds of fruit.

Western Oregon

Lower Columbia and Coast Regions

Western Oregon is divided into three principal regions. The Lower Columbia and coast region include that territory which lies along the Pacific Coast about 40 miles in width and along the Columbia River. The Coast Mountains which separate the coast region from the Willamette Valley average 1,500 to 2,000 feet in elevation with passes 600 to 800 feet and peaks ranging up to 3,000 feet or more. This region is made up of the counties of Columbia, Clatsop, Tillamook, Lincoln, Western Lane, Western Douglas, Coos and Curry. It is in this region where dairying is highly developed.

Ample rainfall coupled with cooling breezes from the Pacific in the summer and warm, balmy breezes moderated by the effects of the Japanese current in the winter keep the grass green and in a succulent condition the year around. Because butterfat and milk are cheapest produced on pasture, there are very few regions that can compete with this one in the low cost production of dairy products. Poultry, vegetable growing, with beef cattle, sheep and goat enterprises operated in connection with the utilization of logged-off land sown to grass are the other principal agricultural pursuits of the region. Industrial activity consists primarily in lumbering and allied industries, fishing and shipping.

The Willamette Valley

This valley, through which flows the river from which it takes its name, is recognized by all who have visited it as one of extensive fertility and high productivity. From Oregon's metropolis, Portland, situated near the northern boundary of the state, the valley extends southward about 150 miles and is from 40 to 60 miles in width. Its soils for the most part are fertile and productive although quite variable and are adapted to as wide a diversity of produc-

tion as can be found anywhere in the northwest. Numerous tributaries of the Willamette River drain the slopes and foothills of the Cascade Mountains on the east, the Coast Mountains on the west, and the higher altitudes on the south all of which traverse small but rich valleys which extend into the hills from the Willamette like a thousand fingers.

Many types of farms are found in the Willamette Valley ranging from general farms consisting of several hundred acres with clover, clover seed, wheat, oats, cattle and sheep as major enterprises to the highly specialized smaller berry, poultry or bulb farm.

Southern Oregon

Southern Oregon is the term used by Oregonians as including the Umpqua and Rogue River valleys located within the counties of Douglas, Josephine and Jackson.

In the Rogue River valley is found one of the most highly specialized pear producing areas in the northwest centering around the city of Medford. Four thousand cars of Bartlett, D'Anjou and Bosc pears are produced.

The Umpqua valley is contained wholly within Douglas county and extends from the summit of the Cascade Mountains on the east to the Pacific Ocean on the west. Douglas county is a heavy producer of turkeys, broccoli, petite prunes, pears, sheep, eggs and cantaloupes.

Canned Berries.

Following table shows proportion of United States output of canned fruits that are produced in Oregon:

Loganberries	77 per cent
Strawberries	58 per cent
Gooseberries	55 per cent
Blackberries	21 per cent
Raspberries	17 per cent



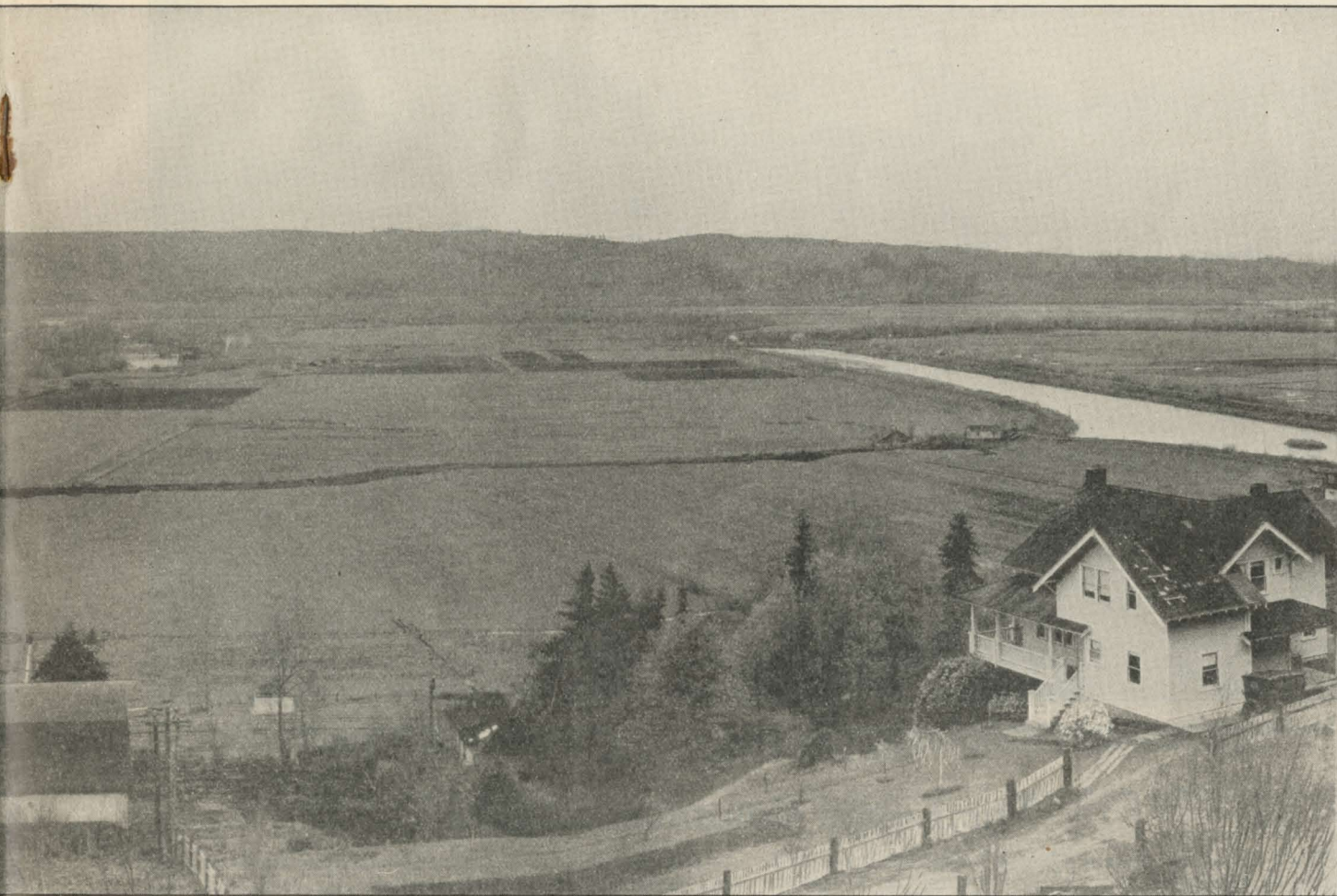
Along the Oregon side of the Columbia River, extending from Portland to the Pacific Ocean is one of the richest and most productive tracts of land in the entire Northwest. It lies level, of silt and alluvial soil enriched by decayed vegetation. The width varies from a half mile to three or four miles at places. About one-half of the entire amount of 100,000 acres remains to be developed. Reclaimed land ready to improve can be purchased at \$50 to \$100 per acre.



Few wheat fields yield less than 90 bushels per acre. After the soil is subdued it is developed for more valuable production of vegetables.



A growing season of three months or more promotes a very large yield for string beans. The cannery price averages about $3\frac{1}{4}$ cents per pound.



Grain is grown only a year or two in order to cultivate and subdue the land. Yields of wheat range from sixty to ninety bushels to the acre. Oats yield ninety to a hundred bushels or more to the acre.

The land is very valuable for dairying as grass grows and supplies good pasturage almost the entire year. A native grass grows luxuriantly, and if protected during the early summer months from grazing produces three to four tons of hay to the acre.



Cucumbers for pickling. Some vegetable crops produce continuously for two or three months and give gross returns of \$300 to \$400 per acre.



Cauliflower yields 250 crates per acre and value ranges from 85 cents to \$1.00 per crate. Land represents value from \$150 to \$300 per acre.



Reclaimed and logged-off lands are adapted for dairying owing to the abundance of grass and long growing season. Oregon stands well in the lead of the principal dairy states in vigor and growth of cows and relative number of butterfat records held by the leading dairy breeds.

The Lower Columbia Region

That portion of western Oregon bordering the Columbia River extending 100 miles inland from the sea and included in the counties of Columbia and Clatsop is commonly referred to in Oregon as the Lower Columbia region. Agriculturally, it is known particularly for its highly developed dairy industry, its many thousands of acres of immensely fertile dyked lands and tide lands, its rapidly developing commercial egg industry and a vegetable production enterprise just now coming into prominence.

The hills which extend back from the fertile valleys, dyked areas and tide lands, were once covered with a dense growth of Douglas fir timber which has now largely been harvested. In its stead are found thousands of acres of cut-over land, some gently sloping and of a plateau nature and now open to farm development.

Number of Farms Increased

The two counties comprising the Lower Columbia region showed the greatest increase in the number of farms during the ten-year period 1920-1930 of all Oregon counties. There were 68 per cent more farms in Columbia county in 1930 than in 1920 and 54 per cent more farms in Clatsop county, 1930 census figures reveal. Columbia county has 1,667 farms while Clatsop county has 694.

The following table shows the acreage of land in each county and the acreage in farms according to the federal census:

	Columbia	Clatsop
Total area in acres.....	423,680	525,440
Acreage in farms	118,604	74,562
Remaining acreage*	305,076	450,878

*(Privately owned timber, cut-over land and mountainous area.)

There are several reasons for the pre-eminence of dairying

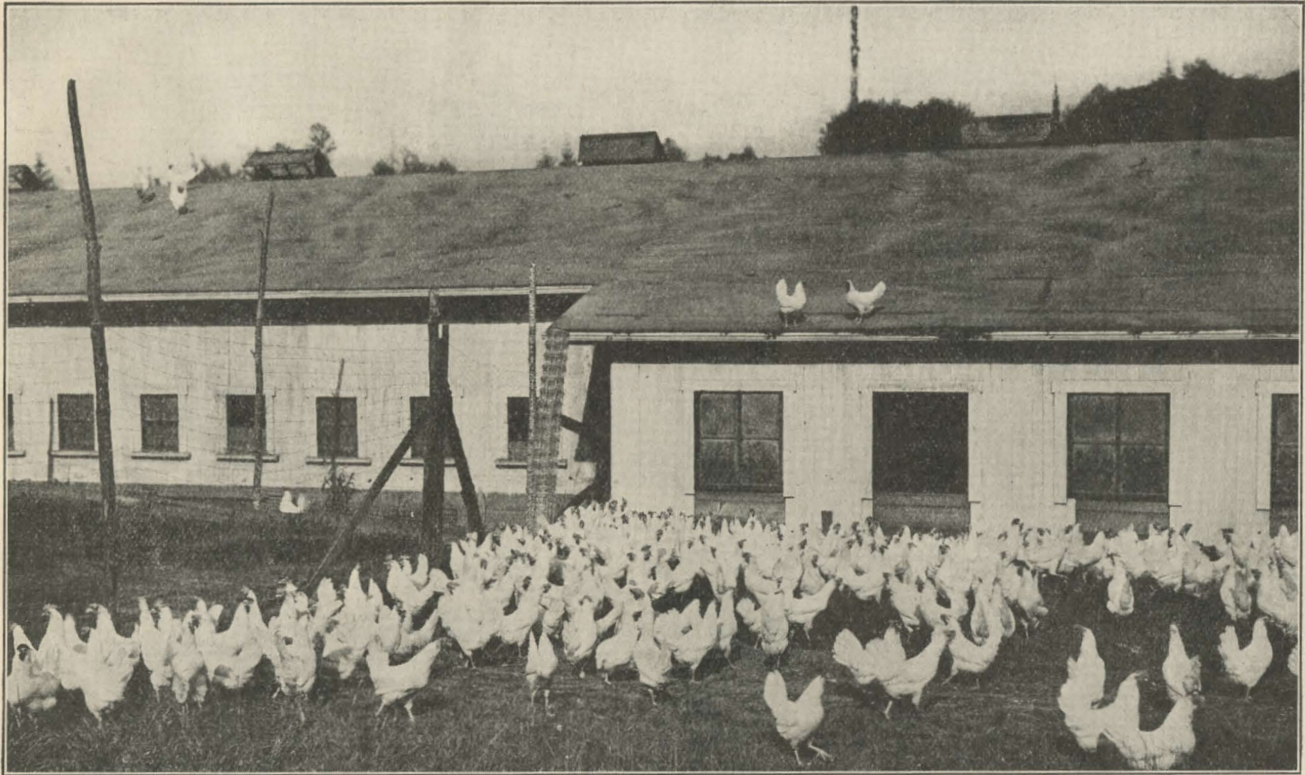
in this district. One is that the long growing season and the mild climate provide pasture for relatively long periods thus making a low cost of production, as the cheapest butterfat is produced off grass. To fill in during the season when pastures are less abundant, large yields of succulent green feed are harvested as well as large yields of root crops for fall and winter feeding as a supplement to pasture. Another reason is that Oregon dairymen receive a relatively high price for their butterfat.

Dairy Plants Modern

The Lower Columbia Dairymen's Association is one of the most successful dairy co-operative marketing organizations in the United States. Because high quality sweet cream butter is produced, 92 score or better, and because of its efficient management, this association has been able to obtain for its members a premium of about three cents a pound on butterfat over the average received by Oregon dairymen. This district is also served by commercial concerns, cream shippers and milk distributors near Portland.

Three hundred ninety-four cows in the Columbia County Dairy Herd Improvement Association had an average annual production of 284.6 pounds of butterfat while 809 cows in the Clatsop Dairy Herd Improvement Association had an average production of 276.8 pounds of butterfat annually. The association records showed profits above feed costs per cow of approximately \$100 in one year.

The commercial egg producing industry in the region has grown rapidly in recent years. This is particularly true in Clatsop county. The poultry industry increased in Clatsop county 200 per cent in a three-year period, according to a survey compiled by the county agricultural agent.



The egg and poultry industry is well advanced in the territory along the Columbia River between Portland and Astoria and south to Seaside. Evenness of temperature and lack of extremes or very great changes has an important influence upon production.

Natural Poultry Country

A cost of production study on eggs made by the Oregon Experiment Station in Clatsop county on 32 commercial poultry farms representing a cross section of the industry showed that the average egg production per hen was 174 annually, and the average size of poultry flocks was 739. Egg production per hen was slightly larger than the average for other commercial flocks in the state surveyed and the average size of flocks was about 100 greater than the average for the state.

The principal factors which make this area particularly adaptable to poultry are its mild climate and freedom from extreme heat during the summer along with an abundance of green feed during both winter and summer all conducive to high production per hen.

The range of the mean temperatures for the different months is probably less for the coast counties of western Oregon than any other section of the United States. A 70-year average shows the mean temperatures for Astoria to be as follows: January, 40.1; February, 42.2; March, 45.3; April, 49; May, 53.3; June 57.4; July 60.7; August, 61.1; September, 58.6; October, 53.3; November, 47; December, 42.2.

The great majority of poultrymen in the region market their eggs through the Pacific Cooperative Poultry Producers' Association which has its main packing plant in Portland and serves the territory well.

What the Dyked Land Grows

One of the greatest assets of the Lower Columbia region is its 30,000 to 40,000 acres of fertile dyked land just now in the process of being placed under cultivation. These dyked lands which have been formed from silt washed in by annual overflows, with a liberal mixture of decayed vegetable matter, have in them the stored fertility of centuries. As an indication of their fertility, yields of 115 bushels of wheat per acre have been harvested as well as 40 bushels of seed flax per acre grown during the period that the lands are being brought under cultivation for more intensified crops.

The production of flower bulbs, particularly narcissi, has expanded rapidly in the last two or three years. More than 1,000,000 bulbs are produced in a year and the value of bulbs marketed is \$100,000. The mild, humid conditions paralleling those which prevail in Holland, the greatest bulb producing country of the world, particularly adapts the area to this enterprise.

Columbia County Census Data

Columbia county has 1,667 farms comprising 118,604 acres or 27.9 per cent of the total land area. The bulk of these farms range in size from 20 to 100 acres. The average value per farm is \$5,967.

According to the United States census of 1930 the county had 11,277 cattle of which 6,248 were producing dairy cows, 1,500 sheep, 500 goats and 1,160 hogs.

Crop production according to the 1930 census was as follows: Corn, 332 acres; wheat, 2,466 acres; oats, 1,806 acres; barley, 880 acres; hay, including timothy, clover, alfalfa, vetch and oats, small grains cut for hay, tame and native grasses, 11,779 acres; potatoes, 1,007 acres.

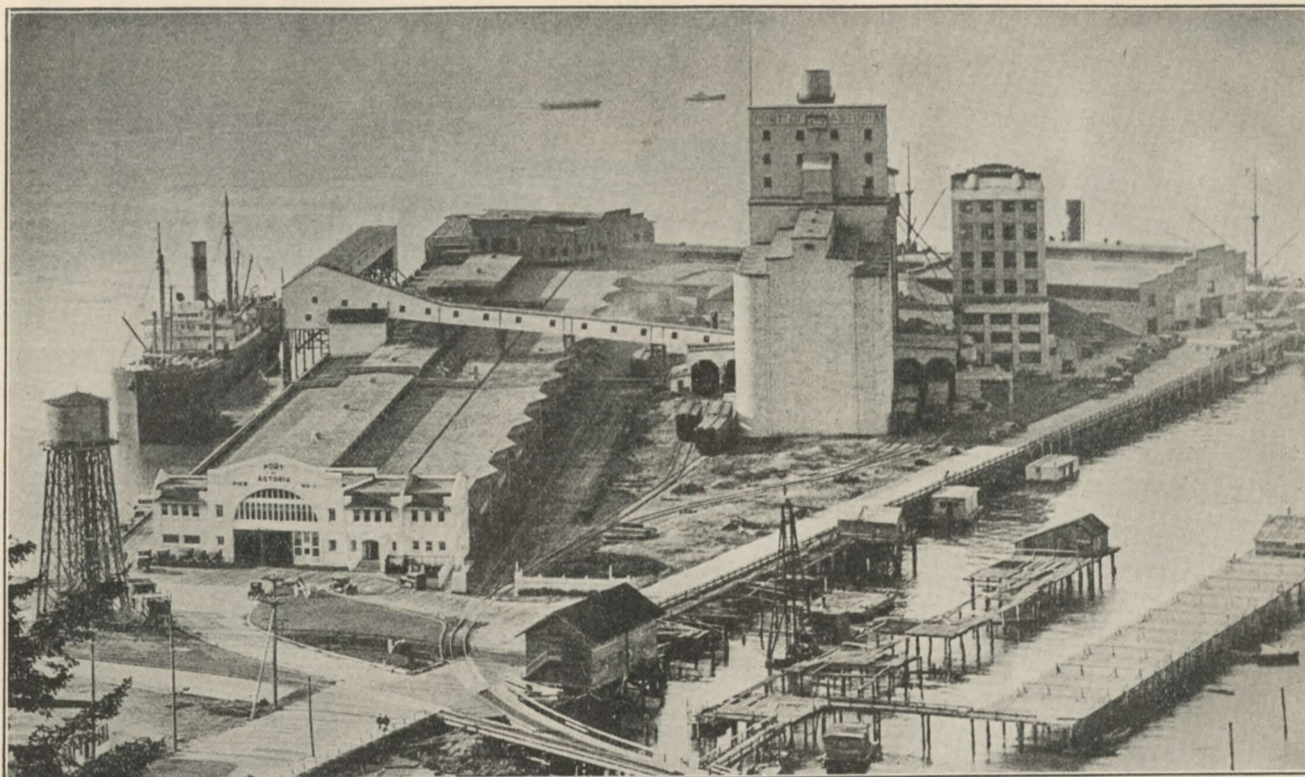
The principal towns in the county with the population of each is as follows: St. Helens, the county seat, 3,994; Vernonia, 1,625; Rainier, 1,353; Clatskanie, 739; Scappoose, 248.

Clatsop County Census Data

Clatsop has 694 farms comprising 74,562 acres or 14.2 per cent of the total land area. The 1930 census record shows the average size of farm to be 107.4 acres with a value of \$7,542. The bulk of the farms in this county range in size from 50 to 174 acres.

The United States census shows that there were 9,569 cattle in the county in 1930 of which 4,679 were producing dairy cows, 600 sheep, 100 goats and 566 hogs.

The crop acreage according to the latest census was as follows: wheat, 90 acres; oats, 415 acres; hay, including timothy, clover, alfalfa, vetch and oats, other tame and wild grasses, 6,028 acres; potatoes, 252 acres.



Port of Astoria, a city of 10,349 population. The scene shows one of the municipal docks with large warehouse, flour mill and grain elevator. The Spokane, Portland and Seattle Railway skirts the river and ocean front, Portland to Astoria and Seaside, providing very convenient transportation to this entire region.

Logged-Off Land

Back of Scappoose, St. Helens, Goble, Rainier and Clatskanie are thousands of acres of logged-off land where hardy and determined settlers have established fine, productive farms. This land can be bought at extremely low prices and favorable terms, and much of it is served by macadamized highways and by rural mail and milk routes. Around the town of Vernonia there are many small fertile valleys flanked by rolling cut-over land. Here is an opportunity for a large settlement of a group who wish to locate as a colony. In Vernonia is located one of the largest and most modern sawmills in the state, and the people here are especially anxious to assist any persons desirous of locating on this cut-over land. They are a hospitable group of people, intensely loyal to their community with a firm belief in its agricultural possibilities and anxious to be helpful to new settlers. This soil is deep, well drained and fertile. Clover, vetch and strawberries are examples of crops that do well on this soil, most of which is of the red shot type.

Lower Columbia Vegetables

On the dyked lands the water table can be held at practically any desired level below the surface by stopping the pumps or damming the ditches. It is also easy to install small pumps if overhead irrigation is desired. However, it is possible in practically all these dyked lands to bring the water table close enough to keep crops growing through until the fall rains begin. This makes it possible to produce cucumbers, string beans for canning, peas, cauliflower and cabbage for fresh shipping clear through until the frosts come late in the fall. This not only gives an exceptional yield but has a further advantage in that it extends the harvesting over a long period. There is sandy loam land in the neighborhood of Astoria where it is possible to harvest root crops such as small bunch carrots the whole year. This soil frees itself readily of exceptional moisture. There is an unusual opportunity here

to expand production of many kinds of vegetables that are out of season for other districts.

Lower Columbia Cranberries

No story of agriculture in Clatsop county would be complete without mention of the cranberry bogs, where yields of cranberries have run as high as 750 bushels per acre. The Pacific Coast is a heavy importer of cranberries, hence there is always a fair market for this highly specialized crop which requires a large initial investment and from three to five years for development. These berries are highly flavored and exceptionally large. They have readily made their way in the western and northwestern markets and are being canned to some extent.

For those who like to handle bees on a commercial scale or as a sideline, the Lower Columbia territory affords an opportunity.

Lower Columbia Industries

A large commercial plant with nation-wide distribution manufactures all kinds of pickles, relishes and sauerkraut at Scappoose. The produce for this factory is raised on the 6,000 acre Scappoose Delta land district. Here also there is developing a large commercial poultry center, backed by community leaders. Several three-acre tracts are being given away for poultry raising.

At Astoria the principal industries are salmon packing, lumbering and dairy manufacturing. All along the river from Portland to Astoria at intervals are lumber and shingle mills.

At Clatskanie and Rainier the same industries prevail; namely, cheese factories, creameries, shingles, lumbering and logging.

St. Helens is an industrialized city whose industries are built around the by-products of the lumber industry. Among the articles manufactured are paper bags, cement paper bags, pulp, paper, Kraft paper, handles and insulating board.



Logged-off land in Columbia and Clatsop counties has good soil, numerous small streams, plenty of cheap building material and fuel, and presents good opportunities to develop small farms with a moderate investment.

Experiment Station

The Astor Experiment Station is located at Astoria. It was established in 1913 for the purpose of improving the agriculture of the coast section of Oregon.

At the Astor Experiment Station the average hay yield runs three to four tons per acre. The root crop produces at the station an average yield of 35 tons per acre. Some varieties produce over 40 tons. The roots can be hauled and fed nearly every day in the winter. There is no necessity for root pits except to store mangles.

It is the policy of this experiment station to co-operate with the county agricultural agents and to advise new farmers if they so desire. With correct information a new settler can grow as good crops as anyone located in this section.

Lower Columbia Dairy Association

The Lower Columbia Dairy Association was one of the first in Oregon to establish the principle of paying for cream on a graded basis and is now a heavy shipper of high score butter to the California markets. In order to further its markets the association entered the ice cream business and now has a plant for this purpose in Portland from where it distributes to a wide territory. The ice cream mixture is made in Astoria whence it is shipped to Portland and frozen. The plant is now the second largest manufacturer of ice cream in the state.

Later the association entered the feed business and is now putting out several different mixtures of dairy feed figured as balanced rations to fit in with the various crops raised by the farmers in this region. The association also manufactures poultry feeds and in this way finds a use for a large amount of powdered milk of which the organization is a large manufacturer. In addition, this association has constantly maintained a price of two to four cents a pound over the Portland price for butterfat.

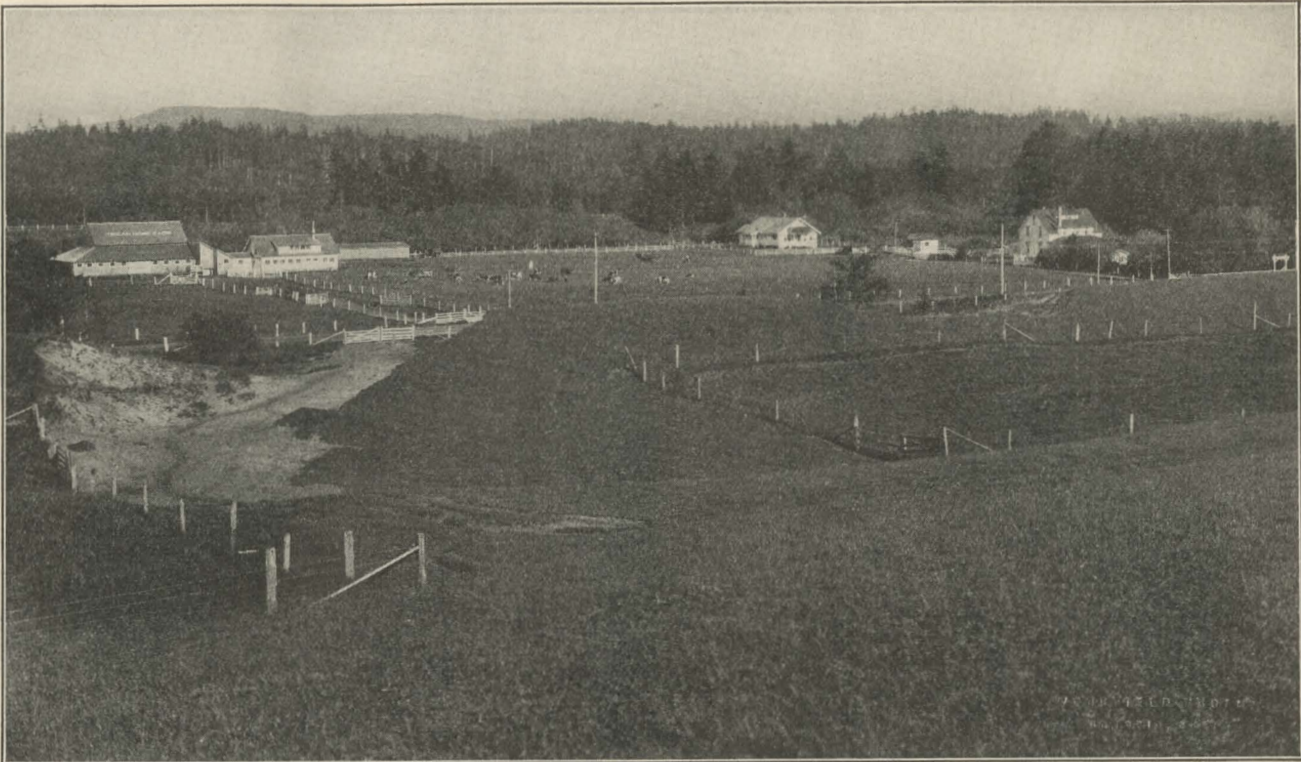
In order to coordinate efforts with other Oregon dairymen and to eliminate destructive competition with other co-operative dairymen in Washington and California, the Interstate Associated Creameries has been formed, having

working agreements as to markets, etc., with the Washington and California co-operatives.

For those who do not wish to join in a co-operative endeavor of this kind, there are located throughout the entire Lower Columbia district commercial creameries and cheese factories and the large centralizers either have plants or buy throughout the territory. Much cream is also shipped to Portland manufacturers desiring high grade sweet cream.



Green peas on the Lower Columbia produce five to six tons per acre and sell at 2 cents to 4 cents per pound. Picked in August and September, they are shipped to central and eastern states when supplies from other territories are low.



Typical farm along the sea coast of Clatsop county. Dairying and poultry provide practically the entire farm incomes. Flower bulb growing is developing.

Experiences of Lower Columbia Farmers

Soil Like That in Holland

In 1916 William DeJong came to the Lower Columbia territory from Holland. Mr. DeJong states that his entire capital was \$35.00. He started on a 40-acre piece of uncleared dyke lands, with no road to his place, the railway running across his land being only way in and out. Mr. DeJong says that he selected this particular section because the land was just the type that he had known in Holland.

Mr. DeJong has kept his 40 acres, it is all cleared and now in a big state of production for dairying, maintaining 40 head of Guernseys. On the DeJong farm is now a modern set of buildings, with all modern conveniences in the home, and in the farm buildings, and on the farm practically every labor-saving device required by the up-to-date farmer.

Mr. DeJong's family now numbers eight. He has sent two sons through college and educated them to be engineers. The farm has been developed along Old Country lines of permanent grass pastures for dairying and corn for ensilage with root crops for winter feeding, which annually average around 45 tons per acre.

Mr. DeJong attributed his success to the soil and the climate. Nowhere will the visitor find a more hospitable welcome and a correct answer to his questions about dairying in the Lower Columbia than in the DeJong home.

A Dairy and Vegetable Farm

John Pederson came to the Lower Columbia section in 1920 with a modest capital of \$250. He purchased 19 acres of reclaimed drainage land all in timber and has cleared all but one acre. On this 19 acres Mr. Pederson has kept as high as 21 head of dairy stock and has used four acres for cash crops of peas, potatoes, etc. An average of only 50 cents per month was spent for mill feed, all other feed being raised on the farm.

Peas for fresh shipping in late August and September are a recognized cash crop in this district and Mr. Pederson has obtained yields as high as $6\frac{1}{2}$ tons per acre. This crop, coming in out of season for other districts, nets the grower from 2 cents per pound up, varying according to seasons.

Mr. Pederson is a painstaking farmer and careful in the selection of seeds, as for instance the selection of seed potatoes by hills only.

Mr. Pederson has modern conveniences for both farm and home. He attributes his success to dairying, but also makes a success of vegetable growing, never failing to have several acres for cash crops.

Flower Bulbs in Clatsop County

Gradually shifting their efforts from poultry and strawberries to bulb production Mr. and Mrs. A. H. Fieselman of Warrenton, Oregon, have been pioneers in promoting this new Clatsop county industry. Their first importation of bulbs from Holland was made in 1923 and consisted of 500 lbs. of King Alfreds. Since that time they have imported several additional lots of different varieties.

The Fieselmans feel that the average grower may well devote his energies to some of our standard narcissus varieties rather than novelties. As evidence of this they have largely confined their stands to King Alfreds, Golden Spur and Spring Glory.

In 1928 three tons of bulbs were sold from the Fieselman farm. This was increased to 4 tons in 1929 and to 6 tons in 1930. This year's crop is expected to be about 35 tons, 14 to 16 tons of which will be marketed.

The Hazeldell Farm, as the Fieselmans call their place, originally consisting of 8 acres has recently been increased to 16 acres. This expansion was found necessary as successful bulb culture necessitates a three-year rotation.

Authorities from all over the country inform us that no finer narcissus bulbs can be grown than those produced in



Dairying has developed to an advanced stage in western Oregon based on natural advantages—abundance of succulent feed, long grazing period, short feeding period, cool summer days, mild winter days, ease of preserving cream and producing high score butter and high production per animal.

the Clatsop region. The Fieselmans are justly proud of their bulb fields and will gladly take time off to show you around and tell you their story, or to lend encouragement and advice to the inexperienced grower.

A Lower Columbia Dairy Farm

The Beeson Bros. came to the Lower Columbia territory from Idaho and took over an unimproved place on the dyked lands. While constantly improving their place, it is as yet far from being completely improved necessitating the purchase of considerable more feed than they will have to buy in a few more years. The record of their herd, however, speaks for itself.

Total production in milk, 238,192 pounds; butterfat, 11,845.1 pounds. Total value of the product aside from skimmed milk, all of which was used on the farm for feeding hogs and calves, \$6,256.60.

The association records show that this herd was on pasture 230 days during the year. The cost of roughage, including pasture at market prices, \$1,124.10. The cost of grain fed the herd was \$883.25.

The value of the butterfat above the cost of the feed was \$4,149.25, or the gross returns per cow for butterfat, \$201.80. The net return was \$133.84. The average cost per pound for producing butterfat was, therefore, 16.1 cents. It is to be understood that all feed raised and pasture grown by the owner of this herd is included in these figures at market price.

The average yield in milk was 7,683 pounds and in butterfat, 384.1 pounds per cow.

Cows Average 376 lbs. of Butterfat

Jacob Reitala located on one of the drainage districts of the Lower Columbia seven years ago, buying a piece of uncleared land. He raises some cash crops besides maintaining a dairy herd of 23 cows.

The records from the cow testing association show that the 23 cows produced 181,721 pounds of milk and 8,650.1 pounds of butterfat during the association year which ended April 1, 1930.

The average yield per cow was 7,901 pounds milk and 376 pounds butterfat.

Mr. Reitala sold his sweet cream to a retailer in Portland and received 60 cents per pound on contract for it. This makes the average amount received per cow last year \$225.60. The skimmed milk was fed to hogs and calves.

All of the feed for the cows was raised by him on his farm, with the exception of one and one-half tons of linseed meal, for which he paid \$58 per ton.

In addition to raising all his feed, he sold 120 tons of hay and a little grain from his farm.

Poultry Flock Pays on Cutover Farm

Eighteen years ago Mr. and Mrs. Walter Kellar were living in the city. They had a family of small children and wanted to move to the country so that their youngsters could readily find things to keep them occupied and to teach them good citizenship while they were growing up. They bought a 40-acre farm near Rainier, Oregon, in the Lower Columbia territory, situated amidst the cut-over region on the higher elevation back a few miles from the Columbia River.

The Kellars first interested themselves in dairy cows and the task of clearing their land and putting up buildings, but later devoted themselves entirely to poultry. Now they have a residence, large laying house and other buildings. A flock of 1,200 to 1,500 laying hens is maintained and in some years the return above feed costs have reached as high as \$2 a bird.

The flock which is the chief source of revenue on this farm is of certified stock and trap-nesting is being practiced at present. One hen recently laid 197 eggs in seven months, which Mrs. Kellar cites as an indication of the advantages under Oregon conditions which tend toward high production and satisfactory returns from poultry.

A son of Mr. and Mrs. Kellar is now at home assisting them with the flock while another recently has bought a partially improved 40-acre farm nearby for \$33 an acre and has started a poultry enterprise for himself.



The bulb growing industry is making rapid progress in Oregon. Natural conditions favor the development of strong and vigorous bulbs. Tulips, narcissi and daffodils are grown on a large commercial scale in several places on the Lower Columbia and in the Willamette Valley.

The Willamette Valley

With a wide diversity of production, fields and timbered areas, green the year around, broken at intervals with rushing rivers and streams, the Willamette Valley, situated between the Cascade Mountains on the east and the Coast Range on the west, combines the practical, everyday resources and opportunities of farm life with many features that contribute to pleasure, comfort and esthetic satisfaction.

A wide diversity of agricultural enterprise provides a stable farm income. Included in this list of commercial crops are tree fruits, including prunes, cherries, pears, apples, and peaches principally, walnuts and filberts, dairying, sheep, goats, hogs, vegetable production, grain and hay, potatoes, cloverseed and flax. The production of small fruits such as strawberries, raspberries, blackberries, blackcap raspberries, gooseberries along with poultry, both turkeys and chickens, has expanded in recent years as the transition has been taking place from the large general farm to the more diversified, smaller acreage.

Berry Acreage on Increase

Oregon's berry industry is largely concentrated in the Willamette Valley, where 84 per cent of the state's total annual berry crop is produced, according to a study recently completed by the Oregon State College. The berry acreage in Oregon has increased since 1919, the study shows, while in the United States as a whole, the acreage has been on a decline. The small fruits acreage in the United States has decreased from 310,000 acres in 1899 to 249,000 acres in 1919 while the acreage in Oregon doubled during the same period. From 1919 to 1929, strawberries in Oregon increased fourfold, and raspberries, threefold. Cultivated blackberries remained stationary and gooseberries, after reaching a peak in acreage in 1926, have declined somewhat.

This berry industry has found an outlet through can-

neries located at central points up and down the Willamette Valley. A large part of the strawberries are sold for barreling purposes and processed by the recently developed frozen pack method.

Strawberries yield from two to four tons per acre, raspberries from one and a half to three tons per acre, loganberries from two to four tons per acre and evergreen blackberries from three to five tons per acre. Depending on the yield and price, the gross returns from these respective crops vary from about \$150 per acre to as high as \$500.

Conditions Favor Poultry

The poultry industry of the Willamette Valley has seen as rapid progress as has the small fruit industry. In 1920, Oregon produced but few eggs in excess of its market requirements. In 1925, its own requirements were supplied and, in addition, 152 carloads were exported. This increased to 414 carloads in 1927 and 500 carloads by 1932. The bulk of these eggs are produced in the Willamette and Lower Columbia river valleys.

The Pacific Co-operative Poultry Producers' Association, with packing plants at Portland and Eugene, operates throughout this section. This section is also served by the large commercial concerns.

English walnuts and filberts thrive under Willamette Valley conditions. There are several thousand acres of filberts. While filberts bear some nuts the first or second year after planting, a profitable production usually does not come until the fifth or sixth year. The yields average about 1,000 pounds per acre although in some plantings, yields of as high as 3,000 pounds per acre have been obtained. Oregon English walnuts are of particularly high quality, thin shelled and sweet meated.

The state has 8,000 acres of English walnuts, the bulk of them being in the Willamette Valley. Trees come into



Strawberries are a valuable and popular crop in western Oregon valleys. They are grown in large commercial acreage and on many farms in small tracts. Fruit canneries provide a dependable market for large supplies.

bearing about the tenth or eleventh year. The average yield ranges around 1,000 pounds per acre. A ready market is found for the nuts through a grower-owned co-operative marketing organization.

Fiber flax provides a cash crop for Willamette Valley farmers in the vicinity of the state flax industry plant at Salem. Soil and climatic conditions are found ideally adapted for fiber flax production and the quality of fiber produced from this flax has been reported equal to the fiber produced anywhere in the world. From 2,000 to 4,000 acres of fiber flax are grown annually, providing the raw product for the linen manufacturing industry.

Seed Crops Important

The production of small seed crops such as clover seed, rye grass seed, vetch seed and Austrian winter field pea seed, provides important cash crops on most of the general farms in the valley. These seed crops are of high quality and, owing to the relatively high value in comparison to their weight, find export markets at reasonable cost.

Various kinds of flowering bulbs have in recent years become of commercial importance from a production standpoint. In several counties the industry has become of such importance that bulbs worth more than \$150,000 are sold for shipment to eastern markets annually.

Oregon Jersey cattle held 11 of the 27 world records recognized by the American Jersey Cattle Club on July 1, 1930. While particularly noted for its Jerseys, high class cattle of the other dairy breeds, including Holstein, Ayrshire, Guernsey and Brown Swiss, are also numerous. Of the 146 Medal of Merit cows recognized by the Jersey breed, 40 are within the state of Oregon. Of the 170 Silver Medal bulls, 34 are in Oregon. Of the 78 Gold Medal bulls, 22 are in Oregon and of the 8 Medal of Merit bulls, 3 are in Oregon. The state has an international reputation for its Jersey cattle.

The Willamette Valley is a center of learning. In nearly every city is found an institution of higher learning, either a college or a university.

Besides the state institutions of higher learning, there are other privately supported colleges of high rank. Among these are Albany College, a Presbyterian school at Albany; Linfield College, a Baptist institution at McMinnville; Pacific University, although non-sectarian, affiliated with the Congregational church, at Forest Grove; the Willamette University, founded by Methodist missionaries in 1840, at Salem; Reed College, an endowed independent institution in Portland; Pacific College, a Quaker institution at Newberg; Mt. Angel College at Mt. Angel, and Columbia University, Portland, Catholic institutions.

Industries Follow Farms

The industries of Hillsboro and Forest Grove in Washington county are based largely on their agricultural resources. Creameries and fruit and vegetable canneries, and a large milk condensing plant are located in this county. One of the largest canneries in the state is also here, and there is in addition a dried prune packing plant. Other industries are sash, door, and brick and tile factories.

The agriculture of this section is largely diversified—dairy, poultry, nuts, celery, onions, prunes, berries and all types of general farming. It was here that the growing of Grimm alfalfa was first successfully proven for Willamette Valley conditions, and now the country has several thousand acres. Yields of alfalfa run high for non-irrigated crops, many obtaining as high as five to five and one-half tons per acre from three cuttings.

Clackamas county produces bulbs and has developed a market for Burbank seed potatoes in California. Practically anything grown in the Willamette Valley is successfully grown in Clackamas county, but in addition to the above things mentioned, dairying, small fruits and poultry are their major agricultural products. The income from poultry alone in Clackamas county is \$1,225,000 annually.

In Marion county, of which Salem is the county seat, there are twelve canneries and one-third of all the berries and fruit put up in Oregon is canned in Salem. This makes Salem the canning center for Oregon and provides practically an unlimited market for small fruits. Marion coun-



Strawberry growing on a large commercial scale during development of a walnut and filbert grove. Note the small trees. The filberts will produce in six to seven years and walnuts in eight to twelve years. The acreage of fruits, nuts and other special crops is steadily increasing as a part of diversified farms and as separate enterprises.

ty is not only the canning center of Oregon, but can be considered also as the flax, cherry, hop and prune center. It is also a producer of bulbs, many beautiful bulb plantations being located near Salem.

Salem, the capital of Oregon, is unlike many capitals in that it is an industrialized city, and its industries are built on a sound and lasting basis, since they are founded on agricultural production. Here are two flax mills, seven canneries, woolen mills, cold pack plants for fruit, dried fruit packing plants, creameries, a pickle factory and a meat packing plant. In addition, there are foundries, sawmills, paper mill, numerous wood-working plants and brick and tile factories.

Albany, county seat of Linn county, is one of the important industrial cities of the Willamette Valley, due to the development of new railway connections of the Oregon Electric Railway into the vast timber resources of eastern Linn county. The city has many fine new locations for these new industries and has excellent power, shipping and other natural facilities.

Among the industries already located there are a door factory, a chair factory, a long established saddlery making saddles, harness and other leather goods, a tannery, meat packing plant, cannery, creamery, private egg and poultry plant, privately owned milk condensing and powdered milk plant, iron works, brick and tile company, planing mill and a pickle factory. In addition, Albany is the center for the shipping of clover seed, vetch seed, grass seed and Austrian winter field peas.

Six Walnut, Filbert Plants

In the eastern part of Linn county the town of Lebanon has a number of agricultural industries, including one of the six packing plants for walnuts and filberts. Lebanon is also a heavy producer of high quality strawberries which are in demand for barreling purposes.

At Corvallis, the county seat of Benton county, is the Oregon State Agricultural College, and here also are lumbering industries and a fruit cannery. Of special importance in this locality, however, is a highly developed poultry

industry which has been built largely around hatcheries.

Eugene is the county seat of Lane county, and its industries are somewhat diversified, the largest being the Eugene Fruit Growers' Association which has built up its gross sales from \$120,000 in 1910 to \$1,800,000 in 1930. This is a farmers' co-operative organization which has built up a world-wide market for canned fruits and vegetables, dried fruits, nuts and vinegar. It has its own box factory, ice plant and also manufactures ice cream, candied fruits and nuts.

The association handles over 27,000,000 pounds of produce annually, employing at the peak of the season over 700 men and women. Among the other industries in Eugene are a woolen mill, flour mill, brick, tile, cement and iron working plants, as well as lumber mills and wood-working plants.

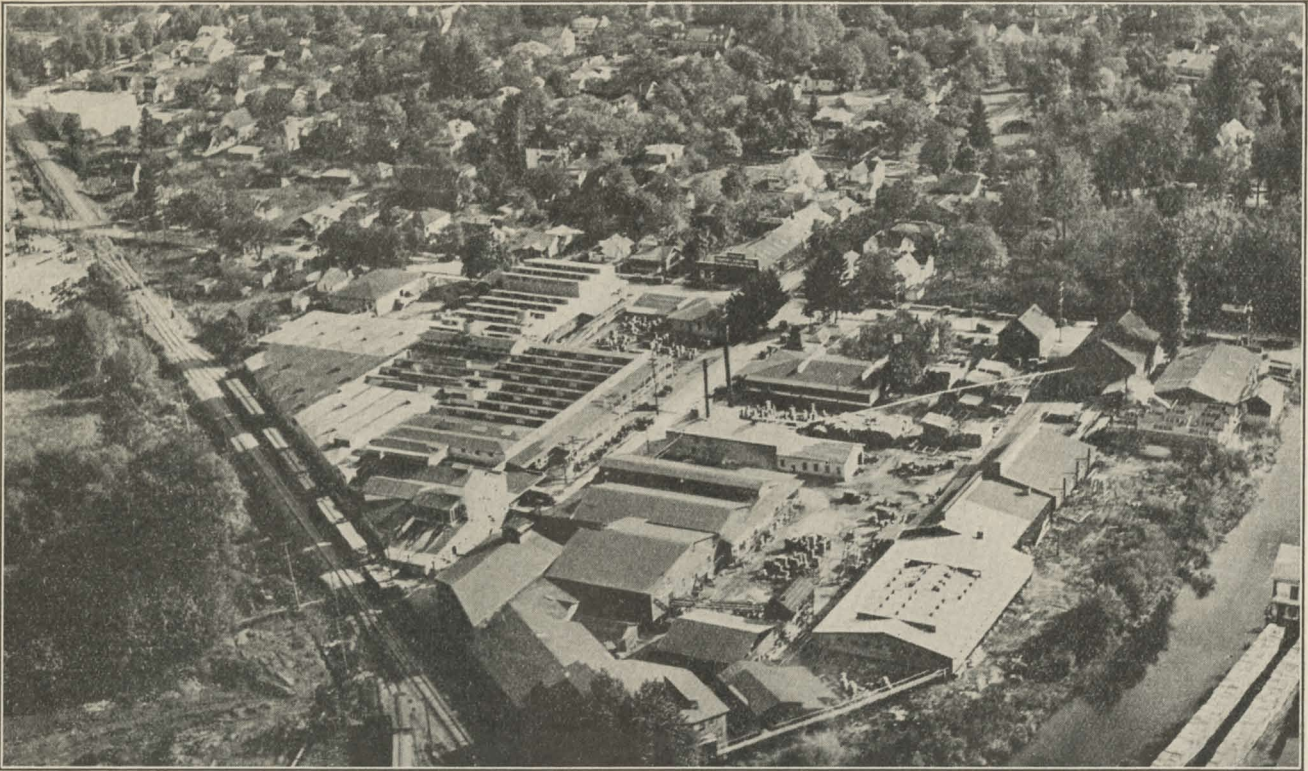
Eugene, like Albany, will have its lumber industry greatly increased as the Oregon Electric Railway is building to develop the timber resources south and west from Eugene in the Siuslaw section. Here also, as at other Oregon points, is a farmers' co-operative creamery making high score butter and ice cream.

Tree Fruits That Prosper

Apples for local consumption and for sale to canneries are raised through the entire valley, and there are a number of orchards raising apples for commercial shipping.

Pears are, however, raised more extensively than apples, and especially is the Bartlett in demand by the canneries. The Willamette Valley canneries ship in annually many carloads of Bartlett pears from other sections of the state and outside the state to take care of their canning requirements. Some winter pears including the Clargeau, Comice and especially the D'Anjou are raised for shipping to the eastern and European markets.

It is here that cherry production reaches its peak when quality is considered. There is an exceptional demand for the Royal Ann cherry of this section, not only by the canners but by barrelers for the manufacture of maraschino cherries.



Plant of the Eugene Fruit Growers' Association at Eugene. They have other plants at Junction City and Creswell. Almost \$2,000,000 worth of dried, canned and preserved fruits and vegetables are marketed annually.

In addition to the Royal Ann, the large Bing and Lambert cherries originated here and they have a national outlet as a fresh cherry being shipped all over the United States.

The prune industry is the most widely extended of any horticultural industry in the Willamette Valley. The Oregon tart-sweet or Italian prune has recently become one of Oregon's leading canned products, a popular breakfast or dessert fruit, and has made its way in the world's markets on the basis of quality alone. The largest bulk of the prunes, however, is still marketed as the dried product. The peak of the annual output of dried fruit is 115,000,000 pounds.

Mohair and Wool Bring Returns

For approximately one-third of a century Polk county has had a number of men who are recognized as outstanding in the country as breeders of Angora goats. It is to this section of the Willamette Valley that goat raisers come from Texas, the greatest goat raising state, and from Arizona and even Mexico for their breeding stock. These men have bred many goats that will hold the wool over for two years, gaining a length of as much as twenty inches and bringing as high as \$150 to \$200 per fleece. Only a few, however, can be made to hold their fleece as most goats when not sheared annually, will shed in the late spring.

Goats live almost entirely on browse, and it is for this purpose that they are kept to a large extent in the Willamette Valley. Thousands of acres of cut-over oak lands have been cleared by use of goats. It is only necessary to pasture these lands with goats for six or seven years and if sufficient goats are kept to keep down the sprouts, the stumps will be rotten and the land easily cleared. For this reason, and to keep down all kinds of underbrush, a number of Willamette Valley farmers maintain herds of goats.

Throughout the Willamette Valley farm flocks of sheep are the rule on practically every farm. However, the

breeds are different than those in the range country. The most popular breeds for Willamette Valley conditions are the long and medium type wools as contrasted with the fine wools of the ranges.

Cotswold, Lincolns and Hampshires are not only popular here for wool and mutton, but are raised by a number of farmers to be sold for breeding stock, the Willamette Valley seeming to produce exceptionally high quality breeding stock of this character.

A Fifty Acre Diversified Farm

Emil Wyffels, Rt. 1, Cornelius, Oregon, is able to make his fifty-acre farm pay satisfactorily and has developed another nice Washington County, Oregon, farm home in recent years.

Dairy cows form the foundation of the farm business on this farm; more than fifteen head of dairy cattle are kept. The cropping system is worked out on the basis of the needed feed and pasture for these cows. "Good cows pay, but the scrub never pays," says Wyffels. Alfalfa and red clover supply the hay needed by the dairy herd. Six tons of alfalfa hay to the acre are usually secured annually on this farm. Red clover yields an average of approximately three tons of hay to the acre. After taking off such a hay crop they have usually been able to harvest a crop of clover seed the same year. Corn for silage and turnips supply succulent feed.

Wyffels is a firm believer in the efficient use of crop residues, barnyard manure, and commercial fertilizers in the upbuilding and maintaining of soil fertility. He never burns any straw, most of this being used in the livestock quarters in one way or another. All crops are grown in a four-year rotation system and the whole farm usually gets an application of barnyard manure once in the rotation.

One son has completed high school and at the present time is assisting with the farm work; another son is enrolled in the Smith-Hughes agricultural department of the Forest Grove High School. One daughter is attending high school, the other is in elementary school.



Filberts are grown commercially outside of the Pacific Northwest in no other section of the United States. Fifteen to twenty million pounds are imported annually to supply the national demand. They have been grown successfully for several years in the Willamette Valley. The yield and quality justify increased acreage.

Willamette Valley Experience Stories

World Record Hens

In the fall of 1911, J. A. Hanson stepped from a train in Corvallis, Oregon, with no cash but a determination to learn the poultry industry.

He worked for a time and then took over a 30-acre farm. Four years later he owned the 30-acre farm, paid for out of profits from the sale of his pedigreed stock and from the sale of eggs for hatching.

By 1915 he had a flock of pullets which made a flock average of 208 eggs, and by 1929 a flock of 1267 pullets made a flock average of 241 eggs. For 8 years his pullets have averaged over 220 eggs and for 11 years have averaged over 200 eggs.

Some of the contests won by Hanson are Washington, 1917; California, 1920; American Poultry Contest, Kansas City, 1925; Storrs International Egg Laying Contest, Storrs, Conn., 1924; Southern California Egg Laying Contest, Pomona, 1924; Daily Mail Contest, Suffolk, England, first pen of all foreign entries; another California State Contest, 1923, and many others, but the most outstanding record, however, was made last year in the Storrs International Egg-Laying Contest at Storrs, Conn., where Hanson's ten-hen pen took first prize by a big margin, laying 2,989 eggs in 364 days and set two additional world records: (1) the original ten hens that started the contest finished; (2) seven of the ten hens laid a total of more than 300 eggs each during the contest.

Mr. Hanson attributes his success not only to his personal work but gives due credit to the climatic conditions which enabled him to range his pullets out and produce a strong, healthy, vigorous bird at a minimum of cost.

Has Grown Strawberries for 16 Years

Rearing five children and taking care of forty to forty-five acres of small fruit has been the task of W. E. Marr and wife for the past sixteen years. Purchasing seventy acres of fertile hill land in the fall of 1915, only part of which

was cleared, with none of it in fruit, the Marrs have developed a paying small fruit growing business in Washington County, Oregon.

Twelve years ago they started with their first strawberries and at that time were one of the very few in their community who were attempting to grow this crop; now the entire part of their farm that is cleared, consisting of more than forty acres, is devoted to strawberries, gooseberries, blackcap raspberries, rhubarb, pears and prunes.

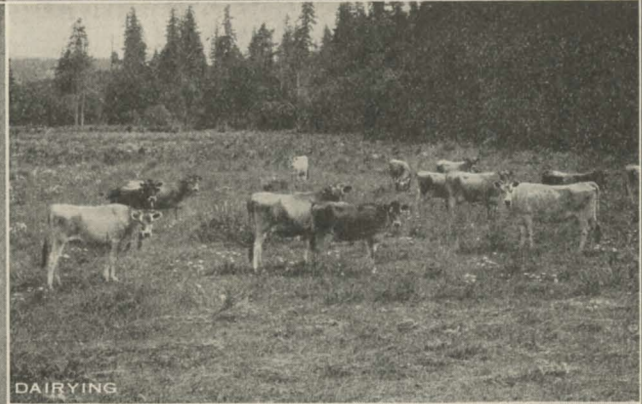
Strawberries comprise the largest acreage of fruit on their place. Yields of strawberries throughout Washington County vary considerably. Mr. Marr states that during all the time he has been growing strawberries he probably has received an average yield of not less than two tons to the acre. Some years his yield was much heavier but in some years due to one condition or another the crop was not so good. A ready market has been available for the strawberry crop from the time he began.

The section in which Mr. Marr resides is particularly adapted to small fruit growing. It is rolling hill land with a deep soil which holds moisture well. "The small fruit business is a good one on good land provided that a man will give it his close attention and follow those practices consistently which are known to bring results and a good living is possible for a farm family on these well located small fruit ranches," states Marr.

Located on the top of a high knoll almost west of Banks the Marr home is one of the attractive scenes of Washington County. Of the family of five children, two daughters are married. The elder daughter and her husband are in the berry growing business north of Banks. The other married daughter and husband have just recently purchased a farm in the home community which will be devoted to small fruit growing; making the purchase the past winter they have already set six acres of this place to strawberries. Both married daughters finished high school and graduated from State Normal.



SHEEP



DAIRYING



FIBRE FLAX



RASPBERRIES



PRUNES



ENGLISH WALNUTS



PEARS



ANGORA GOATS

A typical group of livestock, field crops, tree fruits, nuts and berries that are found on a diversified farm in the Willamette Valley.



Range cattle on a mountain or foothill meadow in forest reserve. Thirteen million acres of government land in central Oregon consist principally of high plains covered with sage brush, grass and scattered juniper trees. It provides range for thousands of cattle and sheep.

Eastern Oregon

A Vast Region of Wheat Farms, Productive Irrigated Valleys, Mountains, Forests, Foothills and Livestock Ranges

That portion of the state lying east of the Cascade Mountains with an area of approximately 60,000 square miles is known as eastern Oregon. It is distinctly different from western Oregon in its natural vegetation, climate, soil and types of agriculture. Here is where one finds the great open spaces and an immense range livestock industry made possible by 13,000,000 acres of public land and an almost equal area within national forests. Nearly 300,000 beef cattle graze the ranges of eastern Oregon annually as well as 2,000,000 sheep, making this one of the important range livestock regions of the country.

Divided into Three Regions

Eastern Oregon is divided into three regions because of their geographical location and similarity in the type of agriculture which prevails. The central Oregon region includes the counties of Deschutes, Crook, Jefferson and Klamath. It is this region which will be discussed more in detail in later paragraphs. The Columbia basin region where wheat production predominates includes the counties of Wasco, Sherman, Gilliam, Morrow, Umatilla. Hood River county is also usually classified with this group although it has no wheat and is practically entirely devoted to fruit production. In the Blue Mountain region are the counties of Wheeler, Grant, Baker, Union, Wallowa, Malheur and Harney.

Scattered at intervals amid this vast area are found intensified irrigated valleys where small farms are the rule and a variety in crops prevails.

Here, too, in the northern part is found the great summer fallow wheat area with the farms ranging in size from a section to 5,000 acres, half of which is in crop each year. Eastern Oregon produces annually approximately 850,000 acres of wheat yielding between 18,000,000 and 20,000,000 bushels.

Climate

The chief characteristics of eastern Oregon's climate are an abundance of sunshine, a scanty rainfall which causes the bulk of the area to be classified as semi-arid, a wide range in temperatures, low humidity and rapid evaporation.



Farm flocks of sheep, dairy cattle, hogs, poultry and diversified products are important sources of income in the irrigated valleys.



A high producing dairy herd on an irrigated farm near Redmond. A long season of pasturage and high production of alfalfa insured by irrigation promote low cost production.

Irrigation in Central Oregon

Insures Large Production of Alfalfa, Clover, Potatoes, and Pasturage, and Economical Production in Dairying, Sheep and Poultry

Central Oregon is a fair land. Away from the snow-capped peaks of the Cascade Mountains, its broad expanses are elevated 3,000 to 5,000 feet above sea level, sage grown, furrowed with the green of juniper trees, cut in places by rocky canyons and here and there broken by picturesque buttes and floored in large areas with flat, wide-reaching plains mid which irrigation projects have been developed during the past 15 to 20 years. Beyond these plains and nearby are crystal blue lakes settled amid timber grown hills which sparkle in a clear high altitude atmosphere.

With the coming of the railroads came irrigation development and transition of the central Oregon region, once noted only as a livestock range area with its beef cattle and sheep, to a diversified area. Replacing the sage and juniper there are now thousands of acres of alfalfa, clover, potatoes and irrigated pasture.

Deschutes and Crook counties are situated in the heart of this central Oregon region. The Cascade Mountains act as a barrier to moisture laden clouds and make central Oregon a semi-arid region.

Indicating the status of central Oregon agriculture are the figures collected by state and government agencies in their farm income surveys made in different parts of Oregon in 1925 and 1926. No area equalled the central Oregon irrigated district in the volume of return on investment in land, equipment and labor. Forty-nine farmers computed with the state statisticians their annual income and expense, and the 10 farms showing the most favorable return paid their owners six per cent interest on their investment, each enjoyed the use of their houses, rent free, were supplied with what the farm furnished toward the family living and in addition averaged \$4,500 each as payment for time and labor. The second year of the survey, the same 10 farmers averaged a net return of \$3,600 after making the foregoing deductions. Central Oregon is well served by state and county roads.

The irrigated lands of central Oregon are naturally adapted to dairying. Irrigated pastures which carry from two to four cows per acre during the entire pasture season

and an abundance of green, leafy alfalfa hay reduce production costs. The following table shows the progress which has been made in Deschutes county during the 10-year period, 1919 to 1929. Similar progress has been made in Crook county. The Jersey breed predominates in this region but there are also numerous herds of purebred Holsteins and Guernseys.

Tabulated Record of Progress in Deschutes County.

	1919	1924	1929*
No. Producing Cows..	1,889	3,555	4,250
Pounds of Butterfat Produced	366,466	684,123	1,105,896
Average Production per Cow	194 lbs.	195 lbs.	260 lbs.
Value of Dairy Products	\$198,949	\$258,531	\$519,771

*Data gathered from local milk and cream buyers. No. cattle, Bureau of Crop and Livestock estimates.

Records taken on three central Oregon irrigated farms indicate the value of irrigated pasture on which dairy cows are grazed. On these three farms, 19 acres of pasture carried 51 cows for a total pasture period of 153 days. The carrying capacity per acre was 2.7 cows and gross return in butterfat sold produced by the cows while on pasture was \$173.21 per acre.

The records of the Central Oregon Dairy Herd Improvement Association further testify to the high status of dairying in the district. The 765 cows in this association, about one-half of which are in Deschutes county and half in Crook county, produced an average of 312.65 pounds of butterfat which brought a gross return of \$153.23 per cow and an average profit above feed costs of \$78.77 per cow.

A New Income Source

Since 1925 small seed production including alsike clover, red clover, ladino clover and alfalfa has provided a cash crop of increasing importance. Very often these seed crops bring a return of more than \$100 per acre. Alsike clover



Potatoes are a valuable cash crop on central Oregon irrigated farms. They yield 300 to 500 bushels to the acre.

seed yields vary from 6 to 15 bushels per acre, red clover from 3 to 8 bushels per acre, alfalfa from 2 to 5 bushels and ladino clover from 150 pounds to 500 pounds per acre. Ladino seed has sold for as high as \$1.25 per pound.

The following table shows the expansion of the small seed production in Deschutes county from 1925 to 1929. Similar expansion has been made in Crook county.

Year	1925	1926	1927	1928	1929
No. Growers	5	15	18	62	116
No. Acres	100	253	..	800	1000
Total Lbs. seed	51,190	47,968	224,441	302,490	
Estimated value	\$51,500	\$13,000	\$50,946	\$56,509	

Potatoes provide an important cash crop on central Oregon irrigated farms. Deschutes Gem potatoes (Netted-gem or Russet Burbank) command a premium price for their quality, uniformity and smooth, bright skin.

Turkeys Bring in Cash

Turkey raising is another enterprise which has developed rapidly in the central Oregon region. In Crook and Deschutes counties, according to W. B. Tucker, Crook county agricultural agent, 11,000 pounds of dressed turkeys were shipped in 1922. By 1928 the turkey production had increased to 280,000 pounds and brought a revenue of approximately \$75,000. Turkey production further expanded later. Because of quality and careful grading, Oregon turkey growers receive relatively high prices for their turkeys. Over 12 cars were shipped in one season.

Alfalfa is an important money crop and finds a ready market in the range livestock operator for wintering of cattle and sheep.

Lamb Feeding Under Way

Lamb feeding is carried on to some extent and there are opportunities to increase this in the future.

A successful commercial egg producing enterprise is found in this section, the eggs being produced largely for local markets. Chick mortality is low. A commercial flock of 900 hens has produced as high as 251 eggs per hen.

Small grains including wheat, oats, barley, yield well

but are grown only for feeding dairy cattle, poultry, hogs and sheep.

Crop yields common on irrigated lands are as follows: Wheat 40 to 60 bushels per acre; oats 70 to 100 bushels per acre; barley 40 to 60 bushels per acre.

Census Data for Deschutes County

Deschutes county has 824 farms, a 10 per cent increase for the 10-year period, 1920 to 1930, comprising 155,432 acres or 7.8 per cent of the total land area. The average acreage per farm is 188.6 with an average value of \$6,916. Irrigated farms are somewhat smaller, the acreage ranging for the most part from 80 to 120 acres.

The livestock population according to 1930 census was cattle, 9,603 of which 4,111 were producing cows; sheep, 21,000; hogs, 1,104.

Crop acreage according to the latest census is as follows: Alfalfa, 16,049 acres; all hay, 20,437 acres; potatoes, 1,174 acres; wheat, 1,576 acres; oats, 1,007 acres; barley, 679 acres.



Farmers in the irrigated valleys around Redmond, Prineville and Bend fatten range lambs for market on alfalfa, barley and wheat.



Alfalfa is the most popular and valuable crop on the irrigated farms. Yields range from 3 to 5 tons per acre. It is the foundation of dairying and livestock raising.

Census Data for Crook County

Crook county has 489 farms comprising 634,962 acres or 1,298.5 acres per farm with an average value of \$11,885. The diversified irrigated farms here as in Deschutes county for the most part range in size from 80 to 120 acres.

The livestock population according to the 1930 census was 19,313 cattle of which 2,077 were producing cows; sheep, 85,000; hogs, 1,428. In 1929, 110,000 head of lambs and sheep were shipped from Prineville.

Crop acreage according to the latest census, was as follows: alfalfa, 11,428 acres; all hay, 29,781 acres; potatoes, 423 acres; wheat, 3,623 acres; oats, 1,048 acres; barley, 948 acres.

Lumber

Central Oregon is not highly industrialized except as to lumber. This region is noted for its Ponderosa or yellow pine as well as other varieties of pine. Pine from central Oregon makes a high class box shuck that is used especially for fresh and dried fruits. Two large lumber mills are located at Bend, drawing timber from the eastern slope of the Cascades in a radius of 50 to 100 miles. There is a large mine where diatomaceous earth is mined. There are a number of creameries manufacturing high grade butter.

Principal Cities

The principal cities of the central Oregon region and their population are: Bend, county seat of Deschutes county, 8,848; Prineville, county seat of Crook county, 1,027; Redmond, 994.

Central Oregon Turkeys

E. J. Stringer who resides on the Lone Pine Irrigation Project in Central Oregon purchased 1,500 poults and raised them to maturity. He marketed about half of these birds through independent buyers and sold the balance as breeders. Mr. Stringer was very well satisfied with his operations, and stated that taking into consideration equipment, etc., his net gain for the entire lot was \$1.04 per bird.

The following year he built a new brooder house 30 by 80 feet, with a hot water heating system. In February he put in 3,000 chicks and is marketing them as broilers so that he can later use this brooder house for turkeys, and plans on purchasing 3,000 poults for this year's operation.

A High Producing Dairy Herd

In 1919 Ernest Ashbacker came to this country from Switzerland and worked with purebred herds on the show circuit. In 1927 he took over a place near Prineville in Crook County and later bought the herd. Mr. Ashbacker has recently been awarded the improvement cup for the highest average herd increase in butterfat for the year. His herd average increased from 336.6 pounds of butterfat the preceding year to 418.6 pounds, a clear gain of 82 pounds of fat or an increase of 19.5 per cent. Nine of Mr. Ashbacker's cows were in the 500 pound class, with one producing 605.1 pounds.

Mr. Ashbacker is a leader in the Central Oregon Cow Testing Association and attributes his success to cooperation in this work and the working out of proper balanced rations, as his experience shows that the hay and pasture crops of this section approach very nearly a balanced ration for a dairy cow.

Ladino Clover Valuable Dairy Feed

L. P. Snap, prominent dairyman in Deschutes County, is not only a great believer in dairy possibilities in this county but is a strong booster for Ladino clover in this connection.

Mr. Snap planted 6 acres to Ladino clover in August, using 15 pounds of seed to the acre. Last year on this 6 acres he pastured 20 head of mature livestock throughout the whole spring, summer and fall. This past season it has shown just as good carrying capacity. Mr. Snap's opinion of this clover is that it is not only a natural milk producer, but as grown here, it seems to have sufficient feed value also to maintain the body weight of the cow.

TABLE OF CONTENTS

	Page		Page
Berries	26	Markets	12
Boys' and Girls' Clubs	8	Ocean Commerce	11
Bulb Growing	21, 24 and 27	Oregon Cities	15
Central Oregon	33 to 35	Pacific International Livestock Show	9
Climate	4 and 5	Poultry	21, 25, 26, 30, 34 and 35
Cranberries	22	Quality of Farm Produce	10
Crop Production	13	Range Sheep and Cattle	33
Dairying	20, 23, 27 and 33	Recreation	6 and 7
Eastern Oregon	32	Schools and Colleges	14
Experiment Stations	9	Sheep, Farm Flocks	26, 31, 33
Fiber Flax	27	Social Advantages	6 and 7
Filberts and Walnuts	26	Seed Crops	27 and 34
Highways	11	Tree Fruits	28
Industries	2	Willamette Valley	26 to 31
Lower Columbia Region	18 to 25	Wool and Mohair	29
		Vegetables	22 and 26

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List of Publications

Montana Map Folder, No. 13—An enlarged map of Montana with a briefly illustrated account of the opportunities for homeseekers or investors.

North Dakota Map Folder, No. 12—An enlarged map of North Dakota with a briefly illustrated account of the opportunities for homeseekers or investors.

North Dakota, No. 14—An illustrated booklet, describing the lands and conditions in the counties of North Dakota.

Washington and Northern Idaho Book, No. 15—A 64-page booklet descriptive of Washington and the Pan Handle of Idaho. It covers territory by districts and shows kind of farming best suited to each.

Montana, the Treasure State, No. 17—A well illustrated 64-page booklet describing Montana both in general and by counties.

Business Opportunities—If interested in securing a location in business, profession or industry, ask for special information on the subject.

List of Land Dealers, No. 18—Names of dealers operating along the Nor. Pac. Ry., showing amount and character of land for sale, general range of prices and terms, etc. (Ask for pamphlet covering state in which you are interested.)

Good Eggs, No. 19—A 32-page booklet highly illustrated, telling the story of quality egg production, grading and packing in Northwest States and distribution to consumers. Also 60 selected receipts for using eggs.

Minnesota, No. 22—A 40-page illustrated publication describing more particularly central and northern Minnesota where there are many desirable openings for good farmers.

The Fertile Northwest, No. 40—A condensed illustrated booklet descriptive of the land and conditions, by states, along the Northern Pacific Railway. Will help in selecting the state or locality that most appeals to you.

Washington and Northern Idaho Map Folder, No. 41—A brief but highly illustrated account of agriculture, industries, climate, rainfall and allied information with large map in colors.

Irrigated Truck Farming at Pasco, Washington, No. 43—A booklet with illustrations descriptive of conditions favorable for early and late season truck and small fruit crops on the Franklin County Irrigation Project in South Central Washington.

Western Montana, No. 45—A 20-page fully illustrated booklet describing agricultural, recreational and scenic advantages of irrigated mountain valleys in western Montana.

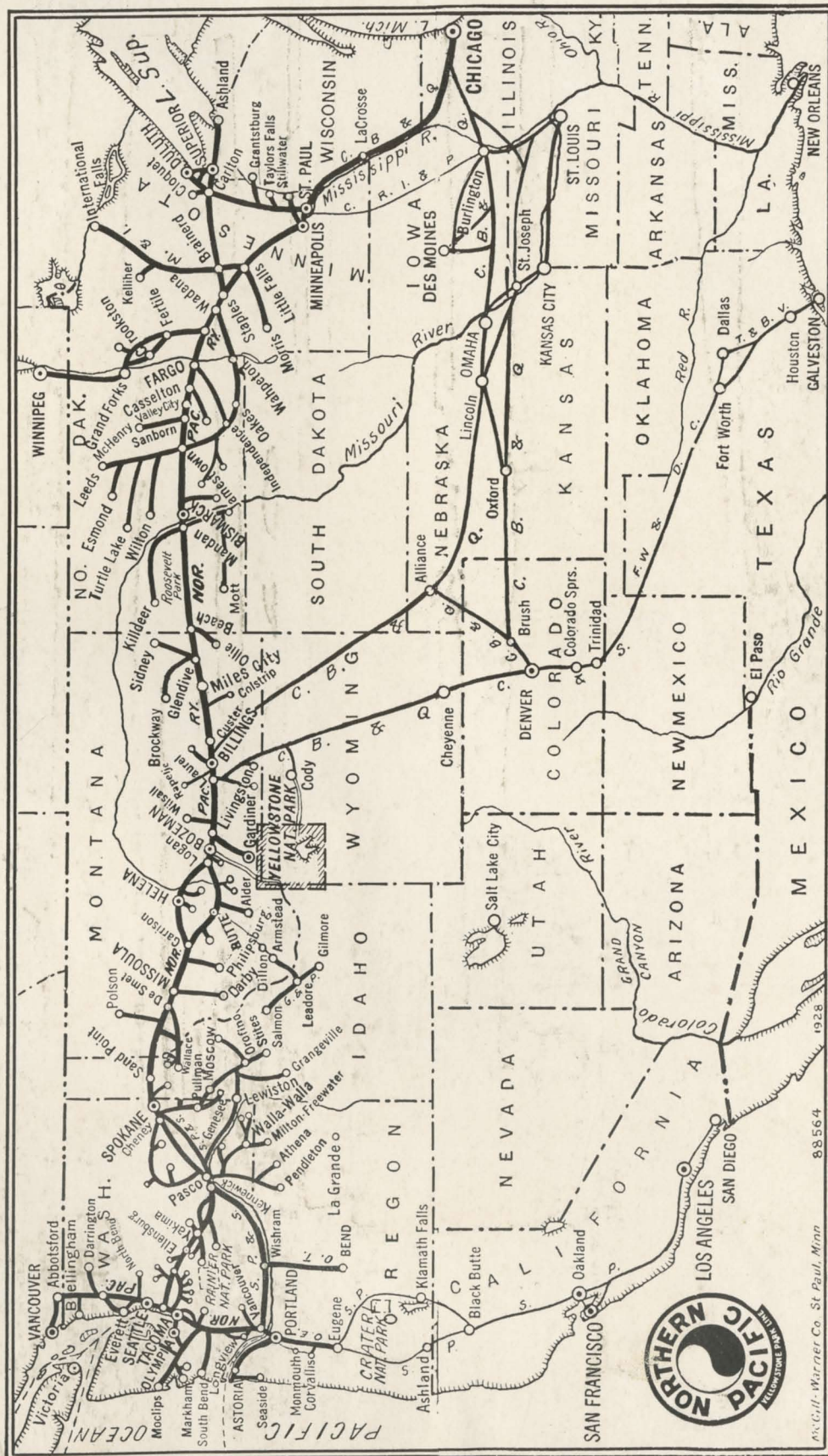
North Dakota Farmers Fatten Oregon and Montana Lambs—A highly illustrated 36-page booklet showing detailed results obtained by North Dakota and Minnesota farmers in fattening western range lambs for market, giving costs, receipts, feeds used, equipment, shelter, methods of selecting and buying lambs, financing and allied data.

Special Publications—Consisting of pamphlets, leaflets, etc., issued by various irrigation and land interests, descriptive of the country tributary to the Northern Pacific. (Please state in what locality you are interested.) Any of these pamphlets will be sent FREE to any address.

For any of the above publications write to

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