

THE FIRST IN HOP PRODUCTION

Oregon's Crop Last Year 16,236,000 Pounds, Nearly One-Third of That of United States—Methods of Cultivation.

OREGON has become the first state in the Union in production of hops. America is rapidly forging to the front as a hop-producing nation, so it is a matter of only a few years when Oregon will be the greatest hop-producing state in the United States.

Three years ago, Herbert Myrick, of New York, in his excellent work on "The Hop," said: "As to the industry developed, it centered in New York State, though many were grown in Wisconsin after the Civil War, but of late years certain districts on the Pacific Coast have proved to be so adapted to this crop as to seriously threaten the older-established hopyards on both sides of the Atlantic."

This same author, who has made a thorough study of the hop-growing industry of the world over, says again that statistics of hop production point to a possible monopoly of the industry in America, and especially by the Pacific Coast States.

As a hop-producing state, New York is already on the verge of being surpassed by Oregon as the pioneer state in that industry on the Pacific Coast. Oregon has surpassed her and is still gaining in the number of acres devoted to the growing of that crop.

It is yet too early to obtain accurate statistics of last year's crop, but Government estimates place the yield as follows:

Oregon	16,236,000
California	12,890,000
New York	12,870,000
Washington	5,644,000
Total for United States	48,630,000

Oregon owes her rapid progress to her climate and soil, which make it possible to grow a better grade of hops than can be produced elsewhere, and to produce them at a less cost per pound. The same conditions which have doubled the production in this state twice in the last 16 years, will continue that increase in the years to come. In two of our Western Oregon counties the hop crop is already the greatest wealth producer, and as the industry develops other counties will number it among their most valued branches of agriculture. The principal hop-producing counties are Marion, Polk, Clackamas, Yamhill, Washington, Linn, Lane, Douglas, Benton and Josephine. In all the Valley counties of Western Oregon there are large areas well suited to hop culture, and this can be purchased at prices which seem low as compared with valuations in other states.

The hop-growing industry is scarcely more than 20 years old in Oregon. How the industry has grown in each of the Pacific Coast states is shown in the following table of acreage and yields compiled by H. J. Ottensmeyer, Oregon representative of the United States Company, of San Francisco. The figures for 1901 are estimates. The value of hops weigh about 180 pounds each:

YEARS	Oregon		Wash.		Calif.	
	Acreage	Yield	Acreage	Yield	Acreage	Yield
1880	1,355	394	4,985	8,540
1881	2,616	400	8,988	8,910
1882	3,721	450	11,320	8,320
1883	4,464	1,170	9,291	2,474	27,662	4,734
1884	10,992	1,733	24,352	3,249	41,221	3,284
1885	15,010	2,200	31,100	4,400	55,000	4,400
1886	11,549	2,206	23,794	2,868	28,411	4,259
1887	11,543	2,201	23,126	2,867	24,735	3,171
1888	11,543	2,201	23,126	2,867	24,735	3,171
1889	11,543	2,201	23,126	2,867	24,735	3,171
1890	11,543	2,201	23,126	2,867	24,735	3,171
1891	11,543	2,201	23,126	2,867	24,735	3,171
1892	11,543	2,201	23,126	2,867	24,735	3,171
1893	11,543	2,201	23,126	2,867	24,735	3,171
1894	11,543	2,201	23,126	2,867	24,735	3,171
1895	11,543	2,201	23,126	2,867	24,735	3,171
1896	11,543	2,201	23,126	2,867	24,735	3,171
1897	11,543	2,201	23,126	2,867	24,735	3,171
1898	11,543	2,201	23,126	2,867	24,735	3,171
1899	11,543	2,201	23,126	2,867	24,735	3,171
1900	11,543	2,201	23,126	2,867	24,735	3,171
1901	11,543	2,201	23,126	2,867	24,735	3,171

Good Climate for Hops. In both climate and soil, Oregon is unsurpassed in natural advantages for hop production. The hop is a very rapid grower, the vine sometimes shooting upward 12 inches in a day. Such a growth requires a warm, moist climate, with plenty of sunshine, an occasional foggy morning and warm, dry weather just before maturity. In Western Oregon, the hop-growing portion of the state, there are two principal seasons, the wet and the dry. It is not to be mistaken, however, that Oregon has no spring and autumn weather. During the winter months there are heavy, frequent rains, which thoroughly saturate the ground with water. The heavy rains cease early in the Spring, but there are warm, refreshing showers at intervals up to June 1. As a rule only one or two heavy rains will be had from June 1 to September 23, when the seasonal storm of the Pacific Coast may be expected. Hop harvest begins from September 1 to 5, and is over by September 15 to 20.

The winter rains put the ground in ideal condition for the production of hops. The moisture stored under ground gradually rises to the surface during the summer and keeps the soil moist, as the way to the surface. Hop roots are driven into the ground and find a never-failing supply of moisture to insure a rapid growth to the vines and a full development to the hop burs. In Oregon all vegetation gets an early start in the Spring, and as there are no late frosts, this is very favorable to the hops. After the vines are started, and the hop strings, they receive occasional rains to aid their growth, and when warm summer weather comes, the vines are large enough to stand the ground, and thus prevent the soil from becoming over-dry. Judicious cultivation during the growing season keeps the surface of the ground loose, so that the moisture of the lower strata will rise to the surface. Warm, dry weather is essential after the burs begin to form in order to prevent the development of vermin, and Oregon can always count on just this kind of atmospheric conditions. It is only once in several years that sufficient rain falls late in the summer to facilitate the multiplication of hop lice, and Oregon growers have now learned by experience that by spraying their yards, they can exterminate the hop lice.

Investigations concerning the effect of atmospheric conditions upon the growing hops has shown that poor results are obtained where there is much foggy weather. But in England, and Oregon, have found very unfavorable upon the hops. On the other hand, in the Pacific Coast States there is just enough foggy weather to fulfill the requirements. One of the characteristic features of Oregon's climate is the low temperature that prevails during summer nights. Such a thing as a warm night is very uncommon, and what may be called a hot night does not occur in summer more than once in three or four years. The cool nights give the surface of the ground an opportunity to regain moisture taken away by the sun's heat during the day.

Aside from the favorable conditions of moisture and sunshine, Oregon has the advantage of having no summer winds to whip the vines and injure the hops. During the forenoon, while the air is cool, there is scarcely any breeze at all.

Every afternoon, when the air has become heated, there is a light sea breeze from the Pacific Ocean. This wind never amounts to a storm, but it is common in the summer in most seacoast countries. Coming from the ocean, this breeze cools the air and thus helps the vines to stand the heat of the day. In case of a summer rain, the afternoon breeze shakes the water from the vines and hastens their drying, thus preventing the development of vermin. Producing sections of the world injury to the hop crop from heavy summer winds is not infrequent.

Soil Adapted to Hops. That the soil of Western Oregon is adapted to the production of hops is shown by the large average yield as compared with the average yield in other hop-producing localities. The maximum yield per acre in Oregon is generally placed at 300 pounds. The average is about 120 which is the usual yield in a large part of the yards. There are some yards, planted on poorly selected soil, that seldom, if ever, get up to this yield. On the other hand, the yards which are nearly always yield more than this amount and sometimes up to the maximum named. The following figures taken from Myrick's "The Hop" show the yields in pounds per acre in the principal hop-producing sections:

COUNTRY	Yield
Germany	800 400 500
England	1,000 500 300
France	1,000 500 300
Pacific Coast	2,000 800 1,200

The favorite soils for hop-growing are those found on the bottom lands. Such soils are formed from alluvial deposits and with scarcely an exception have perfect drainage. There are limited areas of bottom lands in the Willamette valley, the Columbia River, and their tributaries, which are overlaid by the high water every year. Each high water leaves a new deposit of silt and loam on the bottom lands. Such lands produce the heaviest crops, but as a rule the quality is not as good as is obtained on bottom lands of the higher lands. Land of the latter class usually have a substratum of coarse river gravel under a top soil, varying from six to 30 feet in depth. Such bottom lands have sometimes a subsoil of clay. Prairie earth hills, which are a surface of black or brown loam, with a subsoil of clay.

Cost of land suitable for hop-growing varies with the character of the soil, and distance from market, etc. Average prices may be stated as follows: Overflow bottom land, \$5 to \$10 per acre; other bottom land, \$20 to \$25 per acre; hillside and hill land, \$25 to \$40 per acre. These prices are for land that has been cleared and placed under cultivation, so that it is ready for setting out of a hopyard. By watching for bargains, however, land can be had cheaper than these prices, and for choice tracts of land higher prices are sometimes paid.

dustry in this state poles were used exclusively, but the wire and string trellis is becoming more popular. Poles for this purpose are cut from tall, slender fir trees, which are plentiful in this state. The poles cost about 2 cents apiece, and are cut longer than necessary in order that they may be long enough for use after the end set in the ground has been rotted off. Poles are set about 18 inches to two feet in the ground and are fastened together with hop twine tied from pole to pole about seven or eight feet from the ground. The hop vines climb the poles and then trail out horizontally on the cross strings. This arrangement is in the beginning the cheapest system of setting out a hopyard, but in the long run the wire and string trellis is probably more economical.

The wire and string trellis is made by suspending wires over the field at height of 10 to 15 feet, and hanging from the wires pieces of twine which reach down to the hills. The vines climb the strings to the top of the trellis, and then trail along the wires. In preparing a yard under this system, main wires are stretched across the yard from east to west every six rows. The end poles are firmly braced so as to stand the tension on the tightened wires. About every six rows across the field there is a lighter supporting pole. On top of these main wires there are stretched across the yard from north to

estate, the financial returns would have been much greater if all the growers had cultivated their yards as faithfully as those who are now recognized as the most successful hop-producers. Experience has proven that unfavorable years will come, and must be taken into account. But the good years also come, and then the profits are large enough to make up for the seasons when there were no returns for the labor and money expended. Careful cultivation and judicious spraying year after year reduces the chance feature to the minimum and gives assurance of reasonable profits in the end.

Spraying. There is only one pest that affects Oregon hops—the hop louse—which attacks the hops about one year in five. In this respect Oregon is fortunate, for in the older hop-producing sections other pests and diseases must be fought. The hop louse sucks the sap from the vines, thus weakening the hops, and it is said by leaving its excrement in the hop burs causes the hops to mold. Spraying is a sure protection against damage from hop lice, and growers are quite generally counting upon this as one of the expenses of hop-growing. The hop lice emigrate to the hop vines from plum trees early in June, and in ordinary years are not plentiful enough to be noticed. Warm, damp, cloudy weather, however, is very favorable to the propagation of the insect, and under such conditions the pests will be so strong as the end poles for the lower supporting wires, but the poles must be braced with guy wires reaching from the tops of the poles to heavy stakes in the ground. The advantage of this system of laying out a yard is that when once established the work does not have to be done over again each year. In a few yards the owners have suspended three strings running from the wires to each hill. One of the strings hangs straight down while each of the others slants to the hill. In this way the hop vines are spread out so that sunlight is more freely admitted and the vines dry out more rapidly after a rain. This method is much more expensive, however, and it is doubtful whether the improvement in the yield and quality of the hops warrants the additional cost.

Cultivation of Hops. Cultivation of hops begins with the first favorable weather in the Spring, and continues until the last week of June. Work with the hoe, if necessary, to keep down weeds, may be continued later than this. There are a few growers who plow their yards late in the Spring, and do not. Cultivation consists of a thorough plowing early in the Spring, followed by harrowing to smooth the ground, and later on cultivating with the hoe. A balance of hops is used. The cultivator can be run between the rows both ways so that but little of the ground need be covered with the hoe. A few inches of superfluous shoots are pulled up, leaving three or four vines to the hill. Some leave only two. When the vines are two feet high, training begins. The vines are either tied up to the poles loosely and started under the poles in the right direction, following the sun, or in case of the trellis system, the vines are stretched across the strings. After the training begins it must be kept up until the vine has nearly finished its growth. When the vines are once twisted around the poles or strings they cling very tenaciously and are never blown down.

After cultivation ceases the vines are cleared of all foliage and arms to a height of five or six feet. This clears away a growth that takes nourishment from the vines. The lower foliage, being shaded by the branches above, holds moisture a long time and thus furnishes a breeding place for vermin. Those growers who have sheep turn the animals into their yards and the sheep eat off the foliage within their reach. This is a cheap and profitable way of cleaning up a yard for the hop foliage makes good food for the sheep and the animals eat off whatever grass or other food vegetation may be growing between the rows. Most growers are believers in frequent and thorough cultivation as the best means of assuring a good crop, but in the ups and downs of the hop industry many yards have been sadly neglected. A poor season for yield or prices discourages the growers and some neglect their yards during the following season. When the good season comes, as it always does, their yards are not in good condition and they miss the good crops their more careful neighbors secure. This habit of neglecting a yard after a year of low prices has had no small effect upon the industry, for it will readily appear that growers must make up good years for the laws of profit and loss, and that the industry is a very favorable year has made a good showing in this

payments by the pound this difference is almost entirely obviated, as also is the gain or loss from wilting while the hops are being picked.

Hop Harvest an Outing. Hop-picking is light work, healthful and fairly remunerative. It comes at a season of the year when outdoor activity is beneficial and pleasant. For these reasons the hop-picking season is made the occasion for an enjoyable and at the same time profitable outing. In this state tenting is pleasant during seven months of the year, and never more so than during the early part of September. The hop harvest gives employment to some 30,000 persons, including those who work in the kilns, etc. This vast army of workers is made up largely of families from the cities, towns and villages of Western Oregon. Each hop-grower provides camping facilities for his pickers and pickers go to the yards with tents, bedding and other camping accessories and remain during the picking season. The atmosphere of the hopfield is healthful, the outdoor exercise is strengthening and the pure air of tent life is invigorating. Without overworking the pickers can make fair wages, and the evenings are given up to enjoyment. Huge bonfires are built every evening, and around these old and young gather for a jolly good time. The benefits to be derived from a fortnight in the hop-

yards is so generally appreciated that people of all classes, well-to-do business men as well as laborers, plan to send their families on this annual outing if convenient.

Curing the Hops. Each half-day's picking of hops is hauled to the hopkin, at one side of the yard, to be dried. The hops are spread upon floors above rooms heated by hot-stoves or furnaces. The floors are not tight, but are open enough to permit the heated air to circulate freely through the hops. To prevent the hops from falling through the floor a coarse cloth, usually of burliap, is first spread down, and the hops are thrown upon this. The floors are about 20 feet square, and the hops are spread on to a depth of about two feet. Stirring is sometimes necessary, but the general plan is to handle the hops as little as possible in order to avoid breaking them. The kilns are heated to a temperature of 140 degrees, and the hops are kept in the curing room about 20 hours. A kettle of burning sulphur is placed in the furnace room and the sulphur fumes pass upward through the curing room, bleaching the hops, purifying them and increasing their keeping qualities. After the hops have been dried they are placed in a cooling room, where they remain a week or more, and then they are baled and are ready for market. A bale of hops weighing about 180 pounds is the product of about 600 pounds of green hops. In an average yield hops produce about 120 pounds of cured hops per acre, or 6 1/2 bales. The green hops on an acre with such a crop would weigh about 4000 pounds, or two tons. It will therefore appear that in the curing process the hops on an acre of land lose some 3000 pounds of water, which must be removed by artificial heat.

Cost of Production. Upon the subject of cost of production growers differ widely. Very few keep account of their expenses, and those who do keep accounts are only approximately correct in their results, for some legitimate expenditures are inadvertently omitted, while some expenses are charged against maintenance for one year, which should be distributed over several years.

W. H. Egan, president of the Oregon Hop-growers' Association, and one of the old practical growers of the business, says that the average cost of production is 6 cents per pound, and that this may be reduced by better management. No two growers incur the same expenses, and some get vastly better results from the same expenditure than do others. Most growers place the cost of an average crop at about 7 1/2 cents per pound, and with a poor yield this will be slightly increased.

While no attempt can reasonably be made to state the actual cost of engaging in hop-growing in this state, and of producing hops, the following figures will show approximately what a man may expect to invest if he starts a hopyard of 20 acres:

Average cost of land, \$5 per acre	100
Cost of trellis, with all appliances	500
Cost of hop poles	200
Hop roots, plowing and planting	200
Total investment	1,000
The annual expense account for the 20	

across, harvesting not included, after the first investment has been made, after a \$50, of which the largest charge will be for cultivation. The items of expense follow:

Grubbing and setting poles \$75
Cultivation, training, etc. 300
Tenting 100
Spraying 50
Insurance and taxes 30
Cleaning up 25
Depreciation 75
Total expense, harvest excluded \$655

These expenses are enumerated separately, as they will be about the same whether the crop be large or small. The expense of \$500 on 20 acres, up to picking time, is an average of \$25 per acre. If the 20 acres yield 30,000 pounds, which is a low average crop, the cost per pound amounts to 2 1/2 cents, or practically 2 cents, exclusive of harvest expenses. The total cost of harvesting will vary with the size of the crop, as the greatest expense is for picking. The average yield of the hopfield is healthful, the outdoor exercise is strengthening and the pure air of tent life is invigorating. Without overworking the pickers can make fair wages, and the evenings are given up to enjoyment. Huge bonfires are built every evening, and around these old and young gather for a jolly good time. The benefits to be derived from a fortnight in the hop-

production are concerned; in Oregon a hopyard yields at least two-thirds of a crop the first year, while in New York the crop is not expected until the third year. In England the first crop is harvested the third season.

Up to the present time Oregon growers have been learning the art of hop-growing in the dear school of experience. Even so late as 1890 one of the veteran growers tried the experiment of leaving only one vine to the hill, thinking thus to improve the quality without a material reduction in the quantity. The experiment proved that the one-vine idea is erroneous, and that the best plan is the practical application of his theories. In the same manner growers have been testing other theories, some to their advantage and others to their loss. But the experience thus gained is valuable and will save the growers much expense and many losses in the future. Those who will hereafter embark in this industry will have the benefit of the experience of those who have gone before. For many years the industry has been a net profit of the industry should increase.

Speculative Feature Decreasing. Since growers have learned that it does not pay to raise hops with the expectation of selling them for enormous prices, they have ceased to incur expenses accordingly, and hop-growing has been reduced to a business basis. Growers will hereafter curtail their expenses where possible and will make it an object to produce a fair-sized crop of first-class quality every year. In the same manner a crop as weather conditions may bring. Instead of trusting to "luck," the growers will themselves supply many of the conditions necessary to a successful crop. More careful and more timely cultivation, to provide for all weather conditions, judicious spraying to insure the crop against insects and prevent curing to secure a perfect marketable crop, and then good business judgment in selling, will leave the hop industry in better shape five years from now than it is today. A man who wishes to invest in hop-growing promises a fair profit and as certain returns as other agricultural pursuits. For many years, however, it has been both a grower and a speculator, there is little to be expected.

The World's Hop Crop. The hop crop of the world for 1901 will aggregate only 20,310,000 pounds, while the consumption will amount to 230,780,000 pounds. These figures are given by George E. Baldwin, United States Consul at Nuremberg, Germany, and are the most authentic thus far issued. Mr. Baldwin states that the hop crop of the world is indicated by these figures, the deficiency may be made up by hops held over by brewers from previous crops.

Of all the hops produced, about 25 per cent are used in the manufacture of beer, the remaining 75 per cent being used for household and medicinal purposes. A few years ago it was the general understanding that brewers are raising the price of hops to a barrel of beer, but in late years this has been reduced to one pound per barrel, and in the last few months hopdealers have made the assertion that only the hop-grower's sound of hops is used to a barrel of beer. From this it may be inferred that brewers are either using substitutes for hops, or that they are making a different quality of beer from what was formerly sold to the beer-consuming world. However that may be, statistical returns show that the consumption of hops is increasing more rapidly than the consumption of hops. The market demand for hops has increased from 170,000,000 pounds in 1885 to 230,780,000 pounds in 1901. Hop production has just about kept pace with the demand for hops, while in other years there will be a surplus. It is readily apparent that the market for hops is increasing rapidly, and the supply, aside from the needs for local consumption, will come from the country that can produce them the cheapest.

Cost in Other Sections. In Germany and France, according to Professor E. B. Lake, of the Oregon Agricultural College, hops are grown in very small patches by farmers who follow other occupations for a living. The cost of hop production under such conditions cannot be ascertained, nor even estimated, with any claim to accuracy. France is an importer of hops, while Germany produces more than her people consume. It may be presumed that the price of hops in Germany, though the profit comes in much the same way that it does to the Oregon hop farmer, who raises a little for the market, thus adding slightly to his income. In the absence of information of more recent date, it may be said that the price of hops in Germany is 10 to 12 cents per pound to produce hops in Germany. The same author places the cost in England at from 12 to 20 cents, and in New York from 8 to 10 cents. The Kentucky Observer, an authority on the hop industry, is quoted as saying that 18 cents per pound is the average cost. New York growers are quoted who show by detailed statements that their crops cost them respectively 12 cents, 10 cents, 13 1/2 cents and 20 cents. In the latter instance the cost was for a yield of 500 pounds per acre, while at 1000 pounds per acre the cost would have been but 11 cents per pound. The average yield in New York is 800 pounds per acre. The smaller the field, the greater will be the cost of production per pound, it should be noted that land for hop production costs more in the older settled states than it does in Oregon, where land is comparatively cheap.

Careful Management Essential. The large yield of hops per acre in Oregon, and the large profits made by the growers when the industry was still young in this state, have had effects which were in a measure injurious. When large returns were reported grain farmers began setting out hopyards, and men rushed into hop-growing without understanding the first principles of planting, cultivating, curing or marketing. The result of this was that many of the hopyards have been expected, and what would have happened in any other industry under the same circumstances. Many men lost all their investments in hop-growing, and made serious mistakes during the first few years, and were soon crowded to the wall. Others went into the industry on borrowed capital, confident of profits large enough to enable them to "pay out" in one or two seasons, but an adverse year found them unable to meet their obligations, and they were forced to give up a yard to their creditors. Some hop-growers have been misled by the agricultural industry by which a living could be made, so much as a means of speculation by which one could grow rich rapidly. Quite naturally, the unscrupulous hop-grower has taken advantage of the development of hop-growing on a conservative basis was delayed.

Hop-growing is an enterprise which should be undertaken by a man who has no experience in the work. A very few who have unusual managing ability may be able to make a success by engaging in the industry, but it should be kept in mind that these will be the exception. Even though a man has abundant capital, and can employ competent supervisors to take charge of his work, he should gain practical knowledge of the business by working under the direction of some one who has made a success of hop-growing. To the man of small capital this is particularly important, and that grower gave wholesome advice who advised a friend to hire out as a laborer in a hop yard for at least one season, before he engaged in the business. One ounce of practical experience beats a pound of theory in an industry where a mistake may easily lose off all the profits of a year's crop.

Good Field for Eastern Growers. A man who has learned the art and science of hop-growing under the conditions which prevail in the Pacific Coast, New York, for example, should find the industry a profitable one in Oregon. The New Yorker has learned by experience to make his land produce larger crops by better cultivation, fertilization, etc., has learned to reduce expenses by stopping many of the small leas that the Western grower disregards. With this knowledge at his command, he should be able to do well in Oregon in the same industry. In other words, the man who can make a living in New York producing hops that yield only 800 pounds per acre on fertilized land, can do better in Oregon, where land produces 1200 pounds per acre without fertilizers. The cost of production in New York is 10 to 12 cents per pound, and in Oregon it is only 7 cents, and this cost could be reduced by closer management. Some good growers say their expenses amount to 5 cents per pound, and this cost will be reduced by the following factors: There is this further advantage in favor of Oregon, so far as yield and cost of

The Sources of the World's Supply of Hops This Year are as follows:

Country	Pounds	Value
Germany	22,500,000	\$1,478,919
Austria	22,300,000	1,424,241
France	4,500,000	281,250
Holland	1,500,000	93,750
Russia	5,500,000	343,750
England	66,000,000	4,125,000
United States	16,236,000	1,014,750
Australia	1,700,000	106,250
Total	203,100,000	12,967,609

World's crop 203,100,000
It will be noted that England supplies America this year in hop production, but it should be remembered that England has this year a yield nearly 50 per cent heavier than usual, and that such a crop can not be expected again in years. With the present crop of hops in the United States we can reasonably expect to excel England next year, as we did in 1900.

According to statistics recently compiled by the United States Department of Agriculture, the exports of hops from the United States during the past five years have been as follows:

Year	Pounds	Value
1896	16,765,254	\$1,478,919
1897	11,428,241	714,265
1898	11,428,241	714,265
1899	11,428,241	714,265
1900	12,638,474	790,776

During the same period the imports were as follows:

Year	Pounds	Value
1896	2,772,045	\$173,253
1897	5,017,821	313,614
1898	6,818,213	426,138
1899	11,919,310	744,957
1900	2,568,712	160,794

That the United States should export so large a quantity of hops and also be an importer is explained by the fact that the class of hops used has a material effect upon the taste of the beer manufactured. In order to secure the desired flavor, in response to the demands of brewers, large quantities of hops in limited quantities are imported from America. The bulk of the surplus of Oregon hops is exported to that country during that period have varied from 9,000,000 pounds to 17,000,000 pounds. Reliable hop-dealers say that the United States exports to England, and that even though that country should produce more than her own market required, her brewers would still consume some 3,000,000 pounds of hops.

Good Quality Essential. In order to build up permanent demands for American hops, the growers have had to produce hops of an acceptable quality. As the quality shall be improved, the permanent demand will be increased. The same rule applies to growers in Oregon, and it is intended that Oregon hops shall be the best of the world over, and that they will be taken to produce a first-class quality every year. The fact that Oregon took first premium on hops at the Pan-American Exposition shows that the quality of our hops is of a high order to quality this season. There are seasons, however, when the weather is not so favorable as it was this year. In order to provide for such contingencies, growers should be prepared to give their yards early and thorough cultivation every year, to spray at the proper season and to cure the hops in a first-class manner. Doing this a double crop will be accomplished; the chances of a poor crop will be greatly lessened, and the Oregon hop will strengthen its position in the markets of the world.

A. W. PRESCOTT, Salem, Or.

What the pioneers of Oregon and their sons have wrought in 50 years; how they followed the track of Lewis and Clark to find a state conceived in liberty; how they have turned a land into one of milk and honey that before nourished in misery only savage creatures; all this will be signified in the 1901 Centennial. The circle of Old Oregon is drawing closer year by year, but the devotion of its founders, the traditions of its growth, will in good faith be maintained. The future of generation to generation; in its heart it will always be the same.



A HOPYARD SCENE. Photo by J. C. Bush.