

One-Fourth of Young English Walnut Orchards in Country Are in Oregon; Product Unexcelled

Plantings Vary in Extent From Few Acres to 1600 and Crop Thrives—Willamette Valley Especially Adapted to Culture, but Snake River Banks Bear Well.



YOUNG WALNUT ORCHARD NEAR DUNDIE, OR.

By C. L. Lewis, Chief Division of Horticulture, Oregon Agricultural College.

More than 20 years English walnuts have fruited successfully in Oregon. There are some very large isolated trees in nearly every city in Western Oregon. There is one commercial orchard over 20 years of age, and quite a number of small orchards from 1 to 15 years of age that are bearing satisfactorily. There are an enormous number of young trees from 1 to 7 years of age. The plantings vary in extent from a few acres to as high as 1600 acres.

About one-fourth of the young English walnut trees in the United States are to be found in Oregon. Most of the trees are grown in Western and Southern Oregon, the Willamette Valley being the center of the industry at present. Large plantings are found in the proximity of such places as Newberg, Hillsboro, McMinnville, Sheridan and Salem. However, trees are found growing successfully in Eastern Oregon. Along the Snake River, for example, the trees are doing especially well, and indications are that practically all our fruit valleys can produce good English walnuts. History has shown us that, where out cultivation of soil and trees is wise and where we have the proper methods of selection in play, the English walnut is a very satisfactory crop.

Rich Soil Is Necessary.

It must be remembered that this nut becomes a large, deep-rooted, long-lived tree. This means, then, that to get the best results we must have favorable soils. The best soils are the deep, rich, moist, well-drained loams. Such soils will be found along the river bottoms, on some of the strong valley loams and on the red hills. It does not seem to make as much difference where the location is, as regards this type of soil, as it does that the soil must be deep, rich and moist. Shallow soils are not suited for this crop. Everything else being equal, it seems that a somewhat rolling and

have good air drainage, as well as soil drainage, are to be desired. Ordinary frosts work very little damage on the improved French strains. The trees are planted at a distance varying from 40 to 60 feet, under average soil conditions, although 40 to 45 feet is thought by many growers to be desirable. If the soil is unusually strong probably a greater distance could be chosen to advantage. Where other varieties of fruits or nuts are to be grown among the English walnuts, from 20 to 40 feet is preferable. Some growers believe that it is to our advantage to plant Italian prunes among walnut trees, and they are demonstrating that it is possible to secure quite a number of very profitable prune crops before it is necessary to remove the trees.

Grafted Trees Best to Plant.

In purchasing trees I would recommend that one secure the best grafted trees. Be sure you have the good French strains, and that the scions have been well selected. While it is true that well-selected seedlings are often fairly satisfactory, one could not expect as uniform results from them as from the grafted trees. Often 25 to 40 per cent of the seedling trees should be top-grafted. Many of them come out too early, some too late, and many are of weak vitality. Many of the seedling orchards in the state are undoubtedly going to prove good investments, and by a little grafting here and there can be made to produce large yields.

In Western Oregon the trees can be planted under average climatic conditions any time from the first of November to the middle of April. In Eastern Oregon and in certain sections of Western Oregon trees planted in late February or March will be found to be the most satisfactory.

The tillage given the English walnut is practically the same as that recommended for fruit trees. Where the growth is not satisfactory cover crops can be used to good advantage.

The only serious disease we have is the bacterial disease, known as blight. This does not, as a rule, kill the trees.

Certain years, however, it injures the young wood quite seriously, but its greatest damage is found on the nuts. Certain years probably 25 per cent of the crop is injured by blight. However, unless it becomes more serious than it has in Oregon thus far, it should not keep one from engaging in the industry. There are very few insects to be contended with. Occasionally San Jose scale or Aphid will need some treatment.

Of the varieties, the Franquette, especially the 'Vrooman' strain, is probably our best all-round nut. It produces a good quality and is a fairly regular bearer, but at times it does not yield as heavily as might be desired. I believe, however, it is a mistake to plant large orchards of the same variety. It would be recommended that a few trees of such varieties as the Mayette, Maylan and the Gladys be planted as pollinators.

One can combine English walnuts with other crops to good advantage. For instance, dried prunes or loganberries, dried plums and dried walnuts can all be handled in the same evaporator. To get the best results with English walnuts it is necessary to wash, grade and dry them. English walnuts also fit in quite nicely with general farming. There are many large American Black Walnut trees scattered over the state that can be top-worked to English walnuts and three or four years after grafting will often yield as heavy as 100 pounds to the tree.

The outlook for the English walnut is very good. The quality of the Oregon-grown nut is one of the best, and the prices from 12 to 25 cents per pound have been very satisfactory. There is a very strong demand for the nut, and at the present time there is very little competition, although as years go by there will assuredly be more. At the present time we have to depend very largely on the imported nuts for the American trade. If one uses judgment in the selection and care of the orchard there is no reason why this industry should not prove to be very satisfactory, from a financial point of view.

price of cotton is seen for the Southern states, and the stimulating effect of war orders is seen for the New England states and several egg stations where salmon is gathered and shipped to the hatcheries. In addition, a number of retaining ponds are maintained where salmon and trout fry are held and fed. The combined capacity of all the hatcheries is about 20,000,000 salmon fry and possibly one-half as many trout. It is summing up the number that can be produced, it must be understood that the Fish and Game Commission, unlike other commissions and departments engaged in salmon work, base the capacity of their hatcheries on the number of fry that can be held and fed for several months, or until they can care for themselves when liberated.

Feed Ponds Established.
Up until 1910 practically all the salmon fry hatched by this state, as well as by the State of Washington and the United States Bureau of Fisheries, were liberated with the yolk sac attached, or shortly after it had become absorbed. With many millions of fry of this nature being turned out in the streams annually, the salmon crop was gradually falling off. Realizing that the propagation of salmon was being carried on was not bringing the best results, those in charge of our state hatcheries, backed by a number of prominent canneries and fishermen among the business men of the state, started what is now known as the feeding pond system, and that no mistake was made in the adoption of this system now goes without dispute, 1914 being the four-year cycle when the fish released from the ponds are expected to return to the river. The take in the Columbia River for that year was the greatest for a number of years and in 1915 it was 15 per cent larger than the preceding season.

Last year the Commission succeeded in collecting on the Willamette River and tributaries sufficient eggs from the early run, or Spring salmon, to supply the Columbia River hatcheries and had a surplus of about 3,000,000 eggs, which were turned over to the State of Washington and the United States Bureau of Fisheries, these having been hatched and liberated into the Columbia River.

From the spawn collected the previous season, we succeeded in turning out this year into the Columbia River and tributaries approximately 18,000,000 husky salmon fingerlings, ranging from two and one-half to five inches in length, all of which were of the Royal or Spring chinook variety. On the coast streams there were liberated 4,781,000 Spring chinook salmon fingerlings and 5,795,000 of other fingerlings. It took over 400,000 pounds of food to feed the baby fish, and all of this had to be scattered with a spoon, so it can be seen that the men in charge of the ponds must have been kept busy.

Past Year's Work Successful.
In summing up the results of the hatchery operations, it can be said that this year's work was the most successful season in the history of the department. The Commission was again fortunate in taking sufficient eggs from the Spring chinook on the Willamette River and tributaries to supply all the Columbia River hatcheries, and with a surplus of 3,000,000 to turn over to the United States Bureau of Fisheries and the State of Washington.

The Columbia River hatcheries are now fully supplied with spawn, and at other places where egg-taking operations are still going on there are plenty of fish in evidence to assure all the eggs that can be handled.

Freight Business Gains.
Our people have been liberally disposed to encourage the return of confidence in business circles and, by the expenditure of available money for improvements, to hasten the return of normal tide of prosperity in the territory which we serve.

Freight business has commenced to pick up and the resumption of activities in the lumber business means solid prosperity not only for the railroads, but has furnished employment for many idle hands.

In Central Oregon important new milling industries have been established. The development of the pine lumber market at Bend means a greater degree of prosperity perhaps than that section has yet known and one that will be stable.

The markets for farm products are good and the movement of crops has been accomplished thus far without encountering the troubles of car shortage. There has been a fair tonnage of products going to market—fruits, wheat, salmon, etc. The movement of crops has been slower than was expected because of lack of ships for export and high storage rates asked. Holding up of shipments through the Canal, because of the strike has caused shippers to rely upon the rail carriers for prompter dispatch in filling their orders, and this has been a factor in the improvement of the situation.

Tourist Travel Important.
The tourist travel to and from the San Francisco Exposition has been the chief enlivening feature of the season, viewed from the railroad standpoint. Northwest travel to the Exposition and California points via our lines has been satisfactory, but local business, which more seriously affects passenger earnings, has been below the normal level.

The establishment of our California service through connection with the Great Northern Pacific Steamship Company's line to San Francisco is a feature of the year in transportation development. The importance of the high character of service to the traveling public is generally recognized; in fact, has been a means of giving much favorable publicity to the Northwest. Upwards of 75,000 people traveled on our line between San Francisco and Portland during the past season, the great majority being Easterners, who have gained new knowledge of the scenic resources of the Columbia River country. I believe this will redound greatly to the advantage of Portland another season, in tourist business.

I am optimistic regarding the development of our state's material resources and I do not think we should relax our efforts because the processes of utilizing them proceed slowly. One of the best movements now under way is the shaping of the scene of organizations for the solution of the problems of marketing Oregon products. We have a number of important crops, increasing in volume, and the profitable disposal of them should proceed hand in hand with other constructive work.

OREGON HATCHERIES ARE OF BIG VALUE

By Practical Methods in Artificial Propagation Future of Commercial Fishing Is Secure.

By R. E. Gaston, Superintendent of State Hatcheries.
MANY of us realize the importance of Oregon's salmon industry and what it means to the sportsmen to have our streams filled with game fish, but only those who have made it a point to investigate the efforts being made by the State Fish and Game Commission by artificial propagation to keep and increase the salmon crop and make it possible for the angler to fill his creel. Oregon has six well-equipped modern hatcheries where both salmon

and trout are propagated. Four are used exclusively for salmon and three devoted to trout. Also there are several egg stations where spawn is gathered and shipped to the hatcheries. In addition, a number of retaining ponds are maintained where salmon and trout fry are held and fed. The combined capacity of all the hatcheries is about 20,000,000 salmon fry and possibly one-half as many trout. It is summing up the number that can be produced, it must be understood that the Fish and Game Commission, unlike other commissions and departments engaged in salmon work, base the capacity of their hatcheries on the number of fry that can be held and fed for several months, or until they can care for themselves when liberated.

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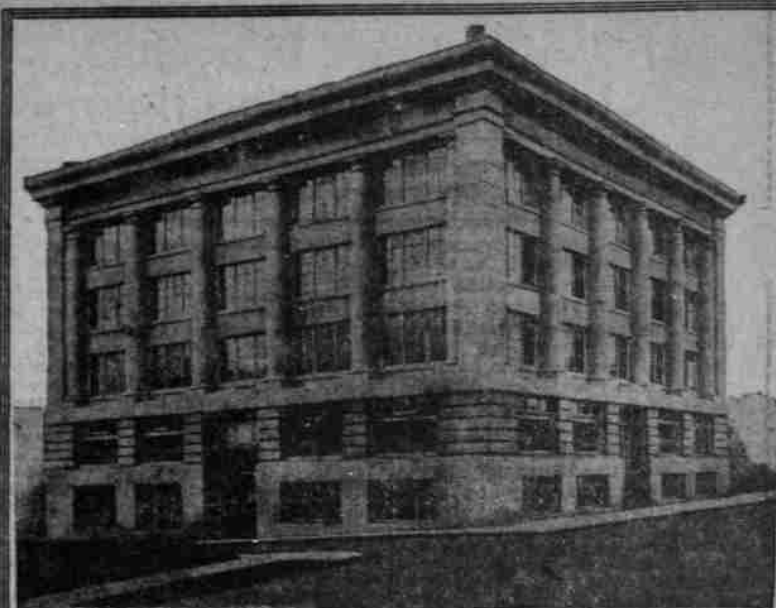
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Building Activity Shows Portland's Growth Stable

Study of Relative Building Operations in Portland and Seattle From 1900 to 1916 Made—Construction Work Barometer of Business—Outlook for New Year Encouraging.

By H. E. Plummer, Inspector of Buildings.

It is interesting to know that building regulations existed in the days of Rome and even Babylon. This may be understood quite readily when it is remembered that the crowding together of people in large cities makes building regulations necessary, and in the cities of Rome and Babylon there was regulation caused by the congestion of the people. In those ancient times the growth and prosperity of cities was not measured by the number of inhabitants, but by rough methods of approximately the number of houses, or heads.

At the present time the growth and prosperity of cities are indicated by many records, among which are bank clearings, real estate transfers, exports or imports of freight and building permits.

Building Activity Is Index.

In my opinion, the record of building permits indicates more truly and definitely than any of these the growth of a city. Although a city may not be growing rapidly, business conditions might be good, and as a consequence the bank clearings will be large, but the building permits, being a more accurate record of the growth, will be small.

Therefore, believing as I do that the study of building permits give the best indication of the growth of cities, I wish to call attention to the accompanying diagram, which shows the relative building operations in Portland and Seattle from 1900 to 1916, making an estimate for the last month of 1915. The curves show plainly the difference in the growth of the two cities. The curve for Seattle shows three cycles or periods of advance and recession, the

first extending from 1900 to 1905, the second from 1905 to 1911 and the third, which is apparently entirely completed, from 1911 to 1915.

Portland's Growth More Stable.
The curve for Portland shows, on the other hand, only one cycle, which is apparently not quite complete, for the entire period from 1900 to 1916. It is probable that during 1915 building operations in Portland will increase in volume, which will end the present cycle and start a new one.

The growth of Portland is therefore shown to fluctuate less often and to be not so much affected by booms as in Seattle. The contention of The Oregonian that Portland is a conservative, well-established city, not affected by numerous land booms, is confirmed. The building activity in Portland has been a well-sustained movement. It received its first real impulse in 1905, at the close of the Lewis and Clark Exposition, which was followed by three years of activity. This period was followed by two years of pronounced activity, which brought the building movement to its greatest height in 1910. At this time it is interesting to note that the curve for Portland in 1910 extends to a higher point than the highest point in the Seattle curve, which was reached in 1909.

In 1911 there was a slight retrogression in building operations, and a gradual decrease each year up to the present time. An examination of Seattle's curve shows the first cycle to have been a movement of small proportions, the second cycle to have been that of the maximum activity and the third to have been a movement which gathered headway slowly, but resulting in one year of activity followed by a decline.

It will be interesting to notice whether the second cycle in Portland gathers headway slowly, as was the case in

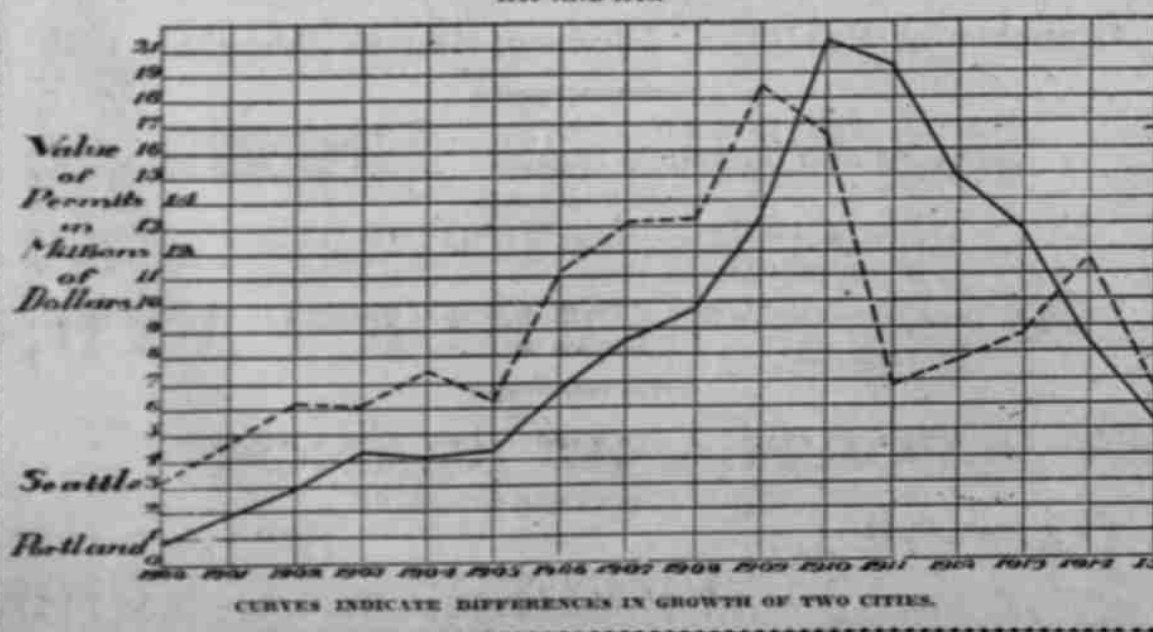
Seattle following a period of great activity. The total of the permits for the entire period from 1910 to 1916 for Seattle exceeds that of Portland by 10 per cent. This indicates that the population of the two cities should be about equal, as Portland in 1909 had a population of 90,475, while that of Seattle was 89,471, according to the United States census figures. Therefore, with 18,590 more people to begin with and 10 per cent less total of building permits, the size of the cities must be about equal. It is, of course, true that the census figures for 1910 show Seattle to have a population of 127,194, an increase of 154,523, while Portland has but 127,214, an increase of 116,748.

A study of the curves for the two cities will explain this difference. Seattle, in the years from 1900 to 1905, was having a growth which exceeded that of Portland, as the census taken during 1909 shows a larger growth for Seattle, and Portland's growth in 1910, 1911, 1912 and 1913, which exceeds Seattle's, is not represented in the census figures. If a Government census were taken today it would show little difference in the population of the two cities, as Seattle's 10 per cent greater growth will be offset to a considerable extent by the extension of the boundaries of Portland to include Lents, St. Johns and Linton.

Business Affects Activity.
As an indication that building permit records are an indication of business conditions, I will mention the report of building permits for the cities of the country for the month of September, which show that in the Southern states there was an increase of 11.7 per cent, in the New England states an increase of 10.3 per cent, while in the Western Coast there was a decrease of 14 per cent.

The stimulating effect of the good

DIAGRAM SHOWING RELATIVE BUILDING OPERATIONS IN PORTLAND AND SEATTLE BETWEEN 1900 AND 1916.



CURVES INDICATE DIFFERENCES IN GROWTH OF TWO CITIES.

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