HOW SUCCESS MAY BE WON ON A HOMESTEAD FARM IN OREGON

BY PROF. THOS. SHAW.

Oregon has more land of a tillable character that is now open to the homesteader than any other state in the Union, except Montana. The reference is, of course, to land that may be cultivated. A circular issued by the Portland Chamber of Commerce gives the area of the Government land as 16,881,069 acres. Nearly all of this area is east of the Cascade Mountains. A considerable proportion of the above is not tillable because of its rocky character. But adjacent to and within areas occupied by Government holdings are wide areas of unbroken land owned privately, and which may be purchased at prices that are reasonable. The total of the tillable land as yet unbroken amounts to not much less than 20,000,000 acres. In the Burns district there are more than 4,000,000 acres of Government land, tillable and untillable. In the Vale district are nearly 6,000,000 acres, and in the Lakeview district are nearly 4,000,000 acres. The balance is in areas much smaller, and is distributed over various parts of the state.

The Character of the Tillable Land.

The soil is essentially what may be termed a volcanic ash, that is, the outcome of volcanic eruption in bygone ages, and, like all soils of volcanic origin, it is of surpassing richness. It is gray or brown in color and fine in texture. The gray color is far from attractive to the man who is familiar with the black loam soils of the Mississippi basin and the basins of its several tributaries. He little suspects that in that gray, dead-looking soil are the elements of plant life in far greater abundance than there can be found in any other kind of soil. These are especially rich in mineral elements, that is, the elements that are so essential where large yields are to be obtained. If there is any lack in these soils it is a lack of humus, or vegetable matter, resulting in part from the relatively light rainfall. Hence it is that the producing power of these lands increases for at least a term of years under judicious tillage after they have been broken.

Growth on the Tillable Land.

The tillable homestead land of Oregon lies almost exclusively east of the Cascade Mountains, where the rainfall is light. It is nearly all covered with a growth of sagebrush which reaches a height running from, say, two to six feet or more, and varying much in density. Ordinarily the plants are from, say, two to six feet apart. This sagebrush must be removed before the land can be plowed by the ordinary breaking plow. The more dense the growth of the sagebrush and the higher it grows the better is the character of the soil, as a rule, and the greater is the amount of the precipitation that may be expected.

Growth on the Untillable Land.

The untillable land is more or less broken in conformation. When it consists of rock that comes up to or near the surface, it is of little or no value for agricultural purposes. But when boulders lie more or less thickly upon it and strong sagebrush appears, it will be found valuable as grazing land in all times. The homesteader should not object to locating near to such land, as, from the outset it will furnish him with grazing, and, in time, he may become the permanent owner, as such lands may be obtained cheaply.

The farmer from the East who passes through the sagebrush lands of Oregon is almost certain to under-estimate their value in producing grazing. The evidences of grass production are not assuring. This follows from the overgrazing of the lands. Only where land has been fenced and not grazed for a season can one get a true idea of the grass production, and of the character of the rich grasses which Oregon produces.

Her Cut-Over Lands.

A large area of cut-over lands is found in Oregon, that is lands that have produced timber that has been removed. The fact that it has grown timber, when east of the Cascades, indicates, first, that the elevation there is relatively high; second, that the precipitation there is considerable, and, third, that the soil has relatively good adaptation for the growth of grains, grasses and fruits. Such lands, mostly under private ownership, may usually be bought cheaply, but the cost of removing the stumps is considerable, and should be considered by the intending purchaser. When once cleared, however, such land is very valuable, because of the variety of the production which it will furnish.

The Precipitation.

The precipitation west of the Cascades is, in most places, very heavy. East of the Cascades, where the larger portion of the homestead lands lie, the precipitation is relatively light. It runs all the way from, say, 10 to 20 inches. Where the rainfall is only ten inches the land, as a rule, will only produce grain crops once in two years. Where it is 20 inches, grain crops can be grown nearly every year. Where it is 15 inches, crops may, with good farming, be grown two years out of three, and, in some instances, probably three out of four. Alfalfa should furnish one cutting every year, the amount being determined largely by the amount of the precipitation. In all these areas the farming must be done more or less by dry-farming methods.

The Climate.

The climate of Oregon will forever remain one of its crowning attractions. The term equable may be written on its every phase. The Summers are not hot, save for very short periods in the lower basins. The nights are almost invariably cool. The Winters are not cold nor long. A man who wears a fur coat is a curiosity in Oregon. The frost seldom penetrates the ground to a depth of more than 12 inches, and in many areas it is even less than 12 inches. The frost seldom stops the plow for more than two or three months, and only on elevations considerably more than 4000 feet do the Summer frosts vex the husbandman. The rains usually fall gently. Hurricanes, cyclones and tornadoes are practically unknown. When snow falls it does not lie long, hence livestock may graze during much of the Winter. The winds that blow stiffly and unendingly at certain seasons on the wide, open prairies are not thus felt in Oregon, and in most of the harvest season, both east and west of the mountains, rain is almost unknown, hence there should be no loss from adverse weather in harvest.

Why Has Settlement Been So Long Deferred?

It is natural that the question should arise in the mind of the reader: Why has a country with so many advantages been left so long practically unsettled in so many of its areas? The answer is easy. It is because of the lack of railroads. Why the railroads have not been built the writer does not know; but of the fact there is not any doubt. To illustrate: From Vale, in Eastern Oregon, to Bend, at the Eastern base of the Cascades, a distance of nearly 200 miles, there is not a mile of finished railroad, and yet there are large areas of good farming land in many places along the public road between them. The intending homesteader must not deceive himself with the thought that he can any more take up public land beside a railway already constructed. The best that we can do is to go into a locality in advance of a railroad, and take up land and wait for the coming of the road. In this age, in any locality where there is much good land, he will not have long to wait for a railroad.

The methods which the homesteader may follow during the three years in which he is securing full title to his land will now be discussed. In many places he may file on 320 acres of homestead land. No sooner is that land proved up on than it is worth not less than $10 an acre, and in many places it will bring a sum considerably higher.

Farming During the First Year.

The homesteader should aim to locate on his land in the late Summer or the very early Autumn. He should thus aim for the reasons that the rain falls in the Autumn and Winter and on into the early Spring months, after which there is but little rain until the Autumn comes again. He will thus be enabled to erect his little cabin, build his stable and clear the sagebrush from a certain area ready for the plow, and on which he will sow Autumn grains. The price of lumber in Oregon is much cheaper than in areas of wide and treeless prairies. The mountains in Oregon, found in various places in the state, are tree clad.

If two or three homesteaders were to locate near to one another, they may economize in the amount of the equipment called for. So important is this matter that it should not be overlooked. Each homesteader should be possessed of the following: Not fewer than three good horses, preferably mares; one or two cows, one or two brood sows, and a small flock of fowls. He should own a breaking plow, a common harrow, a disk, a mower, a wagon and a one-horse cultivator. If there is co-operation, one reaper and one fanning mill should suffice for a time for two or three families. Later they may have to combine and purchase a small thresher.

Each homesteader should bring with him a few bushels of Winter wheat for seed, preferably of the turkey red variety in the dry area; a sack or two of Winter rye, one or two each of Winter barley, Winter oats and Winter emmer. He should plant an acre or two of potatoes in the Spring, and an acre or less of artichokes to provide food for his swine; but the seed potatoes and artichokes would have to be secured later, as will be apparent should he come to his homestead in the late Summer or early Autumn. He should also have not less than 30 to 40 pounds of good alfalfa seed, or enough to last him at least two seasons. To take the seeds with him will effect a large saving in freight. In addition to this equipment he should have enough cash to supply the needs of his family until the following harvest, and to furnish such grain and hay as his horses may need until more grows the following season. The amount called for will vary with the size of the family. Some grain will also be wanted for the swine and fowls.

As soon as the small buildings are erected, the next work is to clear away the sagebrush and plow the land for the Winter grain. If a machine with its equipment may be hired to cut under the brush on several acres it will enable the homesteader to sow a larger area, than would otherwise be possible, of Autumn grains. The sagebrush may be gathered and stacked up by the dwelling to furnish fuel for the Winter. It answers very well for such a use. The grain of the different kinds should be sown as soon as enough rain has fallen to insure safe growth.

As soon as the grain is sown, the clearing off of more sagebrush and the plowing of the land should continue in order to get it ready for Spring crops. The more of this kind of work that can be done the better, as the land thus opened up absorbs the Winter and early Spring precipitation, and if the area thus broken is not all wanted for Spring planting, it may be Summer-fallowed for Autumn planting of the Autumn cereals.

In the Spring, as soon as growth begins, the planting of garden seeds should begin. Somewhat later potatoes may be planted, preferably of some early variety, and yet later corn and beans may be planted. The potatoes, corn and beans may be planted in the usual way. If the ground has been made ready, the artichokes may be safely planted the previous Autumn. It would not be correct to say that Spring grains should not be sown. Some seasons they do well, but, as the Summers are usually very dry, the aim should be rather to have Autumn-sown grains. An acre or two of alfalfa may, and should, be sown in the early Spring. Whether this will bring any return the first year is problematical. It will depend almost entirely on the amount of the precipitation.

At the end of the first 12 months the results would be in outline as follows: The homesteader would have some wheat to sell. He would also have a supply of fodder and grain for his stock, and enough could be saved from each kind for the next year's seed. The grain not wanted for seed, except the wheat, could be cut a little under-ripe and fed as hay. This, with the corn fodder and the range pasture, should preclude the necessity of buying any food for the stock during the second 12 months. The brood sows kept over the second Winter should get a considerable part of their living that Winter from the artichokes. From the time of locating there would probably be some cash revenue from the cows and fowls, and the supply of pork for the family should be ready for the second year's sustenance. There should be enough of potatoes to meet the needs of the family and some for sale. The supply of vegetables should also be ample, and it could embrace many varieties.

Farming During the Second Year.

When the second Autumn arrives there should be a large amount of fallowed land ready for sowing. This ground, if properly cared for, will be in a fine state for receiving the seed as soon as the rains come. If plowed in the quite early Spring it would receive some of the Spring rains. If at once harrowed and occasionally afterwards, the moisture would thus be held for the autumn crops. These should be sown as soon as the first rains come in the Autumn, which is usually in October. The land that grew corn and potatoes may be similarly sown, as the cultivation given to these would aid much in holding the moisture. A larger area should be planted to artichokes. A large part of the grain crop thus sown should be Winter wheat, as it will be the chief money crop the next season. The ground that grew grain crops the previous Summer should be plowed deeply as soon as it has become moistened. Such moistening will be facilitated if the disk has been run over the stubbles as soon as the harvest is reaped. This operation will facilitate the sprouting of the shattered grain, and the destruction of the same by the plowing that follows later.

Every effort should then be put forth to clean and plow more sagebrush land, a part of which will be Summer-fallowed, and a part, if necessary, may be devoted to such crops as are planted in the Spring. While it answers quite well to plow land intended for fallow in the early Spring, if it can be plowed in the Autumn it is penetrated more deeply by the moisture that falls in the Winter; hence, if this moisture is retained by judicious harrowing, this land should have more reserve moisture stored in it than land plowed in the Spring.

In the second Spring the area of potatoes may be increased if there is a market for them. The area of the fodder corn should be largely increased, and also that of the alfalfa. If the land that produced grain hay the previous year has been deeply plowed it should be suitable for the alfalfa, and if the land has been well manured before the plowing its suitability will be further increased, as the manure will aid in the inoculation of the crop. These crops must be planted in each instance as early as it will be safe to plant them.

At the end of the second 12 months the results would be somewhat as follows: There should be a goodly amount of wheat for sale, as much butter as during the previous year, a marked increase of eggs, and a considerable revenue from the swine. There should also be some colts and cattle growing into money. The food grown on the farm should be ample for all these, and a sufficiency of each kind for seed.

Farming During the Third Year.

At the beginning of the third year the area ready to receive Autumn-sown grains would be much increased over the area ready the previous year. This increase would come in part from fallow land and in part from corn land. Winter wheat should again be given the right of way in the Autumn. The procedure the third year should be essentially on the same lines as outlined for the second year.

At the end of the third year the results would be in outline as follows: There should be a large amount of wheat for sale and of some of the other grains. The alfalfa should go far to provide the hay called for, supplemented by the corn fodder. The number of the cows would be increased, there would be some beef for sale, the progeny of the cows. The revenue from the swine and fowls would be substantial. One or two young horses would be ready to sell or to break for working on the farm. A large part of the farm should be under fence, as posts are much cheaper in Oregon than in states farther east. And, best of all, the farm would now be the property of the owner.

Should the homesteader move onto his farm in the Spring, he may, of course, succeed, but he labors under this handicap, viz., that he must support his family and buy food for his horses for a much longer period than if he located in the Autumn. The single man would not need to give attention to livestock other than horses, and he would have a part of the year to devote to other work.

Some facts will now be submitted with reference to certain features of tillage that are important, and that must be given due attention by the homesteader who is going to succeed on a dry-land Oregon farm.

The Nature of the Plowing.

Where moisture is abundant the land may be plowed at any time that is convenient. It is much different, however, under dry conditions. There are seasons when it may be plowed with much more advantage than at other times, with reference to crop production, and also to the ease with which it may be plowed. In dry areas it is always a matter of much importance to plow the land when it is possessed of a considerable amount of moisture. East of the eastern range of the Rockies the bulk of the precipitation comes in the Spring and early Summer. East of the Cascades, as in Oregon, it comes in the late Autumn, Winter and early Spring months. This means, then, that the aim should be to plow the land after it has become softened in the Autumn or early Spring, and also at intervening times between the Autumn and the Spring when such plowing is admissible. It should also be deep, as a rule. The advantages of deep breaking are that subsequently it will be easier to plow deep than if the ground had been plowed shallow. It makes a larger field for the conservation of moisture and it enables the moisture to penetrate more deeply than it otherwise would.

The Amounts of Seed to Sow.

In dry areas the amounts of seed that will suffice are much less than in humid areas. This is owing to the fact, first, that plants stool much more in dry than in humid areas, and, second, that there are more plants on a given area than the moisture will sustain; the plants will not develop properly, nor will they produce abundantly. The amounts of the different kinds of grains to sow will be approximately as follows: Winter wheat, three pecks; durum wheat, four pecks; barley, three to four pecks; oats, four pecks; emmer, five pecks, and rye, five pecks. These amounts are for land that has been well prepared, and relate to these amounts by measure rather than by weight. In Western lands grains frequently overrun in weight; hence, if the weight were taken instead of the measure, the amount sown might be too small.

Harrowing the Crop When Sown.

The crop may in many instances be harrowed with profit after it has begun to grow. It may be harrowed once or twice. Corn and potatoes may usually be harrowed more frequently. The best time usually for giving the first harrowing to Autumn-sown grain is just when it first begins to show. It may not be necessary to harrow at that stage, but if there is any tendency in the ground to crust the crop will be much benefited by such harrowing. A second harrowing will, probably, be useful in the Spring, especially if the soil has become more or less impacted. The first harrowing should be given with a light harrow, and the teeth should be given a backward slant. The second harrowing may call, in some instances, for a heavy harrow, and in other instances for a light one, dependent upon the condition of the land. The second harrowing should be given as soon as the land will bear harrowing, providing the harrow will not then bury any considerable number of the plants. A third harrowing will, at least in some instances, be in order toward the close of the usual season of precipitation. Corn and potatoes should be harrowed soon after they are planted, and again just before they come through the ground. The harrow should be used once or twice subsequently, and the cultivator should then be used frequently until the plants become too large to admit of this. The object of such cultivation is two-fold: First to keep a mulch on the soil that will prevent the escape of moisture, and, second, to keep the land clean.

Succession in the Crops.

The homesteader should avoid growing two small-grain crops in succession where the precipitation is less than 15 inches. This arises from the fact that the first crop absorbs so large an amount of moisture from the soil that little or no reserve moisture is left for the second crop. It may be asked: can one make farming pay where only one grain crop is obtainable in two years? The answer is, that in such areas the one crop is as large as two grown in many other areas. For instance, the average of Winter wheat grown in Oregon on Summer-fallow land is from 25 to 40 bushels usually, probably around 30 bushels; whereas, in the Dakotas, where wheat is grown every year on the same land, the average is about 13 bushels. The labor put upon the two crops grown in the Dakotas is more than the labor put upon the one crop in Oregon.

But, where corn can be grown, the Oregon farmer can improve upon the one-crop system in two years. He can get three crops in four years, two of which will be small grain and one of which will be corn. The succession will be as follows: Summer-fallow, small grain, corn, small grain and Summer-fallow again. The weak point in this rotation lies in the fact that usually the farmer is not able to make the amount of corn acreage equal to that of the Summer-fallow because of the labor involved in taking care of so much corn. Corn may in certain areas be grown for the grain. In certain other areas it can only be grown to provide fodder.

The Flax Crop.

In certain portions of Oregon magnificent crops of flax may be grown. West of the Cascades it grows in splendid form. It was not mentioned along with the grains which it was recommended to sow, for the reason that it has been but little tried in dry areas. It stands drought as well or better than any other cereal, hence it is probable that flax could be added to the crops grown by the dry-land homesteader. It should be sown early. Along with wheat, it would be a money crop.

Methods Submitted, General Guides.

The methods above submitted are only general guides. It is not possible to lay down hard-and-fast rules for the tillage of the land that will apply in every instance. It is believed, however, that the homesteader who approximates his work to the outline submitted will not be without success in his effort. The dry lands of Oregon will yield freely to those who till them, but only on the condition that they are tilled in a certain way.

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Low One-Way Spring Colonist Fares in effect from the East daily, March 15 to April 15, 1913, inclusive. Low Round-Trip Homeseekers' Fares in effect from the East to points in Oregon the first and third Tuesdays in January to December, 1913, inclusive. Write today.

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HANDSOME NEW PUBLIC LIBRARY BUILT TO MEET NEEDS FOR MANY YEARS TO COME

Arrangement Is Planned to Give Greatest Degree of Service to Patrons—Two Branches Are Open, Two Are Under Way and Fifth Will Soon Be Erected.

By W. B. Ayer, President Library Association of Portland.

THE public library occupies the leading position among educational institutions of this community. Its progress is greatly in excess of the development in any other direction. In 1910 the circulation was 552,722, in 1912 1,036,824—a gain of nearly 100 per cent in two years. The past year marked the first decade of our public library service. In 1902 the circulation was less than one volume per capita. In 1912 it was over four.

Before the public library became one of the great educational factors of the American city its usefulness was measured only by its attractiveness as a resort for quiet reading and study, and by the number and value of its books. This factor remains one of the most important functions of library work, and a large part of every library building is devoted to what is now termed its "reference" department. The great library buildings of America, such as those of New York and Boston, allot only a limited amount of space to the circulating department. In Portland, with our central location and open shelf arrangement, which permits the borrower to select his own books, it is necessary to devote about an equal area to each branch of the service.

The great increase in circulation and attendance has taxed the existing library facilities to the utmost. During the past year two branches have been completed, two more are under construction, and a fifth will be completed during the ensuing year. It has been the policy of the library directors to make these branch library buildings architecturally attractive, both on the exterior and the interior. There are eight other small branches occupying rented quarters, and in time, as the circulation increases, it is hoped that funds will be available with which to erect permanent buildings.

The new central library building will be completed next Summer. The necessity of providing generous space for the public and ample room for the storage of books and administration of the entire library system required that the sum available should be devoted to utility. The building contains over 2,000,000 cubic feet, and, without furniture and fixtures, will cost less than 19 cents a cubic foot. Its exterior, designed in the simple, dignified Georgian style, will be of red brick with light gray limestone trimmings.

From Tenth street one enters a spacious vestibule, with checkroom and entrance to an unassigned room, which may be utilized for meeting of various societies and clubs; then into the main lobby. From this lobby will be entrances to the great periodical and newspaper room, to the children's room, county department, women's rest room and auditorium. The auditorium will have its main entrance, however, from Yamhill street. On the Eleventh-street side will be located the packing and shippingroom and the bindery. In the basement under the lobby will be located the heating and ventilating plant. Also, with an entrance from Yamhill street, a public comfort station, which, by arrangement with the Council, will be operated by the city.

An easy flight of stairs leads from the lobby to the second floor directly into the public catalogue room. From this room access is had to the circulating and reference rooms. These rooms are each 45 feet wide, 105 feet long and 30 feet high, lighted by grat round, arched windows. The technical library also opens out of the public catalogue room, as do the main office and administrative headquarters. The fine arts library is at the west end of the reference room, and from the circulating room is the entrance to the city school department. Above these two last named rooms and running along the Eleventh-street side is a mezzanine floor, which is entirely given over to the cataloguing and order departments.

On the third floor will be located the janitor's living apartments, and the rest and lunchroom for members of the staff. With these exceptions, the third floor will be for future development.

In the center of the building, occupying the space generally given over to a light court, will be located the stack room, running from the basement to the roof, with eight tiers of iron stacks, having a capacity of over 350,000 volumes. The various rooms will have wall shelving with a capacity of 100,000 volumes. The stack room will be used for the less called for books—those books that are only occasionally in demand, but which are necessary to a well rounded out collection. Entrance to the stacks will be from the reference and circulating rooms and will be open to the public only upon special request.

WATER OFFICE RECEIPTS GROW.

Receipts from the sale of water to consumers in Portland have increased from $285,997.85 in 1900 to approximately $782,509 in 1912. This big gain is the more significant as showing the city's progress, when it is taken into consideration that the water rates were reduced in 1901, 1907 and 1909. Receipts of the water office for a period of years follow:

1900	$285,997.85
1905	513,829.76
1906	560,090.80
1907	559,531.10
1908	608,259.00
1909	570,730.60
1910	643,421.00
1911	748,996.20
1912	782,509.00

IMPROVEMENT OUTLAY BIG.

Portland is spending millions of dollars each year for street pavement and sewers. A few years ago Portland had the reputation of being one of the most poorly paved cities in the country. Now there are 272 miles of hard-surfaced streets, and their cleanliness is marked in comparison with the streets of the majority of cities. The following table shows the annual outlay for street and sewer improvements in Portland:

1904..	$ 710,000	1909..	$2,432,000
1905..	540,000	1910..	4,400,000
1906..	516,000	1911..	7,398,506
1907..	807,000	1912..	4,484,857
1908..	1,031,000		

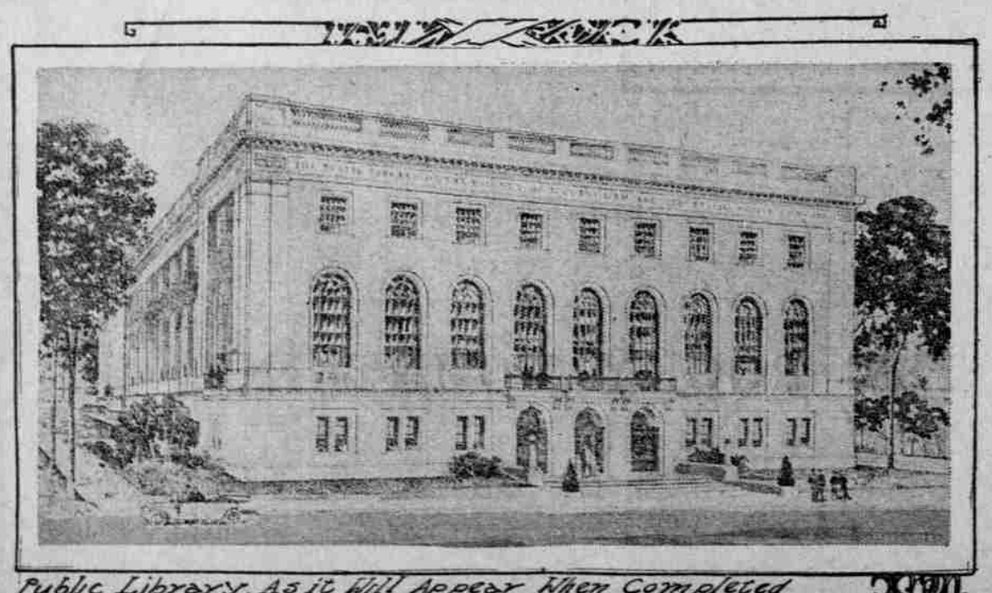
PORTLAND LEADS ON NORTH COAST AS JOBBING CENTER

Position as Chief Commercial Center Is Secure if Business Men Utilize Natural Advantages.

By A. H. Devers, Chairman Transportation Committee of Chamber of Commerce.

PORTLAND is the largest jobbing center on the North Pacific Coast. This city was jobbing goods before any of its competitors on the Coast or in the interior had an existence. It remains today the largest jobbing center on the North Pacific Coast, but its supremacy cannot be maintained unless certain important factors are given careful attention by the jobbers and manufacturers. The first one of these which demands attention and which is of the utmost importance is the use of water transportation both into and out of the city. The city has not given its water transportation possibilities the attention they deserve. We are awakening now, but we must keep awake and continually work to the end of getting direct communication with the outer world by water. Our competitors on this Coast have this direct communication and we without it would eventually lose our supremacy. This, in my opinion, is the one great necessity that we must secure to retain our present position. We have the waterways and any sort of steamer can reach us, but we must arrange for fuel, supplies, modern docks, and accommodations, but above all give such volume of business as will make it profitable and economical for ocean going vessels from foreign ports to come to Portland.

Our next greatest work should be to encourage in every possible way the building of steamboat lines on our rivers so that we may utilize our unequaled position as a distributing center. Our geographical position as a jobbing center is superior to that of any on the Coast, and it all lies with the jobbers and the manufacturers working hand in hand and not being afraid to spend a little money, whether or not we are to remain the largest commercial city on the North Pacific Coast, or be relegated to a lower place.



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