

Our High Destinies Here Wait on Use of Available Water

Hitched to Eternity, the Wheels of Our Industries Harnessed to Water's Flow

Vast Undeveloped Hydroelectric Power Is Available in the White Coal Running Now Largely to Wast Down Our Mountains and Valleys

The white coal tributary to Salem is bound to render this city an increasingly important industrial center working up the raw materials of the land and the forests that make up the supporting base. The potential resources beyond the dreams of even our present day people, who have already witnessed what would have been considered phenomenal progress by the pioneers who saw this section in the garb of primitive nature.

This white coal of our water powers largely yet running to waste is comparatively easy and inexpensive to develop. Distance of transmission is not as much a barrier to progress in this field as it was a few years ago. But short lines from hydroelectric projects will always be a factor making for low cost of operation and low overhead.

Vast Source Near
Within a distance of 50 miles of Salem, it was estimated a year ago that there were 250,000 horse power potentials already marked out in four streams and lakes; and the fillings have been going steadily since then.

At that time there were within 100 miles of Salem about 60 water power projects with above 100 horse power each, and the developed power of these was 63,739.24, and the total claimed horse power 529,892. It is reasonable to estimate a final total of a million horse power in the water projects within a radius of 100 miles of Salem.

On The Santiam
The fillings on the power of Marion lake and near by North Santiam water flows have come into public notice recently, on account of diverse claims based on surveys of the cities of Salem and Albany, for domestic water supplies. The fillings of the people proposing power development there mark out about 70,000 potential horse power for hydroelectric development. This is perhaps only about half the potential power of the North Santiam district's flow. (This is the estimate of a competent engineer.)

All his power is within 100 miles of Salem, and over half of it within 50 miles, and a good deal of it within a less distance.

This will be cheaply developed, compared with the average cost of such projects throughout the country.

Reaching Further Out
It is estimated that, within 150 miles, three million horse power may be developed, and within 200 miles, four million.
That is not a long distance, in terms of transmission of power, for modern engineering experts. They cover twice the distance in sending power over their high voltage lines in other sections, without appreciable loss of energy. So the great Columbia river project is within easy reach of Salem power users, or rather will be when it is developed. Also the vast powers of the Deschutes, just over the Cascades, and the McKenzie and other great powers. The Oak Grove plant of the Portland Electric Power company, on the upper reaches of the Clackamas river, is about the same distance from Salem as from Portland; the water for the 105,000 horse power plant coming largely from the eternal snows of Mt. Jefferson, in the northeast corner of Marion county.

Hitched to Eternity
The economic advantages of water powers that are exhaustless

in point of time are many, and will be appreciated more and more.
Salem had her birth in a water power project; became a town through the advantages of its water powers on North Mill creek, and then on South Mill creek, added later in their flow from the Santiam ditch. The opening of the latter has a major undertaking for the pioneers. The benefits still flow from this source; but they are small indeed as compared with the present power sources utilized here, and smaller still in the prospect of the vastly greater sources that will in good time be tapped and their energies harnessed to innumerable new plants and made to bestow blessings upon future teeming millions in this great Willamette valley.

SPREADING LIME AND FERTILIZER

Fertilizers for late spring crops are best broadcast and harrowed in at time of planting so they will be thoroughly incorporated in the soil and be in solution when the seedlings germinate, says Dr. W. L. Powers, chief in soils at the Oregon State Agricultural college. Best results are reported from Iowa experiment station trials when lime treatments are applied with a fertilizer attachment on the planter, the material being sown a few inches to the side of the rows. Ground limestone can be applied with a manure spreader or with a manure spreader the floor of which has been covered with heavy barnyard manure. A tall gate seeder is also on the market. This attachment distributes the material in strips 20 feet wide.

Lime is best applied on soils that are known to be acid or of medium fertility, where legumes such as alfalfa or clover are to be grown. Applications of one to one and a half tons per acre are sufficient. A new lime bulletin is available upon request at the soils department.

SPRING PLANTING TIME!
It is April, gentle reader, and the spring planting season consists of April and May, the most desirable period being from about April 15 to May 15. If you have been dreaming of the wonderful things you would do in the spring, with trees and shrubs and vines and flowers, it is high time to get busy. If you haven't prepared a definite plan of procedure, don't wait another minute. The folks that can help you in making a plan or selecting plants to use are going to be pulling through a swamp of rush activity pretty soon, for it's a short season and there is a lot to be done. The earlier you get started, the earlier your plant orders are booked, and you get delivery just so much earlier in the season, before growth is started enough to involve a setback for the season's development.

THE TOMATO IS THE POOR MAN'S ORANGE

The usefulness of the tomato in the home garden is plainly demonstrated by its unusual popularity, says A. G. B. Bouquet, vegetable gardening specialist at the Oregon experiment station. The plants are prolific bearers of fruit, and as a canning crop the tomato takes first place among the vegetables. This popularity is partly due to the value of its vitamin content. It is sometimes called "the poor man's orange."

A good stocky plant with a good root system is of primary importance in the successful growing of tomatoes. At the time plants are set out they are from 8 to 10 inches high. The time for setting out the plants is from May 10 to 20 or after the frost season is over. It is best that the plants be set down several hours before transplanting so that soil will adhere to the root system. Commercial growers place plants from 4 to 5 feet apart and the vines are allowed to run on the ground. Home gardeners sometimes use some method of supporting the plants, limiting the growth to three or four main stalks.

Chemical fertilizers are frequently applied for the commercial production of early tomatoes. This fertilizer contains a considerable amount of phosphorus, and not much nitrogen or potash, being in the ratio of 4-16-4. On light soils more potash is used. When more than 500 pounds are used, broadcasting is the best method of distribution, but for hill applications 500 pounds an acre is adequate. The best time for distribution is before the plants have been set out. The broadcast application is done earlier than the hill distribution.

For canneries tomatoes when early maturity is not expected, rotted barnyard manure will often tend to increase the yield. Eight or 10 tons are applied to an acre with a supplementary distribution of 400 pounds of superphosphate.

CLEAN YOUR PRUNE DRYERS IN SEASON

Before the season's operations become extensive, it is essential that farm dehydrators be clean and in good condition. A strong solution of lye, or sawdust dipped in lye and spread on the floor will remove the old prune drips which cause much mold and odor. After 24 hours the lye and juice can be removed by washing and rinsing thoroughly. Trays may be cleaned by dipping with the same solution, and sunning to aerate them. This kills the mold, making the dehydrator clean and sweet, says the Oregon experiment station.

Powdery mildew of grapes, which is seriously cutting down the production of grapes in small plantings in Oregon, is easily controlled, says the experiment station. As the fungus is confined to the outside of the grapes and the leaves, sulfur dust applied at frequent intervals during the growing season will prevent the development of the mildew. Best results are obtained by beginning the treatment early in the season, destroying the fungus before it becomes visible or does any damage. The treatment is repeated at 10-day intervals to keep the growing parts covered with the dust.

College Expert Tells How To Control Powdery Mildew On European Type Grapes

The American Varieties in Commercial Plantings in This Section are Little if at All Affected by the Pest, However

John C. Burnett of the department of industrial journalism, Oregon State Agricultural college, sends the following for this annual grape Slogan number of The Statesman:
The powdery mildew disease is seriously cutting down the yield and quality of grapes in Oregon, according to H. P. Bars, plant pathologist of the experiment station. While commercial growers are not seriously affected, a large number of persons in Oregon, growing grapes for their own use, do not understand the nature of this disease, nor how to control it.

While the cultivated American types of grapes are but little affected by the powdery mildew, the European types and some of the hybrids of the two types are susceptible to serious injury by this disease. The vineyards in some sections of Europe were once threatened with extinction by the mildew, but a means of control has now been found that is effective the world over.

How it Develops
The powdery mildew, it is believed, lives over winter chiefly in the buds of grapes, says Professor Bars. Then, when the buds shoot out in the spring, the mildew grows out on the new shoots, onto the young foliage, and into the clusters of blossoms.

The fungus is inconspicuous early in the season, but later shows up in the form of grayish or powdery white patches on the surface of the leaves and sometimes on the stem. It creeps over the surface of the grape berries, giving them an ashy appearance. Eight or 10 tons are applied to an acre with a supplementary distribution of 400 pounds of superphosphate.

It does not hurt to apply sulfur dust while the grape clusters are in full bloom, it has been found, some growers even reporting an apparent increase in fruit as a result of such a practice.

"The main things to be observed in connection with the prevention of powdery mildew are an early start and repeated applications until the middle of the summer when the danger of mildew damage is practically over," says Professor Bars.

It is comparatively simple to control. As the fungus is confined to the outside of the grapes and the leaves, sulfur dust applied at frequent intervals during the growing season will prevent the development of the mildew, says Professor Bars, but to get the

best results he advises that the grower begin the treatment early in the season, destroying the fungus before it becomes visible or produces any damage at all.
"It is best to begin dusting with sulfur when the shoots are not more than a few inches long and before the first leaves are full size," advises Professor Bars. "The treatment is repeated at intervals of ten days or two weeks to keep the growing parts covered with the dust. In fact, in the early part of the season when growth is very rapid, it might be advisable to apply dust at intervals of a week, especially if the disease has been severe in previous years. After the trouble is under control, dusting every two weeks will ordinarily keep it in check."

Fine Sulfur Does Work
The finer the sulfur used the less it takes to do the work and the better it will adhere to the vines, says Professor Bars, who recommends that the material used be the best obtainable—either in the form of ground sulfur or of sublimed sulfur, known as flowers of sulfur. It is best applied with some kind of blower or dust gun. Small outfits are obtainable at the larger seed stores.

For best results dusting is done only when the air is still; just before or after sunrise is usually a good time. A heavy covering of dust is not necessary, if it is uniformly and thoroughly distributed over all exposed parts, says Professor Bars.

It does not hurt to apply sulfur dust while the grape clusters are in full bloom, it has been found, some growers even reporting an apparent increase in fruit as a result of such a practice.

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INOCULATING PEA AND BEAN CROPS

Thorough inoculation of beans and peas with root nodule bacteria is one of the essential factors in getting a good stand, says Dr. W. V. Halverson, associate bacteriologist of the Oregon State Agricultural college. Many planters rely on the possibility of sufficient bacteria being present in the soil, but experiments in various parts of the country have shown that artificial cultures, when applied to the seed a time of planting, increase the yield considerably.

Several thousand acres of land in Umatilla county are being prepared for beans under contract of a large canning firm, which has asked Dr. Halverson to supervise the inoculation of the seed with root nodule bacteria as soon as weather conditions permit. A Washington-Idaho seed company also has a contract for 1000 acres of field peas in Umatilla county which require inoculation.

Experimental tests to prove the value of inoculation and determine the most effective and efficient methods of application on beans and peas are planned by the bacteriology department of O. A. C. in cooperation with Walter A. Holt, county agent, Umatilla county.

CUT DEAD FLOWERS
During your walk around your garden, carry a small basket and a pair of shears to cut off all dead flowers. Just as soon as the bloom of a bulb has passed its stage of beauty, it should be cut off in order to keep the beauty and neatness of the garden. Likewise all perennial plants whose blooms have ended should be cut off. Cutting a few dead flowers each day will keep your flower bed clean and fresh all the time.

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Water Power, Gift of God

THE average old timer of Oregon, except the webfoot state, would have been jarred by the assertion that the ultimate great future of Salem and the Willamette valley is tied up with water—

The use of water for power and irrigation. But that fact is evident to every upstanding observer now. Two-thirds of the water powers of the United States are in the Pacific coast states. Oregon has an eighth of the water powers of the country. Four million or more horse power is running to waste within a radius of 200 miles of Salem; a half million not far outside of a radius of 50 miles; certainly no toutside of a 100 mile circle.

The Willamette valley is the certain stage of a future population of ten millions of people, or more. With the use of our undeveloped water powers and the available water for irrigation, this will be possible; with such a population maintained in comfort and in a high stage of average prosperity.

The available water used for irrigation will mean sugar factories all over the valley; the full development of our flax and linen industries; the greatest dairying section of like extent in the world; vast truck garden and orchard developments, and a long train of indirect benefits in the way of stabilized industries on the land backing up the industries of the cities and towns, supplied with their raw products from the annual crops and the constantly ripening harvest.

Our water powers are as "permanent as the revolution of the earth; as certain as the sun." The resource of water, this gift of God, through the laws of nature, a value that never diminishes, never dies, never is consumed, never wears out, never is used to exhaustion, destruction or extraction. This clean white coal, possible benison and blessing, is as free as the grace of God for the taking; for bestowal n answer to the call of industry and science.

What a picture of the future! But a true picture, only waiting the magic brush of the practical painter of progress.

Rich soil, in good producing condition, is necessary to secure a large yield of root crops in Oregon, finds the experiment station. Applications of 20 to 40 tons of barnyard manure an acre are not uncommon, and the crops are in such cases often grown on the same land several years in succession. Cost of handling makes it desirable to produce this heavy yielding, water crop fairly close to the place where it is to be stored. Commercial fertilizers, particularly superphosphate in the coast region, help to secure a larger yield of roots.

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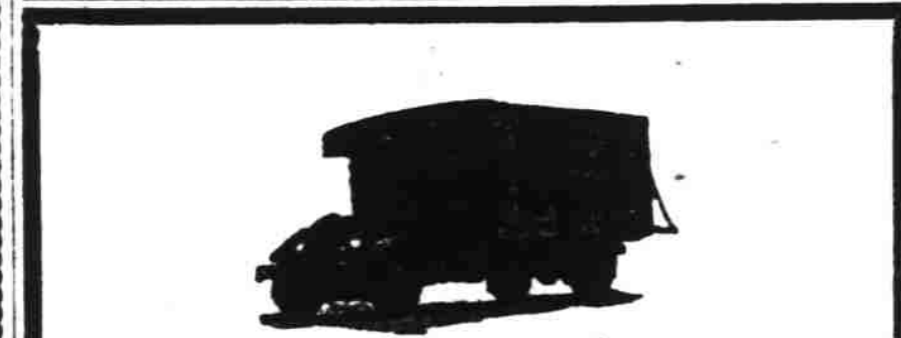
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