IRRIGATION ALONG **WILLAMETTE URGED** BY STATE ENGINEER

Lack of Summer Rain Makes It Highly Expedient, He Says, in Giving Glimpse at Future Valley Farming.

By John H. Lewis, State Engineer.

Salem, Or., June 3 .- Actual construction work is now in progress on the first irrigation project of any magnitude to be undertaken in the Willamette valley, at West Stayton, and the day is not far distant when each stream which enters this valley will be diverted for irrigation purposes.

That irrigation is necessary and will pay has been demonstrated beyond any possibility of doubt. And the fear that the soil will bake and refuse to yield readily under the new treatment is rapidly disappearing.

There is approximately 8,000,000 acres in the Willamette valley watershed, and \$,000,000 acres in the floor of the valley, including adjacent low foothills. may that 1,000,000 acres in this valley will be under irrigation in the next 30 years is not an extravagant statement. The project under construction contemplates the irrigation of 20,000 acres in Marion county, and there are five other projects in contemplation which will be undertaken if the first attempt is sucmaful. Knowing many of the men behind this first enterprise, and being acquainted with the lands, I have no fear as to a successful outcome

Much Water Is Available.

The Willamette valley is better supplied with water for irrigation purposes than any other valley in Oregon, and there are practically no natural obstacles to overcome in the diversion of this water. Where storage is not required, land favorably situated should be irrigated at a cost ranging from \$15 to \$25 per acre or with storage from \$5 to \$10 in addition.

It will not be necessary for the far mer to await the construction of a large protect to supply water by gravity flow, for it is believed that an abundance of water can be had by sinking a bored well to an underground water stratum, which has been tapped in places ranging from 100 to 150 feet below the surface. This water is said to be under sufficient pressure to bring it within 10 to 25 feet of the surface.

Drainage in some districts should go hand in hand with irrigation. The quick removal of excessive spring meisture would prevent waterlogging of the ground and increase by several weeks the length of the growing season. In other districts the drainage through the porous gravelly subsoil is so perfect that the lands are considered of but little value under present conditions. These lands, when irrigated, will become the most valuable.

Evolution in Valley Crops.

For many years grain growing has been the leading industry of the valley, all of which is in private ownership. The average farm is probably 320 acres in extent, the tendency being to increase. of the diminished yield due to constant cropping. Diversified farming has been urged of late as a remedy, but this is possibly only selected lands which are retentive of moisture, or those which receive moisture through subirrigation. It is not contended that irrigation is necessary for all crops, for deep rooted plants, such as orchards, are not affected by the long, dry summer. But for truck garden, alfalfa, clover, small fruits and vegetables, irrigation in reasonable quantities is absolutely necessary for the highest yield. Dairying is destined to become the

leading industry, because of the mild open winters. The most serious obstacle, however, is the long dry summer when it is necessary to carry the herd on dry feed, the same as during the winter months in the east. This condition, however, can easily be remedled through the artificial application of water. It has been conclusively proved that three full crops of clover, together with fail pasture, can be produced with irrigation, where only one crop, with pasture, is available under present conditions. Also four crops of alfalfa, with pasture, can likewise be produced.

Extreme Dryness of Summers.

Less than 7 per cent of the total recipitation in the Willamette valley falls during the summer months. During this same period in an irrigated country the equivalent of the entire annual precipitation is applied to the growing crops. It may be surprising to know that the summer precipitation at Denver, Colo., is 4.4 inches; at Cheyefina, Wyo., 5 inches, and at Santa Fe, N. M., 6.2 inches, as compared with 2.25 inches at Eugene. The summer conditions, therefore, are more arid in the Willamette valley than in these arid states. During the spring seed germinating period, which is the most defloient period for the irrigator, nature supplyies and distributes the moisture. At Milan, Italy, where irrigation has reached a high state of development and has been practiced for many years, the summer precipitation is 10.2 inches, as compared with 2.6 inches at Eugene. It is believed that these comparisons conclusively demonstrate a deficiency of summer precipitation.

demonstrated by the figures published to the application of 9.9 acre inches of in the Oregon Countryman by W. L. water at a total annual cost of \$13 per These figures are from careful experiments, the water being furnished by gasoline engine pumping from unwould amount to \$13.55 per acre, or

From four cuttings of irrigated alfalfa 17 tons of green feed were secured per acre, as compared with five tons from two cuttings on unirrigated land, or a gain of 12 tons per acre due land, or a gain of 12 tons per acre due to a potato crop, 140 bushels of potato irrigation. The increase of yield in the toes were secured as compared with this case was 240 per cent. Less than 80 bushels per acre from a similarly one acre foot of water (1.42 ac. in.) was situated unfrigated field. This gain of applied to produce this remarkable result at a total annual cost of \$10.83 was secured at a total annual cost for per acre. At an average price of \$4 per ton for such feed, the net profit due to irrigation would amount to \$37 per acre, or \$42 per cent on the money actually invested to secure such increased yield. If this water had been applied by gravity canal at a first cost of producing such results.

S4 bushels per acre, or 150 per cent, was secured at a total annual cost for irrigation of \$5.56. At 50 cents per bushel the net profit due to irrigation amounted to the net profit due to irrigation amounted to \$37 per cent of the net profit due to irrigation amounted to the net profit due to irrigation amounted to the net profit due to irrigation amounted to \$36.46, or 655 per cent per bushel the net profit due to irrigation amounted to \$40.83 per cent per bushel to irrigation amounted to \$40.83 per cent per bushel to irrigation amounted to \$40.83 per cent per bushel to irrigation amounted to \$40.83 per cent per bushel per acre, or \$50.84 per cent per acre, or \$50.84 applied to produce this remarkable re- 84 bushels per acre, or 150 per cent,

Governors Who Have Accepted Invitations to Attend Astoria Centennial



1-Joseph M. Carey, Wyoming; 2-Walter F. Frear, Hawaii; 8.-Oswald eWst, Oregon; 4-Edwin L. Norris, Montana; 5-William E. Glasscock, West Virginia; 6-Charles S. Deneen, Illinois; 7-R. S. Vessey, South Dakota; 8-William Hodges Mann, Virginia; 9-Villiam J. Mills, New Mexico; 10-Lee Cruce, Oklahoma; 11-Simeon E. Baldwin, Connecticut; 12-John K. Tener, Pennsylvania; 13-Cole L. Blease, South Carolina; 14-Augustus E. Willson, Kentucky; 15-A. O. Eberhart, Minnesota; 16-Ben W. Hooper, Tennessee; 17-Eugene N. Foss, Massachusetts; 18-Chase S. Osborn, Michigan; 19-Hoke Smith, Georgia; 20-John F. Shafroth, Colorado; 21-Chester H. Aldrich, Nebraska; 22-W. W. Kitchin, North Carolina; 23-Judson Harmon, Ohio; 24-Frederick W. Plaisted, Maine; 25-Francis C. McGovern, Wisconsin; 26-Aram J. Pothier, Rhode Island; 27-M. E. Hay, Washington; 28-W. R. Stubbs, Kansas; 29-Albert W. Gilchrist, Florida.

Powers of this institution (O. A. C.). acre. The clover was weighed when periments, the water being turning would amount to \$13.55 per nore, by gasoline engine pumping from underground sources, the lift being about 135 per cent of the annual cost. By gravity canal the net profit due to irrect the sound has increased to \$18.55 per acre, or 871 per cent of the annual

> Comparisons in Potatoes. By applying 5.35 acre inches of water

applied by gravity canal at a first cost plished in the Willamette valley of \$25 per acre, the actual profit in through irrigation, it is easy to figure this case would amount to \$5\$ per cent how the farmer could well afford to of the money invested, including 6 per borrow, even at 10 per cent interest, all cent on first cost, maintenance at \$1 the money to install an irrigation sysper acre, and distribution of water estem. The increase in land values would imated, \$2.50 per acre. more than offset such cost. As such being From three cuttings of irrigated clo-information accumulates and with a mill. ver 10.2 tons were secured, as compared few successful projects constructed, it with 4.3 tons from two cuttings of un- is easy to conceive such a boom in irirrigated clover, or a gain of 5.9 tons. rigated lands in the Willamette valley varieties of flesh eating plants.

That irrigation pays appears to be This is an increase of 133 per cent due that its population will be increased ten fold in the near future.

organizations of the state could take up no line of promotion which would yield greater returns in increased population than by promoting the idea of irrigation in this beautiful valley. It has no greater population per square mile than many dry farming communities of the arid region. Irrigation will therefore do as much for us as it

will in such communities. ters, long dry growing season, conven-ience of rail and water transportation and accessibility to the markets of the world, I predict a most rapid development for this valley through the adoption of this new method of agriculture

Pretty Good Cleanup. (Special Dispatch to The Journal.)

Medford, Or., June 8 .- During the month J. W. Opp owner of the Opp quartz mine on Jackson creek cleaned up 109 ounces of gold and sold it to the Jackson County bank, receiving \$2100 for it. The mine is enjoying a splendid run, a large number of men being at work in the mine and in the

There are known to be at least 100

en fold in the near future. Mint to Commercial Clubs. It seems to me that the commercial REPORT DECIDES ACTION ON LOCKS FIGHTS FOR WOMAN CHIEF

Major McIndoe Submits Favorable Opinion, Work May Begin at Once.

(Washington Bureau of The Journal.) Washington, D. C., June 3 .- Senator estimates of the cost of the proposed cessor may be attempted Monday night, Oregon City locks and that department believes that little time needs to elapse looks would aid navigation; on March steamers. 36, he was ordered to report his plans of the estimated cost, McIndoe has

completed his report and will submit its

HUNNEWELL'S MAYORESS

Hunnewell, Kan., June 3 .- Mrs. Ella Wilson, mayor of Hunewell, is preparing tonight for her fight before the city council Monday night over the proposed appointments of women as city marshal and city clerk. The coun-cil will meet for the first time in a month, one meeting having been passed because the situation had not cleared for the "lady mayor."

When Mrs. Wilson was elected may-or, she immediately announced her choice of Mrs. G. A. Osborn as marshal, and Mrs. W. E. Hilton as clerk Since then the council of five has been deadlocked against the mayoress Chamberlain was informed today that and one councilman, Lee Lewis, has rethe war department expected Major Mc- signed rather than continue the strug-Indoe's arrival soon. He will bring gie. The appointment of Lewis' suc-

Three thousand pieces of baggage an before the beginning of work. Major hour can be handled by an electrically McIndoe, February 23, was ordered to driven belt conveyor recently installed prepare a report on whether or not the on a New York pier to load passenger

CONGREGATIONAL

Pacific Coast Congress to Be Will Save Thousands to Ore-Held at First Congregational Church.

The fifth meeting of the Pacific Coast congress of Congregational churches will be held in the First Congregational church, Park and Madison streets, Saturday, June 10, and adjourn Thursday evening following. first meeting of this congress was held in this city June 24-27, 1888, as a result of the efforts of Rev. George H. Atkin-son, D. D. The object he had in mind was to increase the spirit of fellowship and co-operation along all lines of christian work. This meeting was attended by representative men-both ministers and laymen-from all parts of the Pacific Coast. This initial meetthe unanimous opinion of all in atendance that it should be repeated at vented the execution of plans that had at the time of sale. been tentatively discussed and submitted to a committee of which he was not held until May, 1900, in San Francisco. The third congres was held in Seattle in May, 1903, and the fourth in Los Angeles in May, 1906. The last have come in from Marion, Douglas, three meetings of the congress have Baker and other parts of the state. We been cumulative in their power and take these applications as an evidence atendance, and particularly helpful in of good faith on the part of the breed-unifying the spirit of christian work ers, and they will not of course, be preas represented by the adherents of the vented from using their stallions be-Pilgrim faith on this coast, whose motto-is "In essentials, unity; in nonessentials, charity; in all things liber-

The local committee of arrangements or the fifth congress is as follows: Rev. Luther R. Dyott, chairman; Rev. Herbert C. Crocker, secretary; Mrs. Frederick Eggert, Mrs. J. C. Luckey. George E. Paddack, Rev. J. J. Rev. E. S. Bollinger, Rev. Howard N. Smith, Rev. W. C. Kantner, Mr. William H. Lewiss, all of Portland; Rev. Edward Lincoln Smith, Seattle; President Charles S. Nash, of the Pa-cific Theological Seminary, Berkeley. Cal.; Rev. Wm. Horace Day, Los An-

This committee has been at work several months in perfecting necessary arrangements and preparing the pro-gram, which will bring to this city a number of the ablest men and women of the denomination, not only on this coast, but from the Atlantic side as well.

A moisture, gas and even explosion proof telephone for use in mines has over the Postal Telegraph company's

NEW STALLION LAW MEETING JUNE 10 LAUDED BY POTTER

gon Horsemen, Says O. A. C. Instructor.

Corvailis, Or., June 2.—Prediction is made by Professor E. L. Potter of the animal husbandry department Oregon Agricultural college, who is also secretary of the new state stallion IIcense board, that the operation of the new stallion law will save the horsemen of the state many thousands of dollars. "If we had had the law before it would have saved some \$10,000 or \$15,-000 to the horsemen of the state on the price of animals sold them as pure bred inder begus certificates," said Professor Potter yesterday, discussing the results to be expected." It is probable that ng was extremely helpful and it was \$1000 more was paid aplece for the dozen stallions with unsatisfactory ped-igrees for whom we have received restated intervals. The untimely death quests for licenses than if a true state-of Dr. Atkinson in February, 1889, pre-"We have thus far had applications from about 400 stallion owners, which is chairman hence a second congress was probably not much over half the number of stallions owned at present in

Oregon. The greater number have come from Wallows county, though many tween the filing of the application and the issuance of the license. The heavy correspondence regarding applications, and the work of classifying and filing hem, occupies us at present, but when hat is done we will begin issuing the

"Besides correcting the present presenter of some horsemen of selling and sing stallions having bogus pedigre the new law will do much to raise the standard of soundness, and thus improve the stock of the future. The future save ing to horsemen of Oregon on these two points will be more than the entire cost inspection and registration, to may nothing of the prevention of the use of stallions as 'sound' which have diseases or constitutional weaknesses liable affect the offspring."

Home Phone Enters Grants Pass,

(Special Disputch to The Journal 1) Grants Pass, Or., June 3.—The Home Telephone company will establish long ilstance offices in this city within a few days. It will have the right to pass

ELECTRO-PAINLESS DENTISTS

L. S. Ausplund, D. D. S., Mgr. 3031/2 Washington St., Cor. 5th, Upstairs



Vote 100 X Yes

The Greater South Portland Bridge **City Election June 5**

Location: Meade Street-Woodward Avenue (Ellsworth Street)

BECAUSE Portland's rapid growth in population in the last decade demands better facilities for traffic and transportation. The same number of bridges are in existence now, with a three-fold increase of popu-

BECAUSE The construction of the bridge would relieve the consession of the

would relieve the congestion of the

BECAUSE Rapid transit is essential to the growth of any city.

BECAUSE Travel from the Fifth, Sixth and Seventh wards would be facilitated and 60,000 inhabitants would be able to get to their business interests and work without the delays now encountered. BECAUSE Safety of life and property in the southwest and southeast sides de-

mand it; the concentration of the fire apparatus of the Fifth, Sixth and Seventh wards would make it possible.

BECAUSE Of the protection of the harber would not be endangered, it is the consensus of opinion that no more bridges can be built between the existing bridges and the now contemplated one. The proposed high bridge draw will seldom be opened. (Paid Adv.)