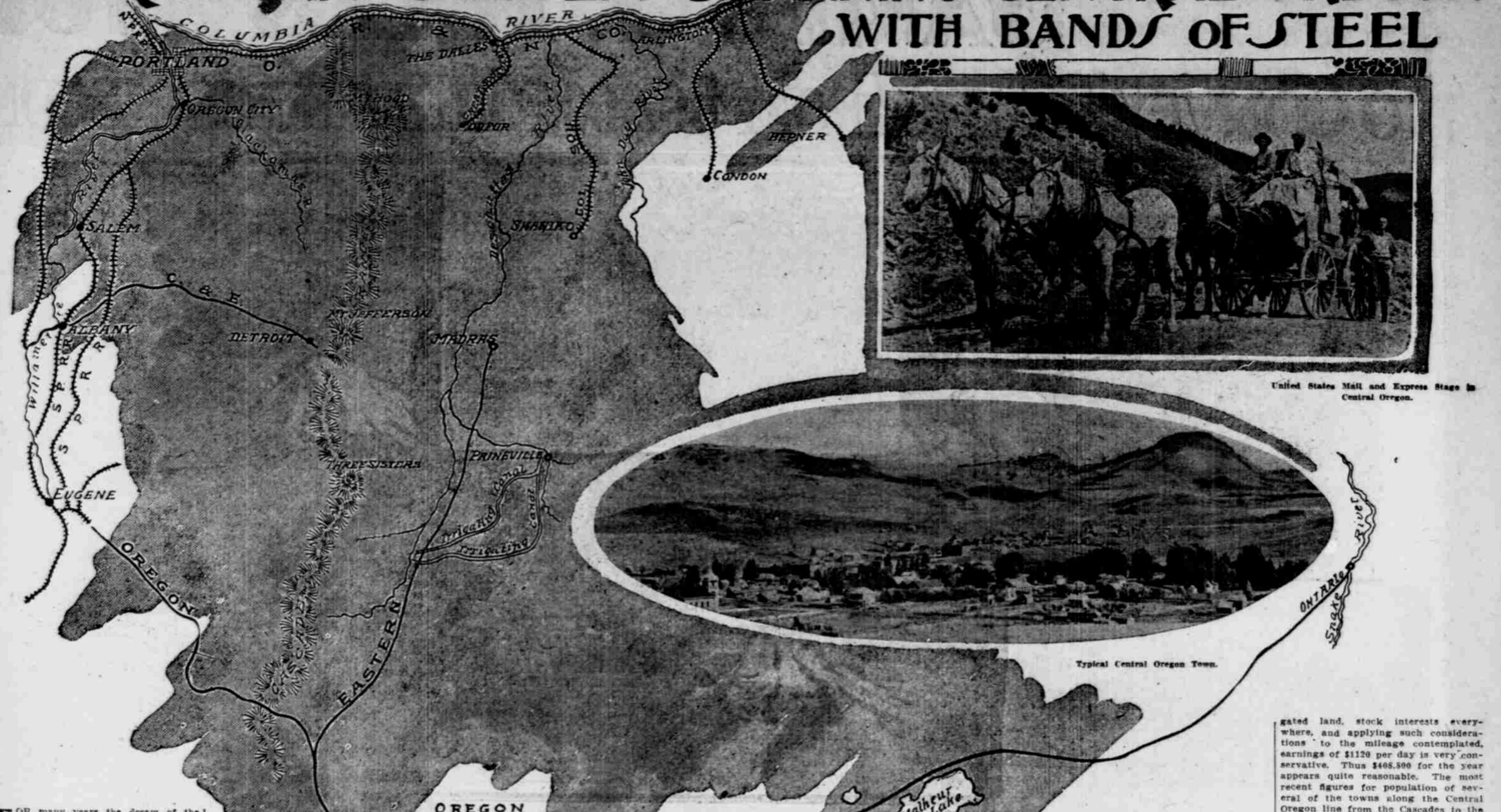


HARRIMAN SYSTEM SPANNING CENTRAL OREGON WITH BANDS OF STEEL



FOR many years the dream of the commercial bodies of Portland and of ambitious residents of the state has been the development of the vast territory of bountiful latent resources known as Eastern and Central Oregon. Extending from the eastern foothills of the Cascades for 200 miles to the Snake River and south almost from the Columbia River to the California line is an immense territory, in which the whistle of the railroad locomotive has not frightened the coyote from his haunts or disturbed the big-eyed cattle feeding on ten thousand hills—for without transportation facilities livestock has been about the only product of the section. Promises of railroad building have been made from time to time by representatives of the great Harriman system by corporations formed independently of large systems, and occasionally reconstructions have been made by surveying parties popularly supposed to represent various of the big systems whose rails have not yet been extended to the Pacific seaboard. Until 1905, however, nothing definite was done, even in beginning preliminary work for the building of the desired railroad to link with Portland and furnish communication with the rest of the country to the largest area of land in the United States, except in Alaska, not traversed by railroad lines. It is for 1905 to bring realization of a measure of the anticipations in operated roads.

The Klamath region is the objective center of the first railroad building across the Cascades to reach districts southward from Shaniko, which is the terminus of the Columbia Southern branch of the O. R. & N. and the most distant point from the Columbia River toward Central Oregon, having transportation by railroad, east of the Cascades. It is apparent, as has been previously anticipated, that the first railroad into the southern part of the Eastern Oregon region will come from the south, in the California Northeastern, building from Weed, on the Southern Pacific, northwest of Mount Shasta, to Klamath Falls, on which a large force of graders are at work and surveys have been recently completed to the projected terminus. This line will be connected during the year 1906, according to the best information obtainable, with the new Oregon Eastern branch of the Southern Pacific, to be built from Natron up the Willamette River to the summit of the Cascades, crossing the divide at an altitude of 6000 feet at a point near Crescent Lake, thence in a southeasterly direction passing out upon the great plain of Eastern Oregon south of Walker's Range.

Oregon Eastern is Authorized.

James P. O'Brien, vice-president and general manager of the Southern Pacific Oregon line and Oregon Railroad & Navigation Company, recently announced officially that the sum of \$4,100,000 had been set aside to build the first 112 miles of this line to the point indicated, which is just at the northern edge of what is designated on the maps as "Klamath Marshes."

The ascent along the Willamette River and crossing to the Eastern plateau can be made, it is stated, on gradients not exceeding 1 per cent, although the first line built will have a maximum of 2 per cent until such time as more expensive work that will require a longer period for accomplishment shall complete the perfected new line. The Oregon Eastern Company was formed a few months ago for the purpose of building a line from Natron, across the divide, thence to Ontario, making an east and west railroad across the center of the state, from which branches are proposed to be built north to the irrigated section along the upper Deschutes River, south to Klamath Falls, and into other irrigation districts and developing agricultural sections of the state. Having an altitude at the southern end

of 416 carloads, with an average haul of 150 miles. At the lowest figure earnings of \$2,400 are shown. But one-third rather than one-tenth is a much more reasonable estimate.

Sheep—The sales to points outside of Oregon for 1903 are reported at 500,000. Crook County alone reports 175,000 shown on the tax roll. Malheur and Harney not much, if any less.

Cattle—If this road carries one-tenth of the cattle exported from Oregon in 1903, it means 10,000 head of cattle

Figuring on the same basis as for cattle, another sum of \$2,400 may be added to the total earnings.

Wool—Considering the 20,000,000 pounds of Oregon's production last year it is a safe estimate that one-fourth will be carried by such a road as we are considering. The great sheds at Shaniko, the Crook County terminus of the Colum-

bia Southern, are crowded to repletion with wool every season. And this point is just about the center of the line under discussion. A wool-scouring plant, to handle 10,000,000 pounds, is building at Portland; that at Pendleton handled 2,000,000 pounds last season, and is to have its capacity doubled. So that traffic in both directions is assured. At less than current rates wool should add \$37,500 to the returns.

Merchandise, general products, mails and express—Taking into account the rapid settling-up of the entire district, development of industries, great and little, breaking and farming of irri-

ARABLE LAND MADE PRODUCTIVE THROUGH PRIVATE ENTERPRISE

What is Being Done by Individual Farmers and Ditch Companies in Reclamation Work.

THE following accounts of irrigation projects leased on private ownership of water supplies in the various counties interested have been brought up to date. The lists are believed to be complete, but minor projects may have escaped notice.

The first figures given are intended to apply to existing irrigation. Figures of possible future irrigation are, of course, in the nature of estimates, and are dependent on water which either flows now through irrigating channels, or is believed to be attainable by construction of dams and reservoirs.

Malheur County.

Irrigation in Malheur County covers a range of about 60 miles on the Malheur River, about 30 miles on the Willow Creek and Bully Creek tributary, and about 21 miles on the Owyhee ditch.

Acreage Under Malheur Canals.

COMPANY.	Established.	Acres Irrigated.	Additional Acres.
Owyhee Ditch Company	1886	8,000	12,000
Nevada Ditch Company	1882	4,000	2,000
Mill Ditch Company	1901	1,000	4,000
Sand Hollow Ditch	1882	1,000	1,000
Gillerman Ditch Company	1883	2,000	2,000
Farmers' Ditch Company	1883	2,000	2,000
Albergober Ditch Company	1883	500	500
Ricker Ditch	1883	1,500	2,500
McLaughlin Ditch	1883	1,800	2,000
Wilson Ditch	1884	800	1,200
Vina Ditch	1884	300	1,000
Lower Willow Creek ditches	1882	20,000	

Plan Big Extensions.

The only extensions planned or considered are the Government irrigation projects. These projects would reach a large amount of unirrigated land, as the plan is to use reservoirs entirely.

A flowing inch of water is estimated to the acre. Most of the ditches in operation are owned and operated by the farmers and the only charge in their operating expenses. The Owyhee, which is the only company ditch outside of the Nevada which is not owned by farmers, charged in 1905 \$2 per acre for irrigation.

With reservoirs the amount of land that could be reached by irrigation is as follows: 100,000 acres on the Malheur project of which it is estimated 25,000 acres would belong to the Willamette Valley & Cascade Mountain Wagonroad Company grant. This land is mostly under private ownership, but not irrigated. The project covers from 50 to 60 miles of territory, ranging from five to ten miles in width along the Malheur River. For this system a reservoir was planned by the Government. Twenty thousand acres would be covered by the Government project planned on Lower Willow Creek, which is exclusive of what is now operated under the present ditch system on that stream. This land is partially owned by the Eastern Oregon Land Company, the owners of The Dalles Mill-

itary Wagonroad Grant; they own less than one-third of the property. A special reservoir was planned by the Government for this project.

A reservoir is planned on Bully Creek to irrigate the bench land below that creek and it is estimated that 20,000 acres of land would be covered by that project. This land is mostly under private holding, and the land irrigated would all be land not now reached by any irrigation scheme. The Government also planned another reservoir to cover the land on the Lower Owyhee and Snake River territory, but the acreage of that part of the project is not known.

People Await Decision.

The people of Malheur County are not projecting any irrigation schemes at the present time, but they feel that if the Government cannot at the present time go ahead with the land covered by the Willamette Valley and Cascade Mountain Wagonroad Company's grant, it should be possible to go ahead and place in operation the land in the other grants. By these projects fully 60,000 acres could be irrigated, which would be exclusive of the Willamette Valley Road Company's grant. That is a cheap irrigation project, as, according to the Government officials' report it could be handled at about \$25 per acre, as against \$10 estimated under the larger project. Besides, this project can secure the land on the Government basis. The Dalles Military Grant is for sale, and is being sold as fast as purchasers can be found. It is understood the Government will not consider these lesser projects unless the whole field can be covered with one gigantic enterprise, but these are different projects, fed by different streams, under different road grants, subject to different conditions, and lying in different directions. Why these two smaller projects, as well as the Owyhee project cannot be taken up independent of the Malheur project is something that the people owning land and anxious to place the same under these projects do not understand.

Baker County.

Although Baker County has not a single irrigation project, either owned by individuals or corporations, of any magnitude, yet the water ditches, leads and canals form a veritable network over the four great farming and fruit-growing sections of the county. In these four sections it is estimated by the county officials that there are at least 60,000 acres of land under irrigation. This comprises practically the entire farming or tillable acreage in the county, as nowhere has full success been reached in raising either grain, fruits or alfalfa without irrigation.

The first and only irrigation project of any magnitude in Baker County is now under construction. E. T. Smith, the wheat king of Hood River, is at the head of a company which has now commenced the construction of a ditch which will water 5000 acres of land adjoining and immediately northeast of Baker City.

The ditch will be seven miles long and have a tunnel of several hundred feet under Reservoir Hill. The land watered will be devoted to fruit raising.

Water was first turned on land in Baker County as far back as 1876, when a few of the early settlers in the Powder Valley near Haines, watered their little garden plots. These ditches have been gradually extended until now they supply water to all the land west of the Powder River from Baker City to Rock Creek. The water is taken by the individual farmers from hundreds of little streams coming down from the mountains.

The Powder Valley farmers use about 1½ inches of water, continuous flow, to the acre, for irrigation. The same amount is sufficient in the Burnt River section, while in Eagle and Pine Valleys the amount required is about two inches.

There is but very little land left in the county which can be reached by existing systems, probably 20,000 acres. But there are several thousands of acres to be reached by new systems following the east side of the Powder River, in all about 40,000 acres.

There are four irrigation sections in Baker County. The Powder Valley is the largest. The Burnt River section is next and then Eagle and Pine Valleys. The Burnt River section offers the greatest opportunity to irrigationists, as there are thousands of acres which might be cultivated if extensive systems of ditches were put in. The Eagle Valley is a little garden spot, about five miles long by two miles wide, and is very rich in fruit. Pine Valley is about 20 miles long and three miles wide, all under irrigation.

When the new company putting in the big ditch demonstrates that water on the land will make a garden out of the great area east of the Powder River, there is no doubt but that other people will realize the fact and as much more land opened up to cultivation in Baker County as is now under cultivation.

Umatilla County.

Irrigation is the chief theme among the residents of Umatilla County since the approval by Secretary Hitchcock of the East Umatilla project, and much speculation is afoot as to the future of the light lands of the county. The importance of irrigation has never been more strongly realized than it is now, though during the past few years several private irrigation enterprises have been started and steps taken to reclaim a large area of the light land of the county.

The oldest irrigation ditch of any consequence is located directly below Echo, and is operated by the Allen Irrigation Company. The ditch has reclaimed approximately 1000 acres of sagebrush land, having been in operation the past 15 years. The land produces alfalfa almost exclusively and has been very profitable to the farmers interested in the vicinity.

The Courtney Irrigation Company

has reclaimed about 400 acres of land immediately below the Allen Irrigation Company's enterprise. Alfalfa, vegetables and fruit are the products raised on this land.

The Brownell ditch is located above Umatilla Station, and supplies water to 1000 acres of land which lies south of the Columbia River. The ditch has been in operation the past four years.

Various Private Enterprises.

The Hinkle and Rutter Creek ditch is located directly west of Echo and although started two years ago it is yet incomplete. So far, 14 miles of the ditch have been finished. The main canal has a carrying capacity of 10,000 acre inches. The ditch during the past season furnished water for 2500 acres.

The Maxwell Irrigation Company, which has Hermonston or Maxwell as its center, is operating a ditch which is seven miles in length. Over 1000 acres have been reclaimed by this ditch.

The Pioneer Irrigation Company at Foster owns a small ditch which supplies water to approximately 300 acres.

The largest private enterprise in the western part of Umatilla County is known as the Furnish ditch, owned by the Inland Irrigation Company. This ditch an originally planned would irrigate 10,000 acres of land, located north of Foster and east of Hermonston. The main canal when completed will be 20 miles long, 15 miles now being finished. With the exception of about 2000 acres, the land to be reclaimed by the company will not be included in the Government project. A force of over 100 men is now employed on the ditch, and efforts are being made to complete the work by the middle of March. The cost of construction will be approximately \$100,000.

In the northern part of the county, irrigation in a small way has been in vogue for many years. The Little Walla Walla River and its tributaries furnish the water supply to hundreds of small farmers and fruitgrowers there. It is estimated that 5000 acres of land is in this way reclaimed in the northern part of Umatilla County. The charge on an acre for water varies according to the locality of the land and the cost of construction of the irrigation canals. The minimum charge is \$10 and the maximum charge is \$40. One miner's inch under a six-inch pressure, or its equivalent in cubic feet per second, is the average supply of irrigation water to the acre.

The actual amount of land reclaimed by private enterprises in Umatilla County is estimated in round numbers at 12,000 acres. The largest enterprises will probably be extended during 1906, and the amount of land that can be supplied with irrigating water is estimated at about 15,000 acres.

The gravity system of irrigation is the principle chiefly employed in

gated land, stock interests everywhere, and applying such considerations to the mileage contemplated, earnings of \$1120 per day is very conservative. Thus \$408,800 for the year appears quite reasonable. The most recent figures for population of several of the towns along the Central Oregon line from the Cascades to the Snake River are as follows: Prineville, 1200; Burns, 1200; Ontario, 1600; Sumpter, 2000; Canyon City, 700; Bend, 500; Laidlaw, 300. And all are growing fast.

Passenger traffic—An estimate of only 50 a day to pass over the line is most moderate. At 2 cents a mile this totals to \$251,045 earnings for the year.

Taking no account of terminal charges, which it is impossible now to estimate in advance with any degree of accuracy, the items above given total \$2,322,145, as earnings that may be anticipated for the first year of operation for the Oregon Eastern, when completed with its branch lines.

United States Mail and Express Stage in Central Oregon.

Typical Central Oregon Town.

plants were operated last season and two more are being installed. Between 7000 and 10,000 acres are covered by irrigation. In 1884, irrigation was commenced in a small way. The first concerted action for systematic irrigation was in 1872, when the Oro Dell Canal Company was incorporated, with a capital stock of \$3000, and charting 3000 inches of water.

The main ditch was completed that year, and in the Fall water was turned on a large tract, on which the squirrels and crickets had destroyed the crops planted, and the settlers were compelled to leave. The experiment proved quite a success in the destruction of the pests, which had hibernated. The Gekeler ditch was soon afterward incorporated, with 2000 inches of water, and a number of other ditches were subsequently established in the vicinity of Union, North Powder, Ladd Creek, Close Creek, Willow Creek, Clark's and Indian Creeks.

The earlier ditches were utilized for gardens and for stock-water. The grain lands of Union County were not then irrigated, and are not to any extent at the present time. Irrigation is now extensively employed in the orchards. The Nisly ditch, north of La Grande, has 1400 inches of water, which is used almost entirely in fruit culture. The establishment of the sugar factory in 1898 gave an impetus to irrigation, and about all available water rights have been secured, and more than the usual quantity of water in the streams during the irrigating season will supply. Under a scientific system of reservoirs and retaining dams, to save the Spring flood until the irrigating season, there could be held water to cover the entire valley.

An incorporated company, known as the Grande Ronde Irrigating Company, has announced plans of securing 10,000 inches of water from the Minam River, through a course of 8000 feet canals 20 miles for a great portion of the Grande Ronde Valley that is not now under irrigation.

There has been no established price for water, as most of the stockholders in the ditches are their own consumers. Under a six-inch pressure one inch is allowed to the acre.

The water-supply will have to be increased before the irrigable area in this valley can be extended.

Profits in Apple Orchards.

From 20 to 30 apple trees are set to an acre of ground. Placed at a distance of 22 feet apart in rows, 90 trees may be set to each acre, but this is too close after the trees reach mature size and when set at that distance alternate trees are cut down when the orchard growth necessitates. During the years of the best bearing period Oregon apple orchards will yield fruit to the value of from \$150 to \$400 per acre, and even higher returns are occasionally reported.