

# The Dalles Times-Mountaineer.

ILLUSTRATED EDITION.

## WASCO COUNTY.

The county of Wasco is situated on the northern boundary of the state, nearly midway between the western and eastern lines. Commencing at a point where the Columbia river cuts through the main range of the Cascade mountain range, it extends eastward along the center of that river about 66 miles to the mouth of Deschutes river. Its eastern boundary follows up that river about 30 miles in a southerly direction; thence southeast and east to John Day river, which marks its eastern boundary to the southeast corner of township 8 south, range 19 east; thence due west along the dividing line between townships 8 and 9, to the summit of the Cascade mountains; thence northerly along the summit of said mountains to the place of beginning.

Could one be suspended in mid air above this broad expanse of country, he would view stretched before him a picture of exquisite beauty and peculiar diversification of scenery. On the west he would see the heavily timbered Cascades, with their snow-capped peaks reaching to the clouds; on the north the rolling hills and deep canyons, gradually losing themselves and terminating at the bank of the mighty Columbia; to the east a broad expanse of rolling hills and level valleys would present themselves to view, while to the south he would view an elevated plateau covered with a luxuriant growth of bunchgrass, and occasionally intersected by deep canyons and sharp defiles, marking the course of Deschutes and other water courses. The picture would be grand, and would inspire the one viewing it with awe.

### TIMBER.

The western portion of the country, from the summit of the Cascade range to their base, is covered with a heavy growth of yellow and white fir, hemlock, and pine. This timber is of fine quality, and will some day prove a source of vast wealth. At present it is utilized only to the extent of supplying local markets, perhaps, with one exception, a mill at Hood River which is engaged in supplying some lumber for shipment and about 7,000,000 feet of ties annually for the Oregon Railway & Navigation Company.

### GENERAL TOPOGRAPHY.

Owing to its situation on the eastern side of the Cascade range of mountains, the surface of the county has a general slope toward the east. The long ridges, covered with a heavy growth of timber, slope gradually down from the summit of the mountains, until they give place to the high, rolling prairies of Eastern Oregon. The northern portion of the county slopes toward the Columbia, which supplies its drainage, and is intersected by numerous creeks, along whose courses are fertile valleys susceptible of the highest state of cultivation, and capable of producing any crop adapted to this latitude. The southern and eastern portions of the county are drained by the Deschutes and John Day rivers, and the numerous streams tributary to them. The general topography of this portion of the county is high plateaus that slope toward the water courses and terminate in beautiful valleys along the streams. At least 75 per cent. of this section is susceptible of cultivation, and is a soil capable of producing abundant crops of cereals.

### SOIL AND CROPS.

The northwestern portion of the United States, and a large portion of British Columbia, was at one time subjected to a tremendous flow of lava, and in consequence the mountain ranges are composed of basalt, while the prairies of Eastern Oregon and Washington have the same material for a foundation. It is the greatest mass of basalt in the known globe. Following this, the country between the Rocky mountains and the Cascades, or their continuation, the Sierra Nevadas, was covered by a vast inland sea, and the soil of this region therefore is sedimentary, consisting largely of decomposed basalt. On this account it is exceedingly rich in plant food, and its wearing qualities are unexcelled. It will stand recropping to cereals longer than any other, and is in this respect practically inexhaustible. It yields generously, even with the careless method of cultivation that is pursued, and while not every season a full crop is harvested, such a thing as a total failure is unknown. The soil retains moisture well, and often good crops have been raised of seasons when not a drop of rain fell from May to harvest time.

Prof. G. W. Shaw, of the State Agricultural College, furnishes some data of the component parts of the soil of Oregon, which shows that of the eastern part of the state to be superior to that west of the Cascade range, and equal in material required to make it productive and durable, to the soil of any locality in the United States. Following is an extract from his writings:

"The soil of Oregon, like all soils of volcanic origin, is of unsurpassed fertility. The greater portion of it is derived from a basalt, which differs from most rocks in that it contains the fertilizing ingredients of a combination of rocks. This basalt is a complex mineral, very dark in color, exceedingly hard, and quite heavy. Mineralogically,

it is made up of a plagioclase, augite and olivine. It nearly always contains more or less magnetic iron ore and other minerals. Chemically, it contains silica, lime, potash, soda, magnesia, oxides of iron and manganese and alumina. The augite not frequently carries considerable phosphoric anhydride, occurring in a crystalline form as apatite.

"The chemical composition of the basalt explains the transformation which a little moisture effects in the apparently barren soil of the eastern portion of the state. In that section land seemingly worthless becomes very productive when supplied with the necessary water.

"Analysis of two typical soils of the state will serve to show the component physical parts. Soil 1 is from The Dalles, in Eastern Oregon, and represents a large extent of territory. Soil 2 is very common in the Willamette valley, in Western Oregon, taken from foothills south of Eugene:

Soil.	No. 1.	No. 2.
Coarse sand, .....	30.4	80.2
Sand, .....	24.0	2.5
Fine sand, .....	12.2	3.0
Silt or clay, .....	33.4	14.0

"The remainder of the mineral matter in the soil, not amounting to more than five pounds in 100 of soil, consists of chemical compound of lime, potash, soda, magnesia, iron, aluminum, manganese, chlorine, salicic acid, phosphoric acid, sulphuric acid, nitric acid, and carbonic acid and water, in varying proportions. It is the compound of these substances that constitutes the plant food in the soil. The acids are united with the bases to form the salts, which occur as chlorides and silicates of potassium and sodium, calcium, magnesia and ammonium, and probably salts of soda, potash and lime, and certain vegetable acids.

"There are only three of these—lime, phosphoric acid and potash—which, as a rule, require attention, so far as de-

"Iron—Professor Hilgard puts 1.5 to 4.0 as the ordinary percentage of ferric oxide in soils but little tinted; ordinary loams from 3.5 to 7.0; highly colored red lands, 7 to 12, and sometimes upwards of 20.

"Humus—This is the storehouse of nitrogen supply, and its determination serves as a measure of the nitrogen. In oak uplands of the cotton states, the range is usually between 0.70 per cent. and 0.80 per cent.; in the poorer sandy soils, from 0.40 per cent. to 0.50 per cent.; in black, calcareous soils, 1.02 to 2.80 per cent.

"The appearance of the soils in Eastern Oregon is altogether different from those of the western portion of the state. By far the larger part is of a gray, ashy appearance, and one coming from the darker soils of the eastern states would be unfavorably impressed. Experience, however, teaches that these soils are abundantly supplied with plant food, and analysis show that they are probably the most fertile soils of the state. The wonderful fertility of these soils is shown in their enormous yield of crops from year to year. The soil is exceedingly deep in most localities, and of such a texture as to be easily worked.

"The difference in composition between the soil of Eastern and Western Oregon is well shown by the following table, giving the averages of a considerable number of analyses:

	Willamette Valley.	Eastern Oregon.
Insoluble matter, .....	65.18	66.69
Soluble Silica, .....	5.02	13.12
Potash, .....	23	43
Soda, .....	.18	.22
Lime, .....	.83	1.22
Magnesia, .....	.79	.75
Manganese, .....	.08	.10
Iron, .....	16.45	10.69
Aluminum, .....	16.45	10.69
Sulphuric Acid, .....	.03	.04
Phosphoric Acid, .....	.21	.14
Water and Organic matter, .....	10.77	6.21
Total, .....	99.77	99.21
Humus, .....	1.63	1.44

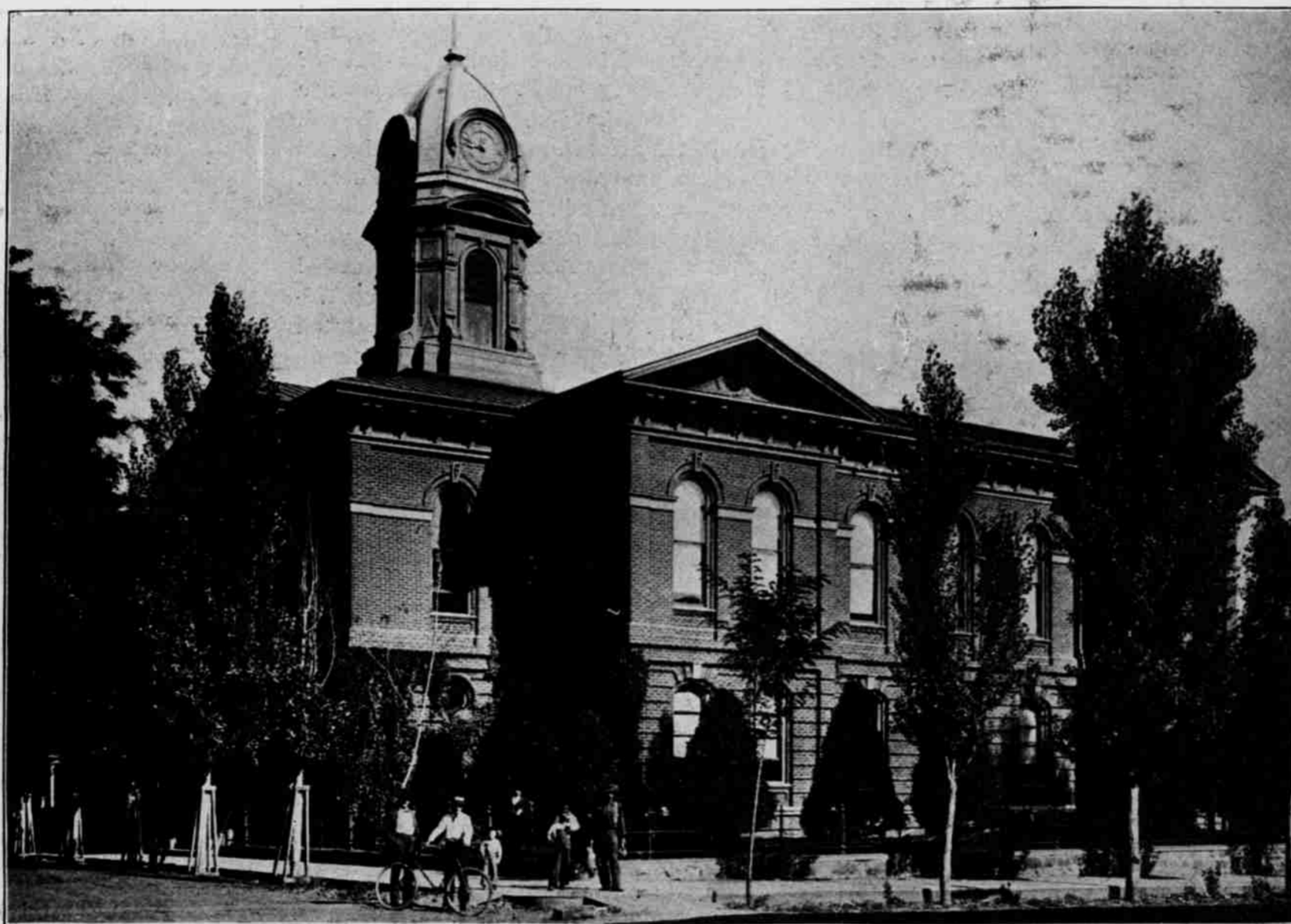
"An examination of this table, in the light of the principles laid down above, will be of interest. It will be noted that the soils of Eastern Oregon are very rich in potash, richer than those of the Willamette Valley, but poorer in phosphoric acid. The lime content of the soil east of the mountains is nearly three times that of the western area. In view of the exceptionally good supply of potash, augmented by an abundance of lime, it appears that these soils will not wear out first on the side of potash. The humus percentage seems to be a little lower than in the humid part of the state, as would be expected, but, recent investigations indicate that the humus of the arid regions carry nearly three times as much nitrogen as those of humid areas. If this be true of the soils in this state as of other localities of limited rainfall, and it doubtless is, there is actually more nitrogen present in the Eastern Oregon soils than in those of Western Oregon.

The soil of Eastern Oregon is pretty uniform, and what applies to the entire country applies to each section, hence Prof. Shaw's description of the soil of Eastern Oregon applies well to Wasco county.

Everything that can be grown in the temperate zone grows well here when proper rules of cultivation are observed. Wheat, oats, barley, rye, potatoes, and all kinds of vegetables yield abundant crops on the high lands without irrigation, while the creek bottoms, or valley lands, are especially adapted to the production of timothy, clover, and alfalfa. The staple crop of the country, however, is wheat, and the average yield, one year with another, is about 15 bushels per acre, though as high as 50 bushels an acre has been harvested in some localities. The climate and soil in all the northern part of the county are specially adapted to fruit culture, and raising such vegetables as cabbage, potatoes, melons, celery, eggplant, tomatoes and similar plants, and large quantities of these are raised for export, market for the same being found at Portland, Seattle, Tacoma, Spokane, and as far distant as Butte, Montana. The fruits that have proven the most profitable in Wasco county are apples, pears, peaches, plums, grapes and cherries, and the majority of the hill land sloping toward the north has been found specially adapted to horticulture, trees grown on such land being exceptionally healthy, and yielding abundant crops of the choicest fruit. Strawberry culture has assumed considerable proportions in some sections of the county, and has proven quite profitable. The fame of the "Oregon Seedling," which is the favorite berry, in eastern markets, is almost world wide, and it gained its reputation from the fine berries raised in Wasco county and put on the markets of New York, Chicago and other cities east of the Rocky mountains. The berries are two weeks earlier than those raised in any other part of the United States, therefore handsome profits are realized on the early shipments.

### THE STOCK INDUSTRY.

In the early settlement of Wasco county stock raising was the sole industry, and is still an important resource, nearly all that section south of Deschutes river being de-



WASCO COUNTY COURT HOUSE.

iciency of plant food is concerned, for the other mineral substances are furnished in abundance by natural agencies. The soluble portion only of the material being used by the plant for food. It is these substances that invite attention. What constitutes a sufficiency of these materials for successfully growing a crop, will differ with the nature of the crop and the physical condition of the soil. The minimum percentage for the growth of general crops is given by Professor Hilgard, than whom no one is more competent to judge, as follows:

"Lime—0.10 per cent. in the highest sandy soil; 0.25 per cent. in clay loams; 0.30 per cent. in heavy clay soil; and it may rise with advantage to 1 or 2 per cent. The indication is that 0.80 per cent. is a fair average for soil of the Willamette valley.

"Phosphoric acid—In sandy loams, 0.10 per cent., when accompanied by a good supply of lime. The maximum found in the best Mississippi table lands was 0.25 per cent.; in the best bottom land of the same region, 0.30 per cent. This ingredient is, according to the California experiment station report for 1888, more abundant in the soils of Oregon than in the soils of California. In the basaltic soils it may run as high as 0.30 per cent. or more.

"Potash—The percentage of heavy clay upland soil and clay loams ranges from about 0.8 to 0.5; lighter loams from 0.45 to 0.30; sandy loams below 0.30; and sandy loams of great depth may fall below 0.10, consistent with good productiveness and durability. Virgin soil with a less percentage than 0.6 is deficient, and virgin soil having 0.50 per cent. or over will not wear out first on that side of the store of mineral plant food; and much less will suffice in the presence of much lime and humus.

"Sulphuric acid—In the best soils, this ingredient is slight; 0.02 per cent. is adequate, but it frequently rises to 0.10 per cent.