

## Irrigation

The N.P., Yakima & Kittitas Irrigation Co.'s Engineers have all been called in from the field and were paid off on Thursday.

Work will be suspended until the 1st of March, when it will be prosecuted with vigor. The agreement between the irrigation company and the Knoewock Ditch Co. has been perfected and bonds have been executed by the former company to comply with the conditions of the contract.

Manager Walter Granger of Montana left Thursday for a 10 days absence and a number of engineers have gone to the Sound to spend the vacation--Yakima Herald, January 8, 1891.

## Irrigation

A meeting of the property owners within the boundaries of the Cowychee and Wide Hollow irrigation district was held on Tuesday at which a committee was appointed to secure the service of a competent engineer and complete the surveys for the ditch--Yakima Herald, February 5, 1891.

## Irrigation

The Iowa Flat and Wenas Ditch company are going to work at once to build five miles of ditch with a carrying capacity of 1000 cubic inches of water/

It is estimated that this additional supply of water will be sufficient to irrigate the major portion of the Wenas country--

Yakima Herald, April 30, 1891.

## Irrigation

Engineer Guy Sterling and party returned from the survey of the Cowychee & Wide Hollow Irrigation ditch line Wednesday and pronounces it feasible in every way.

He estimates that water can be taken from the Nile and cover 60,000 acres of arid land, suitable for agricultural purposes, for \$250,000. As this is only about \$4 per acre, the scheme is one that certainly should be carried out--Yakima Herald, April 23, 1891.



five times the amount of water of the lower canal or 165,000 cubic feet a minute. At Union gap, the waters will be separated, one branch being carried across the river by a pipe line at an elevation of 200 feet thence along the upper Sunnyside and finally through a gap in the Rattlesnakes to the Columbia slope, a distance of 115 miles.

The second branch will follow around the hills at Union gap and out upon the reservation lands and thence along the base of the hills to below Prosser, a distance of 76 miles.

In order to secure sufficient water to cover the vast bodies of land contemplated the engineers found it was necessary to secure mammoth storage reservoirs so as to board up the water at those seasons when not needed and when it would otherwise go to waste.

With this in view the company last year appropriated Lake Kitchelas, Katchees(eez) and Cle-Elum at the headwaters of the Yakima and Bumping or Tanum lake at the head of the Natcheez

Some improvements have already been made on these water sources but the work of preparing for storage will begun at once and large forces of men will be sent up to build dams.

The dams at the lakes of the Yakima will be twenty feet in height, while that of Bumping lake will be forty feet. Work on these dams will be continued until they are completed so that water will be there when needed.

Granger said that it was the intention of the company to give the people cheap water. They have unexcelled facilities for advertising in all of the desirable portions of the world and particular efforts would be made to colonize the lands with people of California, Colorado and other sections where the methods and means of irrigation are well known and very shortly agents will

## Irrigation

### Dams--California

Judge J.R. Lewis of Seattle spent several days in the city during the past week, returning home Wednesday.

The judge who has an orchard in California as well as here, says that the irrigation methods pursued in the former place will have to be adopted here; that is, that the storage system of water for such streams as the Ahtanum and Wenash, which fail in adequate supply during some seasons, will solve the problem of irrigation in these sections.

In some counties in California streams with no greater volume of water than the Ahtanum are made to water a much greater dependent country through storing the water in reservoirs during the season when it is not required for the crops--Yakima Herald, June 3, 1891.



The name of the company embraces Kittitas for the reason that it is contemplated eventually to embrace that valley in the system.

In Yakima county two main canals are laid out, known as the upper and lower canal, and it is the lower one on which all surveys have been completed and on which active construction work was commenced on Monday last.

This canal begins at a point about two miles below Union gap and will empty into the Yakima opposite the town of Prosser. Its dimensions are thirty feet wide on the bottom, 62 on top and will carry 33,000 cubic feet per minute. The length of the canal is 65 miles and it is the contract for the first twenty five miles that has just been let.

This contract embraces the heaviest work and for some distance will cost \$9,000 per mile.

As an evidence of the difficulties, there is one cut of 600 feet in length from which upwards of 25,000 cubic feet yards of dirt will have to be removed. The land directly covered by the canal aggregate 90,500 acres.

Engineer Rockwood estimates that this land, with a population no greater than on similarly favored lands in California, will support 50,000 people.

The intake of the upper line or main canal will be at the wagon road bridge across the Natcheez river and near the present head of Hubbard ditch. The land to be covered are the upper lands of the Sunnyside, 75,000 acres; the irrigable lands on the Columbia slope of the Rattlesnake mountains, 70,000 acres; the irrigable lands of the Yakima reservation and those lands on the west side of the Yakima river in the vicinity of Prosser, altogether about 330,550 acres. The canal from the Natcheez to Union Gap, a distance of 14 miles, will be an immense affair, carrying 33,000



water of the Natcheez river, an inexhaustible source, has been made.

Two hundred thousand feet of lumber cut from the mountains above has been used in the construction of flumes. A large part of the work along the hillsides forming the divide between the upper Natcheez and Wenas valleys was cut through solid rock at an immense cost, compensated, however, by the indestructibility of that portion of the ditch.

Two years have elapsed since the excavation and construction of the ditch was first begun, and even now the work is just nearing completion.

The originator and promoter of this great enterprise, the man whose brain conceived and whose energy carried to a successful issue this great work is John A. Stone of Pierce county, Washington.

Mr. Stone is perhaps the largest and certainly the most successful farmer in Pierce county. His six hundred and forty acre farm, on what is known as Connell's Prairie, one hundred acres of which is devoted to hop culture and every acre of which, although in a densely timbered country is under cultivation, shows evidence of the most careful businesslike management.

He is the owner of numerous other farms and he takes an especial pride in his landed possessions and in putting them in as high a degree of cultivation and perfection as money, energy and attention can put them.

He is enterprising and energetic, a man of unceasing activity and wonderful foresight.

When two years ago he first came to Yakima county his practical eye clearly foresaw its magnificent possibilities as an agricultural county. He saw a soil as rich as that of the valley of the Egyptian Nile and a climate whose every feature was an element of growth.

All that was needed was water to make the desert blossom.



## Irrigation

A meeting of land owners was held at Wide Hollow school house Monday afternoon to consider the Barlow-Burlingame ditch proposition.

Col. L.S. Howlett was called to the chair and ably presided over the gathering. A committee was chosen by the meeting consisting of Joseph Stephenson, Col. H.D. Cock and John L. Morrison to investigate the proposition and consult legal counsel as to the effect and force of the contracts submitted by Messrs Barlow and Burlingame for signatures.

The meeting then adjourned until Saturday at 2 p.m. at the council chambers.

The contract provides that the signers shall deed half of the arid land covered by the proposed ditch to the builder as a bonus and to pay \$1,50 per acre annual rental for all land put in cultivation under the ditch, the settlers to have one-half inch of water per acre. There seems to be some doubt among the settlers as to whether or not the amount of water stated was sufficient for the requirements while others maintained that it would make a marsh of the land in time.

Messrs Barlow and Burlingame set a force of men with teams to work on Monday and they are now engaged in making an appropriation of the waters of the Natchez. The proposed ditch will be 11 feet wide on the bottom, with a two feet slope, three feet deep, three feet fall to the mile and carry 5,000 inches of water--Takima Herald, July 14, 1892.

[Box 41 Yakima (co.) - Irrigation]

## Irrigation (govt. Report)

Yakima county is south of Kittitas and north of Klickitat these three extending from the summit of the Cascade mountains eastward to the Columbia.

The Yakima river and its principal tributary the Natcheez rise among the high peaks---other streams of the county, as for example Wenas creek and Ahtanum river, derive most of their water from spurs of the range....It is evident that water storage must be resorted to in order to save some of the surplus water of early spring, which usually comes in a flood of short duration, so short in fact that the irrigators have barely time to give their lands one thorough watering.

In many of the streams there are often two decided floods, the earlier resulting from the melting of the snows on the lower foothills following a warm wind or rain. Later in the spring the snows on the higher mountains begin to melt, sometimes keeping up the height of the water and at other times giving rise to a second well marked flood.

The creeks which do not receive this second supply shrink during June, so that by the first of July there is hardly enough water for gardens and stock.

Some of the lower grounds along the creeks receive sufficient moisture by seepage from the streams or from the ditches on the benches to raise crops without application of water to the surface but the higher lands must be irrigated, except perhaps in the case of those at an elevation of from 1,500 to 2,000 feet or more.

The topography of this country is shown by maps made by the northern transcontinental survey of 1883. The area surveyed includes the Kittitas valley and the southern portion of Kittitas county as well as



from these lakes and is highly productive, containing unusually but a small proportion of alkali.

The geological structure is in some respects similar to that of the ancient lake basins in the states further to the east, where artesian wells have been found.

East of the town of Yakima in the Woxee valley are two wells, 285 feet and 325 feet deep, respectively, having a combined flow of 1.35 second feet, the waters of which are of great value to household use, for stock and irrigation.

An unsuccessful well has been drilled near Pasco, Franklin county, to a depth of 527 feet, mainly in basalt.

The greater portion of the center of the county west of the Yakima river is occupied by the Indian reservation which includes a large part of Yakima prairie. Northeast of this prairie are rolling hills and plateaus, generally covered with nutritious bunch grass so valuable for stock raising.

The soil is rich and with an abundant rainfall good crops could be raised.

In some localities large areas of government land have been taken up and settlers have raised from 10 to 20 bushels of wheat to the acre. The majority however, have not been able to secure a crop, and many homesteads have been abandoned.

In the eastern part of the county, away from the river, it is exceedingly difficult to obtain water even for domestic purposes, and it is necessary to haul it long distances.

A deep well has been drilled at the expense of the state in section 36, township 8, north range 26 east. This reached a depth of about 500 feet, and cost \$3,400. Water was struck at a depth of 225 feet, but did not rise to a higher level.

[Box 41 Yakima (Co.) - Irrigation]

orchards and gardens. It is reported that a large amount of water is required by the land under this ditch, and that, on the average, one second foot is used for 50 acres.

The supply of water in the creek is not sufficient for all the demands upon it.

The Scott ditch takes water from the Natcheez river about 12 miles northwest of Yakima, running out on the south side of the stream.

It is about three miles long, nearly three feet wide and one foot deep and cost \$1,500. It is owned by private parties, and irrigates 60 acres of alfalfa, clover, hops, potatoes, sorghum and wheat.

Union ditch takes water from the Natcheez river at a point two miles northwest of North Yakima bringing it out upon the south side through the city.

The total length of the ditch is six miles; the average width seven feet; the depth one and a half feet, and the cost was \$2,000.

The ditch was first used in 1874.

It is now owned by an incorporated company of farmers. There is a large amount of water in the river, and the supply has been ample for all demands.

The Fowler ditch takes water from the Yakima near the town of North Yakima and runs on the east side of the river into Moxee valley.

The length is eight miles; the average width seven feet; the depth about one foot and the cost \$3,000.

No dam is used in the river and the fall of the stream is sufficient to bring water into the ditch. About 1,500 acres are



## Sunnyside

Paul Schulze and Attorney J.H. Mitchell were in Yakima Tuesday looking after the interests of the Northern Pacific company and the irrigation company in the contest over the Sunnyside lands now being heard in the land office.

The evidence went to show that 78,000 acres of the land were bought from the Northern Pacific by the Kleinschmidt-Granger-McIntyre combination at \$1.25 an acre and that the present irrigation company is the lineal descendent of the projectors of the scheme.

Testimony was introduced showing that the Northern Pacific executed its first deed to the lands in question in March, 1892 and that the railroad company owns 1,250 of the 5,000 shares of the Irrigation company--Yakima Herald, August 4, 1892.

Among the recent purchasers of Sunnyside lands, who will at once prepare to engage in the cultivation of fruits and hops, are Wm. R. Lisle of La Salle, Ill. 40 acres in sec. 5 twp. 10 range 21 and Morgan and Mitchell of Seattle, 60 acres in sec 29, twp. 10 range 23. Yakima Herald, December 1, 1892.

## Irrigation

Irrigation is emperor of this vast inland empire.

The great fruit of its application is a prime factor in the development of thousands of pretty homes on the rich acres of our picturesque valleys hitherto profitless in the absence of water with which to instill life and vigor into the gems of vegetation.

Much effort has been expended by way of simplifying and facilitating the use of the "generous means nature has so abundantly provided; but Messrs Evans and Smith have just completed a mechanical appliance for raising water for irrigating and domestic purposes that is unquestionably destined to supercede all other ordinary means employed for that purpose.

This device is now in operation on the place of Lawyer Fred Parker near the city and to those who have examined it at work it demonstrates beyond doubt that it has no peer as an invention for raising water from the streams and ditches for irrigation and other purposes.

The power derived is from a wheel anchored in the bottom of the stream, entirely submerged at low water mark, and is consequently wholly free from molestation by drift or other debris floating in the water.

It is protected from the winds and independent of the presence of high water.

The wheel is connected with a bucket elevator which is placed at the edge of the water on the bank of the stream and is as simple in its construction as is the power furnished by the movement of the current.

This plant is as practicable for use in large irrigating ditches and canals for watering lands on the upper side as well as lands on the lower side of the canal that cannot be reached by means of gravitation.



## *Irrigation - General*

### Irrigation

Major Powell, director of the U.S. geodetic survey and Hon Gardiner G Hubbard, president of the National Geographic Society who have been spending the past week on the Moxee, the guests of Mr. William Ker, have contributed much to the entertainment of citizens during their stay.

....Mr. Powell said in effect he had visited all of the main valleys of the arid region and none offered more opportunities for reclaiming land so easily and cheaply as this; that countries watered artificially were calculated to sustain a much denser population than the humid regions and that he knew of no section of the country capable of supporting a greater population than this in an equal area.

He said that the storage system was one which must be largely relied upon and that in this respect the Yakima valley was only second to the valley of the Snake river which was first.

As to the science of irrigation he said it was not new; that while two fifths of the United States was an arid region and three fifths humid; that three fifths of the agricultural crops of the world were grown by irrigation and that irrigation was the birthplace of civilization; that when the implements of the husbandman were made of stone or were otherwise crude; that it was easier to cultivate the soil of an arid region which was not obstructed by tree growth and rank vegetation and that when the natural resources of forest and stream were abandoned to seek provender from the soil, then and there was the beginning of civilization and that while the humid lands of this country were first brought under cultivation, he expected to see the densest population and the seat of the highest civilization in the arid regions west of the Rockies.

With Yakima he was greatly impressed, for in climate it was like

## Irrigation

Notice to the Public: I desire to inform those residing along the Union ditch, so-called Mill ditch, that the North Yakima Milling company does not operate and is not responsible for any damage or overflow by said ditch further east from the mill than the corner of C street and Natcheez avenue.

From said point both ditches are owned and maintained by the Union Ditch company and the responsibility for any damage caused by said ditches rests with that company.

North Yakima Milling company, Alex Miller, President. Yakima Herald, December 22, 1892.



## Sunnyside

E.F. Benson reports that for the first half of March his sales of Sunnyside lands amounted to over \$15,000 and he is only one of five agents handling the irrigation company's property.

Mr. Benson estimates that all of the company's desirable lands will be sold before the close of the present year. The purchasers are making substantial improvements and a great section of country that was nothing more than a barren desert a year ago now teems with life and is dotted with a good class of farm houses--Yakima Herald, March 19, 1893.

Four desert claims in the Sunnyside district were jumped this week by citizens of North Yakima. The original claimants believe they will have no trouble in holding the land--Yakima Herald, March 30, 1893.

## Sunnyside canal

The negotiations that have been pending for some time for floating the Northern Pacific and Yakima Irrigation company have been completed and the \$350,000 worth of bonds have been floated.

The same syndicate of English capitalists who have taken these bonds have been negotiating for the bonds of the Prosser Falls and Priest Rapids Canal company in which Allen C. Mason is heavily interested and the latter has said that if one deal went through the other would also.

Paul Schulze, president of the NPYI C said:

"We have floated \$350,000 worth of our \$7,000,000 five and a half per cent sinking fund gold bonds. The mortgage to secure payment of the bonds was executed here today and has been sent to the California Safe Deposit and Trust company, trustee, to be executed there also.

The Blatchley Engraving company is now engraving the bonds and they will be ready in about a week. They will be forwarded to London and payment will be made upon receipt there.

The balance of the bonds can only be sold gradually as the land sales are made. The money from London will arrive here about the first of August."

The bonds of the Prosser Falls and Priest Rapids Canal company aggregate ~~\$600,000~~ \$600,000-Tacoma News, June, 1893



## Irrigation

F.H. Newell of the United States geological survey corps is engaged in ascertaining the quantity of water in the various streams of any consequence of this and Kittitas counties, with a view to obtaining a definite knowledge of their capacity for furnishing water, for irrigation purposes.

Data of this nature will prove a great aid to the farmers of these counties and Mr. Newell has kindly professed to furnish us with information from time to time for the benefit of those interested.

At the bridge below the old town he found 2,960 second feet of water, fully enough he says to irrigate 300,000 second acres of land.

Mr. Newell says he has investigated the water supply of all irrigable regions of the county and finds none so well supplied with water and with facilities for storage as Yakima.

A communication from Mr. Newell, giving accurate and interesting figures on the subject of measurement and capacity of our streams will be published next week--Yakima Herald, August 17, 1893.

The following report is the result of the researches of the U.S. Geological survey corps under Mr. F.H. Newell of the Yakima and Natcheez rivers:

Measurements of the quantity of water in the Yakima river made by Mr. Newell topographical engineer of the U.S. geological survey, and water gauges have been located at important points.

One of these is under the western end of the county bridge at the narrows below the old town of Yakima. The gauge is inclined, following the slope of the bank, but is marked to vertical feet and tenths of a foot. It can be easily read from the bridge, the inclined position serving to magnify the spaces between the mark.

There is an old

482078

the quantity on August 16, 1893, being 211 second feet.

The lake at the time stood at 2.6 feet, having fallen from 4.9 feet the height during high water of this spring-Yakima Herald, August 24, 1893.