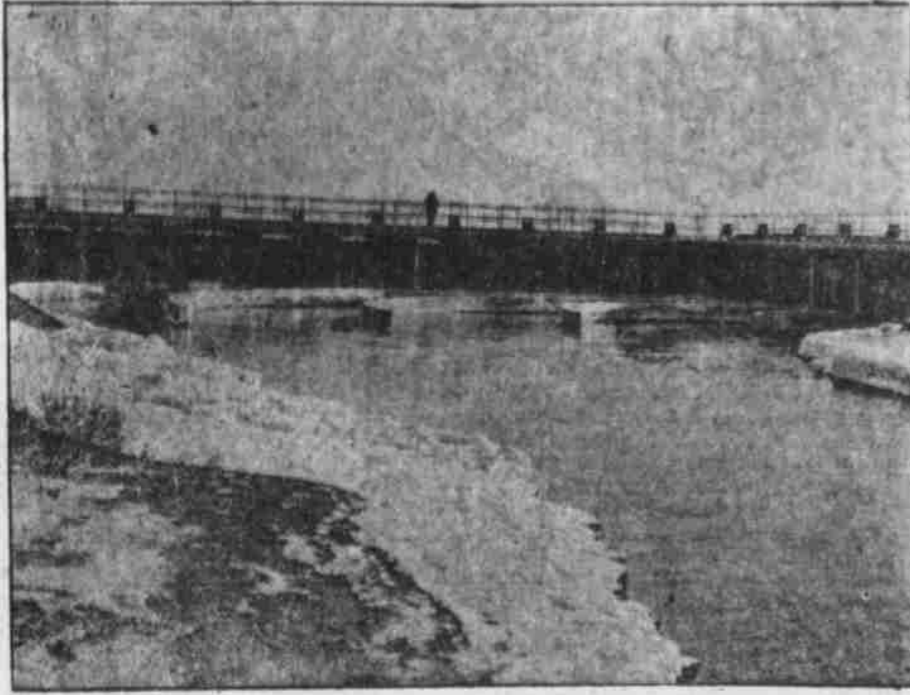
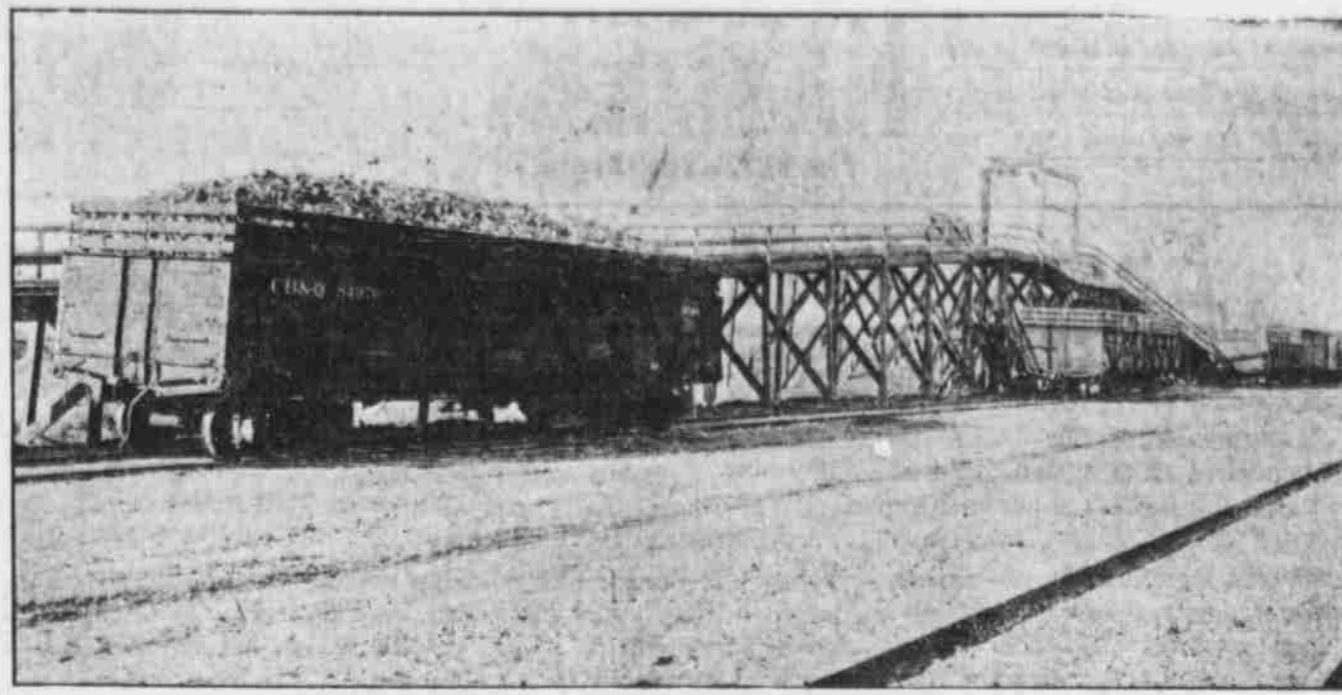


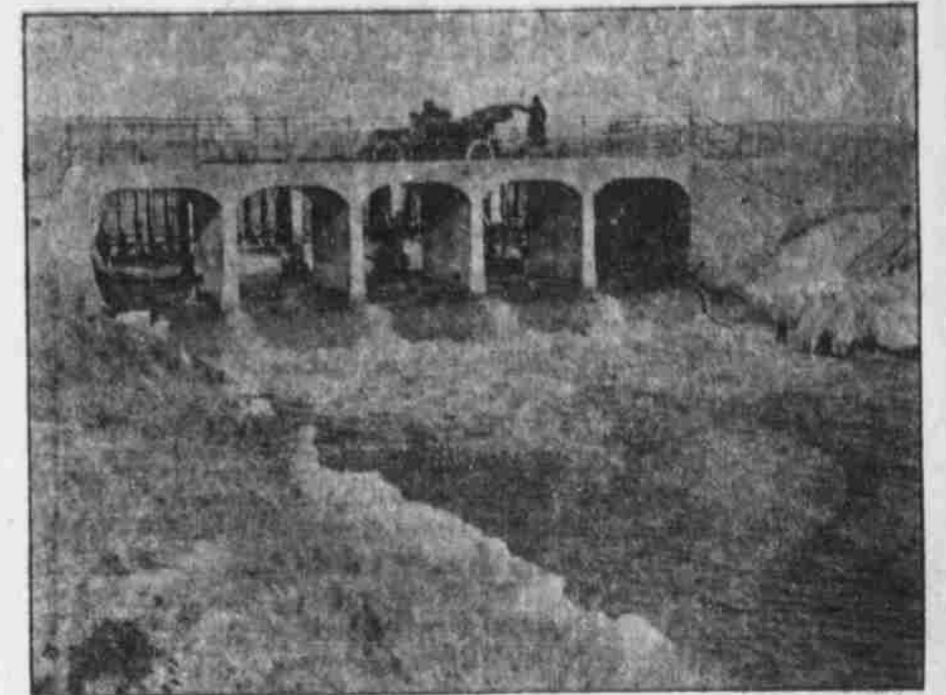
Scotts Bluff County Sees Man's Triumph Over Nature by Irrigation



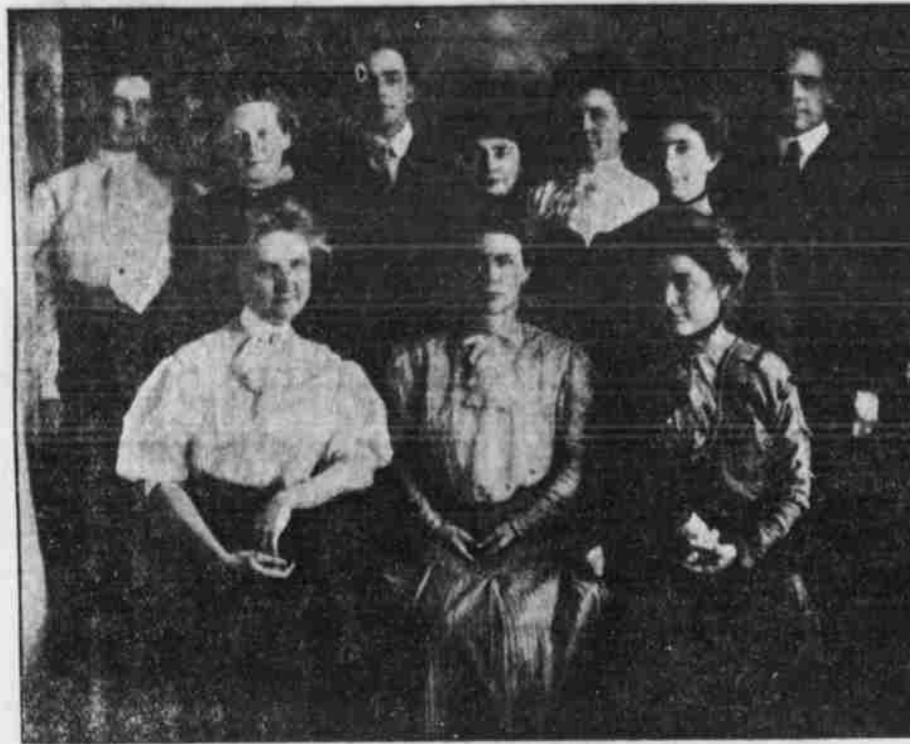
LOOKING DOWN TRI-STATE CANAL TO CHECK GATES AND WATERWAY—DECEMBER 6, 1908.



SUGAR BEET LOADING STATION, SCOTT'S BLUFF.



WASTE WAY OF TRI-STATE CANAL, SHOWING WATER FLOWING BACK TO THE RIVER—DECEMBER 6, 1908.



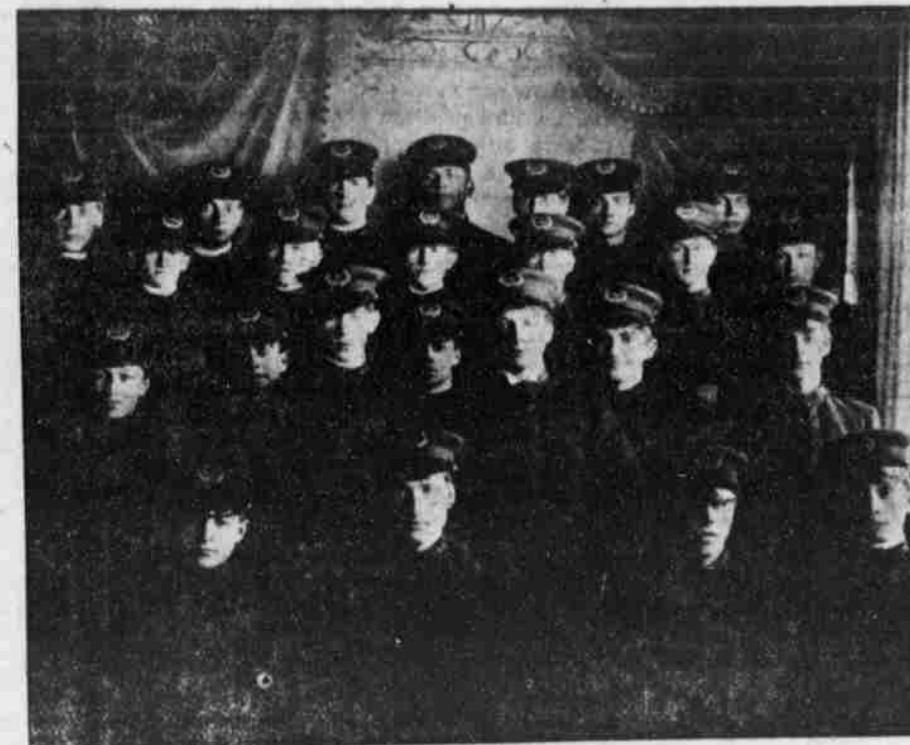
TEACHERS OF SCOTT'S BLUFF SCHOOLS.



POTATOES GROWN NEAR SCOTT'S BLUFF, NEB.



METHODIST CHURCH, SCOTT'S BLUFF.



HIGH SCHOOL CADETS, SCOTT'S BLUFF.

few miles of this canal is ninety feet wide on the bottom. The balance will average forty-six feet in width, with a depth of ten feet. At various points where the highway crosses the canal, steel bridges have been erected. Five are already completed and seven are now building, at a cost of \$2,100 each. The main course of this canal, which heads on the north bank of the North Platte river just east of the Wyoming line, is southeasterly along the northern part of what is known as the second bench land, laying about half way between the government interstate canal on the north and the Platte river on the south.

Besides the government canal and the Tri-state canal, which pass entirely through Scott's Bluff county, there are nine other smaller irrigation ditches that are from seven to fifty miles in length. The Mitchell ditch irrigates 13,000 acres; Gering, 15,000 acres; Minatare, 9,000 acres; Bayard, 4,000 acres; Wintercreek, 7,500 acres; Enterprise, 9,000 acres; Central, 4,000 acres; Ramsborn, 3,000 acres; Castlerock and Steamboat, 5,000 acres. These many irrigation systems have been constructed in a narrow strip of land through Scott's Bluff county about eighteen miles wide at the center of the county.

One matter of more than ordinary impor-

tance is the splendid character of the soil for the sugar beet industry. Beet sugar manufacturing has grown to the utmost importance in certain irrigation districts of the western country. The sugar beet thrives to perfection in the North Platte valley. Here is found the rich soil so necessary for its growth and the abundant sunshine that forms the sugar. Absolute control of the supply of moisture insures a certain crop and the highest percentage of sugar. The beet growers of Scott's Bluff county will grow 5,000 acres of sugar beets the present season. The seed for planting this immense crop came from Germany and consisted of 522 sacks of 110 pounds each. The farmers of this county grew 1,000 acres of sugar beets in 1908.

All kinds of grasses yield an excellent crop in the irrigated section of this county, but one of the most prolific in yield is alfalfa. This plant is at home and it is best in the North Platte valley. Here it reaches its highest possible perfection, and the sunshine and lack of rain makes its curing perfect, and when properly cared for it remains as green as when cut, retaining all of its nutritious qualities. The annual yield of alfalfa runs from five to seven times per acre. Three hundred to 500 pounds of seed

have been gathered from an acre of alfalfa in this valley, and this seed is worth 15 cents a pound. It must not be forgotten that Scott's Bluff county leads all other counties in the state in the matter of irrigation. This makes it possible and quite probable that in the near future it will lead all other counties in the state in the alfalfa and dairy industry. At the present time the farmers of this county have 6,700 acres seeded to alfalfa, and this accounts in part for these farmers shipping to market last year 9,500 head of cattle, 1,000 fat hogs, 1,000 horses and over 4,000 fat sheep. Besides this there was 8,800 tons of alfalfa shipped out of the county. The splendid crop of alfalfa is having a decided tendency to develop the dairy industry. Last year the farmers of this county sold and shipped out 7,900 pounds of butter and 21,000 gallons of cream. Although this is a new county and bordering on the frontier, the farmers already have about 1,000 cows on their farms. The Scott's Bluff county exhibit at the Nebraska State fair in 1907 was awarded seventeen prize medals, a possible twenty-four. It is clear that the agricultural resources of the county are measured by the water supply. The power of the soil is beyond question. People are beginning to

In the Field of Electrical Experiment

Better Results on Wireless.

IRELESS telegraphy has not reached its full development, by no means," said Mr. Marconi, in an interview in the New York Tribune, "but it is making steady progress. I am able to send faster than formerly and to send and receive simultaneously. Besides, I now have an improved way of generating other waves, which gives better satisfaction. It produces 'undamped' or only slightly 'damped' waves, instead of the 'damped' waves employed at one time.

"At present, I am planning to do nothing with the Marconi station at Cape Cod. It could be devoted to trans-Atlantic service if more powerful generators were used. Just now my attention is concentrated on the stations at Glace Bay, Nova Scotia, and Clifden, Ireland. Regular service in both directions between those points has been maintained for many months, but in order to avoid interruption from a temporary breakdown of the plant there is being duplicated. To install the additional apparatus at Glace Bay will take two or three months. About 100 horsepower is required for trans-Atlantic communication. The chief reason for erecting a new European station is that it was hard to secure extra land at one in Cornwall (Poldhu). At Clifden there are no such troubles. Not far from 2,000 yards are being transmitted daily for patrons, besides the messages incidental to the experiments still in progress. Most of the imperfections in our service have been due to difficulties with the connecting land wires on both sides of the Atlantic. We do not try to send more than twenty words a minute at present. Some of the machines employed for rapid transmission over land wires could be used in wireless telegraphy, but I have not yet tried any of them.

"The greatest distance to which messages are sent regularly from land stations is 2,000 miles, but this is occasionally doubled. At one time the conditions are more favorable than at another. The difference is like that of vision when the air contains dust or mist and when it is clear. From the majority of the ships having the best equipment in the merchant marine and the British navy it is possible to send with certainty 200 miles, but now and then their messages are distinctly heard ten miles as far away. The statement that an operator at Los Angeles picked up one from Admiral Sperry's flagship when it was 2,000 miles off is not incredible, but such a range is very unusual.

"After our long-distance stations on the Atlantic are fully equipped I shall give a little thought to a trans-Pacific service. It seems probable that the Pacific can be spanned from shore to shore without any relays in midocean. Already there are three Marconi stations in Hawaii, designed for communication between islands in the group. Plans for other stations in Australia are under consideration, but their execution depends somewhat on the grant of a subsidy."

Concerning the use of other waves to guide unmanned torpedo boats, Mr. Mar-

coni spoke cautiously. He distinguishes between the large amount of power needed to propel such a craft and the very small amount needed to steer it. If its screws are driven by suitable means, already provided on the boat, its movements can be controlled by wireless methods at a distance. The power needed to pull a lever on a locomotive, for instance, is a very different thing from that which hauls a train. To transmit power enough to control valves or rudders is feasible enough, but if any system of supplying power enough to drive a ship exists Mr. Marconi has not heard of it.

Tallest of Wireless Towers.

The most impressive thing about the new wireless outfit contracted for by the Navy department, says the Boston Transcript, is that it will necessitate the use of a tower 650 feet high, which will be by all odds the highest structure in the world, except the Eiffel tower. But the new tower will be solid. It is to be of concrete and will make the Washington monument look squatly by comparison. It will scarcely seem a tower at all, being a fifty feet at the base and only fifty feet at the top. It will be more like an exaggerated chimney or a concrete mast, but it will be hollow and will carry the aerial wires in the shape of an immense umbrella frame at the top. The top of the tower, it is believed, will not be much of a resort for sightseers, even should they be allowed the privilege. There will be no elevator, and anyone who wants to ascend for the view will have to walk. The Navy department wanted to use the Washington monument for a wireless tower on account of its height. Permission to turn the great shaft to utilitarian purposes could not be obtained. The taller, thinner tower is the alternative.

It will convey some impression of the height of the tower to compare it with the monument. That is 555 feet high, fifty-five feet at the base and twenty-five feet at the top. The cement tower, which will be reinforced with concrete, will be only fifty feet at the base and eight feet on top, though it will be 650 feet high. The aerial frame will spread from the top like umbrella ribs 200 feet long and insulated at the tips and connected with guy wires that will run to the ground and keep them extended. The wires from the aerial frame will run inside the tower from the top to the ground. The current will be 100 horsepower, about thirty times as strong as anything now in use.

There is not anything too much known about the possibilities of long-distance transmission in wireless stations. It is thought that with the outfit proposed wireless messages can be sent 1,500 miles. The department now gets occasional wireless messages over 2,000 miles and some times nearly 3,000 miles away. These are regarded as freak messages; but experts consider that if of this sort of sending is possible by a low-powered station a bigger one will be able to accomplish the same thing positively.

Several ships of the navy will be equipped under the same contract with out-

fits capable of sending up to 1,000 miles. It is impossible to install an effective sending station on shipboard as will be the great station at Washington, but there are few places where a ship with a 1,000-mile sending radius cannot pick up some shore station so as to get a message relayed to Washington.

The total cost of the station when completed and in working order, exclusive of the tower, will be about \$100,000, and it is expected to be in operation in six months time. Its success is positively guaranteed by the contractors, and confidently expected by Admiral Cowles and Lieutenant Commander Cleland Davis, the officer in charge of the installation and under whose direction plans and details have been developed.

X-Ray and Cancer.

Prof. Cecil Rowntree of the Middlesex Hospital Cancer Research laboratories, in the course of a lecture before the British Royal College of Surgeons on the X-ray and cancer, stated that there had been in England eleven cases of cancer arising in X-ray workers. Prof. Rowntree said that it was probable that this form of growth was not so malignant a nature as other kinds, and that, therefore, the very extensive operations which would be an appropriate procedure in cases of ordinary cancer were unnecessary. The investigation of the influence of the X-ray on animals was carried out, and it was found that, in addition to some ordinary changes, such as are met with on the hands of X-ray workers, others of a more striking nature had manifested themselves. For instance, it was found that when the upper surface of a rat's tail was exposed to the ray, the cells of the exposed surface underwent changes of a destructive nature, whereas the ray, attenuated by passing through the thickness of the tail, stimulated the cells on the opposite side to increased growth. Other evidence was brought forward which goes to show X-rays have, in fact, two separate and distinct actions upon animals and vegetable cells. In relatively large doses they have destructive paralyzing action upon the cells' activity, whereas in small and off-repeated doses they bring about exactly the opposite condition and stimulate the tissues to abnormal activity and increased growth. Prof. Rowntree is of the opinion that these observations may have an important practical application in connection with the treatment of cancer.

Reflections of a Bachelor.

First, a girl makes a man think he is in love with her, then she makes him think she is pretty. The trouble with education for women is they know too much for man's superiority without it. It takes some people so long to make up their minds, that when they finally do they have forgotten what it was about. You can never convince a woman that the reason her husband doesn't want her is overdraw her account isn't just because it's stingy.—New York Press.

gaining to be realized by the people of western Nebraska. In reality, it is in some ways the most important material problem of their immediate future. The real home builder who undertook to subdue Scott's Bluff county to agriculture, encountered many difficulties. For many years this region has been utilized as a public common. Cattle and sheep had had free access to it and overgrazed it. These early cattle men were the pioneers of the plains county. They farmed but little, and from the nature of their business, and the methods of operation, wanted no neighbors. Within the last fifteen years there has been an awakening to the opportunity which lies in the plains area, and settlers have moved westward with such remarkable rapidity that the day of the broad free range, with the old careless and often inhuman methods of stock raising, is about over. The day of small flocks and herds, winter fed and fattened, on home grown forage, is at hand. The present pioneers, who are conquering the wilderness of Scott's Bluff county, were impelled by the instinct of home building more than by the love of adventure or the lure of gold to wander forth to this new country and make homes for themselves and their children. Water is now their most valuable fundamental resource, but it must be taken care of and used with intelligence and forethought or it will lose most of its value.

The rapid narrowing of the limits of our unoccupied public domain in Nebraska, and the tremendous increase in values, all over the state, renders it more difficult yearly for the man of small means to get a foothold on the soil. So great is the land hunger over the entire west that already 350,000 families, composing some of the best blood of the nation, have taken up new homes under a foreign flag. Our greatness as a state must have its foundation in the homes of the man whose feet are firmly planted upon his own land. There is no state stability in a citizenship born and reared on rented farms. Patriotism, loyalty and civic pride are not bred and fostered in this way. An assurance that the great mass of our people shall reside in homes of their own, is an assurance that our future will be one of stability and progress. From the very inception of this republic our legislators have recognized that it was a national duty to render the acquirement of homes as easy as possible. This recognition was shown in the homestead law which opened the settlement of the Mississippi valley.

The first extensive irrigation enterprise in the North Platte valley was what was known as the farmers' canal, which was started in 1867. Practically, it may be said that the Farmers' canal is first on the North Platte river, not only in point of time, but in the amount of water it is entitled to divert from the river and the area of land which it can cover. From the Platte river there extends three benches of rich soil, all of which are irrigable, and

farther back from the river are the broken undulating stretches which are excellent grazing land. The altitude of the valley here runs from 3,600 to 4,200 feet. Here the air is pure, crisp and invigorating. The extremes of heat and cold are tempered by the lack of moisture. The mean precipitation is about fifteen inches yearly. The heat of the day is never oppressive, and the summer nights are always cool and delightful. When the geographical location of the valley is considered, there is no more favorable section in the entire western country than this valley.

It is quite plain that the cattle industry, which was one of the first, has come to stay. Much land in western Nebraska can never be brought under the plow, and will probably serve as a stock range for many years to come. This industry is bound to increase with the coming years, yet the individual holdings of free range inevitably will diminish. This will tend to invite the small range with the valley ranch, under one management, a system which, if it becomes general, has many advantages. It will enhance better blood in the stock on this range and the drought period will lose very much of its terror, while a great proportion of the animals grown will be sold as a finished product.

It appears that nature has designed this particular section of the North Platte valley to be irrigated. A watershed of nearly 15,000 square miles, bounded by the high mountain ranges of northern Colorado on the south and the continental divide and the mountains of eastern Wyoming on the west and north, affords an unlimited amount of water for irrigation. The North Platte river has a sufficient amount of water when the Pathfinder dam is in full operation to cover more than 1,000,000 acres of land, with the depth of one foot of water. The government reclamation service has in progress of construction eleven projects involving an expenditure of over \$100,000,000 and the reclaiming of over 600,000 acres. The government irrigating canal passing through Scott's Bluff county is furnishing water to 37,000 acres. This canal is many miles in length, and is regarded as one of the prominent irrigating systems of the United States. The Pathfinder dam, erected in a narrow canyon of the Platte, is 215 feet high and will create an enormous reservoir with a storage capacity of 1,025,000 acres a foot deep. The government has already constructed a canal nearly sixty-five miles long through eastern Wyoming and western Nebraska. Owing to the rough condition along the canal route several large concrete aqueducts were constructed and for several miles the canal is lined with cement.

The Tri-state canal, as it is now known, embodying both the Farmers' and Columbian canals, is one of the most extensive private irrigation enterprises in the United States and equals in size and importance some of the largest government undertakings. The canal will irrigate about 90,000 acres. About sixty miles of the main canal have been completed, covering upwards of 20,000 acres of the choicest land. The first

standpoint, ranks among the very best, if not the very best in western Nebraska, its possibilities for development and its future out-look, is a step in advance of any western county yet visited. The county has a valuation of over \$5,000,000, and has a population of over 7,000. It has fifty miles of railroad, and five substantial, thrifty rural routes in the country, and more than 80 per cent of the farmers own the farms on which they reside. The political and municipal machinery of the county seems to be running smooth and the schools are in a flourishing condition for a new county. There are thirty-eight school districts, with fifty-eight teachers. The average salary paid the teachers is \$53.22. Miss Agnes Lackey has held the position of county superintendent of schools for more than six years, and under her able management much progress has been made. Scott's Bluff has a school population of 350, pre- sided over by ten teachers. The industrial condition of the county is excellent. The air of prosperity is seen not only among the business men of the different cities, but the farmer is enjoying his full share. The good crops and excellent prices are largely responsible for this.

Mr. B. H. Mills, one of the counties' substantial farmers, sold last fall, \$1,450.50 worth of potatoes from ten acres of ground. As an illustration of the productivity of this new county, we wish to state that between September 11, 1908, and January 29, 1909, there was shipped from Scott's Bluff City, 79 cartloads of potatoes, 107 cartloads of live stock, 280 cartloads of hay, 104 cartloads of live stock and forty-three cartloads of grain. During the same time there was shipped from Mitchell, eighty-five cars of potatoes, forty-five cars of beets, 133 cars of hay, fifteen cars of grain, and 137 cars of live stock. From the little town of Minatare, with a population of about 400, there was shipped during this time 42 cartloads of hay, potatoes, beets and grain, besides eighty-seven cars of live stock. Besides this, there was shipped from two side tracks more than a 100 cartloads of grain and live stock.

Scott's Bluff is one of the thrifty, prosperous towns of the upper Platte valley. It has a population of about 1,500, and is a model, normal town; it has no saloons, in fact, the entire county is without a saloon, but this little city has the faculty of winning the good will of strangers and extending the glad hand to all visitors or settlers. The churches are in a good condition. The two ladies' clubs of the city have done and are doing much for the betterment and building up of the city. Scott's Bluff has a business men's association, known as the Commercial club, that is not only decidedly active, but progressive. This club has collected and is using \$10,000 in the extension and betterment of the public highway. The city is putting in a new system of electric lighting, costing \$25,000, and a system of water works that will be ready in the near future. Not the least of this city's influence for good is the well organized chautauqua, which has been a success from the start.

Scott's Bluff county from an industrial