

Imperial Dress

AND FARMER.

"Water is King—Here is its Kingdom."

VOL. II.

IMPERIAL, CAL., SATURDAY, MARCH 7, 1903.

No. 47

Prospect for Irrigation Along the Colorado River

A Project Requiring Vast Expenditure Which Would Bring Equally Great Returns in Land Reclaimed.

By Frederick Haynes Newell, Chief Engineer, Reclamation Survey.

The following notes are from observations made during a four weeks' trip in California and Arizona, in the course of which I floated 400 miles down the Colorado River in a small rowboat. The purpose of this trip was to investigate the possibilities of that section of the southwestern desert country in the line of irrigation, and to get a preliminary idea of the feasibility of conserving the great floods of water which at certain seasons of the year pass down the Colorado River to the Gulf of California.

In some respects this projected enterprise resembles the great reclamation works which have been constructed by the English government in Egypt, whereby the flood waters of the Nile are impounded and distributed over millions of acres of fertile delta land. To carry out to its full possibilities this great project on the Colorado River would require an expenditure of from \$15,000,000 to \$20,000,000, which would give in return an irrigated area of over 1,000,000 acres of extremely fertile land.

I first went to the Needles, in California, and there secured a wagon outfit and drove up the Colorado River as far as possible, to what is known as Bulls Head, one of the highest sites for a proposed reservoir on the river; then came back through the agricultural lands near Camp Mohave, where the Indian school is situated and where large areas can be brought under irrigation by a high-line canal from the Colorado River. Then I went back to the Needles, and, in company with J. B. Lippincott, consulting engineer; Arthur P. Davis, principal engineer; E. T. Perkins, district engineer, and E. C. Barnard, topographer, started on a trip down the river.

We were five days in an open boat, camping along the banks of the stream at night. We then struck a little river steamer, the St. Vallier, which was on the point of starting from Ehrenberg to Yuma. All navigation on the river is suspended at dark, and in fact is also often suspended in the daytime while the crew is engaged in getting the boat off the sand bars. There is a decided current, which runs about three miles an hour and carries the boat from one side to the other of the channel, the water spreading out in many places over a very wide area. It is easy traveling along these channels until one reaches a place where the river widens out; then the water becomes so shallow that the boats frequently get stuck. The little stern-wheel steamers which occasionally use this river, when they get stuck on a sand bar, turn around, and the revolution of the wheel digs out the sand so that the boat can drift on down.

We went down the river about 400 miles in all. The country back from the river is arid and desolate, and has very scanty vegetation except for an occasional thorn bush. It is generally considered to be a highly mineralized country, and there are an almost infinite number of prospect holes and a few mines but very little, if any, ore is now being shipped. This is probably largely due to the difficulties of transportation.

We saw very few people along the

river. An occasional Indian was met poling his boat against the stream, carrying goods to the mining camps or to the Indian school. These are the Mohave Indians. They all use punts or flat-bottom boats. There seemed to be no white settlers along the river except a few prospectors. We found no mosquitoes at this time of year, and the nights were frosty. The country is semi-tropical, having very hot days and cold nights, especially on the lower levels.

The Colorado River is the largest river of the arid region. It can be compared in size to the Nile of Egypt and is similar in many characteristics. It differs in the flow, for this is not as regular or as well sustained, because of the fact that there are no lakes at the head of the river to insure permanency of such flow. It is navigable with difficulty, however, for light boats on the lower part of the river. A large part of its course is through canyons where the water cannot be diverted upon the surrounding land. The lower river passes through an open country, varied by a few narrow valleys. The fall of rain there is very slight, and canals taken out fill quickly with silt. Silt is the great obstacle to the development of the irrigation feature, and ditches will have to be given a heavy grade.

Reservoirs are necessary to store and control the silt. Small works are impossible and large ones will be very costly. The land to be reclaimed is probably as good as any in the United States. The problem of getting water upon it is not easy of solution, for there are many alternative plans. The land will produce large crops in frequent succession, one following the other as fast as it can be planted, grown and harvested.

For the first 100 miles below the Needles the river is mostly in canyons or narrow valleys and ranges from 200 to 800 feet in width. It is generally very shallow. The valleys upon it grow wider as you go down, and there are bordering bench lands covered with gravel, but having a fairly good soil and one that will be excellent when treated with the muddy waters of the river.

To place water upon these bench lands will require numerous dams from 50 to 100 feet in height and from 800 to 1000 feet in length. As Yuma is approached, the valleys widen out into the deserts of Arizona and Southern California, but along this part of the river there are possibly millions of acres which may in time be brought under irrigation. Above and in the vicinity of Yuma dams have been made to divert the water by small ditches, but owing to the large amount of sediment carried by the water, these ditches have been quickly filled and rendered useless.

One of the chief difficulties in utilizing the Colorado River is on account of the great amount of fine earth carried in suspension by the water. When the course of the water is checked this material is dropped, filling the reservoirs and canals. It is necessary, therefore, to give the canals a slope so great that the water will run rapidly out at all times and not stagnate at any point until it is put upon the fields. There the

fine earth serves to enrich the ground and perpetuates the fertility of the soil.

Below Yuma, on the west side, water is taken out in a large ditch on the Mexican side of the international boundary and carried into natural channels, which terminate in what is known as the Alamo or Salton River. The Salton River flows into the Salton Sink, which lies partly in the United States and partly in Mexico. Water is now running from the Colorado River into the Salton Sink, but it is necessary to keep at work constantly with dredges on this to keep open the channel from the river to the Alamo. An appropriation of 10,000 cubic feet per second of water has been made from the Colorado River, or about twice the amount of the low-water flow. Only a small part of this water is now actually used, but if the lands are completely developed it will be necessary to provide water storage on the headwaters of the Upper Colorado to furnish the necessary water for the development of the lands in the United States.

The government is now giving some consideration to this project, but of course, our observations are merely for the purpose of coming to a thorough understanding of the possibilities of all the arid region of the United States in the irrigation field. This Colorado River project is one of vast expenditure, with equally vast returns in the land which would be available for settlement; with a number of others of similar character it will serve as a sort of reserve outlet for increasing population in the years to come. My trip as a whole was most interesting and valuable, and in course of time we will be able to give some definite ideas as to what the expenditure in the building of reservoirs and other works of water conservation would accomplish in that section.

Questions and Answers.

In a recent issue of the Press there was published an article under the heading of "Imperial Catechism," in which we unintentionally did an injustice to the dealers in agricultural machinery at Imperial. A correspondent writing to the Imperial Land Company for information as to shipping in horses and agricultural machinery was advised to bring such horses and implements, rather than to sell them at a sacrifice, as the prices were high in the valley. This was intended to convey the idea to the settler that prices were high as compared to the prices that could be obtained if such articles were sold and then a supply purchased again after arriving at their California destination.

The facts are that agricultural implements can be purchased as cheaply in Imperial as they can be purchased elsewhere and then shipped in. A person at a distance cannot afford to ship in their goods, probably, unless it be in carload lots. People will buy where they can buy the cheapest as a rule, and yet other things being equal, it is always good policy for settlers in a new country

to buy their goods at home and thus help to build up their own section, for the business men of a given locality are always at work building up the ranches, and they are therefore entitled to consideration.

The agricultural implement men of Imperial have faced the music in a manly way and have done good service in shipping in goods for the benefit of the ranchers when it would have been almost impossible for the ranchers to have gone away from home and made their purchases and then shipped the goods in on their own account. The Press recognizes this condition of affairs and would not intentionally say a word that would divert a dollar from what is justly due them.

How Flagstuffs Grow.

The people of Riverside have just erected a flagstaff made from a eucalyptus tree that is one-hundred feet in height.

It only takes a few years to grow such a tree here in Southern California.

In 1875 the writer planted a little blue gum tree four inches in height in the then embryonic town of Pomona. In 1881, six years later, that tree measured ninety feet in height and fifty-four inches in circumference, one foot from the ground.

Here in Southern California we can grow flagstuffs while you wait, figuratively speaking.

Statistics published by the National Bureau of Education show that the high schools in every state of the union are graduating more girls than boys—some of them twice or three times as many. The whole number of boys in attendance at public high schools in the United States in 1898 was 189,187; of girls, 206,413. Because of the growing tendency to take boys out of school early in order to put them into business, girls are getting more schooling than boys.—Santa Ana Herald.

It is only a few years since, it was not considered necessary to give the girls an extended education. Now the graduates of the high schools are mostly girls, and the future mothers of our country are to be more highly educated than heretofore. Hence we may look for more rapid intellectual strides on the part of the people of our country than ever before.

The man who plants an apple or peach tree for those who come after him, or who adds to the beauty and usefulness of the pasture by making two spears of grass grow where there was one, will not have been an entire failure.—Tennessee Farmer.

This being the case—and it is true, what is to be said of the man or men who convert a desert into a garden?

The cheapest thing in the world is the good will of the little ones, and nothing pays better dividends than an investment of this kind.