

The farm is situated one mile south of the Town of Fallon, Nevada, within the irrigation project, and consists of 160 acres. Mr. F. B. Headley is farm superintendent, and he very courteously showed me around the farm and over a considerable area of the irrigation project.

The reclamation of lands containing alkali salts in excess of the amount tolerated by lucerne and other cultivated crops is the problem to which the greatest amount of attention has been given since the establishment of the farm in 1906.

A large part of the soil of the experiment farm is non-productive; some of it is of such a nature that no crops have been produced therefrom although farmed for seven years; other portions are as fertile as could be desired, and heavy yields of lucerne and truck (garden vegetables) crops are obtained. The low productivity of these soils is owing to the presence of an excessive amount of one or more of the alkali salts.

The experiments already conducted go to show that to reclaim permanently lands of this alkali character it will be necessary to cut off the seepage or lower the water-table by means of drainage to such a depth that there can be no further rise of water from beneath. When this is done the salts, being once removed, will not again return to the upper soil, and the reclamation is permanent so long as the water-table remains at a sufficient depth beneath the surface.

One of the important lines of work at the experiment farm is the testing of trees and shrubs to determine which kinds are best suited to the conditions of the project. It must be borne in mind that the lands of the project are naturally almost barren of vegetation, so that it is important that suitable plants for shade and ornamental purposes be found and that their growth be encouraged. The following trees and shrubs have been found to be well adapted to the project: Carolina poplar, Norway poplar, Chinese balsam poplar, black-locust, Russian golden willow, Russian oleastis, American elm, Karagatch elm, and a tall-growing willow from China; and these are distributed in large numbers each spring to residents of the project.

Eleven varieties of lucerne grown from seed sown three years ago are grown in a duplicate planting of rows 30 in. apart. The results of a test covering three years have been quite uniformly favourable to the Grimm, which is one of the hardiest varieties known.

Eighteen varieties of tomatoes were tested in duplicate lots in 1914. The highest-yielding variety was Perfection.

Sweet or Bokhara clover has been grown for a number of years at the experiment farm, usually on soils where lucerne does not grow well. The experience gained is that it can be grown successfully on soil containing more black alkali than is tolerated by lucerne. It has been found that if the crop is cut before blossoming live-stock soon learn to eat it. It has been observed that some horses and cattle eat it as readily as they do lucerne, while it is apparently disliked by others.

Mr. Headley does not recommend that this crop be grown on land that will grow lucerne successfully. Sweet-clover has been considered an undesirable crop to grow in some parts, but farmers on the Truckee-Carson Project have come to think well of it.

Co-operative work with farmers: The soil of the experiment farm not yet being considered in suitable condition for experiment crop work, it has been found advisable to conduct some of the more urgent crop tests on adjacent older farms where the soil is better adapted for the work. These consisted of variety tests of the following: Fodder-corn or maize, sorghum, wheat, oats, maize, potatoes, and onions. All were tested in duplicate lots.

The success of this great irrigation scheme is beyond question when it is considered that this project is recovering from desert conditions 206,000 acres of what was once called the Forty-mile Desert. Converting that desert, which formerly only produced sage-brush and other allied desert scrub, into luxuriant fields and beautiful gardens on which now grow extensive areas of cereals, forage, and other crops giving high yields and of excellent quality, vegetables, fruits, and flowers, where dairying is now one of the established industries, and cattle are bred and fattened, and where sugar-beet is one of the staple products, produced in such quantities as to be capable of supplying a modern beet-sugar factory equipped for handling 500 tons of beet per day, one cannot but realize what possibilities there are in New Zealand, with its unlimited water-supplies, were such a scheme adopted and carried out on many parts where there are extensive areas suitable for irrigation now producing little or nothing.

Grand Junction, Colorado.

The area of the State of Colorado is 66,526,720 acres. The area of the arable land is, approximately, 22,400,000 acres; the area of lands which can be placed under irrigation is 6,000,000 acres; the area of land irrigated and in actual cultivation is 3,000,000 acres. The average annual cost of water per acre to the farmer is 3s. The population of the State of Colorado at the last census (1910) was 799,024.

Diversified farming is carried on in the State. Fruit and vegetable production is amongst the principal industries, and the ability to irrigate the lands enables wheat, oats, and barley to be grown successfully and profitably. Lucerne is the staple hay crop in all parts of Colorado, growing in localities as high as 8,000 ft. in altitude. Four to six tons to the acre is the average yield of lucerne hay.

Colorado is the largest beet-sugar-producing State in the Union, so that a very extensive area of sugar-beet is annually grown to keep some twenty or more sugar-factories in operation. Potatoes are extensively grown. Poultry-raising and egg-production also are amongst the industries to which considerable attention is given.

Colorado claims to have produced the first irrigated fruit in the United States. It also claims that in open competitions and in market returns for the last quarter of a century Colorado remains the banner fruit State of the Union. About one-fourth of the annual value of the