

pled Oklahoma, and planted the seeds of liberty, intelligence, sobriety and good citizenship in that once sparsely inhabited country.

The Expense of the Undertaking.

CHAPTER VIII.

In order to answer the question put at the outset of this inquiry; that is, whether the value of the Everglades when drained is worth the expense of the operation, it is necessary to consider the proposition from two or three different standpoints; that of the citizen, the state and the nation.

Let us consider first the question from the standpoint of the citizen.

At present, except a few small drainage canals, now under construction near Miami and Fort Lauderdale, the work is being conducted exclusively by the State of Florida, without aid from the Government other than the services of a competent corps of engineers in determining levels, etc.

The cost of the reclamation of these lands has been reckoned at one dollar per acre. This seems to be too low an estimate, in view of the fact that the average operating expenses for the removal of the excavated material is reported to be seven cents per cubic yard. Bearing in mind that the canals are sixty feet wide and ten feet deep below the soil surface, and that the two dredges engaged on this work are capable of an average progression forward of the dimensions stated of one hundred and fifty feet per day for 25 days in each month, (the dredge Okeechobee has a record of over 6,000 feet during one month) the daily excavation would be 3,333 cubic yards. In one month the progress would be 3,750 feet forward of the dimensions stated, and the material excavated would be 83,333 cubic yards.

The canals now projected and underway are the West canal from Ft. Lauderdale and the West canal from Miami, the North canal from Fort Lauderdale toward Lake Okeechobee, and the North canal from the Caloosahatchie river toward the same lake. Only the two former will be considered in this inquiry.

These two canals it is reported are to be run West for twenty miles each and then to be joined by a North and South canal of approxi-

mately twenty-five miles in length; the dredges working from the ends of the West canals toward each other. These canals will form the North, West and South barriers to the encroachments of the Everglade waters from those directions, and the elevated rim of the Everglades to the East will be fastland in this direction.

It will therefore require some sixty-five miles of canals to enclose the tract in question which will approximate 320,000 acres in area.

At the monthly rate of forward progression for each dredge of 3,750 feet, or 71-100 of a mile, of the dimensions stated, it would require about three years and nine months to finish the work; and the amount of the excavated material would be 91.5×83.333 equals 7,624,969 cubic yards.

If the area reclaimed by these operations be 320,000 acres, and the expense be assumed to be one dollar an acre, the excavation and removal of seven million, six hundred and twenty-four thousand, nine hundred sixty-nine cubic yards would cost only four and two-tenth cents per yard,—an estimated cost which is probably much too low, notwithstanding the maximum capacity of each of these dredges is much greater than the figures used in his calculation.

Let us assume, however, that the actual cost is seven cents per yard as reported,—about seventy per cent more than the theoretical cost. This would mean that the excavation and removal of seven million, six hundred and twenty-five thousand cubic yards and the reclamation thereby of 320,000 acres of Everglade lands, would cost one dollar and sixty-eight cents per acre.

It seems nonsensical to ask seriously, from any point of view whether this is too much to pay for the reclamation of these rich and fertile lands. Contrasted with the government expense of the reclamation of the desert lands of the great arid states of the West, it seems so trivial as to be hardly credible.

Out of the dozen or more reclamation projects in the western arid territory, the expense of which is cheerfully borne by the government, and the management of which is under the direct control of its able corps of engineers, the average expense per acre for a perpetual water right, aside from the initial cost of the soil itself, is about twenty-five dollars; but in some instances as in the Uncompahgre valley in Colorado, where exceptional difficulties have been encountered, the government prices for perpetual water rights run up to forty dollars per acre; and the settler has to acquire the land besides. This can be readily verified by the statements in the official time table books published by the railroads

traversing Colorado, Utah, New Mexico, Arizona and other Western States; and by the advertisements of the real estate agencies at such centers as Grand Junction and Montrose in Colorado and Phoenix, Arizona, etc.

In comparison with these reclamation expenses of the arid western lands, the apparent costs of the Everglade project are insignificant.

From the standpoint of the citizen—the homeseeker and settler, it does seem worth while to be able to buy lands as rich and productive as any on the continent, in a healthy, salubrious climate free from malaria, for a moderate price and without being obliged to purchase an expensive perpetual water right, or as an alternative to be at the mercy of the water owners as a tenant.

If these facts be true as we state them and believe them to be, no argument is necessary, and actual inspection only is needed, to convince the homeseeker that the expense to be incurred in the reclamation of the Everglades is amply justified in providing homes for the yeomanry of the country.

From the State standpoint, the expense is more than justified, because with approximately a million and a half acres of Everglade lands still unsold, the successful reclamation of the 320,000 acres of lands above mentioned will raise the values of all Everglade lands. The prices have already advanced very substantially, by reason of the work already done, from the original State price of two dollars an acre. It is not by any means an unreasonable expectation to see these reclaimed lands selling for the current prices of the irrigated lands of the arid West:—that is unimproved lands at from \$50.00 per acre and upwards with perpetual water rights, and the improved orchard lands with similar rights at five hundred dollars an acre and upwards.

Even at the minimum prices of these Western irrigated lands the one and a half million acres of State lands yet unsold would be worth a colossal sum; and the portion of this asset, which the law sets aside for the educational fund, would make the Florida State School reserve among the largest in the Union. Added to this, and also to be taken into consideration, are the taxes to be derived from the lands benefited by the drainage operations,—at present approximately \$200,000 per annum.

From a National standpoint, the same conclusion must be reached.

The population of this country is increasing with great rapidity. It has doubled within thirty-five years and for thirty-five years prior to this period, the increase was about in the same proportion. If this ratio is maintained as there is every reason to believe will be the case, we will have in the neighborhood of two hundred millions of people by

the middle of this century,—a population nearly as dense as that of India.

Competition in the large cities is already very keen among applicants for clerical positions, and places however insignificant under the Government or State control. Unless avenues for employment are provided outside the cities the congestion of labor will inevitably result in diminished prices, as is shown by the wage conditions in thickly populated England, France, Germany and Russia, not to speak of the deplorable conditions in India and China; and the universal American rule of maintaining good prices and shorter hours for labor,—on the theory that leisure and plenty insure intelligence and contentment, will be seriously jeopardized.

If this American rule is worth encouragement and maintenance, the expense of the reclamation of the Florida Everglades is not only justified from a National standpoint, but the Government should as cheerfully and unhesitatingly as it has done in the West, contribute materially to the carrying out of the project or, better still, take it in hand by its irrigation and drainage bureaus, and carry it to a successful conclusion.

It should not be overlooked that of the 320,000 acres to which reference is above made, the Northern boundary canal running West from Fort Lauderdale, has already been cut to a point where the dredge Okeechobee is working about eighteen miles in the Glades; and the Southern boundary canal running West from Miami has reached a point about three miles in the Glades. It will thus be seen that only about forty-four miles of canals are still to be cut in order to isolate this body of land from the other part of the Everglades. The completion of this remaining forty-four miles of canals, with the two dredges working at opposite ends toward each other, it is estimated will take about thirty-one months or two and a half years. If double or night shifts are worked, the time of completion will be much hastened.

The conclusions to be drawn from the foregoing statements of fact and warrantable inferences, by any disinterested persons, it seems are

- 1st. That the effective drainage of the Everglades is feasible.
- 2nd. That an enormous natural reservoir or tank, exists in Lake Okeechobee at an adequate high level, to supply the Everglade plateau with water for irrigation in times of drought.
- 3rd. That the reclaimed soil of the Everglades is a black humus incorporated with sand, clay and marl carried down from the decomposed sedimentary rocks from above; and is very rich in the elements required for plant life and growth.
- 4th. That the climate of the lower Florida peninsula, if affected in any appreciable degree by the drainage and irrigation of these lands,

will become somewhat warmer and further removed from the frost point instead of cooler.

5th. That the irrigation features of the project will, by the adequate control of the drainage waters through its locks and dams, enable any bog or peat fires to be quickly extinguished.

6th. That the expense of the undertaking is trivial, compared with any other reclamation project under the charge of the general Government.

7th. And that the benefits to be derived from this reclamation service, whether considered from the standpoint of the citizen, the State or the Nation, are inestimable.

Since the foregoing was written, the report of the Legislative Committee of the Florida Senate and House of Representatives, on the drainage operations during the spring of the present year, has been made public in the excellent Everglade edition of the Miami Metropolis. It appears from this report that up to March 1st, 1909, the canal on the south fork of the New River had only been cut about seven and a half miles, and that it is the intention to continue the canal in its westerly present direction about six miles, at which point it will turn southward toward Miami. The dredge Miami which is to work north-westerly and then northward to meet the other dredge had then only recently commenced work at the head of the north fork of the Miami river.

If these two dredges have each cut an average of 3,750 feet per month since that time, it would advance the total length of canal for the eight months intervening, $71 \times 2 \times 8$ equals 11.36 miles; and the New river dredge should be near the turning point southward. I am informed however that this average progression has not been maintained; and with no definite data on the subject at hand, it is impossible to forecast the date when the first large block of Everglade muck lands will be reclaimed, through the agency of the canals under construction. The Trustees of the State Internal Improvement Fund, who are in charge of the work are earnestly pushing the operations in this direction; and they have recently advertised for bids for the excavation of three hundred miles of main canals in this territory. The bids to be opened at Tallahassee, Fla. on December 22nd, 1909. This action is in line with the recommendations of the joint committee of the Florida Legislature in their report of May last, on the conduct of the drainage operations, and with the spirit of the House resolutions of June 1st, 1909, and is very significant of an intention to brook no further delay in the prosecution of this great work.