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CHAPTER XIII.

THE EVERGLADES OF FLORIDA.



SOUTH of Lake Okeechobee, reputed to be the largest body of fresh water wholly within the confines of the United States except, of course, Lake Michigan, is a large tract of marsh land, called the Everglades. A glade is usually defined as a grassy opening, strip or lane, between growths of trees. There are many such little glades between the long pine-covered ridges which jut out into what the natives designate the main or Big Glades. This is, no doubt, the meaning of the word Everglades, the term *ever* signifying *all*, or wholly glade or grassy, with few islands—in short, mile after mile of low grass morass.

This territory is all south of latitude 27°, the same latitude as the valleys of the Nile and Ganges, and is the only part of the mainland of the United States with a tropical or Antillean flora, for although a part of Texas is also below this same parallel, the land is more or less arid, and there is no great body of warm water to the northwestward to temper the cold winds from that quarter. We may safely say, therefore, that the Everglade region is the only part of the mainland of the United States which is truly humid tropical, the only place where tropical crops can be successfully produced without irrigation, although irrigation is desirable in almost all tropical countries.

The warm trade winds reach us from the West Indies, so that climatically and botanically we are in the same class with Western Cuba and the Bahamas, and, although it is a little cooler here in winter, it is all the better, since cool weather, up to a certain point, of course, produces quality in fruits and

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vegetables—that is, richness of flavor combined with firmness, permitting shipments long distances.

The Everglade region is over three million acres in extent, fully as large as Porto Rico or Jamaica. From the center of Lake Okeechobee to Miami is at least a hundred miles, and southward to the shore of the Bay of Florida is fifty more.

Although there are patches of sand and marl and rock, the soil of the Everglades is mostly black muck, the result of ages of decomposition of vegetable matter. Reclaimed muck lands throughout the world usually have great productivity, and, therefore, high value. The fact that these muck lands are in a region where tropical fruits and tropical staple crops, such as sugar cane, as well as Northern vegetables, grow in midwinter, gives this region an added value over muck lands elsewhere. I spoke above of "Northern vegetables," but we must not forget that the original home of many of these was in the Southland.

This vast area of mud sloughs is usually completely inundated for several months of the year. It is a weary waste of saw-grass, through which neither walking nor boating is satisfactory. Remove the water, burn off the saw-grass, and the aspect soon changes. The cool breezes sweep over it; it is a broad, level prairie; other grasses and wild flowers appear. With teams plowing and cattle pasturing, it would look not unlike the low countries of Europe, which the enterprising Dutch have wrested from the sea, nor unlike the prairies of Louisiana which our own people have reclaimed by holding the mighty Mississippi in its course. Although the whole body of the Everglades is considerably above sea level (Lake Okeechobee 23 feet), the water could not escape to the sea, because of sand dunes and a rock rim around the edges. This rock rim, although usually called limestone, is in reality in many sections a calcareous sandstone, and was once no doubt mobile. It was blown in by the wind in the form of a dune and afterwards hardened into rock called Miami oölite. These dunes, just as has happened in other parts of the world, notably the Landes of France, choked up the rivers, caused inundation, and this in turn caused the formation of muck and bottled up a great mass of

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fertility for future use. Before this dune hardened many streams succeeded in working holes through it, and this explains many of the subterranean channels to the bay and ocean. This dune formation and wind origin of limestone ridges is no fairy tale. Go to Eleuthera, in the Bahamas, and other places of a like nature, and you will see it in all stages.

It is worthy of note in passing that just to the west of the Everglades are great deposits of phosphate, the remains of sea animals, rich in phosphorus, the scarcest and most precious of plant foods, in fact, also animal foods, since foods deficient in it are deficient in bone-making qualities. One-third of the world's phosphate supply is here in Florida, and in time the fertility of the great agricultural soils of the world will be measured by the amount of phosphorus available. It is more than likely that phosphate beds will be found in the Everglades.

On the south the Everglade region is bounded by a little-known section, usually marked on the map the Big Mangrove Swamp. Much of this section has never been surveyed, and less is really known about it than is known of Angola or Quintana Roo. On the maps the stream courses are usually marked with dotted lines. Some maps show White Water Bay as a big sheet of water; others don't show it at all. In this region there is considerable hardwood, even mahogany, locally known as madeira. It is so common in one place that it furnishes the name "Madeira Hammock." This madeira is the true mahogany, *Swietenia Mahagoni*, and samples which I sent to London experts were pronounced first class for solid furniture and appeared identical in character with a specimen of mahogany, or *Caoba*, which was sent by the government of Mexico to the Paris Exposition.

On the northwestern edge of the Everglades is the Big Cypress Swamp, one of the largest and finest bodies of cypress timber left in the South.

The drainage work now under way and certain to be completed within a short time, since the work is in charge of a competent engineer, and the contract has been let to a Baltimore firm accustomed to handling such big enterprises, is being paid

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for by the sale of lands. The question of drainage resolves itself into two factors, all a matter of digging through mud and rock, opening the outlets to the sea and lowering the level of Lake Okeechobee. For example, suppose we have one big plate representing the Everglades as a whole. Inside this plate on the edge to one side is another very much smaller plate, representing Lake Okeechobee. Flowing into the small plate is a large quantity of water from another watershed. The small or Okeechobee plate spills over and in the course of time the Everglade plate spills over its rim into the sea. I have seen the water rise at the south end of the Glades without any rain or signs of rain. But it had rained up the State and filled to overflowing the Okeechobee plate. Of course, there are local rains which come quickly and heavily; in fact, there are rains called "glade rains." In the summer I have seen it day after day raining on the Glades, while the bay shore was suffering from drought. What passes away through underground channels and what passes away through evaporation and transpiration is probably quite equal to the precipitation, and I have always believed that if the excess from Okeechobee could be disposed of, floods would be seldom and of slight duration in the Everglades. The rivers which run into the sea are narrow and clogged with rocky bottoms. Two or three streams of considerable size disappear on the edge of the Glades and appear again in the form of big springs on the edge of Biscayne Bay.

There were attempts at drainage in times past, but they did little good. To be sure, they lowered the water a little and increased the zone dry enough for cultivation around the edge and permitted earlier cropping, but these attempts were like nibbles at a big project which had to be complete throughout and on a large scale in order to be effective.

The late Napoleon Broward, with the eye of a practical man, knew good land when he saw it, and knew also that water would run down hill. Used to pulling wrecks off reefs, he came to conclusions quickly and intuitively. When some insisted that it would take fifteen years of rainfall observations, several years of careful topographical surveying and the reports of

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several expensive and conflicting experts to determine the feasibility of his scheme, he was abashed, but not discouraged. He replied: "I will be dead by that time. The State will be poor and the money thus expended would buy a couple of dredges. We can sell some land to build dredges and if my friends will hold the knockers in check, we can soon make a convincing ocular demonstration." Corporate interests which had lost their grip



A SCENE IN THE PINE LAND ON THE MAINLAND. THE PINES (*P. CARIBAEA*) IN THE BACKGROUND. THE ROAD IS CONSTRUCTED OF LIME-ROCK, ALSO THE FENCE. THE ROCK WAS TORN FROM THE CLEARING ON THE LEFT BY GRUBBING AND BLASTING. (PHOTO BY PROF. JOHN CRAIG.)

on these lands, of course, opposed him out of sheer bitterness, but there were also hundreds of knockers, strange to say, among home people, who had nothing to lose and everything to gain, and who talked it down by the hour on the street corners to every newcomer. I remember visiting the Everglades with one of the first groups of newcomers from New Mexico. They had heard so many stories that they were skeptical. Instead of being

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disheartened at the sight of so much water, coming from a land of drought and desert, they enthused over it, and without exception bought, and most of them have bought and sold several times since.

To Broward the credit is due. He was to Florida what Bremon tier and Cham bre lent were to France and Dal gas to Denmark.



SCENE IN EGYPT, WHICH IS IN THE SAME LATITUDE AS SOUTH FLORIDA, WHERE FLAT ROOFS NOT ONLY PREVAIL, BUT WHERE THEY ARE USED AS MUCH AS ANY ROOM IN THE DWELLING.

Broward possessed to a striking degree the three qualities that make good manhood and citizenship—he was honest, he had a lot of good common sense, and he had also the sense of humor. Above all, he had common sense—the sense of proportions—good judgment or the ability to do the right thing in the right way and at the right time. He worked against jealous and greedy corporations, rival politicians and a host of born knockers, but he fought a good fight, and Florida owes more to

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Broward than to any other man. In Arcachon, in the Landes of France, there is a statue of Bremontier, the man who added a new province to that Republic by the reclamation of swamp land. Soon there will be, probably in Jacksonville, a monument to Broward, the man who was the maker of South Florida.

I have called this the greatest conservation project in the United States because at the cost of about one dollar, an acre of land capable of producing net two hundred dollars' worth of vegetables annually is actually formed out of the useless mud sloughs. The saw-grass can be quickly burnt and the land is ready for the plow, with plenty of water for irrigation purposes, if it is necessary. Compare this with the cost of any of our irrigation projects. Think of buying a farm and paying for it with the first year's crop! Land dry enough to crop rents now at ten dollars per acre.

The Chattahoochie Canal is practically done. This leads from Okeechobee to the Gulf. A dredge is working southward from Okeechobee on the main canal toward Miami. Another is working northward from Miami, and two are at work back of Fort Lauderdale, well out into the Glades.

These are all fine, large canals and of great usefulness for transportation as soon as the dams are replaced by locks. Dams are now necessary to hold back the water to float the dredges.

What will grow in the Everglades is a hard question to answer. It would be easier to tell what will not grow there. Under the head of fruits there are about fifty kinds which grow in this region; add to this list almost all the vegetables grown in the tropics and the North; add to this many staples and forage crops; many bushes and vines and three hundred or more useful native and introduced trees.

As the water goes down there is left over the Glades a deposit of lime. This is mostly precipitated lime, which goes to form marl. Mixed with it are the shells of fresh-water mollusks, and in some places tons of dead fish. During the past summer I saw pool after pool filled with dying and putrefying fish, emitting an unbearable stench. Around these pools were hundreds of birds, buzzards, herons and crackles, all eating their

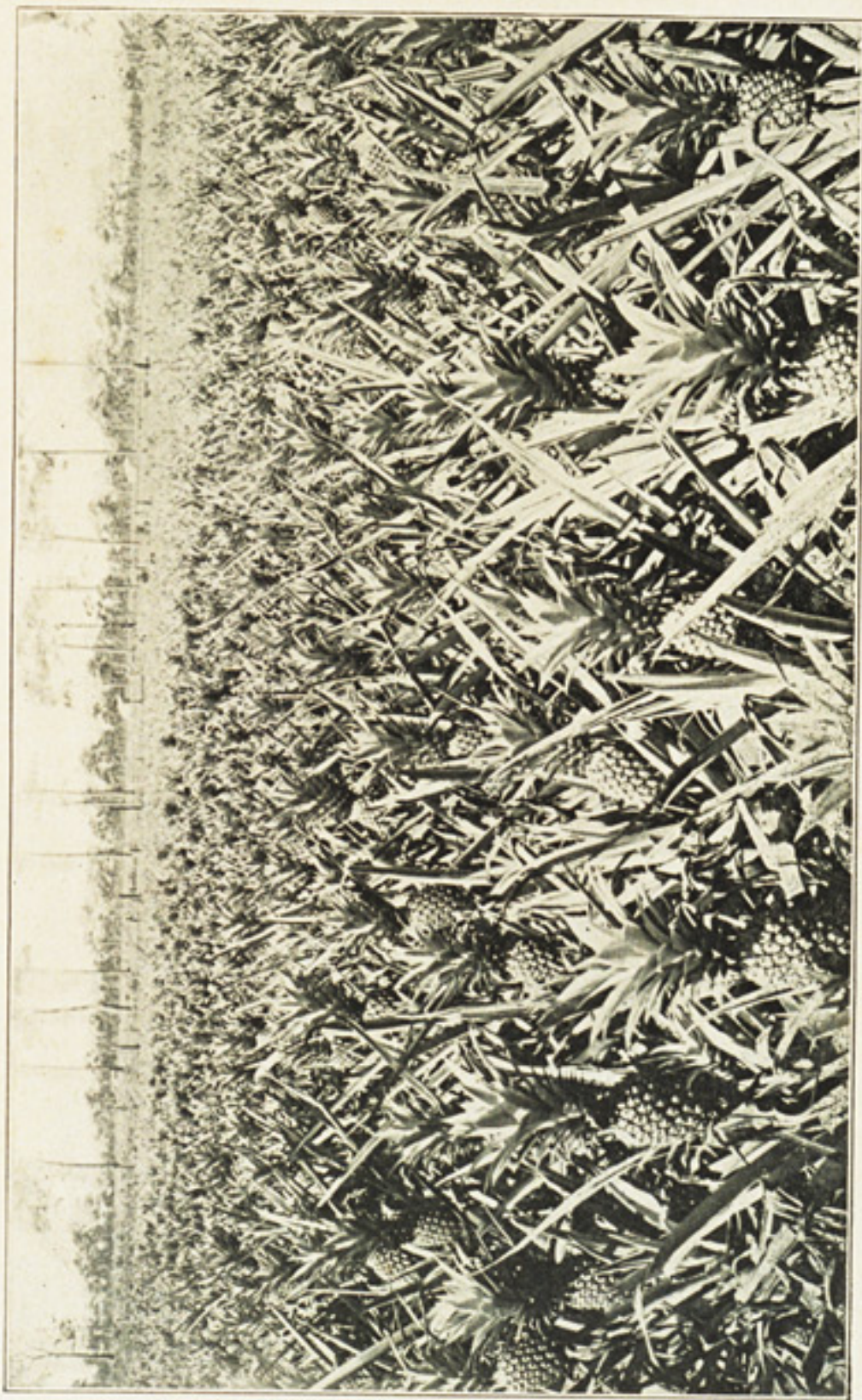
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fill from these charnel pits, and fighting and screaming over the booty. When the land is all drained these spots will have magical fertility.

That the Everglades will be drained within about a couple of years seems certain, and that people are coming here is already evident. Although houses to rent are scarce and board in the tourist season high, it is the land for the poor man. The climate is fine—fully as good as any Mediterranean, Caribbean or Californian climate. Wood is cheap for fuel and house construction. A rustic bungalow can be cheaply made and a pipe churned into the ground to a depth of fifteen feet or less yields an abundance of water. There is plenty of rock for roads, fences and house construction. The surrounding waters are famous for fish of many varieties. The inland canal route from Jacksonville to Key West is done. There will be miles of inland canals, and there is bay after bay along the shore.

In Southern California the hand of man has produced a highly developed and attractive region with no resources except vim and climate. Obstacles were met on every hand. In Southern Florida we have the resources, but the vim has been lacking. We have been reposing since the Seminole war. It is not laziness. We have been indulging our love of leisure. But it is this grappling with nature which develops the latent forces within the man. The coming age is to be an age of conquest, the conquest of nature, the reclamation of swamp lands and the irrigation of deserts.

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PINEAPPLE FIELD, SOUTHERN FLORIDA.