

October 23, 1923

Mr. J.R. Deane.,
Leamington Hotel,
Miami,
Florida.

Dear Mr. Deane:

Answering yours of the 19th inst. and referring to your enclosure of letter from Dr. E.W. Brandes, Pathologist, United States Department of Agriculture, Washington, D.C.

It is certainly extremely unfortunate that Dr. Brandes has not been in the Cape Sable District, nor made a study of the marl (clayey limestone) soils of the lower Everglades.

His assumption that these Cape Sable soils are "more likely to be of the so-called "Saw Grass" type, which is not as suitable for agricultural purposes as the "Custard Apple" type, is of course predicated on the premise that the Cape Sable soils are the "Saw Grass" type, which is found in the central portion of the Everglades. This is erroneous, as the Cape Sable soils are in the main, a character of soil which can only be classed with the marl soils found only in extreme southern Florida on such prairies as Allapattah, (near Miami, upon which successful and successive crops of vegetables have been grown for the past twenty-five years. I personally grew three successive crops of sugar cane on this prairie from ratoons of original planting, and my last crop was even better than the original or first crop. The land became so valuable for other crops that I dug out - and it was no small job to do so - the sugar cane and used the land for growing truck crops for the Miami market; this land is now the property of Ernest Schaaf, who conducts a canning factory on the property) Little River (at which point A.B. Janes and others have grown successive and successful crops of vegetables, and, I am sure, sugar cane), Fulford (where Hon. R.E. McDonald and others have proven the value of these marl lands for both vegetables and sugar cane), Dania, (where marl lands have been under cultivation successfully for over twenty-five years), Larkins, (where for over twenty years these marl lands have been cultivated and each year they have improved and increased in production) Peters and Perrine (where the wonderful T.J. Peters tomato farms are located - he finding it profitable to farm these lands even before

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the F.E.C. Ry. was extended south from Miami - hauling his crops by mule team to Cutler, and then in turn transporting by boat to Miami for forwarding to northern products.

This same thing can be said of Goulds, Black Point, Naranja, Silver Palm, Homestead, and all the other "finger marl Prairies" of the Everglades - all of them growing vegetables of the best quality, which stand shipment to market well, for the simple reason of the very nature of the marl lands upon which they are grown.

The Cape Sable section is but the largest of these marl prairies, and all that I have said about the other prairies can be said also of the Cape Sable lands except that as vegetables were harder to transport to market, by virtue of their very perishable nature, the "old settler" planted sugar cane on the high, elevated areas that needed little or no drainage, and for over twenty-five years they have grown sugar cane on the same land, year after year, sometimes letting their sugar cane "ratoon" for as many as fifteen years - which was of course bad culture. Even now there are a number of "old fields" of sugar cane at Cape Sable which would be a revelation to the agriculturist who understands sugar cane. It is a fact that when Mr. R.J. Bolles bought from the State a large acreage of Everglade land, he sent to Cape Sable and had photographs made of sugar cane growing there (these same fields are still producing sugar cane), and he used these photographs in his advertising of his lands in the "upper Everglades", and as practically all of the operations of the Everglades Drainage Board have been directed toward draining the Upper Everglades, more attention of late years has been directed to the "Custard Apple" land surrounding Lake Okeechobee.

I am very familiar with the "Custard Apple" fringe on the south shore of the Lake, which changes as you leave the Lake to "Willow" lands, and then the "Saw Grass" lands of the central portion of the Everglades, but so few are informed as to a remarkable and wonderful change which occurs at a point where the Hammock islands begin to appear as one approaches the "lower Glades", is very noticeable on a line if drawn due west from Miami, for at or about this point the "marl" lands begin to appear in the main body of the Everglades, but are more noticeable in the finger prairies; even extending as far north as Dania these finger prairies are almost all marl and begin on the border of the Everglades, and project themselves through openings in the pine or other timbered

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land, winding in and out until they find their outlet to the sea. Before this marl was formed by the action of nature, these apertures from the Everglades to the sea were unquestionably the natural drainage of the Everglades to the sea, and as said, they extend on the East Coast at intervals of every few miles, until below Royal Palm Hammock there is a vast open prairie of this excellent marl, and from that point extending to the very point of the Peninsular to Cape Sable.

The Cape Sable marl, in the writer's opinion, is the oldest formation, being the first formed, and as the chemical action, as explained to you, is ever producing this marl, and had the drainage of the Everglades been delayed, Nature would have replaced the "Saw Grass" peat of the interior Everglades, with this marl; in fact, I am firmly convinced that this would have been the instance even up to the very rim of Lake Okeechobee, as this formation of marl is heavier than the undecayed vegetable matter upon which it first rests, and thus, the marl being heavier sinks or settles below the "peat". In time the peat either drifted away at the high water period or was consumed by fires during the dry Spring months, thus leaving the marl lands as nature's finished soil for the use of man.

I quite agree with Dr. Brandes, that "it cannot be assumed that all the soil in the Everglades is capable of producing satisfactory yields of vegetables and sugar cane", as I believe this "saw grass" area is not at this time soil of any classification, as it has not as yet become plant food, and when it does, it will have gone through years of decay, and will shrink or settle at least twenty-five percent, or, if nature had been given its way and no drainage of this land attempted or accomplished, it would have been replaced by marl in time.

As I see the "Custard Apple" area around the shores of Lake Okeechobee - the washings of the waves of the Lake caused a "rim to form, custard apple trees sprang up, the root system, and the annual falling of leaves from these trees, and the catching of drift, which easily decayed, and really produced a soil that is fertile, and as this area of "Custard Apple" was ever increasing, by the simple acts of nature, and thus is the "older" soil of the "Upper" Everglades, as is the marl, the older soil of the "Lower" Everglades.

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Just how long these Custard Apple lands will continue to be fertile is ofcourse a debatable question, but it is fair to assume that so porous, soft, spongy available soil will soon exhaust itself unless deeper plowing is resorted to and new soil brought to the surface.

Ofcourse, planting any kind of crop on the "Custard Apple" land is more or less an experiment, except in the instance, perhaps, of high timbered hammock lands which were seldom, if ever, under water at our summer extreme rainfall period, and naturally these soils being high in nitrogen content and low in potash content, will not produce any crops which "carry" or "keep" well; this might be overcome by resorting to the use of potash to "balance up" this soil.

Crops of vegetables, however, grown on marl lands are firm and solid, with little of the water character which seem to be the instance of vegetables grown on muck soils no matter where located.

I wish that Dr. Brandes could see the plantings now being made near Miami and on all the fingered marl 'Glades referred to in this letter. However, new marl lands are now being opened up at Homestead and Naranja, and hundreds - yes, thousands - of acres of these marl lands will be planted this season, just as the finger marl lands have been planted for the last twenty-five years.

I believe the report of the Commissioner of Agriculture of Florida, will develop the fact that there is annually produced in Dade County something like 3,000,000 crates of vegetables for shipment to northern markets, in addition to the home consumption. Practically all of this great output is produced on marl lands. I believe this will answer fully Dr. Brandes' suggestion "to ask the plants" for the plants have certainly answered for these marl lands, by producing successfully and successively crops for twenty-five years, and wherever this soil has been constantly cultivated, it is far superior to soil when it is first given to the plow. In other words, the character of this land improves the more it is cultivated, for the simple reason that more plant food is being incorporated in the soil - thus producing a better soil by constant cultivation.

Mr. S. Rodnan Ginsburg, who acquired his experience at Romano Central in Santa Domingo, said that he believed that when these marl lands were drained, they contain the proper lime

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contents to produce a sugar cane balanced in sucrose and purity.

I shall not enter into the detail of drainage, seepage, character of under-lying rock for road construction, because I know this is peculiarly the duty of an engineer, but I know that if a Plan of Reclamation for drainage and improvement is laid out for a given area in the Cape Sable District by local engineers, and that should such a plan be approved by Engineers of the reputation of B.M. Hall & Sons of Atlanta, or Elliott & Harmon of Peoria, Ill, that no one would have the right to question such a plan, when approved by such an authority.

I trust that the above will be of assistance to you in your selection of an area of land which can be drained, and which, when drained will produce successfully and successively vegetable crops, and which areas can also be used for the establishing of a large sugar cane plantation.

I am,

Very respectfully yours,

JFJ:H