



# Florida East Coast Railway Company

FLAGLER SYSTEM

~~INCORPORATED IN FLORIDA~~

J. E. INGRAHAM  
VICE-PRESIDENT

8206  
St. Augustine, Fla., August 14, 1918

Mr. F. J. Pepper,  
Care Mr. F. S. Morse,  
Miami, Florida.

Dear Mr. Pepper:

In 1897 during the settlement of the claims of the Perrine Grant with the United States Land Office, and in accordance with the contract made by Dr. Perrine many years ago, and which we carried out, we furnished to a number of settlers on the Grant a number of rubber trees, that an experiment might be made in the cultivation of rubber for commercial purposes. One of these trees, which had grown to a very large size, as I remember to have seen it within two or three years, was opposite Mrs. Carnegie's place on the Grant near Perrine. There were also a number of others.

My object in calling this matter to your attention is to ask if these trees have suffered by frost, and if they have been killed or cut down, what their present condition is. They were planted in the spring of 1897, I think, or about that time and grew rapidly and attained a large size within a few years. It has therefore occurred to me that if these trees have flourished in that latitude without any care or special cultivation that there is a strong probability that as a commercial asset they may be very valuable, as the uses of rubber by the Government at the present time are very great, and there is a probability that its uses for civil purposes will be largely increased for industrial needs.

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There is also growing on the Grant the false rubber. You will probably recollect having seen it overlapping the pine trees and the Gum-limbo trees. The juice of this rubber tree, or the milk from it, (and it bleeds very freely when cut), when <sup>coagulated</sup> ~~placed~~ over an open fire and continually stirred with a wooden paddle, will make a low grade of rubber called "Centrale" and was worth in the market about thirty cents a pound. At one time Dr. Richmond, who was very much interested in this subject made and sent to me a little ball of rubber made out of the milk of the false rubber tree. I looked it up and found that it was used as an adulterant and used with the true rubber. This may also be of use to investigate. There is no reason, as I can see, that if these trees grow satisfactorily and withstand the colds that you have there in that latitude that they should not be planted commercially and yield very considerable profits, making another staple product for your county. It certainly is well worth a very careful investigation, and I hope you will be interested in it and undertake it.

The principal sources of commercial rubber are the Provinces of Brazil. The Encyclopedia Britannica says that the Brazilian rubber is chiefly obtained from the Hevia brasiliensis, a large euphorbiaceous tree upwards of 60 feet in height, and having trifoliate leaves. The trunk reaches to about eight feet in circumference. The fruit is a capsule containing three seeds rather larger than cobnuts having a smooth brown surface figured with black patches. The seeds readily lose their vitality and on this account need special care in transport. They should be loosely packed in dry soil or charcoal. In Brazil the trees are found in different districts, but flourish best on rich, alluvial soil by the side of rivers, where there is a certain

amount of drainage and the temperature reaches from 89 to 94 Fah. at Noon and never cooler than 73 Fah. at night while rain falls about six months and the soil and atmosphere are moist throughout the year. The latex, or milk, is collected in the so called or dry dry season and the trees are tapped in the early morning when the milk is more readily obtained. The tapping is in diagonal lines around the tree, without girdling and extends from two to three feet above the ground.

It also grows in Ecuador and in the French Sudan where the production of rubber is chiefly from a vine but has lately been replaced by plantations of trees. The hevea tree furnishes an inferior quality of rubber if tapped six or seven years of age. Rubber improves with the age of the tree. In 1909 the total production is stated to have been about seventy thousand tons, of which more than one half came from tropical America, about one-third from Africa whilst the remainder was of Asiatic origin, including plantation rubber from Ceylon and Malaya which amounted to 3,000 tons. This is quoted from the 11th edition of the Encyclopedia Britannica, beginning at page 795.

The market price of commercial rubber, says the Encyclopedia depends upon the price of refined "Para" from South America. It varied in 1900 from about seventy cents to \$1.43 per pound. Paragraph 6 on page 797 says that there are a number of vines growing throughout tropical Africa, including the Sudan, Congo, Mozambique and Madagascar, the principal of which are the *Landolphia awariensis* and *Landolphia Heudelotii* common throughout West Africa and *L.Kirkii* and *L.Dawei* in East Africa, which are used to adulterate the true rubber.

To obtain the rubber, after the latex or milk has been obtained from tapping the tree, the latex is usually treated in the following

manner. A piece of wood about three feet long, with a flattened end forming a kind of paddle, is dipped in the milk or this is poured over it as evenly as possible. The milk is then carefully dried by turning the mould round and round in the smoke, thus producing, by the burning wood, mixed with certain oily palm nuts called the Attalea excelsa, the smoke being confined within certain limits by the narrowness of the neck of the pot in which the nuts are heated. The creosote and other products from the smoke no doubt act antiseptically and prevent to a very large extent the subsequent putrefaction of the proteids retained by the coagulated rubber. Each layer of rubber is allowed to become firm before forming another. A practiced hand can make five or six pounds an hour. In some places a stout stick is substituted for the paddle on which the rubber as it coagulates is wound cylindrically. Rubber thus prepared is the finest that can be obtained. The cakes when completed, in order to remove them from the mould, are slit open with a sharp knife and hung up to dry. These flat rubber cakes are called in the London market "Biscuits."

The true rubber or Hevea brasiliensis flourishes to the greatest extent at low altitudes on rich soil capable of retaining moisture. As to its yield: half a pound of rubber per tree must not be looked for from recent plantations, although much higher yields, up to 10 to 15 lbs and over per tree are recorded from South America. An average of 150 trees per acre, planted 15 by 20 feet and yielding 1/2 lb per tree per annum at 61 cents per pound gives a result of \$140.00 per acre. The cost of production may be assumed to be about twenty cents per pound, to which is to be added the expense of transportation. On page 799 of the Encyclopedia there are instructions for a more advanced method of coagulating the rubber than that previously given.

Mr. F. J. R. -- 5

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I commend the matter to the attention of you gentlemen and think it worth not only careful consideration but a good deal of it, for I believe most sincerely that it will grow in the hammocks of Dade County from Fort Lauderdale to Cape Sable.

Very truly yours,

*J. C. Hays*  
Vice-President.

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