

Some Observations on the Cherimoyas of Colombia and Guatemala

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As many of my friends know, I have been playing with Annonas for several years in a rather desultory way, collecting data on the various species which I could find described in the literature and recording what data have accumulated here in South Florida that have come to my notice.

When, therefore, circumstances connected with the health of our daughter and son-in-law. Dr. and Mrs. Marston Bates, made it imperative that Mrs. Fairchild and I go down to Columbia and cross the Andes in order to be with them, there came into my mind the possibility that I might see with my own eyes some of the Cherimoyas of the Andes about which I had heard all sorts of stories.

We took off from Dinner key on June 28th and flying across Cuba stopping at Cienfuegos, where to our surprise and delight David Sturrock and Mr. Walsingham greeted us with great bunches of Litchi fruits in their hands. We had no time to stop over and visit the Harvard Institute at Soledad, as we were bound for Baranquilla on the low hot coast of Columbia. We distributed the lichis to some of the passengers on the plane as we passed high over Jamaica and gave the balance to the Comandante of the Port at Baranquilla who appeared to take a great interest in new fruits and had a garden of his own.

In the market at Baranquilla I thought to find annonas which had been brought in from the highlands and was pleased to see some, but they were of the small compact type with many protuberances, of a dark green color and contained many seeds. They were of an inferior type. I did not see the leaves and think they represent the lowland species of Sugar-apple (*Annona squamosa*) although they did not fall into segments as the sugar-apple seems generally to do here. I met this same hard, tightly compacted form, which was usually of a dark green color, in various markets later; in Bogota, Cali, Villavicencio and later in Guatemala, and I have seedlings of these growing.

In the Panama market I saw this form again but did not get a chance to see the trees from which they came. The leaves of the seedlings are small and young but they bear out the idea that they are forms of *Annona squamosa*.

From Panama we flew over to Cali, looking down from the clouds upon the beautiful Cauca valley with its haciendas and mountainsides dotted with white cattle and its tile-roofed villages along its banks. As we were hurrying to our children we had time for only a glimpse of the Cali market and I failed to find there any other form of *Annona* than the same one seen in Baranquilla.

As we were lunching at Dr. Galloway's ranch house at Pereira, I asked him about the Cherimoya and his Spanish manager, Don Raphael, brought in three fruits picked from a tree behind the house. I thought I had seen some pretty large Cherimoyas. I had listened to the accounts of large fruits which my friend Mrs. Whitehouse had seen in Peru and Chili, and Mrs. Henry L. Doherty had brought in several plants of what she said were trees of enormous-fruited Cherimoyas from Lima, but when I saw those fruits laid on the table at Dr. Galloway's ranch house at 6000 feet altitude I realized that I knew nothing about this fruit of the Andes for which so many extravagant claims have been made. I became aroused, and although the expedition was designed to be a hunt for palms suited for the Fairchild Tropical Garden in Coconut Grove, I began to ask questions. Behind the house stood a good sized tree of this Cherimoya. There were many fruits hanging on it and Don Raphael explained that in order to make the tree fruit well he weighted the long branches down by tying rocks to them so that their tips touched the ground. If he did not do this the crop was small, he said. For it is to be remembered that the fruits form on the newly made wood and the more side branches there are the more flowers form.

After one of the truly great days of our lives, Mrs. Fairchild and I most reluctantly bid our charming host adieu, expecting fully to return and stay in his ranch house which he generously offered us. But we took the enormous fruits of his cherimoya with us and ate them in Bogota and sent the seeds to be grown in Florida, and there are a number of seedlings here as a result.

These fruits were different from any Cherimoyas I had ever seen. In the first place they were a dark green. Usually the Cherimoyas I had seen, such as those grown on the trellises on Maderia, had a grey bloom which made them distinctly light colored.

When we got to Bogota I laid these marvelous fruits on the table in my room, and as they ripened we ate them and sent in the seeds. There were 25 in one fruit which was six inches in diameter and five inches long. It was a dark green and had a flesh that was rather firm; not so soft and not quite so delicious in flavor as the Hybrid "Atemoya" with which many of you are familiar, but it had practically none of the grittiness that characterizes the Custard-apple (*Annona reticulata*), and it would rank among fruit lovers as a perfectly delicious table fruit.

The very first morning after our arrival in the hotel in Bogota, the waitress, one of these obliging and quite charming personalities which a good traveller is sure to find in Colombia and other South American countries if he knows how to speak some Spanish, remarked rather scornfully as she viewed my fruits that they were small fruits; not at all large, such as grew in her home town at Guayata in the mountains north of Bogota. There she said the Cherimoyas grew twice as large as those I was gloating over.

I have a custom of carrying a map when I travel and I wrote on the margin of it a note and pointed it to her village in the Andes as an objective not to be forgotten.

I was so surprised to hear that my fruits were small that I made inquiries of the various friends we met in Bogota and elsewhere, and was surprised to have them corroborate the statement of the maid. One of my friends, Mr. Jamie Samper, went to the trouble of having one of his men send out to get some of those enormous Cherimoyas, but he returned with a disappointing account that the season of the very large ones had not yet

arrived. Those he did bring were about the same size as Dr. Galloway's. "But they do come nearly twice as large," my friend stoutly declared.

When we flew over the Andes down to where our daughter lives and her husband, Marston Bates, carries on his researches with yellow fever mosquitoes for the Rockefeller Institute, we passed out of the region of the enormous Cherimoyas and the only annonas we found on the market at that lower elevation of 1800 feet were the small sugar-apples like those in Baranquilla.

Just as soon as I could, and before our collecting days closed in Colombia, Mrs. Fairchild, Nancy and I made a search for these giant Cherimoyas.

I find it difficult to give you who have lived so long at sea level an idea of this hunt for the giant Cherimoyas of Guayata, for, to begin with, it starts from Bogota, nine thousand feet up in the air. The road we traveled went up and down, winding in and out, crossing streams and hugging the mountain to let other cars pass, and all the time we were as high, almost, as the famous Gorner Grat glacier in Switzerland which I climbed up to as a youth and imagined I had about reached the top of the world.

Furthermore, whereas there are places to stop for the night all over this great flat plains of Florida, the places where any sort of comfort can be found are few and far between in Colombia. This makes the kind of "delayed travel" such as one has to indulge in when investigating the plants of the hillsides, or even of the roadside only, an undertaking of some difficulty; for to travel the narrow roads at night is dangerous and to spend a night sleeping in one's car at 6000 feet altitude is to spend a mighty cold, uncomfortable night indeed.

To follow this chase on the way from Bogota to Tunja through Choconta and down the steep mountain side to Macheta and Guateque and up through the dry zone to Arcabuco is like following a trip across the state of Florida, but I assure you it took two whole days and entailed two very uncomfortable nights. For scenery and exciting happenings however it would be "hard to beat." As I see, in the slat houses in Coconut Grove, benches filled with seedlings that have grown from the seeds we collected, I live over in my imagination the unforgettable beauties and thrills of those days. Even my photographs cannot bring these back to me as the hundreds of little plants do.

When we reached the town of Macheta and began to look for trees of the giant Cherimoyas, we found only small-fruited trees. The second day following there would be a market, we were told, and then we could see the big ones, for the natives who bring them in from Guayata, the home town of the maid in the Bogota hotel. We had to hurry back to the main road and even so got to Tunja too late to get more than one room in the modest hotel there where we had to sleep three in a room—primitive accommodations you would call them.

We got up in time for the market of Macheta and sure enough, there were the large Cherimoyas being sold, three of them packed end to end, one on top of the other and covered with dried banana leaves to protect them on the long ride on horse back over the mountain trails.

We followed the directions given us at the market and set off to see the trees from which these large Cherimoyas came and in the hope that we might yet find one of the

real giants, for there was none more than six inches across there in the Macheta market.

This ride over the narrow roads, some of them made for mules and horses only, was exciting, for Nancy is a fearless driver and got us in and out safely. Alas, however, although we passed a good many men on horseback with baskets of Cherimoyas which we examined carefully, not one came up to our high standard and the fact was evident that we were not there at the season of the real giants. We even followed one trail to its bitter end at a tiny mountain church where we talked with a priest who supported the claims of the growers and we were shown a tree which commonly at certain seasons bore the giant fruits.

Along the roadsides scattered here and there stood the Cherimoya trees. None of them seemed to have been grown from grafts—all appeared to be seedlings and they were rather neglected too. Nowhere did I see anything that could be called an orchard in the North American sense of the word. It is true I failed to discover any person who seemed to be what the Floridians would call "Annona minded." There may be, however, small orchards back further in the mountains. I would love to go there sometime and see and make perhaps a collection of all the forms there are of the Cherimoyas of this part of Colombia. From what I saw, however, I judge that the type of rather smooth, dark green fruit with sunken areas, not protruding bumps, is the prevailing type.

I gathered the seeds of the various forms and these are now growing lustily in the slat houses at the Subtropical Experiment Station, Chapman Field and The Fairchild Tropical Garden.

On our return from Colombia we accepted the hospitality of our old friends the Wilson Popenoes and spent several weeks in Guatemala, most of the time in Antigua but with trips to Amatitlan Chihchicastinango and Coban. In none of these markets did I see quite the same dark green form of Cherimoyas that was common in Colombia. They were grey-green in color. One of them weighed 2 lbs. 7 ozs., however, and was 6 inches through. It is true the altitude of Antigua is not over 5000 feet whereas the altitude in Colombia where I found the dark form was from 7000 to 9000 feet and this may have made a difference.

The fruits on the individual trees which I examined seemed to be often quite variable, some having no protuberances and others having no sunken areas, both forms on the same tree. One tree in Dr. Popenoe's dooryard had a fruit which appeared to be so distinctly different from all the others that even its seeds appeared more like those of the custard-apple, only half the size of seeds from the ordinary large fruits. I wonder if anyone else has observed strikingly different fruits on the same trees and if a difference in their seeds has been observed. There is something peculiar in the great variation in shape of the fruits of the Cherimoya, as evidenced by the presence or absence of protuberances. So far as my limited reading in the literature is concerned, I have not encountered any observations recorded of the presence of bud sports in this species.

So my quest for the real giants among the Cherimoya of Colombia was only so far successful as to furnish heresay evidence of their existence. It is true I did see and eat some which were twice as large as any of this species that I had ever tasted before.

But I cannot close this brief paper without adding to it a few words regarding the experiments I am making with the pond-apple (*Annona glabra*) as a stock here on the Kampong.

The idea of using this species, native to the Lake Okeechobee and other Everglades areas, is not a new one. As early as 1907, Edward Simmonds, I find on consulting my photographs and early notes, grafted a Cherimoya from Lima, Peru on the pond-apple and it was growing in the Brickwell Avenue Garden in 1912. The fact that the pond-apple did not go dormant during the winter, I think, dissuaded him from going further with his experiments. The grafted tree did not bear well.

Mr. Honc of Pin Island showed me ten years or so ago a tree of the pond-apple which he had grafted with the Custard-apple (*Annona reticulata*) and I saw it again last year. It seemed to be neglected but still in fair condition.

Last April I splice-grafted on a seedling pond-apple on the edge of my low prairie land on the Kampong the following species of *Annona*, and I am pleased to report that they are all growing well today: *Annona senegalensis* which is used in Egypt as a stock for the sugar apple and which has grown well here but never as yet fruited, I believe; *Annona diversifolia*, the Guatemalan and Mexican low altitude llama which Popenoe predicted would fruit well here but which so far has born few fruits; and the hybrid between the *Annona Cherimoya* and the *Annona squamosa*, the so-called "Atemoya."

It seems to me significant that this native species which grows along edges of the so-called Marl Prairies of our coast where the temperatures do not go as low as they do even a mile inland will take these various introduced species, for this may prove a starting point for the breeding of various of these related species, without which, as I see it, we are hardly likely to make much progress in the development of the Annonaceous fruits here. And since to my mind the family offers a field of great possibilities, I hope that some of the younger horticulturists of the Krome Institute will come to the aid of Mr. Lynch, who has already started some interesting experiments at the Sub-Tropical Experiment Station at Homestead.

This field of plant breeding has unfortunately lost one of its most enthusiastic advocates in the death of Dr. G. A. Zimmerman of Pickettown, Pennsylvania, who since 1916 has been crossing the different species of *Asimina*, the hardiest genus of the whole family and the largest native wild fruit of America. An account of his work appeared in the March 1941 number of the *Journal of Heredity*. His stocks have been saved by the cooperation of the Department of Botany of the University of Western Ontario at London, Canada, where in the greenhouses are growing seedlings of tropical *Annonas* and their North American relative, the *Asiminas*.