tested hybrid stocks (Morton citrange and Sampson tangelo), so that a whole grove can be planted to trees grafted on identical stocks, not propagated from cuttings but grown from seed so they develop a rootsystem with a taproot and laterals, preferred by nurserymen.

Curiously enough it is very difficult to secure viable hybrids between kumquats (Fortunella) and the trifoliate orange (Poncirus), while it is easy to secure trigeneric ones by crossing kumquats with citranges, hybrids of sweet oranges and the trifoliate. These hybrids are called citrangequats and are often more vigorous and fruitful than hybrids between citranges and grapefruits, although the grapefruit is a much more vigorous grower than any true kumquat.

Complex hybrid rootstocks can be expected to produce vigorous rootstocks for citrus fruit trees. In my chapter, "The Botany of Citrus and its wild relatives" (published in Webber and Batchelor, "The Citrus Industry", Univ. of Calif. Press, 1948, page 355, fig. 55) there is a diagram which shows the large number of intergeneric hybrids already known. Many of these hybrids show much promise and merit immediate testing as rootstocks for our principal citrus fruit trees. In this same chapter the numerous hybrids shown in the diagram are discussed under the parental species.

In testing new or little-used stocks for citrus fruit trees it will at first be necessary to make a future-delivery contract between nurseryman and grower, with an advance payment from the grower. Such a contract would protect the nurseryman and encourage him to grow new rootstocks.

Two years ago, at the fifty-sixth meeting of the Florida State Horticultural Society at Winter Haven, I told the Krome Institute the thrilling experience I had had fifty years before when at the sixth annual meeting of this Society at Pensacola many of the leading orange growers (there were no grapefruit growers then) got up and warmly approved a proposal I made to organize a non-profit company to import citrus varieties and citrus wild relatives from their Asiatic and East Indian homes. The great freeze of December, 1894, and February, 1895, killed most of the orange trees in Florida and made it impossible to carry this project through.

I hope that the orange and grapefruit growers of today will again approve the program I have briefly sketched and urge their representatives, both local and federal, to request legislation to make possible the prompt introduction into this country and the speedy test as rootstocks of all the citrus species and their wild relatives in order to protect the future prosperity of our most valuable tree crop.

PERSONAL RECOLLECTIONS OF GEORGE B. CELLON, HORTICULTURAL PIONEER OF SOUTH FLORIDA

DAVID FAIRCHILD

Whenever the drama of the avocado and the mango in America is written, as it should be some day, the name of George B. Cellon will take a prominent place in the beginning chapters. I am not a historian and am incapable of writing with strict historical and chronological accuracy about the role which he played in the early days of these two growing industries of South Florida. I was out of the country much of the time when the things happened which give his life the spectacular character which I have always associated with it. But
certain memories and charming, amusing inci-
dents come to me now that his life has come
to a quiet end, which will interest the younger
members of the Krome Institute. I trust in
reciting them I shall not arouse any of the
unpleasant recollections associated with his
somewhat sarcastic and amusing characteriza-
tions of some of those who came into competi-
tion with him in those early days. For my
own associations with him were always of the
pleasanter nature, even though some of his
positive statements trampled on my toes or
hit me squarely in the face. He talked frankly
and expressed his opinions sarcastically and
dramatically.

I think it was in 1912 that I first met him.
I had sent in from East Africa in 1902 what
I supposed were scions of a very good mango
which Mr. Lathrop had taken me down the
East Coast of Africa to get. We had eaten
the fruit but when it came to getting the scions
had discovered that we would have to charter
a boat and go to the island of Chiloane after
them. The American Consular agent, a Mr.
Glenny, had offered to get the scions for us
and mail them and we had let him do it. He
had sent budsticks an inch or more in diameter
and I had been much surprised to learn
through Mr. Simmonds, then in charge of the
little garden on Brickell Avenue, that Cellon
had succeeded in getting one of the buds to
take. I had suggested that the variety be
named after Mr. Lathrop and naturally was-
very keen to see Cellon and learn how this
variety which had been named after my friend
was growing.

It was ten years since the budwood had
arrived and I was prepared to see some good
sized trees of the Lathrop on Cellons place.
He had been quite strict about letting visitors
into his nursery, for they wanted to learn how
he had been so signally successful in the bud-
ding of mangos and avocados when they had
had so many failures, and since he made his
living from the sale of his budded plants I felt
that he had a right to his secrets although
many thought otherwise then.

It was with some considerable hesitation
therefore that I went to see him. When I
introduced myself he said; "So you are Mr.
Fairchild, the fellow who sent me the Lathrop
mango, are you? Well, I want to tell you
that it isn't worth a damn. I took you at your
word, that it was a superior mango, and went
ahead and made over all these trees which
you see about you here to the Lathrop. But
when it fruited it turned out to be a good for
nothing green thing that isn't eatable, let alone
commercial. So I made over the whole lot
again to the Haden mango, that new, brilliant
red variety which is now the only commercial
variety and am propagating it exclusively now.
What you see now are trees with a sandwich
of Lathrop and tops of the Haden, the first
large trees ever top-worked to the Haden va-
riety. Someone of your fancy friends played
a trick on you, Fairchild."

That I was taken aback would be putting it
mildly. I could not say anything for it was
evident that Glenny must have taken scions
from the wrong tree. But I could understand
Cellon's disappointment and chagrin to have
been let down by an Agricultural Explorer
in this way and as soon as I got my breath
I apologized profusely and explained the situa-
tion. I never did get from Glenny an explana-
tion. But I have in fruit now one of the dis-
graced Lathrop mangos and every year enjoy
its unique flavor, for although it is probably
the worst looking little mango ever produced,
it is late and of a different character from any
other I have seen in South Florida. I even
have some seedlings of it to experiment with.

After this spectacular introduction to George
Cellon we became good friends and every time
I came to Florida I went to see him, for his
was by far the best handled and largest col-
clection of mangos and avocados outside that
of the collections at the Birckell Avenue
Garden and the Krome collections at Home-
stead, then a day's journey away.

I believe Cellon was the first to conduct a
mango nursery on strictly modern lines, bud-
ding his seedlings, which he grew in boxes,
and getting a large proportion of his buds to
take. Woodrow as late as 1899 in his "Gar-
dening in India" described at length the meth-
ods of top-working seedling trees by grafting
and inarching, but used the marcotte method in his own garden operations. He gives credit to the Portuguese for first noting the great diversity of quality of the seedling mangos and of applying the art of grafting to propagate the superior kinds. It was in his garden in Poona that I saw his grafters at work inarching potted seedlings to a Borsha mango tree in 1902. These inarched mangos were very different from the clean, slender, budded plants which Cellon put on the market when he started his drive with the Haden mango in the 'teens.

I have no idea how many of his budded Haden mango plants he sold, and in my conversations with him he never boasted much about them, but I think that there were a good many hundreds if not thousands which found their way out into the hands of private growers and played a significant part in the start of the Haden mango as a commercial crop for South Florida.

He was perhaps quite as much interested in the color plates which he had made and used in his wide advertisement of the Haden mango on the market. He had a sense of the value and methods of advertising and his shipments of the beautiful scarlet mango which were accompanied with an alluring letter-press did much to arouse a wide interest in the possibilities of the Haden as a commercial crop.

My last visit to his home on 7th Avenue, long after the real estate development had robbed it of the interest it had for me for many years, was in response to his wish that his scrapbooks and the electrophyle plates and color lithographs which he had stored in his closet should be placed in some secure spot. Mrs. Dall, the Custodian of the Palm Museum of the Fairchild Tropical Garden, went with me and we gathered together everything that he thought would be of historical value and deposited them in the Museum of the Fairchild Garden. This was with the understanding that in the event of there coming into existence a general museum of horticulture where they might be exhibited, that museum should have the right to take them from their storage place and the officers of the Garden would give them the permission.

As he sat in his rocking chair in the little office where for so many years he received his many visitors and watched us pack up the copper plates and note books, he drew sadly from his trouser pocket his little budding knife, ground almost to its back with his sharpening stone. "This might go with the others," he said "It's the knife I have budded thousands of mangos and avocados with and perhaps someday someone might be interested in seeing it. Keep it with the cuts and books." These last remains of his work are now safely in the Fairchild Garden Palm Museum.

But it is as the first man to bud the avocado that Cellon will go down into history, more than as the first one to properly bud the mango, for the mango had been propagated for centuries by graftage, whereas so far as I have been able to ascertain the avocado, a fruit of the western world, although covering with its groves and scattered trees the hillsides and lowlands of Central and parts of South America, had been always grown as seedlings. There did not exist anywhere a named variety of the fruit in the accepted horticultural sense; all the plantings were of seedlings. Popenoe had found no budded or grafted avocados in his travels up and down the West Coast of Central and South America, and in the West Indies and along the lowlands of the South American coast only seedlings were grown. Until Cellon successfully budded these two avocados, the Trapp seedling on Mr. H. R. Trapp's place in Coconut Grove, Florida, and the Pollock seedling on the place of H. S. Pollock in Miami in 1901, it can be said the avocado industry had really not begun. It was not until 7 years later that the first budded avocado was produced in California, the Canner, and not until 1912 that the famous Taft avocado, which fruited in 1909 at nine years of age, was budded at Orange, California. Since I had had the pleasure of an acquaintance with Mr. C. P. Taft in 1903 and visited him in 1919 when he was a man of 63 and he told me that a small Chilean avocado which I had sent in from Chile in 1899 was the very first avocado.
he had ever seen, I have noted with particular interest the beginnings of the avocado industry in both California and Florida. I feel, therefore, that in chronicling the passing of George B. Cellon I am giving credit where credit is due to the first man in the history of the world, so far as we can now discover, who budded the avocado commercially and put budded seedling trees on the market, almost a decade before there were any budded avocado trees in California. In 1910 the early varieties like the Fowler, Harmon, Blake, Miller, Walker and White were first budded. This fact has a historical significance that deserves to be emphasized.

Mr. Cellon was quite naturally very proud of having been the first to bud the avocado and also the mango and he once related to me an incident in connection with this Society. I wondered why he had nothing to do with the Society and asked him why. According to my recollection one of the former presidents of the Society invited him to attend an annual meeting and tell the Society about his experiences in budding the mango and avocado. He related how he had dressed up in his very best clothes, clothes which he had once worn on Wall Street when he lived in New York, and had gone to the meeting ready to give a talk. But the president never called upon him, forgot entirely the invitation he had extended to Cellon, and he had left the meeting, crestfallen, never to attend one of the sessions again. He was through with the whole lot, so to say, and as he related the humiliating experience his eyes snapped, for his was a proud French ancestry and he knew that he did not deserve the snubbing which he had received. Perhaps I should not relate this incident, but it reveals the very sensitive nature of the man and points out how easily such mistakes can be made by presiding officers who are not schooled in the art of courteous attention to the feelings of their audiences.

In 1917 when the budwood which Wilson Popenoe gathered from wild avocado trees in Guatemala, Honduras and Ecuador came in for propagation, some of it was entrusted to Mr. Cellon to top-work good sized trees in his orchard, and I saw for the first time some of Popenoe’s varieties in his orchard in fruit. It was there that we got some of the first readings on their behaviour which checked with those of Mr. Simmonds in the Brickell Avenue and Buena Vista gardens. For comparison we had then the Pollock and the Trapp, a few Guatemalan seedlings such as Colla, Collins and Taylor, and some of the new California sorts which did not grow well. Of the numerous natural hybrids which have since taken the field, only Winslowson was yet in fruit.

But in 1915 Mrs. Cellon, as she herself told me once, rescued from her husband’s spittoon a seed which he had thrown there and planted it near her flower-filled slat house, for she was a gardener too in her own right. It was the seed of a fruit from the parent Taft tree, which had before this time become noted throughout California. Mr. Cellon did not find it particularly to his taste, he once told me, and had no interest in saving the seed.

It is from this seed which Mrs. Cellon planted that the variety has developed which bears her maiden name of Lula. I once tried to get her to pose beside the tree with a fruit of it in her hand, but she refused. She was a shy person and I never saw her out in society, but there existed a bond of sympathy between those two which was remarkable and when she died Mr. Cellon kept her desk and all her things just as they were in her lifetime. It was one of the old fashioned marriage-for-life affairs.

He was a slender, rather frail appearing man with a thin face and sharp piercing eyes. He had one of the drollest, most numerous, rather sarcastic ways of talking and writing. There never was anything cliche about it and generally something peculiarly direct and to the point. One might disagree with him, but there was no question as to where he stood on any matter connected with his profession. His methods of advertising the mango and avocado were far ahead of others and of the time in which he lived, and his shipments to northern markets were, for a time at least, profitable. His success in marketing his mango crops
was an encouragement to many others and led to the setting out of many small plantings, I believe, especially as the budded mangos in his nursery were for sale and were always of good manufacture.

He was a great believer in the use of mulch about his trees. I recall his employment of the Mexican Yam Bean, one of his experiments. He planted a single plant of this legume, *Pachyrhizus erosus*, in the center of each square and allowed it to run in every direction until it had covered the whole ground about the trees. I have a photograph of Mr. Cellon and Dr. O. V. Piper, the great forage crop expert, standing side by side in a deep mass of this bean in his mango orchard. So convinced was he of the value of mulch that at one time he covered the ground with dead palm leaves, boards and trash of all sorts, which gave his place a rather bizarre appearance. Since previous to his experiments one of the pioneer avocado growers at Buena Vista had tried the California clean culture method and we had seen his trees decline in vigor, we were inclined to admit there was something in Cellon’s method of heavy mulch, at least in the dry winter season. The tangled character of the ground cover probably has discouraged others from trying the yam bean even though it has an advantage over what was in use at the time temporarily, the velvet bean, which ran over the trees at a great rate and almost smothered them.

I have always felt that Edward Simmonds, who was in charge of the little Introduction Garden on Brickell Avenue, got much from his association with Mr. Cellon, for he knew better how to handle him than did others of the men who were in charge of it previously and who perhaps showed less tact. In any case there was a bond of sympathy between these two remarkable plantsmen which played an important role at what appears to have been a critical period in the development of both the avocado and the mango industries. For with the large introductions of East Indian mangos which the Office of Plant Introduction had made and the collections of bud wood of the avocado which Wilson Popenoe had sent in from Guatemala, Costa Rica, and Mexico, it was a fortunate circumstance that two such accomplished plantsmen were working in sympathy with the same material. As I see it, there might have been much greater losses than there were of this valuable material. I am not saying that I would not like to see the Guatemalan highlands and the tierra caliente of the whole of Central America and Mexico given another careful survey for seedling avocados, and the vast collections of mango varieties in British India, Indo-China, the Philippines and the Dutch East Indies studied by a trained mango expert who knew what to search for in the way of varieties to be used in the creation of new and better sorts of mangos. When these two growing industries, whose beginnings some of us were privileged to see, are properly handled by a competent historian, one of the niches, and an important one, will have in it a bust of George B. Cellon.

What could anyone of his modest nature crave more than a niche beside the others in such a hall of fame where there will be many pioneers?