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5th Floor, Hunt Library  
Carnegie Mellon University  
4909 Frew Street  
Pittsburgh, PA 15213-3890  
Contact: Archives  
Telephone: 412-268-2434  
Email: [huntinst@andrew.cmu.edu](mailto:huntinst@andrew.cmu.edu)  
Web site: [www.huntbotanical.org](http://www.huntbotanical.org)

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The Hunt Institute for Botanical Documentation, a research division of Carnegie Mellon University, specializes in the history of botany and all aspects of plant science and serves the international scientific community through research and documentation. To this end, the Institute acquires and maintains authoritative collections of books, plant images, manuscripts, portraits and data files, and provides publications and other modes of information service. The Institute meets the reference needs of botanists, biologists, historians, conservationists, librarians, bibliographers and the public at large, especially those concerned with any aspect of the North American flora.

Hunt Institute was dedicated in 1961 as the Rachel McMasters Miller Hunt Botanical Library, an international center for bibliographical research and service in the interests of botany and horticulture, as well as a center for the study of all aspects of the history of the plant sciences. By 1971 the Library's activities had so diversified that the name was changed to Hunt Institute for Botanical Documentation. Growth in collections and research projects led to the establishment of four programmatic departments: Archives, Art, Bibliography and the Library.



SANTA CRUZ DE TENERIFE November 17, 1958

Dr. Wilson Popenoe  
Rancho California  
Almuñecar. Granada.

Dear Dr. Popenoe:

I received your kind letter dated October 22 and I hope you had a nice trip with your friends from Boston.

From Florida we have received a lot of varieties, probably all that have some value. They are: Simmonds, Waldin, Lula, Booth 7 and 8, Taylor, Pollock, Hall, Chequette, Tonnage and Caquett, The budwood arrived a little late but many of the buds have been successful.

From California we have in the Garden, since many years, Fuerte that you have seen already in some growers orchards like Fumero's and in Güimar. We have also since 3 or 4 years Hass, Rincon, Bacon, Zutano, Emerald, McArthur, Anaheim and Corona and this last summer, we received Puebla, Nabal and Frey. Bacon and Emerald have already produced fruit.

I believe, we have enough material already and once we have studied it here, we will propagate the best varieties. In the mean time, we will continue propagating Fuerte Java, Jema mainly that we know are good ~~and~~ winter varieties. The Haden mangoes grafts have been successful and from 9 grafts, 6 are well established.

With best regards to your wife,

Very truly yours,

*W. Popenoe*

## PORTUGAL, FRANCE AND ITALY

Not much to say about these countries. In the Botanic Garden at Lisbon we ~~found~~ <sup>again saw</sup> two rather small ~~plants~~ <sup>trees</sup>, obviously of the Mexican race if the anise-like odor means anything. We have not seen any others in our travels through Portugal; if they exist I feel sure they are few in number, and they probably have to be Mexicans to stand the cool climate.

On the French Riviera avocados have been reported from time to time, probably all of them Mexicans. I remember reading about them in the accounts of ~~the~~ those lovely gardens in the vicinity of Hyeres and Cannes and Nice; but I think they are considered more as horticultural curiosities than ~~commercial~~ <sup>scarcely</sup> commercial possibilities. The same is true of the adjoining Italian Riviera. And I recall that Doctor Fenzi ~~xxxxxxx~~ told me years ago in California that there was a Mexican seedling in Rome- it seems to me he had a photograph of it. This, again, was a curiosity of course. <sup>But</sup> ~~But~~ this year we got a bit <sup>deeper</sup> ~~further~~ into the situation, so far as Italy is concerned. This was due to our friend Franco Fenzi, one of the sons of that able botanist and plantsman <sup>Dr. Fenzi</sup> known to us Californians of the early days as Doctor F. Franceschi, who spent so much time and money introducing and testing exotic plants in the Santa Barbara area. <sup>His</sup> ~~His~~ little book, "Santa Barbara Exotic Flora," is a classic). ~~xxxxxxx~~ <sup>Fenzi</sup> After growing up in California, Franco came to Italy (the family home was originally at Florence, I believe) where he has lived for many years, in Rome for a time and now at Palermo, Sicily. I wrote Franco that we would be in Rome this past June, and asked him what he knew about avocados, and I quote the following from his reply;

"A good friend of mine in Florence is Professor Abetti, an astronomer, and director of the observatory at Arcetri. A very active and interesting man. Some years ago, returning from Mount Palomar in California, he brought to Florence from Pasadena a few Fuerte fruits, planted the seeds, and had a tree blooming and setting fruits in a sheltered spot near the observatory. It is still there if it was not killed by the freeze of two years ago."

"The climate of Sicily is ideal for avocados although in most places the wind that does not bother the lemons very much might not be good for them. There are several bearing trees around Palermo

but only one produces fruit of really good quality- I am trying to propagate it. The bud came from California and the fruit looks like a large Fuerte. Some years ago a friend of mine who owned some restaurants in New York saved avocado seeds and so gathered several hundred ~~hundred~~ which he turned over to me, and I in turn gave them to the Botanical Garden here, but they did not have much luck with them. I think they kept them too wet. In the meantime we put several buds on an old unproductive tree and now it is <sup>yielding</sup> producing fruit of two varieties. Those who have tasted the fruit dont know (and therefore dont like) avocados; <sup>because of this</sup> ~~and therefore~~ it is difficult to develop interest in avocado planting, even on an experimental scale. However, I have given away trees, here and there, and some of them are beginning to come into flower."

<sup>Mr</sup> Fenzi's letter probably covers the situation pretty well. Helen and I went down the coast beyond Naples, as far as Sorrento, Seeing so many lemon trees in that region I was hopeful we might find a few avocados; but we did not see a single one. ~~Again say~~, where you can grow lemons I dont see why you can't grow avocados - if you want to do so. The trouble is, nobody wants to. <sup>do so</sup> Incidentally, the way they handle their lemons and oranges down below Naples is interesting. I couldnt figure it out at first. They set high posts through the small orchards, stretch wires between them, and in winter run out half-shade mats made of wild cane (which they keep rolled up during the summer) to protect the trees from frost.

Apparently there is no particular reason to expect extensive development of avocado growing in Italy during what folks ~~these~~ like to call the "foreseeable future". <sup>foreseeable</sup> ~~They~~ just are <sup>not</sup> interested. But if those Italian ~~horticulturists~~ ever go in for avocados they will do a swell job. They are really great horticulturists.



## THE EASTERN MEDITERRANEAN

Having read Dr Chanan Oppenheimer's excellent little book on Tropical and Subtropical Fruits in Palestine, it was obvious that we had to go to ~~that region~~ <sup>these</sup> ~~(xxxxxxxxxxxxxxxxxxxxxx)~~ <sup>cracker that</sup> the part of it which is now the State of Israel) if we were going to know much about avocados ~~around the Mediterranean~~. So we hopped off at Rome, and stopped first in Greece to see if there were any avocado trees planted around the Parthenon, or elsewhere. Not much agriculture at all around the Parthenon, but when we got down to Olympia in the Peloponnesus I began to feel at home. When we got up in the morning and <sup>I glanced</sup> looked out the window of our hotel, <sup>and</sup> I said to Helen, "If it werent for so many Italian cypress trees this would look just like the Guatemalan highlands". Lovely country; I dont see how <sup>Olympia</sup> it could help inspiring those ancient Greeks to break ~~the~~ records for the hundred yard dash, the shot put, and the pole vault. And as we rolled up toward Patras, it was a pleasure to see the olives and figs and grapes and pistachios and oranges and lemons, - but there were no avocados. I mention Greece only because I dont see why they should not grow some avocados. This applies even more to the Island of Crete, and others in the Aegean Sea. Lemons everywhere. The Greeks drink more lemonade than <sup>residents of Atlanta Georgia</sup> Georgians drink Coca Cola, and that is a lot. But they dont eat ~~any~~ avocados. They should.

Israel is a small state, with ~~not~~ much good land. What they have they are cultivating, or are going to cultivate, intensively. They are just getting under way, of course. They are <sup>highly intelligent</sup> smart people and they are doing a wonderful job. For example, they have more than 4000 acres in Cavendish bananas. I thought I knew a little bit about banana <sup>Culture</sup> growing, but those fellows threw figures at me so fast it made my head swim. And will you tell me just where in California you can ride down a road - as you can in Israel - and admire on <sup>one side, 50 feet away,</sup> the right a fine apple orchard and on the <sup>other</sup> left a thriving banana plantation? I have never seen anything like it.

Doctor Oppenheimer started out, some 25 years ago, to introduce and test tropical and subtropical fruits. He did <sup>not</sup> overlook many bets. Things have now gone way beyond the experimental stage, as I <sup>Asaph Goetz is Director of the Department of Horticulture.</sup> shall mention in connection with their avocado work. Zalman Rapaport is Chief Horticulturist; at Tel Aviv; Robert Ticho handles things up north around Haifa; they have some excellent men at the ~~ibutz~~ Kinneret right where the River Jordan takes off from the Sea of Galilee; and

*(occidentally, about two thirds of their trees are on carot 12 lime roots; the rest on some orange)*  
so on. Too much excellent work to see and appreciate in ten days, which was all we had. Now they have gone in for apples! I think they will have to ~~make~~ <sup>distill</sup> an awful lot of cider to get rid of them. And of course those Jaffa oranges - the backbone, I suppose, of their horticultural export trade. And the grapes and everything else, but we do not need to talk about them. I want to discuss avocados ~~first~~, <sup>then</sup> and mention the mangos and annonas.

At Mikveh Israel (an agricultural school five miles from Tel Aviv) there are grafted trees (from California) of the following avocados, imported 34 years ago: Dickinson, Duke, Taft, two types or strains of Fuerte, Anaheim and Collinson, - I don't know where they got that one. There are also some Guatemalan and Mexican seedlings. Near Rehovot, which I take to be the base, more or less, of experimental work with tropical fruits, Dr Oppenheimer has an avocado variety collection which I feel sure is the best <sup>east</sup> this side of the College of Agriculture of the University of California at Los Angeles, or the Subtropical Experiment Station at Homestead, Florida. <sup>Los Angeles</sup> Maybe better than either, from one standpoint: here, as in southern Spain, you can grow all three races of avocados, side by side.

But as yet, they have not done much with West Indian avocados in Israel. Nor the Florida hybrids, Guatemalan x West Indian. For commercial planting (and there are quite a few young orchards, <sup>about 500 acres -</sup> some in full bearing) the situation is about this - subject to change without notice, of course. Fuerte, I would say, is <sup>definitely</sup> the leader. Ettinger, considered to be a <sup>daughter of</sup> ~~seedling of~~ Fuerte (it came from a seed brought from Chile 30 years ago) is <sup>probably</sup> second in popularity, but I mention it <sup>its</sup> because the fruit is very much like Fuerte, but matures a month <sup>or</sup> to six weeks earlier. The quality not quite <sup>so good as they would like.</sup> up to that of Fuerte, they say. The tree just as tall and slender as Fuerte is short and spreading, an interesting feature.

I think their next choice is Nabal - which will surprise a good many Californians. Of course <sup>Nabal</sup> it shows a strong tendency toward alternate bearing but when it does bear it produces tremendous crops and they say it cannot be equalled in quality. Then along come Anaheim and Benik. For quality I feel safe in saying they prefer Benik; I suppose for productiveness Anaheim. They don't feel quite safe about Hass; some think it is extremely promising, others say the fruit is too small. But I believe it is gaining ground. For example, I went to see a

*Or Spanish also*



young orchard, ~~15 months from planting~~, at the Kibutz Gaash north of Tel Aviv. I must explain just <sup>what</sup> a Kibutz is. It is a cooperative agricultural colony, which <sup>operates</sup> pretty independently on <sup>public</sup> government land, ~~gather~~. There are a lot of them in Israel; I believe they told me there are something like 70,000 people in such colonies. The money made- if and when money is made, - goes into the community chest.

This young orchard, <sup>at Gaash</sup> operated by Zwi Schachar who had been in Mexico for some time (you meet them from everywhere, ~~here~~ in Israel) was interplanted between Cavendish bananas. They say this is a fine system; the bananas are taken out after a few years and the avocados carry on. In Schachar's orchard the trees were <sup>at 15 months from planting</sup> 6 to 12 feet high, and the following varieties were represented: Fuerte, Nabal, Ettinger, Benik, Anaheim and Hass. ~~I would say this is a pretty fair example of what they are planting.~~ I asked one of the leading authorities - I am not going to mention his name because he will probably change his mind before this gets into print - what he would recommend for a commercial planting. He answered without much hesitation; about 50% should be divided between Fuerte and Ettinger, the other 50% as follows: 30% Nabal, 10% Benik, and 10% Hass. Interesting figures.

You can tell George Zentmyer that I did not see in Israel, nor have I seen in Spain, anything that looks to me like Phytophthora root rot. Of course George will reply that when it comes to root rot, I ~~adopt~~ <sup>follow</sup> the ostrich policy - I stick my head in the sand so I can not see it. But seriously, the symptoms as you know them in California and as I know them in Honduras (Oh, how well!) do not appear ~~over~~ <sup>here</sup>. What I did see in Israel was <sup>one</sup> a young grove pretty well drowned out. But that is nothing to write home about.

Dr Oppenheimer is enthusiastic about mangos. He has a lot of them at Rehovot. They look good ~~to me, too~~. But I ~~am~~ <sup>do</sup> not convinced that this is as much of a mango country as it is an avocado country. They have Haden, which so far would <sup>seem</sup> have to top the list, ~~I believe~~, and they have several varieties from Egypt, which may have come from India originally, and which are said to be good. And Dr Oppenheimer has a seedling, of which Haden was very likely the pollen parent, which impressed me very favorably and which he has named Maya in honor of his charming wife - nothing to do with us Maya Indians.

*Everybody works, nobody gets a salary. You have plenty of money and women, To edit, you are given insurance and clothes, and you take care of the milk, down which you get I and your babies are cared for in a community nursery.*

Plenty of other tropical and subtropical fruits have been introduced and tested; there seems to be almost nothing that they can't grow, though I wouldn't give much for their chances with <sup>such recalcitrant subjects as</sup> the mangosteen. They can grow lychees allright, but the <sup>my</sup> feeling is that the trees are not sufficiently productive to make <sup>Commercial</sup> extensive cultivation <sup>advisable</sup> promising. They have <sup>a few</sup> macadamias in production: no enthusiasm noted. Annonas are becoming <sup>a few</sup> commercial importance. They started with Annona squamosa; it wasn't too popular in the markets. The cherimoya does not fruit well, and if it did, the fruit would not be of fine quality in this climate (in my humble opinion). They had these <sup>a few cherimoya and Squamosa</sup> two species growing side by side at the experiment station in Rehovot, and some <sup>volunteer</sup> seedlings showed up which appeared to be hybrids. What we have called atemoyas in other countries. These are making a hit. They bear pretty well and they sell well. There are already some <sup>small</sup> commercial plantings.

<sup>On my</sup> last day in Israel they <sup>took</sup> ~~dragged~~ me to the agricultural college in Rehovot and made me give a talk on tropical fruits. This had been announced on the bulletin board. They wrote it out first in English and then they turned the typewriter around, and <sup>starting from right to left</sup> ~~beginning at the other~~ side, wrote it out in Hebrew. I enjoyed meeting the group, especially because about half of the people, it seemed, had studied at Davis, or Los Angeles or Riverside. A few days previously I had visited the nursery of Mr Honski near Tel Aviv. A perfect little gem of a nursery. So beautifully kept, so clean, that I got down on my knees and thanked the Lord that we still have nurserymen like Mr Honski in this world. I wrote Knowles Ryerson about it, and he wrote back "Sure I remember Mr Honski; he was a student of ours at Davis." The Director of <sup>Horticulture Asaph</sup> Horticulture, Mr Coor, is another Davis man. Robert Ticho spent some time at Riverside. I <sup>feel</sup> proud <sup>to think</sup> that California has contributed <sup>so much</sup> something toward the training of these men who are <sup>working hard and efficiently</sup> doing so much to develop horticulture in the State of Israel.

#### THE CANARY ISLANDS

For reasons which it <sup>is</sup> ~~does~~ not ~~even~~ necessary for ~~me~~ to <sup>elaborate</sup> ~~expound~~, it did not seem feasible to visit Egypt or the north coast of Africa, not even Algeria, where I would like very much to see what has taken place since my brother Paul and I went ~~out~~ into the Sahara and brought out a lot of date palms more than 40 years ago. So we came back to Spain to see how the avocado introductions from California, Texas, ~~Florida and~~



Florida, Mexico, Chile, Honduras, Israel and the Canary Islands were coming along; then we took off by air to see what is going on in the last mentioned region. <sup>Canaries</sup> It is a bit out of the world, but Oh how interesting! Of course, bananas and tomatoes and potatoes occupy most of their attention, and to my surprise I found that the camels are not just for tourists to be photographed on, <sup>They are</sup> but <sup>at</sup> on the southern <sup>side</sup> of the island of Tenerife (the largest of the Canaries, and the only one we visited) they actually make those camels work. I could not note that the animals <sup>altogether pleased</sup> were ~~entirely satisfied~~ with this situation. <sup>There is not much enthusiasm</sup>

To anyone interested in plants, the great feature of Tenerife (and I might add, one of the great features of the horticultural world) is the Jardín de Aclimatación de Orotava. In 1788 the King of Spain decided that it wasn't going to be a simple matter to grow mangos and certain other things at Madrid, so he told the boys to start a Botanic Garden at Orotava in the Canaries - an excellent choice of site. He told them to get plants from everywhere, and they did. And of course the remarkable feature is that this garden not only is still there, but under the direction of Ing. Andres Garcia Cabezon and the head <sup>enthusiastic</sup> gardener Carlos Gonzales Martin, it is in beautiful condition. More than 1500 species of plants, <sup>almost</sup> everything except the African Baobab tree, and I think this was a good omission because it would almost fill the <sup>few</sup> acres of the garden and leave no room for avocados or anything else.

Avocados are not as abundant in the Canaries as I expected them to be. <sup>We</sup> covered the island of Tenerife pretty thoroughly and I do not believe there are <sup>many</sup> more than 2000 trees, though some people would say 3000. These are, with few exceptions, West Indian seedlings. I suppose the ~~xxxxxxx~~ original <sup>so</sup> seeds came from Cuba. <sup>so</sup> We chose our moment for visiting Tenerife to be there in the avocado season: There were fruits in the market every day, but no great quantity. In a week we were able to buy 350 to shuck out seeds and bring them back to Spain for production of <sup>plants for grafting</sup> footstocks. The fruits are mostly obovoid to pear-shaped, mostly green in color but some purple, with medium sized seeds and flesh of acceptable flavor. About like the <sup>ordinary, not fancy,</sup> poorer aguacates you would buy in the markets of <sup>Cuba. Habana.</sup>

The center of production is down on the east side of the island, around the town of Güimar. I believe half the <sup>avocados</sup> trees on Tenerife are in this area, ~~alone~~. Elsewhere there are occasional trees in dooryards;

around Guimar there are <sup>a few</sup> occasional groups of five to 10 trees, planted to produce fruit for the market. Not much of an industry. And near <sup>town</sup> this ~~two~~ are the only two plantings of grafted trees, in orchard form, which we saw - and we assume we saw everything as we were in the hands of our friend Ing. Garcia Cabezon who is <sup>They now have -</sup> doing all he can to encourage avocado cultivation in the Canaries. <sup>or more</sup>

The development of grafted varieties has been one of the many services of the Jardin de Aclimatacion de Orotava. It was commenced ~~many~~ by don Juan Bolinaga, a ~~horticulturist~~ horticulturist from northern Spain who was in charge of this garden for about 40 years. He ~~has~~ retired, <sup>as of some 5 years ago;</sup> we went to see him in Puerto de la Cruz, a couple of miles from the garden. He had a grafted avocado in his back yard. It looked to me as though it might be Puebla.

*Tenerife*  
The present situation is this: They have a small nursery at the Jardin de Aclimatacion where they are propagating and selling budded avocado trees. They have Fuerte. They have a <sup>local variety</sup> seedling which Ing. Garcia Cabezon <sup>says</sup> came from one of the seeds he sent from California some years ago. He thinks it may be a Fuerte seedling. I am inclined to believe he is right. He has named this Jeva. It has not ~~yet~~ yet produced fruit outside the garden, ~~so far~~ so far as I know, so its commercial value is not fully established. There is another tree in the garden which they are propagating and which he calls Java. This is obviously a Guatemalan - I saw ~~half~~ half grown fruits and smelled the leaves - ~~and~~ it is not clear whether it reached here as a grafted tree from California or grow from a California seed. ~~The only other varieties which has been propagated to any extent is a West Indian seedling which originated on the island of Las Palmas, and which has been named~~

~~The~~ two small commercial orchards near Guimar, totalling about 250 trees in all, are made up of Fuerte and Jema and Java. In the outskirts of Santa Cruz de Tenerife ~~Don Sr Fumero~~ <sup>Don Sr Fumero</sup> who has a fine banana plantation (a fairly large one; in the Canaries if you have a city lot 100 x 150 feet, the rear 100 ft is devoted to commercial production of Cavendish bananas) had about 150 seedling West Indian avocados scattered over his farm. He has been topworking these and now has about 110 grafted trees, nearly all Fuertes. As far as I was able to learn, this just about ends the account of commercial avocado growing in the Canary Islands.

*on Tenerife.*