arrangements in a few key marketing-areas; create and test certain consumer-demand characteristics and otherwise test the market-ability of this entirely new product, through a period of one year.

The deep-frozen field has been the principal focus of our experimentation this year and our Lychee Association Board feels that, as it is followed through, it will open-up an extensive, rapidly-growing, year-round market which, together with marketing of fresh Lychees in season, should more than absorb any normally-increasing Lychee crop of the future. There is much to be done but the potentiality of the objectives is very large and appears to be reasonably attainable within a period of a few years.

LITERATURE CITED

MURMURINGS OF A SUB-TROPICAL HORTICULTURAL FAILURE

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Real honest to goodness Horticultural failures such as I, should in addition to all other lack of qualifications, be illiterate as well, then they will never become involved in writing articles on sub-tropical fruits, and thus continue to live long and useless lives planting sub-tropical after sub-tropical and reveling in the paradise of all of their mistakes and failures.

Unfortunately, due to my parents ambition for me; and their more obvious desire to get rid of me, during school hours at least, I became unwillingly and unwittingly familiar with Horticultural books and therefore, in later life, when I first undertook the study of Tropical Horticulture I began assembling a botanical library which now includes, with two exceptions a complete set of the Proceedings of the Florida State Horticultural Society since it became associated with the Krome Memorial Section.

The papers, documents, treatises, and observations, as published in this section of the Proceedings have been carefully studied, catalogued, assimilated, and fed through a mechanical brain by me. Two earth shaking facts have emerged.

First, all papers heretofore published have been written by experts.

Second, in no instance did the author admit failure in his undertakings.

Here is a paper not written by an expert and one in which the author "Shoulda' stood in his plant bed", but by one who has had instead a lotta' fun with his failures.

Some of the seamier aspects of sub-tropical fruit culture on the West Coast of Florida, above Bradenton, which should be generally considered as the Tampa-St. Petersburg area, and which may be of some interest are delineated as follows, but—

In giving you a condensed statement of sub-tropical fruit growing here I must explain two important criteria to be considered.

One is A. B. This means "Above Bradenton". I must make this distinction for the reason that there appears to be a weather band across the State at or about Bradenton on the West Coast, and it is much easier to raise tropicales below Bradenton and south through Ft. Myers than north of there.

I am informed you will hear from others with reference to progress in Lychees, Mangos and other tropicales in commercial production in this area, and they are much more competent to discuss weather conditions, and I hope will rescue me from explaining something I don't know very much about.

My other criteria is A. F., and perhaps I can explain this weather phenomena by some illustrations.

I was on a plane the other day flying to Tampa from Washington. The Hostess had just served lunch to my seat mate and I when suddenly the plane seemed to drop at least 1,000 feet, hit the air again on one wing, then bounced sideways thus turning my partner's tray all over my head and face. Why they served a cherry tart that day I will never know, but I dug it out of my ear just in time to hear the pilot say over the loud speaker, "We are just passing through an area of 'Mild Turbulence'".
Maybe it’s like the weather expression used by South Florida TV, weather announcers. While we are having a howling tropical storm, they say, we are having “inclement weather”.

Therefore, as an amateur meteorologist, I want to say that the winter of 1957-1958 on the West Coast of Florida witnessed an area of “depressed temperature”.

To be more practical. This winter in Tampa we planted ice cubes in vermiculite, overnight they sprang up into five flavored popsicles.

Some fifteen year old tropical trees I own were frozen to the ground so when I refer to my observations as A. F., I mean “After the Freeze”, and I think we can pretty well tell which tropicaals will take it and those which will not grow in the Hillsborough-Pinellas County area.

You will note I have lapsed into the pronoun “We”. This is not an editorial “We”. It refers to a real, red blooded American boy, age of 45 or thereabouts, name of John Baxter. We have been partners in this hobby of sub-tropical Horticulture for many years. He is the man who has the green thumb with the well worn thumb nail. He is the man who plants the big trees and cuts through the “hard pan” with a shovel to accomplish it. He is the one who reads the books in the library, and can talk “Highbrow Botanical talk”. So when I say “We” I literally mean “We”, and when I say “I”, I likewise literally mean “We”.

When I refer to specific plants I am, of course, referring to doorway and back yard plantings for so far as I know there have been no commercial plantings of Sub-Tropical fruits in this area this year.

Let’s examine the Jambolan Plum (Eugenia jambolana). There are many of these trees on the West Coast The freeze knocked the tops off the mature trees, but they are coming back fast and are bushier than ever. They are prolific growers; they provide shade; the kids can climb them; and they have a fruit which while not particularly ornamental is a useful fruit.

I can see some of my listeners seem to disagree with me.

Maybe I don’t know too much about the “flora and fauna”, but I observed this:

When the ripe fruit falls on the ground it seems to ferment, this seems to attract the bees who suck the juice, thus intoxicating them, and whether you believe it or not these intoxicated bees will walk right into the house and make a hive in my wife’s bustle.

You ask what great scientific truth we can draw from this?

Simply that you can make the finest Jambolan Plum wine you ever imagined out of the fruit, its taste is simply maddening, and its color rivals the “Rubies of the Rajah”.

It is also a cure for the Yaws.

Examine the speaker carefully—see, there is not a single Yaw on him.

Then there’s the Voa Vanga. One of the few fruits you can’t sink your teeth into.

They grow “great guns” on the West Coast. If frozen down they come back in a few months. They are pretty foliage plants, and are wonderful as a screen for rusty garbage cans. The fruit is prolific and about the size of a walnut.

It has one minor deficiency, other than tasting like dried apples; and that is, that the meat around the seed is about as thick as the skin of a balloon, and with our present teeth awkwardly hard to gnaw off. I have been experimenting with this situation, and I have found that you just can’t change the characteristics of the fruit, so like any pioneer tropical horticulturist, I have been putting drops of Colchicine on the heads of the neighborhood chil-
dren each day hoping it would change their genetic characteristics and thus they will grow long canine teeth to gnaw with, and a new race of Voa Vanga lovers will result.

One of the best yard trees is the Macadamia Nut (Macadamia ternifolia). It will stand reasonably cold weather. It makes a pretty, bushy tree if trained by pulling down the ends of the branches to promote growth of upright branches along the bent branches. If you desire fruit, a nutritional spray is a "must", otherwise, they require no special care other than a good dose of fertilizer with all the minor elements twice a year. These trees are becoming more popular every year in this area.

It has one pest that doesn't exist. It is called the "Macadamia Nut Nibbler". I have a photograph for those interested.

The nuts are Satelitic meaning "Out of this World", but no one has yet found an easy way to open them. We tried blasting, but "no luck". We now scatter them on the sidewalk in front of the house, like ball bearings, and watch house to house canvassers break their backs when they step on them while coming up the walk.

Lychees (Litchi chinensis) grow fine here. They are enjoying a great surge of popularity, and the nurseries have difficulty in keeping a supply of the better sized trees. If they had any protection at all the '57-'58 freeze did not greatly harm them. This is a subtropical, every householder on the West Coast should have.

What can I say about the fruit?

I can say that I have never tried it boiled, baked, or fried. It's so good that you eat it "as is", and deep freeze the rest for they freeze perfectly and keep a year or more.

You know; a new use might be as a substitute for a Manhattan Cocktail cherry. Of course, the Lychees are about three times larger than a cherry and that would mean a pint sized Manhattan glass, and after two or three of these the world would be filled with happy, happy people, drinking oversized Manhattans, and all because of a Tropical fruit. Fantastic isn't it?

What astounds me is how few people realize the virtues of certain members of the Eugenia family. Those I will mention are ideally suited to the West Coast area both by temperament, cold resistance, and fruit appreciation by connoisseurs.

Could you ask for anything more attractive as a good yard tree? Yes, a front yard tree, one covered with glossy, green leaves similar to a Magnolia, and twice a year a tree completely covered with masses of white flowers, followed by buckets of red, cherry like fruit.

That's the Grumichama (Eugenia dombeyi) and the plants are readily available here.

At this point a "Kudos" should be conferred on Jack Holmes, one of our local nurserymen, with the heart of a "plant explorer". He has brought to the West Coast of Florida from the West Coast of California the "Cherry of the Rio Grande" (Eugenia sp.). This is a 8-10 foot shrub and it just loves our climate and whereas the fruit is not as sweet as the Grumichama, neither is a Morello Cherry as sweet as a Napoleon Cherry. I would hazard a guess that it is probably the newest sub-tropical fruit being planted by sub-tropical devotees in this area.

Of course, the Jaboticaba (Myrtaria Cauliflora) a tree with two to three crops of fruit a year, cannot escape mention. There are a number of bearing trees in this area, and it grows well as far north as Orlando. The fruit tastes like a Scuppernong grape, and I am informed the juice will make citrus juice look
Comparison in size of yard grown jujubes and large olives.

to its laurels. There are named varieties of this tree and grafted trees available thanks to Mr. Anderson, a tropical fruit enthusiast living in Pierce, Florida.

I won't mention the Rose Apple (Eugenia jambos) because there are so many of these trees around here.

One of my most vivid recollections was when through the help of a friend I tried to candy the fruit “Chinese Style”. It just didn’t come out right and reminded me of crystallized violets. People just shouldn’t eat roses or violets, they should smell them instead. It just seems to offend one’s sense of propriety.

There is a difference between the taste experiences I have just commented upon which may be classified as “uncommon”, and those classified as “exotic”. All of which brings to our attention the Australian Peach (Eugenia tomentosa).

It grows well on the West Coast. Some say too well. The fruit is about the size of a small tomato—you know the kind you pickle—it is of a gorgeous orange color with the down of a high society peach.

The taste?

That’s where the exotic part comes in. It is something like a dog with a fire cracker tied to its tail.

It has sort of a smoky aroma (So has Scotch), you can’t run away from it, and it has a delayed taste action that is so elusive, yet so dangerous, you get the impression that at any time your taste buds will burst into a pyrotechnic display of ecstasy. It seems to me though it needs an igniter similar to a match for a firecracker, or maybe salt or something, as a welcome addition.

Be assured its experimental possibilities are boundless.

Since there are a number of Ceylon Gooseberry (Dovyalis hebecarpa) shrubs on the West Coast perhaps mention should be made of Dovyalis Abysinica which has a red fruit in comparison to the velvet black fruit of the Ceylon Gooseberry, and is much sweeter. Try both shrubs.

There seems to be a rather perceptible turning up of noses when I mention the Ceylon Gooseberry, but let me offer for your consideration a product much more distinctive, and exclusive, than most of the rare fruits with which you are acquainted.

By way of explanation it is well known that there is a condiment made only in Key West, Florida, called “Old Sour”. It is what imparts to avocado and conch salads the distinctive flavor which has never been copied or equalled.

It is made from the Key Lime juice, salt, and garlic buds, placed in a container covered with cheesecloth and put aside. The older the mixture, the more delightful it is to the epicurean taste. The importance and social prominence of the guest determine whether Old Sour 1 year, 5 years or 10 years of age will be served on his salad.

That’s one way to determine your social prestige, in Key West at least.

You have probably guessed my secret by this time, and that is, that Ceylon Gooseberries
make a vinegar with a flavor which is inherently its own and for salads is unsurpassed. One taste, and Kraft, Blue Plate and Heilman's salad dressings are banned from the house forever. Try it, I know it is better than even Ceylon Gooseberry pie.

To mention all of the sub-tropical fruit trees tested and approved on the West Coast would require more time than I have available.

Mr. Baxter and I have fruited the Akee (Blighia sapida), The Tamarind (Tamarindus indica), The Atemoya (Annona hybrid), The Sugar Apple (Annona Squamosa), The Custard Apple (Annona reticulata), The Egg Fruit (Pouteria campechiana), The Carissa (Carissa grandiflora), The Otaheite Gooseberry (Phyllanthus acidus), The Barbados Cherry (Malpighia glabra), The Carambola (Averrhoa carambola), The Longan (Euphoria longana), and The Red Papaya (Carica papaya), which by the way has a pest unknown to the science of entomology, and which is found only on this West Coast. It is called the “One Eyed Purple Papaya Eater”. Photographic proof is for the first time available with this paper.

If you want to try any or all of these plants just mentioned around this area you are assured of success, and by all means plant them all if you have the space.

Let me back up a minute, you ought to try Jujubes too. There are two varieties, both do well here. Both are cold resistant if you fertilize them with chicken manure 3-4 times a year.

One, the Jujube (Zizyphus jujuba) variety is “lang”, and has large fruit the size of the largest Olive, and is eaten fresh. The other, the Jujube (Zizyphus mauritiana) the Indian Jujube, I thought was only fit for famine food until I bought a book on Indian Economic Fruits, and found that it is made into jam and sold commercially in the market places.

While I am backing up give me another minute to discuss the White Sapota (Casimiroa edulis). They can be grafted with ease so Sam Tarallo, my friend who knows about those plants, says.

There are many trees around Tampa probably because of our large Latin population. The cold weather nips them, but doesn’t really pinch until it hurts. I dislike the bitter back lash of the fruit so I bought a “Sue Belle” Sapota from—I hate to say it—California. It is prolific, it is sweet, it has no bitter back lash, and grafts readily on our seedling stock.

The wooly leaf Sapota is one to plant and get out of the way of. It grows without care and is happiest when extending over into your neighbor’s yard.

Either Sapota is enjoyable, but there is a difference between the two just like the French words “gormet” and “gourmet”, both refer to eaters, only one means an appreciative eater, and the other does not.

At present we are experimenting with the Kwai Muk (Artocarpus hypargyrea), Morrisonia; Cornus mas; Carica andinamarcensis, and Actinidia arguta. They may be good or they may be bad, but no matter whichever they are, they have furnished us a lot of fun, healthful recreation, a creative hobby, and an expanded knowledge of the wonders of the plant world. That in itself is pay enough.

One last suggestion.

If you have room for only two fruit trees let me suggest the Miraculous Fruit (Sideroxylon dulceficum), and one sub-tropical fruit tree. This way you eat one of the sub-tropical fruit, as is, but before you eat the next one you eat a Miraculous Fruit, which is about as big as a grain of puffed wheat. This changes your taste buds, next eat another fruit and it tastes entirely different. By altering the quantity of Miraculous Fruit you eat you can see that one tropical fruit tree will furnish endless taste variations, and no one fruit will taste like the one before it.

Or have I been testing that Jambolan wine again?

**BIBLIOGRAPHY**

Most Bibliographies are referred to by figure references, but this one is different.

Listed below are ten books which taken together form a practical sub-tropical horticultural library, and include every plant mentioned in this paper, as well as a few thousand not mentioned herein. Each of these books can be purchased on the open market and for a reasonable sum:

3. Useful Plants of the Philippines—Wm. H. Brown Dept. of Agriculture and Natural Resources, Philippines.
6. Sturdevant's Notes of Edible Plants—V. P. Hedrick, New York Agricultural Experiment Station.
SOME EFFECTS OF WAXES AND 2,4,5-Trichlorophenoxyacetic Acid AS POSTHARVEST TREATMENTS ON PERSIAN LIMES

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Florida Persian limes are shipped green since this is the color preferred by the market. However, they often reach the consumer yellow or yellow-green because of the gradual loss of green color during the interim. Any treatment that retards yellowing and extends market life will benefit the lime industry.

Stewart et al (4), in packing house studies, found that California lemons treated with 100 to 1,000 p.p.m. 2,4,5-T (2,4,5-trichlorophenoxyacetic acid) in wax emulsion became yellow more slowly than those not treated when stored 85 to 120 days at 58 to 60° F. They found also that the storage life of lemons in California could be extended by treatment with 2,4,5-T in wax emulsion. They attributed the value of 2,4,5-T to reduction in the number of dead buttons through which decay organisms enter. Gates (1) reported that dipping limes into a solution of 800 p.p.m. of the sodium salt of 2,4-D (2,4-dichlorophenoxyacetic acid), a compound closely related to 2,4,5-T, reduced decay from 22 to 4 per cent of non-wrapped Florida limes held at room temperature for five weeks.

A self-polishing, fungicidal water wax (wax 101A) was recently formulated by Newhall and Grierson (3). Its fungicidal properties are derived from two chemical ingredients, sodium o-phenylphenate and hexamethylene-tetramine. Since wax 101A is self-polishing, it is especially suitable for Temple oranges, tangerines and other kinds of tender citrus fruit injured by brushing, because its use avoids brushing injury.

The present investigation was initiated primarily to determine the effects of 2,4,5-T on the retention of green color in the rind of limes. Secondary effects upon decay and weight loss also were considered. Since Florida limes are waxed, another objective was to compare weight loss and decay of limes treated with wax 101A and one of the commercial waxes commonly used on limes.

MATERIALS AND METHODS

Preliminary studies during July 1956 indicated that limes treated with 500 or 1,000 p.p.m. of 2,4,5-T retained the green color in their rinds better than those treated with 100 p.p.m.

Fifty-four cartons of 50 limes each, uniform in color and size, were picked from a commercial grove near Homestead, Fla., September 25, 1956. These were divided into two lots of 27 cartons each. Each lot was subdivided for nine treatments with three cartons in each. Lot A was stored at 50° F. for four weeks after treatment, and Lot B for eight weeks. The treatments were as follows: (1) 500 p.p.m. 2,4,5-T; (2) 1,000 p.p.m. 2,4,5-T; (3) 101A wax; (4) 101A wax plus 500 p.p.m. 2,4,5-T; (5) 101A wax plus 1,000 p.p.m. 2,4,5-T; (6) commercial wax; (7) commercial wax plus 500 p.p.m. 2,4,5-T; (8) commercial wax plus 1,000 p.p.m. 2,4,5-T and (9) no treatment. All treatments except the commercial wax were applied by dipping. Commercial wax was applied with cheesecloth. This procedure was followed because the preliminary studies indicated that limes dipped into the volatile water-immiscible commercial wax developed brown areas with a scalded appearance; but when the wax was applied with a cloth and allowed to dry before the limes were packed, the scalded areas did not appear. A common detergent was used as a spreader in all treatments.

Each lime was scored for color at the time of treatment by comparing its greenest part with the nearest matching color among the grapefruit color standards used by Harding and Fisher (2). Grapefruit color standards A, B and C, used for the greenest limes, were