



NEWSLETTER APRIL 1999

**TAMPA BAY CHAPTER of the
RARE FRUIT COUNCIL INTERNATIONAL, Inc.**

EDITORIAL COMMITTEE: BOB HEATH, THERESA HEATH, ARNOLD STARK, LILLIAN STARK

PRESIDENT: CHARLES NOVAK

MEETINGS ARE HELD ON THE 2nd SUNDAY OF THE MONTH @ 2:00 PM.

NEXT MEETING: APRIL 10 & 11, 1999 @ USF (SEE PROGRAM BELOW)

PROGRAM: THE USF PLANT FESTIVAL IS SCHEDULED FOR OUR REGULAR MEETING DATE, THE 10th & 11th OF APRIL. Consequently, our scheduled program for April will be participation in the USF Spring Plant Festival. All members are invited to participate and bring plants to donate or sell. Parking is free this time but admission is \$1.00, for which the Club will reimburse workers and participants in the Sale. This is an interesting affair & well worth the \$1.00 admission. Likewise, it is a social event as well as a money maker for the Club. There will be no tasting table or plant raffle this month. But we desperately need workers. Let's make this USF Sale our big one. Please join us.

U.S.F. SPRING PLANT FESTIVAL

The RFCI will be participating in the USF PLANT FESTIVAL on APRIL 10 & 11, 1999. This is an important fund raiser and all members are invited to attend, to assist in the Sale, to sell plants, to enjoy the camaraderie and to visit other groups.

Our participation will begin about 1:00 Friday afternoon, Apr 9, raising tents, setting up tables, arranging plants and posters, til about 6:00 pm.

On Saturday, Apr 10, the Gardens will be open from 7:00 a.m. til 9:00 p.m. for our final preparations. Price for admission is \$1.00, reimbursed by the Club.

The front gate will close at 8:00 a.m. Saturday and Sunday, and participants will have to enter by the side south gate after the front gate closes.

From 7:00 a.m. til 9:00 a.m. on Saturday and Sunday, traffic will be one way, in the front gate and out the side gate. The Festival will end at 4:00 p.m. on Saturday and 3:00 p.m. on Sunday, and only after 4:15 and 3:15 p.m. respectively, will we be allowed to bring vehicles in to remove plants or re-supply.

Parking for participants not bringing supplies or plants is across the street from the front entrance to the Gardens.

The USF Botanical Gardens takes 10% of our gross sales; the remaining 90% will be split 70/20 between the participant and the RFCI, so mark your plants accordingly, remembering that you get 70% of the selling price, less taxes.

We have provided a list of RFCI workers to the Gardens. Only those on the list will be allowed in before the Sale begins. If you are refused admittance, someone from our group will vouch for you to gain your admittance.

DIRECTIONS TO THE U.S.F. SPRING PLANT FESTIVAL:

Enter the Gardens from Bruce B Downs one block north of Fowler, turn east on Pine Street, and left at Alumni Drive. Go one block to the Gardens entrance.

TISSUE CULTURE RESEARCH WITH CITRUS

by Dr. Grosser

Dr. Grosser's research involves tissue culture. It is interesting that when one takes a particular cultivar and puts it into tissue culture to generate plants, one gets a multitude of genetic variations and generates cultures that are not present in the source plants, variations that are created by the tissue culture process. The amount of variation is proportional to the complexity and length of time they are cultivated. He showed us a slide of cells from a sweet orange, magnified perhaps 40 times, where we could see all sorts of adventitious buds, one way to generate plants from the sweet orange.

Several years ago he was involved in a large project with a need to regenerate several hundred plants of Hamlin and Valencia, two of the most popular oranges. They generated plants using tissue culture methods and protoplasts, which are simply individual cells that have had their rigid cell walls removed by enzyme digestion. By these methods they produced approximately 1000 Valencias and Hamlins, which they put out in the field. They are now about 10 years old and are fruiting. They are finding all kinds of interesting variations, one of the most striking of which are Valencia oranges that are fruiting as much as two months earlier than the usual Valencias.

Dr Grosser showed us slides of some of the variations with fruit of better color, larger size, less seeds and considerable variation in tree size after 10 years. They found seven clones of Valencias that were completely seedless. Most Valencias have two or three seeds. Early production of Valencias is very critical to the growers because up until now they haven't had a good juicing orange between the early Hamlin and the late Valencia. They are also finding fruit that bears later in the summer with very good quality, making the season that much longer.

Next, Dr Grosser talked about development of seedless Mandarin type citrus. They have a large program to accomplish this. It is well known that if you cross a tetraploid with a diploid, you get a seedless triploid. Triploids have three sets of chromosomes where diploids have two. We looked at a tetraploid grapefruit and a Dancy tangerine with two sets of

chromosomes, a diploid. One set of chromosomes is nine, so when they cross a diploid with 18 chromosomes with a tetraploid of 36 chromosomes, the progeny will have 27 chromosomes and will be completely seedless. We've known for a long time that one can do conventional breeding between a tetraploid and a diploid and get very beautiful seedless fruit. Their main problem was that they did not have quality tetraploid breeding parents to contribute good qualities to the product so the cross would usually end up with beautiful fruit that didn't taste very good. So they've been trying to develop tetraploids that have very high quality and can contribute that high quality to the cross.

Dr Grosser showed us a slide of a fruit that was produced in Italy, a triploid that was a cross between a tetraploid orange and a diploid Mandarin tangerine. The fruit tastes as good as it looks and peels easily. It has been released in Italy and is doing quite well there, according to Dr Grosser. They were very excited when they found out about this fruit. When one does this kind of cross using a diploid female, the endosperm does not develop normally and the seeds will abort before developing sufficiently to germinate. To compensate for this, after making the cross they can harvest the fruit in the summer when they are very small and try to pull the embryos out of the developing ovules before they abort. Because the endosperm is inadequate, the seeds will abort due to a lack of nutrition.

The next slide, which was made some years ago, showed us some of the triploids that they have created in one season. They are now producing over a thousand triploids in each season and what is significant to Dr. Grosser is the number of variations in the parental material. One he feels is very significant is a hybrid of Clementine and Mineola tangelo, a really outstanding fruit which, in his opinion, is even better than the Mineola. This is what they are using for the female, and the tetraploid they are using for the cross is from cell fusion, which is a hybrid of Nova, Mandarin and Sugary Sweet Orange, which is a special sweet orange that transmits lower acidity to its progeny. This is one of the toughest things to

control, the amount of acidity in the progeny. They now have over 100 hybrids produced by the test tube baby technique. Dr Grosser showed us several slides of trees that are being grown to produce the tetraploid hybrids they are using in the research. In order to produce the tetraploids they treat the cells from their cultures with the enzyme that separates the cells and removes their rigid cell walls to give the protoplasm, which is nothing more than a naked cell suspended in the medium. They can do the same thing with the seedling leaves of the other parent they want to cross. They mix together the diploid cells from two different parents and treat them with polyethylene glycol. A certain percentage of the cells will fuse together and the trick then is to produce plants from the fused cells.

We saw a slide of the cells in solution without their cell walls. They are all perfectly spherical. They are bathed together in a liquid cultural medium that has a high osmotic condition to hold the cells together without their cell walls. Without the high osmotic condition the cells will just collapse. Also, some leaf cells in another solution were isolated the same way. Then they purify the naked cells, get rid of all the broken pieces and mix the solutions with the cells from two different parents. The cells combine in all kinds of combinations.

The next slide showed two different kinds of cells combining, which is what they want, and another combination that is completely fused. We could see three or more cells fusing, which is really a dead end because this produces too many chromosomes and will not produce a plant. After one month or so, small colonies develop from the protoplasts which are then transferred to a rooting medium for root development. Then the plants can go into the soil. Dr Grosser indicated they now have about 3,000 diploids in the field and they expect by next year, perhaps, some of them will start flowering and produce fruit. They are pretty excited about it, although it takes about one out of 400 hybrids to get something that is commercially acceptable. So out of the 3,000 they expect to have a few good ones in the near future.

At this point Dr Grosser switched from

fruit quality to root stocks. He indicated that we have quite a few diseases that kill lots of citrus trees in Florida. One of the root stocks that has been very popular in Florida is sour orange, but because of citrus tristeza virus and the brown aphid that is spreading it around a little more quickly, it is not wise to use this root stock anymore. So we need a replacement for sour orange. Also, they are interested in cold tolerance, tree size and resistance to other diseases, including root rot and citrus blight that take out about a million trees a year. Dwarfing in citrus is very important for the harvesters. They have also been using the cell fusion technique to hybridize citrus with other genera that are related to citrus. Some citrus relatives have some useful traits for root stock improvement and many of these cannot be crossed by sexual methods. This is the only way one can get these kinds of hybrids.

He showed us slides of some of the leaves resulting from crosses of various citrus with setropsis, a species from western Africa, and with Severinia. All of these have a non-citrus type fruit so Dr Grosser doesn't know what kind of fruit they are going to get from them, if any. But they should be rather novel fruit if they ever produce.

Some of these hybrids do present problems, of course. Severinia, for instance, has different nutritional needs than citrus and this is carried over into the hybrid, so to use the Severinia hybrid for a root stock means we would have to change our nutritional approach to the trees.

The primary strategy for using self fusion is simply to take two root stocks that complement each other, fuse them together and try to capture the best qualities of both parents in one tree.

When you do a self fusion, you only get one hybrid form any two parents, whereas if you do sexual hybrids, you may get hundreds of different varieties. In this case it would be extremely difficult to figure out which ones might be the best.

Raffle: March 1999

Plant Name	Donor	Winner
Beauty Berry	Heath	Toni Singleton
Orange Berry	Heath	Tom Solosky
Papaya	Heath	David & Linda Frey
Monstera	Heath	Kimberly Hunt
Eugenia confusa	Heath	Kent Helmick
Rose Apple	Heath	Sal Russo
Carambola jelly	Heath	Robert Wong
Sugar Apple	Heath	Stark
Pineapple	Paul Branesky	Butch Bouchard
Loquat	Phil Brown	Butch Bouchard
Surinam Cherry	Phil Brown	Butch Bouchard
?	Phil Brown	Nancy McCormack
Loquat	Jan Conard	Butch Bouchard
Purple Passion Fruit	Charles Novak	Tom Solosky
Purple Passion Fruit	Charles Novak	Shane Smith
Purple Passion Fruit	Charles Novak	Susan McAveety
Purple Passion Fruit (2)	Charles Novak	Thomas Scott
Purple Passion Fruit	Charles Novak	Sheri Page
Jackfruit	Charles Novak	Kent Helmick
Jackfruit	Charles Novak	Butch Bouchard
Jackfruit	Charles Novak	?
Flowering Banana	Charles Novak	Sal Russo
Flowering Banana	Charles Novak	Stark
Brazilian Guava	Stark	Phil Brown
Brazilian Guava	Shane Smith	Nancy McCormack
Brazilian Guava	Shane Smith	?
Concrete Goose	Shane Smith	Butch Bouchard

ARE YOU A "?" *Please...please...please print your name on the Plant Exchange List*

when you bring a plant and when you get a plant.

It helps all of us know who is trying to grow what.



Tasting Table: February 1998

Novak: Fruit Punch, Blueberry Cheesecake, Mango/Pineapple Upsidedown Cake, Coconut & Kiwi

MaryAnn Branesky: Fried Bananas

Pat Jean: Lemon Squares

Janet Conard: Fruitcake, OrangeJuice

Sharon Pilot: Banana Nut Bread

Al Roberts: Calamondin Cake

Phil: Dried Tamarind & Longan

Paul Branesky: Papaya

Kimberly Hunt: Chocolate Cake

Nancy McCormack: Chips

From the President
Charles Novak

I am honored to be serving as your club president for another year. This is my fourth year and I hope I can serve you well.

I hope everyone enjoyed Dr. Grosser's presentation last month as much as I did. I am very interested in genetic engineering and the development of new and better varieties of fruits. We may be able to arrange a trip to Dr Grosser's lab if there are enough interested club members. Let me know if you would be interested in touring his facility.

You may have noticed a new section in the newsletter. If you are looking for certain items (plants, seeds, tools, etc.) or have items you wish to sell or trade you may submit the information for possible inclusion in the newsletter. Only one page is available; therefore, your items may not be listed in the very next newsletter.

The Director of USF Botanical Garden, Bradley Carter, attended our last club meeting. He has many new and promising ideas for the Garden. We all need to help him make the USF Botanical Garden a success. He will need help setting up tents Friday afternoon, April 9, for the USF Botanical Garden Spring Plant Festival on Saturday and Sunday. If you are available to help, please be at the USF Botanical Garden around 1 P.M. We need everyone's help to make the sale a success. Please try to be available to help on either Saturday or Sunday (both days would be great!). Some of us will be there all three days. If you have not been to one of these plant festivals, you will be amazed at the many different plants and trees that will be available for purchase. You will also meet many interesting people. Also, this is the perfect opportunity for you to sell your extra fruit plants. See the map in this newsletter for directions to the Botanical Garden.

The following is a list of scheduled programs/speakers:

April 10 & 11	USF Botanical Garden Spring Plant Festival
May 9	Gene Joyner
June 13	Debra Toyer-Growing Blueberries

Lanny Brooks needs your help to schedule speakers/programs for our club meetings. If you have a suggestion or know of someone who might present a program of interest to club members, please contact Lanny at (813) 926-9887.

I would like to thank the club members who bring plants for the plant exchange and food for the tasting table. It is greatly appreciated.

WHAT'S HAPPENING

Mar-Apr 1999

by Paul Zmoda

Spring will soon be here and there is no time to waste. If you are growing papayas as biannuals - plant them out now - you can expect fruit on two year old plants before next winter. I've been growing strawberry trees (*Muntingia calabura*) as an annual since they are so tender. I plant the trees out in early spring and take cuttings in midsummer. These cutting-grown trees are raised in pots and are protected from any cold. Later on, they are used to replace the previous, mature trees which usually succumb to winter.

I've put fertilizer around all surviving trees out in the woods. The malabar chestnut, although leafless, is green and branching well. Date, coconut and peach palms are alive and are expected to grow well during the heat of the upcoming growing season. One jaboticaba, about eight years old, is doing fine in light shade. I girdled a lower branch with a sharp knife to see if I might induce flowering. I'm jealous of Janet Conard's huge jaboticaba tree which is covered with blooms this year.

We have new neighbors at our farm - six big, black dairy heifers. I am pleased to have them there because I can hop the fence and gather "cow pies" for our hungry plants. Bananas especially love this nutritious by-product. There is one problem having cows so close, though; they are able to reach over the fence to nibble on the closest trees. Now I must cow-proof my plantings: they seem to enjoy the white sapote best.

New plantings: Huamoa plantain, strawberry tree, squash, watermelon, peppers, eggplants and Colombian blackberry 'Mora'.

WHAT'S HAPPENING IN YOUR GARDEN?

Paul Zmoda has been writing "What's Happening" for 10 years and we would like to know what is happening in some other members' gardens. Please sit down and let us know what you're doing, what is growing well, what's fruiting, what you would like to fruit, what is interesting and what you are enjoying. You may not realize it but our members are really interested in hearing from you.

A MEMORIAL

by Bob Heath

One more reason to plant seeds and grow your own trees.

An avocado tree appeared in our back yard, a seedling, from a seed left by an animal or by a family member, absentmindedly thrown in an overgrown part of the yard, a small tree in an area not much frequented. The tree was first noticed when it was about three feet tall and it grew rapidly through the summer and into the depths of winter where it withstood a temperature of 24° without leaf damage. This piqued our interest so we left it there and watched it grow. Eventually, after several years, the tree flowered and produced fruit different from avocados with which we were familiar. This is our seedling tree and may be one of a kind so we have the right to give it a name. We wanted a name suitable for avocados and one with a meaning to us. As it happened, we were presented with a very tragic situation which provided the ideal name for this tree. A dear friend of the family was crushed beneath the wheels of a semi on I-75 in a careless accident by a truck driver which snuffed out his life instantly. In honor of this dear friend we have chosen to name the tree the Zimmer avocado. We are in the process of propagating the tree with graft wood on seedling stock.

Members Corner:

(In order to include your submission for this section in the next newsletter, it must be received no later than 10 days after our regular club meeting, or, give the written information to your newsletter editors at the meeting.)



Wanted: Buddha's Hand Citron Seed; Charles Novak (813)754-1399

For Sale: Sears Edger, only used a few times (\$75); Charles Novak (813)754-1399

For Sale: Macintosh Centris 610 Computer, color monitor & CD Drive-great for kids (\$75)
Charles Novak (813)754-1399



New Officers

President	Charles Novak
Vice President	Bob Heath
Vice President	Jerry Amyot
Vice President	Lanny Brooks
Vice President	Al Jean
Treasurer	Susan McAveety
Secretary	Linda Novak

Summer Trip to the Peruvian Amazon

Academic Achievement Center is taking its second trip to the Peruvian Amazon with Amazonia Expeditions, leaving Saturday, July 17 and returning Saturday, July 25. There is room for additional individuals, and this is an ideal family trip. See monkeys, sloths, parrots, toucans, blue morpho butterflies, and many types of reptiles, amphibians, birds, and unusual insects! Buy or trade at a native market day!. See the giant Victoria water lilies! Taste the wild fruits of the rainforest and buy myriad tropical fruits at a huge market! Go night hunting for caiman and boas! Travel on the world's largest river and see (and perhaps swim with) the pink river dolphins! Go piranha fishing! For more information, including costs, call Arnold Stark at (813)654-4198 (daytime) or (813)621-4987 (evening).

RFCI LIBRARIAN

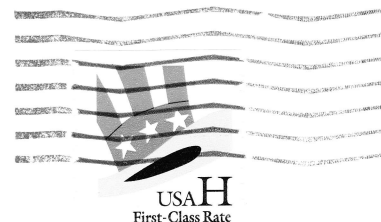
Our Club needs someone to act as a full time librarian, a position now being held by our president, Charles Novak. Charles has built the cabinet to transport and display the books but we need someone who comes to most of the meetings and has a closed vehicle, a van or similar, to carry the cabinet to and from the meetings. Our library is small at this time but we would like to see it grow and intend to add books as they become available. We are asking for someone who is interested in making a commitment to the Club. Being the librarian is certainly a low paid job but it has the great benefit of having all these books at your beck and call in your home to be perused at your leisure. This is certainly an inducement for one who wants to become an authority on rare fruit.

RECIPE: MULBERRY SAUCE

1/2 cup sugar	1 cup fresh mulberries (stems removed)
2 tsp cornstarch	1 Tbsp liqueur
1/2 cup water	1 tsp lime juice

Combine sugar and cornstarch. Stir in water. Add mulberries and liqueur. Bring to a boil, simmer until clear and thickened (approx. 4 minutes). Remove from heat and add lime juice. Chill. May be served over pound cake, pancakes, baked custard or pudding. Yield: 3 cups.

RFCI Tampa Bay Chapter
313 Pruett Rd
Seffner FL 33584



FIRST CLASS MAIL

P. JUDSON NEWCOMBE
314 DEER PARK AVE.
TEMPLE TERRACE, FL 33617

